

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

Form C-141  
Revised August 8, 2011

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

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: 200 Energy Court, Farmington, NM 87401	Telephone No.: 505-326-9497
Facility Name: Gallegos Canyon Unit 196E	Facility Type: Natural gas well

Surface Owner: Fee	Mineral Owner: Fee	API No. 3004524254
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: San Juan
D	19	28N	12W	950	North	950	West	

Latitude 36.65237° Longitude -108.15838°

**NATURE OF RELEASE**

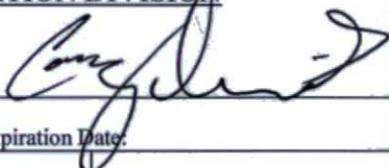
Type of Release: produced water	Volume of Release: 44.1 bbl	Volume Recovered: none
Source of Release: Failed sidewall of BGT	Date and Hour of Occurrence: Beginning March 9, 2016	Date and Hour of Discovery: June 1, 2016 2:30 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? Vanessa Fields	<b>OIL CONS. DIV DIST. 3</b> <b>SEP 30 2016</b>
By Whom? Steve Moskal	Date and Hour: 6/2/2016 @ 9:05 AM	
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.\* Internal corrosion of below grade tank resulted in the release of produced water; above the ground surface. The well had been worked-over and placed back on line on March 9<sup>th</sup>, 2016. BP assumed all fluids collected from this date to the date of discovery were discharged from the tank.

Describe Area Affected and Cleanup Action Taken.\* The fluid was removed from the tank. BP proposed to remediate impacted soils through soil shredding as detailed in the approved remediation plan. Approximately 900 cubic yards of soil was processed and treated with hydrogen peroxide. The lateral extents of the excavation were determined. The base of the excavation encountered competent sandstone where reasonable excavation was not achievable. Approximately 450 gallons of hydrogen peroxide solution was applied. Treated soils were below the site specific closure standard and were used for backfill material. BP requests no further action at the location.

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: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Steve Moskal	Approved by Environmental Specialist: 	
Title: Field Environmental Coordinator	Approval Date: 10/19/16	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval:	
Date: September 30, 2016	Phone: 505-326-9497	Attached <input type="checkbox"/>

\* Attach Additional Sheets If Necessary

#NMF 16154 35 824

50

**BP America**  
**GCU 196E**  
(D) Sec 19 – T28N – R12W  
San Juan County, New Mexico  
API: 30-045-24254

Summary Record of Impact Remediation

June 7, 2016 Impacts discovered during closure of a 95 barrel below grade tank (BGT). Composite sample of soils immediately below tank (5' below surface grade) tested total petroleum hydrocarbons (TPH) by U.S. EPA Method 8015 at 7,971 mg/Kg. Integrity of the BGT was found to be compromised with corrosion holes at the base of the tank and this was likely a source of the discovered impacts. It could not be determined if historical impacts may also have contributed impacts.

The site NMOCD closure standard was determined at 100 ppm TPH based on:

Horizontal Distance to Dry Wash < 200 feet (20 points)  
Nearest Water Well > 1,000 feet (0 points)  
Depth to Groundwater > 100 feet (0 points)

August 23, 2016 A site remediation plan was approved by NMOCD with concurrence from the private surface owner. The plan addressed lateral excavation of impacts until the site closure standards had been confirmed by laboratory testing, and vertical excavation until: (1) meeting site closure standards, or (2) excavation refusal due to dense sandstone. If refusal was encountered, the base of the excavation would be sprayed with hydrogen peroxide to mitigate residual impacts.

NMOCD and the private surface owner approved on-site shredding of excavated soils and treatment with hydrogen peroxide to chemically degrade hydrocarbons. Following treatment, soils would be laboratory tested to confirm residual impacts did not exceed 100 ppm TPH. Following successful treatment, the soils would then be placed back into the remedial excavation.

August 31, 2016 Begin site remediation via excavation of impacts with an excavator.

September 1, 2016 Conduct initial closure sampling of excavation sidewalls and base, with NMOCD witnessing. Excavation size approximately 45' x 30' x 13' average depth.

September 2, 2016 Receive rush lab results from initial sample event. North and east sidewalls test below site closure standards for all constituents. Base, south sidewall and west sidewall test above site closure standard for TPH only.

**Closure Sampling Test Results – September 1, 2016**

Sample ID	Date/Time	TPH 8015B (GRO+DRO+MRO) (mg/Kg)	Total BTEX 8021 (mg/Kg)	Chloride (mg/Kg)	Comments
Base 5-pt Composite	9/1/2016 @ 11:45	590	ND	310	Exceeds TPH standard
South Wall 5-pt Composite	9/1/2016 @ 11:52	880	ND	220	Exceeds TPH standard
West Wall 5-pt Composite	9/1/2016 @ 11:57	147	11	270	Exceeds TPH standard
East Wall 5-pt Composite	9/1/2016 @ 12:02	ND	ND	210	Passes standard
North Wall 5-pt Composite	9/1/2016 @ 12:08	ND	ND	ND	Passes standard
NMOCD Closure Standard	-----	100	50	500	-----

September 6, 2016 Conduct additional remedial excavation on south and west sidewalls. Conduct second round of closure sampling with NMOCD present. Excavation size approximately 45' x 44' x 14' average depth. Additionally, begin on-site soil shredding/hydrogen peroxide treatment on impacted soils.

September 7, 2016 Receive rush lab results from initial sample event. West and south sidewalls test below site closure standards for all constituents.

**Closure Sampling Test Results – September 6, 2016**

Sample ID	Date/Time	TPH 8015B (GRO+DRO+MRO) (mg/Kg)	Total BTEX 8021 (mg/Kg)	Chloride (mg/Kg)	Comments
Extended West Wall 5-pt Composite	9/6/2016 @ 14:13	ND	ND	ND	Passes standard
Extended South Wall 5-pt Composite	9/6/2016 @ 14:17	ND	ND	55	Passes standard
NMOCD Closure Standard	-----	100	50	500	-----

September 9, 2016 Shredded soils placed into 8 x 100 cubic yard (CY) piles and 1 x 97 CY pile (897 CY total) Conduct sampling of each pile with 5-point composites. NMOCD on site to observe sampling.

September 12, 2016 Receive rush lab results on treatment pile sampling. Piles No's 1-6 and No. 9 pass lab testing. Piles 7 and 8 fail.

September 13, 2016 Re-shred piles 7 and 8. Apply hydrogen peroxide treatment to base of open excavation and begin backfill with clean shredded soils.

September 14, 2016 Sample piles 7 and 8 with NMOCD on site to observe.

September 15, 2016 Receive rush lab results from pile sampling. Both piles 7 and 8 pass.

## Treated Soil Pile Test Results

September 9, 2016

Pile ID	Volume (CY)	Field OVM (ppm)	Stain	Odor	BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH MRO (mg/Kg)	TPH Total (mg/Kg)
TSP-1	100	18.9	No	No	ND	ND	51	ND	51
TSP-2	100	14.4	No	No	ND	ND	49	ND	49
TSP-3	100	14.6	No	No	ND	ND	40	ND	40
TSP-4	100	10.1	No	No	ND	ND	28	ND	28
TSP-5	100	19.2	No	No	ND	ND	32	ND	32
TSP-6	100	18.3	No	No	ND	ND	43	ND	43
TSP-7	100	64.4	No	Minor	ND	ND	220	120	340
TSP-8	100	34.2	No	No	ND	ND	150	100	250
TSP-9	97	35.2	No	No	ND	ND	49	ND	49

September 13, 2016

Pile ID	Volume (CY)	Field OVM (ppm)	Stain	Odor	BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH MRO (mg/Kg)	TPH Total (mg/Kg)
TSP-7	100	32.2	No	V Minor	--	--	--	--	--
TSP-8	100	23.9	No	No	--	--	--	--	--

Note: Piles TSP-7 and TSP-8 re-shredded following review of these field test results

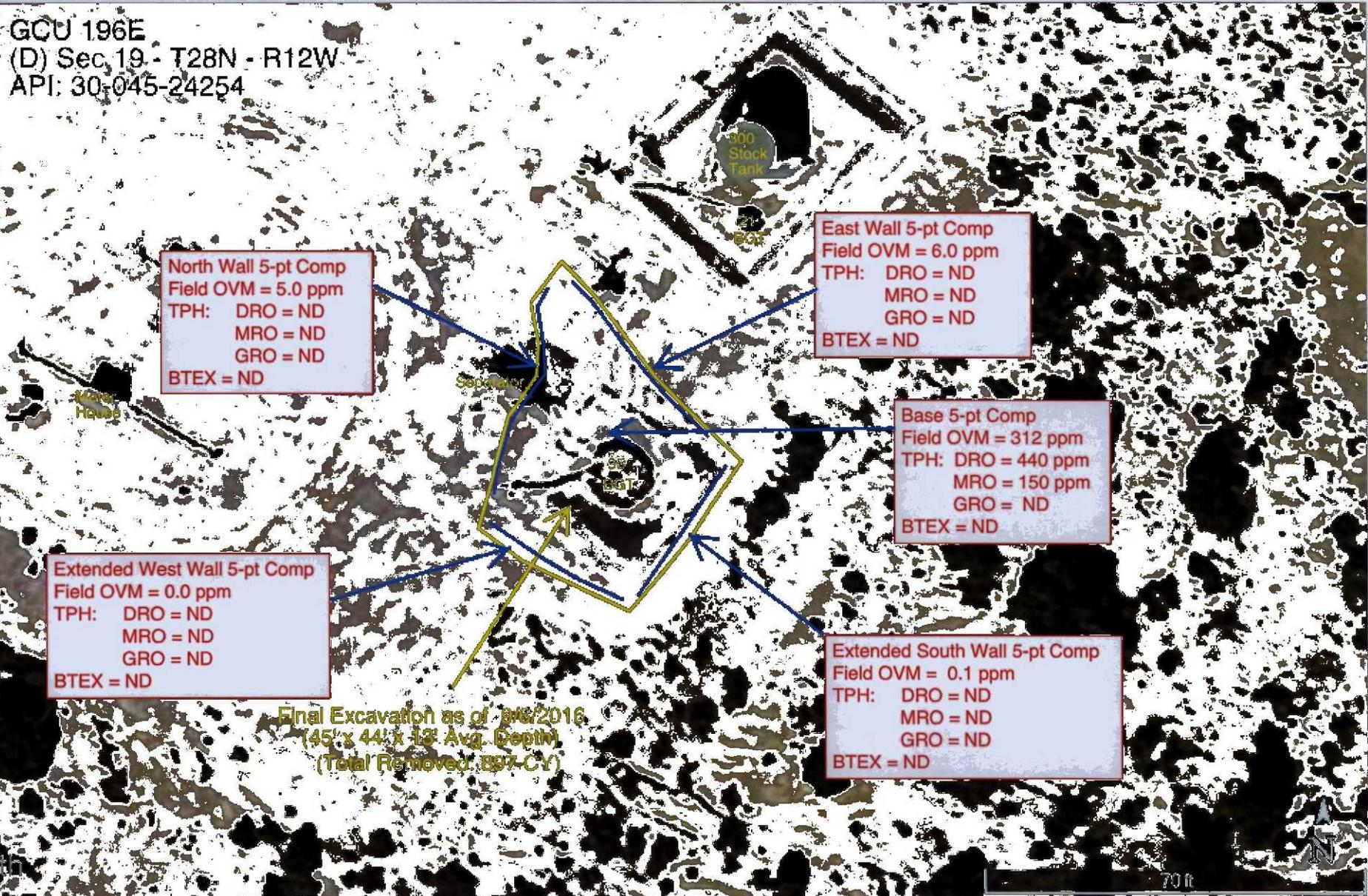
September 14, 2016

Pile ID	Volume (CY)	Field OVM (ppm)	Stain	Odor	BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH MRO (mg/Kg)	TPH Total (mg/Kg)
TSP-7R	100	23.5	No	No	NA	ND	59	ND	59
TSP-8R	100	23.2	No	No	NA	ND	46	ND	46

Note: BTEX not tested per approval of NMOCD based on prior test results of ND on all TSP's

September 16, 2016 Complete backfilling operations with clean shredded soils.

GCU 196E  
(D) Sec. 19 - T28N - R12W  
API: 30-045-24254





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

September 06, 2016

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

RE: GCU 196E

OrderNo.: 1609068

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 6 sample(s) on 9/2/2016 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](http://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, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



**Hall Environmental Analysis Laboratory, Inc.**

CLIENT: Blagg Engineering

Client Sample ID: South Wall 5-pt Comp

Project: GCU 196E

Collection Date: 9/1/2016 11:52:00 AM

Lab ID: 1609068-002

Matrix: SOIL

Received Date: 9/2/2016 7:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	220	30		mg/Kg	20	9/2/2016 11:06:23 AM	27331
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	620	10		mg/Kg	1	9/2/2016 10:26:30 AM	27322
Motor Oil Range Organics (MRO)	260	50		mg/Kg	1	9/2/2016 10:26:30 AM	27322
Surr: DNOP	114	70-130		%Rec	1	9/2/2016 10:26:30 AM	27322
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	9/2/2016 10:33:26 AM	27312
Surr: BFB	101	68.3-144		%Rec	1	9/2/2016 10:33:26 AM	27312
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.020		mg/Kg	1	9/2/2016 10:33:26 AM	27312
Toluene	ND	0.041		mg/Kg	1	9/2/2016 10:33:26 AM	27312
Ethylbenzene	ND	0.041		mg/Kg	1	9/2/2016 10:33:26 AM	27312
Xylenes, Total	ND	0.081		mg/Kg	1	9/2/2016 10:33:26 AM	27312
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	9/2/2016 10:33:26 AM	27312

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

<b>Qualifiers:</b>	* 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



# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1609068

Date Reported: 9/6/2016

CLIENT: Blagg Engineering

Client Sample ID: East Wall 5-pt Comp

Project: GCU 196E

Collection Date: 9/1/2016 12:02:00 PM

Lab ID: 1609068-004

Matrix: SOIL

Received Date: 9/2/2016 7:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	210	30		mg/Kg	20	9/2/2016 11:31:12 AM	27331
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/2/2016 12:17:39 PM	27322
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/2/2016 12:17:39 PM	27322
Surr: DNOP	105	70-130		%Rec	1	9/2/2016 12:17:39 PM	27322
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	9/2/2016 11:20:27 AM	27312
Surr: BFB	88.1	68.3-144		%Rec	1	9/2/2016 11:20:27 AM	27312
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.021		mg/Kg	1	9/2/2016 11:20:27 AM	27312
Toluene	ND	0.043		mg/Kg	1	9/2/2016 11:20:27 AM	27312
Ethylbenzene	ND	0.043		mg/Kg	1	9/2/2016 11:20:27 AM	27312
Xylenes, Total	ND	0.086		mg/Kg	1	9/2/2016 11:20:27 AM	27312
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	9/2/2016 11:20:27 AM	27312

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

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
 Lab Order 1609068  
 Date Reported: 9/6/2016

CLIENT: Blagg Engineering  
 Project: GCU 196E  
 Lab ID: 1609068-005

Matrix: SOIL

Client Sample ID: North Wall 5-pt Comp  
 Collection Date: 9/1/2016 12:08:00 PM  
 Received Date: 9/2/2016 7:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	ND	30		mg/Kg	20	9/2/2016 11:43:36 AM	27331
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	9/2/2016 12:39:54 PM	27322
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/2/2016 12:39:54 PM	27322
Surr: DNOP	97.1	70-130		%Rec	1	9/2/2016 12:39:54 PM	27322
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	9/2/2016 11:43:56 AM	27312
Surr: BFB	85.3	68.3-144		%Rec	1	9/2/2016 11:43:56 AM	27312
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.020		mg/Kg	1	9/2/2016 11:43:56 AM	27312
Toluene	ND	0.041		mg/Kg	1	9/2/2016 11:43:56 AM	27312
Ethylbenzene	ND	0.041		mg/Kg	1	9/2/2016 11:43:56 AM	27312
Xylenes, Total	ND	0.081		mg/Kg	1	9/2/2016 11:43:56 AM	27312
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	9/2/2016 11:43:56 AM	27312

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



# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609068

06-Sep-16

Client: Blagg Engineering

Project: GCU 196E

Sample ID	MB-27331	SampType	MBLK	TestCode	EPA Method 300.0: Anions					
Client ID	PBS	Batch ID	27331	RunNo	36994					
Prep Date	9/2/2016	Analysis Date	9/2/2016	SeqNo	1146344	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-27331	SampType	LCS	TestCode	EPA Method 300.0: Anions					
Client ID	LCSS	Batch ID	27331	RunNo	36994					
Prep Date	9/2/2016	Analysis Date	9/2/2016	SeqNo	1146345	Units	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.3	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
- 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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609068

06-Sep-16

Client: Blagg Engineering

Project: GCU 196E

Sample ID	LCS-27322	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	27322	RunNo:	36957					
Prep Date:	9/2/2016	Analysis Date:	9/2/2016	SeqNo:	1145248	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.6	62.6	124			
Surr: DNOP	4.6		5.000		92.7	70	130			

Sample ID	MB-27322	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	27322	RunNo:	36957					
Prep Date:	9/2/2016	Analysis Date:	9/2/2016	SeqNo:	1145249	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.5	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
- 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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609068

06-Sep-16

Client: Blagg Engineering

Project: GCU 196E

Sample ID	<b>MB-27312</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>27312</b>	RunNo:	<b>36969</b>					
Prep Date:	<b>9/1/2016</b>	Analysis Date:	<b>9/2/2016</b>	SeqNo:	<b>1146035</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.7	68.3	144			

Sample ID	<b>LCS-27312</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>27312</b>	RunNo:	<b>36969</b>					
Prep Date:	<b>9/1/2016</b>	Analysis Date:	<b>9/2/2016</b>	SeqNo:	<b>1146036</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	80	120			
Surr: BFB	940		1000		94.3	68.3	144			

### 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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609068  
06-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID: <b>MB-27312</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>27312</b>	RunNo: <b>36969</b>								
Prep Date: <b>9/1/2016</b>	Analysis Date: <b>9/2/2016</b>	SeqNo: <b>1146076</b> Units: <b>mg/Kg</b>								
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	1.0		1.000		103	80	120			

Sample ID: <b>LCS-27312</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>27312</b>	RunNo: <b>36969</b>								
Prep Date: <b>9/1/2016</b>	Analysis Date: <b>9/2/2016</b>	SeqNo: <b>1146077</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	75.3	123			
Toluene	0.97	0.050	1.000	0	97.3	80	124			
Ethylbenzene	0.97	0.050	1.000	0	97.3	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.2	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	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: **1609068**

RcptNo: **1**

Received by/date: AS 09/02/16

Logged By: **Anne Thorne** 9/2/2016 7:05:00 AM

*Anne Thorne*

Completed By: **Anne Thorne** 9/2/2016

*Anne Thorne*

Reviewed By: **IO** 9/2/16

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

17. Additional remarks:

**18. Cooler Information**

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

# Chain-of-Custody Record

Client: **BP AMERICA**

Mailing Address: **BLAGG ENGINEERING INC.**

Phone #: **(505) 320-1183**

Email or Fax#:

A/QC Package:  
 Standard  Level 4 (Full Validation)

Accreditation:  
 NELAP  Other \_\_\_\_\_

EDD (Type):

Turn-Around Time: **ASAP SAME DAY**  
 Standard  Rush

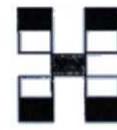
Project Name: **GCU 196E**

Project #:

Project Manager: **J. Blagg**

Sampler: **J. Blagg**  
 On Ice:  Yes  No

Sample Temperature: **1.5**



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MIRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE	Air Bubbles (Y or N)
2016	1145	SOIL	BASE 5-pt comp	4 oz x 1	COOL	201	X		X									X	
"	1152	"	SOUTH Wall 5-pt comp	"	"	202	X		X									X	
"	1157	"	West Wall 5-pt comp	"	"	203	X		X									X	
"	1202	"	EAST Wall 5-pt comp	"	"	204	X		X									X	
"	1208	"	NORTH Wall 5-pt comp	"	"	205	X		X									X	
"	1302	"	SPOILS PILE 10-pt	"	"	206			X										

Date: 2016 Time: 1450 Relinquished by: **J. Blagg**

Received by: **Christy Walker** Date: 9/1/16 Time: 1450

Remarks: **Bill BP CONTRACT: STEVE MOSKAL VID: VHIXONEVRM**

Date: 1/16 Time: 1815 Relinquished by: **Christy Walker**

Received by: **Christy Walker** Date: 09/12/16 Time: 0705

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



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September 08, 2016

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

RE: GCU 196E

OrderNo.: 1609193

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/7/2016 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](http://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, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Blagg Engineering **Client Sample ID:** Extended S Wall 5-pt Comp  
**Project:** GCU 196E **Collection Date:** 9/6/2016 2:17:00 PM  
**Lab ID:** 1609193-002 **Matrix:** SOIL **Received Date:** 9/7/2016 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	55	30		mg/Kg	20	9/7/2016 11:06:46 AM	27379
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/7/2016 10:35:49 AM	27368
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/7/2016 10:35:49 AM	27368
Surr: DNOP	113	70-130		%Rec	1	9/7/2016 10:35:49 AM	27368
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	9/7/2016 11:30:36 AM	27356
Surr: BFB	84.9	68.3-144		%Rec	1	9/7/2016 11:30:36 AM	27356
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.019		mg/Kg	1	9/7/2016 11:30:36 AM	27356
Toluene	ND	0.038		mg/Kg	1	9/7/2016 11:30:36 AM	27356
Ethylbenzene	ND	0.038		mg/Kg	1	9/7/2016 11:30:36 AM	27356
Xylenes, Total	ND	0.076		mg/Kg	1	9/7/2016 11:30:36 AM	27356
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	9/7/2016 11:30:36 AM	27356

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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609193

08-Sep-16

Client: Blagg Engineering

Project: GCU 196E

Sample ID	MB-27379	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	27379	RunNo:	37058					
Prep Date:	9/7/2016	Analysis Date:	9/7/2016	SeqNo:	1148828	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-27379	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	27379	RunNo:	37058					
Prep Date:	9/7/2016	Analysis Date:	9/7/2016	SeqNo:	1148829	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
- 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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609193

08-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID	LCS-27368		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	27368		RunNo:	37024				
Prep Date:	9/7/2016		Analysis Date:	9/7/2016		SeqNo:	1147691		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	44	10	50.00	0	88.9	62.6	124				
Surr: DNOP	5.0		5.000		100	70	130				

Sample ID	MB-27368		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	27368		RunNo:	37024				
Prep Date:	9/7/2016		Analysis Date:	9/7/2016		SeqNo:	1147692		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	11		10.00		113	70	130				

Sample ID	LCS-27347		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	27347		RunNo:	37025				
Prep Date:	9/6/2016		Analysis Date:	9/7/2016		SeqNo:	1147694		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.7		5.000		94.1	70	130				

Sample ID	MB-27347		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	27347		RunNo:	37025				
Prep Date:	9/6/2016		Analysis Date:	9/7/2016		SeqNo:	1147695		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	8.7		10.00		87.2	70	130				

Sample ID	LCS-27351		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	27351		RunNo:	37025				
Prep Date:	9/6/2016		Analysis Date:	9/7/2016		SeqNo:	1148382		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.4		5.000		88.3	70	130				

Sample ID	MB-27351		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	27351		RunNo:	37025				
Prep Date:	9/6/2016		Analysis Date:	9/7/2016		SeqNo:	1148383		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	8.3		10.00		82.7	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

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1609193

08-Sep-16

Client: Blagg Engineering

Project: GCU 196E

Sample ID	LCS-27356	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	27356	RunNo:	37033					
Prep Date:	9/6/2016	Analysis Date:	9/7/2016	SeqNo:	1148297	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	81.5	80	120			
Surr: BFB	950		1000		95.1	68.3	144			

Sample ID	MB-27356	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	27356	RunNo:	37033					
Prep Date:	9/6/2016	Analysis Date:	9/7/2016	SeqNo:	1148299	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	860		1000		86.5	68.3	144			

### 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

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1609193  
 08-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID	<b>LCS-27356</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>27356</b>	RunNo:	<b>37033</b>					
Prep Date:	<b>9/6/2016</b>	Analysis Date:	<b>9/7/2016</b>	SeqNo:	<b>1148359</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.025	1.000	0	79.4	75.3	123			
Toluene	0.91	0.050	1.000	0	90.7	80	124			
Ethylbenzene	0.98	0.050	1.000	0	98.1	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	98.0	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		111	80	120			

Sample ID	<b>MB-27356</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>27356</b>	RunNo:	<b>37033</b>					
Prep Date:	<b>9/6/2016</b>	Analysis Date:	<b>9/7/2016</b>	SeqNo:	<b>1148360</b>	Units:	<b>mg/Kg</b>			
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	1.0		1.000		105	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



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 Website: www.hallenvironmental.com

# Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1609193**

RcptNo: **1**

Received by/date: AT 09/07/16

Logged By: **Anne Thorne** 9/7/2016 7:10:00 AM *Anne Thorne*

Completed By: **Anne Thorne** 9/7/2016 *Anne Thorne*

Reviewed By: IO 9/07/16

**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? Yes  No   
(Note discrepancies on chain of custody)
- 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? Yes  No   
(If no, notify customer for authorization.)

# 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	1.5	Good	Yes			

# Chain-of-Custody Record

Turn-Around Time: **ASAP SAME DAY**  
 Standard  Rush

Client: **BP America**

Billing Address: **BLADE Engineering Inc.**

Project Name:

Project #: **GCW 196E**

Phone #: **505-320-1183**

Mail or Fax#:

Project Manager: **J. Blagg**

VQC Package:  
 Standard  Level 4 (Full Validation)

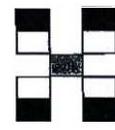
Sampler: **J. Blagg**

Creditation:  
 NELAP  Other \_\_\_\_\_

On Ice:  Yes  No

EDD (Type):

Sample Temperature: **25-10-15**



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TPH's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MIRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE	Air Bubbles (Y or N)
1/16	1413	Soil	Extended West wall 5-pt comp.	4oz x 1	CEL	1609193 201	X		X									X	
"	1417	"	Extended South wall 5-pt comp.	"	"	202	X		X									X	

Site: **2016** Time: **1821** Relinquished by: **Jeff Blagg**

Received by: **Pat Walt** Date: **9/6/16** Time: **1821**

Remarks: **Bill BP contact: Steve Makal VID: VHXONEVRM**

Site: **2/16** Time: **1901** Relinquished by: **Pat Walt**

Received by: **Chris Brown** Date: **09/07/16** Time: **0710**

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.



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

September 13, 2016

Jeff Blagg  
Blagg Engineering  
P. O. Box 87  
Bloomfield, NM 87413  
TEL:  
FAX

RE: GCU 196E

OrderNo.: 1609493

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 9 sample(s) on 9/10/2016 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](http://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, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Blagg Engineering  
**Project:** GCU 196E  
**Lab ID:** 1609493-001

**Client Sample ID:** TSP-1  
**Collection Date:** 9/9/2016 2:24:00 PM  
**Matrix:** MEOH (SOIL) **Received Date:** 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	81	30		mg/Kg	20	9/12/2016 11:07:57 AM	27452
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	51	10		mg/Kg	1	9/12/2016 11:34:16 AM	27432
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/12/2016 11:34:16 AM	27432
Surr: DNOP	103	70-130		%Rec	1	9/12/2016 11:34:16 AM	27432
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	9/12/2016 11:17:32 AM	27409
Surr: BFB	100	68.3-144		%Rec	1	9/12/2016 11:17:32 AM	27409
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.019		mg/Kg	1	9/12/2016 11:17:32 AM	27409
Toluene	ND	0.038		mg/Kg	1	9/12/2016 11:17:32 AM	27409
Ethylbenzene	ND	0.038		mg/Kg	1	9/12/2016 11:17:32 AM	27409
Xylenes, Total	ND	0.076		mg/Kg	1	9/12/2016 11:17:32 AM	27409
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	9/12/2016 11:17:32 AM	27409

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

<b>Qualifiers:</b>	* 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

**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Blagg Engineering  
**Project:** GCU 196E  
**Lab ID:** 1609493-002

**Client Sample ID:** TSP-2  
**Collection Date:** 9/9/2016 2:27:00 PM  
**Matrix:** MEOH (SOIL) **Received Date:** 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	80	30		mg/Kg	20	9/12/2016 11:20:22 AM	27452
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	49	9.6		mg/Kg	1	9/12/2016 11:56:06 AM	27432
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/12/2016 11:56:06 AM	27432
Surr: DNOP	106	70-130		%Rec	1	9/12/2016 11:56:06 AM	27432
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	9/12/2016 11:41:01 AM	27409
Surr: BFB	99.3	68.3-144		%Rec	1	9/12/2016 11:41:01 AM	27409
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.019		mg/Kg	1	9/12/2016 11:41:01 AM	27409
Toluene	ND	0.038		mg/Kg	1	9/12/2016 11:41:01 AM	27409
Ethylbenzene	ND	0.038		mg/Kg	1	9/12/2016 11:41:01 AM	27409
Xylenes, Total	ND	0.076		mg/Kg	1	9/12/2016 11:41:01 AM	27409
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	9/12/2016 11:41:01 AM	27409

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

<b>Qualifiers:</b>	* 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











**Hall Environmental Analysis Laboratory, Inc.**

**CLIENT:** Blagg Engineering **Client Sample ID:** TSP-8  
**Project:** GCU 196E **Collection Date:** 9/9/2016 3:12:00 PM  
**Lab ID:** 1609493-008 **Matrix:** MEOH (SOIL) **Received Date:** 9/10/2016 9:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LGT</b>
Chloride	120	30		mg/Kg	20	9/12/2016 1:12:03 PM	27452
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	150	9.5		mg/Kg	1	9/12/2016 2:06:05 PM	27432
Motor Oil Range Organics (MRO)	100	48		mg/Kg	1	9/12/2016 2:06:05 PM	27432
Surr: DNOP	99.7	70-130		%Rec	1	9/12/2016 2:06:05 PM	27432
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	9/12/2016 2:02:28 PM	27409
Surr: BFB	107	68.3-144		%Rec	1	9/12/2016 2:02:28 PM	27409
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.019		mg/Kg	1	9/12/2016 2:02:28 PM	27409
Toluene	ND	0.038		mg/Kg	1	9/12/2016 2:02:28 PM	27409
Ethylbenzene	ND	0.038		mg/Kg	1	9/12/2016 2:02:28 PM	27409
Xylenes, Total	ND	0.075		mg/Kg	1	9/12/2016 2:02:28 PM	27409
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	9/12/2016 2:02:28 PM	27409

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

<b>Qualifiers:</b>	* 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



**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1609493  
 13-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID <b>MB-27452</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>27452</b>	RunNo: <b>37147</b>								
Prep Date: <b>9/12/2016</b>	Analysis Date: <b>9/12/2016</b>	SeqNo: <b>1151980</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID <b>LCS-27452</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>27452</b>	RunNo: <b>37147</b>								
Prep Date: <b>9/12/2016</b>	Analysis Date: <b>9/12/2016</b>	SeqNo: <b>1151981</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	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
- 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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609493

13-Sep-16

Client: Blagg Engineering

Project: GCU 196E

Sample ID	<b>LCS-27432</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>27432</b>	RunNo:	<b>37115</b>					
Prep Date:	<b>9/12/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1150825</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	97.8	62.6	124			
Surr: DNOP	5.3		5.000		106	70	130			

Sample ID	<b>MB-27432</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>27432</b>	RunNo:	<b>37115</b>					
Prep Date:	<b>9/12/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1150826</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	70	130			

Sample ID	<b>1609493-001AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>TSP-1</b>	Batch ID:	<b>27432</b>	RunNo:	<b>37115</b>					
Prep Date:	<b>9/12/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1151156</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	91	9.8	49.07	51.14	80.8	33.9	141			
Surr: DNOP	4.8		4.907		98.5	70	130			

Sample ID	<b>1609493-001AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>TSP-1</b>	Batch ID:	<b>27432</b>	RunNo:	<b>37115</b>					
Prep Date:	<b>9/12/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1151157</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	95	9.7	48.36	51.14	90.0	33.9	141	4.17	20	
Surr: DNOP	5.0		4.836		104	70	130	0	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                                    |
| 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 |

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1609493  
 13-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID	<b>LCS-27409</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>27409</b>	RunNo:	<b>37124</b>					
Prep Date:	<b>9/9/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1152184</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	80	120			
Surr: BFB	970		1000		97.3	68.3	144			

Sample ID	<b>MB-27409</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015D: Gasoline Range</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>27409</b>	RunNo:	<b>37124</b>					
Prep Date:	<b>9/9/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1152185</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		89.1	68.3	144			

**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

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1609493  
 13-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID	<b>LCS-27409</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>27409</b>	RunNo:	<b>37124</b>					
Prep Date:	<b>9/9/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1152197</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.8	75.3	123			
Toluene	0.96	0.050	1.000	0	95.8	80	124			
Ethylbenzene	1.0	0.050	1.000	0	103	82.8	121			
Xylenes, Total	3.1	0.10	3.000	0	103	83.9	122			
Surr: 4-Bromofluorobenzene	1.2		1.000		119	80	120			

Sample ID	<b>MB-27409</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8021B: Volatiles</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>27409</b>	RunNo:	<b>37124</b>					
Prep Date:	<b>9/9/2016</b>	Analysis Date:	<b>9/12/2016</b>	SeqNo:	<b>1152198</b>	Units:	<b>mg/Kg</b>			
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	1.1		1.000		112	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: **1609493**

RcptNo: 1

Received by/date:

*AJ*

*09/10/16*

Logged By: **Ashley Gallegos**

9/10/2016 9:00:00 AM

*AJ*

Completed By: **Ashley Gallegos**

9/12/2016 7:46:17 AM

*AJ*

Reviewed By: *JC* *09/12/16*

### 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	1.1	Good	Yes			

# Chain-of-Custody Record

Turn-Around Time: **ASAP SAME DAY**

Standard  Rush

Project Name: **GCU 196E**

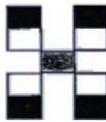
Project #:

Project Manager: **J. Blagg**

Sampler: **J. Blagg**

On Ice:  Yes  No

Sample Temperature: **1**



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: **BP AMERICA**

Company Name: **BLAGG ENGINEERING INC.**

Mailing Address:

Phone #: **(505) 320-1183**

Email or Fax#:

QC Package:  Standard  Level 4 (Full Validation)

Accreditation:  NELAP  Other

EDD (Type):

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBEs (8021)	BTEX + MTBE + TPH (Gas only)	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 <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE	Air Bubbles (Y or N)
9/10	1424	SOIL	TSP-1	4oz x 1	COOL	-001	X	X										X	
	1427	"	TSP-2	"	"	-002	X	X										X	
	1430	"	TSP-3	"	"	-003	X	X										X	
	1457	"	TSP-4	"	"	-004	X	X										X	
	1454	"	TSP-5	"	"	-005	X	X										X	
	1451	"	TSP-6	"	"	-006	X	X										X	
	1509	"	TSP-7	"	"	-007	X	X										X	
	1512	"	TSP-8	"	"	-008	X	X										X	
	1515	"	TSP-9	"	"	-009	X	X										X	

Date: 9/10 Time: 1710 Relinquished by: **Jeff Blagg** Received by: **Christine Waelen** Date: 9/9/10 Time: 1710

Date: 9/10 Time: 0900 Relinquished by: **Christine Waelen** Received by: **[Signature]** Date: 09/10/10 Time: 0900

Remarks: **BILL BP CONTACT: STEVE MOSKAL VID: VHIXONEVRM**

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  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

September 16, 2016

Jeff Blagg  
Blagg Engineering  
P. O. Box 87  
Bloomfield, NM 87413  
TEL:  
FAX

RE: GCU 196E

OrderNo.: 1609790

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/15/2016 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](http://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, appearing to read 'Andy Freeman', is written over a light blue horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report  
 Lab Order 1609790  
 Date Reported: 9/16/2016

CLIENT: Blagg Engineering  
 Project: GCU 196E  
 Lab ID: 1609790-001

Client Sample ID: TSP-7R  
 Collection Date: 9/14/2016 1:55:00 PM  
 Received Date: 9/15/2016 7:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	59	9.9		mg/Kg	1	9/15/2016 10:11:17 AM	27516
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/15/2016 10:11:17 AM	27516
Surr: DNOP	104	70-130		%Rec	1	9/15/2016 10:11:17 AM	27516
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/15/2016 10:53:17 AM	27505
Surr: BFB	91.1	68.3-144		%Rec	1	9/15/2016 10:53:17 AM	27505

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

**Hall Environmental Analysis Laboratory, Inc.**

**Analytical Report**  
 Lab Order 1609790  
 Date Reported: 9/16/2016

**CLIENT:** Blagg Engineering **Client Sample ID:** TSP-8R  
**Project:** GCU 196E **Collection Date:** 9/14/2016 1:58:00 PM  
**Lab ID:** 1609790-002 **Matrix:** MEOH (SOIL) **Received Date:** 9/15/2016 7:25:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>TOM</b>
Diesel Range Organics (DRO)	46	9.5		mg/Kg	1	9/15/2016 10:33:04 AM	27516
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/15/2016 10:33:04 AM	27516
Surr: DNOP	102	70-130		%Rec	1	9/15/2016 10:33:04 AM	27516
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	9/15/2016 11:16:47 AM	27505
Surr: BFB	85.9	68.3-144		%Rec	1	9/15/2016 11:16:47 AM	27505

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1609790

16-Sep-16

**Client:** Blagg Engineering

**Project:** GCU 196E

Sample ID	<b>LCS-27516</b>	SampType:	<b>LCS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>LCSS</b>	Batch ID:	<b>27516</b>	RunNo:	<b>37208</b>					
Prep Date:	<b>9/15/2016</b>	Analysis Date:	<b>9/15/2016</b>	SeqNo:	<b>1154867</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.3	62.6	124			
Surr: DNOP	4.6		5.000		92.1	70	130			

Sample ID	<b>MB-27516</b>	SampType:	<b>MBLK</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>PBS</b>	Batch ID:	<b>27516</b>	RunNo:	<b>37208</b>					
Prep Date:	<b>9/15/2016</b>	Analysis Date:	<b>9/15/2016</b>	SeqNo:	<b>1154868</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		95.6	70	130			

Sample ID	<b>1609790-001AMS</b>	SampType:	<b>MS</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>TSP-7R</b>	Batch ID:	<b>27516</b>	RunNo:	<b>37208</b>					
Prep Date:	<b>9/15/2016</b>	Analysis Date:	<b>9/15/2016</b>	SeqNo:	<b>1154970</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	9.8	49.16	59.42	88.5	33.9	141			
Surr: DNOP	5.2		4.916		106	70	130			

Sample ID	<b>1609790-001AMSD</b>	SampType:	<b>MSD</b>	TestCode:	<b>EPA Method 8015M/D: Diesel Range Organics</b>					
Client ID:	<b>TSP-7R</b>	Batch ID:	<b>27516</b>	RunNo:	<b>37208</b>					
Prep Date:	<b>9/15/2016</b>	Analysis Date:	<b>9/15/2016</b>	SeqNo:	<b>1154971</b>	Units:	<b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	100	9.4	47.21	59.42	91.2	33.9	141	0.461	20	
Surr: DNOP	5.0		4.721		107	70	130	0	0	

**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

**QC SUMMARY REPORT**  
**Hall Environmental Analysis Laboratory, Inc.**

WO#: 1609790  
 16-Sep-16

**Client:** Blagg Engineering  
**Project:** GCU 196E

Sample ID <b>MB-27505</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>27505</b>	RunNo: <b>37219</b>								
Prep Date: <b>9/14/2016</b>	Analysis Date: <b>9/15/2016</b>	SeqNo: <b>1155555</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	800		1000		79.7	68.3	144			

Sample ID <b>LCS-27505</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>27505</b>	RunNo: <b>37219</b>								
Prep Date: <b>9/14/2016</b>	Analysis Date: <b>9/15/2016</b>	SeqNo: <b>1155556</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.7	80	120			
Surr: BFB	860		1000		86.2	68.3	144			

**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: **1609790**

RcptNo: **1**

Received by/date: AG 09/15/16

Logged By: **Ashley Gallegos** 9/15/2016 7:25:00 AM AG

Completed By: **Ashley Gallegos** 9/15/2016 8:25:17 AM AG

Reviewed By: JC 09/15/16 09/15/16 JC

**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? Yes  No   
(Note discrepancies on chain of custody)
- 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? Yes  No   
(If no, notify customer for authorization.)

# 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:

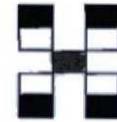
**18. Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

# Chain-of-Custody Record

Int: BP AMERICA  
 Billing Address: BLAGG ENGINEERING INC.  
 Phone #: 505-320-1193  
 Email or Fax#: \_\_\_\_\_  
 QC Package: \_\_\_\_\_  
 Standard  Level 4 (Full Validation)  
 Accreditation: \_\_\_\_\_  
 NELAP  Other \_\_\_\_\_  
 EDD (Type) \_\_\_\_\_

Turn-Around Time: ASAP SAME DAY  
 Standard  Rush  
 Project Name: GCW 196E  
 Project #: \_\_\_\_\_  
 Project Manager: J. Blagg  
 Sampler: J. Blagg  
 On Ice:  Yes  No  
 Sample Temperature: \_\_\_\_\_



## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

### Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	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 <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub> )	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)	
1/16/2016	1355	SOIL	TSP-7R	4oz x 1	cool	11097AD-001			X										
1/16/2016	1359	"	TSP-8R	"	"	-002			X										

Relinquished by: J. Blagg Date: 1/16/16 Time: 1140  
 Received by: [Signature]  
 Relinquished by: [Signature] Date: 09/15/16 Time: 0725  
 Received by: [Signature]  
 Remarks: Bill BP CONTACT: STEVE MOSKAL VID: VHXONEVRM

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.