

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

Ken McQueen
Cabinet Secretary

Matthias Sayer
Deputy Cabinet Secretary

Heather Riley, Division Director
Oil Conservation Division



November 28, 2018

Steven Moskal
BPX Energy
Field Environmental Coordinator
1199 Main Ave, Suite 101
Durango, CO 81301

Reference GCU 145 30-045-07909
 BP's Request for Closure August 13, 2018

Mr. Moskal:

OCD has reviewed the files on the release referenced above. The available information shows BP's remediation efforts have removed impacts from the groundwater and met the monitoring requirements.

The available information indicates BP has met the requirements of 19.15.29-30 NMAC. No further corrective action is required. This referenced project is closed.

This finding by the OCD does not relieve BP of responsibility if future information shows a threat to ground water, surface water, human health, or the environment. Further, it does not relieve BP of responsibility for compliance with any federal, state, or local law.

Please properly plug remaining monitoring wells per requirements of the New Mexico Office of the State Engineer.

Thank you,

Vanessa Fields
Environmental Specialist
505-334-6178 ext. 119

BLAGG ENGINEERING, INC.

P.O. Box 87, Bloomfield, New Mexico 87413

Phone: (505)632-1199 Fax: (505)632-3903

August 10, 2018

Mr. Steve Moskal
BP America Production Company
380 Airport Road
Durango, Colorado

Re: Transmittal of Closure Documentation
GCU 145
(A) Sec 26 – T29N – R12W
API: 30-045-07909
San Juan County, New Mexico

NMOC
AUG 13 2018
DISTRICT III

Dear Mr. Moskal:

At your request, Blagg Engineering, Inc. (BEI) has prepared documentation for closure of remedial activities at the BP operated GCU 145. This site is located on private property approximately 5 miles west of Bloomfield, New Mexico (Figures 1 and 2). Hydrocarbon impacts to groundwater were discovered during closure of a 95 barrel BGT on July 22, 2013. Initial assessment of the impacts indicated that they were limited in size. A groundwater monitor well was installed at the BGT location on February 12, 2014. Analytical test results from the initial well sampling indicated that impacts were limited to trace concentrations of benzene only and that natural attenuation would likely be effective at source mitigation.

The GCU 145 well pad was associated with a prior groundwater impact first discovered in 1994. That impact was subsequently remediated via excavation. Groundwater monitoring on five (5) wells installed in 2006 confirmed that groundwater impacts had been remediated. The site was assigned a 3RP-16 remediation file by the New Mexico Oil Conservation Division (NMOC). Closure of that file was granted by NMOC on February 24, 2017.

Quarterly groundwater sampling on MW-6 has confirmed that natural attenuation was effective at mitigation of the trace impacts. After six (6) of the first quarterly sample events with benzene testing slightly above closure standards, the following eight (8) quarterly events tested all BTEX constituents at below regulatory closure limits.

On May 15, 2018 two (2) down-gradient monitor wells were installed to confirm that impacts from the prior 95 BGT had not migrated from the source area. The wells were sampled on June 18, 2018. Laboratory analytical test results from those wells confirm that no residual groundwater impacts are present.

Blagg Engineering, Inc. is of the opinion that no further action is necessary to investigate or remediate the minor groundwater impact associated with the 95 BGT at the GCU 145. Site closure is recommended. Attached to this transmittal is the supporting documentation for this recommendation, including boring logs, sampling notes and laboratory analytical reports.

Questions or comments with respect to this transmittal may be directed to myself at (505)320-1183. BEI appreciates the opportunity to provide services to BP.

Respectfully,

Blagg Engineering, Inc.

Jeffrey C Blagg, PE

Digitally signed by Jeffrey C Blagg, PE

DN: cn=Jeffrey C Blagg, PE, o, ou, email=jeffcblagg@aol.com, c=US

Date: 2018.08.13 06:23:09 -06'00'

Jeffrey C. Blagg, P.E.

President

Attachment: Closure Documentation

BP America
GCU 145
(A) Sec 26 – T29N – R12W
San Juan County, New Mexico
API: 30-045-07909

Summary Record of Impact Remediation

July 22, 2013 Shallow groundwater encountered during closure of a 95 barrel BGT. No visual evidence or odor associated with the groundwater or soils at the BGT location. Soil sidewalls (at 3' depth) and groundwater (at 4'-5' depth) sampled for laboratory analysis. (Figure 1: Site Location Map Figure 2: Site Map)

July 23, 2013 Initial receipt of rush laboratory results. Soil tested at non-detect for hydrocarbons. Groundwater tested at 72 ug/L for benzene. Other BTEX constituents tested below closure standards.

Site closure standard determined at 100 ppm TPH based on:

Depth to Groundwater < 10 feet (20 points)

Site location shown on Figure 1.

Note that the GCU 145 was a prior groundwater impact site, NMOCD 3RP-16. That impact had been remediated via excavation. Five (5) groundwater monitor wells were installed to confirm closure, which was granted by NMOCD on February 24, 2017. Historical measurements and sampling on the 3RP-16 monitor wells determined a uniform groundwater gradient to the southeast at the site. The monitor wells had been taken out of service prior to the discovery of impacts at the 95 BGT in July 2013 and could no longer be sampled or measured.

February 12, 2014 Install monitor well (MW-6) at failed BGT location (Figure 2)

March 19, 2014 Initial sample event on MW-6. Failed on benzene only at 39 ug/L. Initiate quarterly sampling on MW-6.

June 27, 2014 – May 28, 2015 Quarterly sample events on MW-6, generally testing low concentrations of benzene at levels slightly above closure standards. Other BTEX constituents test below regulatory limits.

August 26, 2015 – May 26, 2017 Achieve 8 consecutive quarterly groundwater sample events on MW-6 with all BTEX constituents testing below regulatory limits.

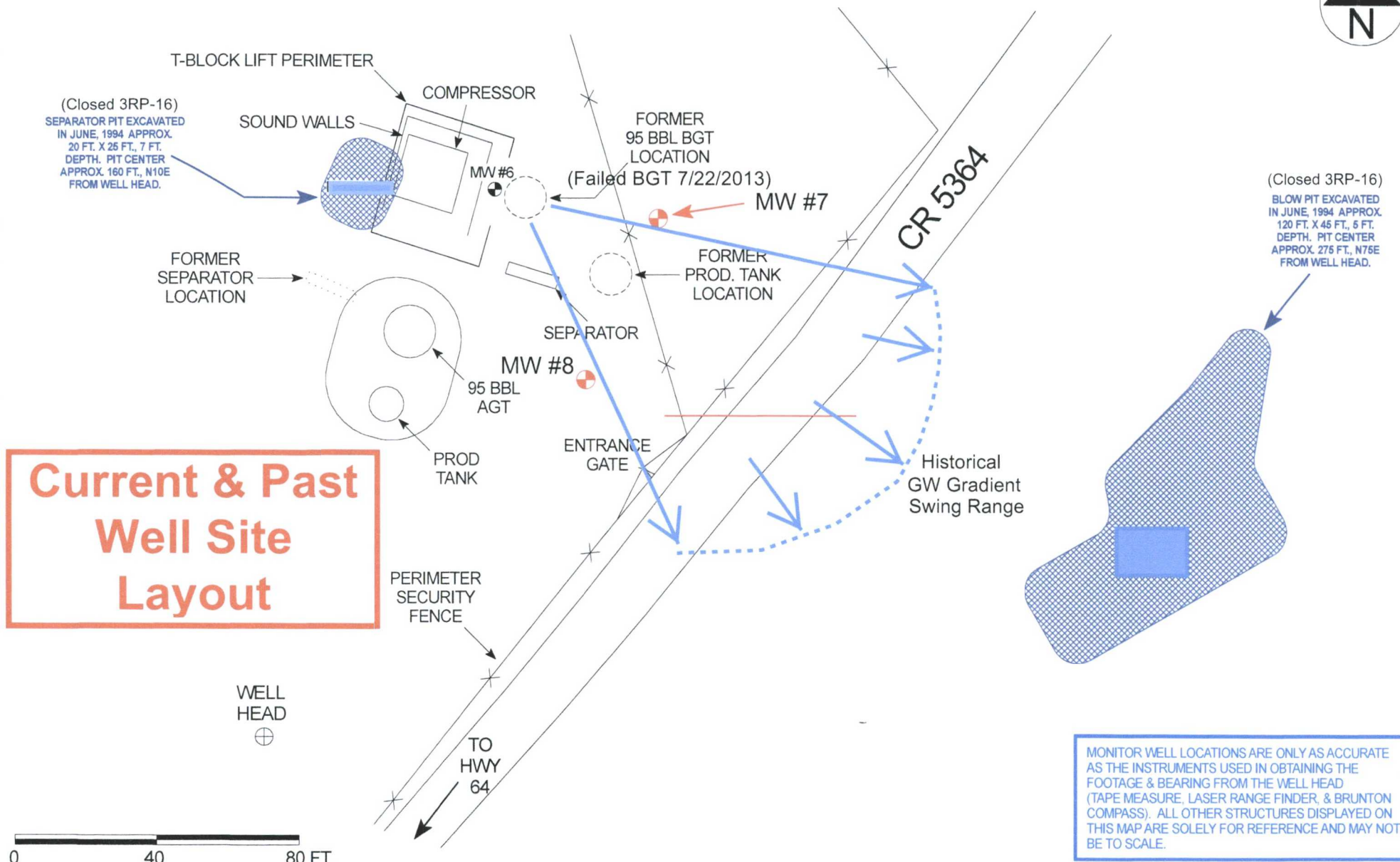
May 15, 2018 Install monitor wells MW-7 and MW-8 at down-gradient locations from MW-6 to provide evidence that impacts were not present. No evidence of soil impacts during well drilling.

June 15, 2018 Develop monitor wells MW-7 and MW-8.

June 18, 2018 Sample event on monitor wells MW-7 and MW-8. Laboratory analytical test results determine groundwater tests below regulatory standards for site closure on both down-gradient wells.

Figures

FIGURE 2



BP AMERICA PRODUCTION CO.

GCU #145

NE/4 NE/4 SEC. 26, T29N, R12W

SAN JUAN COUNTY, NEW MEXICO

B LAGG ENGINEERING, I NC.

CONSULTING PETROLEUM / RECLAMATION SERVICES

P.O. BOX 87

BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

PROJECT: MW MONITORING

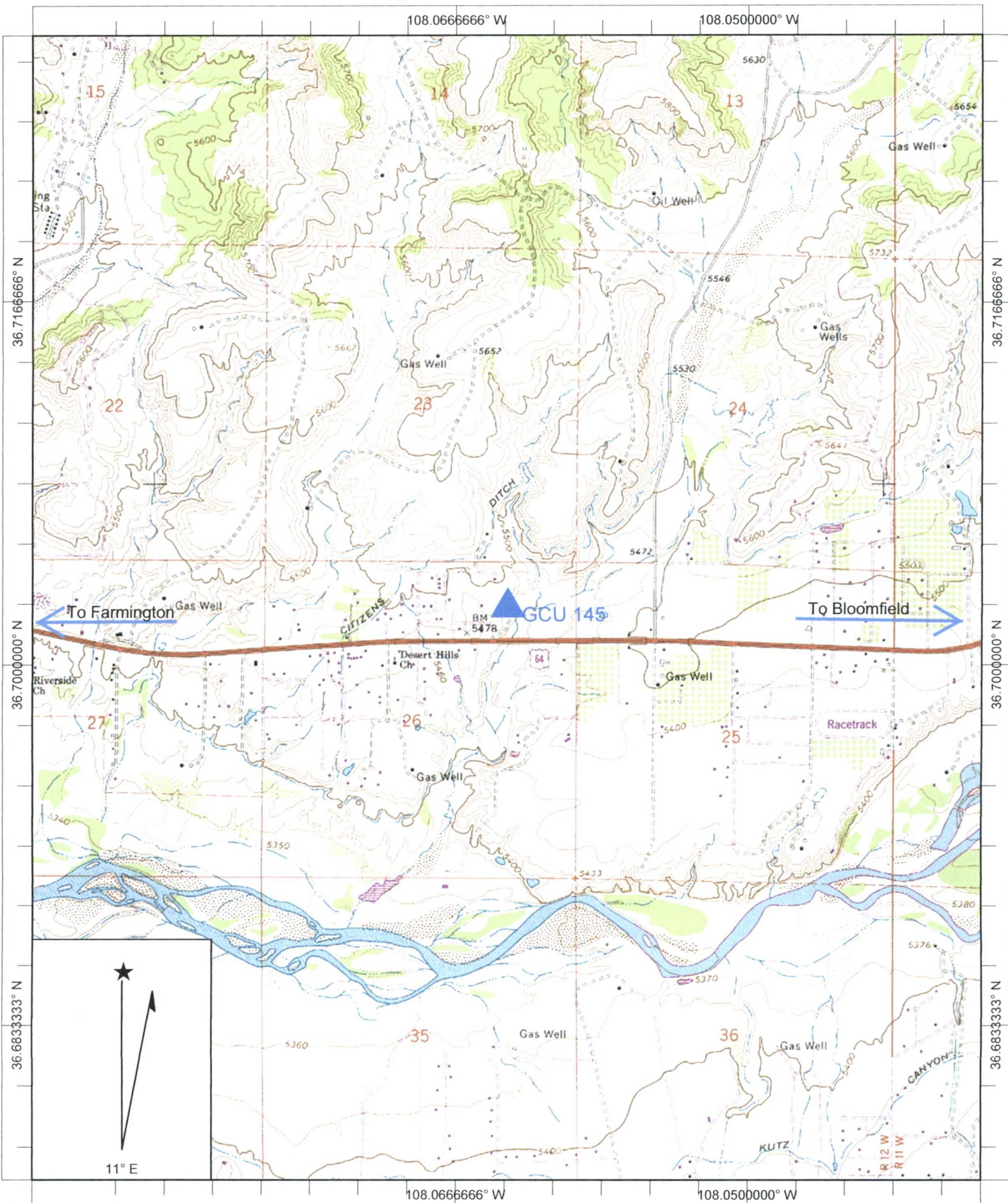
DRAWN BY: NJV

FILENAME: GCU 145-SM2.SKF

REVISED: 07-10-16 NJV

**SITE
MAP**

07/16



Name: HORN CANYON
 Date: 8/10/2018
 Scale: 1 inch equals 2000 feet

Caption: BP America
 GCU 145

Figure 1
 Site Location Map

Analytical Data Summary Spreadsheet

BP AMERICA PRODUCTION COMPANY

GROUNDWATER FIELD DATA & LAB BTEX RESULTS

GCU # 145 - 95 BGT
UNIT A, SEC. 26, T29N, R12W

Revised Date: August 10, 2018
Submitted by Blagg Engineering, Inc.

								BTEX US EPA METHOD 8021B or 8260B			
SAMPLE DATE	WELL NAME / NUMBER / SAMPLE ID	DEPTH TO WATER (ft)	WELL DEPTH (ft)	TDS (mg/L)	CONDUCT. (umhos)	pH	FREE PHASE PRODUCT (ft)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL BENZENE (ppb)	TOTAL XYLENES (ppb)
07/22/13	95 BGT GW @ 5'							72	ND	67	110
03/19/14	MW #6	10.06	17.66	926	1,200	7.28		39	ND	92	620
06/27/14		6.59			900	7.22		15	ND	62	240
08/26/14		6.09			700	7.33		18	1.4	70	540
12/01/14		7.72			700	7.49		7.6	ND	11	55
02/24/15		9.64			1,000	7.16		19	1.0	19	65
05/28/15		9.49			1,300	7.15		28	1.0	59	350
08/26/15		6.83			800	7.13		5.0	ND	9.1	30
12/09/15		7.01			900	7.31		4.1	ND	7.4	22
02/23/16		8.67			1,200	6.90		3.8	ND	4.2	9.1
06/22/16		7.75			1,200	7.14		1.5	ND	2.0	5.0
08/22/16		6.28			1,200	7.07		2.2	ND	6.0	24
12/16/16		7.48			800	6.96		ND	ND	2.5	6.5
03/14/17		9.07			1,200	7.24		ND	ND	1.8	8.7
05/26/17		8.25			1,400	6.99		1.2	ND	9.4	12
06/18/18	MW #7	5.22	14.00		1,100	6.94		ND	ND	ND	ND
06/18/18	MW #8	6.99	15.00		1,000	7.05		2.4	ND	ND	3.2

NMWQCC GROUNDWATER STANDARDS

10	750	750	620
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SAMPLE DATE	WELL NAME /NUMBER	Fluoride (mg/L)	Chloride (mg/L)	Sulfate (mg/L)	Nitrate-N (mg/L)	TDS (mg/L)
03/19/14	MW #6	1.6	14	300	ND	926
06/18/18	MW #7	1.1	21	530	ND	1,170
06/18/18	MW #8	1.1	19	390	ND	868

NMWQCC GROUNDWATER STANDARDS

1.60	250	600	10	1,000
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- 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) NMWQCC - New Mexico Water Quality Control Commission.
 - 4) TDS - Total Dissolved Solids
 - 5) mg/L - Milligrams per liter
 - 6) Conduct. - Conductivity
 - 7) umhos - Micro-ohms
 - 8) pH NMWQCC standards range between 6 -9
 - 9) ug/L - Micrograms per liter
 - 10) NA - Not available or not applicable
 - 11) ND - Indicates not detected at the reporting limits (less than regulatory standards of at least a magnitude of 10) .

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: BP	Contact: Steve Moskal
Address: 380 Airport Road, Durango, CO 81303	Telephone No.: 505-330-9179
Facility Name: Gallegos Canyon Unit No. 145	Facility Type: Natural gas well

Surface Owner: Fee	Mineral Owner: Fee	API No. 30-045-07909
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LOCATION OF RELEASE

Unit Letter A	Section 26	Township 29N	Range 12W	Feet from the 842	North/South Line North	Feet from the 1,142	East/West Line East	County: San Juan
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Latitude 36.70243° Longitude -108.06371°

NATURE OF RELEASE

Type of Release: Hydrocarbon – Unknown – hydrocarbons	Volume of Release: unknown	Volume Recovered: none
Source of Release: Flowline	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery: July 29, 2013
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Brandon Powell - NMOCD	NMOCD
By Whom? Courtney Cochran – BP	Date and Hour: 7/29/2013	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	AUG 13 2018

If a Watercourse was Impacted, Describe Fully.*



Describe Cause of Problem and Remedial Action Taken.*

During the closure of 95 bbl BGT groundwater was encountered at 3-5 feet below grade. No visual impacts were noted to either soil sidewall or groundwater. Samples were taken from both in accordance with regulation. Laboratory analysis revealed impacted groundwater with a Benzene level of 72 ppb. Soil sidewall sample came back non-detect. Continued groundwater monitoring determined contaminants of concern below water quality standards. An additional 2 groundwater monitoring wells we installed downgradient to confirm no residual impacts.

Describe Area Affected and Cleanup Action Taken.*

Following discovery of impacts associated with a BGT closure sampling, further groundwater delineation and monitoring were performed. Once levels for contaminants of concern were below water quality standards, further delineation was performed. Attached are the results of downgradient groundwater delineation activities which determined the no residual influence of contaminants of concern downgradient of the original source. Based on the attached report and laboratory results, BP requests closure of this site with no further action.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Steve Moskal	Approved by Environmental Specialist: 	
Title: Field Environmental Coordinator	Approval Date: <u>11/28/18</u>	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: August 12, 2018	Phone: 505-330-9179	

* Attach Additional Sheets If Necessary

N5K1322840633

Monitor Well Logs

BLAGG ENGINEERING, INC.

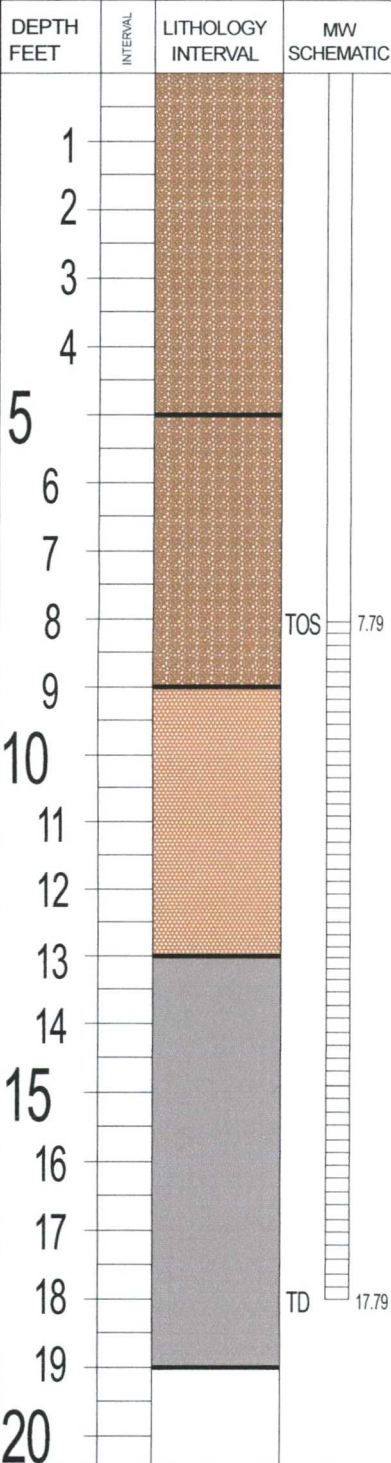
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW #6

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU #145 - SEPARATOR PIT UNIT A, SEC. 26, T29N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / ENVIROTECH, INC.
EQUIPMENT USED: MOBILE DRILL RIG (CME 75)
BORING LOCATION: 169 FT., N22E FROM WELL HEAD.

BORING #..... BH-6
MW#..... 6
PAGE #..... 6
DATE STARTED 2/12/14
DATE FINISHED 2/12/14
OPERATOR..... KP
PREPARED BY NJV



FIELD CLASSIFICATION AND REMARKS

GROUND SURFACE

TOP OF CASING APPROXIMATELY AT GRADE.

DARK YELLOWISH BROWN ROAD BASE AGGREGATE WITH SMALL TO LARGE RIVER GRAVEL, NON COHESIVE, FIRM, DRY TO SLIGHTLY MOIST, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (0.0 - 5.0 FT. BELOW GRADE).

DARK YELLOWISH BROWN SAND WITH GRAVEL, NON COHESIVE, FIRM, SLIGHTLY MOIST TO WET, NO APPARENT HYDROCARBON ODOR DETECTED PHYSICALLY FROM AUGER CUTTINGS (5.0 - 9.0 FT. BELOW GRADE).

SAME AS ABOVE EXCEPT MONDERATE BROWN, SATURATED, NO APPARENT HYDROCARBON ODOR DETECTED WITHIN AUGER CUTTINGS (9.0 - 13.0 FT. BELOW GRADE).

SAME AS ABOVE EXCEPT DARK GRAY, SATURATED, STRONG APPARENT HYDROCARBON ODOR WITHIN AUGER CUTTINGS (13.0 - 19.0 FT. BELOW GRADE).

NOTE:  - ROAD BASE AGGREGATE AND/OR SAND AND GRAVEL.

NOTE:  - SAND.

TOS - TOP OF SCREEN FROM GROUND SURFACE.

TD - TOTAL DEPTH OF MONITOR WELL FROM GROUND SURFACE.

Monitor well consist of 2 inch PVC piping - casing from grade to 7.79 feet below grade, 0.010 slotted screen between 7.79 to 17.79 feet below grade, sanded annular to 5.00 feet below grade, bentonite chips from 3.00 to 5.00 feet below grade, concreted flush mount well cover at surface, secured with locking cap & padlock.

BLAGG ENGINEERING, INC.

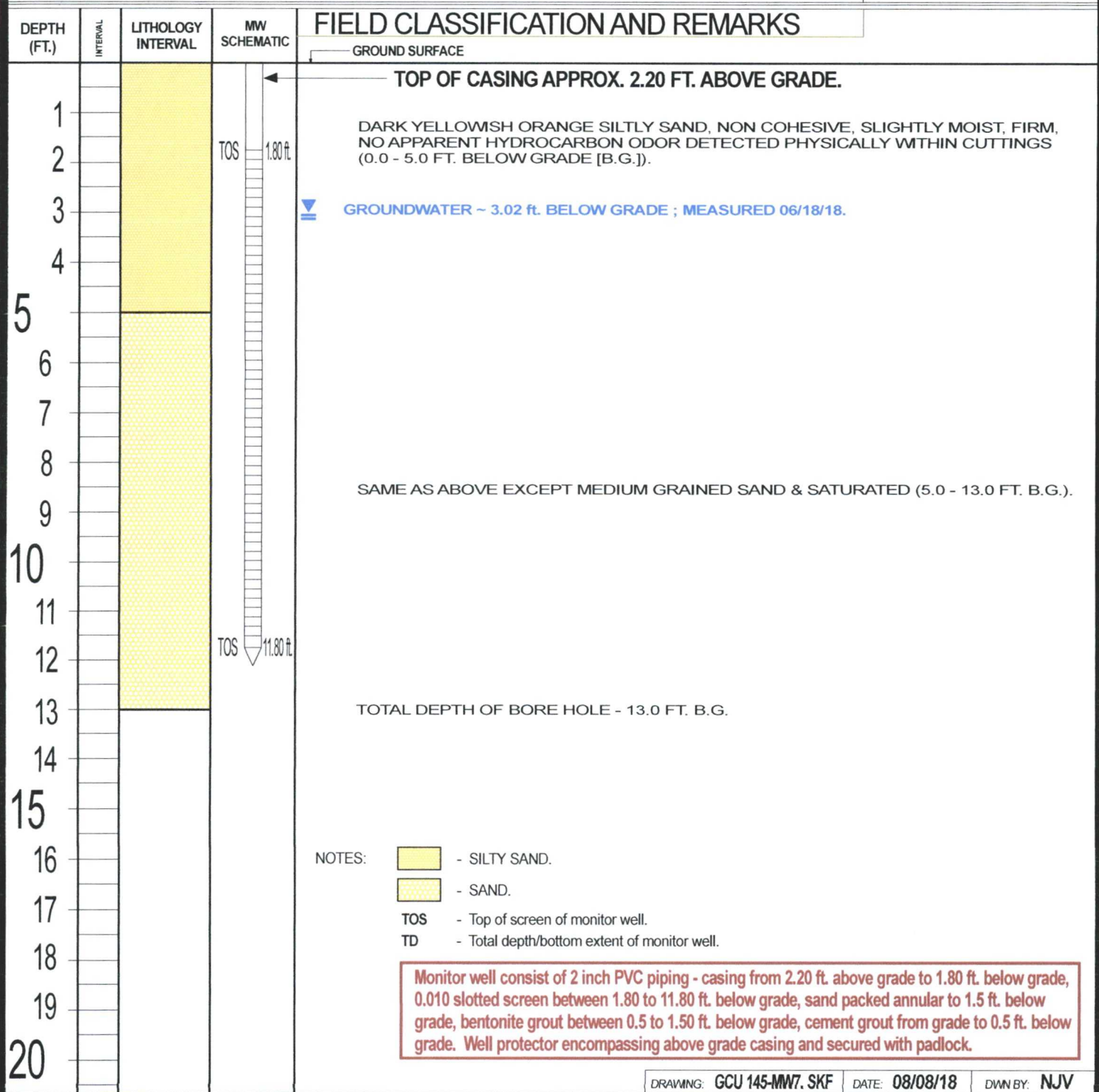
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW# 7

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU # 145 API #: 3004507909 UNIT G, SEC. 25, T29N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / GEOMAT
EQUIPMENT USED: MOBILE DRILL RIG (CME 55) - HOLLOW STEM AUGER
BORING LOCATION: APPROX. 186 FEET, N37.5E FROM WELL HEAD.

BORING #..... BH - 7
MW#..... 7
PAGE #..... 7
DATE STARTED 05/15/18
DATE FINISHED 05/15/18
OPERATOR..... KP
LOGGED BY..... JCB



BLAGG ENGINEERING, INC.

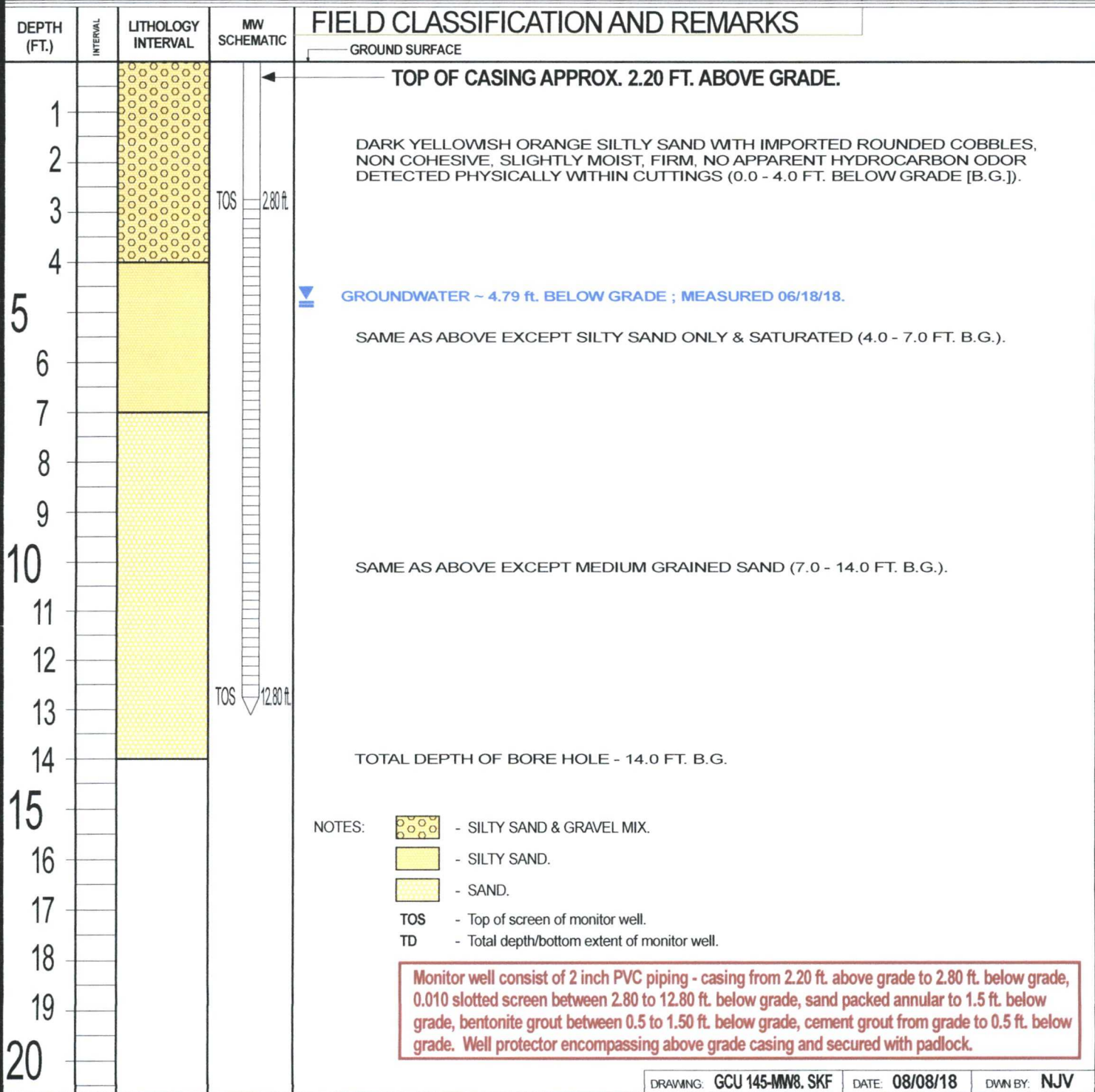
P.O. BOX 87
BLOOMFIELD, NM 87413
(505) 632-1199

MW# 8

BORE / TEST HOLE REPORT

CLIENT: BP AMERICA PRODUCTION CO.
LOCATION NAME: GCU # 145 API #: 3004507909 UNIT G, SEC. 25, T29N, R12W
CONTRACTOR: BLAGG ENGINEERING, INC. / GEOMAT
EQUIPMENT USED: MOBILE DRILL RIG (CME 55) - HOLLOW STEM AUGER
BORING LOCATION: APPROX. 137 FEET, N42E FROM WELL HEAD.

BORING #..... BH - 8
MW #..... 8
PAGE #..... 8
DATE STARTED 05/15/18
DATE FINISHED 05/15/18
OPERATOR..... KP
LOGGED BY..... JCB



Laboratory Analytical Data Reports
and
Field Monitor Well Sampling Notes

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145

UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : March 19, 2014

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 03-19-14.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
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MW #6	-	-	10.06	17.66	1430	7.28	1,200	11.3	3.75
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INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	03/18/14	0615

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2 "

Installed on 2/12/2014. Developed/purged 50 gallons continuously on 2/17/2014 (light to dark black in appearance, apparent)

hydrocarbon odor detected physically in purged water). Purged well using 2 inch submersible electric pump, new / clear

vinyl tubing and with brass adjustable flow valve attachment added near sampling end of tubing . Collected samples for

BTEX per US EPA Method 8021B & general chemistry parameters.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	<u>1:45 PM</u>	temp.	<u>49 F</u>
off-site	<u>2:45 PM</u>	temp.	<u>49 F</u>
sky cond.	<u>Mostly sunny</u>		
wind speed	<u>calm</u>	direct.	<u>NA</u>

Analytical Report

Lab Order 1403864

Date Reported: 3/28/2014

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW #6

Project: GCU #145

Collection Date: 3/19/2014 2:30:00 PM

Lab ID: 1403864-001

Matrix: AQUEOUS

Received Date: 3/20/2014 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	39	5.0		µg/L	5	3/21/2014 3:10:16 PM	R17507
Toluene	ND	5.0		µg/L	5	3/21/2014 3:10:16 PM	R17507
Ethylbenzene	92	5.0		µg/L	5	3/21/2014 3:10:16 PM	R17507
Xylenes, Total	620	10		µg/L	5	3/21/2014 3:10:16 PM	R17507
Surr: 4-Bromofluorobenzene	109	82.9-139		%REC	5	3/21/2014 3:10:16 PM	R17507
EPA METHOD 300.0: ANIONS							Analyst: JRR
Fluoride	1.6	0.10		mg/L	1	3/21/2014 1:29:20 AM	R17478
Chloride	14	0.50		mg/L	1	3/21/2014 1:29:20 AM	R17478
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	3/21/2014 1:29:20 AM	R17478
Sulfate	300	10		mg/L	20	3/21/2014 1:41:45 AM	R17478
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JLF
Iron	0.024	0.020		mg/L	1	3/25/2014 2:37:07 PM	R17555
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	926	40.0	*	mg/L	1	3/25/2014 5:22:00 PM	12342

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

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) _____

☒ Standard ☐ Rush _____

Project Name:

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 15.0

[illegible]

Date: 3/19/14	Time: 1543	Relinquished by: [Signature]
Date:	Time:	Relinquished by:

Received by:	Date	Time
<i>Chris E. Wacker</i>	3/19/14	1543
Received by:	Date	Time

Remarks:

Send invoice to :

Blagg Engineering, Inc.
P.O. Box 87
Bloomfield, NM 87413

Date:	Time:	Room/Quarantine by:
3/19/14	1757	Christa Walter

03/20/14 1000

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.



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403864

28-Mar-14

Client: Blagg Engineering

Project: GCU #145

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID:	R17478	RunNo:	17478					
Prep Date:		Analysis Date:	3/20/2014	SeqNo:	503445	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Chloride	ND	0.50								
Nitrogen, Nitrate (As N)	ND	0.10								
Sulfate	ND	0.50								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID:	R17478	RunNo:	17478					
Prep Date:		Analysis Date:	3/20/2014	SeqNo:	503446	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.51	0.10	0.5000	0	103	90	110			
Chloride	4.7	0.50	5.000	0	94.3	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.4	90	110			
Sulfate	9.5	0.50	10.00	0	95.2	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403864

28-Mar-14

Client: Blagg Engineering

Project: GCU #145

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R17450	RunNo:	17450					
Prep Date:		Analysis Date:	3/20/2014	SeqNo:	503110	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	19		20.00		96.6	82.9	139			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R17450	RunNo:	17450					
Prep Date:		Analysis Date:	3/20/2014	SeqNo:	503111	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	20		20.00		100	82.9	139			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R17507	RunNo:	17507					
Prep Date:		Analysis Date:	3/21/2014	SeqNo:	504436	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.0	82.9	139			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R17507	RunNo:	17507					
Prep Date:		Analysis Date:	3/21/2014	SeqNo:	504437	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	102	80	120			
Toluene	20	1.0	20.00	0	102	80	120			
Ethylbenzene	20	1.0	20.00	0	101	80	120			
Xylenes, Total	61	2.0	60.00	0	102	80	120			
Surr: 4-Bromofluorobenzene	16		20.00		81.1	82.9	139			S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403864

28-Mar-14

Client: Blagg Engineering

Project: GCU #145

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	R17555	RunNo:	17555					
Prep Date:		Analysis Date:	3/25/2014	SeqNo:	505683	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	ND	0.020								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	R17555	RunNo:	17555					
Prep Date:		Analysis Date:	3/25/2014	SeqNo:	505684	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.46	0.020	0.5000	0	91.6	80	120			

Sample ID	1403864-001CMS	SampType:	MS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	MW #6	Batch ID:	R17555	RunNo:	17555					
Prep Date:		Analysis Date:	3/25/2014	SeqNo:	505688	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.47	0.020	0.5000	0.02409	88.3	75	125			

Sample ID	1403864-001CMSD	SampType:	MSD	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	MW #6	Batch ID:	R17555	RunNo:	17555					
Prep Date:		Analysis Date:	3/25/2014	SeqNo:	505689	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Iron	0.46	0.020	0.5000	0.02409	87.9	75	125	0.424	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1403864

28-Mar-14

Client: Blagg Engineering

Project: GCU #145

Sample ID	MB-12342	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	12342	RunNo:	17558					
Prep Date:	3/24/2014	Analysis Date:	3/25/2014	SeqNo:	505731	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-12342	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	12342	RunNo:	17558					
Prep Date:	3/24/2014	Analysis Date:	3/25/2014	SeqNo:	505732	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1030	20.0	1000	0	103	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG

Work Order Number: 1403864

RcptNo: 1

Received by/date:	C.M. 03/20/14		
Logged By:	Anne Thorne	3/20/2014 10:00:00 AM	Anne Thorne
Completed By:	Anne Thorne	3/20/2014	Anne Thorne
Reviewed By:	ly	03/20/14	

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved bottles checked for pH: 2
(2 or >12 unless noted)
Adjusted? NO
Checked by: [Signature]

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:		Date:	
By Whom:		Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.9	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : June 27, 2014

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 06-27-14.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	6.59	17.66	1135	7.22	900	18.5	5.50
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INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

06/24/14

1730

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #6. Collected sample for BTEX per US EPA Method 8021B from MW #6 only.

Purged well 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 #6 ~ 0.13 ft. below grade.

on-site	<u>10:45 AM</u>	temp	<u>78 F</u>
off-site	<u>11:45 AM</u>	temp	<u>80 F</u>
sky cond.	<u>Sunny</u>		
wind speed	<u>10 - 20</u>	direct.	<u>NW - W</u>

Analytical ReportLab Order **1407178**Date Reported: **7/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU #145**Collection Date:** 6/27/2014 11:35:00 AM**Lab ID:** 1407178-001**Matrix:** AQUEOUS**Received Date:** 7/3/2014 7:06:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	15	5.0		µg/L	5	7/3/2014 4:23:28 PM	R19692
Toluene	ND	5.0		µg/L	5	7/3/2014 4:23:28 PM	R19692
Ethylbenzene	62	5.0		µg/L	5	7/3/2014 4:23:28 PM	R19692
Xylenes, Total	240	10		µg/L	5	7/3/2014 4:23:28 PM	R19692
Surr: 4-Bromofluorobenzene	136	82.9-139		%REC	5	7/3/2014 4:23:28 PM	R19692

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.



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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Chain-of-Custody Record		Reference No. _____	
Client: BLAGG ENGR. / BP AMERICA		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush _____	
Mailing Address: P.O. BOX 87		Project Name: _____	
BLOOMFIELD, NM 87413		GCU # 145	
Phone #: (505) 632-1199		Project #: _____	
email or Fax#: _____		Project Manager: _____	
QA/QC Package:		NELSON VELEZ	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: NELSON VELEZ <i>NV</i>	
Accreditation:		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		Sample Temperature: <i>1.3</i>	
<input type="checkbox"/> EDD (Type) _____			



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

[illegible]

Date: 7/2/14	Time: 1500	Relinquished by: 	Received by: 	Date 07/03/14	Time 0704
Date:	Time:	Relinquished by:	Received by:	Date	Time

Blagg Engineering, Inc.
P.O. Box 87
Bloomfield, NM 87413

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1407178

09-Jul-14

Client: Blagg Engineering

Project: GCU #145

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R19692	RunNo:	19692					
Prep Date:		Analysis Date:	7/3/2014	SeqNo:	571873	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	22		20.00		109	82.9	139			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R19692	RunNo:	19692					
Prep Date:		Analysis Date:	7/3/2014	SeqNo:	571874	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	80	120			
Toluene	21	1.0	20.00	0	103	80	120			
Ethylbenzene	20	1.0	20.00	0	102	80	120			
Xylenes, Total	64	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		100	82.9	139			

Sample ID	1407178-001AMS	SampType:	MS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW #6	Batch ID:	R19692	RunNo:	19692					
Prep Date:		Analysis Date:	7/3/2014	SeqNo:	571878	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	120	5.0	100.0	14.69	108	71	129			
Toluene	110	5.0	100.0	0	108	68.4	135			
Ethylbenzene	180	5.0	100.0	61.81	115	69.4	135			
Xylenes, Total	570	10	300.0	241.7	111	72.4	135			
Surr: 4-Bromofluorobenzene	130		100.0		133	82.9	139			

Sample ID	1407178-001AMSD	SampType:	MSD	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	MW #6	Batch ID:	R19692	RunNo:	19692					
Prep Date:		Analysis Date:	7/3/2014	SeqNo:	571879	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	120	5.0	100.0	14.69	106	71	129	1.19	20	
Toluene	110	5.0	100.0	0	107	68.4	135	1.64	20	
Ethylbenzene	180	5.0	100.0	61.81	113	69.4	135	0.757	20	
Xylenes, Total	570	10	300.0	241.7	111	72.4	135	0.0853	20	
Surr: 4-Bromofluorobenzene	130		100.0		128	82.9	139	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1407178**

RcptNo: **1**

Received by/date:

AT 07/03/14

Logged By: **Anne Thorne**

7/3/2014 7:06:00 AM

Anne Thorne

Completed By: **Anne Thorne**

7/3/2014

Anne Thorne

Reviewed By:

[Signature] *07/03/14*

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : August 26, 2014

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 08-26-14.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	6.09	17.66	1040	7.33	700	21.7	5.75
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INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

08/25/14

0600

NOTES : Volume of water purged from well prior to sampling; $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #6 . Collected sample for BTEX per USEPA Method 8021B from MW #6 only .

Purged well 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 #6 ~ 0.13 ft. below grade.

on-site	<u>9:45 AM</u>	temp	<u>67 F</u>
off-site	<u>10:45 AM</u>	temp	<u>71 F</u>
sky cond.	<u>Cloudy</u>		
wind speed	<u>5 - 10</u>	direct.	<u>ENE - E</u>

Analytical ReportLab Order **1408F61**Date Reported: **9/9/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU #145**Collection Date:** 8/26/2014 10:40:00 AM**Lab ID:** 1408F61-001**Matrix:** AQUEOUS**Received Date:** 8/29/2014 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	18	1.0		µg/L	1	9/2/2014 3:28:47 PM	R20946
Toluene	1.4	1.0		µg/L	1	9/2/2014 3:28:47 PM	R20946
Ethylbenzene	70	1.0		µg/L	1	9/2/2014 3:28:47 PM	R20946
Xylenes, Total	540	20		µg/L	10	9/3/2014 1:33:56 PM	R20970
Surr: 4-Bromofluorobenzene	196	82.9-139	S	%REC	1	9/2/2014 3:28:47 PM	R20946

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

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) _____

☒ Standard ☐ Rush _____

Project Name:

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 100

[illegible]

Date: 8/28/14	Time: 1605	Relinquished by: <i>[Signature]</i>	Received by: Kristen Watten	Date 8/28/14	Time 1605
Date: 8/28/14	Time: 1800	Relinquished by: Kristen Watten	Received by: Michelle Conner	Date 08/29/14	Time 0825

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + TMB (8021B)

~~BTEX + MTBE + TMB~~ (8021

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

FDD (Method 504.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

Total Dissolved Solids

Iron. Ferrous (filtered)

Nitrate N / Nitrite N

מחירים / מחירים

Grab sample

5 pt. composite sample

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.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1408F61

09-Sep-14

Client: Blagg Engineering

Project: GCU #145

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R20946	RunNo:	20946					
Prep Date:		Analysis Date:	9/2/2014	SeqNo:	609490	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	21		20.00		103	82.9	139			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode: EPA Method 8021B: Volatiles						
Client ID:	LCSW	Batch ID:	R20946	RunNo: 20946						
Prep Date:		Analysis Date:	9/2/2014	SeqNo: 609491			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.2	80	120			
Toluene	20	1.0	20.00	0	100	80	120			
Ethylbenzene	20	1.0	20.00	0	101	80	120			
Surr: 4-Bromofluorobenzene	24		20.00		118	82.9	139			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R20970	RunNo:	20970					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610421	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	22		20.00		110	82.9	139			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R20970	RunNo:	20970					
Prep Date:		Analysis Date:	9/3/2014	SeqNo:	610422	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	64	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	20		20.00		99.0	82.9	139			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1408F61**

RcptNo: **1**

Received by/date: **MG** **08/29/14**

Logged By: **Celina Sessa** **8/29/2014 8:25:00 AM**

Celina Sessa

Completed By: **Celina Sessa** **8/29/2014 1:54:10 PM**

Celina Sessa

Reviewed By:

[Signature]

09/02/14

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145

UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : December 1, 2014

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 12-01-14.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
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MW #6	-	-	7.72	17.66	1420	7.49	700	17.0	5.00
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INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

08/25/14

0600

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in MW #6 . Collected sample for BTEX per US EPA Method 8021B from MW #6 only .

Purged well 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 #6 ~ 0.13 ft. below grade.

on-site	<u>1:30 PM</u>	temp	<u>52 F</u>
off-site	<u>2:30 PM</u>	temp	<u>53 F</u>
sky cond.	<u>Sunny</u>		
wind speed	<u>Calm</u>	direct.	<u>NA</u>

Analytical ReportLab Order **1412132**Date Reported: **12/5/2014****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW # 6**Project:** GCU # 145**Collection Date:** 12/1/2014 2:20:00 PM**Lab ID:** 1412132-001**Matrix:** AQUEOUS**Received Date:** 12/3/2014 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	7.6	1.0		µg/L	1	12/3/2014 6:23:52 PM	R22896
Toluene	ND	1.0		µg/L	1	12/3/2014 6:23:52 PM	R22896
Ethylbenzene	11	1.0		µg/L	1	12/3/2014 6:23:52 PM	R22896
Xylenes, Total	55	2.0		µg/L	1	12/3/2014 6:23:52 PM	R22896
Surr: 4-Bromofluorobenzene	140	66.6-167		%REC	1	12/3/2014 6:23:52 PM	R22896

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1412132

05-Dec-14

Client: Blagg Engineering

Project: GCU # 145

Sample ID	5ML RB	SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBW	Batch ID:	R22896		RunNo:	22896				
Prep Date:		Analysis Date:	12/3/2014		SeqNo:	676694		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		105	66.6	167			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R22896	RunNo:	22896					
Prep Date:		Analysis Date:	12/3/2014	SeqNo:	676695	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	105	80	120			
Toluene	21	1.0	20.00	0	107	80	120			
Ethylbenzene	22	1.0	20.00	0	108	80	120			
Xylenes, Total	65	2.0	60.00	0	109	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		109	66.6	167			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH greater than 2.
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1412132**

RcptNo: 1

Received by/date:

12/03/14

Logged By: **Lindsay Mangin**

12/3/2014 7:30:00 AM

Completed By: **Lindsay Mangin**

12/3/2014 9:02:03 AM

Reviewed By:

12/03/14

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐ # of preserved bottles checked for pH: ☐
(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐ Adjusted? ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐ Checked by: ☐

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.6	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : February 24, 2015
Filename : GCU 145 mw log 2015-02-24.xls

DEVELOPER / SAMPLER : N J V
PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
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MW #6	-	-	9.64	17.66	1030	7.16	1,000	11.3	3.00
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INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00	2,800
-----------------	-------

DATE & TIME =

02/24/15	0900
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NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #6. Collected sample for BTEX per US EPA Method 8021B from MW #6 only.

Purged well 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 #6 ~ 0.13 ft. below grade.

on-site	<u>9:30 AM</u>	temp	<u>30 F</u>
off-site	<u>10:45 AM</u>	temp	<u>32 F</u>
sky cond.	<u>Overcast / Snow</u>		
wind speed	<u>0 - 5</u>	direct.	<u>E - ESE</u>

Analytical Report

Lab Order 1502A18

Date Reported: 2/26/2015

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU # 145**Collection Date:** 2/24/2015 10:30:00 AM**Lab ID:** 1502A18-001**Matrix:** AQUEOUS**Received Date:** 2/25/2015 7:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	19	1.0		µg/L	1	2/25/2015 1:48:31 PM	R24516
Toluene	1.0	1.0		µg/L	1	2/25/2015 1:48:31 PM	R24516
Ethylbenzene	19	1.0		µg/L	1	2/25/2015 1:48:31 PM	R24516
Xylenes, Total	65	2.0		µg/L	1	2/25/2015 1:48:31 PM	R24516
Surr: 4-Bromofluorobenzene	154	80-120	S	%REC	1	2/25/2015 1:48:31 PM	R24516

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

Chain-of-Custody Record		Turn-Around Time
Client: BLAGG ENGR. / BP AMERICA	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
Mailing Address: P.O. BOX 87	Project Name:	GCU # 145
BLOOMFIELD, NM 87413	Project #:	
Phone #: (505) 632-1199	Project Manager:	NELSON VELEZ
Email or Fax#:		
QA/QC Package:	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)	
Accreditation:	<input type="checkbox"/> NELAP <input type="checkbox"/> Other	Sampler: NELSON VELEZ
<input type="checkbox"/> EDD (Type)	<input type="checkbox"/> On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Sample Temperature:	

☒ Standard ☐ Rush

GCU # 145

Project Manager'

NELSON VELEZ

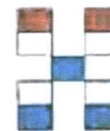
Sampler: **NELSON VELEZ**

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.7

[illegible]

Date: 1/24/15	Time: 1315	Relinquished by: <i>[Signature]</i>	Received by: <i>Master Watan</i>	Date 2/24/15	Time 1315
Date: 2/24/15	Time: 1714	Relinquished by: <i>Master Watan</i>	Received by: <i>[Signature]</i>	Date 2/24/15	Time 1730



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

✓	BTEX + MTBE + THM (8021B)
	BTEX + MTBE + TPH (Gas only)
	TPH 8015B (GRO / DRO / MRO)
	TPH (Method 418.1)
	EDB (Method 504.1)
	PAH (8310 or 8270SIMS)
	RCRA 8 Metals
	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
	Total Dissolved Solids
	8260B (VOA)
	8270 (Semi-VOA)
	Cation / Anion Balance
✓	Grab sample
	5 pt. composite sample
	Air Bubbles (Y or N)

Remarks:

BILL DIRECTLY TO BP:

Jeff Peace, 200 Energy Court, Farmington, NM 87401

Paykey: ZEVH01REME

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1502A18

26-Feb-15

Client: Blagg Engineering

Project: GCU # 145

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R24516	RunNo:	24516					
Prep Date:		Analysis Date:	2/25/2015	SeqNo:	721920	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		107	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R24516	RunNo:	24516					
Prep Date:		Analysis Date:	2/25/2015	SeqNo:	721921	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	22	1.0	20.00	0	112	80	120			
Toluene	22	1.0	20.00	0	110	80	120			
Ethylbenzene	22	1.0	20.00	0	108	80	120			
Xylenes, Total	64	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	23		20.00		115	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-1975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG

Work Order Number: 1502A18

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

2/25/2015 7:30:00 AM

Completed By: Ashley Gallegos

2/25/2015 8:59:18 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles?

Yes ☐

No ☐

Not Present ☒

2. Is Chain of Custody complete?

Yes ☒

No ☐

Not Present ☐

3. How was the sample delivered?

Courier

Log In

4. Was an attempt made to cool the samples?

Yes ☒

No ☐

NA ☐

5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ?

Yes ☒

No ☐

NA ☐

6. Sample(s) in proper container(s)?

Yes ☒

No ☐

7. Sufficient sample volume for indicated test(s)?

Yes ☒

No ☐

8. Are samples (except VOA and ONG) properly preserved?

Yes ☒

No ☐

9. Was preservative added to bottles?

Yes ☐

No ☒

NA ☐

10. VOA vials have zero headspace?

Yes ☒

No ☐

No VOA Vials ☐

11. Were any sample containers received broken?

Yes ☐

No ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

13. Are matrices correctly identified on Chain of Custody?

Yes ☒

No ☐

Adjusted?

14. Is it clear what analyses were requested?

Yes ☒

No ☐

15. Were all holding times able to be met?

Yes ☒

No ☐

Checked by:

(If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18 Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	12	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : May 28, 2015
Filename : GCU 145 mw log 2015-05-28.xls

DEVELOPER / SAMPLER : N J V
PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	9.49	17.66	1040	7.15	1,300	14.8	4.00
-------	---	---	------	-------	------	------	-------	------	------

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	05/11/15	0600

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2"

Excellent recovery in MW #6 . Collected sample for BTEX per US EPA Method 8021B from MW #6 only .

Purged well 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 #6 ~ 0.13 ft. below grade.

on-site	9:45 AM	temp	63 F
off-site	11:00 AM	temp	68 F
sky cond.	Sunny		
wind speed	0 - 5	direct.	ESE

Analytical ReportLab Order **1505C52**Date Reported: **6/2/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW # 6**Project:** GCU # 145**Collection Date:** 5/28/2015 10:40:00 AM**Lab ID:** 1505C52-001**Matrix:** AQUEOUS**Received Date:** 5/29/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	28	1.0		µg/L	1	5/29/2015 10:52:41 PM	R26505
Toluene	1.0	1.0		µg/L	1	5/29/2015 10:52:41 PM	R26505
Ethylbenzene	59	1.0		µg/L	1	5/29/2015 10:52:41 PM	R26505
Xylenes, Total	350	20		µg/L	10	6/1/2015 8:05:48 PM	R26543
Surr: 4-Bromofluorobenzene	144	80-120	S	%REC	1	5/29/2015 10:52:41 PM	R26505

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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	ND	Not Detected at the Reporting Limit
	O	RSD is greater than RSDlimit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	Spike Recovery outside accepted recovery limits		

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) _____

[illegible]

Date: 5/28/15	Time: 1535	Relinquished by: [Signature]
Date: 5/28/15	Time: 1800	Relinquished by: [Signature]

Received by: Christa Wacker Date 5/28/15 Time 1535

Received by: [Signature] Date 5/29/15 Time 0700



Analysis Request

[illegible]

Remarks:	
BILL DIRECTLY TO BP:	
Jeff Peace, 200 Energy Court, Farmington, NM 87401	
Paykey: ZEVH01REME	

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1505C52

02-Jun-15

Client: Blagg Engineering

Project: GCU # 145

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R26505	RunNo:	26505					
Prep Date:		Analysis Date:	5/29/2015	SeqNo:	787688	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Surr: 4-Bromofluorobenzene	21		20.00		105	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R26505	RunNo:	26505					
Prep Date:		Analysis Date:	5/29/2015	SeqNo:	787689	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	116	80	120			
Toluene	23	1.0	20.00	0	117	80	120			
Ethylbenzene	22	1.0	20.00	0	112	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		108	80	120			

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID:	R26543	RunNo:	26543					
Prep Date:		Analysis Date:	6/1/2015	SeqNo:	788822	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	19		20.00		97.0	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R26543	RunNo:	26543					
Prep Date:		Analysis Date:	6/1/2015	SeqNo:	788823	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Xylenes, Total	64	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		112	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1505C52**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

5/29/2015 7:00:00 AM

Completed By: **Lindsay Mangin**

5/29/2015 9:12:34 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH:
(<2 or >12 unless noted)
Adjusted?
Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : August 26, 2015
Filename : GCU 145 mw log 2015-08-26.xls

DEVELOPER / SAMPLER : N J V
PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
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MW #6	-	-	6.83	17.66	1100	7.13	800	20.5	4.00
-------	---	---	------	-------	------	------	-----	------	------

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	08/19/15	0900

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in MW #6 . Collected sample for BTEX per US EPA Method 8021B from MW #6 only .

Purged well 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 #6 ~ 0.13 ft. below grade.

on-site	10:45 AM	temp	63 F
off-site	11:45 AM	temp	65 F
sky cond.	Cloudy		
wind speed	5 - 10	direct.	NE

Analytical ReportLab Order **1508E37**Date Reported: **9/4/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW # 6**Project:** GCU # 145**Collection Date:** 8/26/2015 11:40:00 AM**Lab ID:** 1508E37-001**Matrix:** AQUEOUS**Received Date:** 8/28/2015 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	5.0	1.0		µg/L	1	9/2/2015 6:18:19 PM	A28626
Toluene	ND	1.0		µg/L	1	9/2/2015 6:18:19 PM	A28626
Ethylbenzene	9.1	1.0		µg/L	1	9/2/2015 6:18:19 PM	A28626
Xylenes, Total	30	1.5		µg/L	1	9/2/2015 6:18:19 PM	A28626
Surr: 1,2-Dichloroethane-d4	99.6	70-130		%REC	1	9/2/2015 6:18:19 PM	A28626
Surr: 4-Bromofluorobenzene	97.7	70-130		%REC	1	9/2/2015 6:18:19 PM	A28626
Surr: Dibromofluoromethane	109	70-130		%REC	1	9/2/2015 6:18:19 PM	A28626
Surr: Toluene-d8	101	70-130		%REC	1	9/2/2015 6:18:19 PM	A28626

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 2
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Chain-of-Custody Record		Turn-Around Time:
Client: BLAGG ENGR. / BP AMERICA	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush _____
Mailing Address: P.O. BOX 87	Project Name:	
BLOOMFIELD, NM 87413	GCU # 145	
Phone #: (505) 632-1199	Project #:	
email or Fax#:	Project Manager:	
QA/QC Package:	NELSON VELEZ	
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)	
Accreditation:	Sampler: NELSON VELEZ <i>91</i>	
<input type="checkbox"/> NELAP	<input type="checkbox"/> Other _____	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> EDD (Type) _____	Sample Temperature: <i>2.3 ± 0.3 °F 2.6</i>	

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/27/15	1600	[Signature]	Christine Walz	8/27/15	1600
Date:	Time:	Relinquished by:	Received by:	Date	Time
8/27/15	1910	Christine Walz	[Signature]	08/28/15	0825



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

Remarks:

BILL DIRECTLY TO BP:

Jeff Peace, 200 Energy Court, Farmington, NM 87401

Paykey: ZEVH01REME

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1508E37

04-Sep-15

Client: Blagg Engineering

Project: GCU # 145

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID: A28626			RunNo: 28626					
Prep Date:		Analysis Date: 9/2/2015			SeqNo: 866329		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.7	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.8		10.00		98.1	70	130			

Sample ID	100ng lcs		SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List					
Client ID:	LCSW		Batch ID: A28626		RunNo: 28626					
Prep Date:			Analysis Date: 9/2/2015		SeqNo: 866330		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	98.9	70	130			
Toluene	19	1.0	20.00	0	97.2	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	11		10.00		105	70	130			
Surr: Dibromofluoromethane	11		10.00		108	70	130			
Surr: Toluene-d8	9.7		10.00		97.2	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1508E37**

RcptNo: 1

Received by/date:

Logged By: **Lindsay Mangin**

08/28/15
8/28/2015 8:25:00 AM

Completed By: **Lindsay Mangin**

8/31/2015 6:25:06 AM

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH:
(<2 or >12 unless noted)
Adjusted? ☐
Checked by: ☐

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145

UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : December 9, 2015

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 2015-12-09.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	7.01	17.66	1120	7.31	900	13.9	5.25
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INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

12/02/15

0600

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW # 6 . Purged well using 2 inch submersible electrical pump , new / clear vinyl tubing,

and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX

per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	<u>10:30 AM</u>	temp	<u>35 F</u>
off-site	<u>11:30 AM</u>	temp	<u>40 F</u>
sky cond.	<u>Sunny</u>		
wind speed	<u>0 - 5</u>	direct.	<u>E</u>

Analytical ReportLab Order **1512616**Date Reported: **12/21/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU #145**Collection Date:** 12/9/2015 11:20:00 AM**Lab ID:** 1512616-001**Matrix:** AQUEOUS**Received Date:** 12/11/2015 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	4.1	1.0		µg/L	1	12/17/2015 2:58:42 PM	A30919
Toluene	ND	1.0		µg/L	1	12/17/2015 2:58:42 PM	A30919
Ethylbenzene	7.4	1.0		µg/L	1	12/17/2015 2:58:42 PM	A30919
Xylenes, Total	22	2.0		µg/L	1	12/17/2015 2:58:42 PM	A30919
Surr: 4-Bromofluorobenzene	133	65-127	S	%REC	1	12/17/2015 2:58:42 PM	A30919

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 2
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix			

Chain-of-Cu today Record		Turn-Around Time:	
Client: BLAGG ENGR. / BP AMERICA		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush _____	
Mailing Address: P.O. BOX 87		Project Name:	
BLOOMFIELD, NM 87413		GCU # 145	
Phone #: (505) 632-1199		Project #:	
email or Fax#:		Project Manager:	
QA/QC Package:		NELSON VELEZ	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: NELSON VELEZ <i>725</i>	
Accreditation:		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		Sample Temperature: <i>1.5</i>	
<input type="checkbox"/> EDD (Type) _____			

☒ Standard ☐ Rush _____

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: **NELSON VELEZ**

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.5

[illegible]

Date:	Time:	Relinquished by:
12/10/15	1258	<i>[Signature]</i>

Date: 12/10/18	Time: 1840	Relinquished by: Robert Walters
-------------------	---------------	------------------------------------

Received by:	Date	Time
Christina Wroble	12/10/15	1258

Received by: *J. A. [Signature]* Date *12/11/15* Time *0700*

Remarks:

BILL DIRECTLY TO BP:

200 Energy Court, Farmington, NM 87401 Attn.: S. Moskal

VID: VHIXONEVRM



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

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 noted on the analytical report.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1512616

21-Dec-15

Client: Blagg Engineering

Project: GCU #145

Sample ID	5ML RB	SampType: MBLK			TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBW	Batch ID: A30919			RunNo: 30919					
Prep Date:		Analysis Date: 12/17/2015			SeqNo: 945783		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		106	65	127			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	A30919	RunNo:	30919					
Prep Date:		Analysis Date:	12/17/2015	SeqNo:	945784	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	97.4	80	120			
Toluene	20	1.0	20.00	0	97.8	80	120			
Ethylbenzene	20	1.0	20.00	0	99.3	80	120			
Xylenes, Total	58	2.0	60.00	0	96.3	80	120			
Surr: 4-Bromofluorobenzene	25		20.00		126	65	127			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1512616**

RcptNo: **1**

Received by/date:	<i>[Signature]</i>	<i>12/11/15</i>
Logged By:	Ashley Gallegos	12/11/2015 7:00:00 AM <i>[Signature]</i>
Completed By:	Ashley Gallegos	12/14/2015 10:11:57 AM <i>[Signature]</i>
Reviewed By:	<i>[Signature]</i>	<i>12/14/15</i>

Chain of Custody

- Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? Courier

Log In

- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
- Was preservative added to bottles? Yes ☐ No ☒ NA ☐
- VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

- Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

- Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.5	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : February 23, 2016

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 2016-02-23.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	8.67	17.66	1450	6.90	1,200	10.3	4.50
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INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

02/23/16

0630

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes:

2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in MW #6 . Purged well using 2 inch submersible electrical pump , new / clear vinyl tubing,
and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX
per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	<u>2:00 PM</u>	temp	<u>41 F</u>
off-site	<u>3:00 PM</u>	temp	<u>37 F</u>
sky cond.	<u>Cloudy</u>		
wind speed	<u>0 - 10</u>	direct.	<u>N - W</u>

Analytical ReportLab Order **1602A69**

Date Reported: 3/1/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU 145**Collection Date:** 2/23/2016 2:50:00 PM**Lab ID:** 1602A69-001**Matrix:** AQUEOUS**Received Date:** 2/25/2016 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	3.8	1.0		µg/L	1	2/26/2016 1:00:15 PM	R32443
Toluene	ND	1.0		µg/L	1	2/26/2016 1:00:15 PM	R32443
Ethylbenzene	4.2	1.0		µg/L	1	2/26/2016 1:00:15 PM	R32443
Xylenes, Total	9.1	2.0		µg/L	1	2/26/2016 1:00:15 PM	R32443
Surr: 4-Bromofluorobenzene	122	65-127		%Rec	1	2/26/2016 1:00:15 PM	R32443

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Chain-of-Custody Record		Turn-Around Time:	
Client: BLAGG ENGR. / BP AMERICA		<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush _____	
Mailing Address: P.O. BOX 87		Project Name:	
BLOOMFIELD, NM 87413		GCU # 145	
Phone #: (505) 632-1199		Project #:	
Email or Fax#:		Project Manager:	
H/A/QC Package:		NELSON VELEZ	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: NELSON VELEZ <i>NV</i>	
Accreditation:		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		Sample Temperature: <i>1.2</i>	
<input type="checkbox"/> EDD (Type) _____			

☒ Standard ☐ Rush

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 12

[illegible]

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
2/24/16	1609	<i>[Signature]</i>	Christian Walter	2/24/16	1609
ate:	Time:	Relinquished by:	Received by:	Date	Time
2/24/16	1814	Chris Walter	<i>[Signature]</i>	2/25/16	0721

Remarks:

BILL DIRECTLY TO BP:
200 Energy Court, Farmington, NM 87401 Attn.: John Ritchie
VID: VRITCJWFEC

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.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1602A69

01-Mar-16

Client: Blagg Engineering

Project: GCU 145

Sample ID	5ML RB	SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBW	Batch ID:	R32443		RunNo:	32443				
Prep Date:		Analysis Date:	2/26/2016		SeqNo:	992135		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	21		20.00		106	65	127			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSW	Batch ID:	R32443	RunNo:	32443					
Prep Date:		Analysis Date:	2/26/2016	SeqNo:	992136	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	18	1.0	20.00	0	90.8	80	120			
Toluene	19	1.0	20.00	0	94.9	80	120			
Ethylbenzene	19	1.0	20.00	0	95.8	80	120			
Xylenes, Total	58	2.0	60.00	0	96.5	80	120			
Surr: 4-Bromofluorobenzene	24		20.00		119	65	127			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG

Work Order Number: 1602A69

RcptNo: 1

Received by/date: LM 02/25/16

Logged By: Anne Thorne 2/25/2016 7:20:00 AM

Completed By: Anne Thorne 2/25/2016

Reviewed By: JA 02/25/16

Anne Thorne

Anne Thorne

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145

UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : June 22, 2016

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 2016-06-22.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
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MW #6	-	-	7.75	17.66	0700	7.14	1,200	16.1	4.75
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INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	06/20/16	0530

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #6 . Purged well using 2 inch submersible electrical pump , new / clear vinyl tubing,
and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX
per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	<u>6:10 AM</u>	temp	<u>66 F</u>
off-site	<u>7:15 AM</u>	temp	<u>69 F</u>
sky cond.	<u>Mostly cloudy</u>		
wind speed	<u>0 -- 5</u>	direct.	<u>E</u>

Analytical ReportLab Order **1606D66**

Date Reported: 6/30/2016

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU #145**Collection Date:** 6/22/2016 7:00:00 AM**Lab ID:** 1606D66-001**Matrix:** AQUEOUS**Received Date:** 6/24/2016 7:47:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	1.5	1.0		µg/L	1	6/27/2016 12:04:24 AM	C35190
Toluene	ND	1.0		µg/L	1	6/27/2016 12:04:24 AM	C35190
Ethylbenzene	2.0	1.0		µg/L	1	6/27/2016 12:04:24 AM	C35190
Xylenes, Total	5.0	1.5		µg/L	1	6/27/2016 12:04:24 AM	C35190
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	6/27/2016 12:04:24 AM	C35190
Surr: 4-Bromofluorobenzene	110	70-130		%Rec	1	6/27/2016 12:04:24 AM	C35190
Surr: Dibromofluoromethane	97.3	70-130		%Rec	1	6/27/2016 12:04:24 AM	C35190
Surr: Toluene-d8	92.6	70-130		%Rec	1	6/27/2016 12:04:24 AM	C35190

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 2
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

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) _____

☒ Standard ☐ Rush _____

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: NELSON VELEZ

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.4

[illegible]

ate: 1/23/16	Time: 1537	Relinquished by: <i>[Signature]</i>	Received by: <i>Christina Wheeler</i>	Date 4/23/16	Time 1537
ate: [23] 11	Time: 1844	Relinquished by: <i>Christina Wheeler</i>	Received by: <i>[Signature]</i>	Date 06/24/16	Time 0747

Remarks:

BILL DIRECTLY TO BP:
200 Energy Court, Farmington, NM 87401 Attn.: John Ritchie

VID: VDRINKIWA1

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



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1606D66

30-Jun-16

Client: Blagg Engineering

Project: GCU #145

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	C35190	RunNo:	35190					
Prep Date:		Analysis Date:	6/26/2016	SeqNo:	1088895	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	10		10.00		101	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.9		10.00		98.6	70	130			
Surr: Toluene-d8	9.1		10.00		91.4	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	C35190	RunNo:	35190					
Prep Date:		Analysis Date:	6/26/2016	SeqNo:	1089164	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	23	1.0	20.00	0	114	70	130			
Toluene	20	1.0	20.00	0	99.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.6	70	130			
Surr: Toluene-d8	9.3		10.00		93.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1606D66**

RcptNo: **1**

Received by/date:	<i>At 06/24/16</i>		
Logged By:	Anne Thorne	6/24/2016 7:47:00 AM	<i>Anne Thorne</i>
Completed By:	Anne Thorne	6/24/2016	<i>Anne Thorne</i>
Reviewed By:	<i>IO</i>	<i>06/24/16</i>	

Chain of Custody

- Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
- Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
- How was the sample delivered? Courier

Log In

- Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
- Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
- Sample(s) in proper container(s)? Yes ☒ No ☐
- Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
- Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
- Was preservative added to bottles? Yes ☐ No ☒ NA ☐
- VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
- Were any sample containers received broken? Yes ☐ No ☒
- Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
- Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
- Is it clear what analyses were requested? Yes ☒ No ☐
- Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

- Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

- Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : August 22, 2016
Filename : GCU 145 mw log 2016-08-22.xls

DEVELOPER / SAMPLER : N J V
PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	6.28	17.66	1200	7.07	600	22.8	5.50
-------	---	---	------	-------	------	------	-----	------	------

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	08/18/16	0630

NOTES : Volume of water purged from well prior to sampling; $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #6 . Purged well using 2 inch submersible electrical pump , new / clear vinyl tubing,
and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX
per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	11:10 AM	temp	69 F
off-site	12:10 PM	temp	71 F
sky cond.	Mostly cloudy		
wind speed	0 - 5	direct.	SSE

Analytical ReportLab Order **1608F05**Date Reported: **8/31/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU 145**Collection Date:** 8/22/2016 12:00:00 PM**Lab ID:** 1608F05-001**Matrix:** AQUEOUS**Received Date:** 8/25/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: BCN
Benzene	2.2	1.0		µg/L	1	8/29/2016 8:23:00 PM	S36829
Toluene	ND	1.0		µg/L	1	8/29/2016 8:23:00 PM	S36829
Ethylbenzene	6.0	1.0		µg/L	1	8/29/2016 8:23:00 PM	S36829
Xylenes, Total	24	1.5		µg/L	1	8/29/2016 8:23:00 PM	S36829
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	8/29/2016 8:23:00 PM	S36829
Surr: 4-Bromofluorobenzene	90.3	70-130		%Rec	1	8/29/2016 8:23:00 PM	S36829
Surr: Dibromofluoromethane	97.4	70-130		%Rec	1	8/29/2016 8:23:00 PM	S36829
Surr: Toluene-d8	96.0	70-130		%Rec	1	8/29/2016 8:23:00 PM	S36829

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 2
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Chain-of-Custody Record		Turn-Around Time:
Client: BLAGG ENGR. / BP AMERICA	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush
	Project Name:	
Mailing Address: P.O. BOX 87	GCU # 145	
BLOOMFIELD, NM 87413	Project #:	
Phone #: (505) 632-1199	Project Manager:	
Email or Fax#:	NELSON VELEZ	
A/QC Package:		
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)	
Accreditation:	Sampler: NELSON VELEZ	
<input checked="" type="checkbox"/> NELAP	<input type="checkbox"/> Other	
<input type="checkbox"/> EDD (Type)	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	Sample Temperature: 35	

☒ Standard ☐ Rush

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: **NELSON VELEZ**

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.5

Container
Type and #Preservative
Type

HEAL No

1008 FO

-00

BTEX ~~AMIDE~~ TMB's (8021B)

BTEX + MTBE + TPH (Gas only)

TPH 8015B (GRO / DRO / MRO)

TPH (Method 418.1)

EDB (Method 504.1)

PAH (8310 or 8270SIMS)

RCRA 8 Metals

Anions (F, Cl, NO₃, NO₂, PO₄, SO₄)

Total Dissolved Solids

8260B (VOA)

8270 (Semi-VOA)

Cation / Anion Balance

Grab sample

5 pt. composite sample

Air Bubbles (Y or N)

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

[illegible]

ate:	Time:	Relinquished by:	Received by:	Date	Time
24/16	15/16	<i>[Signature]</i>	<i>[Signature]</i>	8/24/16	15/16

ate:	Time:	Relinquished by:	Received by:	Date	Time
24/14	2031	Christa Walke	[Signature]	08/25	1400

Remarks:

BILL DIRECTLY TO BP:

200 Energy Court, Farmington, NM 87401 Attn.: John Ritchie

WID: VDRINKJWA1

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.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1608F05

31-Aug-16

Client: Blagg Engineering

Project: GCU 145

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	S36829	RunNo:	36829					
Prep Date:		Analysis Date:	8/29/2016	SeqNo:	1141729	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	97.5	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	9.7		10.00		96.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.6	70	130			
Surr: Toluene-d8	9.7		10.00		97.5	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	S36829	RunNo:	36829					
Prep Date:		Analysis Date:	8/29/2016	SeqNo:	1141730	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.4		10.00		94.4	70	130			
Surr: Toluene-d8	9.8		10.00		98.4	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
R RPD outside accepted recovery limits	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1608F05**

RcptNo: **1**

Received by/date: _____

Logged By: **Ashley Gallegos**

8/25/2016 8:00:00 AM

[Signature]

Completed By: **Ashley Gallegos**

8/29/2016 12:18:59 PM

[Signature]

Reviewed By: *[Signature]*

08/29/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks: _____

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.5	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # : N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED : HALL ENVIRONMENTAL

Date : December 16, 2016
Filename : GCU 145 mw log 2016-12-16.xls

DEVELOPER / SAMPLER : N J V
PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	7.48	17.66	1130	6.96	800	14.5	5.00
-------	---	---	------	-------	------	------	-----	------	------

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	12/06/16	0600

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in MW #6 . Purged well using 2 inch submersible electrical pump , new / clear vinyl tubing,
and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX
per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	10:40 AM	temp	42 F
off-site	11:40 AM	temp	44 F
sky cond.	Cloudy		
wind speed	0 - 5	direct.	N

Analytical ReportLab Order **1612947**Date Reported: **12/27/2016****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW # 6**Project:** GCU 145**Collection Date:** 12/16/2016 11:30:00 AM**Lab ID:** 1612947-001**Matrix:** AQUEOUS**Received Date:** 12/17/2016 7:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	2.0		µg/L	2	12/22/2016 12:17:00 PM	SLW395
Toluene	ND	2.0		µg/L	2	12/22/2016 12:17:00 PM	SLW395
Ethylbenzene	2.5	2.0		µg/L	2	12/22/2016 12:17:00 PM	SLW395
Xylenes, Total	6.5	3.0		µg/L	2	12/22/2016 12:17:00 PM	SLW395
Surr: 1,2-Dichloroethane-d4	94.3	70-130		%Rec	2	12/22/2016 12:17:00 PM	SLW395
Surr: 4-Bromofluorobenzene	97.4	70-130		%Rec	2	12/22/2016 12:17:00 PM	SLW395
Surr: Dibromofluoromethane	93.0	70-130		%Rec	2	12/22/2016 12:17:00 PM	SLW395
Surr: Toluene-d8	97.8	70-130		%Rec	2	12/22/2016 12:17:00 PM	SLW395

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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) _____

☒ Standard ☐ Rush

GCU # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: **NELSON VELEZ**

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.1

[illegible]

Date: 12/16/16	Time: 1245	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date 12/16/16	Time 1245
Date: 12/16/16	Time: 1800	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date 12/17/16	Time 0740



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

	BTEX + MTBE + TMBz	(8021B)
	BTEX + MTBE + TPH	(Gas only)
	TPH 8015B	(GRO / DRO / MRO)
	TPH	(Method 418.1)
	EDB	(Method 504.1)
	PAH	(8310 or 8270SIMS)
	RCRA 8 Metals	
	Anions	(F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
	Total Dissolved Solids	
	8260B	(VOA)
	8270	(Semi-VOA)
	Cation / Anion Balance	
	Grab sample	
	5 pt. composite sample	
	Air Bubbles (Y or N)	

Remarks:

BILL DIRECTLY TO BP:
200 Energy Court, Farmington, NM 87401 Attn.: John Ritchie

VID: VDRINKWJA1

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.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1612947

27-Dec-16

Client: Blagg Engineering

Project: GCU 145

Sample ID	100ng LCS	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	SLW39559	RunNo:	39559					
Prep Date:		Analysis Date:	12/21/2016	SeqNo:	1239951	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.5		10.00		94.6	70	130			
Surr: Toluene-d8	9.9		10.00		99.5	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	SLW39559	RunNo:	39559					
Prep Date:		Analysis Date:	12/21/2016	SeqNo:	1239952	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	9.8		10.00		98.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		100	70	130			
Surr: Dibromofluoromethane	9.6		10.00		95.7	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	SLW39586	RunNo:	39586					
Prep Date:		Analysis Date:	12/22/2016	SeqNo:	1240940	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.8	70	130			
Toluene	20	1.0	20.00	0	99.0	70	130			
Surr: 1,2-Dichloroethane-d4	9.5		10.00		95.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.4		10.00		93.5	70	130			
Surr: Toluene-d8	10		10.00		99.6	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	SLW39586	RunNo:	39586					
Prep Date:		Analysis Date:	12/22/2016	SeqNo:	1240943	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.4		10.00		94.2	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.2		10.00		92.5	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1612947**

RcptNo: **1**

Received by/date:

Logged By: **Lindsay Mangin**

12/17/16
12/17/2016 7:45:00 AM

Completed By: **Lindsay Mangin**

12/17/2016 8:46:31 AM

Reviewed By: **AG**

12/19/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____

Date: _____

By Whom: _____

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145

UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : March 14, 2017

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 2017-03-14.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	9.07	17.66	0950	7.24	1,200	10.4	4.25
-------	---	---	------	-------	------	------	-------	------	------

INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

03/14/17

0700

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00 " well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2 "

Excellent recovery in MW #6 . Purged well using 2 inch submersible electrical pump , new / clear vinyl tubing,
and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX
per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	<u>9:00 AM</u>	temp	<u>40 F</u>
off-site	<u>10:00 AM</u>	temp	<u>46 F</u>
sky cond.	<u>Sunny</u>		
wind speed	<u>0 - 5</u>	direct.	<u>E - W</u>

Analytical ReportLab Order **1703790**Date Reported: **3/17/2017****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Blagg Engineering**Client Sample ID:** MW # 6**Project:** GCU 145**Collection Date:** 3/14/2017 9:50:00 AM**Lab ID:** 1703790-001**Matrix:** AQUEOUS**Received Date:** 3/15/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	1.0		µg/L	1	3/16/2017 4:50:18 PM	R41422
Toluene	ND	1.0		µg/L	1	3/16/2017 4:50:18 PM	R41422
Ethylbenzene	1.8	1.0		µg/L	1	3/16/2017 4:50:18 PM	R41422
Xylenes, Total	8.7	2.0		µg/L	1	3/16/2017 4:50:18 PM	R41422
Surr: 4-Bromofluorobenzene	117	80-120		%Rec	1	3/16/2017 4:50:18 PM	R41422

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 2
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Chain-of-Custody Record		Turn-Around Time:
Client: BLAGG ENGR. / BP AMERICA	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush _____	Project Name: GCU # 145
Mailing Address: P.O. BOX 87		
BLOOMFIELD, NM 87413		Project #:
Phone #: (505) 632-1199		
email or Fax#:		Project Manager: NELSON VELEZ
QA/QC Package: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		
Accreditation: <input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		Sampler: NELSON VELEZ 977
<input type="checkbox"/> EDD (Type) _____		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
		Sample Temperature: 1-0

Sample Temperature: 1.0



✓	BTEX MTBE THM (8021B)
	BTEX + MTBE + TPH (Gas only)
	TPH 8015B (GRO / DRO / MRO)
	TPH (Method 418.1)
	EDB (Method 504.1)
	PAH (8310 or 8270SIMS)
	RCRA 8 Metals
	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
	Total Dissolved Solids
	8260B (VOA)
	8270 (Semi-VOA)
	Cation / Anion Balance
✓	Grab sample
	5 pt. composite sample
	Air Rubbles (Y or N)

Date: 3/14/17	Time 1610	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date 3/14/17	Time 1616
Date: 3/14/17	Time 1911	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date 03/15/17	Time 0720

VID: VDRINKWJA1

If necessary, samples submitted to off-site Environmental may be subcontracted to other approved laboratories	This serves as notice of this possibility	Any sub-contracted data will be clearly noted on the analytical report
---	---	--

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1703790

17-Mar-17

Client: Blagg Engineering

Project: GCU 145

Sample ID RB	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBW	Batch ID: R41422		RunNo: 41422							
Prep Date:	Analysis Date: 3/16/2017		SeqNo: 1299249		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	2.0								
Surr: 4-Bromofluorobenzene	22		20.00		109	80	120			

Sample ID 100NG BTEX LCS	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSW	Batch ID: R41422		RunNo: 41422							
Prep Date:	Analysis Date: 3/16/2017		SeqNo: 1299250		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.9	71.7	126			
Toluene	20	1.0	20.00	0	99.1	73.3	119			
Ethylbenzene	20	1.0	20.00	0	102	80	120			
Xylenes, Total	63	2.0	60.00	0	106	80	120			
Surr: 4-Bromofluorobenzene	22		20.00		111	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG

Work Order Number: 1703790

RcptNo: 1

Received by/date:

AK 03/15/17

Logged By: Lindsay Mangin

3/15/2017 7:20:00 AM

Lindsay Mangin

Completed By: Lindsay Mangin

3/15/2017 12:08:27 PM

Lindsay Mangin

Reviewed By:

AK

03/15/17

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐
- # of preserved bottles checked for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145

UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : May 26, 2017

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 2017-05-26.xls

PROJECT MANAGER : N J V

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
MW #6	-	-	8.25	17.66	0950	6.99	1,400	15.2	4.75

INSTRUMENT CALIBRATIONS =

4.01/7.00/10.00

2,800

DATE & TIME =

05/26/17

0600

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
 (i.e. 2" MW $r = (1/12) \text{ ft}$. $h = 1 \text{ ft}$.) (i.e. 4" MW $r = (2/12) \text{ ft}$. $h = 1 \text{ ft}$.)

Ideally a minimum of three (3) wellbore volumes:

2.00" well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2".

Excellent recovery in MW #6. Purged well using 2 inch submersible electrical pump, new / clear vinyl tubing,
and with brass adjustable flow valve attachment added near sampling end of tubing. Collected sample for BTEX
per US EPA Method 8021B from MW #6 only.

Top of casing: MW #6 ~ 0.13 ft. below grade.

on-site	<u>9:00 AM</u>	temp	<u>63 F</u>
off-site	<u>10:00 AM</u>	temp	<u>68 F</u>
sky cond.	<u>Sunny</u>		
wind speed	<u>0 - 10</u>	direct.	<u>E</u>

Analytical Report

Lab Order 1705E90

Date Reported: 6/2/2017

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** MW #6**Project:** GCU #145**Collection Date:** 5/26/2017 9:50:00 AM**Lab ID:** 1705E90-001**Matrix:** AQUEOUS**Received Date:** 5/31/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: DJF
Benzene	1.2	1.0		µg/L	1	6/1/2017 1:01:47 AM	SL43178
Toluene	ND	1.0		µg/L	1	6/1/2017 1:01:47 AM	SL43178
Ethylbenzene	9.4	1.0		µg/L	1	6/1/2017 1:01:47 AM	SL43178
Xylenes, Total	12	1.5		µg/L	1	6/1/2017 1:01:47 AM	SL43178
Surr: 1,2-Dichloroethane-d4	92.8	70-130		%Rec	1	6/1/2017 1:01:47 AM	SL43178
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	6/1/2017 1:01:47 AM	SL43178
Surr: Dibromofluoromethane	94.9	70-130		%Rec	1	6/1/2017 1:01:47 AM	SL43178
Surr: Toluene-d8	102	70-130		%Rec	1	6/1/2017 1:01:47 AM	SL43178

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank	Page 1 of 2
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range	
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit	
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified	

Client: **BLAGG ENGR. / BP AMERICA**

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 # 145

Project #:

Project Manager:

NELSON VELEZ

Sampler: **NELSON VELEZ**

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3

97v

HEAL No

705590

105 L90

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

✓	BTEX MTBE TPH (8021B)
	BTEX + MTBE + TPH (Gas only)
	TPH 8015B (GRO / DRO / MRO)
	TPH (Method 418.1)
	EDB (Method 504.1)
	PAH (8310 or 8270SIMS)
	RCRA 8 Metals
	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
	Total Dissolved Solids
	8260B (VOA)
	8270 (Semi-VOA)
	Cation / Anion Balance
✓	Grab sample
	5 pt. composite sample
	Air Rubbles (Y or N)

Date:	Time:	Relinquished by:
-------	-------	------------------

5/30/17 | 1200

Relinquished by:

Mr. J.

Received by:

Date Time

05/31/17
0715

Remarks:

BILL DIRECTLY TO BP:

200 Energy Court, Farmington, NM 87401 Attn.: Steve Moskal

VID: VRITCJWFEC WBS ELEMENT: L1-00169-E:GCU145

Date:	Time:	Relinquished by:
-------	-------	------------------

Received by:

Date _____ Time _____

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.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705E90

02-Jun-17

Client: Blagg Engineering

Project: GCU #145

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	PBW	Batch ID:	SL43178	RunNo:	43178					
Prep Date:		Analysis Date:	5/31/2017	SeqNo:	1359057	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.7		10.00		97.3	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		99.6	70	130			
Surr: Dibromofluoromethane	9.8		10.00		97.7	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260: Volatiles Short List					
Client ID:	LCSW	Batch ID:	SL43178	RunNo:	43178					
Prep Date:		Analysis Date:	5/31/2017	SeqNo:	1359058	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	21	1.0	20.00	0	104	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.4		10.00		93.7	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.4	70	130			
Surr: Dibromofluoromethane	9.5		10.00		95.1	70	130			
Surr: Toluene-d8	9.9		10.00		99.3	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG

Work Order Number: 1705E90

RcptNo: 1

Received By: Anne Thorne 5/31/2017 7:15:00 AM

Completed By: Andy Jansson 5/31/2017 8:08:07 AM

Reviewed By: SRe 05/31/17

Anne Thorne

Andy Jansson

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH: _____
(<2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (If applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:	_____	Date:	_____
By Whom:	_____	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

BLAGG ENGINEERING, INC.

MONITOR / TEST WELL DEVELOPMENT & / OR SAMPLING DATA

CLIENT : BP AMERICA PROD. CO.

CHAIN-OF-CUSTODY # :

N / A

GCU # 145
UNIT A, SEC. 26, T29N, R12W

LABORATORY (S) USED :

HALL ENVIRONMENTAL

Date : June 18, 2018

DEVELOPER / SAMPLER : N J V

Filename : GCU 145 mw log 2018-06-18.xls

PROJECT MANAGER : S. MOSKAL

Sample ID	WELL ELEV. (ft)	WATER ELEV. (ft)	DEPTH TO WATER (ft)	TOTAL DEPTH (ft)	SAMPLING TIME	pH	CONDUCT (umhos)	TEMP. (celcius)	VOLUME PURGED (gal.)
-----------	-----------------	------------------	---------------------	------------------	---------------	----	-----------------	-----------------	----------------------

MW #6	-	-	-	17.66	-	-	-	-	-
MW #7	-	-	5.22	14.00	1130	6.94	1,100	17.8	4.25
MW #8	-	-	6.99	15.00	1230	7.05	1,000	18.2	4.00

INSTRUMENT CALIBRATIONS =	4.01/7.00/10.00	2,800
DATE & TIME =	06/14/18	0600

NOTES : Volume of water purged from well prior to sampling: $V = \pi \times r^2 \times h \times 7.48 \text{ gal./ft}^3 \times 3 \text{ (wellbores)}$.
(i.e. 2" MW $r = (1/12) \text{ ft.}$ $h = 1 \text{ ft.}$) (i.e. 4" MW $r = (2/12) \text{ ft.}$ $h = 1 \text{ ft.}$)

Ideally a minimum of three (3) wellbore volumes: 2.00" well diameter = 0.49 gal. / ft. of water.

Comments or note well diameter if not standard 2"

MW #7 & #8 installed on 5/15/2018. Developed/purged on 5/31/2018 (light brownish tint in appearance, no apparent hydrocarbon odor detected physically in purged water. Purged well using 2 inch submersible electric pump, new / clear vinyl tubing and with brass adjustable flow valve attachment added near sampling end of tubing . Collected samples for BTEX per US EPA Method 8260 & general chemistry parameters.

Top of casing: MW #7 ~ 2.20 ft. , MW #8 ~ 2.20 ft. below grade.

on-site	10:45 AM	temp	74F
off-site	12:45 PM	temp	78 F
sky cond.	Sunny		
wind speed	0-5	direct.	SSE - E

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1806B90

Date Reported: 7/6/2018

CLIENT: Blagg Engineering

Client Sample ID: MW#7

Project: GCU 145

Collection Date: 6/18/2018 11:30:00 AM

Lab ID: 1806B90-001

Matrix: AQUEOUS

Received Date: 6/20/2018 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Fluoride	1.1	0.10		mg/L	1	7/3/2018 11:54:46 AM	R52476
Chloride	21	2.5		mg/L	5	6/20/2018 11:31:03 AM	R52134
Nitrogen, Nitrite (As N)	ND	0.50	H	mg/L	5	6/20/2018 11:31:03 AM	R52134
Bromide	ND	0.50		mg/L	5	6/20/2018 11:31:03 AM	R52134
Nitrogen, Nitrate (As N)	ND	0.50	H	mg/L	5	6/20/2018 11:31:03 AM	R52134
Phosphorus, Orthophosphate (As P)	ND	2.5	H	mg/L	5	6/20/2018 11:31:03 AM	R52134
Sulfate	530	10		mg/L	20	6/20/2018 11:43:28 AM	R52134
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1500	5.0		µmhos/c	1	6/21/2018 6:54:31 PM	R52161
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	217.9	20.00		mg/L Ca	1	6/21/2018 6:54:31 PM	R52161
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/21/2018 6:54:31 PM	R52161
Total Alkalinity (as CaCO3)	217.9	20.00		mg/L Ca	1	6/21/2018 6:54:31 PM	R52161
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	1170	40.0	*D	mg/L	1	6/25/2018 4:16:00 PM	38842
EPA METHOD 6010B: DISSOLVED METALS							Analyst: MED
Calcium	210	5.0		mg/L	5	6/25/2018 2:11:46 PM	A52214
Magnesium	29	1.0		mg/L	1	6/22/2018 3:50:53 PM	A52172
Potassium	1.9	1.0		mg/L	1	6/22/2018 3:50:53 PM	A52172
Sodium	75	1.0		mg/L	1	6/22/2018 3:50:53 PM	A52172
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Toluene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Ethylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Naphthalene	ND	2.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1-Methylnaphthalene	ND	4.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
2-Methylnaphthalene	ND	4.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Acetone	ND	10		µg/L	1	6/22/2018 10:20:00 AM	B52236
Bromobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Bromodichloromethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Bromoform	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Bromomethane	ND	3.0		µg/L	1	6/22/2018 10:20:00 AM	B52236

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1806B90

Date Reported: 7/6/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW#7

Project: GCU 145

Collection Date: 6/18/2018 11:30:00 AM

Lab ID: 1806B90-001

Matrix: AQUEOUS

Received Date: 6/20/2018 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
2-Butanone	ND	10		µg/L	1	6/22/2018 10:20:00 AM	B52236
Carbon disulfide	ND	10		µg/L	1	6/22/2018 10:20:00 AM	B52236
Carbon Tetrachloride	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Chlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Chloroethane	ND	2.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Chloroform	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Chloromethane	ND	3.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
2-Chlorotoluene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
4-Chlorotoluene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
cis-1,2-DCE	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Dibromochloromethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Dibromomethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,3-Dichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1-Dichloroethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1-Dichloroethene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2-Dichloropropane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,3-Dichloropropane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
2,2-Dichloropropane	ND	2.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1-Dichloropropene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Hexachlorobutadiene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
2-Hexanone	ND	10		µg/L	1	6/22/2018 10:20:00 AM	B52236
Isopropylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
4-Isopropyltoluene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
4-Methyl-2-pentanone	ND	10		µg/L	1	6/22/2018 10:20:00 AM	B52236
Methylene Chloride	ND	3.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
n-Butylbenzene	ND	3.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
n-Propylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
sec-Butylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Styrene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
tert-Butylbenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
trans-1,2-DCE	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1806B90

Date Reported: 7/6/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW#7

Project: GCU 145

Collection Date: 6/18/2018 11:30:00 AM

Lab ID: 1806B90-001

Matrix: AQUEOUS

Received Date: 6/20/2018 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Trichlorofluoromethane	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
1,2,3-Trichloropropane	ND	2.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Vinyl chloride	ND	1.0		µg/L	1	6/22/2018 10:20:00 AM	B52236
Xylenes, Total	ND	1.5		µg/L	1	6/22/2018 10:20:00 AM	B52236
Surr: 1,2-Dichloroethane-d4	100	70-130		%Rec	1	6/22/2018 10:20:00 AM	B52236
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	6/22/2018 10:20:00 AM	B52236
Surr: Dibromofluoromethane	89.4	70-130		%Rec	1	6/22/2018 10:20:00 AM	B52236
Surr: Toluene-d8	110	70-130		%Rec	1	6/22/2018 10:20:00 AM	B52236

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1806B90

Date Reported: 7/6/2018

CLIENT: Blagg Engineering

Client Sample ID: MW#8

Project: GCU 145

Collection Date: 6/18/2018 12:30:00 PM

Lab ID: 1806B90-002

Matrix: AQUEOUS

Received Date: 6/20/2018 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Fluoride	1.1	0.10		mg/L	1	7/3/2018 12:07:39 PM	R52476
Chloride	19	10		mg/L	20	6/20/2018 12:14:12 PM	R52126
Nitrogen, Nitrite (As N)	ND	0.10		mg/L	1	6/20/2018 12:01:21 PM	R52126
Bromide	0.13	0.10		mg/L	1	6/20/2018 12:01:21 PM	R52126
Nitrogen, Nitrate (As N)	ND	0.10		mg/L	1	6/20/2018 12:01:21 PM	R52126
Phosphorus, Orthophosphate (As P)	ND	0.50		mg/L	1	6/20/2018 12:01:21 PM	R52126
Sulfate	390	10		mg/L	20	6/20/2018 12:14:12 PM	R52126
SM2510B: SPECIFIC CONDUCTANCE							Analyst: JRR
Conductivity	1100	5.0		µmhos/c	1	6/21/2018 7:06:12 PM	R52161
SM2320B: ALKALINITY							Analyst: JRR
Bicarbonate (As CaCO3)	203.8	20.00		mg/L Ca	1	6/21/2018 7:06:12 PM	R52161
Carbonate (As CaCO3)	ND	2.000		mg/L Ca	1	6/21/2018 7:06:12 PM	R52161
Total Alkalinity (as CaCO3)	203.8	20.00		mg/L Ca	1	6/21/2018 7:06:12 PM	R52161
SM2540C MOD: TOTAL DISSOLVED SOLIDS							Analyst: KS
Total Dissolved Solids	868	20.0	*	mg/L	1	6/25/2018 4:16:00 PM	38842
EPA METHOD 6010B: DISSOLVED METALS							Analyst: JLF
Calcium	180	5.0		mg/L	5	6/22/2018 4:23:42 PM	A52172
Magnesium	20	1.0		mg/L	1	6/22/2018 3:52:33 PM	A52172
Potassium	ND	1.0		mg/L	1	6/22/2018 3:52:33 PM	A52172
Sodium	46	1.0		mg/L	1	6/22/2018 3:52:33 PM	A52172
EPA METHOD 8260B: VOLATILES							Analyst: RAA
Benzene	2.4	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Toluene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Ethylbenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2,4-Trimethylbenzene	4.2	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,3,5-Trimethylbenzene	1.1	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Naphthalene	ND	2.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1-Methylnaphthalene	ND	4.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
2-Methylnaphthalene	ND	4.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Acetone	ND	10		µg/L	1	6/22/2018 10:44:00 AM	B52236
Bromobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Bromodichloromethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Bromoform	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Bromomethane	ND	3.0		µg/L	1	6/22/2018 10:44:00 AM	B52236

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1806B90

Date Reported: 7/6/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW#8

Project: GCU 145

Collection Date: 6/18/2018 12:30:00 PM

Lab ID: 1806B90-002

Matrix: AQUEOUS

Received Date: 6/20/2018 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
2-Butanone	ND	10		µg/L	1	6/22/2018 10:44:00 AM	B52236
Carbon disulfide	ND	10		µg/L	1	6/22/2018 10:44:00 AM	B52236
Carbon Tetrachloride	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Chlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Chloroethane	ND	2.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Chloroform	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Chloromethane	ND	3.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
2-Chlorotoluene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
4-Chlorotoluene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
cis-1,2-DCE	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Dibromochloromethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Dibromomethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2-Dichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,3-Dichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,4-Dichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Dichlorodifluoromethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1-Dichloroethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1-Dichloroethene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2-Dichloropropane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,3-Dichloropropane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
2,2-Dichloropropane	ND	2.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1-Dichloropropene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Hexachlorobutadiene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
2-Hexanone	ND	10		µg/L	1	6/22/2018 10:44:00 AM	B52236
Isopropylbenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
4-Isopropyltoluene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
4-Methyl-2-pentanone	ND	10		µg/L	1	6/22/2018 10:44:00 AM	B52236
Methylene Chloride	ND	3.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
n-Butylbenzene	ND	3.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
n-Propylbenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
sec-Butylbenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Styrene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
tert-Butylbenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
trans-1,2-DCE	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report

Lab Order 1806B90

Date Reported: 7/6/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: MW#8

Project: GCU 145

Collection Date: 6/18/2018 12:30:00 PM

Lab ID: 1806B90-002

Matrix: AQUEOUS

Received Date: 6/20/2018 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: RAA
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1,1-Trichloroethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,1,2-Trichloroethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Trichloroethene (TCE)	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Trichlorofluoromethane	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
1,2,3-Trichloropropane	ND	2.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Vinyl chloride	ND	1.0		µg/L	1	6/22/2018 10:44:00 AM	B52236
Xylenes, Total	3.2	1.5		µg/L	1	6/22/2018 10:44:00 AM	B52236
Surr: 1,2-Dichloroethane-d4	96.2	70-130		%Rec	1	6/22/2018 10:44:00 AM	B52236
Surr: 4-Bromofluorobenzene	105	70-130		%Rec	1	6/22/2018 10:44:00 AM	B52236
Surr: Dibromofluoromethane	93.1	70-130		%Rec	1	6/22/2018 10:44:00 AM	B52236
Surr: Toluene-d8	96.0	70-130		%Rec	1	6/22/2018 10:44:00 AM	B52236

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	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	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Chain-of-Custody Record		Turn-Around Time:
Client: BLAGG ENGR. / BP AMERICA	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
Mailing Address: P.O. BOX 87	Project Name:	
BLOOMFIELD, NM 87413	GCU # 145	
Phone #: (505) 632-1199	Project fr:	
email or Fax#:	Project Manager:	
QA/QC Package:	STEVE MOSKAL	
<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		
Accreditation:	Sampler: NELSON VELEZ	
<input type="checkbox"/> NELAP <input type="checkbox"/> Other	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> EDD (Type)	Sample Temperature: 1:4	

Sample Temperature: 1.4

[illegible]

WBS ELEMENT: L1-001CV-E:1 GCU145

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99

If necessary, samples submitted to Half 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.

SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	MB	SampType: MBLK		TestCode: EPA Method 300.0: Anions						
Client ID:	PBW	Batch ID: R52126		RunNo: 52126						
Prep Date:		Analysis Date: 6/20/2018		SeqNo: 1706575		Units: mg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType: LCS		TestCode: EPA Method 300.0: Anions						
Client ID:	LCSW	Batch ID: R52126		RunNo: 52126						
Prep Date:	Analysis Date: 6/20/2018		SeqNo: 1706576		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.0	90	110			
Bromide	2.5	0.10	2.500	0	99.3	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	101	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.2	90	110			
Sulfate	9.5	0.50	10.00	0	95.2	90	110			

Sample ID	MB	SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBW	Batch ID:	R52126		RunNo:	52126				
Prep Date:		Analysis Date:	6/20/2018		SeqNo:	1706628		Units:	mg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS	SampType: LCS			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R52126			RunNo: 52126					
Prep Date:		Analysis Date: 6/20/2018			SeqNo: 1706629		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	101	90	110			
Nitrogen, Nitrite (As N)	1.0	0.10	1.000	0	101	90	110			
Bromide	2.6	0.10	2.500	0	102	90	110			
Nitrogen, Nitrate (As N)	2.6	0.10	2.500	0	104	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R52126		RunNo: 52126					
Prep Date:			Analysis Date: 6/20/2018		SeqNo: 1706629		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Phosphorus, Orthophosphate (As P	5.1	0.50	5.000	0	101	90	110			
Sulfate	9.8	0.50	10.00	0	98.0	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R52134			RunNo: 52134					
Prep Date:		Analysis Date: 6/20/2018			SeqNo: 1707308		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R52134		RunNo: 52134					
Prep Date:			Analysis Date: 6/20/2018		SeqNo: 1707309		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	96.8	90	110			
Nitrogen, Nitrite (As N)	0.98	0.10	1.000	0	98.5	90	110			
Bromide	2.6	0.10	2.500	0	105	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	5.1	0.50	5.000	0	101	90	110			
Sulfate	9.5	0.50	10.00	0	95.4	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R52134			RunNo: 52134					
Prep Date:		Analysis Date: 6/20/2018			SeqNo: 1707362		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	LCS		SampType: LCS		TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW		Batch ID: R52134		RunNo: 52134					
Prep Date:			Analysis Date: 6/20/2018		SeqNo: 1707363		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.7	0.50	5.000	0	93.8	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.1	90	110			
Bromide	2.5	0.10	2.500	0	102	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	98.5	90	110			
Phosphorus, Orthophosphate (As P	4.9	0.50	5.000	0	98.2	90	110			
Sulfate	9.2	0.50	10.00	0	92.3	90	110			

Sample ID	MB	SampType: MBLK			TestCode: EPA Method 300.0: Anions					
Client ID:	PBW	Batch ID: R52134			RunNo: 52134					
Prep Date:		Analysis Date: 6/21/2018			SeqNo: 1707395		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID	LCS		SampType:	LCS		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSW		Batch ID:	R52134		RunNo:	52134				
Prep Date:			Analysis Date:	6/21/2018		SeqNo:	1707396		Units: mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	4.7	0.50	5.000	0	94.4	90	110				
Nitrogen, Nitrite (As N)	0.97	0.10	1.000	0	96.8	90	110				
Bromide	2.6	0.10	2.500	0	103	90	110				
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.3	90	110				
Phosphorus, Orthophosphate (As P	5.0	0.50	5.000	0	99.5	90	110				
Sulfate	9.3	0.50	10.00	0	93.0	90	110				

Sample ID	MB	SampType:	mblk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBW	Batch ID:	R52476		RunNo:	52476				
Prep Date:		Analysis Date:	7/3/2018		SeqNo:	1720725	Units:	mg/L		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	LCS-b	SampType: lcs			TestCode: EPA Method 300.0: Anions					
Client ID:	LCSW	Batch ID: R52476			RunNo: 52476					
Prep Date:		Analysis Date: 7/3/2018			SeqNo: 1720731		Units: mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.48	0.10	0.5000	0	96.9	90	110			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	100ng lcs2	SampType: LCS			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID: B52236			RunNo: 52236					
Prep Date:		Analysis Date: 6/22/2018			SeqNo: 1711792		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	99.0	70	130			
Toluene	19	1.0	20.00	0	95.3	70	130			
Chlorobenzene	18	1.0	20.00	0	91.7	70	130			
1,1-Dichloroethene	20	1.0	20.00	0	99.4	70	130			
Trichloroethene (TCE)	18	1.0	20.00	0	92.4	70	130			
Surr: 1,2-Dichloroethane-d4	9.6		10.00		95.6	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		103	70	130			
Surr: Dibromofluoromethane	9.2		10.00		91.5	70	130			
Surr: Toluene-d8	9.4		10.00		94.3	70	130			

Sample ID	rb3	SampType: MBLK			TestCode: EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID: B52236			RunNo: 52236					
Prep Date:		Analysis Date: 6/22/2018			SeqNo: 1711793		Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering
Project: GCU 145

Sample ID: rb3	SampType: MBLK	TestCode: EPA Method 8260B: VOLATILES								
Client ID: PBW	Batch ID: B52236	RunNo: 52236								
Prep Date:	Analysis Date: 6/22/2018	SeqNo: 1711793	Units: µg/L							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	rb3	SampType: MBLK		TestCode: EPA Method 8260B: VOLATILES						
Client ID:	PBW	Batch ID: B52236		RunNo: 52236						
Prep Date:		Analysis Date: 6/22/2018		SeqNo: 1711793		Units: µg/L				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.6		10.00		96.0	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		104	70	130			
Surr: Dibromofluoromethane	9.1		10.00		90.7	70	130			
Surr: Toluene-d8	9.4		10.00		93.5	70	130			

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	lcs-1 ~20uS eC		SampType:	lcs		TestCode:	SM2510B: Specific Conductance					
Client ID:	LCSW		Batch ID:	R52161		RunNo:	52161					
Prep Date:			Analysis Date:	6/21/2018		SeqNo:	1708753		Units: µmhos/cm			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Conductivity	22	5.0	19.98	0	112	80	120					

Qualifiers:

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	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	P Sample pH Not In Range
PQL Practical Quantitative Limit	RL Reporting Detection Limit
S % Recovery outside of range due to dilution or matrix	W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	MB	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	A52172	RunNo:	52172					
Prep Date:		Analysis Date:	6/22/2018	SeqNo:	1709121	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	LCS	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A52172	RunNo:	52172					
Prep Date:		Analysis Date:	6/22/2018	SeqNo:	1709123	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	80	120			
Magnesium	51	1.0	50.00	0	101	80	120			
Potassium	49	1.0	50.00	0	98.6	80	120			
Sodium	51	1.0	50.00	0	102	80	120			

Sample ID	LCSD	SampType:	LCSD	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSS02	Batch ID:	A52172	RunNo:	52172					
Prep Date:		Analysis Date:	6/22/2018	SeqNo:	1709124	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.4	80	120	3.54	20	
Magnesium	49	1.0	50.00	0	97.7	80	120	3.53	20	
Potassium	48	1.0	50.00	0	95.2	80	120	3.55	20	
Sodium	50	1.0	50.00	0	101	80	120	1.24	20	

Sample ID	MB-A	SampType:	MBLK	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	PBW	Batch ID:	A52214	RunNo:	52214					
Prep Date:		Analysis Date:	6/25/2018	SeqNo:	1710618	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								

Sample ID	LCS-A	SampType:	LCS	TestCode:	EPA Method 6010B: Dissolved Metals					
Client ID:	LCSW	Batch ID:	A52214	RunNo:	52214					
Prep Date:		Analysis Date:	6/25/2018	SeqNo:	1710619	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	101	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	mb-1 alk	SampType:	mbk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R52161	RunNo:	52161					
Prep Date:		Analysis Date:	6/21/2018	SeqNo:	1708707	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-1 alk		SampType:	lcs		TestCode:	SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID:	R52161		RunNo:	52161				
Prep Date:			Analysis Date:	6/21/2018		SeqNo:	1708708		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	79.16	20.00	80.00	0	99.0	90	110				

Sample ID	mb-2 alk	SampType:	mbk	TestCode:	SM2320B: Alkalinity					
Client ID:	PBW	Batch ID:	R52161	RunNo:	52161					
Prep Date:		Analysis Date:	6/21/2018	SeqNo:	1708730	Units:	mg/L CaCO3			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	lcs-2 alk		SampType:	lcs		TestCode:	SM2320B: Alkalinity				
Client ID:	LCSW		Batch ID:	R52161		RunNo:	52161				
Prep Date:			Analysis Date:	6/21/2018		SeqNo:	1708731		Units: mg/L CaCO3		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Total Alkalinity (as CaCO3)	79.52	20.00	80.00	0	99.4	90	110				

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806B90

06-Jul-18

Client: Blagg Engineering

Project: GCU 145

Sample ID	MB-38842	SampType:	MBLK	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	PBW	Batch ID:	38842	RunNo:	52218					
Prep Date:	6/22/2018	Analysis Date:	6/25/2018	SeqNo:	1710741	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	LCS-38842	SampType:	LCS	TestCode:	SM2540C MOD: Total Dissolved Solids					
Client ID:	LCSW	Batch ID:	38842	RunNo:	52218					
Prep Date:	6/22/2018	Analysis Date:	6/25/2018	SeqNo:	1710742	Units:	mg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

* Value exceeds Maximum Contaminant Level.
D Sample Diluted Due to Matrix
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
PQL Practical Quantitative Limit
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank
E Value above quantitation range
J Analyte detected below quantitation limits
P Sample pH Not In Range
RL Reporting Detection Limit
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: BLAGG

Work Order Number: 1806B9D

Rep/No: 1

Received By: Isaiah Ortiz 6/20/2018 7:15:00 AM

Completed By: Michelle Garcia 6/20/2018 9:09:57 AM

Reviewed By: *my* 6/20/18

IC

Michelle Garcia

Labeled by: mw 6/20/18

Chain of Custody

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☒
8. Was preservative added to bottles? Yes ☒ No ☒ NA ☐
9. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(if no, notify customer for authorization) Yes ☒ No ☐
of preserved bottles checked or pti: 62 or >12 unless noted
Adjusted? yes
Checked by: mw

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks: For Metals analysis - poured off from preserved 500 mL HDPE into 250 mL HDPE and added approx 0.4 mL HNO₃ for acceptable pti. Held for 24 hrs prior to analysis

Cooler Information

Cooler No.	Temp °C	Condition	Seal Intact	Seal No.	Seal Date	Signed By
1	14	Good	Not Present			

*mw 6/20/18
@ 1100*