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 Department

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
District RP	
Facility ID	
Application ID	

NMOCD
JAN 17 2019
DISTRICT III

Release Notification

Responsible Party

Responsible Party: BP America Production Co.	OGRID: 778 Final Report
Contact Name: Steve Moskal	Contact Telephone: (505) 330-9179
Contact email: steven.moskal@bpx.com	Incident # *(assigned by OCD)*
Contact mailing address: 1199 Main Ave. Suite 101, Durango CO, 81301	

Location of Release Source

Latitude: 36.64325° Longitude: -108.13707°
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Gallegos Canyon Unit 198	Site Type: Natural Gas Production Well (Abandoned)
Date Release Discovered: June 22, 2018	API#: 30-045-07275

Unit Letter	Section	Township	Range	County
N	20	T28N	R12W	San Juan

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): unknown	Volume Recovered (bbls): 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☒ Condensate	Volume Released (bbls):	Volume Recovered (bbls):
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:

BGT closure sampling indicated soil impacts. The BGT removed for closure and the impacted area remediated to NMAC 19.15.29 standards.

91

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.

☒ The impacted area has been secured to protect human health and the environment.

☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	50-100 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☒ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☒ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☒ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: Date: January 16, 2019

email: steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by: Date:

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

Remediation Plan Checklist: ***Each of the following items must be included in the plan.***

- ☐ Detailed description of proposed remediation technique
- ☐ Scaled sitemap with GPS coordinates showing delineation points
- ☐ Estimated volume of material to be remediated
- ☐ Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- ☐ Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: ***Each of the following items must be confirmed as part of any request for deferral of remediation.***

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Steve Moskal Title: Environmental Coordinator

Signature: Date: January 16, 2019

email: steven.moskal@bpx,com Telephone: (505) 330-9179

OCD Only

Received by: Vanessa Fields Date: 1/17/2019

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Date: 1/18/2019

Printed Name: Vanessa Fields Title: Environmental Specialist

BP America
GCU 198
(N) Sec 20 – T28N – R12W
San Juan County, New Mexico
API: 30-045-07275

Summary Record of Impact Remediation

June 22, 2018

1. Soils impacted with hydrocarbons were encountered during closure of a 95 barrel below grade tank. Analytical laboratory testing of impacted soils immediately below the BGT at the 5' depth reported total petroleum hydrocarbons (TPH) at 780 ppm, total BTEX at non-detect (ND) and chlorides at ND.

2. BGT failed on Release Rule 19.15.29 NMAC site closure standard, established as follows:

Horizontal Distance to Water Course < 300 feet
Distance to Nearest Water Well > 1,000 feet
Depth to Groundwater >50 feet

Site closure standard therefore determined at 100 ppm TPH and 50 ppm total BTEX (with 10 ppm benzene) and 600 ppm chlorides.

3. Gas well plugged and abandoned.

4. Federal mineral lease, NAPI surface.

August 22, 2018: Initiate remediation via excavation and haul to Envirotech Landfarm.

August 24, 2018: Excavation size approximately 27' x 24' x 16' deep. Closure sampling conducted on sidewalls and base with analytical results as follows:

Initial Closure Sampling Test Results
August 24, 2018
(See Figure 1 map and photo's)

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
North Base 5-pt @ 16'	8/24/2018 @ 14:29	158	420	ND	ND	ND
South Base 5-pt @ 16'	8/24/2018 @ 14:37	1,163	1,810	ND	ND	ND
South Wall (Ramp) 5-pt @ (6'-14')	8/24/2018 @ 14:41	39.9	450	ND	ND	ND
East Sidewall 5-pt @ (6'-14')	8/24/2018 @ 14:49	5.5	ND	ND	ND	ND
Site	Closure	Standard:	100	50	10	600

August 25 – 29, 2018: Advance remedial excavation.

August 29, 2018: Excavation size approximately 56' x 36' x 19' deep. Closure sampling conducted on sidewalls and base with analytical results as follows:

Closure Sampling Test Results
August 29, 2018
(See Figure 2 map and photo's)

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
West Base 5-pt @ 19'	8/29/2018 @ 12:29	140	68	ND	ND	44
West Wall N. Half 5-pt @ 6'-17'	8/29/2018 @ 12:39	2.8	ND	ND	ND	ND
West Wall S. Half 5-pt @ 6'-17'	8/29/2018 @ 12:44	0.0	ND	ND	ND	ND
South Wall W. Half 5-pt @ 6'-17'	8/29/2018 @ 12:48	0.0	ND	ND	ND	ND
Site	Closure	Standard:	100	50	10	600

August 30 – 31, 2018: Advance remedial excavation towards east and south.

August 31, 2018: Closure sampling conducted on sidewalls and base with analytical results as follows:

Closure Sampling Test Results
August 31, 2018
(See Figure 3 map and photo's)

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
East Base N Half 5-pt @ 19'	8/31/2018 @ 12:35	0.1	ND	ND	ND	ND
East Base S Half 5-pt @ 19'	8/31/2018 @ 12:41	34	ND	ND	ND	ND
South Wall (Ramp) 5-pt @ 6'-17'	8/31/2018 @ 12:48	0.1	ND	ND	ND	ND
Site	Closure	Standard:	100	50	10	600

September 1 – 11, 2018: Backfill open excavation and advance the remedial dig to the North.

September 11, 2018: Closure sampling conducted on north sidewalls and base with analytical results as follows:

Closure Sampling Test Results
September 11, 2018
(See Figure 4 map and photo's)

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
North Base 5-pt @ 20'	9/11/2018 @ 10:21	105	173	ND	ND	33
North-East Walls 6-pt @ 6'-18''	9/11/2018 @ 10:34	0.8	ND	ND	ND	ND
North-West Walls 6-pt @ 6'-18''	9/11/2018 @ 10:44	0.4	ND	ND	ND	40
Site	Closure	Standard:	100	50	10	600

September 12 – 19, 2018: Engineer excavation to allow advancing past 20' depth. Extend north base to 23'.

September 19, 2018: Closure sampling conducted on north base with analytical results as follows:

Final Closure Sampling Test Results
September 19, 2018
(See Figure 5 map and photo's)

Sample ID	Date/Time	Field OVM (ppm)	TPH Method 8015B (mg/Kg)	BTEX Method 8021 (mg/Kg)	Benzene Method 8021 (mg/Kg)	Chloride Method 300 (mg/Kg)
North Base 5-pt @ 23'	9/19/2018 @ 12:56	0.0	ND	ND	ND	ND
Site Closure Standard:			100	50	10	600

September 21, 2018: Complete backfilling excavation.

SITING AND HYDRO-GEOLOGICAL REPORT FOR GALLEGOS CANYON UNIT 198

SITING CRITERIA 19.15.17.10 NMAC

Depth to groundwater at the site is estimated to be between 50 and 100 feet. This estimation is based on data from Stone and others (1983), and depth to groundwater data obtained from water wells permitted by the New Mexico State Engineer's Office (OSE, Figure 1). Local topography and proximity to adjacent water features is also considered. A topographic map of the site is provided as Figure 2 and demonstrates that the below grade tank (BGT) is not within 300 feet of any continuously flowing watercourse or within 200 feet of any other significant watercourse, lakebed, sinkhole or playa lake as measured from the ordinary high water mark. Figure 3 demonstrates that the BGT is not within 300 feet of a permanent residence, school, hospital, institution or church. Figure 4 demonstrates, based on a search of the OSE database and USGS topographic maps, that there are no freshwater wells or springs within 1000 feet of the BGT. Figure 5 demonstrates that the BGT is not within a municipal boundary or a defined municipal freshwater well field. Figure 6 demonstrates that the BGT is not within 500 feet of a wetland. Figure 7 demonstrates that the BGT is not in an area overlying a subsurface mine. The BGT is not located in an unstable area. Figure 8 demonstrates that the BGT is not within the mapped FEMA 100-year floodplain.

Local Geology and Hydrology

This particular site is located on a slope west of Gallegos Canyon. Groundwater is estimated to be between 50 and 100 feet below ground surface (bgs) at this site. This is based on the elevation difference between the site and Gallegos Canyon of 69 feet. Gallegos Canyon is 2,983 feet southeast from the site. Broad shalely hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries are common. The predominant geologic formation is the Nacimiento Formation of Tertiary age, which underlies surface soils and is often exposed. Deposits of Quaternary alluvial and eolian sands occur prominently near the surface of the area, especially near washes.

Regional Geology and Hydrology

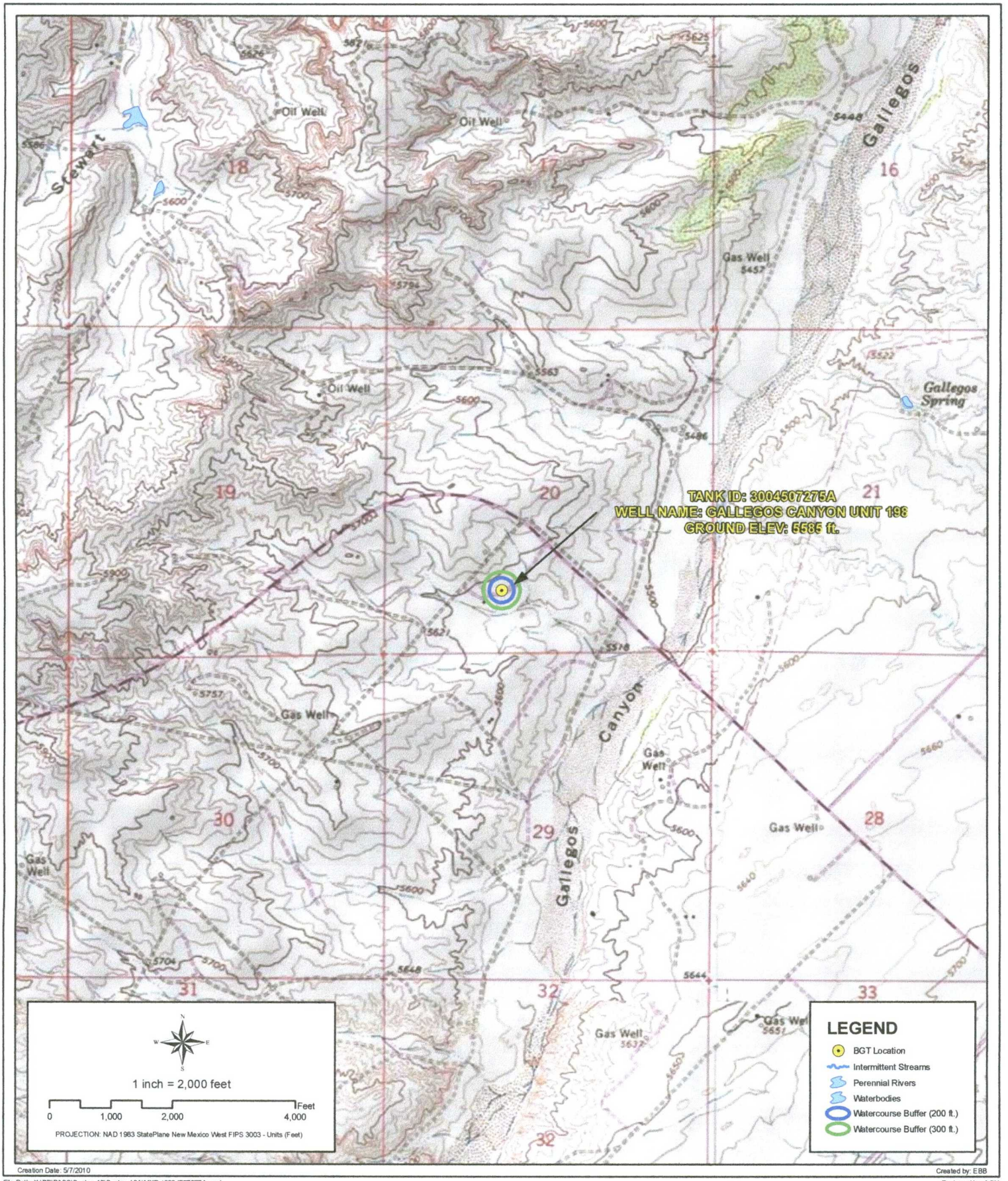
The San Juan Basin is situated in the Navajo section of the Colorado Plateau and is characterized by broad open valleys, mesas, buttes and hogbacks. Away from major valleys and canyons topographic relief is generally low. Native vegetation is sparse and shrubby. Drainage is mainly by the San Juan River, the only permanent stream in the Navajo Section of the Colorado Plateau. The San Juan River is a tributary of the Colorado River. Major tributaries include the Animas, Chaco and La Plata Rivers. Flow of the San Juan River across the basin is regulated by the Navajo Dam, located about 30 miles northeast of Farmington, New Mexico. The climate is arid to semiarid with an average annual precipitation of 8 to 10 inches. Soils within the basin consist of weathered parent rock derived from predominantly physical means mostly from eolian depositional system with fluvial having a lesser impact.

Cretaceous and Tertiary sandstones, as well as Quaternary Alluvial deposits, serve as the primary aquifers in the San Juan Basin (Stone et al., 1983). In most of the proposed area, the Nacimiento Formation lies at the surface and grades into the Animas Formation to the west. The lower part of the Nacimiento Formation is composed of interbedded black, carbonaceous mudstones and white coarse-grained sandstones. The upper part is comprised of mudstone and sandstone. It is generally slope-forming, even within the sandstone units. Thickness of the Nacimiento ranges from 418 to 2232 feet (Stone et al., 1983). Aquifers within the coarser and continuous sandstone bodies of the Nacimiento Formation are between 0 and 1000 feet deep in this section of the basin. Wells within these bodies flow from 16 to 100 gallons per minute (gpm), and transmissivities are expected to be 100 ft^2/d (Stone et al, 1983). Groundwater within these aquifers flows toward the San Juan River.

References

Circular 154—Guidebook to coal geology of northwest New Mexico By E. C. Beaumont, J. W. Shomaker, W. J. Stone, and others, 1976

Stone, et al., 1983, Hydrogeology and Water Resources of the San Juan Basin, New Mexico, Socorro, New Mexico Bureau of Mines and Mineral Resources Hydrologic Report 6, 70 p



Creation Date: 5/7/2010

Created by: EBB

File Path: X:\BP\PASS\Sector_10\Sector_10A\MXDs\3004507275A.mxd

Reviewed by: AGH

PROXIMITY TO WATERCOURSES

WELL NAME: GALLEGOS CANYON UNIT 198

API NUMBER: 3004507275 TANK ID: 3004507275A

SECTION 20, TOWNSHIP 28.0N, RANGE 12W, P.M. NM23

FIGURE 2

Creation Date: 5/7/2010

Created by: EBB

File Path: X:\BP\PASS\Sector_10\Sector_10A\MXDs\3004507275A.mxd

Reviewed by: AGH

bp

PROXIMITY TO PERMANENT STRUCTURE

WELL NAME: GALLEGOS CANYON UNIT 198

API NUMBER: 3004507275 TANK ID: 3004507275A

SECTION 20, TOWNSHIP 28.0N, RANGE 12W, P.M. NM23

FIGURE

3

GCU 198

Initial Release Discovery at 95 BGT

CLIENT: BP

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

API #: 3004507275
TANK ID (if applicble): A

FIELD REPORT:

(circle one): [BGT CONFIRMATION] / RELEASE INVESTIGATION / OTHER:

PAGE #: 1 of 1

SITE INFORMATION:

SITE NAME: GCU # 198

DATE STARTED: 06/22/18
DATE FINISHED:

QUAD/UNIT: N SEC: 20 TWP: 28N RNG: 12W PM: NM CNTY: SJ ST: NM

1/4 -1/4/FOOTAGE: 1,010'S / 2,090'W SE/SW LEASE TYPE: FEDERAL / STATE / FEE / [INDIAN]

ENVIRONMENTAL SPECIALIST(S): NJV

LEASE #: I-149-IND-8476 PROD. FORMATION: DK CONTRACTOR: STRIKE BP - J. GONZALES

REFERENCE POINT:

WELL HEAD (W.H.) GPS COORD.: 36.64323 X 108.13707 GL ELEV.: 5,585'

1) 95 BGT (SW/DB) GPS COORD.: 36.64325 X 108.13757 DISTANCE/BEARING FROM W.H.: 149', N88W
2) GPS COORD.: DISTANCE/BEARING FROM W.H.:
3) GPS COORD.: DISTANCE/BEARING FROM W.H.:
4) GPS COORD.: DISTANCE/BEARING FROM W.H.:

SAMPLING DATA:

CHAIN OF CUSTODY RECORD(S) # OR LAB USED: HALL

	SAMPLE ID:	SAMPLE DATE:	SAMPLE TIME:	LAB ANALYSIS:	OVM READING (ppm)
1)	5PC - TB @ 5' (95)	06/22/18	1110	8015B/8021B/300.0 (Cl)	31.5
2)					
3)					
4)					
5)					

SOIL DESCRIPTION:

SOIL TYPE: [SAND] [SILTY SAND] SILT / SILTY CLAY / CLAY / [GRAVEL] [OTHER] BEDROCK (SANDSTONE)

SOIL COLOR: MOSTLY DARK YELLOWISH ORANGE

COHESION (ALL OTHERS): [NON COHESIVE] SLIGHTLY COHESIVE / COHESIVE / [HIGHLY COHESIVE]

CONSISTENCY (NON COHESIVE SOILS): LOOSE / [FIRM] DENSE / [VERY DENSE]

MOISTURE: [DRY] [SLIGHTLY MOIST] [MOIST] WET / SATURATED / SUPER SATURATED

SAMPLE TYPE: GRAB [COMPOSITE] # OF PTS. 5

DISCOLORATION/STAINING OBSERVED: [YES] NO EXPLANATION - LIGHT GRAY

PLASTICITY (CLAYS): NON PLASTIC / SLIGHTLY PLASTIC / COHESIVE / MEDIUM PLASTIC / HIGHLY PLASTIC

DENSITY (COHESIVE CLAYS & SILTS): SOFT / FIRM / STIFF / VERY STIFF / HARD

HC ODOR DETECTED: [YES] NO EXPLANATION - MINOR IN DISCOLORED SOILS

ANY AREAS DISPLAYING WETNESS: YES [NO] EXPLANATION -

SITE OBSERVATIONS:

LOST INTEGRITY OF EQUIPMENT: [YES] NO EXPLANATION - MOST LIKELY AT WEST SIDEWALL & BOTTOM

APPARENT EVIDENCE OF A RELEASE OBSERVED AND/OR OCCURRED : [YES] NO EXPLANATION: PHYSICALLY OBSERVED & MINOR HYDROCARBON ODOR

EQUIPMENT SET OVER RECLAIMED AREA: YES [NO] EXPLANATION -

OTHER: NMOCD OR BLM REPS. NOT PRESENT TO WITNESS CONFIRMATION SAMPLING. GAS WELL TO BE PLUGGED & ABANDONED.

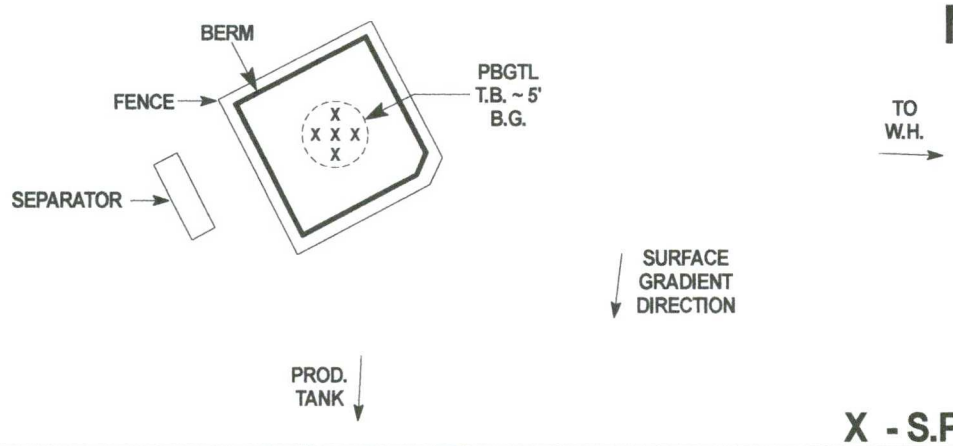
EXCAVATION DIMENSION ESTIMATION: ____ ft. X ____ ft. X ____ ft. EXCAVATION ESTIMATION (Cubic Yards) :

DEPTH TO GROUNDWATER: <100' NEAREST WATER SOURCE: >1,000' NEAREST SURFACE WATER: <1,000' NMOCD TPH CLOSURE STD: 100 ppm

SITE SKETCH

BGT Located : off / [on] site

PLOT PLAN circle: attached



N

X - S.P.D.

OVM CALIB. READ. = 99.4 ppm RF =1.00
OVM CALIB. GAS = 100 ppm
TIME: 11:28 (am)/pm DATE: 06/22/18

MISCELL. NOTES

WO:
REF #: P-984
VID: VHIXONEVB2
PJ #:
Permit date(s): 06/02/10
OCD Appr. date(s): 03/07/17

Tank ID	OVM = Organic Vapor Meter ppm = parts per million
A	BGT Sidewalls Visible: Y / (N)
	BGT Sidewalls Visible: Y / N
	BGT Sidewalls Visible: Y / N

Magnetic declination: 10° E

NOTES: BGT = BELOW-GRADE TANK; E.D. = EXCAVATION DEPRESSION; B.G. = BELOW GRADE; B = BELOW; T.H. = TEST HOLE; ~ = APPROX.; W.H. = WELL HEAD; T.B. = TANK BOTTOM; PBGTL = PREVIOUS BELOW-GRADE TANK LOCATION; SPD = SAMPLE POINT DESIGNATION; R.W. = RETAINING WALL; NA - NOT APPLICABLE OR NOT AVAILABLE; SW - SINGLE WALL; DW - DOUBLE WALL; SB - SINGLE BOTTOM; DB - DOUBLE BOTTOM.

NOTES: GOOGLE EARTH IMAGERY DATE: 3/15/2015. ONSITE: 06/22/18

Analytical Report
Lab Order **1806E44**
Date Reported: **6/26/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: GCU 198
Lab ID: 1806E44-001 **Matrix:** SOIL

Client Sample ID: 5PC-TB @ 5' (95)
Collection Date: 6/22/2018 11:10:00 AM
Received Date: 6/23/2018 10:35:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	6/25/2018 1:03:58 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	300	9.3		mg/Kg	1	6/25/2018 11:48:10 AM	38859
Motor Oil Range Organics (MRO)	480	47		mg/Kg	1	6/25/2018 11:48:10 AM	38859
Surr: DNOP	102	70-130		%Rec	1	6/25/2018 11:48:10 AM	38859
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	6/25/2018 9:32:37 AM	38844
Surr: BFB	91.8	15-316		%Rec	1	6/25/2018 9:32:37 AM	38844
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	6/25/2018 9:32:37 AM	38844
Toluene	ND	0.039		mg/Kg	1	6/25/2018 9:32:37 AM	38844
Ethylbenzene	ND	0.039		mg/Kg	1	6/25/2018 9:32:37 AM	38844
Xylenes, Total	ND	0.078		mg/Kg	1	6/25/2018 9:32:37 AM	38844
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	6/25/2018 9:32:37 AM	38844

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 Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Chain-of-Custody Record

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

Mailing Address: **P.O. BOX 87**
BLOOMFIELD, NM 87413

Phone #: **(505) 632-1199**

email or Fax#:

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

Accreditation:
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush **SAME DAY**

Project Name:
GCU # 198

Project #:

Project Manager:
ERIN GARIFALOS

Sampler: **NELSON VELEZ**

On Ice: ☑ Yes ☐ No 977

Sample Temperature: 1.7°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 + TMB's~~ (8021B)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH (8310 or 8270SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride (soil - 300.0 / water - 300.1)		Grab sample	5 pt. composite sample	Air Bubbles (Y or N)
6/22/18	1110	SOIL	5PC - TB @ 5' (95)	4 oz. - 1	Cool	180644	✓		✓									✓			✓	

Date: 6/22/18 Time: 1420 Relinquished by: [signature] Received by: Christa Walls Date: 6/22/18 Time: 1420

Date: 6/22/18 Time: 1710 Relinquished by: Christa Walls Received by: [signature] Date: 6/23/18 Time: 1035

Remarks: **BILL DIRECTLY TO BP USING THE CONTACT WITH CORRESPONDING VID & REFERENCE # WHEN APPLICABLE;**
CONTACT: **ERIN GARIFALOS / VANCE HIXON**
VID: **VHIXONEVB2**
Reference # **P - 984**

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806E44**

26-Jun-18

Client: Blagg Engineering
Project: GCU 198

Sample ID	**MB-38870**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**38870**		RunNo:	**52211**				
Prep Date:	**6/25/2018**	Analysis Date:	**6/25/2018**		SeqNo:	**1711195**	Units:	**mg/Kg**		

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

Sample ID	**LCS-38870**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**38870**		RunNo:	**52211**				
Prep Date:	**6/25/2018**	Analysis Date:	**6/25/2018**		SeqNo:	**1711196**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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#: **1806E44**

26-Jun-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **LCS-38859**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **LCSS**	Batch ID: **38859**			RunNo: **52195**					
Prep Date: **6/25/2018**	Analysis Date: **6/25/2018**			SeqNo: **1710097**		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	84.9	70	130			
Surr: DNOP	4.4		5.000		87.5	70	130			

Sample ID **MB-38859**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **PBS**	Batch ID: **38859**			RunNo: **52195**					
Prep Date: **6/25/2018**	Analysis Date: **6/25/2018**			SeqNo: **1710098**		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	9.4		10.00		94.3	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
PQL	Practical Quanitative 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#: **1806E44**

26-Jun-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-38844**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **38844**	RunNo: **52200**
Prep Date: **6/22/2018**	Analysis Date: **6/25/2018**	SeqNo: **1710874** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		85.9	15	316			

Sample ID **LCS-38844**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **38844**	RunNo: **52200**
Prep Date: **6/22/2018**	Analysis Date: **6/25/2018**	SeqNo: **1710875** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	105	75.9	131			
Surr: BFB	980		1000		97.6	15	316			

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 Quanitative 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#: **1806E44**

26-Jun-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-38844**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **38844**	RunNo: **52200**
Prep Date: **6/22/2018**	Analysis Date: **6/25/2018**	SeqNo: **1710901** 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	0.99		1.000		99.1	80	120			

Sample ID **LCS-38844**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **38844**	RunNo: **52200**
Prep Date: **6/22/2018**	Analysis Date: **6/25/2018**	SeqNo: **1710902** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	97.7	77.3	128			
Toluene	0.99	0.050	1.000	0	98.9	79.2	125			
Ethylbenzene	0.98	0.050	1.000	0	97.6	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	100	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

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: 1806E44 | RcptNo: 1

Received By: Andy Freeman 6/23/2018 10:35:00 AM

Completed By: Anne Thorne 6/25/2018 7:27:08 AM

Reviewed By: ENM 6/25/18

Labeled by: AT 06/25/18

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

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

GCU 198

Site Remediation
August 24, 2018

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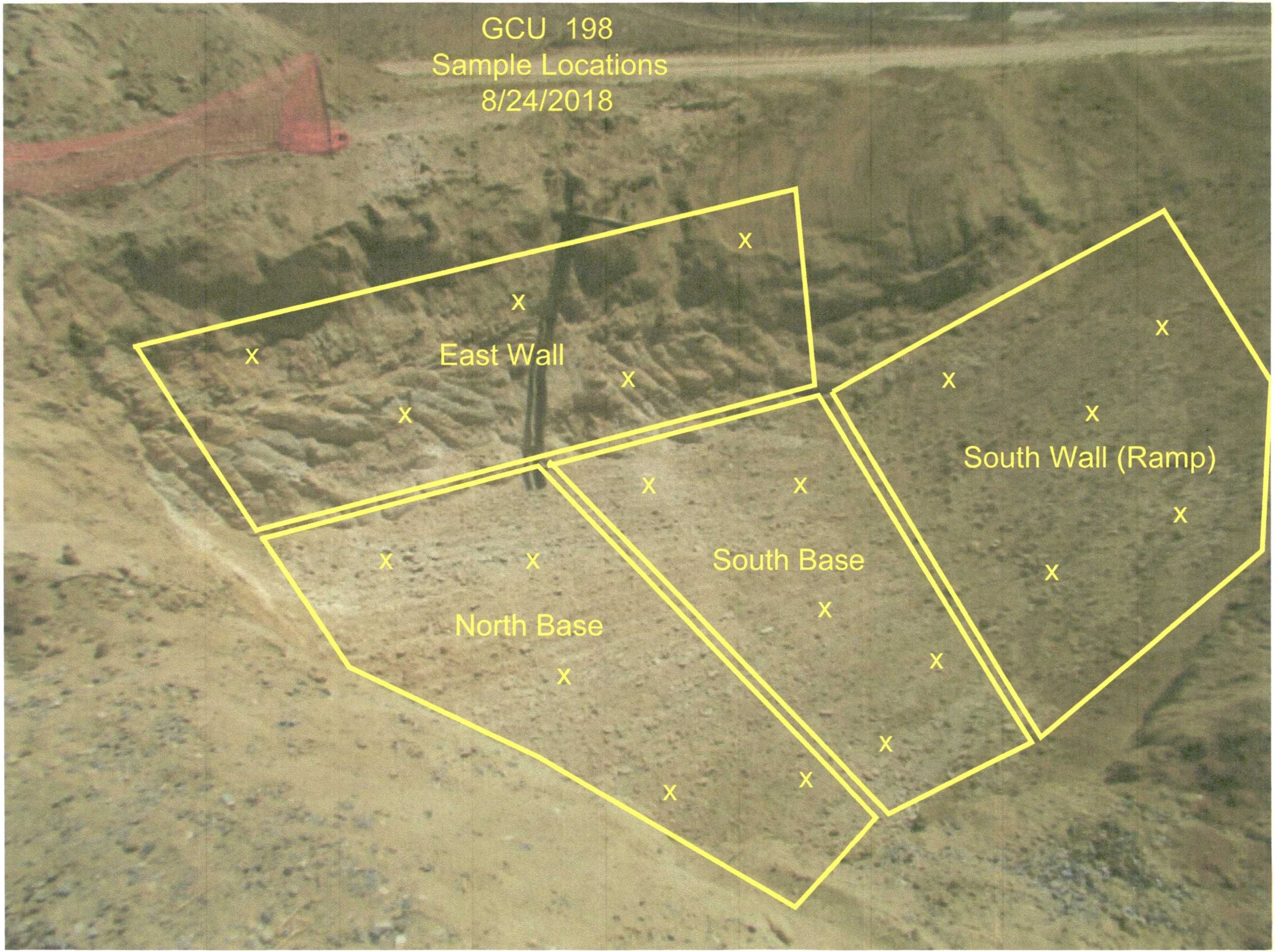
Figure 1
Photographs
Lab Reports


Figure 1
GCU 198
(N) Sec 20 - T28N - R12W
API: 30-045-07275
Remedial Excavation
August 24, 2018
27' x 24' x 16' Deep
N
24'
27'
E
W
S
Ramp
GCU 198
August 24, 2018 Sample Event
North Base 5-pt: OVM = 158 ppm
South Base 5-pt OVM = 1,163 ppm
South Wall (Ramp) OVM = 39.9 ppm
East Wall OVM = 5.5 ppm
Google earth
© 2018 Google
N
90 ft


GCU 198
Sample Locations
8/24/2018
East Wall
South Wall (Ramp)
South Base
North Base

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

August 28, 2018

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

RE: GCU 198 OrderNo.: 1808F82

Dear Sabre Beebe:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/25/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1808F82**
Date Reported: **8/28/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: GCU 198
Lab ID: 1808F82-001
Matrix: MEOH (SOIL)
Client Sample ID: North Base @ 16'
Collection Date: 8/24/2018 2:29:00 PM
Received Date: 8/25/2018 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/27/2018 12:09:56 PM	40002
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	19		mg/Kg	5	8/27/2018 11:10:56 AM	A53722
Surr: BFB	110	70-130		%Rec	5	8/27/2018 11:10:56 AM	A53722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	290	9.8		mg/Kg	1	8/27/2018 10:29:26 AM	39995
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	8/27/2018 10:29:26 AM	39995
Surr: DNOP	116	50.6-138		%Rec	1	8/27/2018 10:29:26 AM	39995
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.093		mg/Kg	5	8/27/2018 11:10:56 AM	B53722
Toluene	ND	0.19		mg/Kg	5	8/27/2018 11:10:56 AM	B53722
Ethylbenzene	ND	0.19		mg/Kg	5	8/27/2018 11:10:56 AM	B53722
Xylenes, Total	ND	0.37		mg/Kg	5	8/27/2018 11:10:56 AM	B53722
Surr: 4-Bromofluorobenzene	121	70-130		%Rec	5	8/27/2018 11:10:56 AM	B53722
Surr: Toluene-d8	102	70-130		%Rec	5	8/27/2018 11:10:56 AM	B53722

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 Quanitative 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
Project: GCU 198
Lab ID: 1808F82-002
Matrix: MEOH (SOIL)
Client Sample ID: South Base @ 16'
Collection Date: 8/24/2018 2:37:00 PM
Received Date: 8/25/2018 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/27/2018 12:22:21 PM	40002
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	140	18		mg/Kg	5	8/27/2018 11:34:01 AM	A53722
Surr: BFB	121	70-130		%Rec	5	8/27/2018 11:34:01 AM	A53722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	1200	20		mg/Kg	2	8/27/2018 1:10:53 PM	39995
Motor Oil Range Organics (MRO)	470	100		mg/Kg	2	8/27/2018 1:10:53 PM	39995
Surr: DNOP	131	50.6-138		%Rec	2	8/27/2018 1:10:53 PM	39995
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.092		mg/Kg	5	8/27/2018 11:34:01 AM	B53722
Toluene	ND	0.18		mg/Kg	5	8/27/2018 11:34:01 AM	B53722
Ethylbenzene	ND	0.18		mg/Kg	5	8/27/2018 11:34:01 AM	B53722
Xylenes, Total	ND	0.37		mg/Kg	5	8/27/2018 11:34:01 AM	B53722
Surr: 4-Bromofluorobenzene	137	70-130	S	%Rec	5	8/27/2018 11:34:01 AM	B53722
Surr: Toluene-d8	100	70-130		%Rec	5	8/27/2018 11:34:01 AM	B53722

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 Quanitative 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
Project: GCU 198
Lab ID: 1808F82-003 **Matrix:** MEOH (SOIL)

Client Sample ID: South Wall (Ramp) (6'-14')
Collection Date: 8/24/2018 2:41:00 PM
Received Date: 8/25/2018 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/27/2018 12:34:46 PM	40002
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/27/2018 11:57:08 AM	A53722
Surr: BFB	122	70-130		%Rec	1	8/27/2018 11:57:08 AM	A53722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	280	10		mg/Kg	1	8/27/2018 11:57:31 AM	39995
Motor Oil Range Organics (MRO)	170	50		mg/Kg	1	8/27/2018 11:57:31 AM	39995
Surr: DNOP	124	50.6-138		%Rec	1	8/27/2018 11:57:31 AM	39995
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.019		mg/Kg	1	8/27/2018 11:57:08 AM	B53722
Toluene	ND	0.039		mg/Kg	1	8/27/2018 11:57:08 AM	B53722
Ethylbenzene	ND	0.039		mg/Kg	1	8/27/2018 11:57:08 AM	B53722
Xylenes, Total	ND	0.077		mg/Kg	1	8/27/2018 11:57:08 AM	B53722
Surr: 4-Bromofluorobenzene	136	70-130	S	%Rec	1	8/27/2018 11:57:08 AM	B53722
Surr: Toluene-d8	101	70-130		%Rec	1	8/27/2018 11:57:08 AM	B53722

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 Quanitative 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
Project: GCU 198
Lab ID: 1808F82-004
Matrix: MEOH (SOIL)
Client Sample ID: East Wall (6'-14')
Collection Date: 8/24/2018 2:49:00 PM
Received Date: 8/25/2018 9:45:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/27/2018 12:47:11 PM	40002
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	8/27/2018 12:20:24 PM	A53722
Surr: BFB	109	70-130		%Rec	1	8/27/2018 12:20:24 PM	A53722
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	8/27/2018 12:48:48 PM	39995
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/27/2018 12:48:48 PM	39995
Surr: DNOP	122	50.6-138		%Rec	1	8/27/2018 12:48:48 PM	39995
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.020		mg/Kg	1	8/27/2018 12:20:24 PM	B53722
Toluene	ND	0.040		mg/Kg	1	8/27/2018 12:20:24 PM	B53722
Ethylbenzene	ND	0.040		mg/Kg	1	8/27/2018 12:20:24 PM	B53722
Xylenes, Total	ND	0.080		mg/Kg	1	8/27/2018 12:20:24 PM	B53722
Surr: 4-Bromofluorobenzene	123	70-130		%Rec	1	8/27/2018 12:20:24 PM	B53722
Surr: Toluene-d8	98.8	70-130		%Rec	1	8/27/2018 12:20:24 PM	B53722

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 Quanitative 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#: **1808F82**

28-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID	**MB-40002**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**40002**		RunNo:	**53720**				
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**		SeqNo:	**1773219**	Units:	**mg/Kg**		

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

Sample ID	**LCS-40002**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**40002**		RunNo:	**53720**				
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**		SeqNo:	**1773220**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	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 Quanitative 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

H ll Environmental Analysis Laboratory, Inc.

WO#: **1808F82**

28-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-39995**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **39995**	RunNo: **53721**
Prep Date: **8/27/2018**	Analysis Date: **8/27/2018**	SeqNo: **1772205** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
[Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		115	50.6	138			

Sample ID **LCS-39995**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **39995**	RunNo: **53721**
Prep Date: **8/27/2018**	Analysis Date: **8/27/2018**	SeqNo: **1772206** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	70	130			
Surr: DNOP	5.4		5.000		108	50.6	138			

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 Quanitative 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#: **1808F82**

28-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **100ng lcs**	SampType: **LCS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **BatchQC**	Batch ID: **B53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772225** 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	1.1	0.050	1.000	0	112	80	120			
Ethylbenzene	1.1	0.050	1.000	0	111	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS**	Batch ID: **B53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772235** 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	0.56		0.5000		112	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			

Sample ID **1808f82-002ams**	SampType: **MS4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **South Base @ 16'**	Batch ID: **B53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772714** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.7	0.092	3.674	0	101	80	120			
Toluene	4.1	0.18	3.674	0	110	80	120			
Ethylbenzene	4.2	0.18	3.674	0.03766	114	82	121			
Xylenes, Total	12	0.37	11.02	0	112	80.2	120			
Surr: 4-Bromofluorobenzene	2.4		1.837		131	70	130			S
Surr: Toluene-d8	1.9		1.837		106	70	130			

Sample ID **1808f82-002amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **South Base @ 16'**	Batch ID: **B53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772715** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.4	0.092	3.674	0	93.8	80	120	7.69	20	
Toluene	3.7	0.18	3.674	0	102	80	120	7.92	20	
Ethylbenzene	4.0	0.18	3.674	0.03766	107	82	121	6.31	20	
Xylenes, Total	11	0.37	11.02	0	104	80.2	120	7.07	20	

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 Quanitative 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#: **1808F82**

28-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **1808f82-002amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **South Base @ 16'**	Batch ID: **B53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772715** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	2.3		1.837		125	70	130	0	0	
Surr: Toluene-d8	1.8		1.837		99.8	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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#: **1808F82**

28-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **A53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772222** 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	98.0	70	130			
Surr: BFB	460		500.0		91.4	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **A53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772223** 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		99.2	70	130			

Sample ID **1808f82-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **North Base @ 16'**	Batch ID: **A53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	100	19	92.72	13.54	97.7	64.7	142			
Surr: BFB	1900		1855		103	70	130			

Sample ID **1808f82-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **North Base @ 16'**	Batch ID: **A53722**	RunNo: **53722**
Prep Date:	Analysis Date: **8/27/2018**	SeqNo: **1772713** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	100	19	92.72	13.54	97.8	64.7	142	0.107	20	
Surr: BFB	1900		1855		104	70	130	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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

ENVIRONMENTAL ANALYSIS LABORAT r
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: 1808F82 | RcptNo: 1

Received By: Jazzmine Burkhead 8/25/2018 9:45:00 AM
Completed By: Ashley Gallegos 8/27/2018 8:33:10 AM
Reviewed By: ENM 8/27/18 labeled by: JAB 08/27/18

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: JAB 08/27/18

Special Handling (If applicable)

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

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

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.1	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: ☐ Standard ☒ Rush SAME DAY

Project Name: GCU 198

Project #:

Project Manager: SABRE BEEBE

Sampler: JEFF BLAGG

On Ice: ☑ Yes ☐ No

Sample Temperature: 5.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1808F82	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
8/24/18	1429	SOIL	NORTH BASE @ 16'	4 oz x 1	COOL	-001	X		X									X				
"	1437	|	SOUTH BASE @ 16'	|	|	-002	|		|									|				
"	1441	|	South Wall (RAMP) (6'-14')	|	|	-003	|		|									|				
"	1449	|	EAST Wall (6'-14')	|	|	-004	|		|									|				

Date	Time	Relinquished by	Received by	Date	Time
8/24/18	1652	Jeff Blagg	Christine Walters	8/24/18	1652
8/24/18	1820	Christine Walters	[illegible signature]	08/25/18	09:45

Remarks: BILL BP
Contact: SABRE BEEBE
SHOULD Get JOB Specific P.O.

GCU 198

Site Remediation
August 29, 2018

.

Figure 2
Photographs
Lab Reports

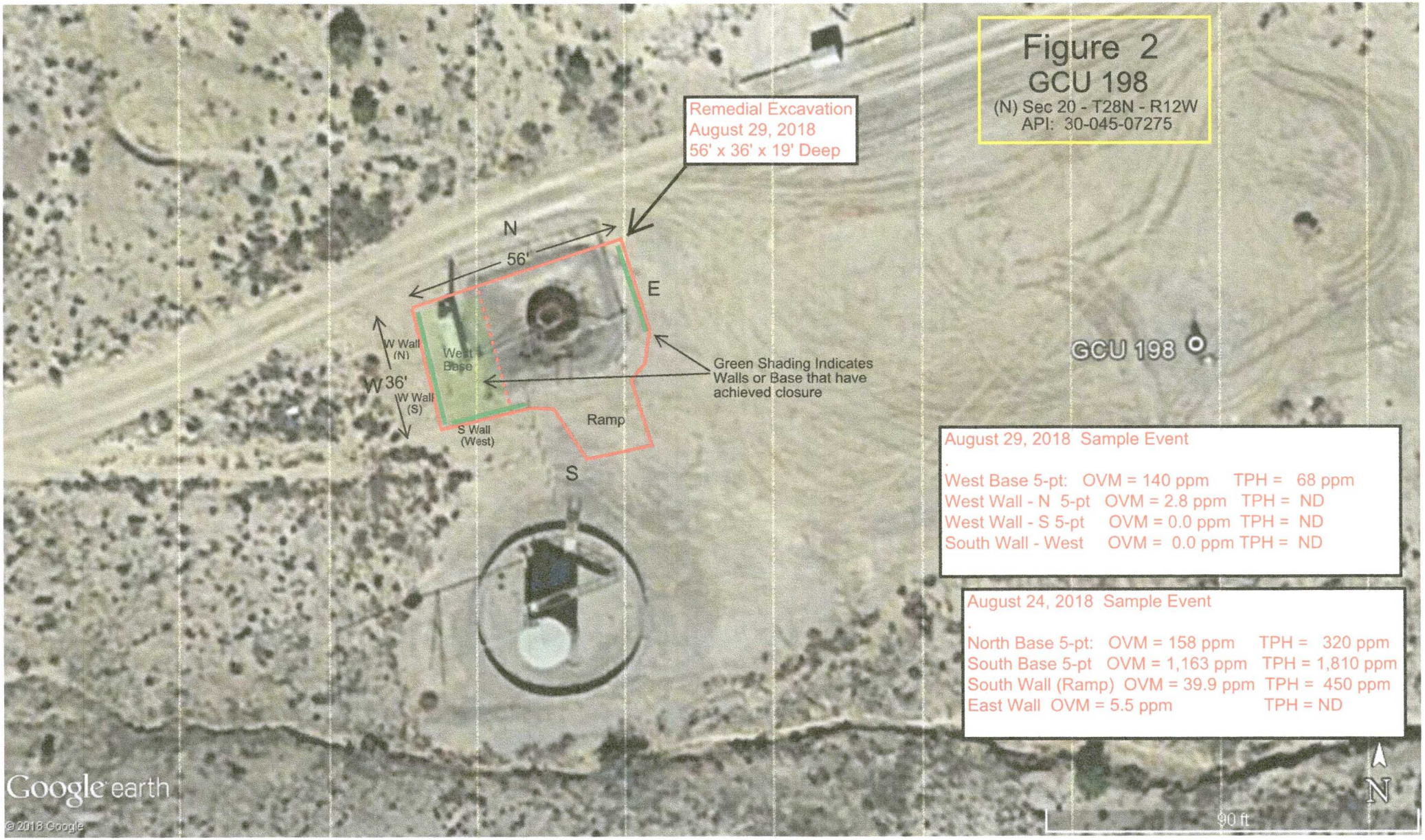
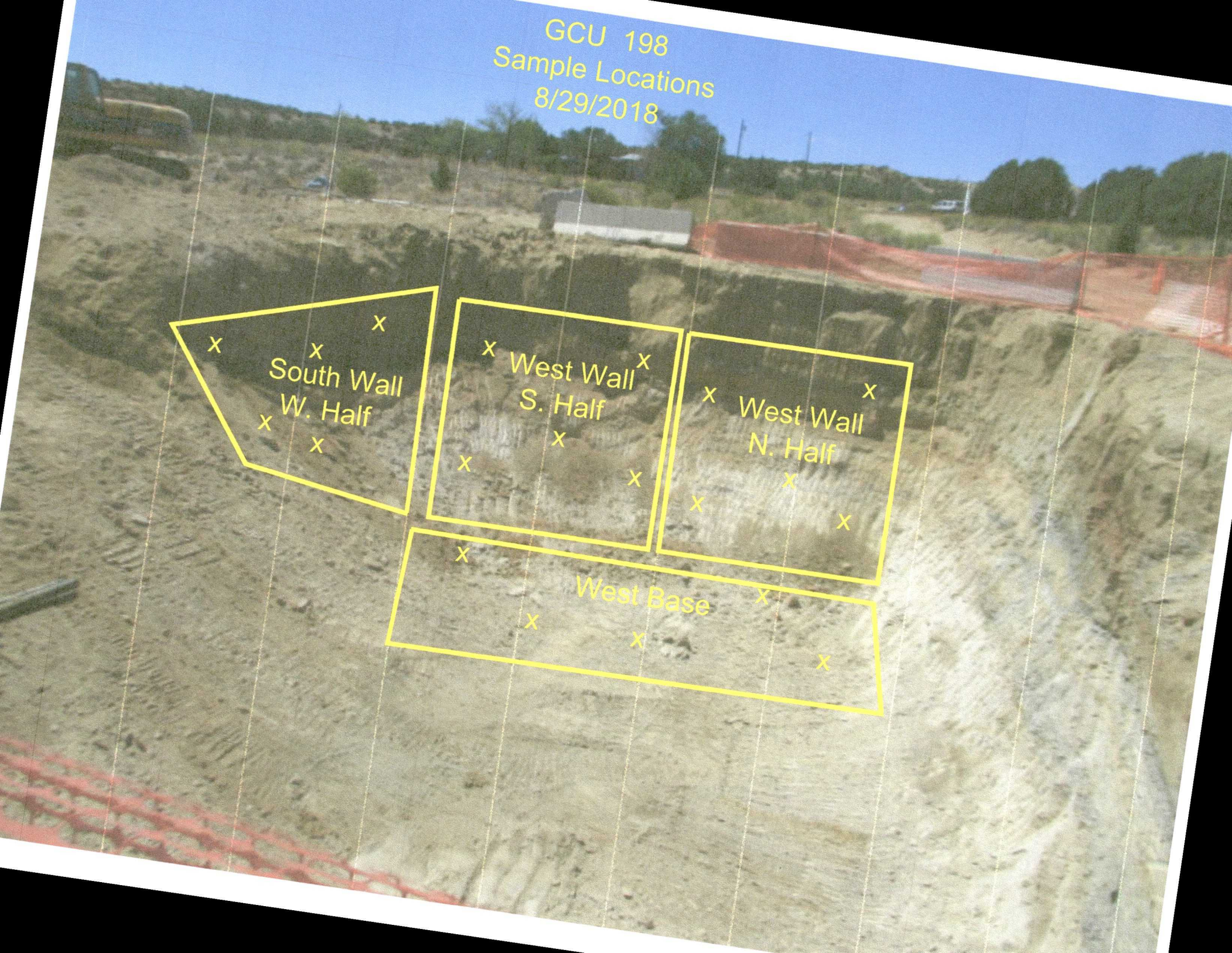


Figure 2
GCU 198
(N) Sec 20 - T28N - R12W
API: 30-045-07275
Remedial Excavation
August 29, 2018
56' x 36' x 19' Deep
N
56'
E
W Wall (N)
West Base
W 36'
W Wall (S)
S Wall (West)
Ramp
S
Green Shading Indicates Walls or Base that have achieved closure
GCU 198
August 29, 2018 Sample Event
West Base 5-pt: OVM = 140 ppm TPH = 68 ppm
West Wall - N 5-pt OVM = 2.8 ppm TPH = ND
West Wall - S 5-pt OVM = 0.0 ppm TPH = ND
South Wall - West OVM = 0.0 ppm TPH = ND
August 24, 2018 Sample Event
North Base 5-pt: OVM = 158 ppm TPH = 320 ppm
South Base 5-pt OVM = 1,163 ppm TPH = 1,810 ppm
South Wall (Ramp) OVM = 39.9 ppm TPH = 450 ppm
East Wall OVM = 5.5 ppm TPH = ND
Google earth
© 2018 Google
N
90 ft


GCU 198
Sample Locations
8/29/2018
South Wall
W. Half
West Wall
S. Half
West Wall
N. Half
West Base

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

August 31, 2018

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

RE: GCU 198 OrderNo.: 1808H73

Dear Sabre Beebe:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/30/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1808H73**
Date Reported: **8/31/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: GCU 198
Lab ID: 1808H73-001 **Matrix:** SOIL

Client Sample ID: West Base @ 19'
Collection Date: 8/29/2018 12:29:00 PM
Received Date: 8/30/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	44	30		mg/Kg	20	8/30/2018 1:28:20 PM	40066
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	68	9.8		mg/Kg	1	8/30/2018 9:20:24 AM	40064
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/30/2018 9:20:24 AM	40064
Surr: DNOP	101	50.6-138		%Rec	1	8/30/2018 9:20:24 AM	40064
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/30/2018 10:04:46 AM	40054
Surr: BFB	98.1	15-316		%Rec	1	8/30/2018 10:04:46 AM	40054
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	8/30/2018 10:04:46 AM	40054
Toluene	ND	0.039		mg/Kg	1	8/30/2018 10:04:46 AM	40054
Ethylbenzene	ND	0.039		mg/Kg	1	8/30/2018 10:04:46 AM	40054
Xylenes, Total	ND	0.079		mg/Kg	1	8/30/2018 10:04:46 AM	40054
Surr: 4-Bromofluorobenzene	91.3	80-120		%Rec	1	8/30/2018 10:04:46 AM	40054

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 Quanitative 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
Project: GCU 198
Lab ID: 1808H73-002 **Matrix:** SOIL

Client Sample ID: West Wall North Half
Collection Date: 8/29/2018 12:39:00 PM
Received Date: 8/30/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/30/2018 1:40:44 PM	40066
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2018 9:44:35 AM	40064
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2018 9:44:35 AM	40064
Surr: DNOP	89.4	50.6-138		%Rec	1	8/30/2018 9:44:35 AM	40064
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	8/30/2018 10:51:20 AM	40054
Surr: BFB	90.9	15-316		%Rec	1	8/30/2018 10:51:20 AM	40054
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	8/30/2018 10:51:20 AM	40054
Toluene	ND	0.038		mg/Kg	1	8/30/2018 10:51:20 AM	40054
Ethylbenzene	ND	0.038		mg/Kg	1	8/30/2018 10:51:20 AM	40054
Xylenes, Total	ND	0.077		mg/Kg	1	8/30/2018 10:51:20 AM	40054
Surr: 4-Bromofluorobenzene	90.5	80-120		%Rec	1	8/30/2018 10:51:20 AM	40054

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 Quanitative 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
Project: GCU 198
Lab ID: 1808H73-003 **Matrix:** SOIL

Client Sample ID: West Wall South Half
Collection Date: 8/29/2018 12:44:00 PM
Received Date: 8/30/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/30/2018 1:53:09 PM	40066
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/30/2018 10:08:59 AM	40064
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/30/2018 10:08:59 AM	40064
Surr: DNOP	90.9	50.6-138		%Rec	1	8/30/2018 10:08:59 AM	40064
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/30/2018 11:14:37 AM	40054
Surr: BFB	89.4	15-316		%Rec	1	8/30/2018 11:14:37 AM	40054
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	8/30/2018 11:14:37 AM	40054
Toluene	ND	0.039		mg/Kg	1	8/30/2018 11:14:37 AM	40054
Ethylbenzene	ND	0.039		mg/Kg	1	8/30/2018 11:14:37 AM	40054
Xylenes, Total	ND	0.077		mg/Kg	1	8/30/2018 11:14:37 AM	40054
Surr: 4-Bromofluorobenzene	88.8	80-120		%Rec	1	8/30/2018 11:14:37 AM	40054

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 Quanitative 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
Project: GCU 198
Lab ID: 1808H73-004 **Matrix:** SOIL

Client Sample ID: South Wall West Half
Collection Date: 8/29/2018 12:48:00 PM
Received Date: 8/30/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	8/30/2018 2:05:33 PM	40066
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/30/2018 10:33:24 AM	40064
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/30/2018 10:33:24 AM	40064
Surr: DNOP	90.9	50.6-138		%Rec	1	8/30/2018 10:33:24 AM	40064
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	8/30/2018 11:38:00 AM	40054
Surr: BFB	90.4	15-316		%Rec	1	8/30/2018 11:38:00 AM	40054
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.020		mg/Kg	1	8/30/2018 11:38:00 AM	40054
Toluene	ND	0.039		mg/Kg	1	8/30/2018 11:38:00 AM	40054
Ethylbenzene	ND	0.039		mg/Kg	1	8/30/2018 11:38:00 AM	40054
Xylenes, Total	ND	0.079		mg/Kg	1	8/30/2018 11:38:00 AM	40054
Surr: 4-Bromofluorobenzene	90.6	80-120		%Rec	1	8/30/2018 11:38:00 AM	40054

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 Quanitative 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#: **1808H73**

31-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID	**MB-40066**	SampType:	**mblk**		TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**40066**		RunNo:	**53830**					
Prep Date:	**8/30/2018**	Analysis Date:	**8/30/2018**		SeqNo:	**1776658**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	ND	1.5									

Sample ID	**LCS-40066**	SampType:	**lcs**		TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**40066**		RunNo:	**53830**					
Prep Date:	**8/30/2018**	Analysis Date:	**8/30/2018**		SeqNo:	**1776659**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Chloride	14	1.5	15.00	0	94.9	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 Quanitative 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#: **1808H73**

31-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **LCS-40064**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **40064**	RunNo: **53813**
Prep Date: **8/30/2018**	Analysis Date: **8/30/2018**	SeqNo: **1775783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.4	70	130			
Surr: DNOP	5.1		5.000		102	50.6	138			

Sample ID **MB-40064**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **40064**	RunNo: **53813**
Prep Date: **8/30/2018**	Analysis Date: **8/30/2018**	SeqNo: **1775784** 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		110	50.6	138			

Sample ID **LCS-40046**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **40046**	RunNo: **53809**
Prep Date: **8/29/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776771** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.8		5.000		75.6	50.6	138			

Sample ID **MB-40046**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **40046**	RunNo: **53809**
Prep Date: **8/29/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776772** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		96.5	50.6	138			

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 Quanitative 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#: **1808H73**

31-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40054**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **40054**	RunNo: **53819**
Prep Date: **8/29/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776352** 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		91.8	15	316			

Sample ID **LCS-40054**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **40054**	RunNo: **53819**
Prep Date: **8/29/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776353** 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	106	75.9	131			
Surr: BFB	1000		1000		102	15	316			

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 Quanitative 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#: **1808H73**

31-Aug-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40054**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **40054**	RunNo: **53819**
Prep Date: **8/29/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776374** 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		90.9	80	120			

Sample ID **LCS-40054**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **40054**	RunNo: **53819**
Prep Date: **8/29/2018**	Analysis Date: **8/30/2018**	SeqNo: **1776375** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.4	77.3	128			
Toluene	0.94	0.050	1.000	0	94.2	79.2	125			
Ethylbenzene	0.94	0.050	1.000	0	94.0	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	94.7	81.6	129			
Surr: 4-Bromofluorobenzene	0.91		1.000		90.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

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: 1808H73 RcptNo: 1

Received By: Anne Thorne 8/30/2018 7:00:00 AM Anne Thorne

Completed By: Anne Thorne 8/30/2018 7:28:56 AM Anne Thorne

Reviewed By: JAB 08/30/18

Labeled by: AT 08/30/18

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	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: GCU 198

Project #:

Project Manager: SABRE BEEBE

Sampler: JEFF BLAGG

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.1

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Request ID	~~8134~~ Container Type and #	Preservative Type	HEAL No.	BTEX + ~~MTBE + TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE	Air Bubbles (Y or N)
8/29/2018	1229	SOIL	WEST BASE @ 19'	MeoH kit 4oz x 1	COOL	001	X		X									X	
	1239		WEST WALL - NORTH HALF			002													
	1244		WEST WALL - SOUTH HALF			003													
	1248		SOUTH WALL - WEST HALF																

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/29/18	1513	Jeff Blagg	Christian Walls	8/29/18	1513
8/29/18	1817	Christian Walls		08/30/18	0700

Remarks: BILL BP
CONTACT: SABRE BEEBE

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.

GCU 198

Site Remediation
August 31, 2018

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Figure 3
Photographs
Lab Reports

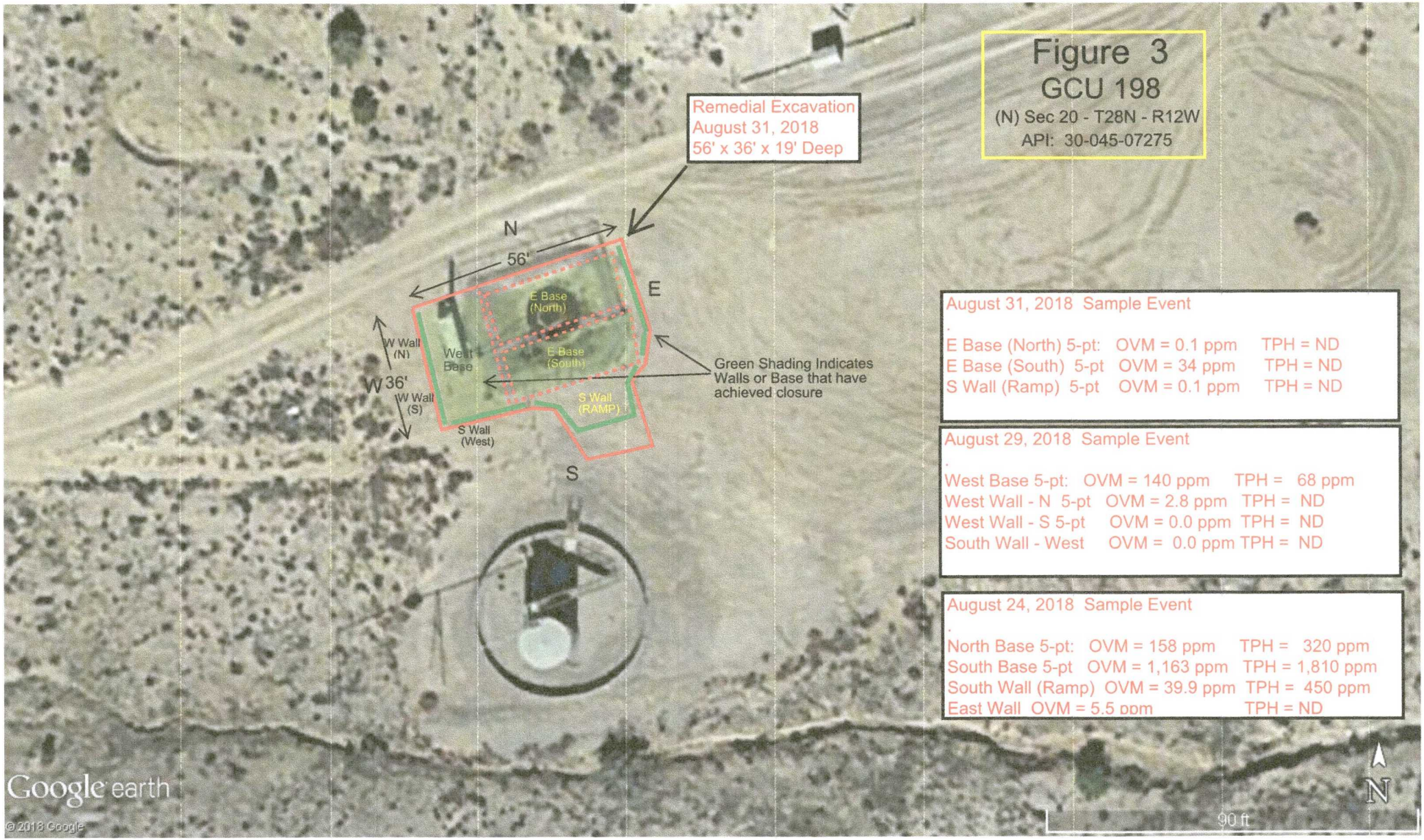
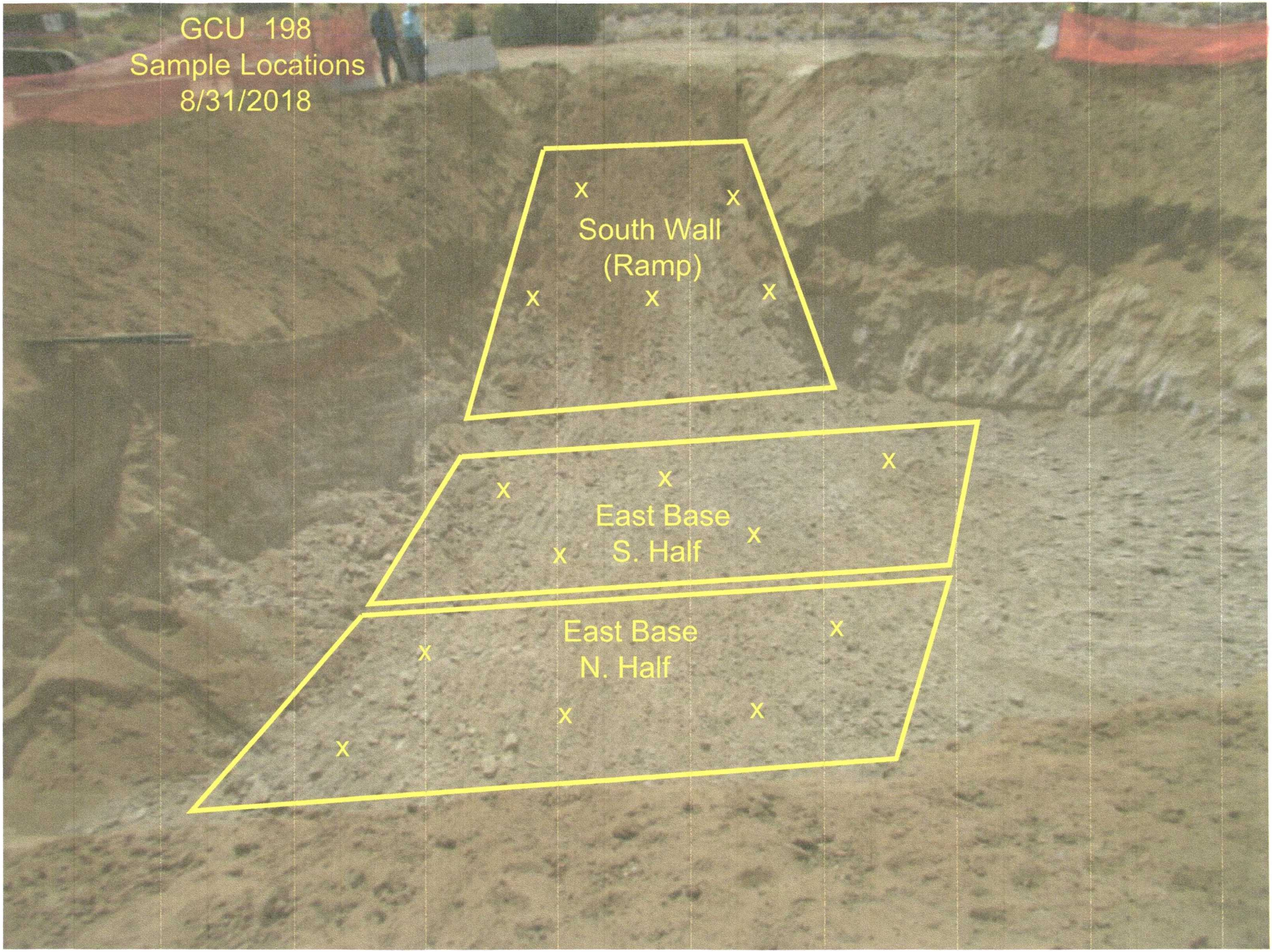


Figure 3
GCU 198
(N) Sec 20 - T28N - R12W
API: 30-045-07275
Remedial Excavation
August 31, 2018
56' x 36' x 19' Deep
N
56'
E
E Base (North)
E Base (South)
W Wall (N)
West Base
W 36'
W Wall (S)
S Wall (RAMP)
S Wall (West)
S
Green Shading Indicates Walls or Base that have achieved closure
August 31, 2018 Sample Event
E Base (North) 5-pt: OVM = 0.1 ppm TPH = ND
E Base (South) 5-pt OVM = 34 ppm TPH = ND
S Wall (Ramp) 5-pt OVM = 0.1 ppm TPH = ND
August 29, 2018 Sample Event
West Base 5-pt: OVM = 140 ppm TPH = 68 ppm
West Wall - N 5-pt OVM = 2.8 ppm TPH = ND
West Wall - S 5-pt OVM = 0.0 ppm TPH = ND
South Wall - West OVM = 0.0 ppm TPH = ND
August 24, 2018 Sample Event
North Base 5-pt: OVM = 158 ppm TPH = 320 ppm
South Base 5-pt OVM = 1,163 ppm TPH = 1,810 ppm
South Wall (Ramp) OVM = 39.9 ppm TPH = 450 ppm
East Wall OVM = 5.5 ppm TPH = ND
Google earth
© 2018 Google
N
90 ft


GCU 198
Sample Locations
8/31/2018
South Wall
(Ramp)
East Base
S. Half
East Base
N. Half

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 05, 2018

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

RE: GCU 198 OrderNo.: 1809001

Dear Sabre Beebe:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/1/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1809001**
Date Reported: **9/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: GCU 198
Lab ID: 1809001-001 **Matrix:** SOIL

Client Sample ID: East Base, North Half @ 19'
Collection Date: 8/31/2018 12:35:00 PM
Received Date: 9/1/2018 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	9/4/2018 11:59:23 AM	40114
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	9/4/2018 10:30:09 AM	A53876
Surr: BFB	106	70-130		%Rec	1	9/4/2018 10:30:09 AM	A53876
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/4/2018 10:31:07 AM	40110
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/4/2018 10:31:07 AM	40110
Surr: DNOP	111	50.6-138		%Rec	1	9/4/2018 10:31:07 AM	40110
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.017		mg/Kg	1	9/4/2018 10:30:09 AM	B53876
Toluene	ND	0.033		mg/Kg	1	9/4/2018 10:30:09 AM	B53876
Ethylbenzene	ND	0.033		mg/Kg	1	9/4/2018 10:30:09 AM	B53876
Xylenes, Total	ND	0.067		mg/Kg	1	9/4/2018 10:30:09 AM	B53876
Surr: 4-Bromofluorobenzene	119	70-130		%Rec	1	9/4/2018 10:30:09 AM	B53876
Surr: Toluene-d8	97.3	70-130		%Rec	1	9/4/2018 10:30:09 AM	B53876

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 Quanitative 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
Project: GCU 198
Lab ID: 1809001-002 **Matrix:** SOIL

Client Sample ID: East Base, South Half @ 19'
Collection Date: 8/31/2018 12:41:00 PM
Received Date: 9/1/2018 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	9/4/2018 12:11:47 PM	40114
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	9/4/2018 10:53:15 AM	A53876
Surr: BFB	109	70-130		%Rec	1	9/4/2018 10:53:15 AM	A53876
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/4/2018 10:53:11 AM	40110
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/4/2018 10:53:11 AM	40110
Surr: DNOP	115	50.6-138		%Rec	1	9/4/2018 10:53:11 AM	40110
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.016		mg/Kg	1	9/4/2018 10:53:15 AM	B53876
Toluene	ND	0.032		mg/Kg	1	9/4/2018 10:53:15 AM	B53876
Ethylbenzene	ND	0.032		mg/Kg	1	9/4/2018 10:53:15 AM	B53876
Xylenes, Total	ND	0.064		mg/Kg	1	9/4/2018 10:53:15 AM	B53876
Surr: 4-Bromofluorobenzene	122	70-130		%Rec	1	9/4/2018 10:53:15 AM	B53876
Surr: Toluene-d8	97.0	70-130		%Rec	1	9/4/2018 10:53:15 AM	B53876

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 Quanitative 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
Project: GCU 198
Lab ID: 1809001-003 **Matrix:** SOIL

Client Sample ID: South Wall (Ramp) (6'-17')
Collection Date: 8/31/2018 12:48:00 PM
Received Date: 9/1/2018 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	9/4/2018 12:24:11 PM	40114
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **AG**	
Gasoline Range Organics (GRO)	ND	3.2		mg/Kg	1	9/4/2018 11:16:14 AM	A53876
Surr: BFB	111	70-130		%Rec	1	9/4/2018 11:16:14 AM	A53876
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/4/2018 11:15:05 AM	40110
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/4/2018 11:15:05 AM	40110
Surr: DNOP	116	50.6-138		%Rec	1	9/4/2018 11:15:05 AM	40110
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **AG**	
Benzene	ND	0.016		mg/Kg	1	9/4/2018 11:16:14 AM	B53876
Toluene	ND	0.032		mg/Kg	1	9/4/2018 11:16:14 AM	B53876
Ethylbenzene	ND	0.032		mg/Kg	1	9/4/2018 11:16:14 AM	B53876
Xylenes, Total	ND	0.064		mg/Kg	1	9/4/2018 11:16:14 AM	B53876
Surr: 4-Bromofluorobenzene	125	70-130		%Rec	1	9/4/2018 11:16:14 AM	B53876
Surr: Toluene-d8	96.5	70-130		%Rec	1	9/4/2018 11:16:14 AM	B53876

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 Quanitative 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#: **1809001**

05-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40114**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **40114**	RunNo: **53883**
Prep Date: **9/4/2018**	Analysis Date: **9/4/2018**	SeqNo: **1779460** Units: **mg/Kg**

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

Sample ID **LCS-40114**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **40114**	RunNo: **53883**
Prep Date: **9/4/2018**	Analysis Date: **9/4/2018**	SeqNo: **1779461** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.6	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
PQL	Practical Quanitative 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#: **1809001**

05-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **LCS-40110**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **LCSS**	Batch ID: **40110**			RunNo: **53885**					
Prep Date: **9/4/2018**	Analysis Date: **9/4/2018**			SeqNo: **1778453**		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	70	130			
Surr: DNOP	4.8		5.000		96.3	50.6	138			

Sample ID **MB-40110**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **PBS**	Batch ID: **40110**			RunNo: **53885**					
Prep Date: **9/4/2018**	Analysis Date: **9/4/2018**			SeqNo: **1778454**		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		108	50.6	138			

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 Quanitative 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#: **1809001**

05-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **100ng lcs**	SampType: **LCS4**			TestCode: **EPA Method 8260B: Volatiles Short List**					
Client ID: **BatchQC**	Batch ID: **B53876**			RunNo: **53876**					
Prep Date:	Analysis Date: **9/4/2018**			SeqNo: **1777900**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	97.7	80	120			
Toluene	1.1	0.050	1.000	0	107	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	0.51		0.5000		102	70	130			
Surr: Toluene-d8	0.51		0.5000		101	70	130			

Sample ID **rb**	SampType: **MBLK**			TestCode: **EPA Method 8260B: Volatiles Short List**					
Client ID: **PBS**	Batch ID: **B53876**			RunNo: **53876**					
Prep Date:	Analysis Date: **9/4/2018**			SeqNo: **1777904**		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	0.55		0.5000		110	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Sample ID **1809001-002ams**	SampType: **MS4**			TestCode: **EPA Method 8260B: Volatiles Short List**					
Client ID: **East Base, South H**	Batch ID: **B53876**			RunNo: **53876**					
Prep Date:	Analysis Date: **9/4/2018**			SeqNo: **1778833**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.59	0.016	0.6369	0	92.6	80	120			
Toluene	0.64	0.032	0.6369	0	100	80	120			
Ethylbenzene	0.69	0.032	0.6369	0	109	82	121			
Xylenes, Total	2.0	0.064	1.911	0.01299	106	80.2	120			
Surr: 4-Bromofluorobenzene	0.36		0.3184		113	70	130			
Surr: Toluene-d8	0.30		0.3184		94.9	70	130			

Sample ID **1809001-002amsd**	SampType: **MSD4**			TestCode: **EPA Method 8260B: Volatiles Short List**					
Client ID: **East Base, South H**	Batch ID: **B53876**			RunNo: **53876**					
Prep Date:	Analysis Date: **9/4/2018**			SeqNo: **1778834**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.59	0.016	0.6369	0	92.9	80	120	0.367	20	
Toluene	0.64	0.032	0.6369	0	100	80	120	0.150	20	
Ethylbenzene	0.67	0.032	0.6369	0	105	82	121	3.45	20	
Xylenes, Total	2.0	0.064	1.911	0.01299	103	80.2	120	2.31	20	

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 Quanitative 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#: **1809001**

05-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **1809001-002amsd**	SampType: **MSD4**	TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **East Base, South H**	Batch ID: **B53876**	RunNo: **53876**
Prep Date:	Analysis Date: **9/4/2018**	SeqNo: **1778834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.36		0.3184		113	70	130	0	0	
Surr: Toluene-d8	0.31		0.3184		97.6	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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#: **1809001**

05-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS**	Batch ID: **A53876**	RunNo: **53876**
Prep Date:	Analysis Date: **9/4/2018**	SeqNo: **1777897** 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	101	70	130			
Surr: BFB	480		500.0		96.3	70	130			

Sample ID **rb**	SampType: **MBLK**	TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS**	Batch ID: **A53876**	RunNo: **53876**
Prep Date:	Analysis Date: **9/4/2018**	SeqNo: **1777898** 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		98.3	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
PQL	Practical Quanitative 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

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: 1809001 RcptNo: 1

Received By: John Caldwell 9/1/2018 7:30:00 AM

Completed By: Anne Thorne 9/4/2018 7:09:46 AM

Reviewed By: IO 09/04/18

Labeled by: AT 09/04/18

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	6.0	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: GCU 198
Project #:
Project Manager: SABRE BEEBE
Sampler: JEFF BLAGG
On Ice: ☒ Yes ☐ No
Sample Temperature: 6.0 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 + 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				Air Bubbles (Y or N)
8/31/18	1235	SOIL	EAST BASE, NORTH HALF @ 19'	4 oz x 1	COOL	809001-001	X		X									X				
"	1241	"	EAST BASE, SOUTH HALF @ 19'	"	"	-002	X		X									X				
"	1248	"	SOUTH WALL (RAMP) (6'-17')	"	"	-003	X		X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/31/2018	1417			9.1.18	0732
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: BILL BP
CONTACT: SABRE BEEBE

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.

GCU 198

Site Remediation
September 11, 2018

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Figure 4
Photographs
Lab Reports

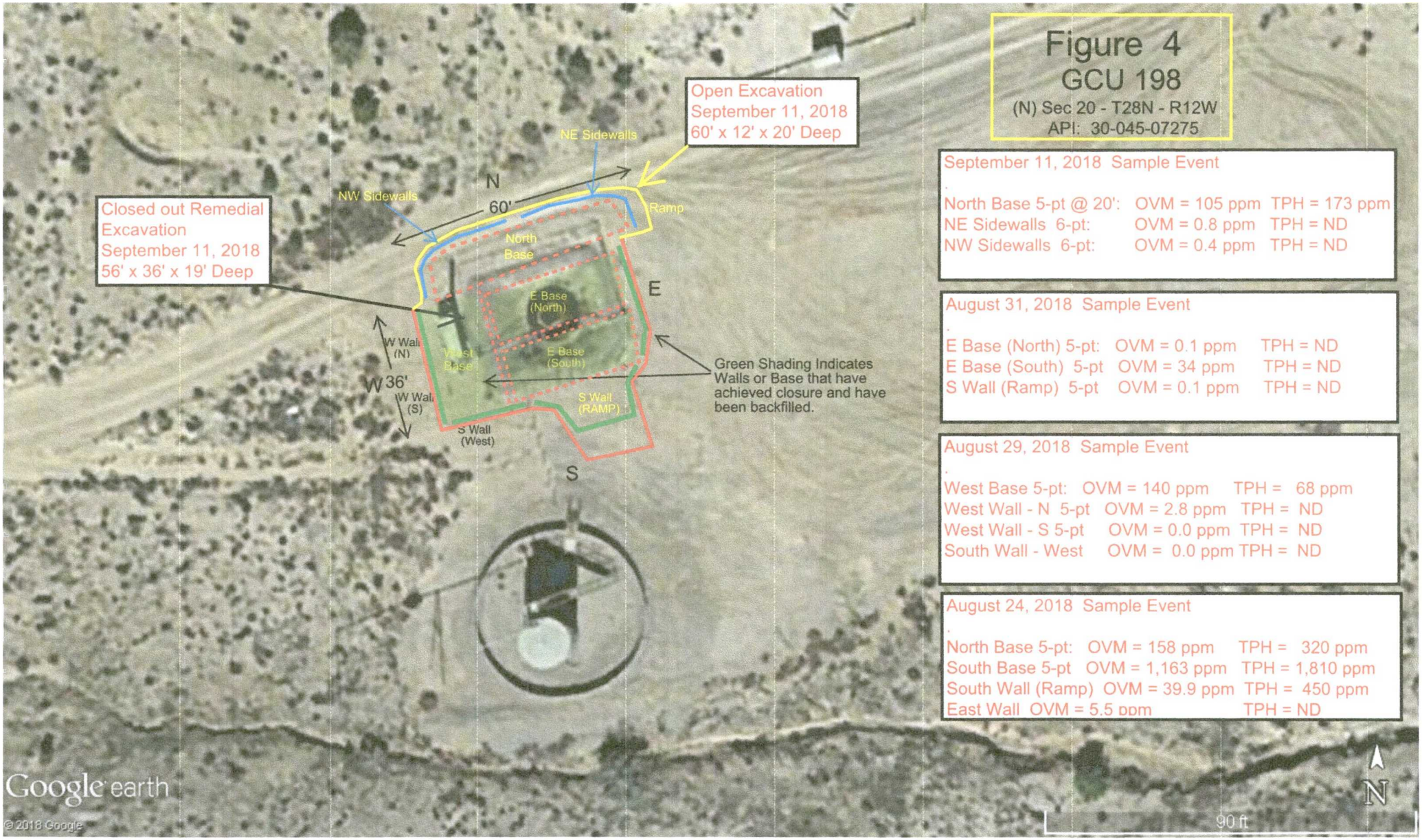
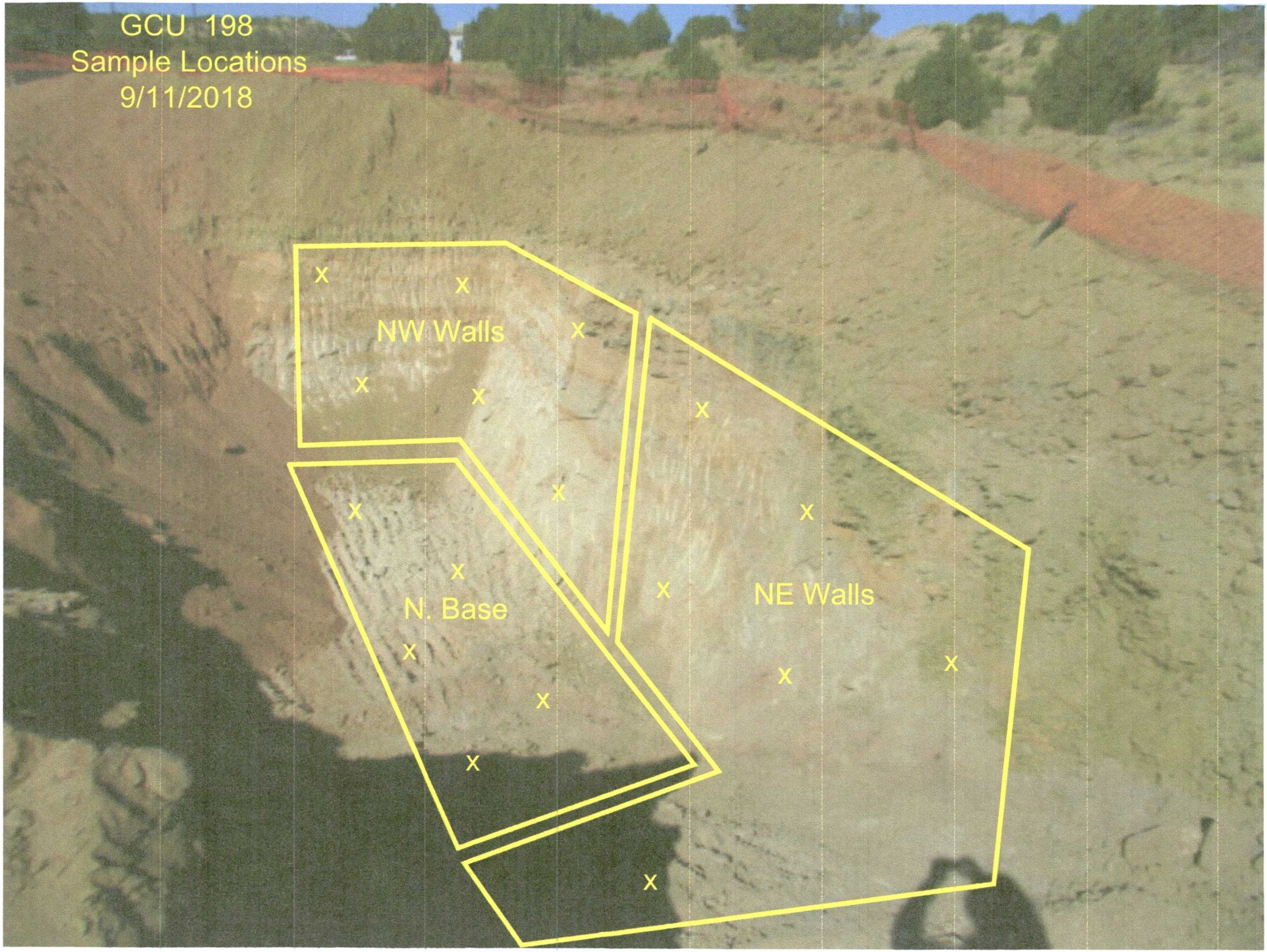


Figure 4
GCU 198
(N) Sec 20 - T28N - R12W
API: 30-045-07275
Open Excavation
September 11, 2018
60' x 12' x 20' Deep
NE Sidewalls
NW Sidewalls
Ramp
N
60'
Closed out Remedial
Excavation
September 11, 2018
56' x 36' x 19' Deep
North
Base
E
E Base
(North)
E Base
(South)
West
Base
W Wall
(N)
W 36'
W Wall
(S)
S Wall
(West)
S Wall
(RAMP)
S
Green Shading Indicates
Walls or Base that have
achieved closure and have
been backfilled.
September 11, 2018 Sample Event
North Base 5-pt @ 20': OVM = 105 ppm TPH = 173 ppm
NE Sidewalls 6-pt: OVM = 0.8 ppm TPH = ND
NW Sidewalls 6-pt: OVM = 0.4 ppm TPH = ND
August 31, 2018 Sample Event
E Base (North) 5-pt: OVM = 0.1 ppm TPH = ND
E Base (South) 5-pt OVM = 34 ppm TPH = ND
S Wall (Ramp) 5-pt OVM = 0.1 ppm TPH = ND
August 29, 2018 Sample Event
West Base 5-pt: OVM = 140 ppm TPH = 68 ppm
West Wall - N 5-pt OVM = 2.8 ppm TPH = ND
West Wall - S 5-pt OVM = 0.0 ppm TPH = ND
South Wall - West OVM = 0.0 ppm TPH = ND
August 24, 2018 Sample Event
North Base 5-pt: OVM = 158 ppm TPH = 320 ppm
South Base 5-pt OVM = 1,163 ppm TPH = 1,810 ppm
South Wall (Ramp) OVM = 39.9 ppm TPH = 450 ppm
East Wall OVM = 5.5 ppm TPH = ND
Google earth
© 2018 Google
N
90 ft


GCU 198
Sample Locations
9/11/2018
NW Walls
N. Base
NE Walls

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 13, 2018

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

RE: GCU 198 OrderNo.: 1809580

Dear Sabre Beebe:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/12/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1809580**
Date Reported: **9/13/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: GCU 198
Lab ID: 1809580-001
Matrix: MEOH (SOIL)
Client Sample ID: North Base 5-pt @ 20'
Collection Date: 9/11/2018 10:21:00 AM
Received Date: 9/12/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	33	30		mg/Kg	20	9/12/2018 12:17:57 PM	40298
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	120	9.9		mg/Kg	1	9/12/2018 10:30:34 AM	40297
Motor Oil Range Organics (MRO)	53	50		mg/Kg	1	9/12/2018 10:30:34 AM	40297
Surr: DNOP	118	50.6-138		%Rec	1	9/12/2018 10:30:34 AM	40297
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	9/12/2018 9:38:51 AM	G54096
Surr: BFB	104	15-316		%Rec	1	9/12/2018 9:38:51 AM	G54096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	9/12/2018 9:38:51 AM	B54096
Toluene	ND	0.036		mg/Kg	1	9/12/2018 9:38:51 AM	B54096
Ethylbenzene	ND	0.036		mg/Kg	1	9/12/2018 9:38:51 AM	B54096
Xylenes, Total	ND	0.072		mg/Kg	1	9/12/2018 9:38:51 AM	B54096
Surr: 4-Bromofluorobenzene	98.8	80-120		%Rec	1	9/12/2018 9:38:51 AM	B54096

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 Quanitative 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
Project: GCU 198
Lab ID: 1809580-002
Matrix: MEOH (SOIL)
Client Sample ID: NE Sidewalls 6-pt (6'-18')
Collection Date: 9/11/2018 10:34:00 AM
Received Date: 9/12/2018 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	9/12/2018 12:30:21 PM	40298
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	9/12/2018 10:52:44 AM	40297
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/12/2018 10:52:44 AM	40297
Surr: DNOP	108	50.6-138		%Rec	1	9/12/2018 10:52:44 AM	40297
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	9/12/2018 10:02:04 AM	G54096
Surr: BFB	91.3	15-316		%Rec	1	9/12/2018 10:02:04 AM	G54096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	9/12/2018 10:02:04 AM	B54096
Toluene	ND	0.038		mg/Kg	1	9/12/2018 10:02:04 AM	B54096
Ethylbenzene	ND	0.038		mg/Kg	1	9/12/2018 10:02:04 AM	B54096
Xylenes, Total	ND	0.077		mg/Kg	1	9/12/2018 10:02:04 AM	B54096
Surr: 4-Bromofluorobenzene	96.3	80-120		%Rec	1	9/12/2018 10:02:04 AM	B54096

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 Quanitative 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
Project: GCU 198
Lab ID: 1809580-003 **Matrix:** MEOH (SOIL)

Client Sample ID: NW Sidewalls 6-pt (6'-18')
Collection Date: 9/11/2018 10:44:00 AM
Received Date: 9/12/2018 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	40	30		mg/Kg	20	9/12/2018 12:42:46 PM	40298
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/12/2018 11:14:40 AM	40297
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/12/2018 11:14:40 AM	40297
Surr: DNOP	122	50.6-138		%Rec	1	9/12/2018 11:14:40 AM	40297
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	9/12/2018 10:25:27 AM	G54096
Surr: BFB	93.9	15-316		%Rec	1	9/12/2018 10:25:27 AM	G54096
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	9/12/2018 10:25:27 AM	B54096
Toluene	ND	0.037		mg/Kg	1	9/12/2018 10:25:27 AM	B54096
Ethylbenzene	ND	0.037		mg/Kg	1	9/12/2018 10:25:27 AM	B54096
Xylenes, Total	ND	0.074		mg/Kg	1	9/12/2018 10:25:27 AM	B54096
Surr: 4-Bromofluorobenzene	99.2	80-120		%Rec	1	9/12/2018 10:25:27 AM	B54096

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 Quanitative 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#: **1809580**

13-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40298**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **40298**	RunNo: **54103**
Prep Date: **9/12/2018**	Analysis Date: **9/12/2018**	SeqNo: **1788910** Units: **mg/Kg**

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

Sample ID **LCS-40298**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **40298**	RunNo: **54103**
Prep Date: **9/12/2018**	Analysis Date: **9/12/2018**	SeqNo: **1788911** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.1	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
PQL	Practical Quanitative 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#: **1809580**

13-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **LCS-40297**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **LCSS**	Batch ID: **40297**			RunNo: **54091**					
Prep Date: **9/12/2018**	Analysis Date: **9/12/2018**			SeqNo: **1787479**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.6	70	130			
Surr: DNOP	5.2		5.000		104	50.6	138			

Sample ID **MB-40297**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **PBS**	Batch ID: **40297**			RunNo: **54091**					
Prep Date: **9/12/2018**	Analysis Date: **9/12/2018**			SeqNo: **1787480**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	50.6	138			

Sample ID **MB-40270**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **PBS**	Batch ID: **40270**			RunNo: **54091**					
Prep Date: **9/11/2018**	Analysis Date: **9/12/2018**			SeqNo: **1788492**		Units: **%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	12		10.00		119	50.6	138			

Sample ID **LCS-40270**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**					
Client ID: **LCSS**	Batch ID: **40270**			RunNo: **54091**					
Prep Date: **9/11/2018**	Analysis Date: **9/12/2018**			SeqNo: **1788493**		Units: **%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		102	50.6	138			

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 Quanitative 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#: **1809580**

13-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **G54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788217** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.1	15	316			

Sample ID **2.5UG GRO LCS**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **G54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788218** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	30	5.0	25.00	0	118	75.9	131			
Surr: BFB	1000		1000		105	15	316			

Sample ID **1809580-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **North Base 5-pt @ 2**	Batch ID: **G54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788219** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	3.6	17.88	0	120	77.8	128			
Surr: BFB	880		715.3		123	15	316			

Sample ID **1809580-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **North Base 5-pt @ 2**	Batch ID: **G54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788220** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	3.6	17.88	0	117	77.8	128	2.30	20	
Surr: BFB	870		715.3		121	15	316	0	0	

Sample ID **MB-40280**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **40280**	RunNo: **54096**
Prep Date: **9/11/2018**	Analysis Date: **9/12/2018**	SeqNo: **1788284** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	970		1000		96.9	15	316			

Sample ID **LCS-40280**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **40280**	RunNo: **54096**
Prep Date: **9/11/2018**	Analysis Date: **9/12/2018**	SeqNo: **1788285** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		105	15	316			

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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#: **1809580**

13-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **RB**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **B54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788312** 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	0.95		1.000		94.9	80	120			

Sample ID **100NG BTEX LCS**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **B54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788313** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.7	77.3	128			
Toluene	0.95	0.050	1.000	0	94.7	79.2	125			
Ethylbenzene	0.94	0.050	1.000	0	93.8	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	94.0	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID **1809580-002AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **NE Sidewalls 6-pt (6**	Batch ID: **B54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788314** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.73	0.019	0.7686	0	95.3	68.5	133			
Toluene	0.77	0.038	0.7686	0	100	75	130			
Ethylbenzene	0.76	0.038	0.7686	0	99.1	79.4	128			
Xylenes, Total	2.3	0.077	2.306	0	100	77.3	131			
Surr: 4-Bromofluorobenzene	0.80		0.7686		104	80	120			

Sample ID **1809580-002AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **NE Sidewalls 6-pt (6**	Batch ID: **B54096**	RunNo: **54096**
Prep Date:	Analysis Date: **9/12/2018**	SeqNo: **1788315** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.72	0.019	0.7686	0	94.0	68.5	133	1.36	20	
Toluene	0.75	0.038	0.7686	0	98.1	75	130	1.90	20	
Ethylbenzene	0.75	0.038	0.7686	0	97.0	79.4	128	2.14	20	
Xylenes, Total	2.3	0.077	2.306	0	99.0	77.3	131	1.16	20	
Surr: 4-Bromofluorobenzene	0.80		0.7686		104	80	120	0	0	

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- B Analyte detected in the associated Method Blank
- D Sample Diluted Due to Matrix
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- J Analyte detected below quantitation limits
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- PQL Practical Quanitative 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#: **1809580**

13-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40280**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **40280**	RunNo: **54096**
Prep Date: **9/11/2018**	Analysis Date: **9/12/2018**	SeqNo: **1788316** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID **LCS-40280**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **40280**	RunNo: **54096**
Prep Date: **9/11/2018**	Analysis Date: **9/12/2018**	SeqNo: **1788317** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.98		1.000		97.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative 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

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: 1809580 | RcptNo: 1

Received By: Erin Melendrez 9/12/2018 7:50:00 AM

Completed By: Ashley Gallegos 9/12/2018 8:31:12 AM

Reviewed By: JO 9/12/18

Labeled by: ENM 9/12/18

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

ENM 9/12/18

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	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:
☐ Standard ☒ Rush SAME DAY
Project Name: GCU 198
Project #:
Project Manager: SABRE BEEBE
Sampler: JEFF BLAGG
On Ice: ☒ Yes ☐ No
Sample Temperature: 0.9+0.7 (CF)=1.1

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1809580	BTEX + ~~MTBE + TMB~~'s (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
9/11/2018	1021	SOIL	NORTH BASE 5-pt @ 20'	4 oz x 1	COOL	-001	X		X									X				
"	1034	"	NE SIDEWALLS 6-pt (6'-18')	"	"	-002	X		X									X				
"	1044	"	NW SIDEWALLS 6-pt (6'-18')	"	"	-003	X		X									X				

Date	Time	Relinquished by:	Received by:	Date	Time
9/11/2018	1454	Jeff Blagg		9/11/18	1454
9/11/18	1830		Courier ENM	9/12/18	0750

Remarks: BILL BP
CONTACT: SABRE BEEBE

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.

GCU 198

Site Remediation
September 19, 2018
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Figure 5
Photographs
Lab Reports

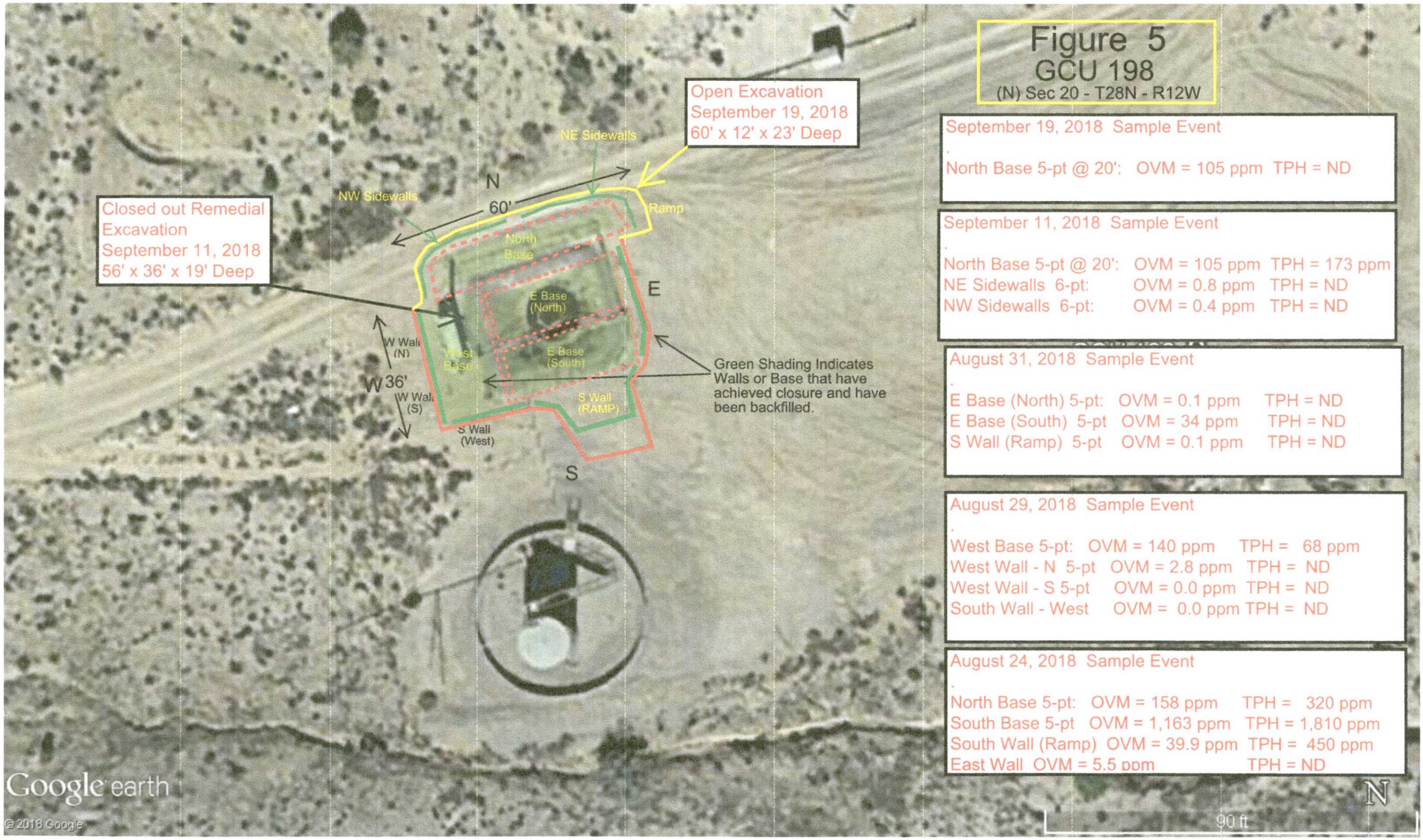
Figure 5
GCU 198
(N) Sec 20 - T28N - R12W
Open Excavation
September 19, 2018
60' x 12' x 23' Deep
NE Sidewalls
NW Sidewalls
Ramp
N
60'
Closed out Remedial
Excavation
September 11, 2018
56' x 36' x 19' Deep
North
Base
E
E Base
(North)
E Base
(South)
West
Base
W Wall
(N)
W 36'
W Wall
(S)
S Wall
(West)
S Wall
(RAMP)
S
Green Shading Indicates
Walls or Base that have
achieved closure and have
been backfilled.
September 19, 2018 Sample Event
North Base 5-pt @ 20': OVM = 105 ppm TPH = ND
September 11, 2018 Sample Event
North Base 5-pt @ 20': OVM = 105 ppm TPH = 173 ppm
NE Sidewalls 6-pt: OVM = 0.8 ppm TPH = ND
NW Sidewalls 6-pt: OVM = 0.4 ppm TPH = ND
August 31, 2018 Sample Event
E Base (North) 5-pt: OVM = 0.1 ppm TPH = ND
E Base (South) 5-pt OVM = 34 ppm TPH = ND
S Wall (Ramp) 5-pt OVM = 0.1 ppm TPH = ND
August 29, 2018 Sample Event
West Base 5-pt: OVM = 140 ppm TPH = 68 ppm
West Wall - N 5-pt OVM = 2.8 ppm TPH = ND
West Wall - S 5-pt OVM = 0.0 ppm TPH = ND
South Wall - West OVM = 0.0 ppm TPH = ND
August 24, 2018 Sample Event
North Base 5-pt: OVM = 158 ppm TPH = 320 ppm
South Base 5-pt OVM = 1,163 ppm TPH = 1,810 ppm
South Wall (Ramp) OVM = 39.9 ppm TPH = 450 ppm
East Wall OVM = 5.5 ppm TPH = ND
Google earth
© 2018 Google
N
90 ft


GCU 198
Sample Locations
9/19/2018
North Base
Extended to 23'
X
X
X
X
X

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

September 24, 2018

Steve Moskal

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

RE: GCU 198 OrderNo.: 1809B65

Dear Steve Moskal:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/20/2018 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1809B65**
Date Reported: **9/24/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Blagg Engineering
Project: GCU 198
Lab ID: 1809B65-001

Client Sample ID: North Base 5-pt @ 23'
Collection Date: 9/19/2018 12:56:00 PM
Matrix: MEOH (SOIL) **Received Date:** 9/20/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **SRM**	
Chloride	ND	30		mg/Kg	20	9/20/2018 12:06:51 PM	40476
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	9/20/2018 10:30:48 AM	40471
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/20/2018 10:30:48 AM	40471
Surr: DNOP	89.8	50.6-138		%Rec	1	9/20/2018 10:30:48 AM	40471
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	9/20/2018 9:55:48 AM	40453
Surr: BFB	92.8	15-316		%Rec	1	9/20/2018 9:55:48 AM	40453
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.018		mg/Kg	1	9/20/2018 9:55:48 AM	40453
Toluene	ND	0.037		mg/Kg	1	9/20/2018 9:55:48 AM	40453
Ethylbenzene	ND	0.037		mg/Kg	1	9/20/2018 9:55:48 AM	40453
Xylenes, Total	ND	0.074		mg/Kg	1	9/20/2018 9:55:48 AM	40453
Surr: 4-Bromofluorobenzene	93.7	80-120		%Rec	1	9/20/2018 9:55:48 AM	40453

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 Quanitative 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#: **1809B65**

24-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID	**MB-40476**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**40476**		RunNo:	**54324**				
Prep Date:	**9/20/2018**	Analysis Date:	**9/20/2018**		SeqNo:	**1798127**	Units:	**mg/Kg**		

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

Sample ID	**LCS-40476**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**40476**		RunNo:	**54324**				
Prep Date:	**9/20/2018**	Analysis Date:	**9/20/2018**		SeqNo:	**1798128**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.4	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 Quanitative 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#: **1809B65**

24-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **1809B65-001AMS**	SampType: **MS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**						
Client ID: **North Base 5-pt @ 2**	Batch ID: **40471**			RunNo: **54274**						
Prep Date: **9/20/2018**	Analysis Date: **9/20/2018**			SeqNo: **1796282**		Units: **mg/Kg**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.9	49.36	0	96.1	53.5	126			
Surr: DNOP	4.0		4.936		80.9	50.6	138			

Sample ID **1809B65-001AMSD**	SampType: **MSD**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**						
Client ID: **North Base 5-pt @ 2**	Batch ID: **40471**			RunNo: **54274**						
Prep Date: **9/20/2018**	Analysis Date: **9/20/2018**			SeqNo: **1796283**		Units: **mg/Kg**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	9.5	47.26	0	101	53.5	126	0.345	21.7	
Surr: DNOP	3.6		4.726		75.7	50.6	138	0	0	

Sample ID **LCS-40471**	SampType: **LCS**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**						
Client ID: **LCSS**	Batch ID: **40471**			RunNo: **54274**						
Prep Date: **9/20/2018**	Analysis Date: **9/20/2018**			SeqNo: **1796284**		Units: **mg/Kg**				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.7	70	130			
Surr: DNOP	4.5		5.000		90.3	50.6	138			

Sample ID **MB-40471**	SampType: **MBLK**			TestCode: **EPA Method 8015M/D: Diesel Range Organics**						
Client ID: **PBS**	Batch ID: **40471**			RunNo: **54274**						
Prep Date: **9/20/2018**	Analysis Date: **9/20/2018**			SeqNo: **1796285**		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		101	50.6	138			

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 Quanitative 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#: **1809B65**

24-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40453**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **40453**	RunNo: **54282**
Prep Date: **9/19/2018**	Analysis Date: **9/20/2018**	SeqNo: **1796709** 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	910		1000		91.4	15	316			

Sample ID **LCS-40453**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **40453**	RunNo: **54282**
Prep Date: **9/19/2018**	Analysis Date: **9/20/2018**	SeqNo: **1796710** 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	96.8	75.9	131			
Surr: BFB	1100		1000		107	15	316			

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 Quanitative 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#: **1809B65**

24-Sep-18

Client: Blagg Engineering
Project: GCU 198

Sample ID **MB-40453**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **40453**	RunNo: **54282**
Prep Date: **9/19/2018**	Analysis Date: **9/20/2018**	SeqNo: **1796749** 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	0.92		1.000		91.5	80	120			

Sample ID **LCS-40453**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **40453**	RunNo: **54282**
Prep Date: **9/19/2018**	Analysis Date: **9/20/2018**	SeqNo: **1796750** 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	93.8	77.3	128			
Toluene	0.98	0.050	1.000	0	98.0	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	96.4	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	97.0	81.6	129			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.4	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **BLAGG** Work Order Number: **1809B65** RcptNo: **1**

Received By: **Jazzmine Burkhead** **9/20/2018 8:30:00 AM**

Completed By: **Ashley Gallegos** **9/20/2018 8:45:42 AM**

Reviewed By: 09/20/18 labeled by: ENM 9/20/18

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: 09/20/18

Special Handling (if applicable)

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

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

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.9	Good	Yes			
2	2.2	Good	Yes			
3	1.7	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:
☐ Standard ☒ Rush SAME DAY
Project Name: GCU 198
Project #:
Project Manager: STEVE MOSKAL/SABRE BEEBE
Sampler: JEFF BLAGG
On Ice: ☒ Yes ☐ No
Sample Temperature: See remarks

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1809B65	BTEX + ~~MTBE + TMB~~'s (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	CHLORIDE				Air Bubbles (Y or N)
9/19/2018	1256	SOIL	NORTH BASE 5-pt @ 23'	4oz x1	COOL	-001	X		X									X				

Analysis Request

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/19/2018	1640	Jeff Blagg	Christine Walters	9/19/18	1640
9/19/18	1840	Christine Walters	Yvonne Bankhead	09/20/18	08:30

Remarks: BILL BP
CONTACT: SABRE BEEBE
Cooler #1-5.8-0.9 Cooler #3-2.6-0.9(CF)=1.7
(CF)=4.9
Cooler #2-3.1-0.9(CF)=2.2

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.