NM2 - ___3_____

MONITORING REPORTS YEAR(S):

___2013 - 2014___

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

David Martin
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

David R. Catanach, Division Director
Oil Conservation Division

May 21, 2015

Jeff Peace
BP America Production Company
200 Energy Court
Farmington, New Mexico 87401

RE: 2014 Annual Vadose Zone Monitoring Report Reviews
BP America Production Company
Permit NM-2-003 Crouch Mesa Waste Management Facility
Location: Unit O of Section 2, Township 29 North, Range 12 West, NMPM
San Juan County, New Mexico

Dear Mr. Peace:

The Oil Conservation Division (OCD) has completed the review of BP America Production Company's (BP) 2014 Annual Vadose Zone Monitoring Report which includes the results from the following sampling events: 1st Quarter March 31, 2014; 2nd Quarter June 30, 2014; August 29, 2014 3rd Quarter; and November 7, 2014 4th Quarter. The review of the 2014 vadose zone (native soils beneath the biopiles) monitoring data has resulted in the discovery of some issues that must be addressed in order for BP to remain compliant with Permit NM2-003 and 19.15.36 NMAC (Part 36).

OCD has reviewed the administrative files for the facility and has been unable to locate the semi-annual treatment zone (soils to be remediated) monitoring required of 19.15.36.15.D NMAC. Pursuant to the transitional provisions of Part 36 (19.15.36.20.A NMAC), "Existing surface waste management facilities shall comply with the operational, waste acceptance and closure requirements provided in 19.15.36 NMAC, except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception or agreement that the division has granted in writing to the particular surface waste management facility." In accordance with 19.15.36.15.D NMAC, "The operator shall collect and analyze at least one composite soil sample, consisting of four discrete samples, from the treatment zone at least semi-annually using the methods specified below for TPH and chlorides." As underlined in the above reference of Subsection D of 19.15.36.15 NMAC, the "methods specified below for TPH and chlorides" are those identified in Subsection F of 19.15.36.15 NMAC: such as "TPH, as determined by EPA method 418.1 or other EPA method approved by the division..." OCD is willing to accept an equivalent method to EPA Method 418.1 that is capable of demonstrating a carbon range from C_6 to C_{36}. Please review OCD's letter dated June 30, 2011 and titled "*Compliance with the Transitional Provisions of the Surface Waste Management Facilities rule (Rule 36) and Treatment and Vadose Monitoring Requirements at Existing Landfarms*" for expectation of

compliance. If the sampling has occurred, please provide OCD copies of the laboratory results to demonstrate compliance. If not, please initiate the required sampling and submit the results.

In accordance with Paragraph (1) of 19.15.36.15.E NMAC, "The operator shall monitor the vadose zone beneath the treatment zone in each landfarm cell." Pursuant to Paragraph (3) of 19.15.36.15.E NMAC, "The operator shall collect and analyze a minimum of four randomly selected, independent samples from the vadose zone, using the methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC at least every five years and shall compare each result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred." OCD has reviewed the administrative file and has been unable to locate the five year vadose zone monitoring program demonstration. Part 36 became effective February 14, 2007. The five year sampling event has been due since March 2012, please complete the demonstration. As underlined in the above reference of Paragraph (3) of 19.15.36.15.E NMAC, the "methods specified below for the constituents listed in Subsections A and B of 20.6.2.3103 NMAC" are those identified in Subsection F of 19.15.36.15 NMAC: such as "determined by *EPA SW-846 methods 6010B or 6020* or other EPA method approved by the division..." Please perform the five year vadose zone monitoring program demonstration on all of the active landfarm cells and submit the sampling results and comparison to background and/or PQLs demonstrating compliance of Paragraph (3) of 19.15.36.15.E NMAC by EPA SW-846 methods 6010B or 6020.

In regards to utilizing the proper TPH test method for vadose zone monitoring, in accordance with Paragraph (2) of 19.15.36.15.E NMAC the operator shall analyze the samples from the vadose zone "using the methods specified below for TPH, BTEX and chlorides and shall compare each result to the higher of the PQL or the background soil concentrations to determine whether a release has occurred." The "methods specified below for TPH, BTEX and chlorides" are those identified in Subsection F of 19.15.36.15 NMAC: such as "TPH, as determined by *EPA method 418.1* or other EPA method approved by the division..." Pursuant to the Transitional Provisions of Subsection A of 19.15.36.20.NMAC, "Existing surface waste management facilities shall comply with the operational, waste acceptance and closure requirements provided in 19.15.36 NMAC, except as otherwise specifically provided in the applicable permit or order, or in a specific waiver, exception or agreement that the division has granted in writing to the particular surface waste management facility." The most common vadose zone monitoring (commonly referred to, but incorrectly as "Treatment Zone Monitoring" within existing landfarm permits) condition in an existing landfarm permit is as follows: "The soil samples must be analyzed using EPA-approved methods for total petroleum hydrocarbons (TPH) and volatile aromatic organics (BTEX) quarterly and for major cations/anions and heavy metals annually." The permit condition only identified the constituent and does not specify the test method. Part 36 specifies EPA Method 418.1 as the required vadose zone analyses for TPH. OCD is willing to accept an equivalent method to EPA Method 418.1 that is capable of demonstrating a carbon range from C_6 to C_{36} (e.g. Method 8015 for GRO/DRO/MRO or ORO). Please submit all future vadose zone sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method. Please review OCD's letter dated June 30, 2011 and titled "*Compliance with the Transitional Provisions of the Surface Waste Management Facilities rule (Rule 36) and Treatment and Vadose Monitoring Requirements at Existing Landfarms*" for expectation of compliance.

Pursuant to 19.15.36.15.E NMAC, the operator is required to compare the vadose results "to the higher of the PQL [Practical Quantitative Limit] or the background soil concentrations to determine whether a release has occurred." OCD's review of the administrative files for the facility resulted in the discovery of the initial facility background data set from January 1999, based upon the activation of Cell 5. The January 18, 1999 background data set provided results for the following 34 parameters: pH, conductivity, total dissolved solids, sodium absorption ratio, total alkalinity, total hardness, bicarbonate, carbonate, hydroxide, nitrates, nitrites, chloride, fluoride, phosphate, sulfate, iron, calcium, magnesium, potassium, sodium, arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, gasoline range organics (GRO), diesel range organics (DRO), benzene, toluene, ethyl benzene, and total xylene. The facility background data set is missing parameters to complete the current quarterly vadose zone monitoring assessment and the 5 year vadose zone monitoring assessment. The January 18, 1999 background data set is missing results for THP by EPA method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36} to complete the current quarterly vadose zone monitoring assessment and results for copper, iron, manganese, and zinc for the five year vadose zone monitoring assessment. Please establish background for TPH by 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36} and for the additional metals "determined by *EPA SW-846 methods 6010B or 6020* or other EPA method approved by the division..." Please provide OCD a demonstration to establish the facility background and/or PQLs. If statistics are used in the demonstration, please provide references from EPA statistical guidance documents to support proposed statistical methods.

OCD compared the January 1999 background data set to the 1st, 2nd, and 3rd quarter vadose zone monitoring results for DRO, GRO, BTEX, and chlorides. OCD determined that chloride was analyzed with a reporting limit of 30 mg/kg. The January 1999 background data set has an established chloride background of 1.6 mg/L, based upon detection. Please ensure that the laboratory's reporting limit does not exceed the established background and/or PQLs for all future vadose zone sampling events. Also, please submit all future vadose zone sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36}.

OCD compared the January 1999 background data set to the 4th quarter vadose zone monitoring results for DRO, GRO, BTEX, major cations/anions and RCRA 8 metals. OCD determined common exceedances to all cells for fluoride, sulfate, calcium, magnesium, potassium, and chromium. None of these exceedances were recognized in the assessment nor was a response action plan proposed or included with the submittal, as required of 19.15.36.15.E.(5) NMAC. The assessment provided in the report's cover letter stated "Analytical test results indicate the facility met standards with each sample event." If a different facility background data set was utilized for the assessment, please provide OCD a copy of the laboratory data set in order to establish an updated and revised facility background with OCD. If not, please demonstrate compliance to 19.15.36.15.E.(5) NMAC. Please ensure that the laboratory's reporting limit does not exceed the established background and/or PQLs for all future vadose zone sampling events. Also, please submit all future vadose zone sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36}.

In the last sentence of the second paragraph of the 2014 Annual Vadose Zone Monitoring Report cover letter, dated November 24, 2014, it states "Cell 5 is used for storage of remediated soils

from composting/landfarming operations." OCD has searched the administrative file (OCD Online) and has been unable to locate any requests from BP for the closure of any biopiles or approvals from OCD for a closure plan and/or closure of any biopiles. Please provide an explanation for the soils BP describes as "remediated." Also, please explain why the soils are stored in Cell 5 and what happens to the remediated soils when they are removed from Cell 5. Also, please provide copies of BP's requests and OCD approvals associated with the storage of "remediated" soils within Cell 5.

The first sentence of the third paragraph of the 2014 Annual Vadose Zone Monitoring Report cover letter, dated November 24, 2014, it states "Sampling protocol specifies collection of subsurface samples in each cell from the native ground surface below the treatment zone during the quarterly monitoring." The "sampling protocol" was provided in the submittal. Pursuant to the November 25, 1998 permit, the vadose zone "sample will be taken between two (2) to three (3) feet below the native ground surface. Please identify the depth in which sample are obtained on the laboratory chain of custody for all future vadose zone sampling events.

Please note that submittal of treatment zone monitoring results alone does not constitute a request for a successive/additional lift. Furthermore, the permit condition specifies "Authorization from the OCD must be obtained prior to application of successive lifts and/or removal of remediated soils." OCD requires such request to be made under a separate cover from other reporting and include the supporting analytical results and an updated facility map that illustrates and identifies the individual landfarm cells within the facility boundary and indicate the approximate location within the landfarm cells in which the samples were obtained.

Please provide OCD copies of the treatment zone (soils to be remediated) laboratory results to demonstrate compliance of the semi-annual sampling required of 19.15.36.15.D NMAC within 45 days of the date of this letter and/or initiate the required sampling and submit the results. Please ensure that THP is assessed by EPA method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36} for future demonstrations. Also, please submit all future vadose zone (native soils) sampling results demonstrating TPH by EPA Method 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36}. Please ensure that the laboratory's reporting limit does not exceed the established background and/or PQLs for all future vadose zone sampling events. Please establish background for TPH by 418.1 or an equivalent method capable of demonstrating a carbon range from C_6 to C_{36} and for the additional metals "determined by *EPA SW-846 methods 6010B or 6020* or other EPA method approved by the division..." within 60 days of the date of this letter. Please provide OCD a demonstration to establish the facility background within 60 days of the date of this letter. If statistics are used in the demonstration, please provide references from EPA statistical guidance documents to support proposed statistical methods. If the January 1999 background data set is the only background data for the comparison to determine whether a release has occurred in the vadose zone, please demonstrate compliance to 19.15.36.15.E.(5) NMAC by initiated the additional sampling for the landfarm cells that demonstrate exceedances in the November 7, 2014 4th Quarter vadose zone monitoring results and submit a response action plan within 90 days of the date of this letter. If a different facility background data set was utilized for the assessment, please provide OCD a copy of the laboratory data set in order to establish an updated and revised facility background with OCD. Please provide an explanation for the soils BP describes as "remediated" in Cell 5 within 30 days of the date of this letter. Also, please explain why the soils are stored in Cell 5 and what

happens to the remediated soils when they are removed from Cell 5 and provide OCD copies of BP's requests and OCD approvals associated with the storage of "remediated" soils within Cell 5 within 30 days of the date of this letter. Please identify the depth in which sample are obtained on the laboratory chain of custody for all future vadose zone sampling events.

OCD has implemented some new policies for submittals. For future submittals, please include a cover letter from the owner/operator, on the owner's/operator's company letterhead, that recognizes the owner/operator has reviewed the submittal, signed by the owner/operator. Also, please provide an updated facility map, for each individual sampling event, that identifies the individual landfarm cells within the facility boundary and indicate the approximate location within the landfarm cells in which the samples were obtained. If there are any questions regarding this matter, please do not hesitate to contact me at (505) 476-3487 or brad.a.jones@state.nm.us.

Sincerely,

Brad A. Jones
Environmental Engineer

BAJ/baj

cc: OCD District III Office, Aztec
Roxana Herrera, BP America Production Company, Houston, TX 77079
Jeffrey C. Blagg, Blagg Engineering, Inc. PO Box 87, Bloomfield, NM 87413

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

SENT VIA CERTIFIED MAIL
7012 1010 0002 1168 7432

RECEIVED OCD
2014 NOV 26 P 3:32

November 24, 2014

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: BP America Production Company
Crouch Mesa Waste Management Facility, Permit NM-02-003
Annual Report on Treatment Zone Monitoring

Dear Mr. Jones:

On behalf of BP America Production Company, Blagg Engineering, Inc. (BEI) is submitting the 2014 annual treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This report is for the December 1, 2013 through November 30, 2014 reporting period. Analytical test results (attached) indicate the facility met standards with each sample event.

The landfarm is presently configured into three (3) active cells, identified as Cell 1, Cell 2 and Cell 5 (Figure 1). The northeast portion of the facility (identified as 'unused cell') is used for equipment, materials and unused compost media storage only. Cell 5 is used for storage of remediated soils from composting/landfarming operations.

Sampling protocol specifies collection of subsurface samples in each cell from the native ground surface below the treatment zone during quarterly monitoring. Quarterly test procedures include total petroleum hydrocarbons (TPH), chloride and benzene, toluene, ethyl-benzene and xylenes (BTEX). Heavy metals and major cations/anions are to be collected for at least one quarterly sample event. During this reporting period, metals and cations/anions were tested on the November 7, 2014 sample event.

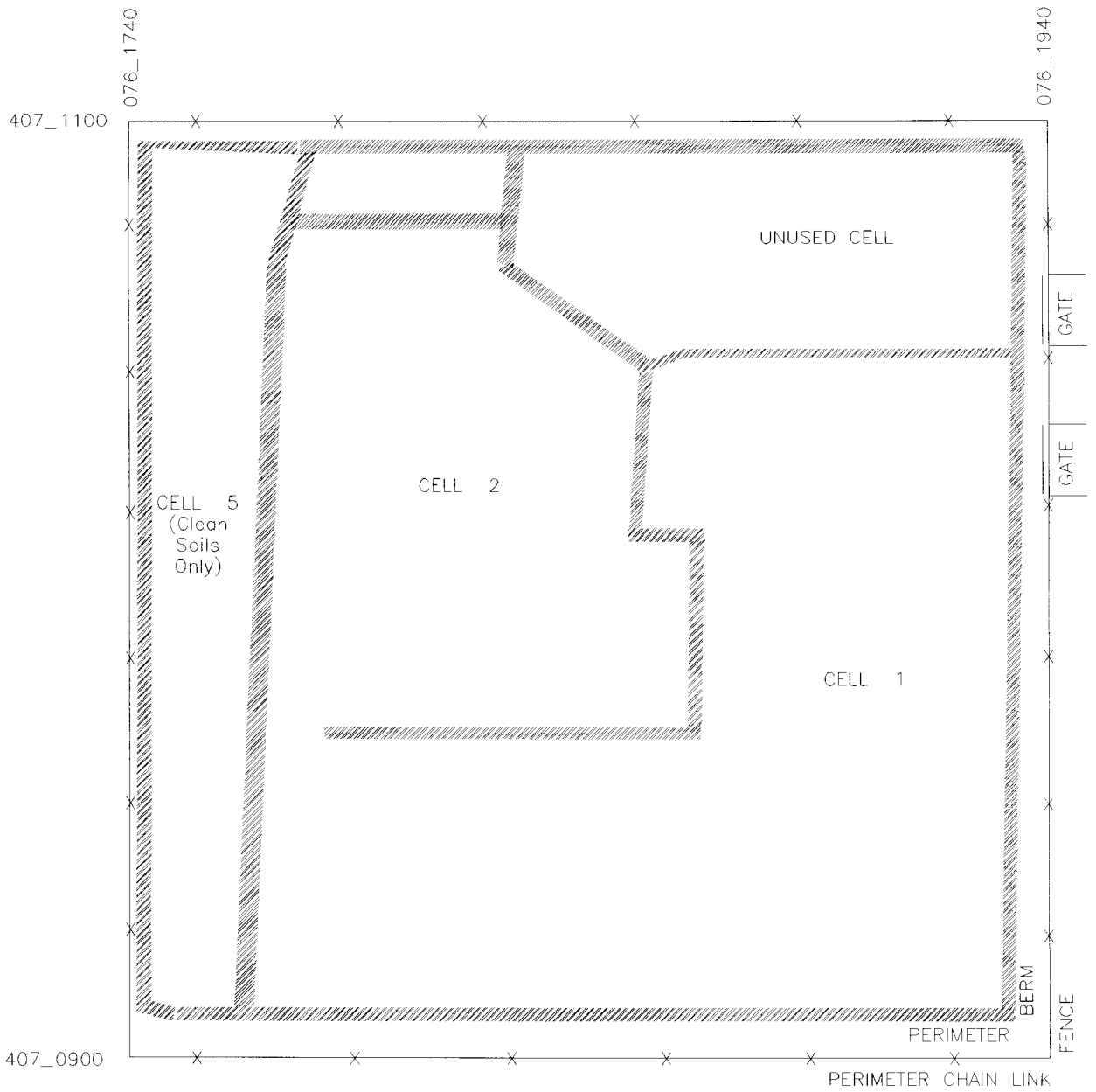
Questions or comments concerning the this transmittal may be directed to myself at (505)632-1199 or to Jeff Peace with BP at (505)326-9200.

Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg, P.E.
President

Attachments: Site Diagram
Soil Treatment Zone Monitoring Reports

cc: Brandon Powell, NMOCD Aztec District Office
Jeff Peace, BP San Juan Operations Center



LEGEND

6' TALL CHAIN LINK FENCE

SOIL BERM

N

0 200 400 FEET

BP AMERICA PRODUCTION CO.
CROUCH MESA WASTE MGMT FAC
SW/4 SE/4 SEC 2 T29N R12W
SAN JUAN CO., NEW MEXICO

NOVEMBER 2014

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

SITE SCHEMATIC

FIGURE 1	DRWN BY: JCB
CRMESA4	PROJ MGR: JCB

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

April 09, 2014

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa LF OrderNo.: 1404169

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/3/2014 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1404169**
Date Reported: **4/9/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF
Lab ID: 1404169-001
Matrix: SOIL
Client Sample ID: Cell 1
Collection Date: 3/31/2014 10:30:00 AM
Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/7/2014 5:38:00 PM	12535
Surr: DNOP	77.5	66-131		%REC	1	4/7/2014 5:38:00 PM	12535
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/4/2014 1:53:48 PM	12530
Surr: BFB	85.6	74.5-129		%REC	1	4/4/2014 1:53:48 PM	12530
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	4/4/2014 1:53:48 PM	12530
Toluene	ND	0.047		mg/Kg	1	4/4/2014 1:53:48 PM	12530
Ethylbenzene	ND	0.047		mg/Kg	1	4/4/2014 1:53:48 PM	12530
Xylenes, Total	ND	0.095		mg/Kg	1	4/4/2014 1:53:48 PM	12530
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	4/4/2014 1:53:48 PM	12530
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	4/7/2014 3:52:55 PM	12566

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 2
Project: Crouch Mesa LF
Collection Date: 3/31/2014 10:45:00 AM
Lab ID: 1404169-002
Matrix: SOIL
Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/7/2014 6:00:09 PM	12535
Surr: DNOP	74.0	66-131		%REC	1	4/7/2014 6:00:09 PM	12535
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/4/2014 3:19:43 PM	12530
Surr: BFB	85.4	74.5-129		%REC	1	4/4/2014 3:19:43 PM	12530
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	4/4/2014 3:19:43 PM	12530
Toluene	ND	0.049		mg/Kg	1	4/4/2014 3:19:43 PM	12530
Ethylbenzene	ND	0.049		mg/Kg	1	4/4/2014 3:19:43 PM	12530
Xylenes, Total	ND	0.097		mg/Kg	1	4/4/2014 3:19:43 PM	12530
Surr: 4-Bromofluorobenzene	99.6	80-120		%REC	1	4/4/2014 3:19:43 PM	12530
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	4/7/2014 4:05:20 PM	12566

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 5
Project: Crouch Mesa LF
Collection Date: 3/31/2014 11:00:00 AM
Lab ID: 1404169-003
Matrix: SOIL
Received Date: 4/3/2014 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/7/2014 6:22:15 PM	12535
Surr: DNOP	73.7	66-131		%REC	1	4/7/2014 6:22:15 PM	12535
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	4/4/2014 3:48:21 PM	12530
Surr: BFB	87.0	74.5-129		%REC	1	4/4/2014 3:48:21 PM	12530
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	4/4/2014 3:48:21 PM	12530
Toluene	ND	0.047		mg/Kg	1	4/4/2014 3:48:21 PM	12530
Ethylbenzene	ND	0.047		mg/Kg	1	4/4/2014 3:48:21 PM	12530
Xylenes, Total	ND	0.095		mg/Kg	1	4/4/2014 3:48:21 PM	12530
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	4/4/2014 3:48:21 PM	12530
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	30		mg/Kg	20	4/7/2014 4:17:44 PM	12566

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

WO#: **1404169**

Hall Environmental Analysis Laboratory, Inc.

09-Apr-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID	**MB-12566**	SampType: **MBLK**			TestCode: **EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID: **12566**			RunNo: **17852**					
Prep Date:	**4/7/2014**	Analysis Date: **4/7/2014**			SeqNo: **514796**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-12566**	SampType: **LCS**			TestCode: **EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID: **12566**			RunNo: **17852**					
Prep Date:	**4/7/2014**	Analysis Date: **4/7/2014**			SeqNo: **514797**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1404169**

09-Apr-14

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-12535**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **12535**	RunNo: **17817**
Prep Date: **4/3/2014**	Analysis Date: **4/7/2014**	SeqNo: **514212** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	7.3		10.00		72.6	66	131			

Sample ID **LCS-12535**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **12535**	RunNo: **17817**
Prep Date: **4/3/2014**	Analysis Date: **4/7/2014**	SeqNo: **514213** 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	87.9	60.8	145			
Surr: DNOP	3.6		5.000		73.0	66	131			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1404169**

09-Apr-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**						
Client ID: **PBS**	Batch ID: **R17799**	RunNo: **17799**						
Prep Date:	Analysis Date: **4/4/2014**	SeqNo: **513541**	Units: **%REC**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		99.2	74.5	129			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**						
Client ID: **LCSS**	Batch ID: **R17799**	RunNo: **17799**						
Prep Date:	Analysis Date: **4/4/2014**	SeqNo: **513542**	Units: **%REC**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		109	74.5	129			

Sample ID **MB-12530**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**						
Client ID: **PBS**	Batch ID: **12530**	RunNo: **17816**						
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513588**	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		85.7	74.5	129			

Sample ID **LCS-12530**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**						
Client ID: **LCSS**	Batch ID: **12530**	RunNo: **17816**						
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513589**	Units: **mg/Kg**					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	109	71.7	134			
Surr: BFB	930		1000		93.2	74.5	129			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1404169**

09-Apr-14

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **5ML RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **R17799**	RunNo: **17799**
Prep Date:	Analysis Date: **4/4/2014**	SeqNo: **513564** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		98.1	80	120			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **R17799**	RunNo: **17799**
Prep Date:	Analysis Date: **4/4/2014**	SeqNo: **513565** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.71		1.000		71.0	80	120			S

Sample ID **MB-12530**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **12530**	RunNo: **17816**
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513622** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID **LCS-12530**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **12530**	RunNo: **17816**
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513623** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	109	80	120			
Toluene	0.99	0.050	1.000	0	99.4	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.8	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.1	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID **1404169-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell 1**	Batch ID: **12530**	RunNo: **17816**
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.047	0.9470	0	125	67.4	135			
Toluene	1.1	0.047	0.9470	0.01053	117	72.6	135			
Ethylbenzene	1.1	0.047	0.9470	0	119	69.4	143			
Xylenes, Total	3.4	0.095	2.841	0.01356	118	70.8	144			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1404169**

09-Apr-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **1404169-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell 1**	Batch ID: **12530**	RunNo: **17816**
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513628** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		0.9470		109	80	120			

Sample ID **1404169-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell 1**	Batch ID: **12530**	RunNo: **17816**
Prep Date: **4/3/2014**	Analysis Date: **4/4/2014**	SeqNo: **513629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.047	0.9497	0	116	67.4	135	6.85	20	
Toluene	1.1	0.047	0.9497	0.01053	112	72.6	135	3.75	20	
Ethylbenzene	1.1	0.047	0.9497	0	115	69.4	143	3.10	20	
Xylenes, Total	3.2	0.095	2.849	0.01356	114	70.8	144	3.74	20	
Surr: 4-Bromofluorobenzene	1.0		0.9497		108	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1404169 | RcptNo: 1

Received by/date: 04/03/14

Logged By: Michelle Garcia 4/3/2014 10:30:00 AM Michelle Garcia

Completed By: Michelle Garcia 4/3/2014 11:59:17 AM Michelle Garcia

Reviewed By: 04/03/14

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° 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	1.8	Good	Yes			

Client:	Blagg Engineering, Inc.	☒ Standard ☐ Rush	
	BP America	Project Name: Crouch Mesa LF	
Mailing Address:	P.O. Box 87		
	Bloomfield, NM 87413	Project #:	
Phone #:	(505)320-1183		
email or Fax#:		Project Manager: Jeff Blagg	
QA/QC Package:			
☐ Standard	☐ Level 4 (Full Validation)		
☐ Other		Sampler: Jeff Blagg	
☐ EDD (Type)		On Ice: ☒ Yes ☐ No	
		Sample Temperature: 1.8	

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1404169	BTEX (8021)		TPH 8015B (GRO / DRO)								Chloride		Air Bubbles (Y or N)
03/31/2014	10:30	Soil	Cell 1	4oz x 1	cool	-001	x		x								x		
03/31/2014	10:45	Soil	Cell 2	4oz x 1	cool	-002	x		x								x		
03/31/2014	11:00	Soil	Cell 5	4oz x 1	cool	-003	x		x								x		

Date:	Time:	Relinquished by:	Received by:	Date	Time
4/2/2014	1437	Jeff Blagg	Christine Walker	4/3/2014	1437
Date:	Time:	Relinquished by:	Received by:	Date	Time
4/2/14	1749	Christine Walker		04/03/14	1030

Remarks: Bill Blagg
BP Contact: Jeff Peace
peace.jeffrey@bp.com
Please copy results to:

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

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

July 18, 2014

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa LF OrderNo.: 1407157

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/3/2014 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1407157**
Date Reported: **7/18/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF
Lab ID: 1407157-001
Matrix: SOIL
Client Sample ID: Cell 1
Collection Date: 6/30/2014 11:30:00 AM
Received Date: 7/3/2014 7:06:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/8/2014 3:49:10 PM	14085
Surr: DNOP	86.0	57.9-140		%REC	1	7/8/2014 3:49:10 PM	14085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/7/2014 11:24:59 PM	14058
Surr: BFB	93.9	80-120		%REC	1	7/7/2014 11:24:59 PM	14058
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	7/7/2014 11:24:59 PM	14058
Toluene	ND	0.050		mg/Kg	1	7/7/2014 11:24:59 PM	14058
Ethylbenzene	ND	0.050		mg/Kg	1	7/7/2014 11:24:59 PM	14058
Xylenes, Total	ND	0.099		mg/Kg	1	7/7/2014 11:24:59 PM	14058
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	7/7/2014 11:24:59 PM	14058
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	ND	30		mg/Kg	20	7/8/2014 1:15:37 PM	14106

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 2
Project: Crouch Mesa LF
Collection Date: 6/30/2014 11:50:00 AM
Lab ID: 1407157-002
Matrix: SOIL
Received Date: 7/3/2014 7:06:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/8/2014 4:20:21 PM	14085
Surr: DNOP	96.9	57.9-140		%REC	1	7/8/2014 4:20:21 PM	14085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/7/2014 11:53:34 PM	14058
Surr: BFB	93.5	80-120		%REC	1	7/7/2014 11:53:34 PM	14058
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	7/7/2014 11:53:34 PM	14058
Toluene	ND	0.047		mg/Kg	1	7/7/2014 11:53:34 PM	14058
Ethylbenzene	ND	0.047		mg/Kg	1	7/7/2014 11:53:34 PM	14058
Xylenes, Total	ND	0.094		mg/Kg	1	7/7/2014 11:53:34 PM	14058
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	7/7/2014 11:53:34 PM	14058
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	ND	30		mg/Kg	20	7/8/2014 1:52:50 PM	14106

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
E	Value above quantitation range
J	Analyte detected below quantitation limits
O	RSD is greater than RSDlimit
R	RPD outside accepted recovery limits
S	Spike Recovery outside accepted recovery limits
B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2.
RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF
Lab ID: 1407157-003
Matrix: SOIL
Client Sample ID: Cell 5
Collection Date: 6/30/2014 12:15:00 PM
Received Date: 7/3/2014 7:06:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/8/2014 4:51:42 PM	14085
Surr: DNOP	89.8	57.9-140		%REC	1	7/8/2014 4:51:42 PM	14085
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/8/2014 12:22:07 AM	14058
Surr: BFB	93.5	80-120		%REC	1	7/8/2014 12:22:07 AM	14058
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	7/8/2014 12:22:07 AM	14058
Toluene	ND	0.049		mg/Kg	1	7/8/2014 12:22:07 AM	14058
Ethylbenzene	ND	0.049		mg/Kg	1	7/8/2014 12:22:07 AM	14058
Xylenes, Total	ND	0.097		mg/Kg	1	7/8/2014 12:22:07 AM	14058
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	7/8/2014 12:22:07 AM	14058
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	ND	30		mg/Kg	20	7/8/2014 4:09:19 PM	14106

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1407157**

18-Jul-14

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID	**MB-14106**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**14106**		RunNo:	**19753**				
Prep Date:	**7/8/2014**	Analysis Date:	**7/8/2014**		SeqNo:	**573864**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-14106**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**14106**		RunNo:	**19753**				
Prep Date:	**7/8/2014**	Analysis Date:	**7/8/2014**		SeqNo:	**573865**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.9	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1407157**

18-Jul-14

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-14085**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **14085**	RunNo: **19699**
Prep Date: **7/7/2014**	Analysis Date: **7/7/2014**	SeqNo: **572210** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.8		10.00		87.6	57.9	140			

Sample ID **LCS-14085**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **14085**	RunNo: **19699**
Prep Date: **7/7/2014**	Analysis Date: **7/7/2014**	SeqNo: **572211** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	105	68.6	130			
Surr: DNOP	4.3		5.000		86.4	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1407157**

18-Jul-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **MB-14058**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **14058**	RunNo: **19711**
Prep Date: **7/3/2014**	Analysis Date: **7/7/2014**	SeqNo: **572606** 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	920		1000		92.2	80	120			

Sample ID **LCS-14058**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **14058**	RunNo: **19711**
Prep Date: **7/3/2014**	Analysis Date: **7/7/2014**	SeqNo: **572607** 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	111	71.7	134			
Surr: BFB	1200		1000		120	80	120			S

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1407157**

18-Jul-14

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-14058**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **14058**	RunNo: **19711**
Prep Date: **7/3/2014**	Analysis Date: **7/7/2014**	SeqNo: **572630** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID **LCS-14058**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **14058**	RunNo: **19711**
Prep Date: **7/3/2014**	Analysis Date: **7/7/2014**	SeqNo: **572631** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	1.000	0	105	80	120			
Toluene	0.99	0.050	1.000	0	99.0	80	120			
Ethylbenzene	1.0	0.050	1.000	0	102	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

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: 1407157 | RcptNo: 1

Received by/date: AT 07/03/14

Logged By: Anne Thorne 7/3/2014 7:06:00 AM

Completed By: Anne Thorne 7/3/2014

Reviewed By: CS 07/03/14

Chain of Custody

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

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	1.3	Good	Yes			

Client:	Blagg Engineering, Inc.	☒ Standard ☐ Rush	
	BP America	Project Name: Crouch Mesa LF	
Mailing Address:	P.O. Box 87		
	Bloomfield, NM 87413	Project #:	
Phone #:	(505)320-1183		
email or Fax#:		Project Manager: Jeff Blagg	
QA/QC Package:			
☐ Standard	☐ Level 4 (Full Validation)		
☐ Other		Sampler: Jeff Blagg	
☐ EDD (Type)		On Ice: ☒ Yes ☐ No	
		Sample Temperature: 13	

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1407157	BTEX (8021)		TPH 8015B (GRO / DRO)									Chloride		
06/30/2014	11:30	Soil	Cell 1	4oz x 1	cool	-001	x		x									x		
06/30/2014	11:50	Soil	Cell 2	4oz x 1	cool	-002	x		x									x		
06/30/2014	12:15	Soil	Cell 5	4oz x 1	cool	-003	x		x									x		

Date: 7/3/2014	Time: 1650	Relinquished by: Jeff Blagg	Received by:	Date: 07/03/14	Time: 0806
Date:	Time:	Relinquished by:	Received by:	Date:	Time:

Remarks: Bill BP

BP Contact: Jeff Peace

peace.jeffrey@bp.com

Please copy results to:

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

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

September 12, 2014

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa LF OrderNo.: 1409191

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/4/2014 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1409191**
Date Reported: **9/12/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF
Lab ID: 1409191-001 **Matrix:** SOIL

Client Sample ID: Cell 1
Collection Date: 8/29/2014 2:05:00 PM
Received Date: 9/4/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/5/2014 4:07:12 PM	15106
Surr: DNOP	100	57.9-140		%REC	1	9/5/2014 4:07:12 PM	15106
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/5/2014 4:53:27 PM	15122
Surr: BFB	94.1	80-120		%REC	1	9/5/2014 4:53:27 PM	15122
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	9/5/2014 4:53:27 PM	15122
Toluene	ND	0.049		mg/Kg	1	9/5/2014 4:53:27 PM	15122
Ethylbenzene	ND	0.049		mg/Kg	1	9/5/2014 4:53:27 PM	15122
Xylenes, Total	ND	0.098		mg/Kg	1	9/5/2014 4:53:27 PM	15122
Surr: 4-Bromofluorobenzene	110	80-120		%REC	1	9/5/2014 4:53:27 PM	15122
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	9/9/2014 8:39:48 PM	15167

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 2
Project: Crouch Mesa LF
Collection Date: 8/29/2014 2:20:00 PM
Lab ID: 1409191-002
Matrix: SOIL
Received Date: 9/4/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/5/2014 4:28:30 PM	15106
Surr: DNOP	97.4	57.9-140		%REC	1	9/5/2014 4:28:30 PM	15106
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/5/2014 5:23:42 PM	15122
Surr: BFB	90.1	80-120		%REC	1	9/5/2014 5:23:42 PM	15122
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	9/5/2014 5:23:42 PM	15122
Toluene	0.12	0.049		mg/Kg	1	9/5/2014 5:23:42 PM	15122
Ethylbenzene	0.085	0.049		mg/Kg	1	9/5/2014 5:23:42 PM	15122
Xylenes, Total	0.16	0.097		mg/Kg	1	9/5/2014 5:23:42 PM	15122
Surr: 4-Bromofluorobenzene	100	80-120		%REC	1	9/5/2014 5:23:42 PM	15122
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	9/8/2014 3:03:43 PM	15172

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 5
Project: Crouch Mesa LF
Collection Date: 8/29/2014 2:40:00 PM
Lab ID: 1409191-003
Matrix: SOIL
Received Date: 9/4/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/5/2014 4:50:01 PM	15106
Surr: DNOP	59.8	57.9-140		%REC	1	9/5/2014 4:50:01 PM	15106
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/5/2014 5:53:58 PM	15122
Surr: BFB	96.3	80-120		%REC	1	9/5/2014 5:53:58 PM	15122
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	9/5/2014 5:53:58 PM	15122
Toluene	ND	0.049		mg/Kg	1	9/5/2014 5:53:58 PM	15122
Ethylbenzene	ND	0.049		mg/Kg	1	9/5/2014 5:53:58 PM	15122
Xylenes, Total	ND	0.098		mg/Kg	1	9/5/2014 5:53:58 PM	15122
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	9/5/2014 5:53:58 PM	15122
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Chloride	ND	30		mg/Kg	20	9/8/2014 3:16:07 PM	15172

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

WO#: **1409191**

Hall Environmental Analysis Laboratory, Inc.

12-Sep-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **MB-15172**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **15172**	RunNo: **21073**
Prep Date: **9/8/2014**	Analysis Date: **9/8/2014**	SeqNo: **613131** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID **LCS-15172**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **15172**	RunNo: **21073**
Prep Date: **9/8/2014**	Analysis Date: **9/8/2014**	SeqNo: **613132** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.3	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1409191**

12-Sep-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **MB-15106**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **15106**	RunNo: **20982**
Prep Date: **9/4/2014**	Analysis Date: **9/4/2014**	SeqNo: **610877** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.4		10.00		83.8	57.9	140			

Sample ID **LCS-15106**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **15106**	RunNo: **20982**
Prep Date: **9/4/2014**	Analysis Date: **9/4/2014**	SeqNo: **610878** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	100	68.6	130			
Surr: DNOP	4.1		5.000		82.5	57.9	140			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1409191**

12-Sep-14

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-15122**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **15122**	RunNo: **21019**
Prep Date: **9/4/2014**	Analysis Date: **9/5/2014**	SeqNo: **612342** 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	950		1000		94.8	80	120			

Sample ID **LCS-15122**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **15122**	RunNo: **21019**
Prep Date: **9/4/2014**	Analysis Date: **9/5/2014**	SeqNo: **612343** 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	97.7	65.8	139			
Surr: BFB	1000		1000		102	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1409191**

12-Sep-14

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **MB-15122**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **15122**	RunNo: **21019**
Prep Date: **9/4/2014**	Analysis Date: **9/5/2014**	SeqNo: **612375** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID **LCS-15122**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **15122**	RunNo: **21019**
Prep Date: **9/4/2014**	Analysis Date: **9/5/2014**	SeqNo: **612376** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.050	1.000	0	85.0	80	120			
Toluene	0.86	0.050	1.000	0	85.9	80	120			
Ethylbenzene	0.91	0.050	1.000	0	90.5	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.8	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1409191 | RcptNo: 1

Received by/date: AT 09/04/14

Logged By: Anne Thorne 9/4/2014 7:00:00 AM

Completed By: Anne Thorne 9/4/2014

Reviewed By: CS 09/04/14

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: BP AMERICA
BLAGG ENGR.
Mailing Address: P.O. Box 87
BLOOMFIELD NM 87413
Phone #: 505-632-1199
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other _____
☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____
Project Name: CROUCH MESA L.F.
Project #:
Project Manager: J. BLAGG
Sampler: J. BLAGG
On Ice: ☒ Yes ☐ No
Sample Temperature: 2.1

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. 1409191	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_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
9/29/2014	1405	SOIL	CELL 1	4 oz x 1	COOL	001	X		X									X				
"	1420	"	CELL 2	"	"	002	X		X									X				
"	1440	"	CELL 5	"	"	003	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/3/14	1127	Jeff Blagg	Chantel Walker	9/3/14	1127
9/3/14	2024	Chantel Walker		09/04/14	0700

Remarks: BILL BP

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

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

November 14, 2014

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa Landfarm OrderNo.: 1411368

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/11/2014 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1411368**
Date Reported: **11/14/2014**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 1
Project: Crouch Mesa Landfarm
Collection Date: 11/7/2014 2:10:00 PM
Lab ID: 1411368-001 **Matrix:** SOIL **Received Date:** 11/11/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/12/2014 3:19:07 PM	16334
Surr: DNOP	97.5	63.5-128		%REC	1	11/12/2014 3:19:07 PM	16334
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/12/2014 12:33:46 PM	16343
Surr: BFB	94.3	80-120		%REC	1	11/12/2014 12:33:46 PM	16343
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	11/12/2014 12:33:46 PM	16343
Toluene	ND	0.048		mg/Kg	1	11/12/2014 12:33:46 PM	16343
Ethylbenzene	ND	0.048		mg/Kg	1	11/12/2014 12:33:46 PM	16343
Xylenes, Total	ND	0.096		mg/Kg	1	11/12/2014 12:33:46 PM	16343
Surr: 4-Bromofluorobenzene	98.6	80-120		%REC	1	11/12/2014 12:33:46 PM	16343
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.46	0.30		mg/Kg	1	11/13/2014 1:30:11 AM	16341
Chloride	ND	1.5		mg/Kg	1	11/13/2014 1:30:11 AM	16341
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/13/2014 1:30:11 AM	16341
Bromide	ND	0.30		mg/Kg	1	11/13/2014 1:30:11 AM	16341
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/13/2014 1:30:11 AM	16341
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	11/13/2014 1:30:11 AM	16341
Sulfate	3400	75		mg/Kg	50	11/13/2014 1:42:36 AM	16341
EPA METHOD 7471: MERCURY						Analyst: **MMD**	
Mercury	ND	0.030		mg/Kg	1	11/12/2014 1:40:50 PM	16346
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.6		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Barium	22	0.10		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Cadmium	ND	0.10		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Calcium	3700	26		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Chromium	1.8	0.31		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Lead	2.1	0.26		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Magnesium	820	26		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Potassium	370	51		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Selenium	ND	2.6		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Silver	ND	0.26		mg/Kg	1	11/13/2014 10:32:57 AM	16364
Sodium	ND	26		mg/Kg	1	11/13/2014 10:32:57 AM	16364

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 2
Project: Crouch Mesa Landfarm
Collection Date: 11/7/2014 2:30:00 PM
Lab ID: 1411368-002
Matrix: SOIL
Received Date: 11/11/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	11/12/2014 4:48:47 PM	16334
Surr: DNOP	97.0	63.5-128		%REC	1	11/12/2014 4:48:47 PM	16334
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/12/2014 1:59:50 PM	16343
Surr: BFB	95.0	80-120		%REC	1	11/12/2014 1:59:50 PM	16343
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	11/12/2014 1:59:50 PM	16343
Toluene	ND	0.050		mg/Kg	1	11/12/2014 1:59:50 PM	16343
Ethylbenzene	ND	0.050		mg/Kg	1	11/12/2014 1:59:50 PM	16343
Xylenes, Total	ND	0.099		mg/Kg	1	11/12/2014 1:59:50 PM	16343
Surr: 4-Bromofluorobenzene	101	80-120		%REC	1	11/12/2014 1:59:50 PM	16343
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	0.84	0.30		mg/Kg	1	11/13/2014 1:55:00 AM	16341
Chloride	ND	1.5		mg/Kg	1	11/13/2014 1:55:00 AM	16341
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/13/2014 1:55:00 AM	16341
Bromide	ND	0.30		mg/Kg	1	11/13/2014 1:55:00 AM	16341
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/13/2014 1:55:00 AM	16341
Phosphorus, Orthophosphate (As P)	ND	30		mg/Kg	20	11/11/2014 1:46:07 PM	16341
Sulfate	4800	75		mg/Kg	50	11/13/2014 2:07:25 AM	16341
EPA METHOD 7471: MERCURY						Analyst: **MMD**	
Mercury	ND	0.035		mg/Kg	1	11/12/2014 1:46:14 PM	16346
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Barium	4.4	0.10		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Cadmium	ND	0.10		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Calcium	31000	250		mg/Kg	10	11/13/2014 10:53:36 AM	16364
Chromium	0.98	0.30		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Lead	1.0	0.25		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Magnesium	700	25		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Potassium	240	51		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Selenium	ND	2.5		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Silver	ND	0.25		mg/Kg	1	11/13/2014 10:46:36 AM	16364
Sodium	ND	25		mg/Kg	1	11/13/2014 10:46:36 AM	16364

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 5
Project: Crouch Mesa Landfarm
Collection Date: 11/7/2014 3:00:00 PM
Lab ID: 1411368-003 **Matrix:** SOIL **Received Date:** 11/11/2014 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/12/2014 5:18:37 PM	16334
Surr: DNOP	101	63.5-128		%REC	1	11/12/2014 5:18:37 PM	16334
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/12/2014 3:25:38 PM	16343
Surr: BFB	94.5	80-120		%REC	1	11/12/2014 3:25:38 PM	16343
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.046		mg/Kg	1	11/12/2014 3:25:38 PM	16343
Toluene	ND	0.046		mg/Kg	1	11/12/2014 3:25:38 PM	16343
Ethylbenzene	ND	0.046		mg/Kg	1	11/12/2014 3:25:38 PM	16343
Xylenes, Total	ND	0.093		mg/Kg	1	11/12/2014 3:25:38 PM	16343
Surr: 4-Bromofluorobenzene	99.2	80-120		%REC	1	11/12/2014 3:25:38 PM	16343
EPA METHOD 300.0: ANIONS						Analyst: **LGP**	
Fluoride	1.2	0.30		mg/Kg	1	11/13/2014 2:19:50 AM	16341
Chloride	ND	1.5		mg/Kg	1	11/13/2014 2:19:50 AM	16341
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	11/13/2014 2:19:50 AM	16341
Bromide	ND	0.30		mg/Kg	1	11/13/2014 2:19:50 AM	16341
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	11/13/2014 2:19:50 AM	16341
Phosphorus, Orthophosphate (As P)	ND	30		mg/Kg	20	11/11/2014 1:58:32 PM	16341
Sulfate	3300	75		mg/Kg	50	11/13/2014 2:32:15 AM	16341
EPA METHOD 7471: MERCURY						Analyst: **MMD**	
Mercury	ND	0.032		mg/Kg	1	11/12/2014 1:48:03 PM	16346
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Barium	5.2	0.10		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Cadmium	ND	0.10		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Calcium	4600	25		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Chromium	2.2	0.30		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Lead	1.9	0.25		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Magnesium	970	25		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Potassium	330	50		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Selenium	ND	2.5		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Silver	ND	0.25		mg/Kg	1	11/13/2014 10:49:32 AM	16364
Sodium	ND	25		mg/Kg	1	11/13/2014 10:49:32 AM	16364

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411368**

14-Nov-14

Client: Blagg Engineering

Project: Crouch Mesa Landfarm

Sample ID **MB-16341**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **16341**	RunNo: **22478**
Prep Date: **11/11/2014**	Analysis Date: **11/11/2014**	SeqNo: **662481** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID **LCS-16341**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **16341**	RunNo: **22478**
Prep Date: **11/11/2014**	Analysis Date: **11/11/2014**	SeqNo: **662482** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	97.9	90	110			
Chloride	14	1.5	15.00	0	91.1	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	96.2	90	110			
Bromide	7.0	0.30	7.500	0	93.8	90	110			
Nitrogen, Nitrate (As N)	7.2	0.30	7.500	0	95.4	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	93.6	90	110			
Sulfate	28	1.5	30.00	0	94.1	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411368**

14-Nov-14

Client: Blagg Engineering

Project: Crouch Mesa Landfarm

Sample ID **MB-16334**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **16334**	RunNo: **22488**
Prep Date: **11/11/2014**	Analysis Date: **11/12/2014**	SeqNo: **663176** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.6		10.00		96.2	63.5	128			

Sample ID **LCS-16334**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **16334**	RunNo: **22488**
Prep Date: **11/11/2014**	Analysis Date: **11/12/2014**	SeqNo: **663181** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	10	50.00	0	86.6	68.6	130			
Surr: DNOP	4.7		5.000		93.2	63.5	128			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411368**

14-Nov-14

Client: Blagg Engineering

Project: Crouch Mesa Landfarm

Sample ID **MB-16343**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **16343**	RunNo: **22500**
Prep Date: **11/11/2014**	Analysis Date: **11/12/2014**	SeqNo: **663428** 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	960		1000		95.6	80	120			

Sample ID **LCS-16343**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **16343**	RunNo: **22500**
Prep Date: **11/11/2014**	Analysis Date: **11/12/2014**	SeqNo: **663429** 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	113	65.8	139			
Surr: BFB	1000		1000		104	80	120			

Sample ID **MB-16343 MK**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **R22500**	RunNo: **22500**
Prep Date:	Analysis Date: **11/12/2014**	SeqNo: **663435** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	960		1000		95.6	80	120			

Sample ID **LCS-16343 MK**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **R22500**	RunNo: **22500**
Prep Date:	Analysis Date: **11/12/2014**	SeqNo: **663436** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		104	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411368**

14-Nov-14

Client: Blagg Engineering
Project: Crouch Mesa Landfarm

Sample ID **MB-16343**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **16343**	RunNo: **22500**
Prep Date: **11/11/2014**	Analysis Date: **11/12/2014**	SeqNo: **663449** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID **LCS-16343**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **16343**	RunNo: **22500**
Prep Date: **11/11/2014**	Analysis Date: **11/12/2014**	SeqNo: **663450** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	80	120			
Toluene	1.0	0.050	1.000	0	101	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411368**

14-Nov-14

Client: Blagg Engineering

Project: Crouch Mesa Landfarm

Sample ID	**MB-16346**	SampType: **MBLK**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID: **16346**		RunNo: **22494**					
Prep Date:	**11/11/2014**	Analysis Date: **11/12/2014**		SeqNo: **663311**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-16346**	SampType: **LCS**		TestCode: **EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID: **16346**		RunNo: **22494**					
Prep Date:	**11/11/2014**	Analysis Date: **11/12/2014**		SeqNo: **663312**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	103	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1411368**

14-Nov-14

Client: Blagg Engineering

Project: Crouch Mesa Landfarm

Sample ID	**MB-16364**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**16364**	RunNo:	**22513**
Prep Date:	**11/12/2014**	Analysis Date:	**11/13/2014**	SeqNo:	**663982** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Lead	ND	0.25								
Magnesium	ND	25								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								

Sample ID	**LCS-16364**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**16364**	RunNo:	**22513**
Prep Date:	**11/12/2014**	Analysis Date:	**11/13/2014**	SeqNo:	**663983** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	26	2.5	25.00	0	102	80	120			
Barium	25	0.10	25.00	0	99.9	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Calcium	2600	25	2500	0	103	80	120			
Chromium	25	0.30	25.00	0	101	80	120			
Lead	24	0.25	25.00	0	96.4	80	120			
Magnesium	2600	25	2500	0	103	80	120			
Potassium	2500	50	2500	0	98.4	80	120			
Selenium	24	2.5	25.00	0	97.4	80	120			
Silver	5.0	0.25	5.000	0	100	80	120			
Sodium	2500	25	2500	0	99.8	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1411368 | RcptNo: 1

Received by/date: AT 11/11/14

Logged By: Anne Thorne 11/11/2014 7:00:00 AM

Completed By: Anne Thorne 11/11/2014

Reviewed By: 11/11/14

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.8	Good	Yes			

Chain-of-Custody Record

Client: BP AMERICA

BLAGG ENGINEERING INC.

Mailing Address: P.O. BOX 87

BLOOMFIELD, NM 87413

Phone #: 505-320-1183

email or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: By Monday 11/17/2014

☐ Standard ☒ Rush

Project Name: CROUCH MESA LANDFARM

Project #:

Project Manager: J. BLAGG

Sampler: J. BLAGG

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.6

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. 1411308	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_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CATIONS/ANIONS				Air Bubbles (Y or N)
11/7/2014	1410	SOIL	CELL 1	4 oz x 2	COOL	001	X		X				X					X				
"	1430	"	CELL 2	"	"	002	X		X				X					X				
"	1500	"	CELL 5	"	"	003	X		X				X					X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/10/2014	1129			11/10/2014	1129
11/10/14	1730			11/11/14	0700

Remarks: BILL BP

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.

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

SENT VIA CERTIFIED MAIL
7011 1570 0002 2817 3469

November 14, 2013

Mr. Brad Jones
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: BP America Production Company
Crouch Mesa Waste Management Facility, Permit NM-02-003
Annual Report on Treatment Zone Monitoring

Dear Mr. Jones:

On behalf of BP America Production Company, Blagg Engineering, Inc. (BEI) is submitting the 2013 annual treatment zone monitoring test results for the Crouch Mesa Waste Management Facility pursuant to Permit NM-02-003, dated November 25, 1998. This report is for the December 1, 2012 through November 30, 2013 reporting period. Analytical test results (attached) indicate the facility met standards with each sample event.

The landfarm is presently configured into three (3) active cells, identified as Cell 1, Cell 2 and Cell 5 (Figure 1). The northeast portion of the facility (identified as 'unused cell') is used for equipment, materials and unused compost media storage only. Cell 5 is used for storage of remediated soils from composting/landfarming operations.

Sampling protocol specifies collection of subsurface samples in each cell from the native ground surface below the treatment zone during quarterly monitoring. Quarterly test procedures include total petroleum hydrocarbons (TPH), chloride and benzene, toluene, ethyl-benzene and xylenes (BTEX). Heavy metals and major cations/anions are to be collected for at least one quarterly sample event. During this reporting period, metals and cations/anions were tested on the September 25, 2013 sample event.

Questions or comments concerning the this transmittal may be directed to myself at (505)632-1199 or to Jeff Peace with BP at (505)326-9200.

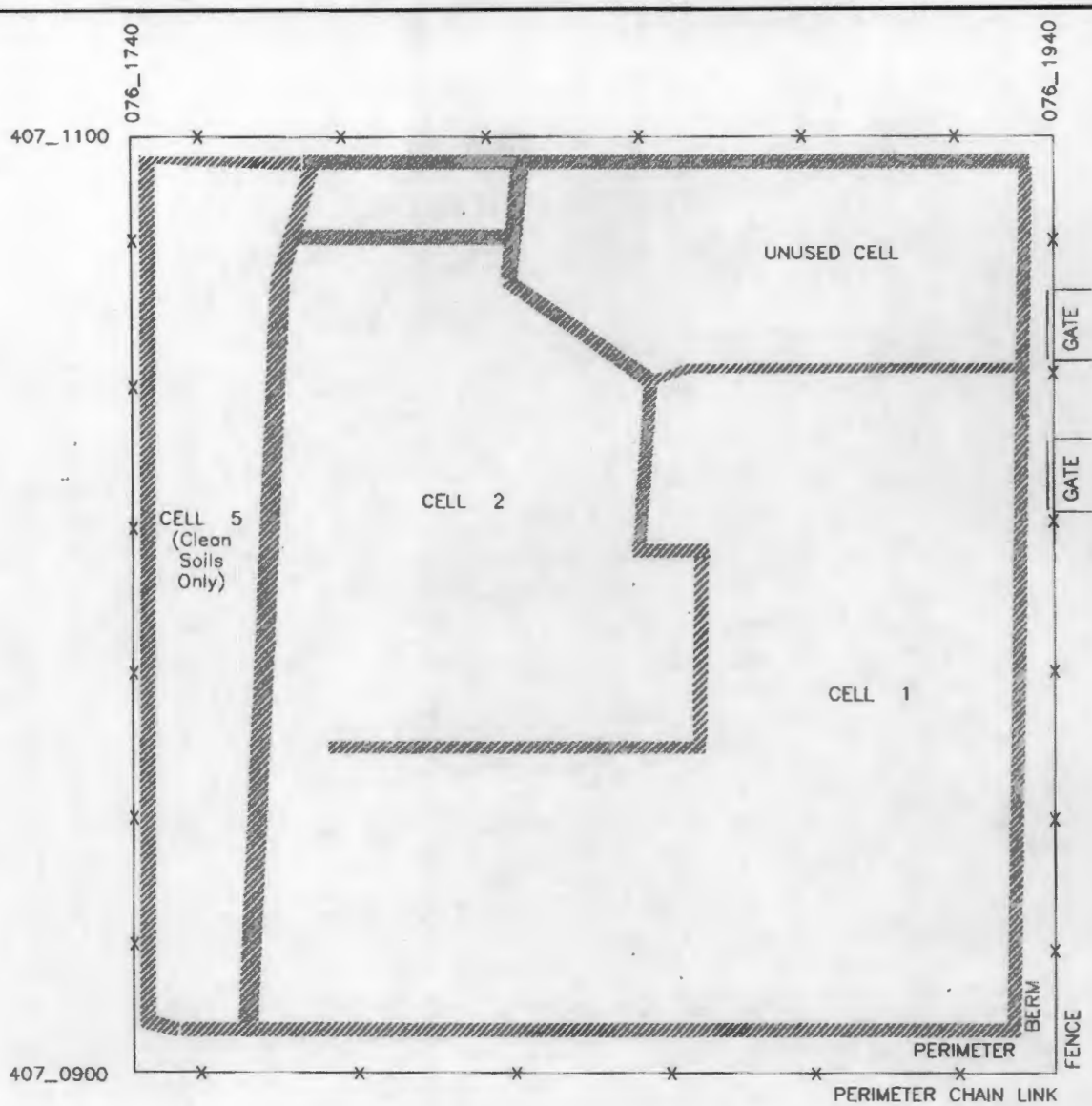
Respectfully submitted:
Blagg Engineering, Inc.

Jeffrey C. Blagg

Jeffrey C. Blagg, P.E.
President

Attachments: Site Diagram
Soil Treatment Zone Monitoring Reports

cc: Brandon Powell, NMOCD Aztec District Office
Jeff Peace, BP San Juan Operations Center



LEGEND

6' TALL CHAIN LINK FENCE

SOIL BERM

N

0 200 400 FEET

BP AMERICA PRODUCTION CO.
CROUCH MESA WASTE MGMT FAC
SW/4 SE/4 SEC 2 T29N R12W
SAN JUAN CO., NEW MEXICO

NOVEMBER 2013

BLAGG ENGINEERING, INC.
CONSULTING ENGINEERING SERVICES

P.O. BOX 87
BLOOMFIELD, NEW MEXICO 87413

PHONE: (505) 632-1199

SITE SCHEMATIC

FIGURE 1	DRWN BY: JCB
CRMESA4	PROJ MGR: JCB

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 01, 2013

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa L.F. OrderNo.: 1303A03

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/26/2013 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. 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. 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.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1303A03**
Date Reported: **4/1/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa L.F.
Lab ID: 1303A03-001
Matrix: SOIL

Client Sample ID: CELL 1
Collection Date: 3/20/2013 1:30:00 PM
Received Date: 3/26/2013 9:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **MMD**
Diesel Range Organics (DRO)	38	9.9		mg/Kg	1	3/28/2013 9:11:44 PM
Surr: DNOP	113	72.4-120		%REC	1	3/28/2013 9:11:44 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/27/2013 11:37:40 PM
Surr: BFB	92.8	84-116		%REC	1	3/27/2013 11:37:40 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.048		mg/Kg	1	3/27/2013 11:37:40 PM
Toluene	ND	0.048		mg/Kg	1	3/27/2013 11:37:40 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/27/2013 11:37:40 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/27/2013 11:37:40 PM
Surr: 4-Bromofluorobenzene	97.4	80-120		%REC	1	3/27/2013 11:37:40 PM
EPA METHOD 300.0: ANIONS						Analyst: **JRR**
Chloride	35	7.5		mg/Kg	5	3/27/2013 12:58:15 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: CELL 2
Project: Crouch Mesa L.F.
Collection Date: 3/20/2013 1:50:00 PM
Lab ID: 1303A03-002
Matrix: SOIL
Received Date: 3/26/2013 9:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **MMD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/28/2013 9:38:46 PM
Surr: DNOP	114	72.4-120		%REC	1	3/28/2013 9:38:46 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/28/2013 12:07:38 AM
Surr: BFB	93.4	84-116		%REC	1	3/28/2013 12:07:38 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.048		mg/Kg	1	3/28/2013 12:07:38 AM
Toluene	ND	0.048		mg/Kg	1	3/28/2013 12:07:38 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/28/2013 12:07:38 AM
Xylenes, Total	ND	0.096		mg/Kg	1	3/28/2013 12:07:38 AM
Surr: 4-Bromofluorobenzene	95.1	80-120		%REC	1	3/28/2013 12:07:38 AM
EPA METHOD 300.0: ANIONS						Analyst: **JRR**
Chloride	ND	7.5		mg/Kg	5	3/27/2013 1:23:05 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: CELL 5
Project: Crouch Mesa L.F.
Collection Date: 3/20/2013 2:08:00 PM
Lab ID: 1303A03-003 **Matrix:** SOIL **Received Date:** 3/26/2013 9:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015B: DIESEL RANGE ORGANICS						Analyst: **MMD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/28/2013 10:06:15 PM
Surr: DNOP	104	72.4-120		%REC	1	3/28/2013 10:06:15 PM
EPA METHOD 8015B: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/28/2013 12:37:29 AM
Surr: BFB	93.9	84-116		%REC	1	3/28/2013 12:37:29 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.048		mg/Kg	1	3/28/2013 12:37:29 AM
Toluene	ND	0.048		mg/Kg	1	3/28/2013 12:37:29 AM
Ethylbenzene	ND	0.048		mg/Kg	1	3/28/2013 12:37:29 AM
Xylenes, Total	ND	0.095		mg/Kg	1	3/28/2013 12:37:29 AM
Surr: 4-Bromofluorobenzene	95.3	80-120		%REC	1	3/28/2013 12:37:29 AM
EPA METHOD 300.0: ANIONS						Analyst: **JRR**
Chloride	ND	1.5		mg/Kg	1	3/27/2013 1:47:53 PM

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1303A03**

01-Apr-13

Client: Blagg Engineering

Project: Crouch Mesa L.F.

Sample ID	**MB-6687**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**6687**	RunNo:	**9467**					
Prep Date:	**3/27/2013**	Analysis Date:	**3/27/2013**	SeqNo:	**270247**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-6687**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**6687**	RunNo:	**9467**					
Prep Date:	**3/27/2013**	Analysis Date:	**3/27/2013**	SeqNo:	**270248**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	16	1.5	15.00	0	104	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
P	Sample pH greater than 2	R	RPD outside accepted recovery limits
RL	Reporting Detection Limit	S	Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1303A03**

01-Apr-13

Client: Blagg Engineering

Project: Crouch Mesa L.F.

Sample ID **MB-6684**	SampType: **MBLK**	TestCode: **EPA Method 8015B: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **6684**	RunNo: **9447**
Prep Date: **3/27/2013**	Analysis Date: **3/27/2013**	SeqNo: **269797** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	11		10.00		107	72.4	120			

Sample ID **LCS-6684**	SampType: **LCS**	TestCode: **EPA Method 8015B: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **6684**	RunNo: **9447**
Prep Date: **3/27/2013**	Analysis Date: **3/27/2013**	SeqNo: **269798** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.0	47.4	122			
Surr: DNOP	5.2		5.000		103	72.4	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1303A03**

01-Apr-13

Client: Blagg Engineering
Project: Crouch Mesa L.F.

Sample ID **MB-6664**	SampType: **MBLK**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **PBS**	Batch ID: **6664**	RunNo: **9453**
Prep Date: **3/26/2013**	Analysis Date: **3/27/2013**	SeqNo: **270328** 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	900		1000		90.1	84	116			

Sample ID **LCS-6664**	SampType: **LCS**	TestCode: **EPA Method 8015B: Gasoline Range**
Client ID: **LCSS**	Batch ID: **6664**	RunNo: **9453**
Prep Date: **3/26/2013**	Analysis Date: **3/27/2013**	SeqNo: **270340** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	106	62.6	136			
Surr: BFB	970		1000		97.3	84	116			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1303A03**

01-Apr-13

Client: Blagg Engineering

Project: Crouch Mesa L.F.

Sample ID **MB-6664**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **6664**	RunNo: **9453**
Prep Date: **3/26/2013**	Analysis Date: **3/27/2013**	SeqNo: **270399** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID **LCS-6664**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **6664**	RunNo: **9453**
Prep Date: **3/26/2013**	Analysis Date: **3/27/2013**	SeqNo: **270406** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.050	1.000	0	95.0	80	120			
Toluene	0.98	0.050	1.000	0	98.4	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.9	80	120			
Xylenes, Total	3.1	0.10	3.000	0	105	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH greater than 2
- RL Reporting Detection Limit
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1303A03 | RcptNo: 1

Received by/date: AG 03/26/13

Logged By: **Michelle Garcia** 3/26/2013 9:55:00 AM

Completed By: **Michelle Garcia** 3/26/2013 11:13:59 AM

Reviewed By: 03/26/13

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	1.5	Good	Yes			

Chain-of-Custody Record

Client: BLAGG ENGINEERING INC.
BP AMERICA
Mailing Address: P.O. BOX 87
BLOOMFIELD NM 87413
Phone #: 505-632-1199
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: CROUCH MESA L.F.
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_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
3/20/2013	1330	SOIL	CELL 1	4 oz x1	COOL	-001	X		X									X				
"	1350	"	CELL 2	"	"	-002	X		X									X				
"	1408	"	CELL 5	"	"	-003	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
3/25/13	0934			3/25/2013	0934
Date:	Time:	Relinquished by:	Received by:	Date	Time
3/25/13	1741			03/26/13	0905

Remarks: BILL BP
WORKORDER: N1500038
PAYKEY: ZPEACJDENV
BP CONTACT: JEFF PEACE

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

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

July 09, 2013

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX: (505) 632-3903

RE: Crouch Mesa L.F. OrderNo.: 1307093

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/2/2013 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1307093**
Date Reported: **7/9/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa L.F.
Lab ID: 1307093-001 **Matrix:** SOIL

Client Sample ID: Cell 1
Collection Date: 6/27/2013 3:20:00 PM
Received Date: 7/2/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/5/2013 4:02:23 PM	8196
Surr: DNOP	77.4	63-147		%REC	1	7/5/2013 4:02:23 PM	8196
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/3/2013 6:31:22 PM	8205
Surr: BFB	90.0	80-120		%REC	1	7/3/2013 6:31:22 PM	8205
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	7/3/2013 6:31:22 PM	8205
Toluene	ND	0.048		mg/Kg	1	7/3/2013 6:31:22 PM	8205
Ethylbenzene	ND	0.048		mg/Kg	1	7/3/2013 6:31:22 PM	8205
Xylenes, Total	ND	0.096		mg/Kg	1	7/3/2013 6:31:22 PM	8205
Surr: 4-Bromofluorobenzene	97.5	80-120		%REC	1	7/3/2013 6:31:22 PM	8205
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	1.5		mg/Kg	1	7/5/2013 2:58:26 PM	8239

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 2
Project: Crouch Mesa L.F.
Collection Date: 6/27/2013 3:45:00 PM
Lab ID: 1307093-002 **Matrix:** SOIL **Received Date:** 7/2/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/5/2013 4:32:31 PM	8196
Surr: DNOP	84.9	63-147		%REC	1	7/5/2013 4:32:31 PM	8196
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/3/2013 7:01:35 PM	8205
Surr: BFB	90.6	80-120		%REC	1	7/3/2013 7:01:35 PM	8205
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	7/3/2013 7:01:35 PM	8205
Toluene	ND	0.048		mg/Kg	1	7/3/2013 7:01:35 PM	8205
Ethylbenzene	ND	0.048		mg/Kg	1	7/3/2013 7:01:35 PM	8205
Xylenes, Total	ND	0.097		mg/Kg	1	7/3/2013 7:01:35 PM	8205
Surr: 4-Bromofluorobenzene	99.3	80-120		%REC	1	7/3/2013 7:01:35 PM	8205
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	1.5		mg/Kg	1	7/5/2013 3:48:05 PM	8239

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

Analytical Report
Lab Order **1307093**
Date Reported: **7/9/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa L.F.
Lab ID: 1307093-003 **Matrix:** SOIL

Client Sample ID: Cell 5
Collection Date: 6/27/2013 4:10:00 PM
Received Date: 7/2/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/3/2013 8:14:14 PM	8196
Surr: DNOP	104	63-147		%REC	1	7/3/2013 8:14:14 PM	8196
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/3/2013 7:31:47 PM	8205
Surr: BFB	91.2	80-120		%REC	1	7/3/2013 7:31:47 PM	8205
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	7/3/2013 7:31:47 PM	8205
Toluene	ND	0.047		mg/Kg	1	7/3/2013 7:31:47 PM	8205
Ethylbenzene	ND	0.047		mg/Kg	1	7/3/2013 7:31:47 PM	8205
Xylenes, Total	ND	0.093		mg/Kg	1	7/3/2013 7:31:47 PM	8205
Surr: 4-Bromofluorobenzene	99.8	80-120		%REC	1	7/3/2013 7:31:47 PM	8205
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	1.5		mg/Kg	1	7/5/2013 4:12:55 PM	8239

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307093**

09-Jul-13

Client: Blagg Engineering

Project: Crouch Mesa L.F.

Sample ID: **MB-8239**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **8239**	RunNo: **11782**
Prep Date: **7/5/2013**	Analysis Date: **7/5/2013**	SeqNo: **334766** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-8239**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **8239**	RunNo: **11782**
Prep Date: **7/5/2013**	Analysis Date: **7/5/2013**	SeqNo: **334767** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

Sample ID: **1307090-001AMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **8239**	RunNo: **11782**
Prep Date: **7/5/2013**	Analysis Date: **7/5/2013**	SeqNo: **334769** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24	1.5	15.00	9.793	95.7	58.8	109			

Sample ID: **1307090-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **BatchQC**	Batch ID: **8239**	RunNo: **11782**
Prep Date: **7/5/2013**	Analysis Date: **7/5/2013**	SeqNo: **334770** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24	1.5	15.00	9.793	93.5	58.8	109	1.38	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307093**

09-Jul-13

Client: Blagg Engineering
Project: Crouch Mesa L.F.

Sample ID: **MB-8196**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **8196**	RunNo: **11717**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **332961** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	14		10.00		143	63	147			

Sample ID: **LCS-8196**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **8196**	RunNo: **11717**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **332962** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	93.7	77.1	128			
Surr: DNOP	5.3		5.000		106	63	147			

Sample ID: **1307016-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **BatchQC**	Batch ID: **8196**	RunNo: **11717**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **333152** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	49.85	9.735	69.6	61.3	138			
Surr: DNOP	5.3		4.985		106	63	147			

Sample ID: **1307016-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **BatchQC**	Batch ID: **8196**	RunNo: **11717**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **333164** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.9	49.65	9.735	96.0	61.3	138	25.5	20	R
Surr: DNOP	5.4		4.965		108	63	147	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307093**

09-Jul-13

Client: Blagg Engineering
Project: Crouch Mesa L.F.

Sample ID: **MB-8205**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **PBS**	Batch ID: **8205**			RunNo: **11743**					
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**			SeqNo: **333662**		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	930		1000		92.6	80	120			

Sample ID: **LCS-8205**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **LCSS**	Batch ID: **8205**			RunNo: **11743**					
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**			SeqNo: **333663**		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	95.8	62.6	136			
Surr: BFB	990		1000		99.0	80	120			

Sample ID: **1307031-001AMS**	SampType: **MS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **BatchQC**	Batch ID: **8205**			RunNo: **11743**					
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**			SeqNo: **333665**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.63	0	110	76	156			
Surr: BFB	960		945.2		102	80	120			

Sample ID: **1307031-001AMSD**	SampType: **MSD**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **BatchQC**	Batch ID: **8205**			RunNo: **11743**					
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**			SeqNo: **333666**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.61	0	112	76	156	1.96	17.7	
Surr: BFB	940		944.3		100	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1307093**

09-Jul-13

Client: Blagg Engineering

Project: Crouch Mesa L.F.

Sample ID: **MB-8205**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **8205**	RunNo: **11743**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **333690** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID: **LCS-8205**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **8205**	RunNo: **11743**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **333691** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.050	1.000	0	95.2	80	120			
Toluene	0.93	0.050	1.000	0	93.2	80	120			
Ethylbenzene	0.94	0.050	1.000	0	93.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.8	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

Sample ID: **1307082-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC**	Batch ID: **8205**	RunNo: **11743**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **333693** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.048	0.9615	0.01757	88.7	67.3	145			
Toluene	0.88	0.048	0.9615	0.01709	90.0	66.8	144			
Ethylbenzene	0.91	0.048	0.9615	0	94.4	61.9	153			
Xylenes, Total	2.9	0.096	2.885	0.02460	98.2	65.8	149			
Surr: 4-Bromofluorobenzene	1.0		0.9615		106	80	120			

Sample ID: **1307082-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BatchQC**	Batch ID: **8205**	RunNo: **11743**
Prep Date: **7/2/2013**	Analysis Date: **7/3/2013**	SeqNo: **333694** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.048	0.9615	0.01757	98.8	67.3	145	10.5	20	
Toluene	0.98	0.048	0.9615	0.01709	99.8	66.8	144	10.2	20	
Ethylbenzene	0.99	0.048	0.9615	0	103	61.9	153	8.56	20	
Xylenes, Total	3.1	0.096	2.885	0.02460	106	65.8	149	7.73	20	
Surr: 4-Bromofluorobenzene	1.0		0.9615		107	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1307093 | RcptNo: 1

Received by/date: 07/02/13

Logged By: Ashley Gallegos 7/2/2013 10:00:00 AM

Completed By: Ashley Gallegos 7/2/2013 10:50:09 AM

Reviewed By: 07/02/13

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	2.6	Good	Yes			

Chain-of-Custody Record

Client: BLAGG ENGINEERING INC.

BP AMERICA

Mailing Address: P.O. BOX 87

BLOOMFIELD NM 87413

Phone #: 505-632-1199

email or Fax#:

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush _____

Project Name: CROUCH MESA L.F.

Project #:

Project Manager: J. BLAGG

Sampler: J. BLAGG

[redacted]

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	[redacted]	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 ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
7/2/2013	1520	SOIL	CELL 1	4 oz x1	COOL	-001	X		X									X				
"	1545	"	CELL 2	"	"	-002	X		X									X				
"	1610	"	CELL 5	"	"	-003	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/2/2013	1057	Jeff Blagg	Christin Whelan	7/2/2013	1057
Date:	Time:	Relinquished by:	Received by:	Date	Time
7/1/13	1745	Christin Wheeler	[signature]	07/02/13	1000

Remarks: BILL BLAGG

BP CONTACT: JEFF PEACE

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

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

October 15, 2013

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa LF OrderNo.: 1309D83

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/27/2013 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1309D83**
Date Reported: **10/15/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: CELL 1
Project: Crouch Mesa LF
Collection Date: 9/25/2013 4:00:00 PM
Lab ID: 1309D83-001 **Matrix:** SOIL **Received Date:** 9/27/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/1/2013 10:45:21 AM	9551
Surr: DNOP	65.6	63-147		%REC	1	10/1/2013 10:45:21 AM	9551
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/1/2013 12:51:43 PM	9556
Surr: BFB	95.5	80-120		%REC	1	10/1/2013 12:51:43 PM	9556
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	10/1/2013 12:51:43 PM	9556
Toluene	ND	0.050		mg/Kg	1	10/1/2013 12:51:43 PM	9556
Ethylbenzene	ND	0.050		mg/Kg	1	10/1/2013 12:51:43 PM	9556
Xylenes, Total	ND	0.10		mg/Kg	1	10/1/2013 12:51:43 PM	9556
Surr: 4-Bromofluorobenzene	107	80-120		%REC	1	10/1/2013 12:51:43 PM	9556
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	7.1	0.30		mg/Kg	1	10/8/2013 4:50:06 PM	9704
Chloride	ND	1.5		mg/Kg	1	10/8/2013 4:50:06 PM	9704
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	10/8/2013 4:50:06 PM	9704
Bromide	ND	0.30		mg/Kg	1	10/8/2013 4:50:06 PM	9704
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	10/8/2013 4:50:06 PM	9704
Phosphorus, Orthophosphate (As P)	ND	1.5		mg/Kg	1	10/8/2013 4:50:06 PM	9704
Sulfate	1100	30		mg/Kg	20	10/8/2013 5:02:30 PM	9704
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	ND	0.033		mg/kg	1	9/30/2013 4:28:42 PM	9559
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Barium	4.9	0.10		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Cadmium	ND	0.10		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Calcium	1700	25		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Chromium	2.5	0.30		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Lead	1.7	0.25		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Magnesium	1400	25		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Potassium	280	50		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Selenium	ND	2.5		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Silver	ND	0.25		mg/Kg	1	10/9/2013 10:52:37 AM	9698
Sodium	46	25		mg/Kg	1	10/9/2013 10:52:37 AM	9698

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF
Lab ID: 1309D83-002 **Matrix:** SOIL

Client Sample ID: CELL 2
Collection Date: 9/25/2013 4:15:00 PM
Received Date: 9/27/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	19	10		mg/Kg	1	10/1/2013 1:42:20 PM	9551
Surr: DNOP	73.4	63-147		%REC	1	10/1/2013 1:42:20 PM	9551
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/1/2013 2:19:00 PM	9556
Surr: BFB	95.2	80-120		%REC	1	10/1/2013 2:19:00 PM	9556
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	10/1/2013 2:19:00 PM	9556
Toluene	ND	0.050		mg/Kg	1	10/1/2013 2:19:00 PM	9556
Ethylbenzene	ND	0.050		mg/Kg	1	10/1/2013 2:19:00 PM	9556
Xylenes, Total	ND	0.10		mg/Kg	1	10/1/2013 2:19:00 PM	9556
Surr: 4-Bromofluorobenzene	105	80-120		%REC	1	10/1/2013 2:19:00 PM	9556
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	ND	0.30		mg/Kg	1	10/8/2013 5:14:55 PM	9704
Chloride	ND	1.5		mg/Kg	1	10/8/2013 5:14:55 PM	9704
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	10/8/2013 5:14:55 PM	9704
Bromide	ND	0.30		mg/Kg	1	10/8/2013 5:14:55 PM	9704
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	10/8/2013 5:14:55 PM	9704
Phosphorus, Orthophosphate (As P)	ND	30		mg/Kg	20	10/8/2013 5:27:21 PM	9704
Sulfate	3900	300		mg/Kg	200	10/10/2013 1:26:47 PM	9704
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	ND	0.033		mg/kg	1	9/30/2013 4:30:28 PM	9559
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Barium	5.5	0.10		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Cadmium	ND	0.10		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Calcium	30000	250		mg/Kg	10	10/9/2013 3:52:46 PM	9698
Chromium	2.3	0.30		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Lead	1.6	0.25		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Magnesium	870	25		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Potassium	320	50		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Selenium	ND	2.5		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Silver	ND	0.25		mg/Kg	1	10/9/2013 10:57:47 AM	9698
Sodium	ND	25		mg/Kg	1	10/9/2013 10:57:47 AM	9698

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF
Lab ID: 1309D83-003 **Matrix:** SOIL

Client Sample ID: CELL 5
Collection Date: 9/25/2013 4:35:00 PM
Received Date: 9/27/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **BCN**	
Diesel Range Organics (DRO)	11	9.9		mg/Kg	1	10/1/2013 2:43:35 PM	9551
Surr: DNOP	77.3	63-147		%REC	1	10/1/2013 2:43:35 PM	9551
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/1/2013 3:44:59 PM	9556
Surr: BFB	91.2	80-120		%REC	1	10/1/2013 3:44:59 PM	9556
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	10/1/2013 3:44:59 PM	9556
Toluene	ND	0.050		mg/Kg	1	10/1/2013 3:44:59 PM	9556
Ethylbenzene	ND	0.050		mg/Kg	1	10/1/2013 3:44:59 PM	9556
Xylenes, Total	ND	0.10		mg/Kg	1	10/1/2013 3:44:59 PM	9556
Surr: 4-Bromofluorobenzene	102	80-120		%REC	1	10/1/2013 3:44:59 PM	9556
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Fluoride	1.4	0.30		mg/Kg	1	10/8/2013 5:39:45 PM	9704
Chloride	ND	1.5		mg/Kg	1	10/8/2013 5:39:45 PM	9704
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	10/8/2013 5:39:45 PM	9704
Bromide	ND	0.30		mg/Kg	1	10/8/2013 5:39:45 PM	9704
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	10/8/2013 5:39:45 PM	9704
Phosphorus, Orthophosphate (As P)	ND	30		mg/Kg	20	10/8/2013 5:52:10 PM	9704
Sulfate	2000	30		mg/Kg	20	10/8/2013 5:52:10 PM	9704
EPA METHOD 7471: MERCURY						Analyst: **IDC**	
Mercury	ND	0.033		mg/kg	1	9/30/2013 4:32:15 PM	9559
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Barium	5.5	0.10		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Cadmium	ND	0.10		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Calcium	2300	25		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Chromium	1.7	0.30		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Lead	2.7	0.25		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Magnesium	610	25		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Potassium	340	50		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Selenium	ND	2.5		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Silver	ND	0.25		mg/Kg	1	10/9/2013 11:03:18 AM	9698
Sodium	63	25		mg/Kg	1	10/9/2013 11:03:18 AM	9698

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309D83**

15-Oct-13

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-9704**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **9704**	RunNo: **13944**
Prep Date: **10/8/2013**	Analysis Date: **10/8/2013**	SeqNo: **398377** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID **LCS-9704**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **9704**	RunNo: **13944**
Prep Date: **10/8/2013**	Analysis Date: **10/8/2013**	SeqNo: **398378** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.4	0.30	1.500	0	95.2	90	110			
Chloride	14	1.5	15.00	0	96.1	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	96.4	90	110			
Bromide	7.3	0.30	7.500	0	97.7	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	98.6	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	96.4	90	110			
Sulfate	29	1.5	30.00	0	96.6	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309D83**

15-Oct-13

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **LCS-9551**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **9551**	RunNo: **13697**
Prep Date: **9/30/2013**	Analysis Date: **9/30/2013**	SeqNo: **390356** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.3	77.1	128			
Surr: DNOP	3.8		5.000		75.6	63	147			

Sample ID **MB-9551**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **9551**	RunNo: **13697**
Prep Date: **9/30/2013**	Analysis Date: **9/30/2013**	SeqNo: **390358** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	7.0		10.00		70.4	63	147			

Sample ID **1309D83-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **CELL 1**	Batch ID: **9551**	RunNo: **13729**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **391579** 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	61.3	138			
Surr: DNOP	3.3		5.000		65.1	63	147			

Sample ID **1309D83-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **CELL 1**	Batch ID: **9551**	RunNo: **13729**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **391757** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	49.80	0	95.2	61.3	138	6.40	20	
Surr: DNOP	3.3		4.980		66.4	63	147	0	0	

Sample ID **MB-9576**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **9576**	RunNo: **13723**
Prep Date: **10/1/2013**	Analysis Date: **10/1/2013**	SeqNo: **391935** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		96.8	63	147			

Sample ID **LCS-9576**	SampType: **LCS**	TestCode: **EPA Method 8015D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **9576**	RunNo: **13723**
Prep Date: **10/1/2013**	Analysis Date: **10/1/2013**	SeqNo: **391959** Units: **%REC**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		102	63	147			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309D83**

15-Oct-13

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-9556**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392566** 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	930		1000		92.8	80	120			

Sample ID **LCS-9556**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392567** 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	113	74.5	126			
Surr: BFB	1000		1000		100	80	120			

Sample ID **1309D83-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **CELL 1**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392570** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	5.0	24.95	0	130	76	156			
Surr: BFB	1000		998.0		105	80	120			

Sample ID **1309D83-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **CELL 1**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392571** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	5.0	24.93	0	129	76	156	1.31	17.7	
Surr: BFB	1000		997.0		104	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309D83**

15-Oct-13

Client: Blagg Engineering

Project: Crouch Mesa LF

Sample ID **MB-9556**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392635** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID **LCS-9556**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392641** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	95.9	80	120			
Toluene	0.98	0.050	1.000	0	98.3	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID **1309D83-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **CELL 2**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392653** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.050	0.9980	0	108	67.3	145			
Toluene	1.1	0.050	0.9980	0.01092	109	66.8	144			
Ethylbenzene	1.1	0.050	0.9980	0	113	61.9	153			
Xylenes, Total	3.4	0.10	2.994	0.01225	114	65.8	149			
Surr: 4-Bromofluorobenzene	1.1		0.9980		111	80	120			

Sample ID **1309D83-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **CELL 2**	Batch ID: **9556**	RunNo: **13760**
Prep Date: **9/30/2013**	Analysis Date: **10/1/2013**	SeqNo: **392654** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	0.9980	0	103	67.3	145	4.86	20	
Toluene	1.1	0.050	0.9980	0.01092	106	66.8	144	2.62	20	
Ethylbenzene	1.1	0.050	0.9980	0	111	61.9	153	1.77	20	
Xylenes, Total	3.3	0.10	2.994	0.01225	110	65.8	149	3.46	20	
Surr: 4-Bromofluorobenzene	1.0		0.9980		105	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309D83**

15-Oct-13

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID	MB-9559	SampType:	MBLK		TestCode:	EPA Method 7471: Mercury				
Client ID:	PBS	Batch ID:	9559		RunNo:	13710				
Prep Date:	9/30/2013	Analysis Date:	9/30/2013		SeqNo:	390623	Units:	mg/kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	LCS-9559	SampType:	LCS		TestCode:	EPA Method 7471: Mercury				
Client ID:	LCSS	Batch ID:	9559		RunNo:	13710				
Prep Date:	9/30/2013	Analysis Date:	9/30/2013		SeqNo:	390624	Units:	mg/kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	96.9	80	120			

Sample ID	1309D83-003AMS	SampType:	ms		TestCode:	EPA Method 7471: Mercury				
Client ID:	CELL 5	Batch ID:	9559		RunNo:	13710				
Prep Date:	9/30/2013	Analysis Date:	9/30/2013		SeqNo:	390629	Units:	mg/kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1663	0	100	75	125			

Sample ID	1309D83-003AMSD	SampType:	msd		TestCode:	EPA Method 7471: Mercury				
Client ID:	CELL 5	Batch ID:	9559		RunNo:	13710				
Prep Date:	9/30/2013	Analysis Date:	9/30/2013		SeqNo:	390630	Units:	mg/kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1642	0	98.0	75	125	3.64	20	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1309D83**

15-Oct-13

Client: Blagg Engineering
Project: Crouch Mesa LF

Sample ID **MB-9698**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **9698**	RunNo: **13936**
Prep Date: **10/8/2013**	Analysis Date: **10/9/2013**	SeqNo: **398246** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Lead	ND	0.25								
Magnesium	ND	25								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								

Sample ID **LCS-9698**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **9698**	RunNo: **13936**
Prep Date: **10/8/2013**	Analysis Date: **10/9/2013**	SeqNo: **398247** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.5	25.00	0	95.0	80	120			
Barium	24	0.10	25.00	0	97.5	80	120			
Cadmium	24	0.10	25.00	0	95.8	80	120			
Calcium	2600	25	2500	0	102	80	120			
Chromium	24	0.30	25.00	0	96.7	80	120			
Lead	24	0.25	25.00	0	95.6	80	120			
Magnesium	2500	25	2500	0	98.7	80	120			
Potassium	2500	50	2500	0	98.6	80	120			
Selenium	22	2.5	25.00	0	89.9	80	120			
Silver	4.4	0.25	5.000	0	87.2	80	120			
Sodium	2500	25	2500	0	98.1	80	120			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1309D83 | RcptNo: 1

Received by/date: LM 09/27/13

Logged By: Michelle Garcia 9/27/2013 10:00:00 AM Michelle Garcia

Completed By: Michelle Garcia 9/27/2013 4:34:35 PM Michelle Garcia

Reviewed By: AT 09/30/13

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 ✔	# of preserved bottles checked for pH:
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ✔	No	(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ✔	No	Adjusted?
14. Is it clear what analyses were requested?	Yes ✔	No	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ✔	No	Checked by:

Special Handling (if applicable)

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

Person Notified: Date:

By Whom: Via: eMail Phone Fax In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			

Chain-of-Custody Record

Client: BLAGG ENGINEERING INC.
BP AMERICA
Mailing Address: P.O. BOX 87
BLOOMFIELD, NM 87413
Phone #: 505-632-1199
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: CROUCH MESA LF
Project #:
Project Manager: J. BLAGG
Sampler: J. BLAGG
On Ice: ☐ No
Sample Temperature:

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type		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_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CATION/ANION				Air Bubbles (Y or N)
9/25/13	1600	SOIL	CELL 1	4oz x2	COOL	-001	X		X				X					X				
"	1615	"	CELL 2	"	"	-002	X		X				X					X				
"	1635	"	CELL 5	"	"	-003	X		X				X					X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/26/13	1640	Jeff Blagg		9/26/13	1640
9/26/13	1806			09/27/13	7000

Remarks:
BILL BLAGG
BP CONTACT: JEFF REACE

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

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

November 11, 2013

Jeff Blagg
Blagg Engineering
P. O. Box 87
Bloomfield, NM 87413
TEL: (505) 320-1183
FAX (505) 632-3903

RE: Crouch Mesa LF-Quarterly OrderNo.: 1311122

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 11/5/2013 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 qualifers 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,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1311122**
Date Reported: **11/11/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF-Quarterly
Lab ID: 1311122-001 **Matrix:** SOIL

Client Sample ID: Cell 1
Collection Date: 11/1/2013 11:30:00 AM
Received Date: 11/5/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/7/2013 10:51:59 AM	10209
Surr: DNOP	98.0	66-131		%REC	1	11/7/2013 10:51:59 AM	10209
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/7/2013 11:29:30 AM	10207
Surr: BFB	93.3	74.5-129		%REC	1	11/7/2013 11:29:30 AM	10207
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	11/7/2013 11:29:30 AM	10207
Toluene	ND	0.048		mg/Kg	1	11/7/2013 11:29:30 AM	10207
Ethylbenzene	ND	0.048		mg/Kg	1	11/7/2013 11:29:30 AM	10207
Xylenes, Total	ND	0.097		mg/Kg	1	11/7/2013 11:29:30 AM	10207
Surr: 4-Bromofluorobenzene	111	80-120		%REC	1	11/7/2013 11:29:30 AM	10207
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	1.5		mg/Kg	1	11/7/2013 4:24:02 PM	10229

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Analytical Report
Lab Order **1311122**
Date Reported: **11/11/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Crouch Mesa LF-Quarterly
Lab ID: 1311122-002 **Matrix:** SOIL

Client Sample ID: Cell 2
Collection Date: 11/1/2013 12:05:00 PM
Received Date: 11/5/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/7/2013 12:25:07 PM	10209
Surr: DNOP	100	66-131		%REC	1	11/7/2013 12:25:07 PM	10209
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/7/2013 12:55:06 PM	10207
Surr: BFB	92.0	74.5-129		%REC	1	11/7/2013 12:55:06 PM	10207
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	11/7/2013 12:55:06 PM	10207
Toluene	ND	0.048		mg/Kg	1	11/7/2013 12:55:06 PM	10207
Ethylbenzene	ND	0.048		mg/Kg	1	11/7/2013 12:55:06 PM	10207
Xylenes, Total	ND	0.095		mg/Kg	1	11/7/2013 12:55:06 PM	10207
Surr: 4-Bromofluorobenzene	110	80-120		%REC	1	11/7/2013 12:55:06 PM	10207
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	1.5		mg/Kg	1	11/7/2013 4:48:51 PM	10229

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

Analytical Report
Lab Order **1311122**
Date Reported: **11/11/2013**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Client Sample ID: Cell 3
Project: Crouch Mesa LF-Quarterly
Collection Date: 11/1/2013 12:30:00 PM
Lab ID: 1311122-003 **Matrix:** SOIL **Received Date:** 11/5/2013 10:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	11/7/2013 12:56:18 PM	10209
Surr: DNOP	103	66-131		%REC	1	11/7/2013 12:56:18 PM	10209
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/7/2013 2:20:52 PM	10207
Surr: BFB	92.5	74.5-129		%REC	1	11/7/2013 2:20:52 PM	10207
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.046		mg/Kg	1	11/7/2013 2:20:52 PM	10207
Toluene	ND	0.046		mg/Kg	1	11/7/2013 2:20:52 PM	10207
Ethylbenzene	ND	0.046		mg/Kg	1	11/7/2013 2:20:52 PM	10207
Xylenes, Total	ND	0.093		mg/Kg	1	11/7/2013 2:20:52 PM	10207
Surr: 4-Bromofluorobenzene	112	80-120		%REC	1	11/7/2013 2:20:52 PM	10207
EPA METHOD 300.0: ANIONS						Analyst: **JRR**	
Chloride	ND	1.5		mg/Kg	1	11/7/2013 5:13:42 PM	10229

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
O	RSD is greater than RSDlimit	P	Sample pH greater than 2 for VOA and TOC only.
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	Spike Recovery outside accepted recovery limits		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1311122

11-Nov-13

Client: Blagg Engineering

Project: Crouch Mesa LF-Quarterly

Sample ID	MB-10229	SampType:	MBLK		TestCode:	EPA Method 300.0: Anions				
Client ID:	PBS	Batch ID:	10229		RunNo:	14657				
Prep Date:	11/7/2013	Analysis Date:	11/7/2013		SeqNo:	421708	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-10229	SampType:	LCS		TestCode:	EPA Method 300.0: Anions				
Client ID:	LCSS	Batch ID:	10229		RunNo:	14657				
Prep Date:	11/7/2013	Analysis Date:	11/7/2013		SeqNo:	421709	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.9	90	110			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1311122

11-Nov-13

Client: Blagg Engineering

Project: Crouch Mesa LF-Quarterly

Sample ID	MB-10209	SampType:	MBLK			TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	PBS	Batch ID:	10209			RunNo:	14632			
Prep Date:	11/6/2013	Analysis Date:	11/7/2013			SeqNo:	420889	Units:	mg/Kg	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	9.7		10.00		96.9	66	131			

Sample ID	LCS-10209	SampType:	LCS			TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	LCSS	Batch ID:	10209			RunNo:	14632			
Prep Date:	11/6/2013	Analysis Date:	11/7/2013			SeqNo:	420892	Units:	mg/Kg	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	62.1	127			
Surr: DNOP	4.5		5.000		89.3	66	131			

Sample ID	1311122-001AMS	SampType:	MS			TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	Cell 1	Batch ID:	10209			RunNo:	14632			
Prep Date:	11/6/2013	Analysis Date:	11/7/2013			SeqNo:	420980	Units:	mg/Kg	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	82	10	50.30	7.228	149	47.4	148			S
Surr: DNOP	5.0		5.030		98.9	66	131			

Sample ID	1311122-001AMSD	SampType:	MSD			TestCode:	EPA Method 8015D: Diesel Range Organics			
Client ID:	Cell 1	Batch ID:	10209			RunNo:	14632			
Prep Date:	11/6/2013	Analysis Date:	11/7/2013			SeqNo:	420981	Units:	mg/Kg	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	65	9.9	49.50	7.228	118	47.4	148	22.6	22.7	
Surr: DNOP	4.8		4.950		98.0	66	131	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1311122

11-Nov-13

Client: Blagg Engineering

Project: Crouch Mesa LF-Quarterly

Sample ID	MB-10207	SampType:	MBLK		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	PBS	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421489	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	920		1000		92.3	74.5	129			

Sample ID	LCS-10207	SampType:	LCS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	LCSS	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421490	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	74.5	126			
Surr: BFB	990		1000		99.4	74.5	129			

Sample ID	1311122-002AMS	SampType:	MS		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	Cell 2	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421493	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	4.8	24.22	0	124	76	156			
Surr: BFB	990		969.0		102	74.5	129			

Sample ID	1311122-002AMSD	SampType:	MSD		TestCode:	EPA Method 8015D: Gasoline Range				
Client ID:	Cell 2	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421494	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	32	4.8	24.25	0	130	76	156	5.14	17.7	
Surr: BFB	990		969.9		102	74.5	129	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1311122

11-Nov-13

Client: Blagg Engineering

Project: Crouch Mesa LF-Quarterly

Sample ID	MB-10207	SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBS	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421547	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		110	80	120			

Sample ID	LCS-10207	SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	LCSS	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421548	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	100	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	104	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID	1311122-001AMS	SampType:	MS		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	Cell 1	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421551	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.049	0.9794	0	115	67.3	145			
Toluene	1.2	0.049	0.9794	0.006363	118	66.8	144			
Ethylbenzene	1.2	0.049	0.9794	0	121	61.9	153			
Xylenes, Total	3.6	0.098	2.938	0	122	65.8	149			
Surr: 4-Bromofluorobenzene	1.1		0.9794		117	80	120			

Sample ID	1311122-001AMSD	SampType:	MSD		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	Cell 1	Batch ID:	10207		RunNo:	14650				
Prep Date:	11/6/2013	Analysis Date:	11/7/2013		SeqNo:	421552	Units:	mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.049	0.9775	0	115	67.3	145	0.196	20	
Toluene	1.2	0.049	0.9775	0.006363	118	66.8	144	0.137	20	
Ethylbenzene	1.2	0.049	0.9775	0	122	61.9	153	0.529	20	
Xylenes, Total	3.6	0.098	2.933	0	124	65.8	149	1.02	20	
Surr: 4-Bromofluorobenzene	1.1		0.9775		115	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits
- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2 for VOA and TOC only.
- RL Reporting Detection Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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: 1311122 | RcptNo: 1

Received by/date: LM 11/05/13

Logged By: Anne Thorne 11/5/2013 10:00:00 AM

Completed By: Anne Thorne 11/5/2013

Reviewed By: AF 11/06/13

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

Client: BLAGG ENGINEERING INC.
BP AMERICA
Mailing Address: P.O. BOX 87
BLOOMFIELD NM 87413
Phone #: 505-632-1199
email or Fax#:
QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)
Accreditation
☐ NELAP ☐ Other
☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush
Project Name: CROUCH MESA LF - QUARTERLY
Project #:
Project Manager: J. BLAGG
Sampler: J. BLAGG
On Ice: [illegible]
Sample Temperature: [illegible]

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_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
11/1/13	1130	SOIL	CELL 1	4 oz x 1	COOL	-001	X		X									X				
"	1205	"	CELL 2	"	"	-002	X		X									X				
"	1230	"	CELL 5	"	"	-003	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
11/4/2013	1312	[signature]	[signature]	11/4/2013	1312
11/4/13	1742	[signature]	[signature]	11/05/13	1000

Remarks: BILL BLAGG

BP CONTACT: JEFF PEACE

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.