

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	NS1826750131
District RP	
Facility ID	
Application ID	

Release Notification

NMOCD

Responsible Party

SEP 17 2018

DISTRICT III

Responsible Party BP America Production Company	OGRID 778
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address 380 North Airport Road, Durango, CO 81303	

Location of Release Source

Latitude 36.70245 Longitude -108.13715
(NAD 83 in decimal degrees to 5 decimal places)

Site Name GCU 188E	Site Type Natural Gas Well Site
Date Release Discovered	API# (if applicable) 3004524171

Unit Letter	Section	Township	Range	County
B	30	29N	12W	San Juan

* COA Hatched

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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release BGT closure sampling indicates not soil impacts, however groundwater was sampled indicating elevated chloride levels. BP will further investigate through delineation via drilling using hollow stem auger.

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Monday, September 24, 2018 2:33 PM
To: 'Steven Moskal'; Fields, Vanessa, EMNRD
Cc: Blagg, Jefferey; 'blagg_njv@yahoo.com'
Subject: RE: Gallegos Canyon Unit 188E Groundwater Delineation Plan (NCS1826750131)

Steve,

OCD has received the Initial/Work plan for the Possible? Release at the GCU 188E.

With the new rule OCD dosnt have to approve work plans for delineation. So what I have done is gone ahead and assigned this site an incident number. (NCS1826750131) please reference it for any additional communications and submittals.

OCD has granted BP an additional 60 days to submit the characterization report and or Closure Report no later than 12/7/2018.

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

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

From: Steven Moskal <Steven.Moskal@BPX.COM>
Sent: Friday, September 14, 2018 1:50 PM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>; Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
Cc: Blagg, Jefferey <jeffcblagg@aol.com>; 'blagg_njv@yahoo.com' <blagg_njv@yahoo.com>
Subject: Gallegos Canyon Unit 188E Groundwater Delineation Plan

Cory and Vanessa,

Attached is the plan to further delineate chloride impacts in groundwater that were obtained from an open excavation sample during a BGT closure. A hard copy will be delivered to your office later today.

Thank you,

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

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Was this a major release as defined by 19.15.29.7(A) NMAC? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)? Not required.	

Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
--

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

Release not confirmed. Elevated chloride in groundwater will be addressed via delineation to determine if further action is required.

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: 9/24/18

Incident ID	
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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?	5' _____ (ft bgs)
Did this release impact groundwater or surface water?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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.

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Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
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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: Steve Moskal Title: Environmental Coordinator
 Signature:  Date: September 14, 2018
 email: Steven.moskal@bpx.com Telephone: (505) 330-9179

OCD Only

Received by:  Date: 9/24/18
 Approved Approved with Attached Conditions of Approval Denied Deferral Approved
 Signature:  Date: 9/24/18

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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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: _____

Printed Name: _____ Title: _____

To: Cory Smith, Vanessa Fields (NMOCD)
From: Steve Moskal (BP)
Date: 9/14/2018
Re: Gallegos Canyon Unit 188E – Groundwater Delineation Plan
API#30-045-24171 (B) S30, T29N, R12W; Lat. 36.70254°, Long. -107.13715°

The Gallegos Canyon Unit (GCU) 188E site is an active natural gas production pad within the San Juan Basin Gas Field in San Juan County, New Mexico. The site is located in San Juan County on private land. Depth to groundwater is anticipated to be ~5' bgs (below ground surface). During a below grade tank (BGT) closure on June 29, 2018, groundwater was encountered at the base of the tank. A grab sample of the groundwater was collected from the open excavation with laboratory results for chloride above the New Mexico water quality standards. All other analyzed contaminants of concern were below lab detection limits. There are no concerns for contaminations other than the elevated chloride. Due to the unconfirmed chloride concentrations and lateral extents, a volume of remediation is unknown.

GROUNDWATER DELINEATION PLAN

BP proposes to advance 3 soil boring to a maximum of 15 feet bgs; one in the center of the recently excavated area and one immediately downgradient and one upgradient of the excavation. The source well will determine if the sample collected from the open excavation during the BGT closure is representative of actual groundwater conditions. The up gradient well will determine background concentrations and the down gradient will determine if the suspected elevated chloride has migrated. The gradient was determined with the assumption that groundwater flows toward the adjacent San Juan River

The borings will be advanced using a minimum 4" (ID) hollow stem auger or other recommended tooling adequate to accommodate 2" PVC groundwater monitoring wells. In each boring, 2-inch PVC well screen will be placed in the lower 10 foot portion, likely from 15' bgs to 5' bgs. Each soil boring will be completed with a blank (solid pipe) riser to the surface for completion as an aboveground monument. The base of the PVC is preferred to have a cone bottom or slip cap. Sand pack will be added to the boring annulus to 1' above the screened interval. Hydrated bentonite or slurry will be placed in the remainder of the boring to 1' bgs where cement will be used to seal the surface and final surface completion. The well protectors will be lockable. The wells will be permitted through the New Mexico Office of the State Engineer Aztec Office by BP's consultant.

During advancement of the well borings, soil samples will be collected for confirmation. A soil sample will be collected every 5' or more frequent if possible. Three soil samples, will be collected from each boring, one from near the surface, one at the field determined groundwater interface, and one below the groundwater interface and all will be submitted for laboratory analysis, following handling and chain of custody protocols, for analysis 6010 or 300.0 chlorides. Field screening will not easily allow detection of chlorides and therefore will not be used.

Once the well installation is complete and allowed to sit for a minimum of 24 hours, the wells will be monitored for water. If no water is present, the wells will then be rechecked in approximately 2 weeks. If water is present, the wells will be developed via a bailing and purging with a new, disposable bailer used in each well. The wells will be purged for a minimum of 3 well volumes and where field screening for temperature, conductivity and pH become stable for a minimum of three

consecutive readings (within 10%). The purged water will be contained and disposed of in the nearby below grade tank.

The wells will then be allowed to sit for approximately 24 hours then purged of approximately three well volumes prior to sampling for General Water Chemistry via API General Chemistry methods (including pH, TDS, cations/anions), all following sample handling and chain of custody protocols.

Once lab results are obtained, BP will determine whether or not further delineation is required and will communicate with the NMOCD on a continued plan of action. Follow up reporting or delineation will be performed within 60 days of the groundwater lab analysis results.

Steve Moskal

A handwritten signature in blue ink, appearing to read "Steve Moskal", enclosed in a light blue oval.

Environmental Coordinator

CLIENT: BP	BLAGG ENGINEERING, INC. P.O. BOX 87, BLOOMFIELD, NM 87413 (505) 632-1199	API #: 3004524171 TANK ID (if applicable): A
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FIELD REPORT: (circle one): BGT CONFIRMATION / RELEASE INVESTIGATION / OTHER:

PAGE #: **1** of **1**

SITE INFORMATION:	SITE NAME: GCU # 188E	DATE STARTED: 06/29/18
QUAD/UNIT: B SEC: 30 TWP: 29N RNG: 12W PM: NM CNTY: SJ ST: NM		DATE FINISHED:
1/4 -1/4/FOOTAGE: 790'N / 1,620'E NW/NE LEASE TYPE: FEDERAL / STATE <input checked="" type="checkbox"/> FEE / INDIAN		ENVIRONMENTAL SPECIALIST(S): NJV
LEASE #: - PROD. FORMATION: DK CONTRACTOR: BP - J. GONZALES		

REFERENCE POINT:	WELL HEAD (W.H.) GPS COORD.: 36.70266 X 108.13674	GL ELEV.: 5,304'
1) 95 BGT (DW/DB)	GPS COORD.: 36.70245 X 108.13715	DISTANCE/BEARING FROM W.H.: 145', S58.5W
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	OVM READING (ppm)
1) SAMPLE ID: 4PC - TB @ 2'-3' (95)	SAMPLE DATE: 06/29/18 SAMPLE TIME: 1110 LAB ANALYSIS: 8015B/8021B/300.0 (CI)	NA
2) SAMPLE ID: GW @ 4.5' (95)	SAMPLE DATE: 06/29/18 SAMPLE TIME: 1115 LAB ANALYSIS: 8260B/300.1 (CI)	NA
3) SAMPLE ID:	SAMPLE DATE: SAMPLE TIME: LAB ANALYSIS:	
4) SAMPLE ID:	SAMPLE DATE: SAMPLE TIME: LAB ANALYSIS:	
5) SAMPLE ID:	SAMPLE DATE: SAMPLE TIME: LAB ANALYSIS:	

SOIL DESCRIPTION:	SOIL TYPE: <input checked="" type="checkbox"/> SAND / <input type="checkbox"/> SILTY SAND / <input type="checkbox"/> SILTY CLAY / <input type="checkbox"/> CLAY / <input checked="" type="checkbox"/> GRAVEL / OTHER	
SOIL COLOR: DARK YELLOWISH ORANGE	PLASTICITY (CLAYS): <input type="checkbox"/> NON PLASTIC / <input type="checkbox"/> SLIGHTLY PLASTIC / <input type="checkbox"/> COHESIVE / <input type="checkbox"/> MEDIUM PLASTIC / <input type="checkbox"/> HIGHLY PLASTIC	
COHESION (ALL OTHERS): <input checked="" type="checkbox"/> NON COHESIVE / <input type="checkbox"/> SLIGHTLY COHESIVE / <input type="checkbox"/> COHESIVE / <input type="checkbox"/> HIGHLY COHESIVE	DENSITY (COHESIVE CLAYS & SILTS): <input type="checkbox"/> SOFT / <input type="checkbox"/> FIRM / <input type="checkbox"/> STIFF / <input type="checkbox"/> VERY STIFF / <input type="checkbox"/> HARD	
CONSISTENCY (NON COHESIVE SOILS): <input checked="" type="checkbox"/> LOOSE / <input checked="" type="checkbox"/> FIRM / <input type="checkbox"/> DENSE / <input type="checkbox"/> VERY DENSE	HC ODOR DETECTED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> EXPLANATION -	
MOISTURE: DRY / <input checked="" type="checkbox"/> SLIGHTLY MOIST / <input type="checkbox"/> MOIST / <input type="checkbox"/> WET / <input type="checkbox"/> SATURATED / <input type="checkbox"/> SUPER SATURATED		
SAMPLE TYPE: GRAB <input checked="" type="checkbox"/> COMPOSITE / # OF PTS. 4	ANY AREAS DISPLAYING WETNESS: <input checked="" type="checkbox"/> YES / <input type="checkbox"/> NO EXPLANATION - GROUNDWATER	
DISCOLORATION/STAINING OBSERVED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> EXPLANATION -		

SITE OBSERVATIONS:	LOST INTEGRITY OF EQUIPMENT: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> EXPLANATION -	
APPARENT EVIDENCE OF A RELEASE OBSERVED AND/OR OCCURRED: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> EXPLANATION:		
EQUIPMENT SET OVER RECLAIMED AREA: YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> EXPLANATION -		
OTHER: NMOCD REP. NOT PRESENT TO WITNESS CONFIRMATION SAMPLING. GAS WELL HAS BEEN PLUGGED & ABANDONED (P&A). WELL PAD SHARED WITH BP'S GCU #395.		
EXCAVATION DIMENSION ESTIMATION: NA ft. X NA ft. X NA ft. EXCAVATION ESTIMATION (Cubic Yards): NA		
DEPTH TO GROUNDWATER: <50' NEAREST WATER SOURCE: <1,000' NEAREST SURFACE WATER: >300' / <1,000' NMOCD TPH CLOSURE STD: 100 ppm		

<p>SITE SKETCH</p> <p>BGT Located: off <input checked="" type="checkbox"/> on site</p> <p>PLOT PLAN circle: <input checked="" type="checkbox"/> attached</p> <p style="text-align: right;">X - S.P.D.</p>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td>OVM CALIB. READ. = NA ppm</td> <td>RF = 1.00</td> </tr> <tr> <td>OVM CALIB. GAS = NA ppm</td> <td></td> </tr> <tr> <td>TIME: NA am/pm</td> <td>DATE: NA</td> </tr> </table> <p>MISCELL. NOTES</p> <p>WO:</p> <p>REF #: P-1000</p> <p>VID: VHIXONEVB2</p> <p>PJ #:</p> <p>Permit date(s): 06/14/10</p> <p>OCD Appr. date(s): 11/01/12</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:10%;">Tank ID</td> <td>OVM = Organic Vapor Meter ppm = parts per million</td> </tr> <tr> <td>A</td> <td>BGT Sidewalls Visible: Y / <input checked="" type="checkbox"/> N</td> </tr> <tr> <td></td> <td>BGT Sidewalls Visible: Y / N</td> </tr> <tr> <td></td> <td>BGT Sidewalls Visible: Y / N</td> </tr> </table> <p>Magnetic declination: 10° E</p>	OVM CALIB. READ. = NA ppm	RF = 1.00	OVM CALIB. GAS = NA ppm		TIME: NA am/pm	DATE: NA	Tank ID	OVM = Organic Vapor Meter ppm = parts per million	A	BGT Sidewalls Visible: Y / <input checked="" type="checkbox"/> N		BGT Sidewalls Visible: Y / N		BGT Sidewalls Visible: Y / N
OVM CALIB. READ. = NA ppm	RF = 1.00														
OVM CALIB. GAS = NA ppm															
TIME: NA am/pm	DATE: NA														
Tank ID	OVM = Organic Vapor Meter ppm = parts per million														
A	BGT Sidewalls Visible: Y / <input checked="" type="checkbox"/> N														
	BGT Sidewalls Visible: Y / N														
	BGT Sidewalls Visible: Y / N														

NOTES: **GOOGLE EARTH IMAGERY DATE: 3/15/2015.** ONSITE: **06/29/18**

1,000 ft. radius
from 95 bgt center

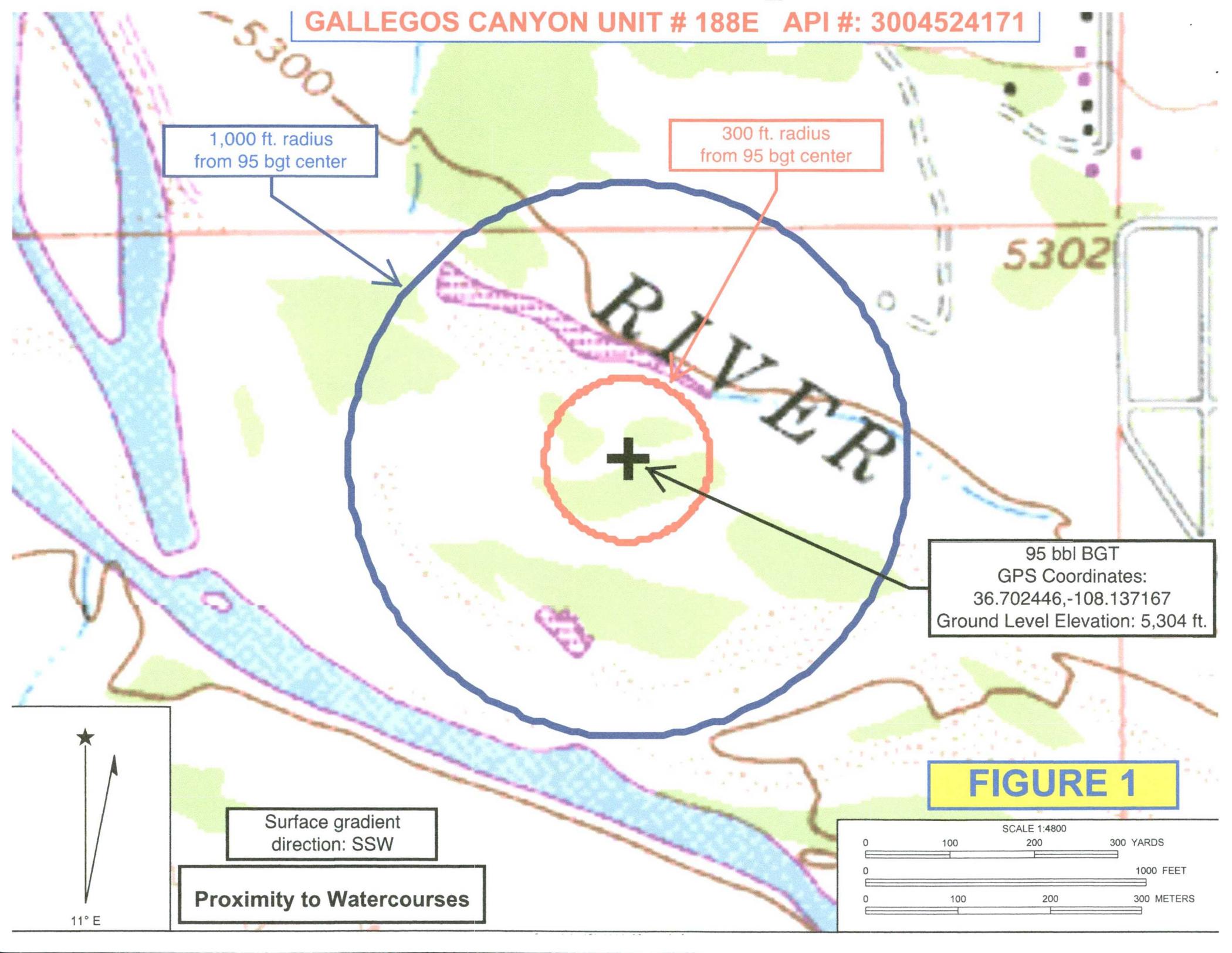
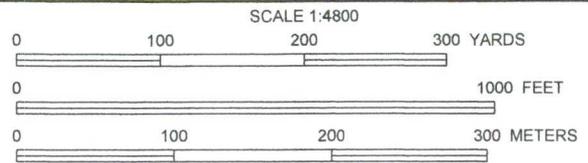
300 ft. radius
from 95 bgt center

95 bbl BGT
GPS Coordinates:
36.702446,-108.137167
Ground Level Elevation: 5,304 ft.

FIGURE 1

Surface gradient
direction: SSW

Proximity to Watercourses



BP - GCU 188E

(B) Section 30, T29N, R12W
API #: 3004524171

Imagery date: 3/15/2015
WH GPS Coord.: 36.702654,-108.136745
95 BGT GPS Coord.: 36.702446,-108.137167

FIGURE 2

GCU 188E P&A



900 ft

BP - GCU 188E

(B) Section 30, T29N, R12W
API #: 3004524171

Imagery date: 3/15/2015
WH GPS Coord.: 36.702654,-108.136745
95 BGT GPS Coord.: 36.702446,-108.137167

FIGURE 3



GCU 188E P&A



300 ft

BP - GCU 188E

(B) Section 30, T29N, R12W
API #: 3004524171

Imagery date: 3/15/2015
WH GPS Coord.: 36.702654,-108.136745
95 BGT GPS Coord.: 36.702446,-108.137167

FIGURE 4

**Temporary Well
Placements**

GCU 188E P&A



Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1806142

Date Reported: 7/5/2018

CLIENT: Blagg Engineering

Client Sample ID: 4PC-SW @ 2 '-3' (95)

Project: GCU 188E

Collection Date: 6/29/2018 11:10:00 AM

Lab ID: 1806I42-001

Matrix: MEOH (SOIL) Received Date: 6/30/2018 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	ND	30		mg/Kg	20	7/2/2018 11:31:08 AM	39003
EPA METHOD 8015D MOD: GASOLINE RANGE							Analyst: AG
Gasoline Range Organics (GRO)	ND	3.3		mg/Kg	1	7/2/2018 11:56:23 AM	A52411
Surr: BFB	108	70-130		%Rec	1	7/2/2018 11:56:23 AM	A52411
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: Irm
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/2/2018 12:42:36 PM	38999
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/2/2018 12:42:36 PM	38999
Surr: DNOP	103	70-130		%Rec	1	7/2/2018 12:42:36 PM	38999
EPA METHOD 8260B: VOLATILES SHORT LIST							Analyst: AG
Benzene	ND	0.017		mg/Kg	1	7/2/2018 11:56:23 AM	C52411
Toluene	ND	0.033		mg/Kg	1	7/2/2018 11:56:23 AM	C52411
Ethylbenzene	ND	0.033		mg/Kg	1	7/2/2018 11:56:23 AM	C52411
Xylenes, Total	ND	0.066		mg/Kg	1	7/2/2018 11:56:23 AM	C52411
Surr: 4-Bromofluorobenzene	122	70-130		%Rec	1	7/2/2018 11:56:23 AM	C52411
Surr: Toluene-d8	96.3	70-130		%Rec	1	7/2/2018 11:56:23 AM	C52411

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1806142

Date Reported: 7/5/2018

CLIENT: Blagg Engineering

Client Sample ID: GW @ 4.5' (95)

Project: GCU 188E

Collection Date: 6/29/2018 11:15:00 AM

Lab ID: 1806142-002

Matrix: AQUEOUS

Received Date: 6/30/2018 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS							Analyst: MRA
Chloride	680	50	*	mg/L	100	7/2/2018 1:47:21 PM	R52416
EPA METHOD 8260B: VOLATILES							Analyst: DJF
Benzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Toluene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Ethylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Methyl tert-butyl ether (MTBE)	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2,4-Trimethylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,3,5-Trimethylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2-Dichloroethane (EDC)	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2-Dibromoethane (EDB)	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Naphthalene	ND	2.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1-Methylnaphthalene	ND	4.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
2-Methylnaphthalene	ND	4.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Acetone	ND	10		µg/L	1	7/2/2018 12:01:16 PM	W52404
Bromobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Bromodichloromethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Bromoform	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Bromomethane	ND	3.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
2-Butanone	ND	10		µg/L	1	7/2/2018 12:01:16 PM	W52404
Carbon disulfide	ND	10		µg/L	1	7/2/2018 12:01:16 PM	W52404
Carbon Tetrachloride	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Chlorobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Chloroethane	ND	2.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Chloroform	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Chloromethane	ND	3.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
2-Chlorotoluene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
4-Chlorotoluene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
cis-1,2-DCE	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
cis-1,3-Dichloropropene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2-Dibromo-3-chloropropane	ND	2.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Dibromochloromethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Dibromomethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2-Dichlorobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,3-Dichlorobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,4-Dichlorobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Dichlorodifluoromethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1-Dichloroethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1-Dichloroethene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2-Dichloropropane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404

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

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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1806142

Date Reported: 7/5/2018

CLIENT: Blagg Engineering

Client Sample ID: GW @ 4.5' (95)

Project: GCU 188E

Collection Date: 6/29/2018 11:15:00 AM

Lab ID: 1806142-002

Matrix: AQUEOUS

Received Date: 6/30/2018 10:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES							Analyst: DJF
1,3-Dichloropropane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
2,2-Dichloropropane	ND	2.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1-Dichloropropene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Hexachlorobutadiene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
2-Hexanone	ND	10		µg/L	1	7/2/2018 12:01:16 PM	W52404
Isopropylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
4-Isopropyltoluene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
4-Methyl-2-pentanone	ND	10		µg/L	1	7/2/2018 12:01:16 PM	W52404
Methylene Chloride	ND	3.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
n-Butylbenzene	ND	3.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
n-Propylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
sec-Butylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Styrene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
tert-Butylbenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1,1,2-Tetrachloroethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1,2,2-Tetrachloroethane	ND	2.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Tetrachloroethene (PCE)	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
trans-1,2-DCE	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
trans-1,3-Dichloropropene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2,3-Trichlorobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2,4-Trichlorobenzene	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1,1-Trichloroethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,1,2-Trichloroethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Trichloroethene (TCE)	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Trichlorofluoromethane	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
1,2,3-Trichloropropane	ND	2.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Vinyl chloride	ND	1.0		µg/L	1	7/2/2018 12:01:16 PM	W52404
Xylenes, Total	ND	1.5		µg/L	1	7/2/2018 12:01:16 PM	W52404
Surr: 1,2-Dichloroethane-d4	101	70-130		%Rec	1	7/2/2018 12:01:16 PM	W52404
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	7/2/2018 12:01:16 PM	W52404
Surr: Dibromofluoromethane	93.7	70-130		%Rec	1	7/2/2018 12:01:16 PM	W52404
Surr: Toluene-d8	104	70-130		%Rec	1	7/2/2018 12:01:16 PM	W52404

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

Chain-of-Custody Record

Turn-Around Time: **SAME DAY**

Standard Rush

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) _____

Project Name: **GCU # 188E**

Project #:

Project Manager: **ERIN GARIFALOS**

Sampler: **NELSON VELEZ**

On Ice: Yes No *97%*

Sample Temperature: *3.9*



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 (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
6/29/18	1110	SOIL	4PC - SW @ 2' - 3' (95)	4 oz. - 1	Cool	1800142 -001	✓	✓										✓		✓
6/29/18	1115	WATER	GW @ 4.5' (95)	40 ml VOA - 2	HCl & Cool	-002										✓				✓
6/29/18	1115	WATER	GW @ 4.5' (95)	500 ml - 1	Cool													✓		✓

Date: *6/29/18* Time: *1100* Relinquished by: *[Signature]*

Date: *6/29/18* Time: *1700* Received by: *Christa Waelte*

Date: *6/29/18* Time: *1852* Relinquished by: *Christa Waelte*

Date: *6/30/18* Time: *1015* Received by: *[Signature]*

Remarks: **BILL DIRECTLY TO BP USING THE CONTACT WITH CORRESPONDING V & REFERENCE # WHEN APPLICABLE;**

CONTACT: **ERIN GARIFALOS / VANCE HIXON**

VID: **VHIXONEVB2**

Reference # **P - 1000**

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This copies as per the...

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering

Project: GCU 188E

Sample ID	MB-39003	SampType:	mblk	TestCode:	EPA Method 300.0: Anions					
Client ID:	PBS	Batch ID:	39003	RunNo:	52405					
Prep Date:	7/2/2018	Analysis Date:	7/2/2018	SeqNo:	1719465	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	LCS-39003	SampType:	lcs	TestCode:	EPA Method 300.0: Anions					
Client ID:	LCSS	Batch ID:	39003	RunNo:	52405					
Prep Date:	7/2/2018	Analysis Date:	7/2/2018	SeqNo:	1719466	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.1	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering
Project: GCU 188E

Sample ID MB	SampType: mblk		TestCode: EPA Method 300.0: Anions							
Client ID: PBW	Batch ID: R52416		RunNo: 52416							
Prep Date:	Analysis Date: 7/2/2018		SeqNo: 1719798		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID LCS	SampType: lcs		TestCode: EPA Method 300.0: Anions							
Client ID: LCSW	Batch ID: R52416		RunNo: 52416							
Prep Date:	Analysis Date: 7/2/2018		SeqNo: 1719799		Units: mg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.6	0.50	5.000	0	92.5	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering
Project: GCU 188E

Sample ID MB-38999	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 38999		RunNo: 52397							
Prep Date: 7/2/2018	Analysis Date: 7/2/2018		SeqNo: 1718308		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.7		10.00		96.7	70	130			

Sample ID LCS-38999	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 38999		RunNo: 52397							
Prep Date: 7/2/2018	Analysis Date: 7/2/2018		SeqNo: 1718309		Units: mg/Kg					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.8	70	130			
Surr: DNOP	4.7		5.000		93.3	70	130			

Sample ID MB-38981	SampType: MBLK		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: PBS	Batch ID: 38981		RunNo: 52397							
Prep Date: 6/29/2018	Analysis Date: 7/2/2018		SeqNo: 1719410		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		102	70	130			

Sample ID LCS-38981	SampType: LCS		TestCode: EPA Method 8015M/D: Diesel Range Organics							
Client ID: LCSS	Batch ID: 38981		RunNo: 52397							
Prep Date: 6/29/2018	Analysis Date: 7/2/2018		SeqNo: 1719411		Units: %Rec					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		94.2	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering
Project: GCU 188E

Sample ID	100ng btex lcs	SampType:	LCS4	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	BatchQC	Batch ID:	C52411	RunNo:	52411					
Prep Date:		Analysis Date:	7/2/2018	SeqNo:	1718288	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	103	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.5	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: Volatiles Short List					
Client ID:	PBS	Batch ID:	C52411	RunNo:	52411					
Prep Date:		Analysis Date:	7/2/2018	SeqNo:	1718297	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	0.59		0.5000		117	70	130			
Surr: Toluene-d8	0.50		0.5000		99.6	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering

Project: GCU 188E

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	W52404	RunNo:	52404					
Prep Date:		Analysis Date:	7/2/2018	SeqNo:	1718775	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Methyl tert-butyl ether (MTBE)	ND	1.0								
1,2,4-Trimethylbenzene	ND	1.0								
1,3,5-Trimethylbenzene	ND	1.0								
1,2-Dichloroethane (EDC)	ND	1.0								
1,2-Dibromoethane (EDB)	ND	1.0								
Naphthalene	ND	2.0								
1-Methylnaphthalene	ND	4.0								
2-Methylnaphthalene	ND	4.0								
Acetone	ND	10								
Bromobenzene	ND	1.0								
Bromodichloromethane	ND	1.0								
Bromoform	ND	1.0								
Bromomethane	ND	3.0								
2-Butanone	ND	10								
Carbon disulfide	ND	10								
Carbon Tetrachloride	ND	1.0								
Chlorobenzene	ND	1.0								
Chloroethane	ND	2.0								
Chloroform	ND	1.0								
Chloromethane	ND	3.0								
2-Chlorotoluene	ND	1.0								
4-Chlorotoluene	ND	1.0								
cis-1,2-DCE	ND	1.0								
cis-1,3-Dichloropropene	ND	1.0								
1,2-Dibromo-3-chloropropane	ND	2.0								
Dibromochloromethane	ND	1.0								
Dibromomethane	ND	1.0								
1,2-Dichlorobenzene	ND	1.0								
1,3-Dichlorobenzene	ND	1.0								
1,4-Dichlorobenzene	ND	1.0								
Dichlorodifluoromethane	ND	1.0								
1,1-Dichloroethane	ND	1.0								
1,1-Dichloroethene	ND	1.0								
1,2-Dichloropropane	ND	1.0								
1,3-Dichloropropane	ND	1.0								
2,2-Dichloropropane	ND	2.0								

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 Quantitative Limit
- S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering

Project: GCU 188E

Sample ID	rb	SampType:	MBLK	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	PBW	Batch ID:	W52404	RunNo:	52404					
Prep Date:		Analysis Date:	7/2/2018	SeqNo:	1718775	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	1.0								
Hexachlorobutadiene	ND	1.0								
2-Hexanone	ND	10								
Isopropylbenzene	ND	1.0								
4-Isopropyltoluene	ND	1.0								
4-Methyl-2-pentanone	ND	10								
Methylene Chloride	ND	3.0								
n-Butylbenzene	ND	3.0								
n-Propylbenzene	ND	1.0								
sec-Butylbenzene	ND	1.0								
Styrene	ND	1.0								
tert-Butylbenzene	ND	1.0								
1,1,1,2-Tetrachloroethane	ND	1.0								
1,1,2,2-Tetrachloroethane	ND	2.0								
Tetrachloroethene (PCE)	ND	1.0								
trans-1,2-DCE	ND	1.0								
trans-1,3-Dichloropropene	ND	1.0								
1,2,3-Trichlorobenzene	ND	1.0								
1,2,4-Trichlorobenzene	ND	1.0								
1,1,1-Trichloroethane	ND	1.0								
1,1,2-Trichloroethane	ND	1.0								
Trichloroethene (TCE)	ND	1.0								
Trichlorofluoromethane	ND	1.0								
1,2,3-Trichloropropane	ND	2.0								
Vinyl chloride	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.0	70	130			
Surr: 4-Bromofluorobenzene	12		10.00		116	70	130			
Surr: Dibromofluoromethane	8.8		10.00		87.6	70	130			
Surr: Toluene-d8	10		10.00		104	70	130			

Sample ID	100ng lcsb	SampType:	LCS	TestCode:	EPA Method 8260B: VOLATILES					
Client ID:	LCSW	Batch ID:	W52404	RunNo:	52404					
Prep Date:		Analysis Date:	7/2/2018	SeqNo:	1718776	Units:	µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	20	1.0	20.00	0	101	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Chlorobenzene	20	1.0	20.00	0	100	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering

Project: GCU 188E

Sample ID	100ng lcsb		SampType:	LCS		TestCode:	EPA Method 8260B: VOLATILES				
Client ID:	LCSW		Batch ID:	W52404		RunNo:	52404				
Prep Date:			Analysis Date:	7/2/2018		SeqNo:	1718776		Units:	µg/L	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
1,1-Dichloroethene	20	1.0	20.00	0	102	70	130				
Trichloroethene (TCE)	19	1.0	20.00	0	92.6	70	130				
Surr: 1,2-Dichloroethane-d4	9.9		10.00		99.5	70	130				
Surr: 4-Bromofluorobenzene	11		10.00		114	70	130				
Surr: Dibromofluoromethane	9.2		10.00		92.1	70	130				
Surr: Toluene-d8	10		10.00		102	70	130				

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1806142

05-Jul-18

Client: Blagg Engineering

Project: GCU 188E

Sample ID	2.5ug gro lcs		SampType:	LCS		TestCode:	EPA Method 8015D Mod: Gasoline Range				
Client ID:	LCSS		Batch ID:	A52411		RunNo:	52411				
Prep Date:			Analysis Date:	7/2/2018		SeqNo:	1718277		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	28	5.0	25.00	0	111	70	130				
Surr: BFB	460		500.0		92.1	70	130				

Sample ID	rb		SampType:	MBLK		TestCode:	EPA Method 8015D Mod: Gasoline Range				
Client ID:	PBS		Batch ID:	A52411		RunNo:	52411				
Prep Date:			Analysis Date:	7/2/2018		SeqNo:	1718278		Units: mg/Kg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	520		500.0		105	70	130				

Qualifiers:

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

Client Name: **BLAGG**

Work Order Number: **1806142**

RcptNo: **1**

Received By: **Erin Melendrez** 6/30/2018 10:15:00 AM

EM

Completed By: **Erin Melendrez** 6/30/2018 11:26:48 AM

EM

Reviewed By: **JU 7-2-18**

LB: AS 07/02/18

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

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

Special Handling (if applicable)

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:

Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Yes			