

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 Production America	Contact: Steve Moskal	
Address: 380 Airport Road, Suite A, Durango, CO 81303	Telephone No.: 505-330-9179	
Facility Name: Gallegos Canyon Unit 307	Facility Type: Saltwater Disposal Well	
Surface Owner: Fee	Mineral Owner: Federal	API No. 3004524248

LOCATION OF RELEASE

Unit Letter L	Section 30	Township 29N	Range 12W	Feet from the 1455	North/South Line South	Feet from the 510	East/West Line West	County: San Juan
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Latitude 36.69434° Longitude -108.14706°

NATURE OF RELEASE


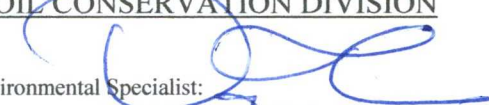
Type of Release: Hydrocarbons and produced water	Volume of Release: unknown	Volume Recovered: none
Source of Release: Historical impacts, likely tank overflow	Date and Hour of Occurrence: unknown	Date and Hour of Discovery: March 26, 2018; 12:35 PM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* During BGT closure activities, impacts were identified beneath the 45 bbl tank. Lab analysis confirms the impacts are above the BGT closure standards and spill and release guidelines with a site ranking of 20. The impacts are primarily motor oil range organics and likely and not readily mobilized in soil. BP delineated via hand auger to determine extents of impacts in highly congested area of facilities.

Describe Area Affected and Cleanup Action Taken.* BP delineated via hand auger to determine extents of impacts in highly congested facility with piping, electrical, and automation. The results of the delineation activity indicate no significant hydrocarbon impacts and elevated chloride levels beginning at the sampled 7' depth. The chloride concentration decrease with depth and indicate that impact to groundwater is not likely. BP requests a variance for closure of this incident. Remediation of this location will require significant decommissioning.

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>10/24/18</u>	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval: <u>Deferment</u>	Attached <input checked="" type="checkbox"/>
Date: August 2, 2018	Phone: 505-330-9179	

* Attach Additional Sheets If Necessary

NMOCD

AUG 08 2018

DISTRICT III

NCS 1814355430

To be remediated at closure

Chlorides above 600 mg/kg
Please see e-mail
(Page 2)

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Fields, Vanessa, EMNRD

From: Fields, Vanessa, EMNRD
Sent: Tuesday, October 23, 2018 2:27 PM
To: Steven Moskal
Subject: RE: Request for Deferment - Gallegos Canyon Unit 307

Good afternoon Steve,

The OCD grants BP approval for deferment of the GCU 307. BP shall comply with 19.15.29.13 when the facility is deconstructed and/or final land use.

I will attach this approval to BP's final C-141.

Thank you,

Vanessa Fields
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 119
Cell: (505) 419-0463
vanessa.fields@state.nm.us

From: Steven Moskal <Steven.Moskal@BPX.COM>
Sent: Tuesday, October 23, 2018 2:20 PM
To: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
Subject: [EXT] Request for Deferment - Gallegos Canyon Unit 307

Vanessa,

In regards to the closure request of the below grade tank located at the GCU 307, BP requests to defer remediation of the elevated chloride to final abandonment and reclamation of the site. The site is a centralized salt water disposal facility with congested piping and associated utilities in the immediate vicinity of the former BGT. BP has demonstrated that the environment is not significantly threatened via the hand auger delineation conducted on June 12, 2018.

At final reclamation BP will comply with NMAC 19.15.29 for closure.

Steve Moskal
BP Lower 48 – San Juan
Field Environmental Coordinator
Phone: (505) 330-9179



BLAGG ENGINEERING, INC.

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

July 11, 2018

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

Re: Transmittal of Investigation Results
GCU 307 SWD
(L) Sec 30 – T29N – R12W
San Juan County, NM

Dear Mr. Moskal:

At your request, Blagg Engineering, Inc. (BEI) performed a hand auger investigation of potential hydrocarbon impacts at a closed out 45 barrel below grade tank (BGT) at the BP operated GCU 307 SWD. This site is located on the Bolack Ranch private property south of Farmington, New Mexico. The purpose of the investigation was to delineate hydrocarbon impacts first discovered on March 26, 2018 during permanent closure activities at the 45 BGT. The hand auger investigation was conducted on June 12, 2018 and final laboratory analytical results from collected soil samples were transmitted to BEI on July 3, 2018.

The investigation was performed pursuant to a plan presented by BP to the New Mexico Oil Conservation Division (NMOCD) via Form C-141 on May 22, 2018. That plan included installation of 5 each hand auger points adjacent to and surrounding the 45 BGT location. As directed by the plan, 2 each soil samples were collected from each hand auger point and submitted for laboratory analytical testing of total petroleum hydrocarbons (TPH); benzene, toluene, ethylbenzene and xylenes (BTEX); and for total chlorides.

Analytical test results, included in the attachments, reported an absence of TPH and BTEX at all sample points. Chlorides were present at various low levels. Based on these results, BEI recommends closure of the site with no further action.

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, P.E.
President

Attachment: Summary Data from Investigation

Summary Hand Auger Investigation Data Spreadsheet

BP AMERICA PRODUCTION COMPANY
Gallegos Canyon Unit # 307 SWD - (Investigation of 45 BGT Impacted Soils)

Unit Letter L, Section 30, T29N, R12W - API Number: 30-045-24248

SAMPLE ID WITH DEPTH BELOW GRADE (feet)	SAMPLE DATE	SAMPLE TIME	SAMPLING COLLECTION TYPE	FIELD OVM READING (ppm)	TPH - cumulative (mg/Kg)	Benzene (mg/Kg)	BTEX - cumulative (mg/Kg)	Chloride (mg/Kg)	Soil Description / Comments
HA-1 @ 7'	06/12/18	0918	Grab	0.5	ND	ND	ND	1,100	
HA-1 @ 9.5'	06/12/18	0933	Grab	1.1	ND	ND	ND	640	
HA-2 @ 7'	06/12/18	0951	Grab	1.1	ND	ND	ND	120	
HA-3 @ 7'	06/12/18	1010	Grab	1.6	ND	ND	ND	130	
HA-3 @ 12'	06/12/18	1023	Grab	1.2	ND	ND	ND	370	
HA-4 @ 12'	06/12/18	1107	Grab	2.4	ND	ND	ND	1,100	
HA-4 @ 19'	06/12/18	1211	Grab	1.9	ND	ND	ND	430	
HA-5 @ 7'	06/12/18	1221	Grab	1.3	ND	ND	ND	1,900	
HA-5 @ 16'	06/12/18	1241	Grab	0.5	ND	ND	ND	930	

NMOCD RELEASE CLOSURE STANDARDS (soils) -	100	100	10	50	
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Notes:

OVM - Organic vapor meter or photo-ionization detector (PID).

TPH - Total petroleum hydrocarbons by US EPA Method 8015B.

BTEX - Benzene, toluene, ethylbenzene, total xylenes by US EPA Method 8021B.

ppm - Parts per million.

mg/Kg - Milligram per kilogram.

ND - Not detected at Reporting Limit.

NMOCD - New Mexico Oil Conservation Division.

NMOCD RELEASE CLOSURE STANDARDS REFERENCE: "Guidelines for Remediation of Leaks, Spills and Releases" dated: August 13, 1993.

OVM CALIBRATION: RESPONSE FACTOR = 1.00 , CALIBRATION GAS - 100 ppm ISOBUTYLENE.

OVM CALIBRATION DATA	DATE	TIME	READING
	06/12/18	0630	100.8

Site Figures

GCU 307 SWD
(L) Sec 30 - T29N - R12W
API: 30-045-24248

Prior 45 BGT Location

Tank
Tank
Tank
Pump House

GCU 307 SWD

GCU 307 BGT Auger Delineation

API Number: 30-045-24248

ULSTR: L-30-29N-12W

Legend

- GCU 307 BGT Location
- Hand Auger Location

GCU 307 BGT Location

HA-4

HA-3

HA-5

HA-1

HA-2

Google Earth

© 2018 Google



60 ft

Photographs



GCU 307 SWD
45 BGT
March 26, 2018



GCU 307 SWD
45 BGT Footprint
March 26, 2018

Hand Auger Boring Logs

BLAGG ENGINEERING, INC.

P.O. BOX 87, BLOOMFIELD, NM 87413

(505) 632-1199

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FIELD BORING LOG

BORING ID: HA-1

PROJECT: GCU 307 SWD

CLIENT: BP America Production Co.

DRILLING CONTRACTOR: Baker/CROSSFIRE

EQUIPMENT USED: HAND AUGER

DATE START: 6/12/2018 DATE FINISH: 6/12/18 DRILLER: — LOGGED BY: JB

TOTAL DEPTH: 9 1/2' CASING TYPE & SIZE: — SLOT SIZE: —

COMMENTS: Auger Angled @ 60° I so TVD = .85 x Auger Depth.

DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	FRP OVM	Lab TPH (mg/Kg)	SAMPLE DESCRIPTION
1'	0845 START	Auger			ROAD BASE w/ CRUSHED GRAVEL
2'					
3'					
4'					
5'					
6'					
7'	0918		0.5	ND	MEDIUM GRAINED SAND, TAN, LITE MOISTURE, NO/NS
8'					SAA, Very Moist
9'					
10'	0933		1.1	ND	SAA, V MOIST to SATURATED, FLOWING SAND
11'					
12'					
13'					
14'					
15'					
16'					
17'					
18'					
19'					
20'					
21'					
22'					
23'					
24'					
25'					
26'					
27'					
28'					
29'					
30'					

BLAGG ENGINEERING, INC.

P.O. BOX 87, BLOOMFIELD, NM 87413

(505) 632-1199

Page 1 of 1

FIELD BORING LOG

BORING ID: HA-2

PROJECT: GCV 307 SWB

CLIENT: BP America Production Co.

DRILLING CONTRACTOR: BLAGG/CROSSFIRE

EQUIPMENT USED: HAND AUGER

DATE START: 6/12/2012 DATE FINISH: 6/12/12 DRILLER: — LOGGED BY: JB

TOTAL DEPTH: 7 1/2' CASING TYPE & SIZE: — SLOT SIZE: —

COMMENTS:

DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	FIELD QUM		SAMPLE DESCRIPTION
1'	0935 START	Auger		Lab TPH (mg/Kg)	SAND, Medium Grained, TAN, MOIST, NO/NS
2'					
3'					
4'					
5'					SAA, Increased Moisture @ 5 1/2'
6'					
7'	0951		1.1	ND	SAA
8'					Refusal @ 7 1/2' (Possible Sandstone)
9'					
10'					
11'					
12'					
13'					
14'					
15'					
16'					
17'					
18'					
19'					
20'					
21'					
22'					
23'					
24'					
25'					
26'					
27'					
28'					
29'					
30'					

BLAGG ENGINEERING, INC.

P.O. BOX 87, BLOOMFIELD, NM 87413

(505) 632-1199

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FIELD BORING LOG

BORING ID: HA-3

PROJECT: GCU 307 SWP

CLIENT: BP America Production Co.

DRILLING CONTRACTOR: BLAGG / CROSSFIRE

EQUIPMENT USED: HAND AUGER

DATE START: 6/12/2018

DATE FINISH: 6/12/18

DRILLER: —

LOGGED BY: JCB

TOTAL DEPTH: 14'

CASING TYPE & SIZE: —

SLOT SIZE: —

COMMENTS:

DEPTH FEET	SAMPLE TIME	SAMPLE TYPE		SAMPLE DESCRIPTION
1'	1001 START	Auger	Lab TPH (mg/Kg)	ROAD BASE & Gravel 0'-1'
2'				MEDIUM SAND, TAN, LITE MOISTURE, NO/NS
3'				Increased moisture @ 3'
4'		Field OVM		
5'				
6'				
7'	1010	1.6	ND	SAA
8'				
9'				
10'				
11'				
12'	1023	1.2	ND	SAA
13'				AT 13' HIT V. Moist Rounded Pebbles/sand
14'	1047			Refusal @ 14'
15'				NO/NS
16'				
17'				
18'				
19'				
20'				
21'				
22'				
23'				
24'				
25'				
26'				
27'				
28'				
29'				
30'				

BLAGG ENGINEERING, INC.

P.O. BOX 87, BLOOMFIELD, NM 87413

(505) 632-1199

Page 1 of 1

FIELD BORING LOG

BORING ID: HA-4

PROJECT: GCV 307 SWP

CLIENT: BP America Production Co.

DRILLING CONTRACTOR: BLAGG / CROSSFIRE

EQUIPMENT USED: Hand Auger

DATE START: 6/12/2018 DATE FINISH: 6/12/18 DRILLER: - LOGGED BY: JB

TOTAL DEPTH: 19' CASING TYPE & SIZE: - SLOT SIZE: -

COMMENTS:

DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	Field OVM		SAMPLE DESCRIPTION
1'	1050 START	Auger		Lab TPH (mg/Kg)	Medium Grained Sand, TAN, Lite Moisture, NO/NS
2'					
3'					
4'					
5'					
6'					
7'	1059		2.3		SAA
8'					
9'					
10'					Increased Moisture @ 10'
11'					
12'	1107		2.4	ND	SAA
13'					MINOR Rounded Pea Pebbles 13½' - 14½'
14'					medium Sand, TAN, Moist, NO/NS
15'					
16'					
17'	1138		2.7		SAA, v. minor Rounded Pebbles.
18'					
19'	1211		1.9	ND	SAA
20'					
21'					
22'					
23'					
24'					
25'					
26'					
27'					
28'					
29'					
30'					

BLAGG ENGINEERING, INC.

P.O. BOX 87, BLOOMFIELD, NM 87413

(505) 632-1199

Page 1 of 1

FIELD BORING LOG

BORING ID: HA-5

PROJECT: GCU 307 SWD

CLIENT: BP America Production Co.

DRILLING CONTRACTOR: BLAGG / CRUISE

EQUIPMENT USED: HAND AUGER

DATE START: 6/12/2012 DATE FINISH: 6/12/12 DRILLER: — LOGGED BY: JB

TOTAL DEPTH: 16 CASING TYPE & SIZE: — SLOT SIZE: —

COMMENTS:

DEPTH FEET	SAMPLE TIME	SAMPLE TYPE	Field QUM	Lab TPH (mg/Kg)	SAMPLE DESCRIPTION
1'	1212	Auger			Medium SAND, TAN, lite moisture, NO/US
2'	start				
3'					
4'					
5'					N. MOIST @ 5'
6'					
7'	1221		1.3	ND	SAA, except moist to saturated, NO/US
8'					
9'					
10'					
11'					
12'	1233		0.7		SAA
13'					
14'					
15'					
16'	1241		0.5	ND	SAA, with small/medium rounded pebbles
17'					Refusal on pebbles
18'					
19'					
20'					
21'					
22'					
23'					
24'					
25'					
26'					
27'					
28'					
29'					
30'					

Laboratory Reports

(Original BGT Closure)



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

March 28, 2018

Erin Garifalos
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX (505) 632-3903

RE: GCU 307 SWD

OrderNo.: 1803D90

Dear Erin Garifalos:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/27/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, reading "John Caldwell", is enclosed within a thin black rectangular border.

John Caldwell
Supervisor
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1803D90

Date Reported: 3/28/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Project:** GCU 307 SWD**Lab ID:** 1803D90-001**Matrix:** SOIL**Client Sample ID:** 45 BGT 5-pt @ 5'**Collection Date:** 3/26/2018 12:35:00 PM**Received Date:** 3/27/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	290	30		mg/Kg	20	3/27/2018 11:53:16 AM	37258
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	3/27/2018 12:24:45 PM	R50102
Surr: BFB	114	70-130		%Rec	1	3/27/2018 12:24:45 PM	R50102
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	23	9.5		mg/Kg	1	3/27/2018 9:52:29 AM	37252
Motor Oil Range Organics (MRO)	220	48		mg/Kg	1	3/27/2018 9:52:29 AM	37252
Surr: DNOP	103	70-130		%Rec	1	3/27/2018 9:52:29 AM	37252
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.017		mg/Kg	1	3/27/2018 12:24:45 PM	S50102
Toluene	ND	0.035		mg/Kg	1	3/27/2018 12:24:45 PM	S50102
Ethylbenzene	ND	0.035		mg/Kg	1	3/27/2018 12:24:45 PM	S50102
Xylenes, Total	ND	0.069		mg/Kg	1	3/27/2018 12:24:45 PM	S50102
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	3/27/2018 12:24:45 PM	S50102
Surr: Toluene-d8	87.4	70-130		%Rec	1	3/27/2018 12:24:45 PM	S50102

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803D90

28-Mar-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	MB-37258		SampType:	mbk		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS		Batch ID:	37258		RunNo:	50104				
Prep Date:	3/27/2018		Analysis Date:	3/27/2018		SeqNo:	1623718		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	LCS-37258		SampType:	lcs		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS		Batch ID:	37258		RunNo:	50104				
Prep Date:	3/27/2018		Analysis Date:	3/27/2018		SeqNo:	1623719		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	95.1	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#: 1803D90

28-Mar-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	LCS-37252		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	37252		RunNo:	50087				
Prep Date:	3/27/2018		Analysis Date:	3/27/2018		SeqNo:	1622167		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
I Range Organics (DRO)	49	10	50.00	0	97.5	70	130				
Surr: DNOP	4.7		5.000		94.7	70	130				

Sample ID	MB-37252		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	37252		RunNo:	50087				
Prep Date:	3/27/2018		Analysis Date:	3/27/2018		SeqNo:	1622168		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
I Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	9.9		10.00		98.6	70	130				

Sample ID	MB-37242		SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 37242		RunNo: 50089					
Prep Date:	3/26/2018		Analysis Date: 3/27/2018		SeqNo: 1622213		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		104	70	130			

Sample ID	LCS-37242		SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 37242		RunNo: 50089					
Prep Date:	3/26/2018		Analysis Date: 3/27/2018		SeqNo: 1622215		Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		97.8	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
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#: 1803D90

28-Mar-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	100ng lcs	SampType:	LCS4	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	BatchQC	Batch ID:	S50102	RunNo:	50102					
Prep Date:		Analysis Date:	3/27/2018	SeqNo:	1622481	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	80	120			
Toluene	0.98	0.050	1.000	0	98.3	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.7	80	120			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.0	70	130			
Surr: Toluene-d8	0.49		0.5000		98.4	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	S50102	RunNo:	50102					
Prep Date:		Analysis Date:	3/27/2018	SeqNo:	1622489	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.52		0.5000		105	70	130			
Surr: Toluene-d8	0.46		0.5000		92.5	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
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#: 1803D90

28-Mar-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	2.5ug gro lcs	SampType: LCS			TestCode: EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID: R50102			RunNo: 50102					
Prep Date:		Analysis Date: 3/27/2018			SeqNo: 1622473		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	97.9	70	130			
Surr: BFB	480		500.0		95.2	70	130			

Sample ID	rb	SampType: MBLK			TestCode: EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID: R50102			RunNo: 50102					
Prep Date:		Analysis Date: 3/27/2018			SeqNo: 1622474		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	520		500.0		104	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
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: 1803D90

RcptNo: 1

Received By: Anne Thorne

3/27/2018 7:50:00 AM

Anne Thorne

Completed By: Anne Thorne

3/27/2018 8:18:52 AM

Anne Thorne

Reviewed By: DDS

3/27/18

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

Special Handling (if applicable)

15. 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:	_____		

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record		Turn-Around Time: SAME DAY
Client: BLAGG ENGR. / BP AMERICA	<input type="checkbox"/> Standard	<input checked="" type="checkbox"/> Rush
Mailing Address: P.O. BOX 87	Project Name: GCU 307 SWD	
BLOOMFIELD, NM 87413	Project #:	
Phone #: (505) 632-1199	Project Manager: ERIN GARIFALOS	
email or Fax#:	Sampler: JEFF BLAGG	
QA/QC Package: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)	On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Accreditation: <input type="checkbox"/> NELAP <input type="checkbox"/> Other	Sample Temperature: 1/5	
<input type="checkbox"/> EDD (Type)		

**SAME
DAY**

☒ Rush

Project Name:

GCU 307 SWD

Project #:

Project Manager:

ERIN GARIFALOS

Sampler: JEFF Burt

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

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)
	8081 Pesticides / 8082 PCB's
	8260B (VOA)
	8270 (Semi-VOA)
✓	Chloride (soil - 300.0 / water - 300.1)
	Grab sample
✓	5 pt. composite sample
	Air Rubbles (Y or N)

Remarks:	<u>BILL DIRECTLY TO BP USING THE CONTACT WITH CORRESPONDING VID</u> <u>& REFERENCE # WHEN APPLICABLE;</u> CONTACT: ERIN GARIFALOS / VANCE HIXON VID: VHIXONEVB2
Reference #	<u>P - 952</u>

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.

Laboratory Reports

(Hand Auger Investigation)



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

July 03, 2018

Steven Moskal
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 632-1199
FAX (505) 632-3903

RE: GCU 307 SWD

OrderNo.: 1806833

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 9 sample(s) on 6/14/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical ReportLab Order **1806833**

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** HA-1@7**Project:** GCU 307 SWD**Collection Date:** 6/12/2018 9:18:00 AM**Lab ID:** 1806833-001**Matrix:** SOIL**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	1100	30		mg/Kg	20	6/26/2018 12:59:55 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	6/19/2018 3:40:06 PM	38734
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	6/19/2018 3:40:06 PM	38734
Surr: DNOP	106	70-130		%Rec	1	6/19/2018 3:40:06 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/18/2018 12:12:10 PM	38709
Surr: BFB	83.0	15-316		%Rec	1	6/18/2018 12:12:10 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	6/18/2018 12:12:10 PM	38709
Toluene	ND	0.048		mg/Kg	1	6/18/2018 12:12:10 PM	38709
Ethylbenzene	ND	0.048		mg/Kg	1	6/18/2018 12:12:10 PM	38709
Xylenes, Total	ND	0.097		mg/Kg	1	6/18/2018 12:12:10 PM	38709
Surr: 4-Bromofluorobenzene	96.0	80-120		%Rec	1	6/18/2018 12:12:10 PM	38709

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 1806833

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** HA-1@9 1/2**Project:** GCU 307 SWD**Collection Date:** 6/12/2018 9:33:00 AM**Lab ID:** 1806833-002**Matrix:** SOIL**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	640	30		mg/Kg	20	6/26/2018 1:12:19 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/19/2018 4:46:54 PM	38734
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/19/2018 4:46:54 PM	38734
Surr: DNOP	108	70-130		%Rec	1	6/19/2018 4:46:54 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/18/2018 1:21:46 PM	38709
Surr: BFB	80.8	15-316		%Rec	1	6/18/2018 1:21:46 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	6/18/2018 1:21:46 PM	38709
Toluene	ND	0.050		mg/Kg	1	6/18/2018 1:21:46 PM	38709
Ethylbenzene	ND	0.050		mg/Kg	1	6/18/2018 1:21:46 PM	38709
Xylenes, Total	ND	0.099		mg/Kg	1	6/18/2018 1:21:46 PM	38709
Surr: 4-Bromofluorobenzene	92.9	80-120		%Rec	1	6/18/2018 1:21:46 PM	38709

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.

CLIENT: Blagg Engineering

Client Sample ID: HA-2@7

Project: GCU 307 SWD

Collection Date: 6/12/2018 9:51:00 AM

Lab ID: 1806833-003

Matrix: SOIL

Received Date: 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	120	30		mg/Kg	20	6/26/2018 1:49:33 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/19/2018 5:08:59 PM	38734
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/19/2018 5:08:59 PM	38734
Surr: DNOP	108	70-130		%Rec	1	6/19/2018 5:08:59 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/18/2018 1:45:02 PM	38709
Surr: BFB	76.5	15-316		%Rec	1	6/18/2018 1:45:02 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	6/18/2018 1:45:02 PM	38709
Toluene	ND	0.048		mg/Kg	1	6/18/2018 1:45:02 PM	38709
Ethylbenzene	ND	0.048		mg/Kg	1	6/18/2018 1:45:02 PM	38709
Xylenes, Total	ND	0.097		mg/Kg	1	6/18/2018 1:45:02 PM	38709
Surr: 4-Bromofluorobenzene	98.6	80-120		%Rec	1	6/18/2018 1:45:02 PM	38709

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 1806833

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: HA-3@7

Project: GCU 307 SWD

Collection Date: 6/12/2018 10:10:00 AM

Lab ID: 1806833-004

Matrix: SOIL

Received Date: 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	130	30		mg/Kg	20	6/26/2018 2:01:58 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/19/2018 5:31:11 PM	38734
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/19/2018 5:31:11 PM	38734
Surr: DNOP	107	70-130		%Rec	1	6/19/2018 5:31:11 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/18/2018 2:08:24 PM	38709
Surr: BFB	77.6	15-316		%Rec	1	6/18/2018 2:08:24 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	6/18/2018 2:08:24 PM	38709
Toluene	ND	0.046		mg/Kg	1	6/18/2018 2:08:24 PM	38709
Ethylbenzene	ND	0.046		mg/Kg	1	6/18/2018 2:08:24 PM	38709
Xylenes, Total	ND	0.093		mg/Kg	1	6/18/2018 2:08:24 PM	38709
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	6/18/2018 2:08:24 PM	38709

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 1806833

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** HA-3@12**Project:** GCU 307 SWD**Collection Date:** 6/12/2018 10:23:00 AM**Lab ID:** 1806833-005**Matrix:** SOIL**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	370	30		mg/Kg	20	6/26/2018 2:14:23 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/19/2018 5:53:24 PM	38734
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/19/2018 5:53:24 PM	38734
Surr: DNOP	108	70-130		%Rec	1	6/19/2018 5:53:24 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2018 2:31:44 PM	38709
Surr: BFB	76.2	15-316		%Rec	1	6/18/2018 2:31:44 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	6/18/2018 2:31:44 PM	38709
Toluene	ND	0.049		mg/Kg	1	6/18/2018 2:31:44 PM	38709
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2018 2:31:44 PM	38709
Xylenes, Total	ND	0.097		mg/Kg	1	6/18/2018 2:31:44 PM	38709
Surr: 4-Bromofluorobenzene	97.5	80-120		%Rec	1	6/18/2018 2:31:44 PM	38709

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 1806833

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** HA-4@12**Project:** GCU 307 SWD**Collection Date:** 6/12/2018 11:07:00 AM**Lab ID:** 1806833-006**Matrix:** SOIL**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	1100	30		mg/Kg	20	6/26/2018 2:26:47 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	6/19/2018 6:15:52 PM	38734
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	6/19/2018 6:15:52 PM	38734
Surr: DNOP	110	70-130		%Rec	1	6/19/2018 6:15:52 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2018 2:55:07 PM	38709
Surr: BFB	77.0	15-316		%Rec	1	6/18/2018 2:55:07 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	6/18/2018 2:55:07 PM	38709
Toluene	ND	0.049		mg/Kg	1	6/18/2018 2:55:07 PM	38709
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2018 2:55:07 PM	38709
Xylenes, Total	ND	0.098		mg/Kg	1	6/18/2018 2:55:07 PM	38709
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	6/18/2018 2:55:07 PM	38709

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 1806833

Date Reported: 7/3/2018

CLIENT: Blagg Engineering**Client Sample ID:** HA-4@19**Project:** GCU 307 SWD**Collection Date:** 6/12/2018 12:11:00 PM**Lab ID:** 1806833-007**Matrix:** SOIL**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	430	30		mg/Kg	20	6/26/2018 2:39:12 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/19/2018 6:38:14 PM	38734
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/19/2018 6:38:14 PM	38734
Surr: DNOP	112	70-130		%Rec	1	6/19/2018 6:38:14 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2018 3:18:27 PM	38709
Surr: BFB	78.0	15-316		%Rec	1	6/18/2018 3:18:27 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	6/18/2018 3:18:27 PM	38709
Toluene	ND	0.049		mg/Kg	1	6/18/2018 3:18:27 PM	38709
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2018 3:18:27 PM	38709
Xylenes, Total	ND	0.099		mg/Kg	1	6/18/2018 3:18:27 PM	38709
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	6/18/2018 3:18:27 PM	38709

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 ReportLab Order **1806833**

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Client Sample ID:** HA-5@7**Project:** GCU 307 SWD**Collection Date:** 6/12/2018 12:21:00 PM**Lab ID:** 1806833-008**Matrix:** SOIL**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	1900	75		mg/Kg	50	6/27/2018 5:57:26 PM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/19/2018 7:00:39 PM	38734
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/19/2018 7:00:39 PM	38734
Surr: DNOP	102	70-130		%Rec	1	6/19/2018 7:00:39 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/18/2018 8:23:15 PM	38709
Surr: BFB	75.7	15-316		%Rec	1	6/18/2018 8:23:15 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	6/18/2018 8:23:15 PM	38709
Toluene	ND	0.049		mg/Kg	1	6/18/2018 8:23:15 PM	38709
Ethylbenzene	ND	0.049		mg/Kg	1	6/18/2018 8:23:15 PM	38709
Xylenes, Total	ND	0.098		mg/Kg	1	6/18/2018 8:23:15 PM	38709
Surr: 4-Bromofluorobenzene	95.3	80-120		%Rec	1	6/18/2018 8:23:15 PM	38709

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 1806833

Date Reported: 7/3/2018

Hall Environmental Analysis Laboratory, Inc.**CLIENT:** Blagg Engineering**Project:** GCU 307 SWD**Lab ID:** 1806833-009**Matrix:** SOIL**Client Sample ID:** HA-5@16**Collection Date:** 6/12/2018 12:41:00 PM**Received Date:** 6/14/2018 8:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: JRR
Chloride	930	30		mg/Kg	20	6/26/2018 3:04:01 AM	38879
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	6/19/2018 7:22:53 PM	38734
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	6/19/2018 7:22:53 PM	38734
Surr: DNOP	105	70-130		%Rec	1	6/19/2018 7:22:53 PM	38734
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/18/2018 8:46:36 PM	38709
Surr: BFB	74.1	15-316		%Rec	1	6/18/2018 8:46:36 PM	38709
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	6/18/2018 8:46:36 PM	38709
Toluene	ND	0.048		mg/Kg	1	6/18/2018 8:46:36 PM	38709
Ethylbenzene	ND	0.048		mg/Kg	1	6/18/2018 8:46:36 PM	38709
Xylenes, Total	ND	0.096		mg/Kg	1	6/18/2018 8:46:36 PM	38709
Surr: 4-Bromofluorobenzene	95.5	80-120		%Rec	1	6/18/2018 8:46:36 PM	38709

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806833

03-Jul-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	MB-38879	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	38879	RunNo:	52237					
Prep Date:	6/25/2018	Analysis Date:	6/25/2018	SeqNo:	1711692	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-38879	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	38879	RunNo:	52237					
Prep Date:	6/25/2018	Analysis Date:	6/25/2018	SeqNo:	1711693	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	90	110			

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#: 1806833

03-Jul-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	LCS-38734		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	38734		RunNo:	52071				
Prep Date:	6/18/2018		Analysis Date:	6/19/2018		SeqNo:	1704501		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
I Range Organics (DRO)	46	10	50.00	0	92.8	70	130				
Surr: DNOP	5.1		5.000		101	70	130				

Sample ID	MB-38734	SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS	Batch ID:	38734		RunNo:	52071				
Prep Date:	6/18/2018	Analysis Date:	6/19/2018		SeqNo:	1704502	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
I Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		105	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#: 1806833

03-Jul-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	MB-38709	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	38709	RunNo:	52047					
Prep Date:	6/15/2018	Analysis Date:	6/18/2018	SeqNo:	1702941	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	840		1000		83.7	15	316			

Sample ID	LCS-38709	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	38709	RunNo:	52047					
Prep Date:	6/15/2018	Analysis Date:	6/18/2018	SeqNo:	1702942	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	110	75.9	131			
Surr: BFB	1000		1000		99.9	15	316			

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#: 1806833

03-Jul-18

Client: Blagg Engineering

Project: GCU 307 SWD

Sample ID	MB-38709		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 38709		RunNo: 52047					
Prep Date:	6/15/2018		Analysis Date: 6/18/2018		SeqNo: 1703010		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.8	80	120			

Sample ID	LCS-38709		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 38709		RunNo: 52047					
Prep Date:	6/15/2018		Analysis Date: 6/18/2018		SeqNo: 1703013		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.4	77.3	128			
Toluene	0.98	0.050	1.000	0	98.2	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	97.7	81.6	129			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.0	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: 1806833

RcptNo: 1

Received By: Isaiah Ortiz 6/14/2018 8:20:00 AM

Completed By: Isaiah Ortiz 6/14/2018 8:53:57 AM

Reviewed By:

Labeled By: ENM 6/14/18

IO

IO

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
for pH: _____
(≤ 2 or >12 unless noted)
Adjusted? _____
Checked by: _____

Special Handling (if applicable)

15. 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:			

16. Additional remarks:

17. Cooler Information

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

Chain-of-Custody Record		Turn-Around Time:
Client: BP AMERICA	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush _____
BLAG ENGINEERING INC.	Project Name:	
Mailing Address:	GCU 307 SWD	
	Project #:	
Phone #: 505-320-1193		
email or Fax#:	Project Manager:	
QA/QC Package:	STEVE MOSKAL	
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)	
Accreditation	Sampler: JEFF BLAGG	
<input 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: 20-10 (C) 10	

Turn-Around Time:

☒ Standard ☐ Rush

Project Name:

GCU 307 SWD

Project #:

Project Manager:

STEVE MOSKAL

Sampler: **JEFF BLAGG**

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.0-1.0 (CF) 1.0



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

	X	BTEX + MTBE MB's (8021)
		BTEX + MTBE + TPH (Gas only)
	X	TPH 8015B (GRO / DRO / MRO)
		TPH (Method 418.1)
		EDB (Method 504.1)
		PAH's (8310 or 8270 SIMS)
		RCRA 8 Metals
		Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)
		8081 Pesticides / 8082 PCB's
		8260B (VOA)
		8270 (Semi-VOA)
	X	C-HLORIDE
		Air Bubbles (Y or N)

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/13/2018	1144	Jeff Blagg	Chet Whit	6/13/2018	1144
Date:	Time:	Relinquished by:	Received by:	Date	Time
6/13/18	1830	Martin Walters	Courier IQS	6/14/18	820

Remarks: Bill BP
CONTACT: Steven.MOSKAL@BPX.COM
WBS ELEMENT: L1-001CT-E:6CW307SWD

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.