



AE Order Number Banner

Report Description

This report shows an AE Order Number in Barcode format for purposes of scanning. The Barcode format is Code 39.



App Number: pGVG1600639104

3RP - 469

BP AMERICA PRODUCTION COMPANY

11/14/2017

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

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

Subsequent Report Final Report

Name of Company: BP	Contact: Steve Moskal
Address: 200 Energy Court, Farmington, NM 87401	Telephone No.: 505-326-9497
Facility Name: Mudge LS 006	Facility Type: Natural gas well

Surface Owner: Federal	Mineral Owner: Federal	API No. 3004510843
------------------------	------------------------	--------------------

LOCATION OF RELEASE

Unit Letter A	Section 11	Township 31N	Range 11W	Feet from the 1,033	North/South Line South	Feet from the 869	East/West Line West	County: San Juan
------------------	---------------	-----------------	--------------	------------------------	---------------------------	----------------------	------------------------	------------------

Latitude 36.90884 Longitude -107.96561

NATURE OF RELEASE

Type of Release: condensate and produced water	Volume of Release: Unknown	Volume Recovered: none
Source of Release: Flow line and BGT	Date and Hour of Occurrence: unknown	Date and Hour of Discovery: August 8, 2014; 1:30 PM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

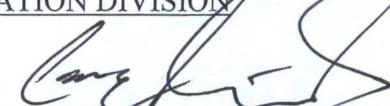
OIL CONS. DIV DIST. 3
SEP 12 2017

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* During construction operations to replace the onsite BGTs impacted soil was discovered. The impacted soil was excavated and transported off site for landfarm treatment. To date approximately 12,212 yards³ have been removed from or treated at the site. Groundwater monitoring wells were installed and sample results received on July 1, 2015 confirmed impacts. Additional monitoring wells were installed following an approved remediation work plan during the first half of August 2016. Final soil impacts were treated via soil shredding. The details and results of the soil shredding activities are detailed in the attached report.

Describe Area Affected and Cleanup Action Taken.* Onsite hydrocarbon impacted soil was excavated. The excavated soil comprising of approximately 6,000 cubic yards were removed from the site. Additional monitoring wells recently installed suggested groundwater impacts are confined to a perched water zone. BP has performed purging the water from this zone in an effort to determine whether the water is perched or not. At this time it is strongly believed that the water is perched and is disconnected from any water bearing aquifer. The attached report details the recent soil remediation project where an additional 6,212 cubic yards of soil were successfully remediated via soil shredding. The final extents were reached in the lateral and vertical directions, with the exception of a plug below a high pressure natural gas collection line and in the area of a large, steep, vegetated hillside where substantial excavation of non-impacted soil would have to occur. The excavation of the clean overburden would pose a significant threat to safety and future erosion if executed. At this time, BP proposes no further soil remediation action at the site. Continued monitoring of the perched water will be performed and reported at a later date.

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

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Steve Moskal	Approved by Environmental Specialist: 	
Title: Field Environmental Coordinator	Approval Date: <u>11/4/17</u>	Expiration Date:
E-mail Address: steven.moskal@bp.com	Conditions of Approval: <u>-7</u>	Attached <input checked="" type="checkbox"/>
Date: September 12, 2017	Phone: 505-326-9497	

* Attach Additional Sheets If Necessary #NCS1423254574
3RP-469

200

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Tuesday, November 14, 2017 10:50 AM
To: Moskal, Steven
Cc: Fields, Vanessa, EMNRD; Powell, Brandon, EMNRD; Bayliss, Randolph, EMNRD
Subject: Mudge LS 6 Subsequent Approval 3RP-469

Steve,

OCD has reviewed and approved the Subsequent C-141 report detailing additional soil excavation at the Mudge LS 6 (30-045-10843) and has approved the report with the following conditions of approval.

- BP will complete additional ground water delineation in Zones 9, and the southern portions of zones 19, 20,21 and 22 as ground water was observed during the excavation no later than February 16, 2017 .
- BP will submit to OCD Santa Fe a detailed report of the ground water investigations within 60 Days of completing additional ground water delineation. (OCD considers delineation to be completed on the date when the well is cased.)

If you have any additional questions please give me a call.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

**Remedial Excavation
of
Hydrocarbon Impacted Soils**

OIL CONS. DIV DIST. 3

SEP 12 2017

**Mudge LS 6
(M) Sec 11 – T32N – R11W
API: 30-045-10843
San Juan County, New Mexico**

Prepared for:
BP America Production Co.
Farmington, New Mexico

Prepared by:
Blagg Engineering, Inc.
P.O. Box 87
Bloomfield, New Mexico 87413
(505)632-1199

September 11
2017

REMEDIAL EXCAVATION
OF
HYDROCARBON IMPACTED SOILS

TABLE OF CONTENTS

Introduction	1
Remediation Activities	1
Conclusions and Recommendations	4
Closure and Limitations	4

TABLES

Table 1: Summary Excavation Closure Analytical Data

Table 2: Summary Treated Soil Pile Analytical Data

APPENDICES

Appendix A: Figures

Figure 1: Site Location Topographic Map

Figure 2: Remedial Excavation Sampling Zones

Appendix B: Excavation Closure - Laboratory Analytical Data Reports

Appendix C: Treated Soil – Laboratory Analytical Data Reports

REMEDIAL EXCAVATION
OF
HYDROCARBON IMPACTED SOILS
MUDGE LS 6

INTRODUCTION

Blagg Engineering Inc. (BEI) has been retained by BP America Production Co. (BP) to monitor, sample and document environmental remediation of hydrocarbon impacts at the Mudge LS 6, a natural gas well located in rural San Juan County, New Mexico at (M) Sec. 11 – T32N – R11W (Figure 1). Hydrocarbon impacts at the site were first discovered in August 2014 during routine closure at a 95 barrel below grade tank (BGT) and a 21 barrel BGT. Both BGT's appeared to be located at spots previously used as unlined earthen pits used for fluid disposal, a common practice permitted by both New Mexico Oil Conservation Division (NMOCD) and the U.S. Bureau of Land Management (BLM) until the mid 1990's. Other sources may have contributed to site impacts but could not be accurately identified. BP began initial remedial excavations of on-site impacts on October 6, 2014 and completed removal of on-site impacts on November 3, 2014. Work to continue remediation of off-site impacts could not be immediately progressed due to regulatory restrictions of moving into a dry ephemeral drainage south of the well pad.

Locally the geologic setting consists of quaternary alluvium (primarily silt and sand) sitting on the Nacimiento formation, a dense siltstone/shalestone/sandstone formation. At the Mudge LS 6 the Nacimiento is primarily sandstone that has been eroded with steep, deep ravines filled with alluvium. During on-site impact removal of the alluvium, isolated pockets of perched groundwater were identified in the low erosional spots of the sandstone. Following the on-site remediation, groundwater monitor wells were installed in these low spots and at surrounding points to quantify the perched water characteristics. It was determined that the perched water was not continuous or connected to a larger groundwater basin (see report by Souder, Miller and Associates, July, 2016).

Following regulatory approval to proceed, removal of off-site impacts began on May 17, 2017 and this work was completed on June 19, 2017.

REMEDICATION ACTIVITIES

Site remediation consisted of 2 separate activities: (1) excavation of off-pad impacted soils and sandstone south of the well pad until site closure standards had been achieved, and (2) on-site treatment of impacted media to remove hydrocarbon impacts to below site closure standards, followed by placing the treated soil back into cleaned up areas of the remedial excavation. The procedures to carry out these activities are discussed below.

The closure standard for the site as determined by the NMOCD and BLM was based on the potential risk to ground and surface water from hydrocarbon impacts. At this site the closure standard was established as follows:

Total Petroleum Hydrocarbons (TPH) = 100 mg/Kg (parts per million)
Benzene = 10 mg/Kg
Benzene, Toluene, Ethyl-Benzene and Total Xylenes (BTEX) combined = 50 mg/Kg
Total Chlorides = 600 mg/Kg

Excavation of Impacted Media to Achieve Site Remediation

Removal of hydrocarbon impacted media began on May 17, 2017 using excavators to strip clean, un-impacted soils, excavate impacted loose soils and remove any impacted sandstone immediately below the loose soils. The excavated impacted soils were placed on the well pad for on-site treatment to remove hydrocarbons via shredding and chemical treatment (discussed below). Excavation began at the southern limit of the well pad and continued towards the south, south west and south east until composite samples submitted for laboratory analytical testing confirmed that sidewalls and base areas were within site closure standards. The final excavating and sampling was concluded on June 19, 2017. The excavated area was approximately 200' (north to south) x 140' (west to east) with maximum depths of approximately 35' below the original well pad surface (Figure 2).

Closure sampling was progressive as the excavation advanced. Sampling areas were marked out on the excavation walls and base for collection of 5-point composites from each area. Sampling was primarily performed using an excavator trackhoe due to the danger of personnel entering the excavation because of the risk of collapsing sidewalls. All closure sampling was witnessed by either or both the NMOCD and BLM. Representative composite portions of sample were placed into a gallon sized Ziploc® baggie for field headspace analysis of organic vapors with a calibrated IonScience Tiger model photo-ionization detector (PID) containing a 11.2 eV lamp. Split samples were placed into a 4-ounce laboratory supplied jar with Teflon® lid, labeled and placed on ice in an ice chest for further laboratory testing. The jarred samples were hand delivered to a representative of Hall Environmental Analytical Laboratories for analysis via U.S. EPA Method 8021B (volatile organics limited to benzene, toluene, ethyl benzene and total xylenes), U.S. EPA Method 8015 (gasoline range (GRO), diesel range (DRO) and motor oil range (MRO) organics), and chlorides via U.S. EPA Method 300. A chain-of-custody followed the samples.

Three (3) sampling areas did not reach the site closure standard (Zones 13, 14 & 20). A variance to the closure standard was granted by NMOCD/BLM for Zones 13 and 14 due to the presence of an active, high pressure natural gas line immediately adjacent to those areas. A variance for Zone 20 was granted do its proximity to a very steep hillside that would have required removal of a substantial area of vegetation protecting that hillside from erosion. Summary laboratory analytical results are included in Table 1: Summary Excavation Closure Analytical Data. Laboratory test reports are attached in Appendix B. There were a total of 22 separate composite sampling areas.

Remediation of Excavated Impacted Media via Soil Shredding

BP contracted remediation of excavated media to a private enterprise, Unlimited Construction, for on-site treatment. A proprietary process (termed 'soil shredding') was used to crush the excavated material and then chemically treat the fine grained soils with hydrogen peroxide to remove hydrocarbons. Following soil shredding, the treated material was sampled to confirm that site closure standards had been achieved and then placed back into remediated portions of the excavation. This process progressed at the same approximate rate as the excavation advanced.

Treated soil was placed into labeled stockpiles prior to closure sampling. This sampling was performed using an excavator trackhoe to dig into each pile and collect composite samples for initial field analysis and subsequent laboratory testing. Sample handling, regulatory witnessing, preservation, chain-of-custody and laboratory test procedures were the same as previously described.

At the onset of the soil shredding process one (1) pile (Pile 10) failed on first testing. This can be a common occurrence with the initial shredding process until the proper chemical balance for remediation is determined. This pile was allowed to further remediate over time as additional chemical reaction occurred and subsequent testing found those soils conformed to the site closure standards. A total of 6,212 cubic yards of soil was treated and placed back into the remedial excavation. A summary of treated soil laboratory test data is presented in Table 2, Summary Treated Soil Pile Analytical Data. Laboratory test reports are attached in Appendix C.

CONCLUSIONS AND RECOMMENDATIONS

- 1) Hydrocarbon impacted soil and bedrock at the BP operated Mudge LS 6 has been successfully excavated and treated. Excavation sampling and analytical testing has confirmed that 19 of 22 separate sampling zones within the remedial excavation test below site closure standards. The three (3) zones with residual hydrocarbon impacts exceeding site closure standards (Zones 13, 14 and 20) are not indicated to contribute a risk to surface or groundwater. Removal of additional soils in Zones 13 and 14 is not presently feasible due to an active third party high pressure natural gas line. Removal of additional soils in Zone 20 will require disturbance of a substantial volume of vegetation on a steep hillside, resulting in accelerated future erosion. Therefore, no additional site remediation of impacts is indicated. Regulatory closure of remedial activities is recommended.
- 2) All soils treated on-site via the proprietary 'soil shredding' process and backfilled into the remedial excavation have demonstrated via analytical testing to be within site closure standards. These treated soils are not indicated to contribute a risk to surface or groundwater. No additional treatment is recommended.

CLOSURE AND LIMITATIONS

This report has been prepared for the exclusive use of BP America Production Company as it pertains to hydrocarbon impact remediation at the Mudge LS 6 in San Juan County, New Mexico. The data presented herein is based on visual observations, subsurface soil conditions encountered at sampling locations and on information reported by analytical laboratory testing of soils. This report does not reflect variations which may exist between sampling locations.

I certify that the work performed by Blagg Engineering, Inc. as described in this report was directed by my supervision, and that I am personally familiar with the remedial actions and the contents of this report.

Submitted by:
Blagg Engineering, Inc.

Jeffrey C. Blagg, PE
NMPE 11607

TABLES

Table 1: Summary Excavation Closure Analytical Data

Table 2: Summary Treated Soil Pile Analytical Data

Table 2

BP America Mudge LS 6 API: 30-045-10843

Treated Soil Pile Test Results

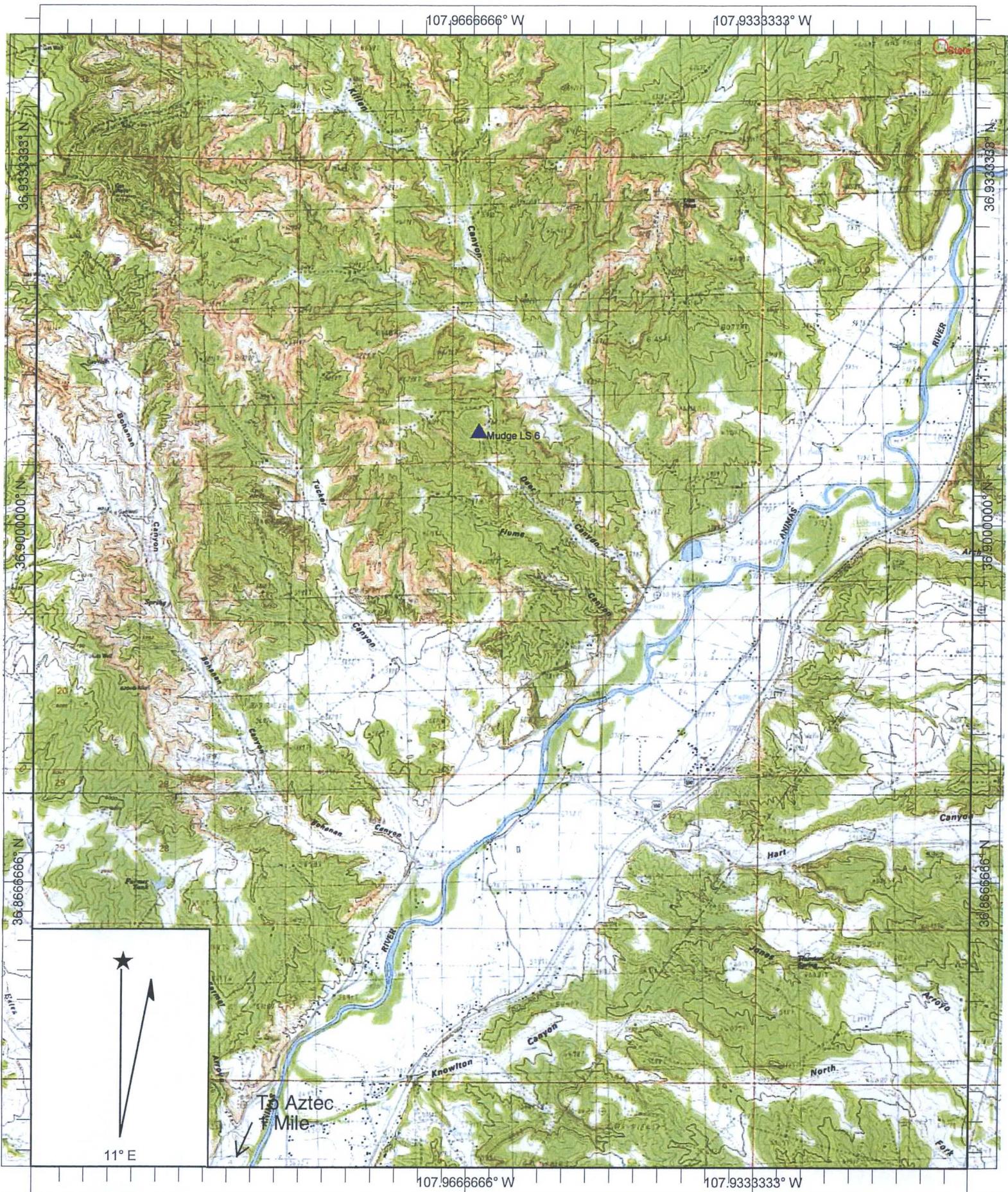
Pile ID	Volume (CY)	Date Created	Date Sampled	Field OVM (ppm)	BTEX (mg/Kg)	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH MRO (mg/Kg)	TPH Total (mg/Kg)	Chloride (mg/Kg)
TSP-1	100	5/19/2017	5/23/2017	0.6	ND	ND	ND	ND	ND	ND
TSP-2	100	5/19/2017	5/23/2017	1.2	ND	ND	ND	ND	ND	ND
TSP-3	100	5/19/2017	5/23/2017	0.6	ND	ND	ND	ND	ND	ND
TSP-4	100	5/19/2017	5/23/2017	0.2	ND	ND	ND	ND	ND	ND
TSP-5	100	5/19/2017	5/23/2017	1.3	ND	ND	14	ND	14	ND
TSP-6	100	5/19/2017	5/23/2017	0.7	ND	ND	ND	ND	ND	ND
TSP-7	100	5/19/2017	5/23/2017	0.9	ND	ND	ND	ND	ND	ND
TSP-8	100	5/24/2017	5/24/2017	70.7	0.12	12	15	ND	27	ND
TSP-9	100	5/24/2017	5/24/2017	91.8	0.08	11	19	ND	30	ND
TSP-10	100	5/24/2017	5/24/2017	141	0.095	18	40	66	124	ND
TSP-10R	100	5/24/2017	5/25/2017	26.6	ND	ND	38	86	124	ND
TSP-10R2	100	5/24/2017	5/26/2017	56.7	ND	4.9	18	ND	22.9	ND
TSP-11-15	500	5/24/2017	5/25/2017	67.5	ND	ND	ND	12	12	ND
TSP-16	500	5/30/2017	5/31/2017	283	ND	ND	13	ND	13	ND
TSP-17	500	6/1/2017	6/2/2017	375	ND	ND	ND	ND	ND	ND
TSP-18	500	6/5/2017	6/6/2017	65.8	ND	ND	ND	ND	ND	ND
TSP-19	500	6/6/2017	6/7/2017	398	0.22	31	14	ND	45	ND
TSP-20	500	6/7/2017	6/7/2017	939	0.38	44	15	ND	59	ND
TSP-21	500	6/6/2017	6/9/2017	173	ND	14	ND	ND	14	ND
TSP-22	500	6/6/2017	6/9/2017	120	0.088	17	11	ND	28	ND
TSP-23	500	6/12/2017	6/13/2017	32.5	ND	17	ND	ND	17	ND
TSP-24	356	6/19/2017	6/20/2017	89	ND	ND	ND	ND	ND	ND
TSP-25	356	6/19/2017	6/20/2017	184	ND	ND	14	ND	14	ND
Total	6,212 CY									

Site Closure Standard: 100 ppm total TPH

APPENDIX A FIGURES

Figure 1: Site Location Topographic Map

Figure 2: Remedial Excavation Sampling Zones



Name: CEDAR HILL
 Date: 9/8/2016
 Scale: 1 inch equals 4000 feet

Caption: BP America
 Mudge LS 6

May 19, 2017 Sidewall Closure Samples:

Z1 (6'-18') OVM = 165 ppm, TPH = 4.7 ppm
Z2 (6'-18') OVM = 62 ppm, TPH = 3.5 ppm
Z3 (9'-18') OVM = 5.3 ppm, TPH = ND
Z4 (9'-18') OVM = 2.0 ppm, TPH = ND

May 23, 2017 Base Closure Samples:

Z5 (20'-25') OVM = 92 ppm, TPH = ND
Z6 (22'-25') OVM = 117 ppm, TPH = ND

May 24, 2017 Sidewall Closure Sample:

Z7 (10'-22') OVM = 17.7 ppm, TPH = ND

May 31, 2017 Sidewall Closure Sample:

Z8 (8'-22') OVM = 3,527 ppm, TPH = 120 ppm

June 2, 2017 Base Closure Sample:

Z9 (27') OVM = 5.1 ppm, TPH = ND

June 6, 2017 Sidewall Closure Sample:

Z10 (7'-17'), TPH = ND

June 9, 2017 Closure Samples:

Z11 (12'-22'), OVM = 3.7 ppm, TPH = ND
Z12 (7'-25'), OVM = 168 ppm, TPH = ND
Z13 (7'-25'), OVM = 4,355 ppm, TPH = 204 ppm
Z14 (7'-25'), OVM = 5,090 ppm, TPH = 450 ppm
Z15 (Base@28'), OVM = 232 ppm, TPH = 7.7 ppm

Informational Grabs from Excavation:

Grab @ 25' OVM = 2,361 ppm, TPH = 100 ppm
Grab @ 22' OVM = 3,030 ppm, TPH = ND
Grab 2 @ 22' OVM = 3,596 ppm, TPH 580 ppm
(Note: This area subsequently excavated)



June 19, 2017 - Closure Sampling
(All 5-Point Composites):

Z16 (20'-30')	OVM=729,	TPH= ND
Z17 (25'-35')	OVM=4,870,	TPH= 4.2 ppm
Z18 (25'-35')	OVM=4,331,	TPH= 25 ppm
Z19 (38')	OVM=307,	TPH= ND
Z20 (25'-35')	OVM=5,391,	TPH= 149 ppm
Z21 (25'-35')	OVM=965,	TPH= 20 ppm
Z22 (25'-35')	OVM=239,	TPH= ND

APPENDIX B

Excavation Closure - Laboratory Analytical Data Reports



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

May 23, 2017

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

RE: MUDGE LS 6

OrderNo.: 1705B26

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/20/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1705B26

Date Reported: 5/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: ZONE 2

Project: MUDGE LS 6

Collection Date: 5/19/2017 1:15:00 PM

Lab ID: 1705B26-002

Matrix: SOIL

Received Date: 5/20/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	30	30		mg/Kg	20	5/22/2017 12:35:42 PM	31886
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	3.5	3.3		mg/Kg	1	5/22/2017 1:32:54 PM	R42963
Surr: BFB	96.6	70-130		%Rec	1	5/22/2017 1:32:54 PM	R42963
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/22/2017 12:00:34 PM	31865
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/22/2017 12:00:34 PM	31865
Surr: DNOP	99.4	70-130		%Rec	1	5/22/2017 12:00:34 PM	31865
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.017		mg/Kg	1	5/22/2017 1:32:54 PM	SL42963
Toluene	ND	0.033		mg/Kg	1	5/22/2017 1:32:54 PM	SL42963
Ethylbenzene	ND	0.033		mg/Kg	1	5/22/2017 1:32:54 PM	SL42963
Xylenes, Total	ND	0.066		mg/Kg	1	5/22/2017 1:32:54 PM	SL42963
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	5/22/2017 1:32:54 PM	SL42963
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	5/22/2017 1:32:54 PM	SL42963
Surr: Dibromofluoromethane	118	70-130		%Rec	1	5/22/2017 1:32:54 PM	SL42963
Surr: Toluene-d8	107	70-130		%Rec	1	5/22/2017 1:32:54 PM	SL42963

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

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

Analytical Report

Lab Order 1705B26

Date Reported: 5/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: ZONE 3

Project: MUDGE LS 6

Collection Date: 5/19/2017 1:19:00 PM

Lab ID: 1705B26-003

Matrix: SOIL

Received Date: 5/20/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	49	30		mg/Kg	20	5/22/2017 12:48:06 PM	31886
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	5/22/2017 2:01:47 PM	R42963
Surr: BFB	94.9	70-130		%Rec	1	5/22/2017 2:01:47 PM	R42963
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/22/2017 12:23:05 PM	31865
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/22/2017 12:23:05 PM	31865
Surr: DNOP	101	70-130		%Rec	1	5/22/2017 12:23:05 PM	31865
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: RAA
Benzene	ND	0.016		mg/Kg	1	5/22/2017 2:01:47 PM	SL42963
Toluene	ND	0.033		mg/Kg	1	5/22/2017 2:01:47 PM	SL42963
Ethylbenzene	ND	0.033		mg/Kg	1	5/22/2017 2:01:47 PM	SL42963
Xylenes, Total	ND	0.066		mg/Kg	1	5/22/2017 2:01:47 PM	SL42963
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	5/22/2017 2:01:47 PM	SL42963
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	5/22/2017 2:01:47 PM	SL42963
Surr: Dibromofluoromethane	113	70-130		%Rec	1	5/22/2017 2:01:47 PM	SL42963
Surr: Toluene-d8	108	70-130		%Rec	1	5/22/2017 2:01:47 PM	SL42963

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705B26
23-May-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	MB-31886	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	31886	RunNo:	42957					
Prep Date:	5/22/2017	Analysis Date:	5/22/2017	SeqNo:	1352553	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-31886	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	31886	RunNo:	42957					
Prep Date:	5/22/2017	Analysis Date:	5/22/2017	SeqNo:	1352554	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.5	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705B26

23-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-31865	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31865	RunNo:	42945					
Prep Date:	5/22/2017	Analysis Date:	5/22/2017	SeqNo:	1351371	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.5	73.2	114			
Surr: DNOP	4.8		5.000		96.8	70	130			

Sample ID	MB-31865	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31865	RunNo:	42945					
Prep Date:	5/22/2017	Analysis Date:	5/22/2017	SeqNo:	1351372	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.8		10.00		97.8	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705B26

23-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID 100ng lcs2	SampType: LCS		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: LCSS	Batch ID: SL42963		RunNo: 42963							
Prep Date:	Analysis Date: 5/22/2017		SeqNo: 1351926		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	1.000	0	119	70	130			
Toluene	1.0	0.050	1.000	0	103	70	130			
Surr: 1,2-Dichloroethane-d4	0.50		0.5000		100	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		108	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.47		0.5000		93.5	70	130			

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batch ID: SL42963		RunNo: 42963							
Prep Date:	Analysis Date: 5/22/2017		SeqNo: 1351933		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		111	70	130			
Surr: Dibromofluoromethane	0.57		0.5000		114	70	130			
Surr: Toluene-d8	0.49		0.5000		98.1	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705B26

23-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID rb	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: R42963	RunNo: 42963								
Prep Date:	Analysis Date: 5/22/2017	SeqNo: 1351944			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	500		500.0		99.5	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: R42963	RunNo: 42963								
Prep Date:	Analysis Date: 5/22/2017	SeqNo: 1352515			Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.2	70	130			
Surr: BFB	500		500.0		100	70	130			

Qualifiers:

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



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: **1705B26**

RcptNo: **1**

Received By: **Anne Thorne** 5/20/2017 11:15:00 AM

Anne Thorne

Completed By: **Anne Thorne** 5/22/2017 7:48:33 AM

Anne Thorne

Reviewed By: *[Signature]* 5/22/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

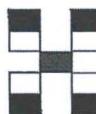
18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.2	Good	Yes			

Chain-of-Custody Record

Client: **BP AMERICA**
BLAGG ENGINEERING INC.
 Mailing Address:
 Phone #: **(505) 320-1183**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Turn-Around Time: **SAME DAY**
 Standard Rush
 Project Name:
MUDGE LS 6
 Project #:
 Project Manager:
J. Blagg
 Sampler: **J. Blagg**
 On Ice: Yes
 Sample Temperature: **41.2**



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	HEALTHY	BTEX + MTBE + THMs (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)
5/19/2017	1308	SOIL	ZONE 1	4 oz X 1	COOL	201	X	X										X	
	1315		ZONE 2			202													
	1319		ZONE 3			203													
	1323		ZONE 4			204													

Date: **5/19/2017** Time: **1650** Relinquished by: **J. Blagg**
 Received by: **[Signature]** Date: **05/20/17** Time: **1115**
 Date: _____ Time: _____ Relinquished by: _____
 Received by: _____ Date: _____ Time: _____

Remarks: **Bill BP CONTACT: STEVE Maska**
VID: VHIXONEVRM
WBS ELEMENT: L1-0018M-E; MUDGE LLS6

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



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

May 25, 2017

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 632-1199

FAX (505) 632-3903

RE: MUDGE LS 6

OrderNo.: 1705C34

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/24/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1705C34

Date Reported: 5/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: ZONE 5

Project: MUDGE LS 6

Collection Date: 5/23/2017 10:25:00 AM

Lab ID: 1705C34-001

Matrix: SOIL

Received Date: 5/24/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	5/24/2017 12:01:05 PM	31936
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/24/2017 8:59:23 AM	31930
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/24/2017 8:59:23 AM	31930
Surr: DNOP	86.9	70-130		%Rec	1	5/24/2017 8:59:23 AM	31930
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	5/24/2017 11:46:13 AM	31921
Surr: BFB	110	54-150		%Rec	5	5/24/2017 11:46:13 AM	31921
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.091		mg/Kg	5	5/24/2017 11:46:13 AM	31921
Toluene	ND	0.18		mg/Kg	5	5/24/2017 11:46:13 AM	31921
Ethylbenzene	ND	0.18		mg/Kg	5	5/24/2017 11:46:13 AM	31921
Xylenes, Total	ND	0.36		mg/Kg	5	5/24/2017 11:46:13 AM	31921
Surr: 4-Bromofluorobenzene	123	66.6-132		%Rec	5	5/24/2017 11:46:13 AM	31921

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

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

Analytical Report

Lab Order 1705C34

Date Reported: 5/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: ZONE 6

Project: MUDGE LS 6

Collection Date: 5/23/2017 10:34:00 AM

Lab ID: 1705C34-002

Matrix: SOIL

Received Date: 5/24/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	5/24/2017 12:38:20 PM	31936
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	5/24/2017 9:27:07 AM	31930
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/24/2017 9:27:07 AM	31930
Surr: DNOP	85.1	70-130		%Rec	1	5/24/2017 9:27:07 AM	31930
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	5/24/2017 12:10:16 PM	31921
Surr: BFB	99.3	54-150		%Rec	1	5/24/2017 12:10:16 PM	31921
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	5/24/2017 12:10:16 PM	31921
Toluene	ND	0.037		mg/Kg	1	5/24/2017 12:10:16 PM	31921
Ethylbenzene	ND	0.037		mg/Kg	1	5/24/2017 12:10:16 PM	31921
Xylenes, Total	ND	0.074		mg/Kg	1	5/24/2017 12:10:16 PM	31921
Surr: 4-Bromofluorobenzene	116	66.6-132		%Rec	1	5/24/2017 12:10:16 PM	31921

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C34

25-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-31936	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	31936	RunNo:	43028					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1355112	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-31936	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	31936	RunNo:	43028					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1355113	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C34
 25-May-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	LCS-31930	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31930	RunNo:	43020					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1353919	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.2	73.2	114			
Surr: DNOP	4.5		5.000		89.2	70	130			

Sample ID	MB-31930	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31930	RunNo:	43020					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1353920	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		97.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C34

25-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-31921	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	31921	RunNo:	43026					
Prep Date:	5/23/2017	Analysis Date:	5/24/2017	SeqNo:	1354470	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	980		1000		97.8	54	150			

Sample ID	LCS-31921	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	31921	RunNo:	43026					
Prep Date:	5/23/2017	Analysis Date:	5/24/2017	SeqNo:	1354471	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.8	76.4	125			
Surr: BFB	1100		1000		106	54	150			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	G43026	RunNo:	43026					
Prep Date:		Analysis Date:	5/24/2017	SeqNo:	1354482	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		99.1	54	150			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	G43026	RunNo:	43026					
Prep Date:		Analysis Date:	5/24/2017	SeqNo:	1354483	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C34
25-May-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID MB-31921	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 31921		RunNo: 43026							
Prep Date: 5/23/2017	Analysis Date: 5/24/2017		SeqNo: 1354496		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		117	66.6	132			

Sample ID LCS-31921	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 31921		RunNo: 43026							
Prep Date: 5/23/2017	Analysis Date: 5/24/2017		SeqNo: 1354497		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		127	66.6	132			

Sample ID RB	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: B43026		RunNo: 43026							
Prep Date:	Analysis Date: 5/24/2017		SeqNo: 1354508		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		115	66.6	132			

Sample ID 100NG BTEX LCS	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: B43026		RunNo: 43026							
Prep Date:	Analysis Date: 5/24/2017		SeqNo: 1354509		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.2		1.000		116	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1705C34**

RcptNo: **1**

Received By: **Anne Thorne** 5/24/2017 7:15:00 AM

Anne Thorne

Completed By: **Anne Thorne** 5/24/2017 7:52:07 AM

Anne Thorne

Reviewed By: **ajs** 5/24/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

Person Notified:	<input style="width: 95%;" type="text"/>	Date:	<input style="width: 95%;" type="text"/>
By Whom:	<input style="width: 95%;" type="text"/>	Via:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	<input style="width: 95%;" type="text"/>		
Client Instructions:	<input style="width: 95%;" type="text"/>		

17. Additional remarks:

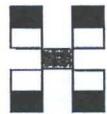
18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: **BP America**
Blagg Engineering Inc.
 Mailing Address:
 Phone #: **(505) 320-1103**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Turn-Around Time: **SAME DAY**
 Standard Rush
 Project Name: **MUDGE LS 6**
 Project #:
 Project Manager: **J. Blagg**
 Sampler: **J. Blagg**
 On Ice No
 Sample Temperature: **11.5**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + THMs (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)	CHLORINE	Air Bubbles (Y or N)
X	X	X									X	
X	X										X	

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5/23/17	1025	SOIL	ZONE 5	4oz x 1	COOL	201
11	1034	"	ZONE 6	"	"	202

Date: 5/23/17 Time: 1520 Relinquished by: **J. Blagg**
 Received by: **Chris Walker** Date: 5/24/17 Time: 1520
 Date: 5/23/17 Time: 1910 Relinquished by: **Christine Walker**
 Received by: **Chris Walker** Date: 5/24/17 Time: 0715

Remarks: **Bill BP** Contact: **Steve Maska**
 UID: **VHIXONEURM**
 WBS ELEMENT: **LI-0018M-E: MUDGE LS 6**

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



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

May 26, 2017

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

RE: MUDGE LS 6

OrderNo.: 1705C81

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 5/25/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1705C81

Date Reported: 5/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 7

Project: MUDGE LS 6

Collection Date: 5/24/2017 1:42:00 PM

Lab ID: 1705C81-001

Matrix: SOIL

Received Date: 5/25/2017 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	5/25/2017 12:02:40 PM	31974
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	5/25/2017 9:30:13 AM	31956
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/25/2017 9:30:13 AM	31956
Surr: DNOP	87.1	70-130		%Rec	1	5/25/2017 9:30:13 AM	31956
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.5		mg/Kg	1	5/25/2017 12:23:45 PM	G43065
Surr: BFB	108	54-150		%Rec	1	5/25/2017 12:23:45 PM	G43065
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.022		mg/Kg	1	5/25/2017 12:23:45 PM	B43065
Toluene	ND	0.045		mg/Kg	1	5/25/2017 12:23:45 PM	B43065
Ethylbenzene	ND	0.045		mg/Kg	1	5/25/2017 12:23:45 PM	B43065
Xylenes, Total	ND	0.089		mg/Kg	1	5/25/2017 12:23:45 PM	B43065
Surr: 4-Bromofluorobenzene	95.1	66.6-132		%Rec	1	5/25/2017 12:23:45 PM	B43065

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C81

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-31974	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	31974	RunNo:	43067					
Prep Date:	5/25/2017	Analysis Date:	5/25/2017	SeqNo:	1355858	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-31974	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	31974	RunNo:	43067					
Prep Date:	5/25/2017	Analysis Date:	5/25/2017	SeqNo:	1355859	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C81

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-31943	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31943	RunNo:	43051					
Prep Date:	5/24/2017	Analysis Date:	5/25/2017	SeqNo:	1354741	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.8		5.000		95.2	70	130			

Sample ID	MB-31943	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31943	RunNo:	43051					
Prep Date:	5/24/2017	Analysis Date:	5/25/2017	SeqNo:	1354742	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		96.1	70	130			

Sample ID	LCS-31956	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31956	RunNo:	43052					
Prep Date:	5/25/2017	Analysis Date:	5/25/2017	SeqNo:	1354925	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.1	73.2	114			
Surr: DNOP	4.3		5.000		85.7	70	130			

Sample ID	MB-31956	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31956	RunNo:	43052					
Prep Date:	5/25/2017	Analysis Date:	5/25/2017	SeqNo:	1354926	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.3	70	130			

Sample ID	LCS-31932	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31932	RunNo:	43051					
Prep Date:	5/24/2017	Analysis Date:	5/25/2017	SeqNo:	1355829	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.3	70	130			

Sample ID	MB-31932	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31932	RunNo:	43051					
Prep Date:	5/24/2017	Analysis Date:	5/25/2017	SeqNo:	1355830	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.4		10.00		94.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C81

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	G43065	RunNo:	43065					
Prep Date:		Analysis Date:	5/25/2017	SeqNo:	1355625	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	54	150			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	G43065	RunNo:	43065					
Prep Date:		Analysis Date:	5/25/2017	SeqNo:	1355626	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	104	76.4	125			
Surr: BFB	1000		1000		103	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C81
26-May-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID RB	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: B43065		RunNo: 43065							
Prep Date:	Analysis Date: 5/25/2017		SeqNo: 1355634		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000		90.7	66.6	132			

Sample ID 100NG BTEX LCS	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: B43065		RunNo: 43065							
Prep Date:	Analysis Date: 5/25/2017		SeqNo: 1355635		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.3	80	120			
Toluene	0.90	0.050	1.000	0	89.6	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.6	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.9	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1705C81**

RcptNo: **1**

Received By: **Anne Thorne**

5/25/2017 7:10:00 AM

Anne Thorne

Completed By: **Anne Thorne**

5/25/2017 8:05:51 AM

Anne Thorne

Reviewed By: *[Signature]*

5/25/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

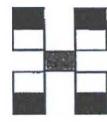
Person Notified: _____	Date: _____
By Whom: _____	Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding: _____	
Client Instructions: _____	

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE + EMB'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)
X		X									X	

Turn-Around Time: SAME DAY

Client: BP America
Blagg Engineering Inc.

Mailing Address: _____

Project Name: MUDGE LS 6

Project #: _____

Project Manager: STEVE MOSKAL

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

Accreditation
 NELAP Other _____

Sampler: JEFF BLAGG

On Site: Yes No

Sample Temperature: _____

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5/24/17	1342	SOIL	ZONE 7	4 Acattlet 0821	COX	1705081 201

Date: 5/24/17 Time: 1640 Relinquished by: Jeff Blagg

Date: 5/24/17 Time: 1804 Relinquished by: Chris Watta

Received by: Chris Watta Date: 5/24/17 Time: 1640

Received by: Chris Watta Date: 05/25/17 Time: 0710

Remarks: Bill BP CONTACT: STEVE MOSKAL
VID: VHXDNEVRM
WBS Element: LI-0018M-E: MUDGE LS 6

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



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

June 05, 2017

Jeff Blagg

Blagg Engineering

P. O. Box 87

Bloomfield, NM 87413

TEL: (505) 632-1199

FAX (505) 632-3903

RE: MUDGE LS 6

OrderNo.: 1706002

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 6/1/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Grab #2 @ 22'
 Project: MUDGE LS 6 Collection Date: 5/31/2017 3:23:00 PM
 Lab ID: 1706002-003 Matrix: SOIL Received Date: 6/1/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/1/2017 11:14:50 AM	32061
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	200	9.6		mg/Kg	1	6/1/2017 10:30:05 AM	32055
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/1/2017 10:30:05 AM	32055
Surr: DNOP	88.6	70-130		%Rec	1	6/1/2017 10:30:05 AM	32055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	380	66		mg/Kg	20	6/1/2017 11:52:46 AM	R43189
Surr: BFB	386	54-150	S	%Rec	20	6/1/2017 11:52:46 AM	R43189
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	0.35	0.33		mg/Kg	20	6/1/2017 11:52:46 AM	B43189
Toluene	ND	0.66		mg/Kg	20	6/1/2017 11:52:46 AM	B43189
Ethylbenzene	ND	0.66		mg/Kg	20	6/1/2017 11:52:46 AM	B43189
Xylenes, Total	3.8	1.3		mg/Kg	20	6/1/2017 11:52:46 AM	B43189
Surr: 4-Bromofluorobenzene	127	66.6-132		%Rec	20	6/1/2017 11:52:46 AM	B43189

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32061	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32061	RunNo:	43191					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1360495	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32061	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32061	RunNo:	43191					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1360496	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	LCS-32055	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32055	RunNo:	43184					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1359572	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	87.4	73.2	114			
Surr: DNOP	4.9		5.000		98.0	70	130			

Sample ID	MB-32055	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32055	RunNo:	43184					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1359573	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	R43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359964	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.4	76.4	125			
Surr: BFB	1200		1000		120	54	150			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	R43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359965	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	1100		1000		111	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	B43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359968	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.5	80	120			
Toluene	0.94	0.050	1.000	0	93.7	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	66.6	132			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	B43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359971	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		110	66.6	132			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: 1706002

RcptNo: 1

Received By: **Anne Thorne**

6/1/2017 7:20:00 AM

Anne Thorne

Completed By: **Anne Thorne**

6/1/2017 7:59:22 AM

Anne Thorne

Reviewed By: *aj*

61117

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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

Chain-of-Custody Record

Client: **BP America**

Mailing Address: **Black Engineering, Inc.**

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

email or Fax#:

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other

EDD (Type)

Turn-Around Time:

Standard Rush **SAME DAY**

Project Name:

MUDGE LS 6

Project #:

Project Manager:

J. Black

Sampler: **J. Black**

On Ice: Yes No

Sample Temperature: **2.7 - CF - LO = 1.7**

For 6 Liters
Container Type and #

Meat Kds

Preservative Type

COOL

HEAL No.

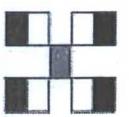
1706002

Date	Time	Matrix	Sample Request ID
5/3/17	1520	SOIL	ZONE 8
	1532		TSP-16
	1523		GRAS * 2 @ 22'

Relinquished by:	Received by:	Date	Time
John Black	John Black	5/3/2017	1707
John Black	John Black	5/3/2017	0720

Analysis Request	BTEX + MTBE + THP'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
	X	X	X									X
	X	X	X									X
	X	X	X									X

Air Bubbles (Y or N)



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Remarks: **Bill BP** CONTACT: **Steve Muesel**
VID: VHXONVCRM
WBS ELEMENT: L1-0018M-E: MUDGE LS 6

TSP SAMPLE TREATED WITH H₂O₂

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



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

June 06, 2017

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

RE: MUDGE LS 6

OrderNo.: 1706156

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/5/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156

06-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32100	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32100	RunNo:	43257					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1362428	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32100	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32100	RunNo:	43257					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1362429	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.2	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156
06-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	LCS-32097	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32097	RunNo:	43241					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1361182	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	86.7	73.2	114			
Surr: DNOP	3.6		5.000		72.5	70	130			

Sample ID	MB-32097	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32097	RunNo:	43241					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1361183	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		85.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156
06-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID MB-32090	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 32090		RunNo: 43255							
Prep Date: 6/2/2017	Analysis Date: 6/5/2017		SeqNo: 1361956		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	1000		1000		102	54	150			

Sample ID LCS-32090	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 32090		RunNo: 43255							
Prep Date: 6/2/2017	Analysis Date: 6/5/2017		SeqNo: 1361957		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.0	76.4	125			
Surr: BFB	1100		1000		108	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156
06-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	MB-32090	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	32090	RunNo:	43255					
Prep Date:	6/2/2017	Analysis Date:	6/5/2017	SeqNo:	1361976	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Sample ID	LCS-32090	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	32090	RunNo:	43255					
Prep Date:	6/2/2017	Analysis Date:	6/5/2017	SeqNo:	1361977	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.8	80	120			
Toluene	1.0	0.050	1.000	0	99.9	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1706156**

RcptNo: **1**

Received By: **Anne Thorne** 6/5/2017 7:30:00 AM

Anne Thorne

Completed By: **Anne Thorne** 6/5/2017 8:08:00 AM

Anne Thorne

Reviewed By: *[Signature]*

6/5/17

Chain of Custody

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

Log In

- 4. Was an attempt made to cool the samples? Yes No NA
- 5. Were all samples received at a temperature of >0° 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: **BP AMERICA**

BLAGG ENGINEERING

Mailing Address:

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

email or Fax#:

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation:

NELAP Other _____

EDD (Type) _____

Turn-Around Time: **SAME DAY**

Standard Rush

Project Name:

MUDGE LS 6

Project #:

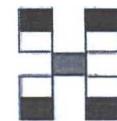
Project Manager:

STEVE MOSKAL

Sampler: **JEFF BLAGG**

On Ice: Yes No

Sample Temperature: **1.0**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MIBK + 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)
6/3/2017	1341	SOIL	TSP-17	406 x 1	COOL	1706154-201	X	X										X	
"	1354	"	ZONE 9	"	"	202	X	X										X	

Date: **6/3/2017** Time: **1847** Relinquished by: **Jeff Blagg**

Received by: **[Signature]** Date: **6/4/17** Time: **1847**

Date: **6/4/17** Time: **1915** Relinquished by: **Christine Waeber**

Received by: **[Signature]** Date: **06/05/17** Time: **0730**

Remarks: **BILL BP CONTACT: STEVE MOSKAL**
VID: VHIXONEVRM
WBS ELEMENT: LI-0018M-E: MUDGE LS 6
TSP SAMPLE TREATED WITH H₂O₂

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



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

June 08, 2017

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

RE: MUDGE LS #6

OrderNo.: 1706315

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/7/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering **Client Sample ID:** NSW of 2nd Excav @ 7'-17'
Project: MUDGE LS #6 **Collection Date:** 6/6/2017 2:01:00 PM
Lab ID: 1706315-001 **Matrix:** SOIL **Received Date:** 6/7/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	6/7/2017 11:16:52 AM	32151
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/7/2017 8:54:51 AM	32146
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/7/2017 8:54:51 AM	32146
Surr: DNOP	84.1	70-130		%Rec	1	6/7/2017 8:54:51 AM	32146
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	6/7/2017 9:35:33 AM	32141
Surr: BFB	105	54-150		%Rec	1	6/7/2017 9:35:33 AM	32141
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	6/7/2017 9:35:33 AM	32141
Toluene	ND	0.038		mg/Kg	1	6/7/2017 9:35:33 AM	32141
Ethylbenzene	ND	0.038		mg/Kg	1	6/7/2017 9:35:33 AM	32141
Xylenes, Total	ND	0.077		mg/Kg	1	6/7/2017 9:35:33 AM	32141
Surr: 4-Bromofluorobenzene	125	66.6-132		%Rec	1	6/7/2017 9:35:33 AM	32141

(This is ID'd as Zone 10 on Figures and Tables in BEI Report)

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

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1706315
 08-Jun-17

Client: Blagg Engineering
Project: MUDGE LS #6

Sample ID	MB-32151	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32151	RunNo:	43316					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363806	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32151	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32151	RunNo:	43316					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363807	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706315

08-Jun-17

Client: Blagg Engineering

Project: MUDGE LS #6

Sample ID	LCS-32146	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32146	RunNo:	43305					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363279	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.6	73.2	114			
Surr: DNOP	3.8		5.000		76.2	70	130			

Sample ID	MB-32146	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32146	RunNo:	43305					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363280	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706315

08-Jun-17

Client: Blagg Engineering

Project: MUDGE LS #6

Sample ID	MB-32141	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	32141	RunNo:	43317					
Prep Date:	6/6/2017	Analysis Date:	6/7/2017	SeqNo:	1364057	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	1000		1000		101	54	150			

Sample ID	LCS-32141	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	32141	RunNo:	43317					
Prep Date:	6/6/2017	Analysis Date:	6/7/2017	SeqNo:	1364058	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	103	76.4	125			
Surr: BFB	1100		1000		106	54	150			

Qualifiers:

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

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1706315
 08-Jun-17

Client: Blagg Engineering
Project: MUDGE LS #6

Sample ID MB-32141	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 32141	RunNo: 43317								
Prep Date: 6/6/2017	Analysis Date: 6/7/2017	SeqNo: 1364078	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Sample ID LCS-32141	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 32141	RunNo: 43317								
Prep Date: 6/6/2017	Analysis Date: 6/7/2017	SeqNo: 1364079	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		124	66.6	132			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1706315**

RcptNo: **1**

Received By: **Anne Thorne**

6/7/2017 7:30:00 AM

Anne Thorne

Completed By: **Anne Thorne**

6/7/2017 7:52:00 AM

Anne Thorne

Reviewed By: **ENM**

06/07/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: **BP AMERICA**

BLASS ENGR.

Mailing Address:

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

email or Fax#:

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other _____

EDD (Type) _____

Turn-Around Time:

Standard Rush **SAME DAY**

Project Name:

MUDGE LS #6

Project #:

Project Manager:

J. BLASS

Sampler: **N. VEJZ**

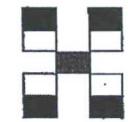
Sample Temperature: **5**

Container Type and #

Preservative Type

HEAL No.

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX+MTBE+TMBs (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	5 FT. COMPOSITE Air Bubbles (Y or N)
6/6/17	1401	SOIL	NSW OF 2ND EXCAV. @ 7'-17'	4oz - 1 mentkt	COOL	1706315 -01	✓		✓									✓	✓



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date: 6/6/17 Time: 1500 Relinquished by: *[Signature]*

Received by: *[Signature]* Date: 6/6/17 Time: 1500

Remarks: INVOICE BP CONTRACT: STEVE MOSKAL

Date: 6/6/17 Time: 1844 Relinquished by: *[Signature]*

Received by: *[Signature]* Date: 06/07/17 Time: 0736

VID #: VHIXONEVRM
WBS ELEMENT: L1-0018M-E: MUDGE LS 6

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



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

June 13, 2017

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

RE: Mudge LS 6

OrderNo.: 1706556

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/10/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Zone 11
 Project: Mudge LS 6 Collection Date: 6/9/2017 1:50:00 PM
 Lab ID: 1706556-001 Matrix: MEOH (SOIL) Received Date: 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/12/2017 12:02:28 PM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	6/12/2017 1:11:59 PM	R43427
Surr: BFB	92.7	70-130		%Rec	1	6/12/2017 1:11:59 PM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/12/2017 12:27:09 PM	32222
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/12/2017 12:27:09 PM	32222
Surr: DNOP	92.1	70-130		%Rec	1	6/12/2017 12:27:09 PM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.016		mg/Kg	1	6/12/2017 1:11:59 PM	A43427
Toluene	ND	0.031		mg/Kg	1	6/12/2017 1:11:59 PM	A43427
Ethylbenzene	ND	0.031		mg/Kg	1	6/12/2017 1:11:59 PM	A43427
Xylenes, Total	ND	0.062		mg/Kg	1	6/12/2017 1:11:59 PM	A43427
Surr: 1,2-Dichloroethane-d4	113	70-130		%Rec	1	6/12/2017 1:11:59 PM	A43427
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/12/2017 1:11:59 PM	A43427
Surr: Dibromofluoromethane	119	70-130		%Rec	1	6/12/2017 1:11:59 PM	A43427
Surr: Toluene-d8	108	70-130		%Rec	1	6/12/2017 1:11:59 PM	A43427

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering **Client Sample ID:** Zone 12
Project: Mudge LS 6 **Collection Date:** 6/9/2017 1:59:00 PM
Lab ID: 1706556-002 **Matrix:** MEOH (SOIL) **Received Date:** 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	41	30		mg/Kg	20	6/12/2017 12:14:53 PM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	1.4		mg/Kg	1	6/12/2017 1:41:10 PM	R43427
Surr: BFB	93.8	70-130		%Rec	1	6/12/2017 1:41:10 PM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	6/12/2017 12:55:17 PM	32222
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/12/2017 12:55:17 PM	32222
Surr: DNOP	92.7	70-130		%Rec	1	6/12/2017 12:55:17 PM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.0072		mg/Kg	1	6/12/2017 1:41:10 PM	A43427
Toluene	ND	0.014		mg/Kg	1	6/12/2017 1:41:10 PM	A43427
Ethylbenzene	ND	0.014		mg/Kg	1	6/12/2017 1:41:10 PM	A43427
Xylenes, Total	ND	0.029		mg/Kg	1	6/12/2017 1:41:10 PM	A43427
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	1	6/12/2017 1:41:10 PM	A43427
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	6/12/2017 1:41:10 PM	A43427
Surr: Dibromofluoromethane	122	70-130		%Rec	1	6/12/2017 1:41:10 PM	A43427
Surr: Toluene-d8	108	70-130		%Rec	1	6/12/2017 1:41:10 PM	A43427

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

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

Analytical Report

Lab Order 1706556

Date Reported: 6/13/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 13

Project: Mudge LS 6

Collection Date: 6/9/2017 2:05:00 PM

Lab ID: 1706556-003

Matrix: MEOH (SOIL)

Received Date: 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/12/2017 12:27:17 PM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	74	17		mg/Kg	5	6/12/2017 11:14:51 AM	R43427
Surr: BFB	95.6	70-130		%Rec	5	6/12/2017 11:14:51 AM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	6/12/2017 1:23:27 PM	32222
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/12/2017 1:23:27 PM	32222
Surr: DNOP	94.0	70-130		%Rec	1	6/12/2017 1:23:27 PM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.086		mg/Kg	5	6/12/2017 11:14:51 AM	A43427
Toluene	ND	0.17		mg/Kg	5	6/12/2017 11:14:51 AM	A43427
Ethylbenzene	ND	0.17		mg/Kg	5	6/12/2017 11:14:51 AM	A43427
Xylenes, Total	1.2	0.34		mg/Kg	5	6/12/2017 11:14:51 AM	A43427
Surr: 1,2-Dichloroethane-d4	112	70-130		%Rec	5	6/12/2017 11:14:51 AM	A43427
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	5	6/12/2017 11:14:51 AM	A43427
Surr: Dibromofluoromethane	96.8	70-130		%Rec	5	6/12/2017 11:14:51 AM	A43427
Surr: Toluene-d8	102	70-130		%Rec	5	6/12/2017 11:14:51 AM	A43427

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Zone 14
 Project: Mudge LS 6 Collection Date: 6/9/2017 2:15:00 PM
 Lab ID: 1706556-004 Matrix: MEOH (SOIL) Received Date: 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/12/2017 12:39:42 PM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	270	16		mg/Kg	5	6/12/2017 2:39:58 PM	R43427
Surr: BFB	95.9	70-130		%Rec	5	6/12/2017 2:39:58 PM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	180	9.7		mg/Kg	1	6/12/2017 1:51:35 PM	32222
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/12/2017 1:51:35 PM	32222
Surr: DNOP	93.5	70-130		%Rec	1	6/12/2017 1:51:35 PM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.080		mg/Kg	5	6/12/2017 2:39:58 PM	A43427
Toluene	ND	0.16		mg/Kg	5	6/12/2017 2:39:58 PM	A43427
Ethylbenzene	0.29	0.16		mg/Kg	5	6/12/2017 2:39:58 PM	A43427
Xylenes, Total	6.2	0.32		mg/Kg	5	6/12/2017 2:39:58 PM	A43427
Surr: 1,2-Dichloroethane-d4	111	70-130		%Rec	5	6/12/2017 2:39:58 PM	A43427
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	5	6/12/2017 2:39:58 PM	A43427
Surr: Dibromofluoromethane	107	70-130		%Rec	5	6/12/2017 2:39:58 PM	A43427
Surr: Toluene-d8	102	70-130		%Rec	5	6/12/2017 2:39:58 PM	A43427

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

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

Analytical Report

Lab Order 1706556

Date Reported: 6/13/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 15

Project: Mudge LS 6

Collection Date: 6/9/2017 2:11:00 PM

Lab ID: 1706556-005

Matrix: MEOH (SOIL)

Received Date: 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/12/2017 12:52:07 PM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	7.7	3.1		mg/Kg	1	6/12/2017 2:10:32 PM	R43427
Surr: BFB	95.1	70-130		%Rec	1	6/12/2017 2:10:32 PM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/12/2017 2:20:02 PM	32222
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/12/2017 2:20:02 PM	32222
Surr: DNOP	92.3	70-130		%Rec	1	6/12/2017 2:20:02 PM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.015		mg/Kg	1	6/12/2017 2:10:32 PM	A43427
Toluene	ND	0.031		mg/Kg	1	6/12/2017 2:10:32 PM	A43427
Ethylbenzene	ND	0.031		mg/Kg	1	6/12/2017 2:10:32 PM	A43427
Xylenes, Total	ND	0.062		mg/Kg	1	6/12/2017 2:10:32 PM	A43427
Surr: 1,2-Dichloroethane-d4	114	70-130		%Rec	1	6/12/2017 2:10:32 PM	A43427
Surr: 4-Bromofluorobenzene	94.3	70-130		%Rec	1	6/12/2017 2:10:32 PM	A43427
Surr: Dibromofluoromethane	122	70-130		%Rec	1	6/12/2017 2:10:32 PM	A43427
Surr: Toluene-d8	121	70-130		%Rec	1	6/12/2017 2:10:32 PM	A43427

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706556

13-Jun-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	MB-32225	SampType:	mbk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32225	RunNo:	43424					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367904	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32225	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32225	RunNo:	43424					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367905	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706556

13-Jun-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	LCS-32222	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32222	RunNo:	43422					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367204	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	73.2	114			
Surr: DNOP	4.7		5.000		93.1	70	130			

Sample ID	MB-32222	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32222	RunNo:	43422					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367205	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.0	70	130			

Sample ID	LCS-32210	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32210	RunNo:	43422					
Prep Date:	6/9/2017	Analysis Date:	6/12/2017	SeqNo:	1367518	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.1	70	130			

Sample ID	MB-32210	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32210	RunNo:	43422					
Prep Date:	6/9/2017	Analysis Date:	6/12/2017	SeqNo:	1367520	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		91.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706556

13-Jun-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID rb	SampType: MBLK		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batch ID: A43427		RunNo: 43427							
Prep Date:	Analysis Date: 6/12/2017		SeqNo: 1367294		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID 100ng lcs	SampType: LCS		TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: LCSS	Batch ID: A43427		RunNo: 43427							
Prep Date:	Analysis Date: 6/12/2017		SeqNo: 1367295		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.8	70	130			
Toluene	0.83	0.050	1.000	0	83.2	70	130			
Surr: 1,2-Dichloroethane-d4	0.57		0.5000		113	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706556

13-Jun-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	PBS	Batch ID:	R43427	RunNo:	43427					
Prep Date:		Analysis Date:	6/12/2017	SeqNo:	1367306	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	490		500.0		97.4	70	130			

Sample ID	2.5ug gro lcs	SampType:	LCS	TestCode:	EPA Method 8015D Mod: Gasoline Range					
Client ID:	LCSS	Batch ID:	R43427	RunNo:	43427					
Prep Date:		Analysis Date:	6/12/2017	SeqNo:	1367677	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	95.3	70	130			
Surr: BFB	470		500.0		94.4	70	130			

Qualifiers:

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



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: **1706556**

RcptNo: **1**

Received By: **Andy Freeman** 6/10/2017 11:15:00 AM

Completed By: **Ashley Gallegos** 6/12/2017 8:36:46 AM

Reviewed By: *SRE 06/12/17*

Andy
Ashley

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			

Quality Record

Client: **BP AMERICA**
BLAGG ENGINEERING INC.
 Mailing Address:
 Phone #: **(505) 320-1183**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

JAMES DAY

Standard Rush
 Project Name:
MUDGE LSG
 Project #:
 Project Manager:
STEVE MUSKAL
 Sampler: **JEFF BLAGG**
 On Ice: Yes No
 Sample Temperature: **2.8°C**



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 + THMs (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)	6081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE	Air Ruthenium (V or Al)
6/9/2017	1350	SOIL	ZONE 11	4oz x 1	COOL	1700556 -001	X	X										X	
	1359		Zone 12			-002													
	1405		Zone 13			-003													
	1415		Zone 14			-004													
	1411		ZONE 15			-005													

Date: 6/9/2017 Time: 1730 Relinquished by: Jeff Blagg
 Received by: [Signature] Date: 6/10/17 Time: 1115
 Relinquished by: [Signature] Received by: [Signature]

Remarks: Bill BP CONTACT: STEVE MUSKAL
 VID: VHIXONEVRM
 WBS ELEMENT: L1-001BM-E:MUDGE LSG

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



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

June 21, 2017

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

RE: MUDGE LS 6

OrderNo.: 1706A33

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 7 sample(s) on 6/20/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1706A33

Date Reported: 6/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 16

Project: MUDGE LS 6

Collection Date: 6/19/2017 9:25:00 AM

Lab ID: 1706A33-001

Matrix: SOIL

Received Date: 6/20/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/20/2017 10:28:38 AM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/20/2017 9:49:55 AM	32384
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/20/2017 9:49:55 AM	32384
Surr: DNOP	102	70-130		%Rec	1	6/20/2017 9:49:55 AM	32384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	6/20/2017 9:37:32 AM	32371
Surr: BFB	93.2	54-150		%Rec	1	6/20/2017 9:37:32 AM	32371
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.018		mg/Kg	1	6/20/2017 9:37:32 AM	32371
Toluene	ND	0.036		mg/Kg	1	6/20/2017 9:37:32 AM	32371
Ethylbenzene	ND	0.036		mg/Kg	1	6/20/2017 9:37:32 AM	32371
Xylenes, Total	ND	0.073		mg/Kg	1	6/20/2017 9:37:32 AM	32371
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	6/20/2017 9:37:32 AM	32371

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 17

Project: MUDGE LS 6

Collection Date: 6/19/2017 9:30:00 AM

Lab ID: 1706A33-002

Matrix: SOIL

Received Date: 6/20/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/20/2017 10:41:02 AM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/20/2017 10:14:51 AM	32384
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/20/2017 10:14:51 AM	32384
Surr: DNOP	96.7	70-130		%Rec	1	6/20/2017 10:14:51 AM	32384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	4.2	4.0		mg/Kg	1	6/20/2017 10:01:34 AM	32371
Surr: BFB	132	54-150		%Rec	1	6/20/2017 10:01:34 AM	32371
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	6/20/2017 10:01:34 AM	32371
Toluene	ND	0.040		mg/Kg	1	6/20/2017 10:01:34 AM	32371
Ethylbenzene	ND	0.040		mg/Kg	1	6/20/2017 10:01:34 AM	32371
Xylenes, Total	ND	0.080		mg/Kg	1	6/20/2017 10:01:34 AM	32371
Surr: 4-Bromofluorobenzene	122	66.6-132		%Rec	1	6/20/2017 10:01:34 AM	32371

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: Zone 18
 Project: MUDGE LS 6 Collection Date: 6/19/2017 9:35:00 AM
 Lab ID: 1706A33-003 Matrix: SOIL Received Date: 6/20/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/20/2017 10:53:27 AM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	25	9.3		mg/Kg	1	6/20/2017 10:40:21 AM	32384
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/20/2017 10:40:21 AM	32384
Surr: DNOP	107	70-130		%Rec	1	6/20/2017 10:40:21 AM	32384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	6/20/2017 10:25:36 AM	32371
Surr: BFB	109	54-150		%Rec	5	6/20/2017 10:25:36 AM	32371
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.092		mg/Kg	5	6/20/2017 10:25:36 AM	32371
Toluene	ND	0.18		mg/Kg	5	6/20/2017 10:25:36 AM	32371
Ethylbenzene	ND	0.18		mg/Kg	5	6/20/2017 10:25:36 AM	32371
Xylenes, Total	ND	0.37		mg/Kg	5	6/20/2017 10:25:36 AM	32371
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	5	6/20/2017 10:25:36 AM	32371

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

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

Analytical Report

Lab Order 1706A33

Date Reported: 6/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 19

Project: MUDGE LS 6

Collection Date: 6/19/2017 9:53:00 AM

Lab ID: 1706A33-004

Matrix: SOIL

Received Date: 6/20/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/20/2017 11:05:52 AM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	6/20/2017 11:05:18 AM	32384
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/20/2017 11:05:18 AM	32384
Surr: DNOP	86.8	70-130		%Rec	1	6/20/2017 11:05:18 AM	32384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	6/20/2017 10:49:41 AM	32371
Surr: BFB	99.6	54-150		%Rec	1	6/20/2017 10:49:41 AM	32371
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.020		mg/Kg	1	6/20/2017 10:49:41 AM	32371
Toluene	ND	0.039		mg/Kg	1	6/20/2017 10:49:41 AM	32371
Ethylbenzene	ND	0.039		mg/Kg	1	6/20/2017 10:49:41 AM	32371
Xylenes, Total	ND	0.079		mg/Kg	1	6/20/2017 10:49:41 AM	32371
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	6/20/2017 10:49:41 AM	32371

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

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

Analytical Report

Lab Order 1706A33

Date Reported: 6/21/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: Zone 20

Project: MUDGE LS 6

Collection Date: 6/19/2017 9:58:00 AM

Lab ID: 1706A33-005

Matrix: SOIL

Received Date: 6/20/2017 7:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/20/2017 11:18:17 AM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	90	9.4		mg/Kg	1	6/20/2017 11:30:10 AM	32384
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/20/2017 11:30:10 AM	32384
Surr: DNOP	90.7	70-130		%Rec	1	6/20/2017 11:30:10 AM	32384
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	59	17		mg/Kg	5	6/20/2017 11:13:50 AM	32371
Surr: BFB	192	54-150	S	%Rec	5	6/20/2017 11:13:50 AM	32371
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.087		mg/Kg	5	6/20/2017 11:13:50 AM	32371
Toluene	ND	0.17		mg/Kg	5	6/20/2017 11:13:50 AM	32371
Ethylbenzene	0.20	0.17		mg/Kg	5	6/20/2017 11:13:50 AM	32371
Xylenes, Total	1.3	0.35		mg/Kg	5	6/20/2017 11:13:50 AM	32371
Surr: 4-Bromofluorobenzene	127	66.6-132		%Rec	5	6/20/2017 11:13:50 AM	32371

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706A33

21-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32385	SampType:	mbk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32385	RunNo:	43638					
Prep Date:	6/20/2017	Analysis Date:	6/20/2017	SeqNo:	1375850	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32385	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32385	RunNo:	43638					
Prep Date:	6/20/2017	Analysis Date:	6/20/2017	SeqNo:	1375851	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706A33

21-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-32384	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32384	RunNo:	43630					
Prep Date:	6/20/2017	Analysis Date:	6/20/2017	SeqNo:	1374743	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	86.7	73.2	114			
Surr: DNOP	3.9		5.000		77.1	70	130			

Sample ID	MB-32384	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32384	RunNo:	43630					
Prep Date:	6/20/2017	Analysis Date:	6/20/2017	SeqNo:	1374744	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		92.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706A33

21-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32371	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	32371	RunNo:	43647					
Prep Date:	6/19/2017	Analysis Date:	6/20/2017	SeqNo:	1375311	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	940		1000		94.3	54	150			

Sample ID	LCS-32371	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	32371	RunNo:	43647					
Prep Date:	6/19/2017	Analysis Date:	6/20/2017	SeqNo:	1375312	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	97.8	76.4	125			
Surr: BFB	1100		1000		109	54	150			

Qualifiers:

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706A33
21-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	MB-32371	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	32371	RunNo:	43647					
Prep Date:	6/19/2017	Analysis Date:	6/20/2017	SeqNo:	1375343	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		122	66.6	132			

Sample ID	LCS-32371	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	32371	RunNo:	43647					
Prep Date:	6/19/2017	Analysis Date:	6/20/2017	SeqNo:	1375344	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	104	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	107	80	120			
Xylenes, Total	3.3	0.10	3.000	0	109	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	66.6	132			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1706A33**

RcptNo: **1**

Received By: **Anne Thorne** 6/20/2017 7:35:00 AM

Anne Thorne

Completed By: **Anne Thorne** 6/20/2017 7:54:40 AM

Anne Thorne

Reviewed By: **ENM** 6/20/17

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

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

APPENDIX C

Treated Soil - Laboratory Analytical Data Reports



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

May 25, 2017

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

RE: MUDGE LS 6

OrderNo.: 1705C33

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/24/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
 Project: MUDGE LS 6
 Lab ID: 1705C33-001

Client Sample ID: TSP-1
 Collection Date: 5/23/2017 9:26:00 AM
 Received Date: 5/24/2017 7:15:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	5/24/2017 10:34:13 AM	31936
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/24/2017 9:54:58 AM	31930
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/24/2017 9:54:58 AM	31930
Surr: DNOP	83.6	70-130		%Rec	1	5/24/2017 9:54:58 AM	31930
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.3		mg/Kg	1	5/24/2017 8:58:33 AM	31921
Surr: BFB	98.8	54-150		%Rec	1	5/24/2017 8:58:33 AM	31921
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.021		mg/Kg	1	5/24/2017 8:58:33 AM	31921
Toluene	ND	0.043		mg/Kg	1	5/24/2017 8:58:33 AM	31921
Ethylbenzene	ND	0.043		mg/Kg	1	5/24/2017 8:58:33 AM	31921
Xylenes, Total	ND	0.085		mg/Kg	1	5/24/2017 8:58:33 AM	31921
Surr: 4-Bromofluorobenzene	117	66.6-132		%Rec	1	5/24/2017 8:58:33 AM	31921

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

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

Analytical Report

Lab Order 1705C33

Date Reported: 5/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-2

Project: MUDGE LS 6

Collection Date: 5/23/2017 9:30:00 AM

Lab ID: 1705C33-002

Matrix: SOIL

Received Date: 5/24/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	5/24/2017 10:46:38 AM	31936
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/24/2017 8:59:55 AM	31930
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/24/2017 8:59:55 AM	31930
Surr: DNOP	99.5	70-130		%Rec	1	5/24/2017 8:59:55 AM	31930
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/24/2017 9:22:28 AM	31921
Surr: BFB	98.9	54-150		%Rec	1	5/24/2017 9:22:28 AM	31921
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.017		mg/Kg	1	5/24/2017 9:22:28 AM	31921
Toluene	ND	0.034		mg/Kg	1	5/24/2017 9:22:28 AM	31921
Ethylbenzene	ND	0.034		mg/Kg	1	5/24/2017 9:22:28 AM	31921
Xylenes, Total	ND	0.069		mg/Kg	1	5/24/2017 9:22:28 AM	31921
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	5/24/2017 9:22:28 AM	31921

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: MUDGE LS 6
Lab ID: 1705C33-004

Client Sample ID: TSP-4
Collection Date: 5/23/2017 9:38:00 AM
Received Date: 5/24/2017 7:15:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	5/24/2017 11:11:27 AM	31936
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/24/2017 9:44:06 AM	31930
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/24/2017 9:44:06 AM	31930
Surr: DNOP	100	70-130		%Rec	1	5/24/2017 9:44:06 AM	31930
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	5/24/2017 10:10:25 AM	31921
Surr: BFB	97.5	54-150		%Rec	1	5/24/2017 10:10:25 AM	31921
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.016		mg/Kg	1	5/24/2017 10:10:25 AM	31921
Toluene	ND	0.033		mg/Kg	1	5/24/2017 10:10:25 AM	31921
Ethylbenzene	ND	0.033		mg/Kg	1	5/24/2017 10:10:25 AM	31921
Xylenes, Total	ND	0.065		mg/Kg	1	5/24/2017 10:10:25 AM	31921
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	5/24/2017 10:10:25 AM	31921

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

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

Analytical Report

Lab Order 1705C33

Date Reported: 5/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-6

Project: MUDGE LS 6

Collection Date: 5/23/2017 9:44:00 AM

Lab ID: 1705C33-006

Matrix: SOIL

Received Date: 5/24/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	5/24/2017 11:36:16 AM	31936
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	5/24/2017 10:28:39 AM	31930
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/24/2017 10:28:39 AM	31930
Surr: DNOP	99.0	70-130		%Rec	1	5/24/2017 10:28:39 AM	31930
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.4		mg/Kg	1	5/24/2017 10:58:07 AM	31921
Surr: BFB	102	54-150		%Rec	1	5/24/2017 10:58:07 AM	31921
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.017		mg/Kg	1	5/24/2017 10:58:07 AM	31921
Toluene	ND	0.034		mg/Kg	1	5/24/2017 10:58:07 AM	31921
Ethylbenzene	ND	0.034		mg/Kg	1	5/24/2017 10:58:07 AM	31921
Xylenes, Total	ND	0.069		mg/Kg	1	5/24/2017 10:58:07 AM	31921
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	5/24/2017 10:58:07 AM	31921

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C33

25-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-31936	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	31936	RunNo:	43028					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1355112	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-31936	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	31936	RunNo:	43028					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1355113	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C33

25-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-31930	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31930	RunNo:	43020					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1353919	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.2	73.2	114			
Surr: DNOP	4.5		5.000		89.2	70	130			

Sample ID	MB-31930	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31930	RunNo:	43020					
Prep Date:	5/24/2017	Analysis Date:	5/24/2017	SeqNo:	1353920	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		97.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C33

25-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID MB-31921	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 31921	RunNo: 43026								
Prep Date: 5/23/2017	Analysis Date: 5/24/2017	SeqNo: 1354470	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	980		1000		97.8	54	150			

Sample ID LCS-31921	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 31921	RunNo: 43026								
Prep Date: 5/23/2017	Analysis Date: 5/24/2017	SeqNo: 1354471	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.8	76.4	125			
Surr: BFB	1100		1000		106	54	150			

Sample ID RB	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: G43026	RunNo: 43026								
Prep Date:	Analysis Date: 5/24/2017	SeqNo: 1354482	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	990		1000		99.1	54	150			

Sample ID 2.5UG GRO LCS	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: G43026	RunNo: 43026								
Prep Date:	Analysis Date: 5/24/2017	SeqNo: 1354483	Units: %Rec							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C33

25-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-31921	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	31921	RunNo:	43026					
Prep Date:	5/23/2017	Analysis Date:	5/24/2017	SeqNo:	1354496	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		117	66.6	132			

Sample ID	LCS-31921	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	31921	RunNo:	43026					
Prep Date:	5/23/2017	Analysis Date:	5/24/2017	SeqNo:	1354497	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	100	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		127	66.6	132			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	B43026	RunNo:	43026					
Prep Date:		Analysis Date:	5/24/2017	SeqNo:	1354508	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		115	66.6	132			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	B43026	RunNo:	43026					
Prep Date:		Analysis Date:	5/24/2017	SeqNo:	1354509	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.2		1.000		116	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1705C33**

RcptNo: **1**

Received By: **Anne Thorne** **5/24/2017 7:15:00 AM**
 Completed By: **Anne Thorne** **5/24/2017 7:43:34 AM**
 Reviewed By: **aj** **5/24/17**

Anne Thorne
Anne Thorne

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: **BP AMERICA**

Mailing Address: **BLAGG ENGINEERING**

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

email or Fax#:

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other _____

EDD (Type) _____

Turn-Around Time: **SAME DAY**

Standard Rush

Project Name:

MUDGE LS 6

Project #:

Project Manager:

J. Blagg

Sampler: **J. Blagg**

On Ice No

Sample Temperature: **1/25**

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.
5/23/2017	0926	SOIL	TSP-1	4oz x 1	COOL	701
	0930		TSP-2			702
	0934		TSP-3			703
	0938		TSP-4			704
	0941		TSP-5			705
	0944		TSP-6			706
	0947		TSP-7			707



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

Analysis Request												
BTEX + MTBE + THPs (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)
X	X										X	

Date: 5/23/2017	Time: 1520	Relinquished by: J. Blagg	Received by: [Signature]	Date: 5/23/17	Time: 1520	Remarks: Bill BP CONTACT: STEVE MOSEKAL VID: VHIXONEVRM WBS ELEMENT: LI-0018M-E: MUDGE LS 6 MUDGE LS 6 Samples Treated with H ₂ O ₂
Date: 5/23/17	Time: 1910	Relinquished by: Christine Walker	Received by: [Signature]	Date: 05/24/17	Time: 0715	

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



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

May 26, 2017

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

RE: MUDGE LS 6

OrderNo.: 1705C78

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 3 sample(s) on 5/25/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
 Project: MUDGE LS 6
 Lab ID: 1705C78-001

Matrix: SOIL

Client Sample ID: TSP-8
 Collection Date: 5/24/2017 1:57:00 PM
 Received Date: 5/25/2017 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	5/25/2017 10:48:12 AM	31974
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	15	10		mg/Kg	1	5/25/2017 9:58:44 AM	31956
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/25/2017 9:58:44 AM	31956
Surr: DNOP	83.5	70-130		%Rec	1	5/25/2017 9:58:44 AM	31956
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	12	3.8		mg/Kg	1	5/25/2017 10:25:55 AM	G43065
Surr: BFB	262	54-150	S	%Rec	1	5/25/2017 10:25:55 AM	G43065
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	5/25/2017 10:25:55 AM	B43065
Toluene	ND	0.038		mg/Kg	1	5/25/2017 10:25:55 AM	B43065
Ethylbenzene	ND	0.038		mg/Kg	1	5/25/2017 10:25:55 AM	B43065
Xylenes, Total	0.12	0.076		mg/Kg	1	5/25/2017 10:25:55 AM	B43065
Surr: 4-Bromofluorobenzene	101	66.6-132		%Rec	1	5/25/2017 10:25:55 AM	B43065

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

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

Analytical Report

Lab Order 1705C78

Date Reported: 5/26/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-9

Project: MUDGE LS 6

Collection Date: 5/24/2017 2:02:00 PM

Lab ID: 1705C78-002

Matrix: SOIL

Received Date: 5/25/2017 7:10:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							
Chloride	ND	30		mg/Kg	20	5/25/2017 11:00:37 AM	31974
Analyst: MRA							
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							
Diesel Range Organics (DRO)	19	9.5		mg/Kg	1	5/25/2017 10:27:03 AM	31956
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/25/2017 10:27:03 AM	31956
Surr: DNOP	88.0	70-130		%Rec	1	5/25/2017 10:27:03 AM	31956
Analyst: TOM							
EPA METHOD 8015D: GASOLINE RANGE							
Gasoline Range Organics (GRO)	11	3.6		mg/Kg	1	5/25/2017 10:49:25 AM	G43065
Surr: BFB	277	54-150	S	%Rec	1	5/25/2017 10:49:25 AM	G43065
Analyst: NSB							
EPA METHOD 8021B: VOLATILES							
Benzene	ND	0.018		mg/Kg	1	5/25/2017 10:49:25 AM	B43065
Toluene	ND	0.036		mg/Kg	1	5/25/2017 10:49:25 AM	B43065
Ethylbenzene	ND	0.036		mg/Kg	1	5/25/2017 10:49:25 AM	B43065
Xylenes, Total	0.081	0.071		mg/Kg	1	5/25/2017 10:49:25 AM	B43065
Surr: 4-Bromofluorobenzene	102	66.6-132		%Rec	1	5/25/2017 10:49:25 AM	B43065

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: MUDGE LS 6
Lab ID: 1705C78-003

Client Sample ID: TSP-10
Collection Date: 5/24/2017 2:04:00 PM
Received Date: 5/25/2017 7:10:00 AM

Matrix: SOIL

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	5/25/2017 11:13:01 AM	31974
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	40	9.4		mg/Kg	1	5/25/2017 10:55:23 AM	31956
Motor Oil Range Organics (MRO)	66	47		mg/Kg	1	5/25/2017 10:55:23 AM	31956
Surr: DNOP	89.2	70-130		%Rec	1	5/25/2017 10:55:23 AM	31956
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	18	3.9		mg/Kg	1	5/25/2017 11:12:58 AM	G43065
Surr: BFB	345	54-150	S	%Rec	1	5/25/2017 11:12:58 AM	G43065
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	5/25/2017 11:12:58 AM	B43065
Toluene	ND	0.039		mg/Kg	1	5/25/2017 11:12:58 AM	B43065
Ethylbenzene	ND	0.039		mg/Kg	1	5/25/2017 11:12:58 AM	B43065
Xylenes, Total	0.095	0.078		mg/Kg	1	5/25/2017 11:12:58 AM	B43065
Surr: 4-Bromofluorobenzene	106	66.6-132		%Rec	1	5/25/2017 11:12:58 AM	B43065

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C78

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-31974	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	31974	RunNo:	43067					
Prep Date:	5/25/2017	Analysis Date:	5/25/2017	SeqNo:	1355858	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-31974	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	31974	RunNo:	43067					
Prep Date:	5/25/2017	Analysis Date:	5/25/2017	SeqNo:	1355859	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C78

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-31943		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	31943		RunNo:	43051				
Prep Date:	5/24/2017		Analysis Date:	5/25/2017		SeqNo:	1354741		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.8		5.000		95.2	70	130				

Sample ID	MB-31943		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	31943		RunNo:	43051				
Prep Date:	5/24/2017		Analysis Date:	5/25/2017		SeqNo:	1354742		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	9.6		10.00		96.1	70	130				

Sample ID	LCS-31956		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	31956		RunNo:	43052				
Prep Date:	5/25/2017		Analysis Date:	5/25/2017		SeqNo:	1354925		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	46	10	50.00	0	91.1	73.2	114				
Surr: DNOP	4.3		5.000		85.7	70	130				

Sample ID	MB-31956		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	31956		RunNo:	43052				
Prep Date:	5/25/2017		Analysis Date:	5/25/2017		SeqNo:	1354926		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	8.1		10.00		81.3	70	130				

Sample ID	LCS-31932		SampType:	LCS		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	LCSS		Batch ID:	31932		RunNo:	43051				
Prep Date:	5/24/2017		Analysis Date:	5/25/2017		SeqNo:	1355829		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	4.5		5.000		89.3	70	130				

Sample ID	MB-31932		SampType:	MBLK		TestCode:	EPA Method 8015M/D: Diesel Range Organics				
Client ID:	PBS		Batch ID:	31932		RunNo:	43051				
Prep Date:	5/24/2017		Analysis Date:	5/25/2017		SeqNo:	1355830		Units: %Rec		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Surr: DNOP	9.4		10.00		94.4	70	130				

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C78

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	G43065	RunNo:	43065					
Prep Date:		Analysis Date:	5/25/2017	SeqNo:	1355625	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	54	150			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	G43065	RunNo:	43065					
Prep Date:		Analysis Date:	5/25/2017	SeqNo:	1355626	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	104	76.4	125			
Surr: BFB	1000		1000		103	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705C78

26-May-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID RB	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: B43065		RunNo: 43065							
Prep Date:	Analysis Date: 5/25/2017		SeqNo: 1355634		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.91		1.000		90.7	66.6	132			

Sample ID 100NG BTEX LCS	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: B43065		RunNo: 43065							
Prep Date:	Analysis Date: 5/25/2017		SeqNo: 1355635		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.025	1.000	0	85.3	80	120			
Toluene	0.90	0.050	1.000	0	89.6	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.6	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		93.9	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: 1705C78

RcptNo: 1

Received By: **Anne Thorne** 5/25/2017 7:10:00 AM

Anne Thorne

Completed By: **Anne Thorne** 5/25/2017 7:52:14 AM

Anne Thorne

Reviewed By: *[Signature]* 5/25/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

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



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

May 31, 2017

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

RE: Mudge LS 6

OrderNo.: 1705D55

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/26/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: TSP-10R
 Project: Mudge LS 6 Collection Date: 5/25/2017 3:03:00 PM
 Lab ID: 1705D55-001 Matrix: MEOH (SOIL) Received Date: 5/26/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	5/26/2017 10:38:59 AM	31989
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	38	9.5		mg/Kg	1	5/26/2017 9:46:23 AM	31984
Motor Oil Range Organics (MRO)	86	47		mg/Kg	1	5/26/2017 9:46:23 AM	31984
Surr: DNOP	87.0	70-130		%Rec	1	5/26/2017 9:46:23 AM	31984
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	5/26/2017 11:46:03 AM	R43104
Surr: BFB	107	54-150		%Rec	1	5/26/2017 11:46:03 AM	R43104
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	5/26/2017 11:46:03 AM	B43104
Toluene	ND	0.039		mg/Kg	1	5/26/2017 11:46:03 AM	B43104
Ethylbenzene	ND	0.039		mg/Kg	1	5/26/2017 11:46:03 AM	B43104
Xylenes, Total	ND	0.077		mg/Kg	1	5/26/2017 11:46:03 AM	B43104
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	5/26/2017 11:46:03 AM	B43104

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

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering Client Sample ID: TSP 11 to 15
 Project: Mudge LS 6 Collection Date: 5/25/2017 2:44:00 PM
 Lab ID: 1705D55-002 Matrix: MEOH (SOIL) Received Date: 5/26/2017 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	5/26/2017 10:51:24 AM	31989
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	12	9.6		mg/Kg	1	5/26/2017 10:14:28 AM	31984
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2017 10:14:28 AM	31984
Surr: DNOP	86.3	70-130		%Rec	1	5/26/2017 10:14:28 AM	31984
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	5/26/2017 12:09:57 PM	R43104
Surr: BFB	114	54-150		%Rec	1	5/26/2017 12:09:57 PM	R43104
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.019		mg/Kg	1	5/26/2017 12:09:57 PM	B43104
Toluene	ND	0.038		mg/Kg	1	5/26/2017 12:09:57 PM	B43104
Ethylbenzene	ND	0.038		mg/Kg	1	5/26/2017 12:09:57 PM	B43104
Xylenes, Total	ND	0.076		mg/Kg	1	5/26/2017 12:09:57 PM	B43104
Surr: 4-Bromofluorobenzene	125	66.6-132		%Rec	1	5/26/2017 12:09:57 PM	B43104

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705D55

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	MB-31989	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	31989	RunNo:	43101					
Prep Date:	5/26/2017	Analysis Date:	5/26/2017	SeqNo:	1356922	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-31989	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	31989	RunNo:	43101					
Prep Date:	5/26/2017	Analysis Date:	5/26/2017	SeqNo:	1356923	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705D55

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	LCS-31984	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	31984	RunNo:	43088					
Prep Date:	5/26/2017	Analysis Date:	5/26/2017	SeqNo:	1356258	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.4	73.2	114			
Surr: DNOP	4.4		5.000		87.8	70	130			

Sample ID	MB-31984	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	31984	RunNo:	43088					
Prep Date:	5/26/2017	Analysis Date:	5/26/2017	SeqNo:	1356259	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.3	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705D55

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	R43104	RunNo:	43104					
Prep Date:		Analysis Date:	5/26/2017	SeqNo:	1356843	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	96.4	76.4	125			
Surr: BFB	1100		1000		112	54	150			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	R43104	RunNo:	43104					
Prep Date:		Analysis Date:	5/26/2017	SeqNo:	1356846	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	990		1000		99.4	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705D55

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	B43104	RunNo:	43104					
Prep Date:		Analysis Date:	5/26/2017	SeqNo:	1356851	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	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		123	66.6	132			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	B43104	RunNo:	43104					
Prep Date:		Analysis Date:	5/26/2017	SeqNo:	1356874	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		117	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1705D55**

RcptNo: **1**

Received By: **Andy Jansson** 5/26/2017 7:50:00 AM *Andy Jansson*
 Completed By: **Andy Jansson** 5/26/2017 8:22:10 AM *Andy Jansson*
 Reviewed By: *[Signature]* *5/26/17*

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

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

17. Additional remarks:

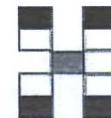
18. Cooler Information

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

Chain-of-Custody Record

Client: **BP America**
Blay Engineering
 Mailing Address:
 Phone #: **(505) 320-1183**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Turn-Around Time: **SAME DAY**
 Standard Rush
 Project Name: **Mudge LS 6**
 Project #:
 Project Manager: **Steve Maskal**
 Sampler: **Jeff Blay**
 On Ice: Yes No
 Sample Temperature: **1.00C**



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 (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 Rubbles (Y or N)
5/25/17	1503	Soil	TSP-10R	406al	cool	1705D55 -001	X	X										X	
11	1444	"	TSP 11 to 15	"	"	-002	X	X										X	

Date: 5/25/17 Time: 1616 Relinquished by: Jeff Blay Received by: [Signature] Date: 5/25/17 Time: 1616
 Date: 5/25/17 Time: 1901 Relinquished by: [Signature] Received by: [Signature] Date: 5/26/17 Time: 0730

Remarks: Bill Blay Contact: Steve Maskal
 VID: VHXKWEIRM
 WBS: LI-0018M-E: MUDGE LS 6

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



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

May 31, 2017

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

RE: Mudge LS 6

OrderNo.: 1705E48

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 2 sample(s) on 5/27/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering **Client Sample ID:** TSP-10R2
Project: Mudge LS 6 **Collection Date:** 5/26/2017 1:10:00 PM
Lab ID: 1705E48-001 **Matrix:** SOIL **Received Date:** 5/27/2017 10:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	5/30/2017 10:47:57 AM	32013
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	18	9.4		mg/Kg	1	5/30/2017 9:42:32 AM	32008
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/30/2017 9:42:32 AM	32008
Surr: DNOP	89.7	70-130		%Rec	1	5/30/2017 9:42:32 AM	32008
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	4.9	3.4		mg/Kg	1	5/30/2017 10:29:24 AM	31995
Surr: BFB	196	54-150	S	%Rec	1	5/30/2017 10:29:24 AM	31995
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.017		mg/Kg	1	5/30/2017 10:29:24 AM	31995
Toluene	ND	0.034		mg/Kg	1	5/30/2017 10:29:24 AM	31995
Ethylbenzene	ND	0.034		mg/Kg	1	5/30/2017 10:29:24 AM	31995
Xylenes, Total	ND	0.067		mg/Kg	1	5/30/2017 10:29:24 AM	31995
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	5/30/2017 10:29:24 AM	31995

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705E48

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	MB-32013	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32013	RunNo:	43126					
Prep Date:	5/30/2017	Analysis Date:	5/30/2017	SeqNo:	1358362	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32013	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32013	RunNo:	43126					
Prep Date:	5/30/2017	Analysis Date:	5/30/2017	SeqNo:	1358363	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705E48

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	LCS-32008	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32008	RunNo:	43123					
Prep Date:	5/30/2017	Analysis Date:	5/30/2017	SeqNo:	1357223	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	85.6	73.2	114			
Surr: DNOP	4.5		5.000		90.7	70	130			

Sample ID	MB-32008	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32008	RunNo:	43123					
Prep Date:	5/30/2017	Analysis Date:	5/30/2017	SeqNo:	1357224	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.3	70	130			

Sample ID	LCS-32000	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32000	RunNo:	43123					
Prep Date:	5/26/2017	Analysis Date:	5/30/2017	SeqNo:	1357843	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		76.2	70	130			

Sample ID	MB-32000	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32000	RunNo:	43123					
Prep Date:	5/26/2017	Analysis Date:	5/30/2017	SeqNo:	1357844	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.3		10.00		83.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705E48

31-May-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	LCS-31995	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	31995	RunNo:	43124					
Prep Date:	5/26/2017	Analysis Date:	5/30/2017	SeqNo:	1357367	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	103	76.4	125			
Surr: BFB	1000		1000		102	54	150			

Sample ID	MB-31995	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	31995	RunNo:	43124					
Prep Date:	5/26/2017	Analysis Date:	5/30/2017	SeqNo:	1357368	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	940		1000		93.9	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1705E48
31-May-17

Client: Blagg Engineering
Project: Mudge LS 6

Sample ID	LCS-31995		SampType:	LCS		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	LCSS		Batch ID:	31995		RunNo:	43124				
Prep Date:	5/26/2017		Analysis Date:	5/30/2017		SeqNo:	1357378		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	1.0	0.025	1.000	0	101	80	120				
Toluene	1.0	0.050	1.000	0	102	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	1.2		1.000		116	66.6	132				

Sample ID	MB-31995		SampType:	MBLK		TestCode:	EPA Method 8021B: Volatiles				
Client ID:	PBS		Batch ID:	31995		RunNo:	43124				
Prep Date:	5/26/2017		Analysis Date:	5/30/2017		SeqNo:	1357379		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	ND	0.025									
Toluene	ND	0.050									
Ethylbenzene	ND	0.050									
Xylenes, Total	ND	0.10									
Surr: 4-Bromofluorobenzene	1.1		1.000		113	66.6	132				

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1705E48**

RcptNo: **1**

Received By: **Andy Freeman**

5/27/2017 10:00:00 AM

Andy Freeman

Completed By: **Anne Thorne**

5/30/2017 7:53:11 AM

Anne Thorne

Reviewed By:

AT

5/30/17

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

By Whom: _____ Via: eMail Phone Fax In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.8	Good	Yes			

Chain-of-Custody Record

Client: BP America

Mailing Address: Bruck Engineering

Phone #: (505) 320-1193

email or Fax#:

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

Accreditation NELAP Other

EDD (Type)

Turn-Around Time:

Standard Rush

Project Name:

Mudge LS 6

Project #:

Project Manager:

Steve Moskala

Sampler: JEFF BLAGG

Original Samples: Yes No

Container Type and #

Preservative Type

Date

Time

Matrix

Sample Request ID

Date

Time

Relinquished by:

Date:

Time:

Relinquished by:

Date:

Time:

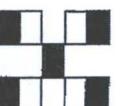
Received by:

Date:

Time:

Received by:

SAME DAY



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

<input checked="" type="checkbox"/>	BTEX + MTBE + TMB's (8021)
<input checked="" type="checkbox"/>	BTEX + MTBE + TPH (Gas only)
<input checked="" type="checkbox"/>	TPH 8015B (GRO / DRO / MRO)
<input type="checkbox"/>	TPH (Method 418.1)
<input type="checkbox"/>	EDB (Method 504.1)
<input type="checkbox"/>	PAH's (8310 or 8270 SIMS)
<input type="checkbox"/>	RCRA 8 Metals
<input type="checkbox"/>	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)
<input type="checkbox"/>	8081 Pesticides / 8082 PCB's
<input type="checkbox"/>	8260B (VOA)
<input type="checkbox"/>	8270 (Semi-VOA)
<input checked="" type="checkbox"/>	chloride
<input type="checkbox"/>	Air Bubbles (Y or N)

Date: <u>5/24/17</u>	Time: <u>1633</u>	Relinquished by: <u>Jeff Blagg</u>	Received by: <u>[Signature]</u>	Date: <u>5/27/17</u>	Time: <u>10:00</u>
Date:	Time:	Relinquished by:	Received by:	Date:	Time:

Remarks: Bill BP Contact: Steve Moskala
VID: VHXONEVEM
WBS: L1-0018M-E: MudgeLS6

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



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

June 05, 2017

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

RE: MUDGE LS 6

OrderNo.: 1706002

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 3 sample(s) on 6/1/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1706002

Date Reported: 6/5/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-16

Project: MUDGE LS 6

Collection Date: 5/31/2017 3:32:00 PM

Lab ID: 1706002-002

Matrix: SOIL

Received Date: 6/1/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/1/2017 11:02:25 AM	32061
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	13	9.4		mg/Kg	1	6/1/2017 10:01:56 AM	32055
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/1/2017 10:01:56 AM	32055
Surr: DNOP	87.6	70-130		%Rec	1	6/1/2017 10:01:56 AM	32055
EPA METHOD 8015D: GASOLINE RANGE							Analyst: RAA
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	6/1/2017 11:29:05 AM	R43189
Surr: BFB	154	54-150	S	%Rec	5	6/1/2017 11:29:05 AM	R43189
EPA METHOD 8021B: VOLATILES							Analyst: RAA
Benzene	ND	0.086		mg/Kg	5	6/1/2017 11:29:05 AM	B43189
Toluene	ND	0.17		mg/Kg	5	6/1/2017 11:29:05 AM	B43189
Ethylbenzene	ND	0.17		mg/Kg	5	6/1/2017 11:29:05 AM	B43189
Xylenes, Total	ND	0.34		mg/Kg	5	6/1/2017 11:29:05 AM	B43189
Surr: 4-Bromofluorobenzene	112	66.6-132		%Rec	5	6/1/2017 11:29:05 AM	B43189

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32061	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32061	RunNo:	43191					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1360495	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32061	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32061	RunNo:	43191					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1360496	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-32055	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32055	RunNo:	43184					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1359572	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	87.4	73.2	114			
Surr: DNOP	4.9		5.000		98.0	70	130			

Sample ID	MB-32055	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32055	RunNo:	43184					
Prep Date:	6/1/2017	Analysis Date:	6/1/2017	SeqNo:	1359573	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		103	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	R43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359964	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.4	76.4	125			
Surr: BFB	1200		1000		120	54	150			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	R43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359965	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	1100		1000		111	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706002

05-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	B43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359968	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.5	80	120			
Toluene	0.94	0.050	1.000	0	93.7	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.2	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	66.6	132			

Sample ID	RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	B43189	RunNo:	43189					
Prep Date:		Analysis Date:	6/1/2017	SeqNo:	1359971	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		110	66.6	132			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1706002**

RcptNo: **1**

Received By: **Anne Thorne** 6/1/2017 7:20:00 AM

Anne Thorne

Completed By: **Anne Thorne** 6/1/2017 7:59:22 AM

Anne Thorne

Reviewed By: **aj** 6/1/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

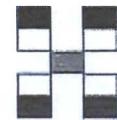
17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

Chain-of-Custody Record

Turn-Around Time:
 Standard Rush **SAME DAY**
 Project Name:
MUDGE LS 6



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: **BP AMERICA**
BLAGG ENGINEERING INC.
 Mailing Address:
 Phone #: **(505) 320-1183**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Project #:
 Project Manager:
J. Blagg
 Sampler: **J. Blagg**
 On Ice: Yes No
 Sample Temperature: **2.7 - CF - 1.0 = 1.7**

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + MIBK'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)
5/31/17	1520	SOIL	ZONE 8	4oz = 1	COOL	201	X		X									X	
	1532		TSP-16			202	X		X									X	
	1523		GRAB #2 @ 22'			203	X		X									X	

Date: 5/31/17 Time: 1707 Relinquished by: **J. Blagg**

Received by: **Chris W...** Date: 5/31/17 Time: 1707

Remarks: **Bill BP** CONTACT: **Steve MCKEAL**
 VID: **VHIX0NEVRM**
 WBS ELEMENT: **L1-0018M-E:MUDGE LS6**
TSP SAMPLE TREATED WITH H₂O₂

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



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

June 06, 2017

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

RE: MUDGE LS 6

OrderNo.: 1706156

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/5/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1706156

Date Reported: 6/6/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-17

Project: MUDGE LS 6

Collection Date: 6/2/2017 1:41:00 PM

Lab ID: 1706156-001

Matrix: SOIL

Received Date: 6/5/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/5/2017 11:05:56 AM	32100
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/5/2017 9:33:55 AM	32097
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/5/2017 9:33:55 AM	32097
Surr: DNOP	87.6	70-130		%Rec	1	6/5/2017 9:33:55 AM	32097
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	6/5/2017 1:03:21 PM	32090
Surr: BFB	109	54-150		%Rec	5	6/5/2017 1:03:21 PM	32090
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.092		mg/Kg	5	6/5/2017 1:03:21 PM	32090
Toluene	ND	0.18		mg/Kg	5	6/5/2017 1:03:21 PM	32090
Ethylbenzene	ND	0.18		mg/Kg	5	6/5/2017 1:03:21 PM	32090
Xylenes, Total	ND	0.37		mg/Kg	5	6/5/2017 1:03:21 PM	32090
Surr: 4-Bromofluorobenzene	122	66.6-132		%Rec	5	6/5/2017 1:03:21 PM	32090

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156

06-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32100	SampType:	MBLK	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32100	RunNo:	43257					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1362428	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32100	SampType:	LCS	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32100	RunNo:	43257					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1362429	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.2	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156

06-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-32097	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32097	RunNo:	43241					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1361182	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	86.7	73.2	114			
Surr: DNOP	3.6		5.000		72.5	70	130			

Sample ID	MB-32097	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32097	RunNo:	43241					
Prep Date:	6/5/2017	Analysis Date:	6/5/2017	SeqNo:	1361183	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		85.0	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156

06-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32090	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	32090	RunNo:	43255					
Prep Date:	6/2/2017	Analysis Date:	6/5/2017	SeqNo:	1361956	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	1000		1000		102	54	150			

Sample ID	LCS-32090	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	32090	RunNo:	43255					
Prep Date:	6/2/2017	Analysis Date:	6/5/2017	SeqNo:	1361957	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.0	76.4	125			
Surr: BFB	1100		1000		108	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706156
06-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	MB-32090	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	32090	RunNo:	43255					
Prep Date:	6/2/2017	Analysis Date:	6/5/2017	SeqNo:	1361976	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Sample ID	LCS-32090	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	32090	RunNo:	43255					
Prep Date:	6/2/2017	Analysis Date:	6/5/2017	SeqNo:	1361977	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	99.8	80	120			
Toluene	1.0	0.050	1.000	0	99.9	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1706156**

RcptNo: **1**

Received By: **Anne Thome** 6/5/2017 7:30:00 AM
 Completed By: **Anne Thome** 6/5/2017 8:08:00 AM
 Reviewed By: *[Signature]* 6/5/17

[Signature]
[Signature]

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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:	_____		
Client Instructions:	_____		

17. Additional remarks:

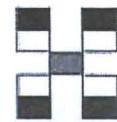
18. Cooler Information

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

Chain-of-Custody Record

Client: **BP AMERICA**
BLAGG ENGINEERING
 Mailing Address:
 Phone #: **(505) 320-1193**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Turn-Around Time: **SAME DAY**
 Standard Rush
 Project Name:
MUDGE LS 6
 Project #:
 Project Manager:
STEVE MOSKAL
 Sampler: **JEFF BLAGG**
 On Ice: Yes No
 Sample Temperature: **1.0**



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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MEBE + MIB'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)
6/3/2017	1341	SOIL	TSP-17	406 x 1	COOL	1706156 -201	X		X									X	
"	1354	"	ZONE 9	"	"	-202	X		X									X	

Date: **6/3/2017** Time: **1847** Relinquished by: **Jeff Blagg**
 Date: **6/4/17** Time: **1915** Relinquished by: **Christine Waack**

Received by: **[Signature]** Date: **6/4/17** Time: **1847**
 Received by: **[Signature]** Date: **06/05/17** Time: **0730**

Remarks: **BILL BP** CONTACT: **STEVE MOSKAL**
VID: VHIXONEVRM
WBS ELEMENT: LI-0018M-E:MUDGE LS6
TSP SAMPLE TREATED WITH H₂O₂

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



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

June 08, 2017

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

RE: MUDGE LS #6

OrderNo.: 1706316

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/7/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1706316

Date Reported: 6/8/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-18

Project: MUDGE LS #6

Collection Date: 6/6/2017 1:42:00 PM

Lab ID: 1706316-001

Matrix: SOIL

Received Date: 6/7/2017 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: LGT
Chloride	ND	30		mg/Kg	20	6/7/2017 11:29:16 AM	32151
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/7/2017 9:17:00 AM	32146
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/7/2017 9:17:00 AM	32146
Surr: DNOP	83.0	70-130		%Rec	1	6/7/2017 9:17:00 AM	32146
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	3.1		mg/Kg	1	6/7/2017 9:59:24 AM	32141
Surr: BFB	162	54-150	S	%Rec	1	6/7/2017 9:59:24 AM	32141
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.016		mg/Kg	1	6/7/2017 9:59:24 AM	32141
Toluene	ND	0.031		mg/Kg	1	6/7/2017 9:59:24 AM	32141
Ethylbenzene	ND	0.031		mg/Kg	1	6/7/2017 9:59:24 AM	32141
Xylenes, Total	ND	0.063		mg/Kg	1	6/7/2017 9:59:24 AM	32141
Surr: 4-Bromofluorobenzene	128	66.6-132		%Rec	1	6/7/2017 9:59:24 AM	32141

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706316

08-Jun-17

Client: Blagg Engineering

Project: MUDGE LS #6

Sample ID	MB-32151	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32151	RunNo:	43316					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363806	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32151	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32151	RunNo:	43316					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363807	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706316
08-Jun-17

Client: Blagg Engineering
Project: MUDGE LS #6

Sample ID	LCS-32146	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32146	RunNo:	43305					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363279	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.6	73.2	114			
Surr: DNOP	3.8		5.000		76.2	70	130			

Sample ID	MB-32146	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32146	RunNo:	43305					
Prep Date:	6/7/2017	Analysis Date:	6/7/2017	SeqNo:	1363280	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.1		10.00		81.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706316

08-Jun-17

Client: Blagg Engineering
Project: MUDGE LS #6

Sample ID	MB-32141	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	32141	RunNo:	43317					
Prep Date:	6/6/2017	Analysis Date:	6/7/2017	SeqNo:	1364057	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	1000		1000		101	54	150			

Sample ID	LCS-32141	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	32141	RunNo:	43317					
Prep Date:	6/6/2017	Analysis Date:	6/7/2017	SeqNo:	1364058	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	103	76.4	125			
Surr: BFB	1100		1000		106	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706316

08-Jun-17

Client: Blagg Engineering
Project: MUDGE LS #6

Sample ID MB-32141	SampType: MBLK	TestCode: EPA Method 8021B: Volatiles								
Client ID: PBS	Batch ID: 32141	RunNo: 43317								
Prep Date: 6/6/2017	Analysis Date: 6/7/2017	SeqNo: 1364078	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Sample ID LCS-32141	SampType: LCS	TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batch ID: 32141	RunNo: 43317								
Prep Date: 6/6/2017	Analysis Date: 6/7/2017	SeqNo: 1364079	Units: mg/Kg							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		124	66.6	132			

Qualifiers:

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

Sample Log-In Check List

Client Name: **BLAGG** Work Order Number: **1706316** RcptNo: **1**

Received By: **Anne Thorne** 6/7/2017 7:30:00 AM
Completed By: **Anne Thorne** 6/7/2017 7:58:53 AM
Reviewed By: **ENM** **06/07/17**

Anne Thorne
Anne Thorne

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: **BP AMERICA**

BLASS ENGR.

Mailing Address:

Phone #: **(505) 370-1183**

email or Fax#:

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation

NELAP Other _____

EDD (Type) _____

Date Time Matrix Sample Request ID

6/6/17 1342 5014 TSP -18

Date: 6/6/17 Time: 1500 Relinquished by: *[Signature]*

Date: 6/6/17 Time: 1844 Relinquished by: *Christina Walters*

Turn-Around Time: **SAME DAY**

Standard Rush

Project Name:

MUDGE LS #6

Project #:

Project Manager:

J. BLASS

Sampler: **N. VELEZ**

On Ice: Yes No

Sample Temperature: **5**

Container Type and #

MEATHCT 402.-1

Preservative Type

COOL

HEAL No:

1001

Received by: *[Signature]* Date Time: 6/6/17 1506

Received by: *[Signature]* Date Time: 06/07/17 0730



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

BTEX + MTBE (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	5 FT. COMPOSTE	Air Bubbles (Y or N)
✓	✓	✓									✓	✓	

Remarks: **INVOICE BP CONTRACT: STEVE MOSKES**

VID #: **VHIXON-EVRM**

WBS ELEMENT: **L1-5018M-E; MUDGE LS 6**

TSP SAMPLE TREATED WITH H₂O₂

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



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

June 09, 2017

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

RE: MUDGE LS #6

OrderNo.: 1706415

Dear Jeff Blagg:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/8/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1706415

Date Reported: 6/9/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-19

Project: MUDGE LS #6

Collection Date: 6/7/2017 2:13:00 PM

Lab ID: 1706415-001

Matrix: SOIL

Received Date: 6/8/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/8/2017 12:24:00 PM	32176
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	14	9.4		mg/Kg	1	6/8/2017 9:42:49 AM	32173
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/8/2017 9:42:49 AM	32173
Surr: DNOP	87.7	70-130		%Rec	1	6/8/2017 9:42:49 AM	32173
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	31	3.4		mg/Kg	1	6/8/2017 10:46:43 AM	32166
Surr: BFB	503	54-150	S	%Rec	1	6/8/2017 10:46:43 AM	32166
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.017		mg/Kg	1	6/8/2017 10:46:43 AM	32166
Toluene	ND	0.034		mg/Kg	1	6/8/2017 10:46:43 AM	32166
Ethylbenzene	ND	0.034		mg/Kg	1	6/8/2017 10:46:43 AM	32166
Xylenes, Total	0.22	0.069		mg/Kg	1	6/8/2017 10:46:43 AM	32166
Surr: 4-Bromofluorobenzene	135	66.6-132	S	%Rec	1	6/8/2017 10:46:43 AM	32166

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

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

Analytical Report

Lab Order 1706415

Date Reported: 6/9/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-20

Project: MUDGE LS #6

Collection Date: 6/7/2017 2:21:00 PM

Lab ID: 1706415-002

Matrix: SOIL

Received Date: 6/8/2017 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/8/2017 12:36:24 PM	32176
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	15	9.8		mg/Kg	1	6/8/2017 10:05:14 AM	32173
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/8/2017 10:05:14 AM	32173
Surr: DNOP	87.8	70-130		%Rec	1	6/8/2017 10:05:14 AM	32173
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	44	16		mg/Kg	5	6/8/2017 11:10:41 AM	32166
Surr: BFB	208	54-150	S	%Rec	5	6/8/2017 11:10:41 AM	32166
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.082		mg/Kg	5	6/8/2017 11:10:41 AM	32166
Toluene	ND	0.16		mg/Kg	5	6/8/2017 11:10:41 AM	32166
Ethylbenzene	ND	0.16		mg/Kg	5	6/8/2017 11:10:41 AM	32166
Xylenes, Total	0.38	0.33		mg/Kg	5	6/8/2017 11:10:41 AM	32166
Surr: 4-Bromofluorobenzene	125	66.6-132		%Rec	5	6/8/2017 11:10:41 AM	32166

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706415

09-Jun-17

Client: Blagg Engineering

Project: MUDGE LS #6

Sample ID	MB-32176	SampType:	mbk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32176	RunNo:	43353					
Prep Date:	6/8/2017	Analysis Date:	6/8/2017	SeqNo:	1365965	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32176	SampType:	Ics	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32176	RunNo:	43353					
Prep Date:	6/8/2017	Analysis Date:	6/8/2017	SeqNo:	1365966	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			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706415

09-Jun-17

Client: Blagg Engineering

Project: MUDGE LS #6

Sample ID	LCS-32173	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32173	RunNo:	43341					
Prep Date:	6/8/2017	Analysis Date:	6/8/2017	SeqNo:	1364719	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	85.6	73.2	114			
Surr: DNOP	4.0		5.000		79.7	70	130			

Sample ID	MB-32173	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32173	RunNo:	43341					
Prep Date:	6/8/2017	Analysis Date:	6/8/2017	SeqNo:	1364720	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		89.4	70	130			

Sample ID	LCS-32152	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32152	RunNo:	43341					
Prep Date:	6/7/2017	Analysis Date:	6/8/2017	SeqNo:	1364955	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.0		5.000		81.0	70	130			

Sample ID	MB-32152	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32152	RunNo:	43341					
Prep Date:	6/7/2017	Analysis Date:	6/8/2017	SeqNo:	1364956	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.0		10.00		90.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706415

09-Jun-17

Client: Blagg Engineering

Project: MUDGE LS #6

Sample ID	MB-32166	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	32166	RunNo:	43350					
Prep Date:	6/7/2017	Analysis Date:	6/8/2017	SeqNo:	1365346	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	1000		1000		102	54	150			

Sample ID	LCS-32166	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	32166	RunNo:	43350					
Prep Date:	6/7/2017	Analysis Date:	6/8/2017	SeqNo:	1365347	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	102	76.4	125			
Surr: BFB	1100		1000		108	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706415
09-Jun-17

Client: Blagg Engineering
Project: MUDGE LS #6

Sample ID	MB-32166	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	32166	RunNo:	43350					
Prep Date:	6/7/2017	Analysis Date:	6/8/2017	SeqNo:	1365358	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		127	66.6	132			

Sample ID	LCS-32166	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	32166	RunNo:	43350					
Prep Date:	6/7/2017	Analysis Date:	6/8/2017	SeqNo:	1365359	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	104	80	120			
Toluene	1.0	0.050	1.000	0	105	80	120			
Ethylbenzene	1.1	0.050	1.000	0	105	80	120			
Xylenes, Total	3.2	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Qualifiers:

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



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

Sample Log-In Check List

Client Name: **BLAGG**

Work Order Number: **1706415**

RcptNo: **1**

Received By: **Anne Thorne** 6/8/2017 7:15:00 AM

Anne Thorne

Completed By: **Anne Thorne** 6/8/2017 7:49:54 AM

Anne Thorne

Reviewed By: **SRC 06/08/17**

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

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

Chain-of-Custody Record

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

Mailing Address:

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

email or Fax#:

QA/QC Package:

Standard Level 4 (Full Validation)

Accreditation:

NELAP Other

EDD (Type)

Turn-Around Time:

JAME DAY

Standard Rush

Project Name:

MUDGE LS # 6

Project #:

Project Manager:

JEFF BLAGG

Sampler: **NEULSON VELEZ AV**

On Ice: Yes No

Sample Temperature: **1.0**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F, Cl, NO ₃ , NO ₂ , PO ₄ , SO ₄)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (soil - 300.0 / water - 300.1)	Grab sample	# pt. composite sample	Air Bubbles (Y or N)
6/7/17	1413	SOIL	TSP-19	1-4oz. Meuthkts	COOL	1706415	✓	✓										✓		5	
6/7/17	1427	SOIL	TSP-20	1-4oz.	COOL	202	✓	✓										✓		5	

Date: 6/7/17	Time: 1600	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date: 6/7/17	Time: 1600
Date: 6/7/17	Time: 1852	Relinquished by: <i>[Signature]</i>	Received by: <i>[Signature]</i>	Date: 6/7/17	Time: 0715

Remarks: **BILL DIRECTLY TO BP USING THE CONTACT WITH CORRESPONDING VID, WBS ELEMENT, OR REFERENCE # WHEN APPLICABLE;**
CONTACT: STEVE MOSKAL
VID: VHIXONEVRM
 WBS Element: **L1-0018M-E:MUDGE6**

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



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

June 13, 2017

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

RE: Mudge LS 6

OrderNo.: 1706555

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/10/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: Mudge LS 6
Lab ID: 1706555-001

Client Sample ID: TSP-21
Collection Date: 6/9/2017 2:50:00 PM
Received Date: 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/12/2017 11:37:38 AM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	14	3.3		mg/Kg	1	6/12/2017 12:12:52 PM	R43427
Surr: BFB	91.4	70-130		%Rec	1	6/12/2017 12:12:52 PM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	6/12/2017 11:31:08 AM	32222
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	6/12/2017 11:31:08 AM	32222
Surr: DNOP	98.5	70-130		%Rec	1	6/12/2017 11:31:08 AM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.017		mg/Kg	1	6/12/2017 12:12:52 PM	A43427
Toluene	ND	0.033		mg/Kg	1	6/12/2017 12:12:52 PM	A43427
Ethylbenzene	ND	0.033		mg/Kg	1	6/12/2017 12:12:52 PM	A43427
Xylenes, Total	ND	0.066		mg/Kg	1	6/12/2017 12:12:52 PM	A43427
Surr: 1,2-Dichloroethane-d4	110	70-130		%Rec	1	6/12/2017 12:12:52 PM	A43427
Surr: 4-Bromofluorobenzene	96.0	70-130		%Rec	1	6/12/2017 12:12:52 PM	A43427
Surr: Dibromofluoromethane	114	70-130		%Rec	1	6/12/2017 12:12:52 PM	A43427
Surr: Toluene-d8	108	70-130		%Rec	1	6/12/2017 12:12:52 PM	A43427

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

Qualifiers: * Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit R RPD outside accepted recovery limits S % Recovery outside of range due to dilution or matrix	B Analyte detected in the associated Method Blank E Value above quantitation range J Analyte detected below quantitation limits P Sample pH Not In Range RL Reporting Detection Limit W Sample container temperature is out of limit as specified	Page 1 of 6
---	--	-------------

Analytical Report

Lab Order 1706555

Date Reported: 6/13/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-22

Project: Mudge LS 6

Collection Date: 6/9/2017 2:56:00 PM

Lab ID: 1706555-002

Matrix: MEOH (SOIL)

Received Date: 6/10/2017 11:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/12/2017 11:50:03 AM	32225
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	17	3.4		mg/Kg	1	6/12/2017 12:42:48 PM	R43427
Surr: BFB	100	70-130		%Rec	1	6/12/2017 12:42:48 PM	R43427
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	11	9.6		mg/Kg	1	6/12/2017 11:59:10 AM	32222
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/12/2017 11:59:10 AM	32222
Surr: DNOP	93.9	70-130		%Rec	1	6/12/2017 11:59:10 AM	32222
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.017		mg/Kg	1	6/12/2017 12:42:48 PM	A43427
Toluene	ND	0.034		mg/Kg	1	6/12/2017 12:42:48 PM	A43427
Ethylbenzene	ND	0.034		mg/Kg	1	6/12/2017 12:42:48 PM	A43427
Xylenes, Total	0.072	0.068		mg/Kg	1	6/12/2017 12:42:48 PM	A43427
Surr: 1,2-Dichloroethane-d4	116	70-130		%Rec	1	6/12/2017 12:42:48 PM	A43427
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	6/12/2017 12:42:48 PM	A43427
Surr: Dibromofluoromethane	124	70-130		%Rec	1	6/12/2017 12:42:48 PM	A43427
Surr: Toluene-d8	117	70-130		%Rec	1	6/12/2017 12:42:48 PM	A43427

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706555

13-Jun-17

Client: Blagg Engineering

Project: Mudge LS 6

Sample ID	MB-32225	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32225	RunNo:	43424					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367904	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32225	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32225	RunNo:	43424					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367905	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	90.6	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706555

13-Jun-17

Client: Blagg Engineering
Project: Mudge LS 6

Sample ID	LCS-32222	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32222	RunNo:	43422					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367204	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	73.2	114			
Surr: DNOP	4.7		5.000		93.1	70	130			

Sample ID	MB-32222	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32222	RunNo:	43422					
Prep Date:	6/12/2017	Analysis Date:	6/12/2017	SeqNo:	1367205	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.6		10.00		96.0	70	130			

Sample ID	LCS-32210	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32210	RunNo:	43422					
Prep Date:	6/9/2017	Analysis Date:	6/12/2017	SeqNo:	1367518	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.1	70	130			

Sample ID	MB-32210	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32210	RunNo:	43422					
Prep Date:	6/9/2017	Analysis Date:	6/12/2017	SeqNo:	1367520	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		91.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706555

13-Jun-17

Client: Blagg Engineering
Project: Mudge LS 6

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	A43427	RunNo:	43427					
Prep Date:		Analysis Date:	6/12/2017	SeqNo:	1367294	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.54		0.5000		108	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID	100ng lcs	SampType:	LCS	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	LCSS	Batch ID:	A43427	RunNo:	43427					
Prep Date:		Analysis Date:	6/12/2017	SeqNo:	1367295	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	98.8	70	130			
Toluene	0.83	0.050	1.000	0	83.2	70	130			
Surr: 1,2-Dichloroethane-d4	0.57		0.5000		113	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		106	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706555

13-Jun-17

Client: Blagg Engineering
Project: Mudge LS 6

Sample ID rb	SampType: MBLK	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: PBS	Batch ID: R43427	RunNo: 43427								
Prep Date:	Analysis Date: 6/12/2017	SeqNo: 1367306	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	490		500.0		97.4	70	130			

Sample ID 2.5ug gro lcs	SampType: LCS	TestCode: EPA Method 8015D Mod: Gasoline Range								
Client ID: LCSS	Batch ID: R43427	RunNo: 43427								
Prep Date:	Analysis Date: 6/12/2017	SeqNo: 1367677	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	95.3	70	130			
Surr: BFB	470		500.0		94.4	70	130			

Qualifiers:

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



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: **1706555**

RcptNo: **1**

Received By: **Andy Freeman** 6/10/2017 11:15:00 AM

Completed By: **Ashley Gallegos** 6/12/2017 8:29:40 AM

Reviewed By: *SRE 06/12/17*

[Handwritten signatures]

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

Turn-Around Time: **SAME DAY**



HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client: **BP AMERICA**
BLAGG ENGINEERING INC.
 Mailing Address:
 Phone #: **(505) 320-1183**
 email or Fax#:
 QA/QC Package:
 Standard Level 4 (Full Validation)
 Accreditation
 NELAP Other _____
 EDD (Type) _____

Standard Rush
 Project Name: **MUDGE LS 6**
 Project #:
 Project Manager: **STEVE MOSKAL**
 Sampler: **JEFF BLAGG**
 On Ice: Yes No
 Sample Temperature: **2.8°C**

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE THM'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)	CHLORINE	Air Bubbles (Y or N)
6/9/2017	1450	SOIL	TSP-21	4 oz x 1	COOL	-001	X	X										X	
"	1456	"	TSP-22	"	"	-002	X	X										X	

Date: **6/9/2017** Time: **1730** Relinquished by: **Jeff Blagg**

Received by: **[Signature]** Date: **6/14/17** Time: **1115**

Remarks: **BILL BP CONTACT: STEVE MOSKAL**
VID: VHIXONEVRM
WBS ELEMENT: L1-0018M-E:MUDGE LS6

Date: _____ Time: _____ Relinquished by: _____

Received by: _____ Date: _____ Time: _____

SAMPLE TREATED WITH H₂O₂

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



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

June 15, 2017

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

RE: MUDGE LS 6

OrderNo.: 1706732

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/14/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706732

15-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	MB-32282	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32282	RunNo:	43485					
Prep Date:	6/14/2017	Analysis Date:	6/14/2017	SeqNo:	1370344	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32282	SampType:	ics	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32282	RunNo:	43485					
Prep Date:	6/14/2017	Analysis Date:	6/14/2017	SeqNo:	1370345	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.8	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706732

15-Jun-17

Client: Blagg Engineering

Project: MUDGE LS 6

Sample ID	LCS-32271	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	32271	RunNo:	43444					
Prep Date:	6/14/2017	Analysis Date:	6/14/2017	SeqNo:	1369340	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	73.2	114			
Surr: DNOP	4.8		5.000		96.7	70	130			

Sample ID	MB-32271	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	32271	RunNo:	43444					
Prep Date:	6/14/2017	Analysis Date:	6/14/2017	SeqNo:	1369341	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.2		10.00		91.7	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706732

15-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID MB-32257	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 32257		RunNo: 43490							
Prep Date: 6/13/2017	Analysis Date: 6/14/2017		SeqNo: 1370009				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		95.9	54	150			

Sample ID LCS-32257	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 32257		RunNo: 43490							
Prep Date: 6/13/2017	Analysis Date: 6/14/2017		SeqNo: 1370010				Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	76.4	125			
Surr: BFB	1000		1000		103	54	150			

Sample ID MB-32244	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 32244		RunNo: 43491							
Prep Date: 6/13/2017	Analysis Date: 6/14/2017		SeqNo: 1370036				Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		110	54	150			

Sample ID LCS-32244	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 32244		RunNo: 43491							
Prep Date: 6/13/2017	Analysis Date: 6/14/2017		SeqNo: 1370037				Units: %Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		119	54	150			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706732
15-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	MB-32257	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	32257	RunNo:	43490					
Prep Date:	6/13/2017	Analysis Date:	6/14/2017	SeqNo:	1370018	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		123	66.6	132			

Sample ID	LCS-32257	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	32257	RunNo:	43490					
Prep Date:	6/13/2017	Analysis Date:	6/14/2017	SeqNo:	1370019	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.2	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	66.6	132			

Sample ID	MB-32244	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	32244	RunNo:	43491					
Prep Date:	6/13/2017	Analysis Date:	6/14/2017	SeqNo:	1370062	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		108	66.6	132			

Sample ID	LCS-32244	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	32244	RunNo:	43491					
Prep Date:	6/13/2017	Analysis Date:	6/14/2017	SeqNo:	1370063	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.1		1.000		111	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: 1706732

RcptNo: 1

Received By: **Anne Thorne** 6/14/2017 7:50:00 AM

Anne Thorne

Completed By: **Anne Thorne** 6/14/2017 8:37:52 AM

Anne Thorne

Reviewed By:

Chain of Custody

1. Custody seals intact on sample bottles? Yes No Not Present
2. Is Chain of Custody complete? Yes No Not Present
3. How was the sample delivered? 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:	<input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person
Regarding:			
Client Instructions:			

17. Additional remarks:

18. Cooler Information

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



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

June 23, 2017

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

RE: MUDGE LS 6

OrderNo.: 1706B08

Dear Steven Moskal:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/21/2017 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report

Lab Order 1706B08

Date Reported: 6/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-24

Project: MUDGE LS 6

Collection Date: 6/20/2017 2:07:00 PM

Lab ID: 1706B08-001

Matrix: SOIL

Received Date: 6/21/2017 7:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/21/2017 10:56:35 AM	32409
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/21/2017 10:08:04 AM	32406
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/21/2017 10:08:04 AM	32406
Surr: DNOP	104	70-130		%Rec	1	6/21/2017 10:08:04 AM	32406
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	18		mg/Kg	5	6/21/2017 10:27:27 AM	32396
Surr: BFB	117	54-150		%Rec	5	6/21/2017 10:27:27 AM	32396
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.089		mg/Kg	5	6/21/2017 10:27:27 AM	32396
Toluene	ND	0.18		mg/Kg	5	6/21/2017 10:27:27 AM	32396
Ethylbenzene	ND	0.18		mg/Kg	5	6/21/2017 10:27:27 AM	32396
Xylenes, Total	ND	0.35		mg/Kg	5	6/21/2017 10:27:27 AM	32396
Surr: 4-Bromofluorobenzene	125	66.6-132		%Rec	5	6/21/2017 10:27:27 AM	32396

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

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

Analytical Report

Lab Order 1706B08

Date Reported: 6/23/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering

Client Sample ID: TSP-25

Project: MUDGE LS 6

Collection Date: 6/20/2017 2:15:00 PM

Lab ID: 1706B08-002

Matrix: SOIL

Received Date: 6/21/2017 7:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	6/21/2017 11:08:59 AM	32409
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: TOM
Diesel Range Organics (DRO)	14	9.8		mg/Kg	1	6/21/2017 10:30:17 AM	32406
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/21/2017 10:30:17 AM	32406
Surr: DNOP	102	70-130		%Rec	1	6/21/2017 10:30:17 AM	32406
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	6/21/2017 10:51:25 AM	32396
Surr: BFB	113	54-150		%Rec	5	6/21/2017 10:51:25 AM	32396
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.096		mg/Kg	5	6/21/2017 10:51:25 AM	32396
Toluene	ND	0.19		mg/Kg	5	6/21/2017 10:51:25 AM	32396
Ethylbenzene	ND	0.19		mg/Kg	5	6/21/2017 10:51:25 AM	32396
Xylenes, Total	ND	0.39		mg/Kg	5	6/21/2017 10:51:25 AM	32396
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	5	6/21/2017 10:51:25 AM	32396

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

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706B08
23-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID	MB-32409	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	32409	RunNo:	43687					
Prep Date:	6/21/2017	Analysis Date:	6/21/2017	SeqNo:	1377078	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-32409	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	32409	RunNo:	43687					
Prep Date:	6/21/2017	Analysis Date:	6/21/2017	SeqNo:	1377079	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.7	90	110			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1706B08
 23-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID LCS-32406	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 32406		RunNo: 43676							
Prep Date: 6/21/2017	Analysis Date: 6/21/2017		SeqNo: 1375835					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	93.5	73.2	114			
Surr: DNOP	4.9		5.000		97.2	70	130			

Sample ID MB-32406	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 32406		RunNo: 43676							
Prep Date: 6/21/2017	Analysis Date: 6/21/2017		SeqNo: 1375836					Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		105	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1706B08

23-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID MB-32396	SampType: MBLK		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: PBS	Batch ID: 32396		RunNo: 43702							
Prep Date: 6/20/2017	Analysis Date: 6/21/2017		SeqNo: 1376444		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	990		1000		98.7	54	150			

Sample ID LCS-32396	SampType: LCS		TestCode: EPA Method 8015D: Gasoline Range							
Client ID: LCSS	Batch ID: 32396		RunNo: 43702							
Prep Date: 6/20/2017	Analysis Date: 6/21/2017		SeqNo: 1376445		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	104	76.4	125			
Surr: BFB	1100		1000		107	54	150			

Qualifiers:

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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: 1706B08

23-Jun-17

Client: Blagg Engineering
Project: MUDGE LS 6

Sample ID MB-32396	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles							
Client ID: PBS	Batch ID: 32396		RunNo: 43702							
Prep Date: 6/20/2017	Analysis Date: 6/21/2017		SeqNo: 1376459				Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.3		1.000		126	66.6	132			

Sample ID LCS-32396	SampType: LCS		TestCode: EPA Method 8021B: Volatiles							
Client ID: LCSS	Batch ID: 32396		RunNo: 43702							
Prep Date: 6/20/2017	Analysis Date: 6/21/2017		SeqNo: 1376460				Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	80	120			
Toluene	1.1	0.050	1.000	0	107	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.3	0.10	3.000	0	109	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		129	66.6	132			

Qualifiers:

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



Hall Environmental Analysis Laboratory
 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: **1706B08**

RcptNo: **1**

Received By: **Anne Thorne** 6/21/2017 7:45:00 AM

Anne Thorne

Completed By: **Anne Thorne** 6/21/2017 8:06:04 AM

Anne Thorne

Reviewed By: **IO** 6/24/17

Chain of Custody

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

Log In

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

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.3	Good	Yes			

Chain-of-Custody Record

Client: **BP AMERICA**

Mailing Address: **Brabb Engineering Inc**

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

email or Fax#:

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

Accreditation
 NELAP Other _____

EDD (Type)

Turn-Around Time: **SAME DAY**

Standard Rush

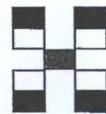
Project Name: **MUDGE LS 6**

Project #:

Project Manager: **STEVE MASKAL**

Sampler: **J- Brabb**
 Yes No

Sample Temperature: **1.3**



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 + TMS'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)
6/20/17	1407	SOIL	TSP-24	4oz x 1	COOL	1706508	X	X										X	
"	1415	"	TSP-25	"	"	262	X	X										X	

Date: 6/20/2017	Time: 1404	Relinquished by: Jeff Blagg	Received by: [Signature]	Date: 6/20/2017	Time: 1404
Date: 4/26/17	Time: 1845	Relinquished by: [Signature]	Received by: [Signature]	Date: 06/21/17	Time: 0745

Remarks: **Bill BP CONTACT: Steve Maskal**
VID: VH1XONEVRM
WBS: LI-0018M-E: MUDGE LS 6
Tracked w/ Hele

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.

Moskal, Steven

From: Moskal, Steven
Sent: Wednesday, June 21, 2017 2:05 PM
To: 'Smith, Cory, EMNRD'; 'l1thomas@blm.gov'
Cc: Fields, Vanessa, EMNRD; jeffcblagg@aol.com; Hixon, Vance E; Gonzales, Jody J; dustindmace@gmail.com
Subject: RE: Mudge LS 006 Sample Results - 6/21/17
Attachments: Mudge LS6.pdf

All,

At laboratory results for the final treated stockpile sampling conducted yesterday are below the site closure standard and will be used as backfill.

BP requests a response to the variance request below. The construction crew is currently backfilling the areas of the excavation which have passed the site closure standards. The Z20 section of the excavation is awaiting a response to be backfilled.

Thank you,

Steve Moskal

BP Lower 48 – San Juan
Field Environmental Coordinator
Office: (505) 326-9497
Cell: (505) 330-9179



This email and any attachments are intended only for the addressee(s) listed above and may contain confidential, proprietary, and/or privileged information. If you are not an intended recipient, please immediately advise the sender by return email, delete this email and any attachments, and destroy any copies of same. Any unauthorized review, use, copying disclosure or distribution of this email and any attachments is prohibited.

From: Moskal, Steven
Sent: Tuesday, June 20, 2017 2:02 PM
To: Smith, Cory, EMNRD; 'l1thomas@blm.gov'
Cc: Fields, Vanessa, EMNRD; jeffcblagg@aol.com; Hixon, Vance E; Gonzales, Jody J; dustindmace@gmail.com
Subject: Mudge LS 006 Sample Results - 6/20/17

Cory and Whitney,

Attached are the laboratory results from the excavation sampling conducted yesterday as well as an updated site diagram. All of the samples were below the site closure standard with the exception of Z20 with a TPH of 149 ppm TPH. BP request a variance to approve this sample for closure with no further action as the sample location is along a very tall and steep hillside which will make it very difficult to remove without significant disturbance to the native soil and vegetation as well as maintaining a safe excavation for construction personnel.

Please let me know if you approve.

Thank you,

Moskal, Steven

From: Moskal, Steven
Sent: Tuesday, June 13, 2017 8:53 AM
To: Smith, Cory, EMNRD
Cc: Fields, Vanessa, EMNRD; Whitney Thomas; Jeff Blagg; Hixon, Vance E; Gonzales, Jody J; dustindmace@gmail.com
Subject: Re: Mudge LS-6 Sampling Results and Notification - 6/13/17

Cory,

The samples collected from the zones in question were 5-point composites consisting of 3 points collected from the visually impacted zone and 2 points collected from the visually, non-impacted zone.

Steve Moskal
Environmental Coordinator -BP- SJS
(505) 330-9179
Sent from my mobile device

> On Jun 13, 2017, at 8:07 AM, Smith, Cory, EMNRD <Cory.Smith@state.nm.us> wrote:

>

> Good morning Steve,

>

> Are the Z13/14 samples 5pt composite? If so are they all within the suspected zone of contamination? Or are they discrete grabs?

>

> Cory Smith

> Environmental Specialist

> Oil Conservation Division

> Energy, Minerals, & Natural Resources

> 1000 Rio Brazos, Aztec, NM 87410

> (505)334-6178 ext 115

> cory.smith@state.nm.us

>

> -----Original Message-----

> From: Moskal, Steven [mailto:Steven.Moskal@bp.com]

> Sent: Tuesday, June 13, 2017 7:57 AM

> To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa,

> EMNRD <Vanessa.Fields@state.nm.us>; Whitney Thomas <l1thomas@blm.gov>

> Cc: Jeff Blagg <jeffcblagg@aol.com>; Hixon, Vance E

> <Vance.Hixon@bp.com>; Gonzales, Jody J <jody.gonzales@bp.com>;

> dustindmace@gmail.com

> Subject: Mudge LS-6 Sampling Results and Notification - 6/13/17

>

> All,

>

> Attached are the recently received lab results, an updated site map and treated stockpile tracking spreadsheet. The lab results indicate that the 500 yard treated stockpiles, TSP-21 & 22, are below the site closure standard and will be used as backfill as needed.

>

> The excavation results are as follows:

>

> Z-11: South Wall - Non Detect

>> Whitney, Cory and Vanessa,

>>

>> BP requests to sample an minimum of 500 cubic yards of treated soils this afternoon around 2:00. Please let the group know if another time works best for you.

>>

>> Thank you,

>>

>> Steve Moskal

>> Environmental Coordinator -BP- SJS

>> (505) 330-9179

>> Sent from my mobile device

>>

>>> On Jun 6, 2017, at 7:56 AM, Moskal, Steven <Steven.Moskal@bp.com> wrote:

>>>

>>> All,

>>>

>>> Attached are the most recent lab results for Z9, the current eastern base of the excavation, and TSP-17, the third 500-yard stockpile sample; both samples are below the site closure standard and will be backfilled/used as backfill as the project progresses.

>>>

>>> The BLM has requested to adjust the sampling time of the excavation and available treated stockpiles to around 1:30 or 2:00 this afternoon. Please let the group know what the NMOCD is available. 2:00 is preferred by BP to allow for additional time to work the excavation.

>>>

>>> Thank you all,

>>>

>>> Steve Moskal

>>> BP Lower 48 - San Juan - Farmington

>>> Field Environmental Coordinator

>>> Office: (505) 326-9497

>>> Cell: (505) 330-9179

>>> [cid:image001.jpg@01D2DE9A.738FA7D0]

>>>

>>> This email and any attachments are intended only for the addressee(s) listed above and may contain confidential, proprietary, and/or privileged information. If you are not an intended recipient, please immediately advise the sender by return email, delete this email and any attachments, and destroy any copies of same. Any unauthorized review, use, copying disclosure or distribution of this email and any attachments is prohibited.

>>>

>>>

>>>

>>>

>>> From: Moskal, Steven

>>> Sent: Monday, June 05, 2017 2:05 PM

>>> To: 'cory.smith@state.nm.us'; 'vanessa.fields@state.nm.us'; 'Whitney Thomas'

>>> Cc: 'Jeff Blagg'; Hixon, Vance E; Gonzales, Jody J; 'dustindmace@gmail.com'

>>> Subject: RE: Mudge LS-6 Sampling Request and Pipeline Issue

>>>

>>> There will be no sampling today. Progress of the excavation has been limited by the pipeline issue.

>>>

>>> We hope to sample tomorrow afternoon around the same time.

>>>

>>> Thank you,

>>>

>>> Steve Moskal

>>> To: cory.smith@state.nm.us<mailto:cory.smith@state.nm.us>;
>>> vanessa.fields@state.nm.us<mailto:vanessa.fields@state.nm.us>;
>>> Whitney Thomas
>>> Cc: Jeff Blagg; Hixon, Vance E; Gonzales, Jody J;
>>> dustindmace@gmail.com<mailto:dustindmace@gmail.com>
>>> Subject: Mudge LS-6 sample results and sample variance request

>>>

>>> All,

>>>

>>> Attached is the recent sample results from the excavation and
>>> stockpile sampling performed yesterday. The excavation sidewall
>>> sample exceeds the site closure standard with 120 ppm TPH. However,
>>> the closely located MW-4D and 4S indicate no contamination. MW-2
>>> was installed in imported backfill after the completion of the 2015
>>> excavation. BP request for a variance in accepting the 120 ppm for
>>> closure as there is a small amount, approximately 10 cubic yards, of
>>> impacted soil that will remain if approved. The monitoring wells
>>> are in close proximity of the Z8 sample and provide lateral
>>> delineation of the impacts in the northern direction. Please let me
>>> know if the request for variance is approved

>>>

>>> TSP-16, a 500 cubic yard sample, resulted in 13 ppm TPH and will be used as backfill as needed.

>>>

>>> The grab sample was collected to obtain further information regarding the contamination levels of the dark grey soil located near the base of the excavation.

>>>

>>> As a reminder, we plan to sample tomorrow afternoon around 1:00 PM, followed by sampling at the Mudge A 002 around 2:00 PM.

>>>

>>> Thank you,

>>>

>>> Steve Moskal

>>> BP Lower 48 - San Juan - Farmington

>>> Field Environmental Coordinator

>>> Office: (505) 326-9497

>>> Cell: (505) 330-9179

>>> [cid:image006.jpg@01D2DE9A.735B5160]

>>>

>>> This email and any attachments are intended only for the addressee(s) listed above and may contain confidential, proprietary, and/or privileged information. If you are not an intended recipient, please immediately advise the sender by return email, delete this email and any attachments, and destroy any copies of same. Any unauthorized review, use, copying disclosure or distribution of this email and any attachments is prohibited.

>>>

>>>

>>>

>>>

>>> <MUDGE LS 6.pdf>

>>> <Mudge LS 6 - June 5_2017.pdf>

>>> <Mudge LS 6 - Treated Soil Pile Summary - 6_2_2017.doc>

>>> <image005.jpg> <image006.jpg> <image001.jpg>

>> <image005.jpg>

>> <image006.jpg>

>> <image001.jpg>