

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	nAPP2111044488
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party EOG Resources, Inc.	OGRID 7377
Contact Name Chase Settle	Contact Telephone 575-748-1471
Contact email Chase_Settle@eogresources.com	Incident # (assigned by OCD)
Contact mailing address 104 S. 4th Street, Artesia, NM 88210	

### Location of Release Source

Latitude 32.85807 Longitude -103.93198  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Jackson B #17	Site Type Well
Date Release Discovered 04/19/2021	API# (if applicable) 30-015-04039

Unit Letter	Section	Township	Range	County
M	1	17S	30E	Eddy

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 checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) Unknown	Volume Recovered (bbls) 0
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride 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

Historical impacts discovered during the P&A of the well. Release volume and date are unknown.

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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)?	

### Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> 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: <u>Chase Settle</u>	Title: <u>Rep Safety &amp; Environmental Sr</u>
Signature: <u></u>	Date: <u>04/19/2021</u>
email: <u>Chase_Settle@eogresources.com</u>	Telephone: <u>575-748-1471</u>
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____

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## 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?	>100 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" 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 checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" 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 type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> 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.

State of New Mexico  
Oil Conservation Division

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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: Chase Settle Title: Rep Safety & Environmental Sr  
Signature:  Date: 08/31/2021  
email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

**OCD Only**

Received by: Jocelyn Harimon Date: 03/30/2023



Incident ID	nAPP211104488
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## 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: Chase Settle Title: Rep Safety & Environmental Sr  
Signature: Chase Settle Date: 03/30/2023  
email: Chase\_Settle@eogresources.com Telephone: 575-748-1471

**OCD Only**

Received by: Jocelyn Harimon Date: 03/30/2023

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

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

2135 S. Loop 250 W,  
Midland, Texas 79703  
United States  
www.ghd.com

Our ref: 11228313-LTR-1

March 29, 2023

New Mexico Oil Conservation Division  
EOG Resources  
811 South First Street  
Artesia, New Mexico 88210

Amended Site Remediation Work Plan – Response to Denial  
Jackson B #17 Wellhead Release Site  
EOG Resources Inc.  
Incident ID: nAPP2111044488  
M-01-17S-30E, Eddy County, New Mexico

To Whom It May Concern:

On July 27, 2022, EOG Resources Inc (EOG) received an email from the New Mexico Oil Conservation Division (OCD) denning the Amended Site Remediation Work Plan, dated April 21, 2022. GHD, on behalf of EOG is submitting this letter and a revised Amended Site Remediation Work Plan for the Jackson B#17 Wellhead Release Site (nAPP2111044488). In addition to the revised Amended Site Remediation Plan, we have addressed comments related to the denial below to provide further clarification.

**OCD comment:** Excavated material that is used as backfill material will need to meet the strictest closure requirement standards. A 5-point composite sample should represent no more than 50 cubic yards and be less than 600 mg/kg for Chlorides and 100 mg/kg for TPH.

**Response:** As indicated on page 4, paragraph 3 of the Amended Site Remediation Work Plan, on April 6 and 7, 2022, forty (40) five five-point composite stockpile samples (SP-1 through SP-40) were collected representing one (1) composite sample for every twenty-five (25) cubic yards. Analytical results indicated that all samples exhibited BTEX, TPH and chloride concentration below Table I closure criteria for depth to groundwater greater than one hundred (100) feet. The material was utilized to backfill the bottom portion of the excavation (deeper than four (4) feet bgs) with imported non-impacted material being used to backfill the upper portion of the excavation (shallower than four (4) feet bgs).

**OCD Comment:** Stockpile samples (SP23, SP24, and SP32) are over the limit.

**Response:** This soil was excavated during the benching process in April 2022 after excavation to a depth of four (4) feet below ground surface (bgs) and confirmation sampling (2/16/22) had already been completed, so this soil consisted only of soil from deeper than four (4) feet bgs, which only requires Table 1 closure criteria to be met once it is placed back in the excavation and if only used below the top four (4) feet of an excavation. This material was utilized to backfill the bottom portion of the excavation (deeper than four (4) feet bgs) with imported non-impacted material being used to backfill the upper portion of the excavation (shallower than four (4) feet bgs).

**OCD Comment:** Associated backfill material will need to be excavated and removed. All samples must be analyzed for all constituents listed in Table I of 19.15.29.12 NMAC. All sample points will need to be vertically

delineated. Soil samples will need to meet Table 1 Closure Criteria for proven depth to water determination. Sidewall samples should be delineated/excavated to 600 mg/kg for chlorides and 100 mg/kg for TPH to define the edge of the release.

**Response:** As previously indicated, the backfill material meets the requirements of Table I of 19.15.29.12 NMAC due to the fact the tested fill material was utilized as fill material to backfill the bottom portion of the excavation (deeper than four (4) feet bgs) with imported non-impacted material being used to backfill the upper portion of the excavation (shallower than four (4) feet bgs).

Based on the site activities conducted to date, all soil samples have been vertically and horizontally delineated and meet the Table I Closure Criteria with the exception of excavation bottom hole samples BH-17B and BH-18B. Due to the exceeding TPH GRO/DRO and Total TPH concentrations, EOG proposed in the April 21, 2022, Amended Site Remediation Work Plan, to install a vertical delineation soil boring in the area of BH-17 and BH-18 as well as to initiate microbial injection treatment of the soil with proposed confirmation soil boring sampling following the series of treatment events. Details of the soil boring and soil treatment activities conducted in 2022 and on-going treatment activities conducted to date are presented in the attached Amended Site Remediation Work Plan, dated March 20, 2023.

Regards,



**J.T. Murrey**  
Senior Project Manager

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Project Manager

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Our ref: 11228313-LTR-1

March 23, 2023

New Mexico Oil Conservation Division  
District 2  
811 South First Street  
Artesia, New Mexico 88210

Amended Site Remediation Work Plan  
Jackson B #17 Wellhead Release Site  
EOG Resources Inc.  
Incident ID: nAPP2111044488  
M-01-17S-30E, Eddy County, New Mexico

To Whom It May Concern:

## 1. Introduction

GHD Services Inc. (GHD), on behalf of EOG Resources Inc. (EOG), submits this Amended Site Remediation Work Plan to the New Mexico Oil Conservation Division (NMOCD) District 2 Office. On January 24, 2022, the NMOCD approved a Site Characterization and Remediation Work Plan dated August 27, 2021. This report provides documentation of remediation, sampling, and analyses in the affected area at the EOG Jackson B #17 Wellhead Release Site (Site). The Site is located in Unit Letter M Section 01 of Township 17 South and Range 30 East in Eddy County, New Mexico. The GPS coordinates for the release site are 32.85807 N latitude and 103.93198 W longitude. The release occurred on land managed by the Bureau of Land Management (BLM). Figure 1 depicts the Site location. The EOG production facility and other site details are depicted on Figure 2.

## 2. Background Information

A C-141 initial report for this release was submitted to the NMOCD on April 19, 2021. The C-141 stated that no known volume or date could be assigned to this historical release. The potential release area was discovered during EOG well plugging and site abandonment activities associated with this location. Soils within the former oil well appeared to be discolored and after discussions between field personnel and environmental staff EOG made the decision to file a C-141 for this suspect release location.

The release falls under the jurisdiction of the NMOCD District 2 Office in Artesia, New Mexico. The NMOCD assigned the release with Incident Number nAPP2111044488. The Initial Form C-141, Site Assessment/Characterization and Remediation Plan portions of Form C-141 for Incident Number nAPP2111044488 are attached to the front of this report.

### 3. Groundwater and Site Characterization

GHD characterized the Site according to Table I, Closure Criteria for Soils Impacted by a Release, from New Mexico Administrative Code (NMAC) Title 19, Chapter 15, Part 29, Section 12 (NMAC 19.15.29.12). The release falls under the jurisdiction of the NMOCD District 2 in Artesia, New Mexico. Details of the characterization can be found in the previously submitted Site Characterization and Remediation Work Plan dated August 27, 2021.

On May 18, 2021, Talon LPE (Talon) installed a temporary well, Jackson B #59, at GPS Coordinates, 32.85697 N latitude and 103.92703 W longitude to approximately 125 feet (ft) below ground surface (bgs.) which is located approximately 0.5 miles from the Site. The Jackson B #59 Temp Well was left open for 72 hours and a water level meter was utilized to determine the presence or absence of groundwater. No groundwater was detected and the temporary well was plugged and abandoned. Depth to groundwater for this Site is greater than 100 ft bgs. No other receptors (karst potential areas, water wells, playas, wetlands, waterways, lakebeds or ordinance boundaries) were located within each specific boundaries or distance from the Site. According to the Site characterization evaluation and 19.15.29.12.C(4)(a)(i), the Site is located within an area with depth to groundwater greater than 100 ft and meets the closure criteria for depth to groundwater greater than 100 ft in Table I in NMAC 19.15.29.12. The Site characterization documentation (Talon's Temporary Well Log, Karst Potential, FEMA, Points of Diversion and Wetlands maps) are provided in Attachment A. The soil and closure criteria are listed below:

**General Site Characterization and Groundwater:**

Site Characterization	Average Groundwater Depth (ft)
No Receptors Found	>100'

**Table 3.1 Closure Criteria for Soils Impacted by a Release (NMAC 19.15.29.12)**

Regulatory Standard	Benzene	BTEX	TPH (GRO+MRO)	TPH (GRO+DRO+MRO)	Chloride
19.15.29.13 Restoration, Reclamation and Re-Vegetation (Impacted Area 0-4 Feet)	10 mg/kg	50 mg/kg	---	100 mg/kg	600 mg/kg
19.15.29.12 NMAC Table I Closure Criteria for Soils Impacted by a Release	10 mg/kg	50 mg/kg	1,000 mg/kg	2,500 mg/kg	20,000 mg/kg

Notes: --- = not defined

### 4. Initial Soil Delineation Assessment Summary and Findings

On May 24 through 25, 2021, GHD Services Inc. (GHD) and EOG's contractor BDS Enterprises, LLC (BDS), on behalf of EOG, installed five test pits within the suspected impacted area. Soil samples were collected at 8 and 20 feet below ground surface (bgs) in test pit TP1 and at the surface and 2 feet bgs in TP2 through TP5. All soil samples were analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) by EPA Method 8021B, total petroleum hydrocarbons (TPH) by EPA Method 8015B Modified, and chloride by EPA Method 300 by Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico. Analytical results indicated test pit TP1 exhibited benzene, BTEX and Total TPH above Table I closure criteria at 8 feet and total TPH at 20

feet bgs. None of the other sample points exhibited benzene, BTEX, Total TPH, or chloride concentrations above Table I closure criteria. Test pits TP3 and TP5 exhibited TPH and/or chloride concentrations above 100 mg/kg and 600 mg/kg, respectively, in the first four feet.

On July 22, 2021, GHD and Talon mobilized to the Site to install a soil boring near TP1 to fully delineate the release to less than 100 mg/kg for TPH concentrations and 600 mg/kg for chloride concentrations. The soil boring was installed to a depth of 75 feet bgs. Samples were collected in approximate 5-foot intervals beginning at 25 feet bgs. Select soil samples were submitted to HEAL in Albuquerque, New Mexico and analyzed for BTEX by EPA Method 8021B, TPH by EPA Method 8015B Modified, and chloride by EPA Method 300. TPH concentrations were delineated to below 100 mg/kg at 25 feet bgs. The Soil Boring Log for TP1 is provided as Attachment B.

Figure 2, Site Assessment: Soil Analytical Results Map, depicts the locations of the initial delineation samples and analytical concentrations. Analytical results are provided in Table 1, on Figure 2, and in the Laboratory Analytical Reports provided in Attachment C.

## 5. Excavation, Confirmation Sampling, Waste Management Activities, and Backfilling Activities

Due to the initial soil sampling activities exhibiting BTEX, TPH, and chloride concentrations above Table I closure criteria values, GHD and Standard Safety and Supply (SS) mobilized to the Site on February 9, 2022, to excavate the affected soils. Excavation activities continued through April 6, 2022, and the extents were modified based off ongoing analytical sample results (discussed below). The area containing affected soil totaled approximately 2,802 square feet and was excavated to depths ranging from approximately four to 30 feet bgs. As shown in Figure 3, a total of 22 excavation sidewall composite, 26 excavation bottom hole composite, and four excavation ramp composite confirmation samples were collected. Excavation bottom hole confirmation samples were collected at the following depths:

- BH-1 through BH-11: approximately 4 feet bgs.
- BH-12 through BH-14: approximately 9 feet bgs.
- BH-15 and BH-16: approximately 15 feet bgs.
- BH-17 and BH-18 locations: approximately 21, 22, 25, 27, and 30 feet bgs.

Areas with excavation bottom hole samples exceeding Table I closure criteria (BH-17, BH-18, and Ramp-3) were excavated further and resampled; Ramp-3A was collected at a depth of 4 feet bgs and final confirmation samples for BH-17 and BH-18 locations (BH-17B and BH-18B) were collected at a depth of approximately 30 feet bgs. Areas with excavation sidewall composite samples exhibiting concentrations exceeding Table I closure criteria (SW-S-21'-27'N, and SW-E-21'-27') were excavated further and resampled; SW-S-21'-30', and SW-E-21'-30'. All confirmation samples collected represented areas no greater than 200 square feet. The 52 composite confirmation samples were taken to HEAL in Albuquerque, New Mexico and analyzed for BTEX by EPA Method 8021B, TPH by EPA Method 8015B Modified, and chloride by EPA Method 300. Two of the final confirmation samples exhibited TPH concentrations above Table I closure criteria (BH-17B and BH-18B). None of the other final confirmation samples exhibited benzene, BTEX, TPH, or chloride concentrations above Table I closure criteria. Laboratory Analytical Reports and Chain-of-Custody Documentation are provided in Attachment C. Analytical results are summarized in Table 1 and on attached Figure 3. A photographic log is included as Attachment D.

Waste management activities were performed in coordination with EOG directives. EOG obtained regulatory approval via the successful processing of Form C-138 Request for Approval to Accept Solid Waste. The waste was approved for acceptance at the OCD-permitted (WM-1-035), Lea Land, LLC facility located at MM64, Highway 62/180 East, Carlsbad, NM, 88220. Approximately 1,394.35 tons of impacted soil were disposed at

Lea Land, LLC, the waste manifests from February 14, 2022, through April 8, 2022, are available upon request and are not included in this report due to size of the file. A Daily Disposal Summary is provided as Table 2. Confirmation sampling notifications are provided as Attachment E.

In order to excavate to 30 feet bgs, approximately 1,000 cubic yards of non-impacted material had to be removed from the area. The non-impacted material was stockpiled on Site in a separate stockpile from that of the impacted material. On April 6 and 7, 2022, 40 five-point composite stockpile samples (SP-1 through SP-40) were collected representing one composite sample for every 25 cubic yards. Analytical results indicated that all samples exhibited BTEX, TPH, and chloride concentrations below Table I closure criteria for depth to groundwater greater than one hundred (100) feet. The material was utilized to backfill the bottom portion of the excavation (deeper than 4 feet bgs) with imported non-impacted material being used to backfill the upper portion of the excavation (shallower than 4 feet bgs). Backfilling activities were completed on April 16, 2022.

## 6. Additional Soil Treatment Activities

As previously indicated, two of the final confirmation samples exhibited TPH concentrations above Table I closure criteria (BH-17B and BH-18B). As such and originally proposed in the Amended Site Remediation Work Plan, dated April 21, 2022, bioremediation through microbial injections was selected to remediate those exceeding areas. Drilling oversight and installation of soil treatment wells was conducted on April 20, 2022 and April 28, 2022. Two soil treatment wells SB-1 and SB-2 were installed within the affected area to assist with the bioremediation and venting of the hydrocarbon impacts below 30 feet bgs.

One treatment well was installed for every 100 square feet of impacted area to be remediated. The wells consisted of 2-inch pvc pipe with slotted well screen installed for the last 5-10 feet of the well, well depth was staggered to ensure the microbial product used to increase bioremediation made contact with all areas that required treatment. The product utilized for treatment was Rigby Taylor (RT) Remediact, which is a concentrated solution of bacteria and microorganisms used to bioremediate hydrocarbons in soils. The RT Remediact was absorbed into the surrounding soils, allowing for the digestion of organics and the breakdown of the residual hydrocarbons. The RT Remediact was injected into the wells every two weeks for approximately twelve weeks, totaling six separate treatments. Each well was injected with 37 gallons of solution for each treatment event. A total of 444 gallons of solution and 4,440 gallons of water was injected for the entire treatment period. The first treatment was completed the week of August 22, 2022, and the final treatment was completed the week of October 31, 2022.

## 7. Additional Soil Treatment Confirmation Soil Sampling Summary and Findings

On November 10, 2022, GHD and HCI Drilling advanced two confirmation soil borings (CB-1 and CB-2) for the purpose of collecting confirmation soil samples within the treatment areas. This consisted of performing one sample boring per 200 square feet, with samples collected at 5-foot intervals beginning at 28 feet bgs to a depth of 35 feet bgs. All confirmation soil samples were analyzed for BTEX by EPA Method 8021B, TPH by EPA Method 8015B Modified, and chloride by EPA Method 300 by Hall Environmental Analysis Laboratory, Inc. in Albuquerque, New Mexico.

One of the two soil borings (CB-1) had samples exceeding applicable Table I closure criteria for TPH GRO/DRO and Total TPH for groundwater greater than 100 feet. Figure 2, Site Details Map, depicts the locations of the confirmation boring samples. The CB-1 and CB-2 soil boring logs are provided as Attachment B. Analytical results are provided in Table 1, on Figure 3, and in the Laboratory Analytical Reports provided in Attachment C.



## 8. nAPP2111044488 Proposed Work Plan

CB-1 exhibited TPH GRO, TPH DRO, and Total TPH above Table I closure criteria to a depth of thirty-five (35) feet bgs. None of the other samples submitted for analysis exhibited exceedances above Table I closure criteria. Based on results from the confirmation soil borings, further soil treatment injections are required to adequately breakdown the hydrocarbon within the impacted soils.

The RT Remediate microbial strain will continue to be injected into the well (CB-1) every three weeks for approximately 18 weeks, totaling six separate treatment events. The amount of treatment solution will be increased for the injection events. Approximately 30 days after the last treatment, a core rig will be brought in to perform sampling of the treated area. This will consist of performing one sample boring per 200 square feet, with samples collected at 5-foot increments with anticipated sampling to begin at 33 feet bgs to a depth of 35 feet bgs.

Once the confirmation sample collected from the soil boring post treatment are below Table I closure criteria, both treatment wells will be plugged with non-impacted soil material and cut/capped at a depth of 3 feet bgs, or completely removed with the bore holes backfilled with non-impacted soil material. A closure report will be prepared to document the additional remediation activities and submitted to the NMOCD. If the samples exhibit Total TPH and TPH GRO and DRO concentrations above Table I closure criteria, an update will be provided to NMOCD with the progress to date with the additional remediation steps that will occur for the Site.

If you have any questions or comments concerning this Amended Site Remediation Work Plan, please do not hesitate to contact our Midland office at (432) 686-0086.

Regards,



**J.T. Murrey**  
Project Director

+1 361 252 6136  
JT.Murrey@ghd.com



**Moshghan Mansoori**  
Senior Project Manager

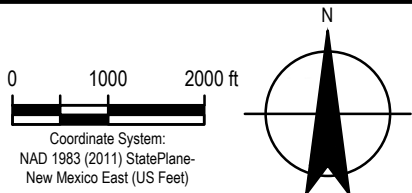
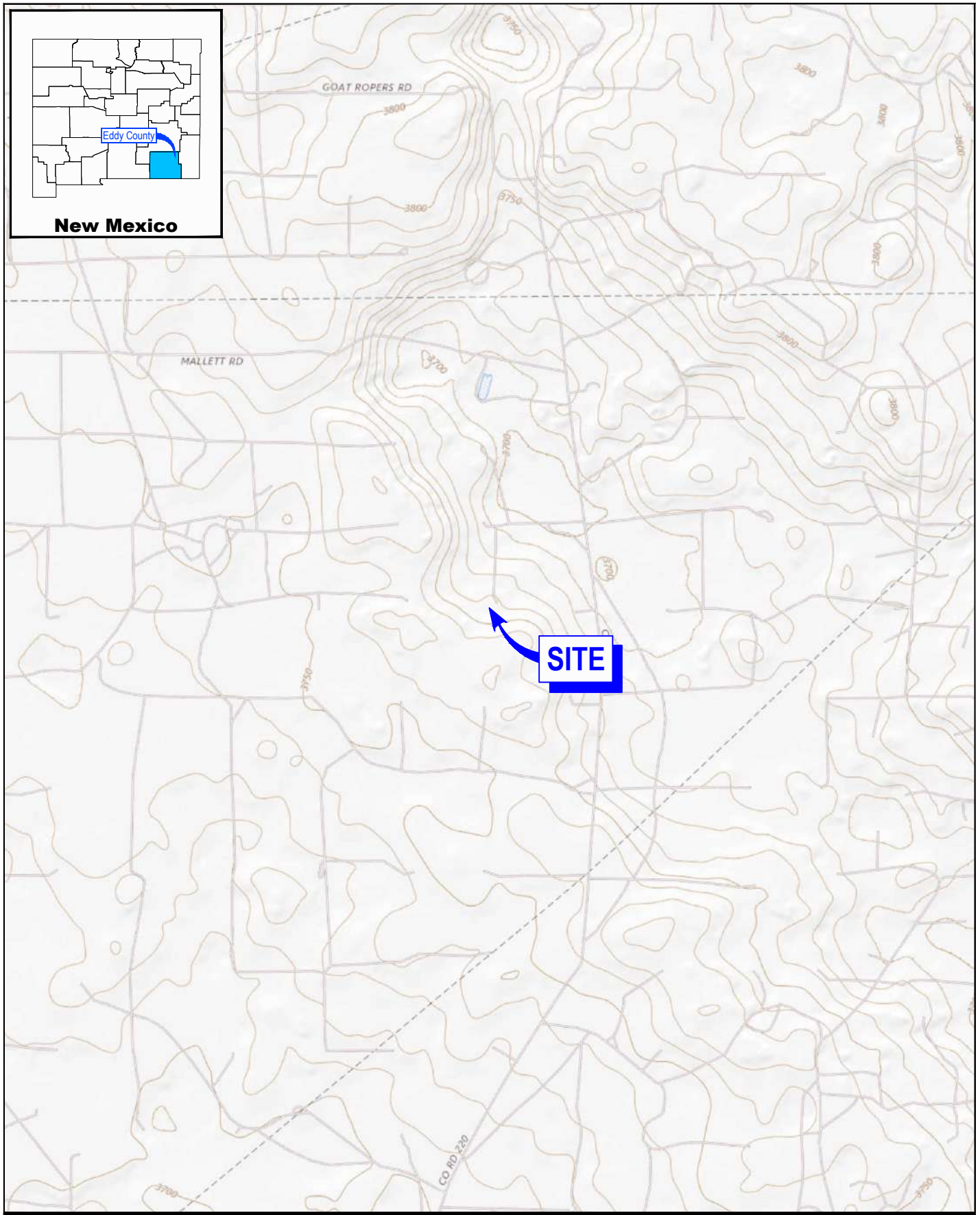
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Moshghan.Mansoori@ghd.com

JTM/MM/mk

Encl.    Figure 1 – Site Location Map  
          Figure 2 – Site Details Map  
          Figure 3 – Confirmation Soil Analytical  
          Table 1 – Summary of Soil Analytical Data  
          Table 2 – Soil Disposal Summary  
          Attachment A – Site Characterization Documentation  
          Attachment B – TP1, SB-1, SB-2, CB-1, and CB-2 Soil Boring Logs  
          Attachment C – Laboratory Analytical Reports and Chain-of-Custody Documentation  
          Attachment D – Photographic Log  
          Attachment E – Confirmation Sampling Notifications

cc:       Chase Settle





EOG RESOURCES  
EDDY COUNTY, NEW MEXICO  
JACKSON B #17 WELLHEAD

Project No. 11228313  
Date November 2022

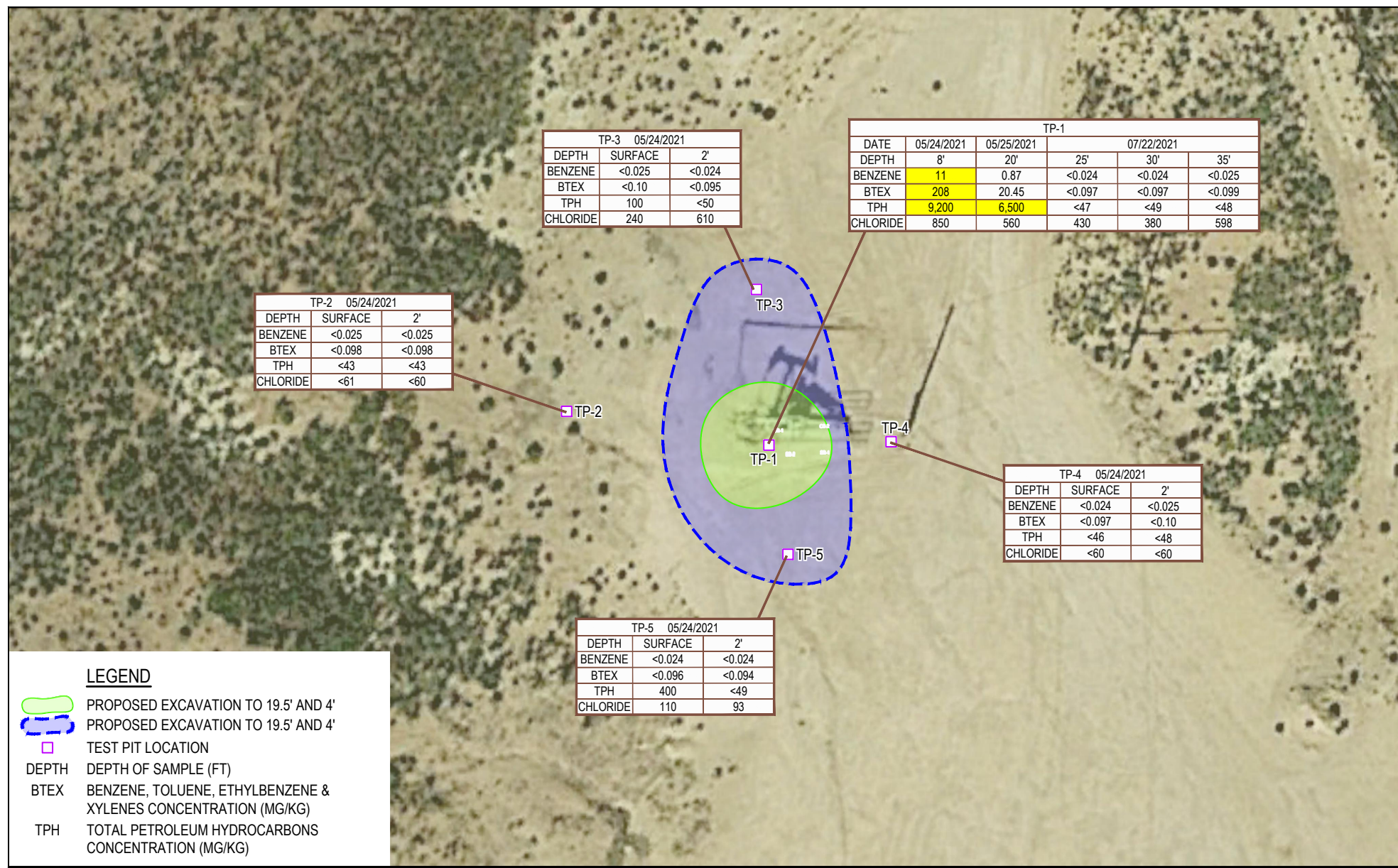
SITE LOCATION MAP

FIGURE 1

Filename: \\ghdnet\ghd\USMidland\Projects\562\11228313\Digital\_Design\CAD\Figures\RPT001\11228313-GHD-0000-RPT-EN-0101\_DL-001.dwg

Data Source: USGS 7.5 Minute Quad "Loco Hills and Henshaw Tank, New Mexico"  
Lat/Long: 32.858019° North, 103.931812° West



**NOTES:**

1. RESULTS IN MILLIGRAMS PER KILOGRAM (MG/KG).
2. SEE TABLE 1 FOR FULL ANALYTICAL RESULTS/DETAILS.
3. YELLOW SHADED CELLS INDICATE EXCEEDANCE.



EOG RESOURCES  
EDDY COUNTY, NEW MEXICO  
JACKSON B #17 WELLHEAD

Project No. 11228313  
Date March 2023

**SITE ASSESSMENT:  
SOIL ANALYTICAL RESULTS MAP**

**FIGURE 2**



Sample ID	Sample Date	Depth (ft bgs)	Benzene	BTEX	Total Petroleum Hydrocarbons (TPH)	Chloride
			mg/kg	mg/kg	Total GRO/DRO/MRO	mg/kg
Table I Closure Criteria for Soils >100 feet Depth to Groundwater 19.15.29 NMAC						
10 mg/kg	50 mg/kg	2,500 mg/kg	20,000 mg/kg			
Initial Assessment Samples						
TP1-8	5/24/21	8	11	208	9,200	850
TP1-20	5/25/21	20	0.87	20.45	6,500	560
TP1-25	7/22/21	25	<0.024	<0.097	<47	430
TP1-30	7/22/21	30	<0.024	<0.097	<49	380
TP1-35	7/22/21	35	<0.025	<0.099	<48	598
TP2-S	5/24/21	Surface	<0.025	<0.098	<43	<61
TP2-2	5/24/21	2	<0.025	<0.098	<43	<60
TP3-S	5/24/21	Surface	<0.025	<0.10	100	240
TP3-2	5/24/21	2	<0.024	<0.095	<50	610
TP4-S	5/24/21	Surface	<0.024	<0.097	<46	<60
TP4-2	5/24/21	2	<0.025	<0.10	<48	<60
TP5-S	5/24/21	Surface	<0.024	<0.096	400	110
TP5-2	5/24/21	2	<0.024	<0.094	<49	93
Sidewall Confirmation Samples						
SW-1	2/15/22	Sidewall	<0.024	<0.097	138	240
SW-2	2/15/22	Sidewall	<0.025	<0.098	85	<60
SW-3	2/15/22	Sidewall	<0.023	<0.094	109	130
SW-4	2/15/22	Sidewall	<0.024	<0.096	<48	<60
SW-5	2/15/22	Sidewall	<0.025	<0.099	458	90
SW-6	2/15/22	Sidewall	<0.025	<0.099	<48	570
SW-7	2/15/22	Sidewall	<0.024	<0.095	<44	110
SW-8	2/15/22	Sidewall	<0.025	<0.10	<47	390
SW-9	2/15/22	Sidewall	<0.11	<0.45	1470	3100
SW-10	2/15/22	Sidewall	<0.024	<0.098	<46	760
SW-11	2/15/22	Sidewall	<0.023	<0.094	<49	1000
SW-12	2/15/22	Sidewall	<0.024	<0.098	<47	720
SW-13	2/15/22	Sidewall	<0.024	<0.096	<50	420
SW-14	2/15/22	Sidewall	<0.024	<0.097	<44	370
SW-15	2/15/22	Sidewall	<0.12	<0.47	1040	660
SW-16	2/15/22	Sidewall	<0.025	<0.098	<46	660
SW-N-21'-27'	3/15/22	Sidewall	<0.023	<0.094	<50	240
SW-S-24'-27'	3/15/22	Sidewall	<0.42	0.45	4,066	830
SW-S-21'-30'	4/6/22	Sidewall	<0.050	<0.300	124.2	976
SW-E-24'-27'	3/15/22	Sidewall	<0.42	<0.49	4,400	860
SW-E-21'-30'	4/6/22	Sidewall	<0.050	<0.300	<10.0	432
SW-W-21'-27'	3/15/22	Sidewall	<0.025	<0.10	<48	740

LEGEND

EXCAVATED AREA

DEPTH OF SAMPLE (FT)

BENZENE, TOLUENE, ETHYLBENZENE & XYLENES CONCENTRATION (MG/KG)

TOTAL PETROLEUM HYDROCARBONS CONCENTRATION (MG/KG)

INDICATES SIDE WALL COMPOSITE SAMPLE

INDICATES SIDE WALL COMPOSITE SAMPLE

INDICATES SIDE WALL COMPOSITE SAMPLE

SAMPLE POINT EXCAVATED

NOTES:

1. RESULTS IN MILLIGRAMS PER KILOGRAM (MG/KG).

2. SEE TABLE 1 FOR FULL ANALYTICAL RESULTS/DETAILS.

3. YELLOW SHADED CELLS INDICATE EXCEEDANCE.

Sample ID	Sample Date	Depth (ft bgs)	Benzene	BTEX	Total Petroleum Hydrocarbons (TPH)	Chloride
			mg/kg	mg/kg	mg/kg	mg/kg
			Table 1 Closure Criteria for Soils >100 feet Depth to Groundwater 19.15.29 NMAC			
			10 mg/kg	50 mg/kg	2,500 mg/kg	20,000 mg/kg
Bottom Hole Confirmation Samples						
BH-1	2/16/22	4	<0.024	<0.094	<50	690
BH-2	2/16/22	4	<0.12	<0.49	440	480
BH-3	2/16/22	4	<0.024	<0.098	196	<60
BH-4	2/16/22	4	<0.024	<0.097	<50	<60
BH-5	2/16/22	4	<0.025	<0.098	<49	<60
BH-6	2/16/22	4	<0.024	<0.097	84	240
BH-7	2/16/22	4	<0.023	<0.094	<49	5,200
BH-8	2/16/22	4	<0.024	<0.095	<50	2,100
BH-9	2/16/22	4	<0.024	<0.096	<49	720
BH-10	2/16/22	4	<0.025	<0.098	<50	220
BH-11	2/16/22	4	<0.024	<0.097	<49	440
BH-12	2/16/22	9	<0.025	<0.099	<49	270
BH-13	2/16/22	9	<0.024	<0.098	<50	390
BH-14	2/16/22	9	<0.025	<0.10	<50	1,200
BH-15	2/16/22	15	<0.025	<0.099	<49	410
BH-16	2/16/22	15	<0.024	<0.099	<49	560
BH-17	2/15/22	24	<0.12	1.00	7,568	750
BH-22-17	3/15/22	22	<0.082	0.18	3,718	910
BH-26-17	3/15/22	26	<0.11	4.0	9,160	780
BH-27-17	3/15/22	27	<0.12	1.4	8,600	820
BH-17B	4/6/22	30	0.210	3.72	5,027	928
BH-18	2/15/22	24	<0.024	0.33	4,935	800
BH-22-18	3/15/22	22	<0.080	0.20	4,320	780
BH-26-18	3/15/22	26	<0.12	4.3	9,570	880
BH-27-18	3/15/22	27	<0.12	1.4	9,710	840
BH-18B	4/6/22	30	0.105	5.75	5,015	1,010
Ramp-1	2/16/22	-	<0.025	<0.099	<48	670
Ramp-2	2/16/22	-	<0.025	<0.098	<47	520
Ramp-3	2/16/22	-	<0.024	<0.097	<50	1,000
Ramp-3A	3/15/22	-	<0.017	<0.069	<47	120
Soil Pile Samples						
SP-1	4/6/22	-	<0.050	<0.300	<10	320
SP-2	4/6/22	-	<0.050	<0.300	<10	320
SP-3	4/6/22	-	<0.050	<0.300	<10	320
SP-4	4/6/22	-	<0.050	<0.300	<10	240
SP-5	4/6/22	-	<0.050	<0.300	<10	336
SP-6	4/6/22	-	<0.050	<0.300	<10	400
SP-7	4/6/22	-	<0.050	<0.300	<10	160
SP-8	4/6/22	-	<0.050	<0.300	<10	160
SP-9	4/6/22	-	<0.050	<0.300	<10	336
SP-10	4/6/22	-	<0.050	<0.300	<10	320
SP-11	4/6/22	-	<0.050	<0.300	<10	400
SP-12	4/6/22	-	<0.050	<0.300	<10	480
SP-13	4/6/22	-	<0.050	<0.300	<10	512
SP-14	4/6/22	-	<0.050	<0.300	<10	432
SP-15	4/6/22	-	<0.050	<0.300	13.7	432
SP-16	4/6/22	-	<0.050	<0.300	32.6	384
SP-17	4/6/22	-	<0.050	<0.300	<10	400
SP-18	4/6/22	-	<0.050	<0.300	<10	432
SP-19	4/6/22	-	<0.050	<0.300	<10	320
SP-20	4/6/22	-	<0.050	<0.300	16.9	368
SP-21	4/7/22	-	<0.050	<0.300	11.7	352
SP-22	4/7/22	-	<0.050	<0.300	<10.0	176
SP-23	4/7/22	-	<0.050	<0.300	283	160
SP-24	4/7/22	-	<0.050	<0.300	148	192
SP-25	4/7/22	-	<0.050	<0.300	<10.0	480
SP-26	4/7/22	-	<0.050	<0.300	<10.0	176
SP-27	4/7/22	-	<0.050	<0.300	<10.0	192
SP-28	4/7/22	-	<0.050	<0.300	<10.0	400
SP-29	4/7/22	-	<0.050	<0.300	<10.0	416
SP-30	4/7/22	-	<0.050	<0.300	<10.0	432
SP-31	4/7/22	-	<0.050	<0.300	<10.0	352
SP-32	4/7/22	-	<0.050	<0.300	107	304
SP-33	4/7/22	-	<0.050	<0.300	<10.0	272
SP-34	4/7/22	-	<0.050	<0.300	10.3	224
SP-35	4/7/22	-	<0.050	<0.300	43.5	240
SP-36	4/7/22	-	<0.050	<0.300	22.7	352
SP-37	4/7/22	-	<0.050	<0.300	<10.0	352
SP-38	4/7/22	-	<0.050	<0.300	<10.0	336
SP-39	4/7/22	-	<0.050	<0.300	<10.0	384
SP-40	4/7/22	-	<0.050	<0.300	<10.0	448
Soil Boring Samples						
SB-1 (35')	4/26/22	35	<0.12	<0.50	<49	2,200
SB-1 (40')	4/26/22	40	<0.025	<0.10	<47	950
SB-2 (35')	4/28/22	35	<0.12	<0.48	600	400
SB-2 (40')	4/28/22	40	<0.12	<0.50	620	270
SB-2 (45')	4/28/22	45	<0.024	<0.094	<47	1,400
Confirmation Soil Samples						
CB-1 (30')	11/10/22	30	<0.024	<0.10	880	98
CB-1 (35')	11/10/22	35	<0.025	<0.10	3800	180
CB-2 (30')	11/10/22	30	<0.025	<0.10	<48	340
CB-2 (35')	11/10/22	35	<0.025	<0.10	<48	490

EOG RESOURCES  
EDDY COUNTY, NEW MEXICO  
JACKSON B #17 WELLHEAD

CONFIRMATION SAMPLING:  
SOIL ANALYTICAL RESULTS MAP

Project No. 11228313  
Date March 2023

FIGURE 3

Data Source: Image © 2021 Google - Imagery Date: November 2, 2017  
Lat/Long: 32.858019° North, 103.931812° West

Released to Imaging: 9/26/2023 2:14:58 PM



Table 1  
Summary of Soil Analytical Data  
Jackson B #17 Wellhead  
EOG Resources  
Eddy County, New Mexico

Sample ID	Sample Date	Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Total Petroleum Hydrocarbons (TPH)				Chloride
								GRO (C6-C10)	DRO (C10-C28)	MRO (C28-C35)	Total GRO/DRO/MRO	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			Table I Closure Criteria for Soils >100 feet Depth to Groundwater 19.15.29 NMAC									
10 mg/kg	---	---	---	50 mg/kg	1,000 mg/kg		---	2,500 mg/kg	20,000 mg/kg			
Initial Assessment Samples												
TP1-8	5/24/21	8	11	58	63	76	208	1,600	3,200	4,400	9,200	850
TP1-20	5/25/21	20	0.87	0.38	10	9.2	20.45	570	3,500	2,500	6,500	560
TP1-25	7/22/21	25	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<9.4	<47	<47	430
TP1-30	7/22/21	30	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<9.8	<49	<49	380
TP1-35	7/22/21	35	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.7	<48	<48	598
TP2-S	5/24/21	Surface	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<8.5	<43	<43	<61
TP2-2	5/24/21	2	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<8.6	<43	<43	<60
TP3-S	5/24/21	Surface	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<8.6	100	100	240
TP3-2	5/24/21	2	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<10	<50	<50	610
TP4-S	5/24/21	Surface	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	<9.2	<46	<46	<60
TP4-2	5/24/21	2	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.7	<48	<48	<60
TP5-S	5/24/21	Surface	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	170	230	400	110
TP5-2	5/24/21	2	<0.024	<0.047	<0.047	<0.094	<0.094	<4.7	<9.7	<49	<49	93
Sidewall Confirmation Samples												
SW-1	2/15/22	Sidewall	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	54	84	138	240
SW-2	2/15/22	Sidewall	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	14	71	85	<60
SW-3	2/15/22	Sidewall	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	11	98	109	130
SW-4	2/15/22	Sidewall	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<9.6	<48	<48	<60
SW-5	2/15/22	Sidewall	<0.025	<0.049	<0.049	<0.099	<0.099	<4.9	78	380	458	90
SW-6	2/15/22	Sidewall	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.7	<48	<48	570
SW-7	2/15/22	Sidewall	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<8.8	<44	<44	110
SW-8	2/15/22	Sidewall	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.5	<47	<47	390
SW-9	2/15/22	Sidewall	<0.11	<0.23	<0.23	<0.46	<0.45	<23	870	600	1470	3100
SW-10	2/15/22	Sidewall	<0.024	<0.049	<0.049	<0.098	<0.098	<4.9	<9.2	<46	<46	760
SW-11	2/15/22	Sidewall	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<9.9	<49	<49	1000
SW-12	2/15/22	Sidewall	<0.024	<0.049	<0.049	<0.098	<0.098	<4.9	<9.5	<47	<47	720
SW-13	2/15/22	Sidewall	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<10	<50	<50	420
SW-14	2/15/22	Sidewall	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	<8.9	<44	<44	370
SW-15	2/15/22	Sidewall	<0.12	<0.24	<0.24	<0.47	<0.47	<24	790	250	1040	660
SW-16	2/15/22	Sidewall	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<9.3	<46	<46	660
SW-N-21'-27'	3/15/22	Sidewall	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<10	<50	<50	240
SW-S-21'-27'	3/15/22	Sidewall	<0.12	<0.24	0.45	<0.47	0.45	56	2,600	1,400	4,056	830
SW-S-21'-30'	4/6/22	Sidewall	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	107	17.2	124.2	976
SW-E-21'-27'	3/15/22	Sidewall	<0.12	<0.24	<0.24	<0.49	<0.49	<24	3,300	1,100	4,400	800
SW-E-21'-30'	4/6/22	Sidewall	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	432
SW-W-21'-27'	3/15/22	Sidewall	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.6	<48	<48	740

Table 1  
Summary of Soil Analytical Data  
Jackson B #17 Wellhead  
EOG Resources  
Eddy County, New Mexico

Sample ID	Sample Date	Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Total Petroleum Hydrocarbons (TPH)				Chloride
								GRO (C6-C10)	DRO (C10-C28)	MRO (C28-C35)	Total GRO/DRO/MRO	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			Table I Closure Criteria for Soils >100 feet Depth to Groundwater 19.15.29 NMAC									
10 mg/kg	---	---	---	50 mg/kg	1,000 mg/kg		---	2,500 mg/kg	20,000 mg/kg			
Bottom Hole Confirmation Samples												
BH-1	2/16/22	4	<0.024	<0.047	<0.047	<0.094	<0.094	<4.7	<10	<50	<50	690
BH-2	2/16/22	4	<0.12	<0.25	<0.25	<0.49	<0.49	<25	280	160	440	480
BH-3	2/16/22	4	<0.024	<0.049	<0.049	<0.098	<0.098	<4.9	56	140	196	<60
BH-4	2/16/22	4	<0.024	<0.048	<0.048	<0.097	<0.097	<4.8	<10	<50	<50	<60
BH-5	2/16/22	4	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<9.7	<49	<49	<60
BH-6	2/16/22	4	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	12	72	84	240
BH-7	2/16/22	4	<0.023	<0.047	<0.047	<0.094	<0.094	<4.7	<9.9	<49	<49	5,200
BH-8	2/16/22	4	<0.024	<0.048	<0.048	<0.095	<0.095	<4.8	<9.9	<50	<50	2,100
BH-9	2/16/22	4	<0.024	<0.048	<0.048	<0.096	<0.096	<4.8	<9.7	<49	<49	720
BH-10	2/16/22	4	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<10	<50	<50	220
BH-11	2/16/22	4	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	<9.9	<49	<49	440
BH-12	2/16/22	9	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.9	<49	<49	270
BH-13	2/16/22	9	<0.024	<0.049	<0.049	<0.098	<0.098	<4.9	<10	<50	<50	390
BH-14	2/16/22	9	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<10	<50	<50	1,200
BH-15	2/16/22	15	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.7	<49	<49	410
BH-16	2/16/22	15	<0.024	<0.049	<0.049	<0.099	<0.099	<4.9	<9.7	<49	<49	560
BH-17	2/15/22	21	<0.12	<0.23	0.47	0.53	1.00	58	5,200	2,300	7,558	750
BH-22 17	3/15/22	22	<0.082	<0.16	0.18	0.33	0.18	18	2,700	1,000	3,718	910
BH-25 17	3/15/22	25	<0.11	<0.23	2.2	1.8	4.0	150	6,300	2,700	9,150	780
BH-27 17	3/15/22	27	<0.12	<0.24	0.91	0.5	1.4	100	6,100	2,400	8,600	820
BH-17B	4/6/22	30	0.210	0.413	1.20	1.90	3.72	215	4,090	722	5,027	928
BH-18	2/15/22	21	<0.024	<0.048	0.14	0.19	0.33	35	3,200	1,700	4,935	800
BH-22 18	3/15/22	22	<0.080	<0.16	0.20	0.32	0.20	20	3,000	1,300	4,320	780
BH-25 18	3/15/22	25	<0.12	<0.24	2.4	1.9	4.3	170	6,400	3,000	9,570	880
BH-27 18	3/15/22	27	<0.12	<0.24	0.85	0.51	1.4	110	7,300	2,300	9,710	840
BH-18B	4/6/22	30	0.105	0.381	2.23	3.04	5.75	241	4,080	694	5,015	1,010
Ramp-1	2/16/22	-	<0.025	<0.050	<0.050	<0.099	<0.099	<5.0	<9.7	<48	<48	670
Ramp-2	2/16/22	-	<0.025	<0.049	<0.049	<0.098	<0.098	<4.9	<9.5	<47	<47	520
Ramp-3	2/16/22	-	<0.024	<0.049	<0.049	<0.097	<0.097	<4.9	<10	<50	<50	1,000
Ramp-3A	3/15/22	-	<0.017	<0.035	<0.035	<0.069	<0.069	<3.5	<9.4	<47	<47	120

Table 1  
Summary of Soil Analytical Data  
Jackson B #17 Wellhead  
EOG Resources  
Eddy County, New Mexico

Sample ID	Sample Date	Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Total Petroleum Hydrocarbons (TPH)				Chloride
								GRO (C6-C10)	DRO (C10-C28)	MRO (C28-C35)	Total GRO/DRO/MRO	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			Table I Closure Criteria for Soils >100 feet Depth to Groundwater 19.15.29 NMAC									
10 mg/kg	---	---	---	50 mg/kg	1,000 mg/kg		---	2,500 mg/kg	20,000 mg/kg			
Soil Pile Samples												
SP-1	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	320
SP-2	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	320
SP-3	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	320
SP-4	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	240
SP-5	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	336
SP-6	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	400
SP-7	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	160
SP-8	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	160
SP-9	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	336
SP-10	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	320
SP-11	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	400
SP-12	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	480
SP-13	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	512
SP-14	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	432
SP-15	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	13.7	<10	13.7	432
SP-16	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	32.6	<10	32.6	384
SP-17	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	400
SP-18	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	432
SP-19	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	<10	<10	<10	320
SP-20	4/6/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10	16.9	<10	16.9	368
SP-21	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	11.7	<10.0	11.7	352
SP-22	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	176
SP-23	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	186	97.1	283	160
SP-24	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	94.1	53.9	148	192
SP-25	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	480
SP-26	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	176
SP-27	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	192
SP-28	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	400
SP-29	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	416
SP-30	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	432
SP-31	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	352
SP-32	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	84	23	107	304
SP-33	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	272
SP-34	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	10.3	<10.0	10.3	224
SP-35	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	30.7	12.8	43.5	240
SP-36	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	22.7	<10.0	22.7	352
SP-37	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	352
SP-38	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	336
SP-39	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	384
SP-40	4/7/22	-	<0.050	<0.050	<0.050	<0.150	<0.300	<10.0	<10.0	<10.0	<10.0	448

Table 1  
Summary of Soil Analytical Data  
Jackson B #17 Wellhead  
EOG Resources  
Eddy County, New Mexico

Sample ID	Sample Date	Depth (ft bgs)	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Total Petroleum Hydrocarbons (TPH)				Chloride
								GRO (C6-C10)	DRO (C10-C28)	MRO (C28-C35)	Total GRO/DRO/MRO	
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
			Table I Closure Criteria for Soils >100 feet Depth to Groundwater 19.15.29 NMAC									
			10 mg/kg	---	---	---	50 mg/kg	1,000 mg/kg		---	2,500 mg/kg	20,000 mg/kg
Soil Boring Samples												
SB-1 (35')	4/26/22	35	<0.12	<0.25	<0.25	<0.50	<0.50	<25	<9.9	<49	<49	2,200
SB-1 (40')	4/26/22	40	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<9.4	<47	<47	950
SB-2 (35')	4/28/22	35	<0.12	<0.24	<0.24	<0.48	<0.48	<24	410	190	600	400
SB-2 (40')	4/28/22	40	<0.12	<0.25	<0.25	<0.50	<0.50	<25	410	210	620	270
SB-2 (45')	4/28/22	45	<0.024	<0.047	<0.047	<0.094	<0.094	<4.7	<9.4	<47	<47	1,400
Confirmation Soil Samples												
CB-1 (30')	11/10/22	30	<0.024	<0.048	<0.048	<0.096	<0.10	<4.8	580	300	880	98
CB-1 (35')	11/10/22	35	<0.025	<0.050	<0.050	<0.099	<0.10	<5.0	2800	1000	3800	180
CB-2 (30')	11/10/22	30	<0.025	<0.050	<0.050	<0.10	<0.10	<5.0	<14	<48	<48	340
CB-2 (35')	11/10/22	35	<0.025	<0.049	<0.049	<0.099	<0.10	<4.9	<14	<48	<48	490

- Notes:
1. Values reported in mg/kg

2. < = Value Less than Reporting Limit (RL)

3. Bold Indicates Analyte Detected

4. BTEX analyses by EPA Method SW 8021B.

5. TPH analyses by EPA Method SW 8015 Mod.

B-DH 2

Sample Point Excavated
6. GRO/DRO/MRO = Gasoline/Diesel/Motor Oil

7. Yellow shaded cells indicate analytical samples that exceed the NMAC 19.15.29.12 Table I Closure Criteria for the site.

8. Peach shaded cells indicate analytical samples that exceed the NMAC 19.15.29.12 Table I Closure Criteria for depth to groundwater <50 ft bgs.

9. J - the target analytes was positively identified below the quantitation limit and above the detection limit.

10. --- = not defined

**Table 2**  
**Daily Disposal Summary**  
**Jackson B #17 Wellhead**  
**EOG Resources**  
**Eddy, County, New Mexico**

<b>Date of Disposal</b>	<b>Total Pounds Disposed</b>	<b>Total Tons Disposed</b>
2/14/2022	632,380	316.19
2/15/2022	690,400	345.20
2/16/2022	936,740	468.37
3/15/2022	89,920	44.96
4/8/2022	439,250	219.63
<b>Project Total</b>	<b>2,788,690</b>	<b>1394.35</b>



# Attachments

# **Attachment A**

## **Site Characterization Documentation**




# EOG Resources

Eddy County, NM

Groundwater Reference Map

## Legend

-  .10 Miles
-  .30 Miles
-  .50 Miles
-  Jackson B
-  Temporary Well







# EOG Jackson B#59

Eddy County, New Mexico

## Legend

 32.85697,-103.92703

32.85697,-103.92703

 Jackson B#59 Temp Well

Square Lake Rd

220

Google Earth

Released to Imaging: 9/26/2023 2:14:58 PM



1000 ft





# BORING LOG

Project No.: 700438.238.01

Weather: Clear, Temp.: 75°F

Driller: D. Londagin

Site Name: Jackson B #59

Logger: D. Adkins

Rig Type: Reich Drill

Location: Eddy County, New Mexico

Field Instrument: NA

Bit Size: 5-7/8"

Date: 5/18/2021

Latitude: 32.85697 N

Drilling Method: Air Rotary

Boring Number: B-1

Longitude: -103.92703 W

Sample Retrieval Method: Drill Cuttings

Time	Lab Sample Collected	Sample Interval (ft)	Sample Recovery (ft)	USCS	Composition (%)	Sample Material/Comments Include composition, color, grain size, moisture, hardness, plasticity, density	Hydrocarbon Odor	PID (ppm)
	<input type="checkbox"/>	0-30'				Red/brown fine Sand (SP)	<u>None</u> Slight Mod. Strong	
	<input type="checkbox"/>	30-40'				Red/brown fine Sand (SP) with varying amounts of silt and caliche	<u>None</u> Slight Mod. Strong	
	<input type="checkbox"/>	40-80'				Dry, dark red/brown sandy Silts (SM)	<u>None</u> Slight Mod. Strong	
	<input type="checkbox"/>	80-125'				Red/brown fine Sand (SP)	<u>None</u> Slight Mod. Strong	
	<input type="checkbox"/>					__ TD 125' __	None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	

Surface Elevation: \_\_\_\_\_

Notes: Groundwater Not Encountered @ 125' BGS – 72 hr.

Logger Initials: DJA

Time	Lab Sample Collected	Sample Interval (ft)	Sample Recovery (ft)	USCS	Composition (%)	Sample Material/Comments Include composition, color, grain size, moisture, hardness, plasticity, density	Hydrocarbon Odor	PID (ppm)
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	
	<input type="checkbox"/>						None Slight Mod. Strong	





**Notes:**


The borehole was advanced to 125' below ground surface (bgs). A 2-inch diameter temporary well constructed of schedule 40 PVC thread coupled to 10-feet of machine slotted well screen was installed in the open borehole. 72-hours after installation, a Solinst water level meter was utilized to determine the presence or absence of groundwater. The temporary well casing was subsequently removed and the bore hole backfilled with hole plug (bentonite chips) and hydrated.

# EOG Jackson B #17 Wellhead

Karst Potential Map

## Legend

-  EOG Jackson B #17 Wellhead
-  High
-  Low
-  Medium

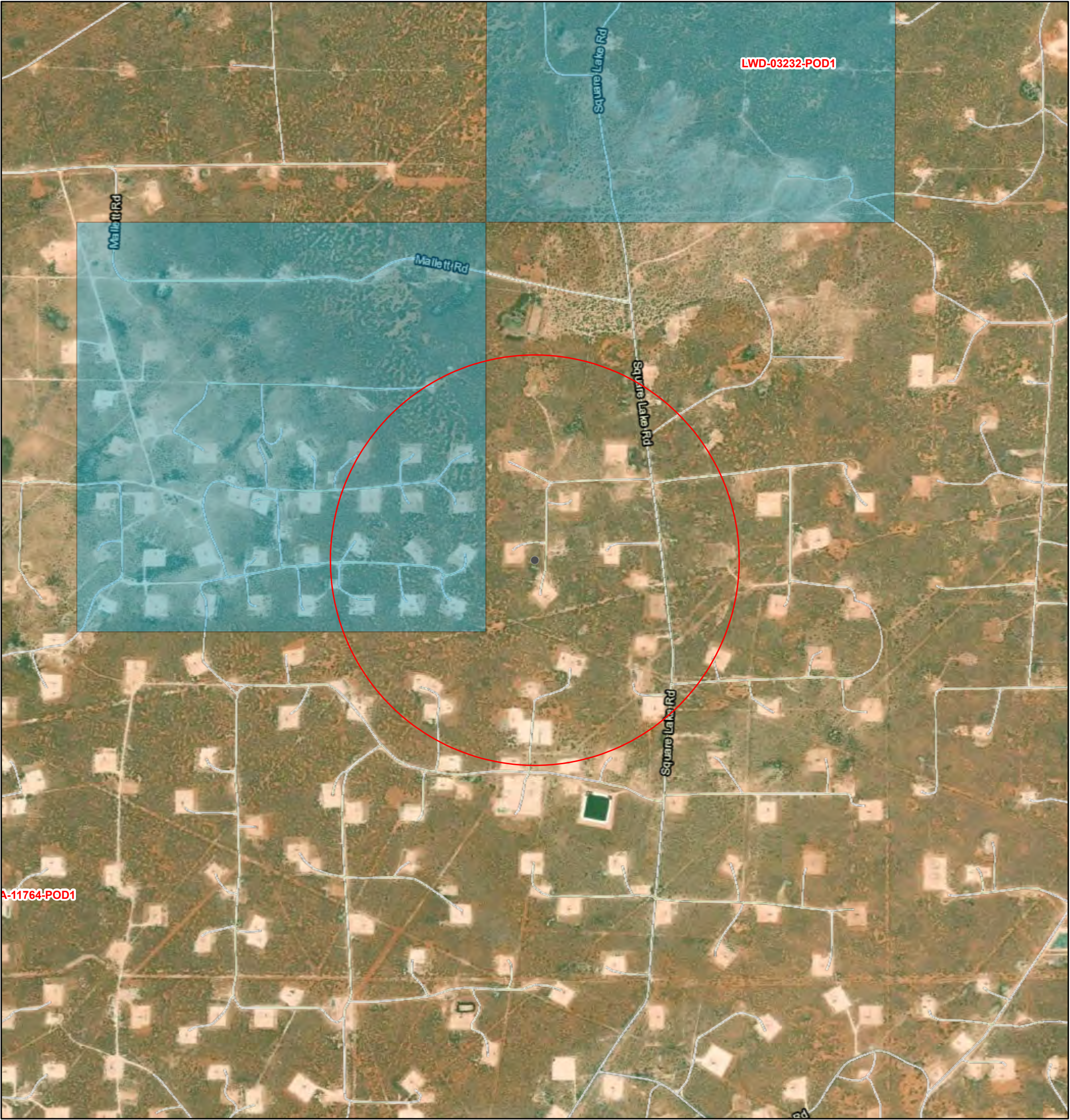
 EOG Jackson B #17 Wellhead






3000 ft

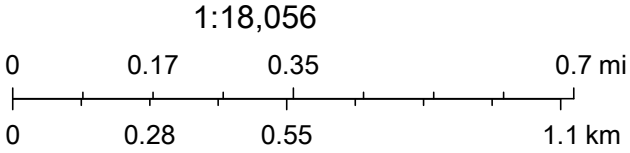


OSE PUBLIC PRINT



8/19/2021, 2:53:19 PM

-  OSE District Boundary
- New Mexico State Trust Lands
-  Both Estates
-  SiteBoundaries





Esri, HERE, iPC, U.S. Department of Energy Office of Legacy Management, Esri, HERE, Garmin, iPC, Maxar




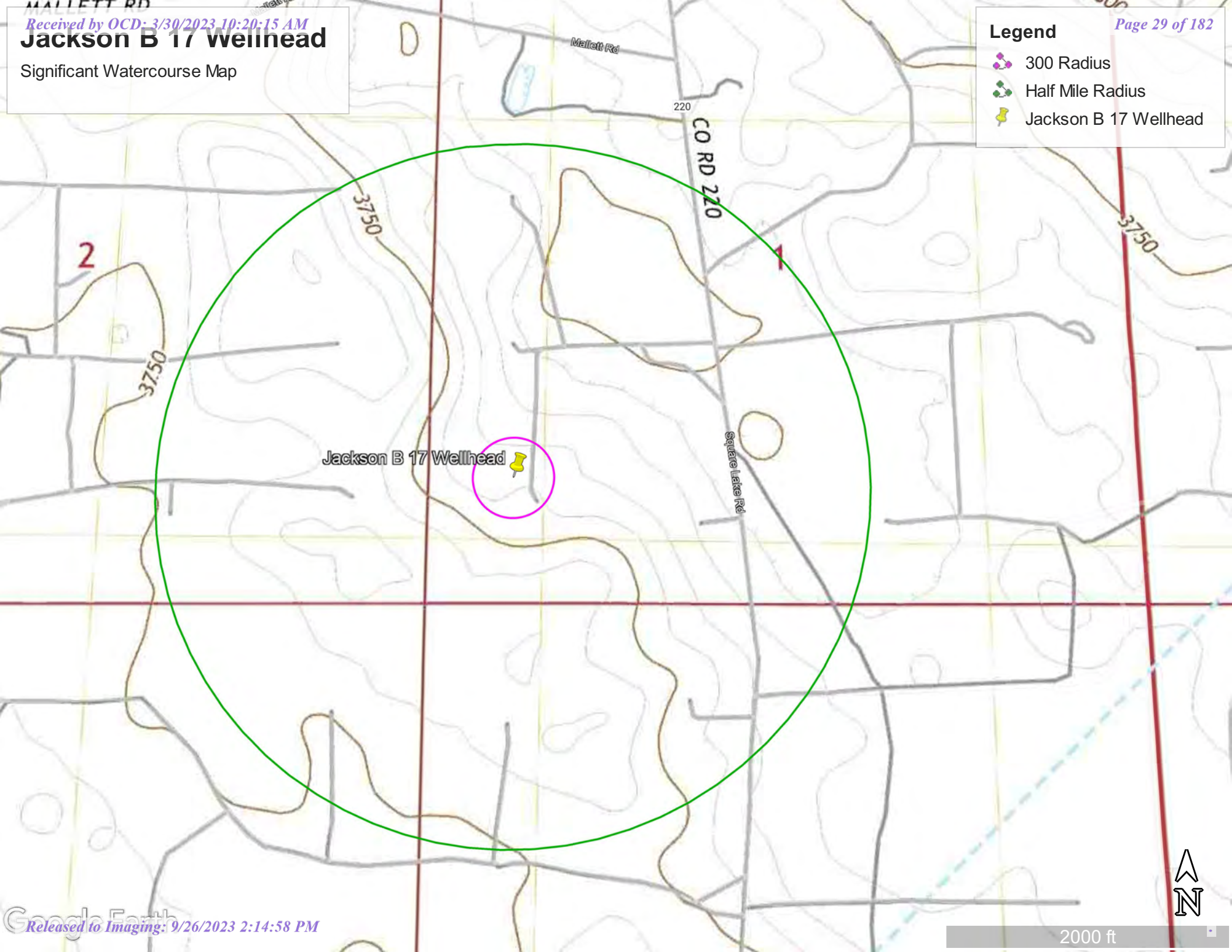
Significant Watercourse Map

Legend

 300 Radius

 Half Mile Radius

 Jackson B 17 Wellhead





# National Flood Hazard Layer FIRMette



103°56'14"W 32°51'47"N



## Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped



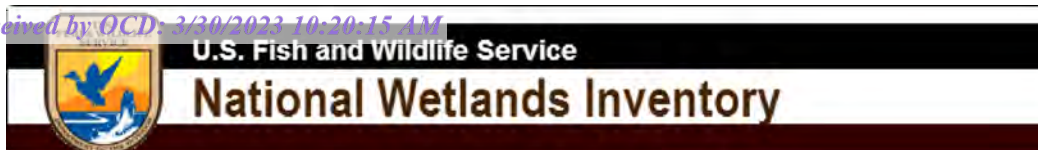
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/19/2021 at 4:53 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.





## EOG Jackson B #17 Wellhead



August 27, 2021

**Wetlands**

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond

- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

# **Attachment B**

**TP1 , SB-1, SB-2, CB-1, and CB-2 Soil  
Boring Logs**



# TEST PIT STRATIGRAPHIC LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: EOG/Jackson B #17 Wellhead PROJECT

HOLE DESIGNATION: TP-#1

NUMBER: 11228313

DATE COMPLETED: 22 July 2021

CLIENT: EOG Resources, INC.

TEST PIT METHOD: Air Rotary

LOCATION: M-01-17S-30E, Eddy Co. NM 32.85807 -103.93198

FIELD PERSONNEL: Lee M./Zach C.

File: \\GHDNET\GHD\USMIDLAND\PROJECTS\56211228312\FIELD NOTES\GINT LOGS\11228312 LOGS.GPJ Library File: 11228312 GHD\_ENVIRO\_V04.GLB Report: OVERBURDEN LOG Date: 28/7/21

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH m BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	mS/cm	NaCl
5	Start strat log @ 20ft						
10							
15							
20	SAND, fine/medium, red and brown, dry	20.00					
25	CLAYEY SAND, red and brown, with caliche interbedded, slightly moist	22.50	20-25'			980	
30	SAND, fine/medium, red and brown, dry - bed of caliche at 27.00ft BGS	25.00	25-30'			1120	
35	- slightly moist at 32.50ft BGS		30-35'			960	
40	CLAYEY SAND, red and brown, slightly moist	37.50	35-40'			620	
45	SAND, fine/medium, red and brown, dry	40.00	40-45'			490	
50			45-50'			400	396
55			50-55'			300	356
60			55-60'			920	875
65			60-65'			500	
70			65-70'			260	268
75	END OF BOREHOLE @ 75.00ft BGS	75.00	70-75'			420	396

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

Note: mS/cm and NaCl data is field screening data



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Jackson B #17 Wellhead

HOLE DESIGNATION: SB-1

PROJECT NUMBER: 11228313

DATE COMPLETED: 20 April 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons and Cuttings

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: \\GHDNET\GHD\USMIDLAND\PROJECTS\11228313\TECH\GINT LOGS\11228313 LOG.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 9/6/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
5	Stratigraphy not recorded							
10								
15								
20								
25								
30								
35	Bed of consolidated caliche	34.00						
	SM-SILTY SAND, light brown, dry	35.00		35'			2200	<49
	SP-SAND, fine to medium, light brown, dry	37.00						
40				40'			950	<47
45	END OF BOREHOLE @ 44.00ft BGS	44.00						
50								
55								

## WELL DETAILS

Screened interval:

28.00 to 38.00ft BGS

Length: 10ft

Diameter: 2in

Slot Size: 0.010

Material: 8/16 Sand

Seal:

3.00 to 26.00ft BGS

Material: Bentonite

Sand Pack:

26.00 to 44.00ft BGS

Material: Sand

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS



# STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Jackson B #17 Wellhead

HOLE DESIGNATION: SB-2

PROJECT NUMBER: 11228313

DATE COMPLETED: 28 April 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary/Split Spoons and Cuttings

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: \\GHDNET\GHD\USMIDLAND\PROJECTS\11228313\TECH\GINT LOGS\11228313 LOG.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 9/6/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	CHLORIDE (mg/kg)	TOTAL TPH (mg/kg)
5	Stratigraphy not recorded							
10								
15								
20								
25								
30								
33.00	Bed of consolidated caliche	33.00						
35.00	SM-SILTY SAND, light brown, dry	35.00		35'		100	400	600
37.00	SP-SAND, fine to medium, light brown, dry	37.00		40'		100	270	620
45.00	END OF BOREHOLE @ 45.00ft BGS	45.00		45'			1400	<47

**WELL DETAILS**

Screened interval:

25.00 to 35.00ft BGS

Length: 10ft

Diameter: 2in

Slot Size: 0.01

Material: 8/16 Sand

Seal:

2.00 to 23.00ft BGS

Material: Bentonite

Sand Pack:

25.00 to 45.00ft BGS

Material: Sand

**NOTES:** MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS





# STRATIGRAPHIC LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Jackson B #17 Wellhead

HOLE DESIGNATION: CB-1

PROJECT NUMBER: 11228313

DATE COMPLETED: 10 November 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: \\GHDNET\GHD\USMIDLAND\PROJECTS\11228313\TECH\GINT LOGS\11228313 LOG-BACKFILL.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 11/11/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
2	SP-SAND, fine to medium grained, with caliche gravel interbedded throughout, light brown, dry						
4							
6							
8							
10							
12							
14							
16	- with silt at 15.00ft BGS						
18							
20							
22							
24							
26	- moist at 27.00ft BGS						
28							
30			28 - 30'				4.2
32							
34	Bed of consolidated CALICHE	33.00	33 - 35'				5.7
36	END OF BOREHOLE @ 35.00ft BGS	35.00					
38							
40							
42							
44							
46							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS ☐





# STRATIGRAPHIC LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: Jackson B #17 Wellhead

HOLE DESIGNATION: CB-2

PROJECT NUMBER: 11228313

DATE COMPLETED: 10 November 2022

CLIENT: EOG Resources

DRILLING METHOD: Air Rotary

LOCATION: Eddy County, New Mexico

FIELD PERSONNEL: L. Mullins

DRILLING CONTRACTOR: HCI Drilling

DRILLER: K. Cooper

File: \\GHDNET\GHD\USMIDLAND\PROJECTS\11228313\TECH\GINT LOGS\11228313 LOG-BACKFILL.GPJ Library File: GHD\_ENVIRO\_V06.GLB Report: OVERBURDEN LOG Date: 11/11/22

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH BGS	SAMPLE				
			NUMBER	INTERVAL	REC (%)	"N" VALUE	PID (ppm)
2	SP-SAND, fine to medium grained, with caliche gravel interbedded throughout, light brown, dry						
4							
6							
8							
10							
12							
14							
16	- with silt at 15.00ft BGS						
18							
20							
22							
24							
26							
28	- slightly moist at 28.00ft BGS						
30	- dry at 30.00ft BGS						
32							
34	Bed of consolidated CALICHE, dry	33.00					
36	END OF BOREHOLE @ 35.00ft BGS	35.00					
38							
40							
42							
44							
46							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE

CHEMICAL ANALYSIS

# **Attachment C**

## **Laboratory Analytical Reports and Chain-of-Custody Documentation**



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

June 02, 2021

Tom Larson

GHD

6121 Indian School Road, NE #200

Albuquerque, NM 87110

TEL: (505) 884-0672

FAX

RE: Jackson B 17 Wellhead

OrderNo.: 2105A89

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 10 sample(s) on 5/26/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Jackson B 17 Wellhead

**Lab Order:** 2105A89

**Lab ID:** 2105A89-001

**Collection Date:** 5/24/2021 10:45:00 AM

**Client Sample ID:** TP1-8

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	850	60		mg/Kg	20	6/1/2021 3:37:04 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	3200	440		mg/Kg	50	5/28/2021 11:33:14 AM	60287
Motor Oil Range Organics (MRO)	4400	2200		mg/Kg	50	5/28/2021 11:33:14 AM	60287
Surr: DNOP	0	70-130	S	%Rec	50	5/28/2021 11:33:14 AM	60287
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	1600	250		mg/Kg	50	5/28/2021 4:07:25 AM	60281
Surr: BFB	153	70-130	S	%Rec	50	5/28/2021 4:07:25 AM	60281
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	11	1.2		mg/Kg	50	5/28/2021 4:07:25 AM	60281
Toluene	58	2.5		mg/Kg	50	5/28/2021 4:07:25 AM	60281
Ethylbenzene	63	2.5		mg/Kg	50	5/28/2021 4:07:25 AM	60281
Xylenes, Total	76	5.0		mg/Kg	50	5/28/2021 4:07:25 AM	60281
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	50	5/28/2021 4:07:25 AM	60281

**Lab ID:** 2105A89-002

**Collection Date:** 5/24/2021 11:00:00 AM

**Client Sample ID:** TP2-S

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	ND	61		mg/Kg	20	6/1/2021 3:49:28 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	8.5		mg/Kg	1	5/28/2021 2:58:15 PM	60297
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/28/2021 2:58:15 PM	60297
Surr: DNOP	115	70-130		%Rec	1	5/28/2021 2:58:15 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2021 6:32:00 PM	60288
Surr: BFB	87.0	70-130		%Rec	1	5/27/2021 6:32:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	5/27/2021 6:32:00 PM	60288
Toluene	ND	0.049		mg/Kg	1	5/27/2021 6:32:00 PM	60288
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2021 6:32:00 PM	60288
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2021 6:32:00 PM	60288
Surr: 4-Bromofluorobenzene	81.7	70-130		%Rec	1	5/27/2021 6:32:00 PM	60288

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

**Qualifiers:**

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

Page 1 of 14

## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD

Lab Order: 2105A89

Project: Jackson B 17 Wellhead

Lab ID: 2105A89-003

Collection Date: 5/24/2021 11:05:00 AM

Client Sample ID: TP2-2

Matrix: SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	ND	60		mg/Kg	20	6/1/2021 4:01:53 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/28/2021 2:13:50 PM	60297
Motor Oil Range Organics (MRO)	ND	43		mg/Kg	1	5/28/2021 2:13:50 PM	60297
Surr: DNOP	98.5	70-130		%Rec	1	5/28/2021 2:13:50 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2021 7:31:00 PM	60288
Surr: BFB	86.2	70-130		%Rec	1	5/27/2021 7:31:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	5/27/2021 7:31:00 PM	60288
Toluene	ND	0.049		mg/Kg	1	5/27/2021 7:31:00 PM	60288
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2021 7:31:00 PM	60288
Xylenes, Total	ND	0.098		mg/Kg	1	5/27/2021 7:31:00 PM	60288
Surr: 4-Bromofluorobenzene	83.1	70-130		%Rec	1	5/27/2021 7:31:00 PM	60288

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

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

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## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Jackson B 17 Wellhead

**Lab Order:** 2105A89

**Lab ID:** 2105A89-004

**Collection Date:** 5/24/2021 11:10:00 AM

**Client Sample ID:** TP3-S

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	240	60		mg/Kg	20	6/1/2021 4:14:18 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	8.6		mg/Kg	1	5/29/2021 3:47:23 PM	60297
Motor Oil Range Organics (MRO)	100	43		mg/Kg	1	5/29/2021 3:47:23 PM	60297
Surr: DNOP	85.1	70-130		%Rec	1	5/29/2021 3:47:23 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/27/2021 8:31:00 PM	60288
Surr: BFB	85.0	70-130		%Rec	1	5/27/2021 8:31:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	5/27/2021 8:31:00 PM	60288
Toluene	ND	0.050		mg/Kg	1	5/27/2021 8:31:00 PM	60288
Ethylbenzene	ND	0.050		mg/Kg	1	5/27/2021 8:31:00 PM	60288
Xylenes, Total	ND	0.10		mg/Kg	1	5/27/2021 8:31:00 PM	60288
Surr: 4-Bromofluorobenzene	82.9	70-130		%Rec	1	5/27/2021 8:31:00 PM	60288

**Lab ID:** 2105A89-005

**Collection Date:** 5/24/2021 11:15:00 AM

**Client Sample ID:** TP3-2

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	610	60		mg/Kg	20	6/1/2021 4:26:42 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	5/28/2021 3:28:18 PM	60297
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	5/28/2021 3:28:18 PM	60297
Surr: DNOP	99.0	70-130		%Rec	1	5/28/2021 3:28:18 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2021 8:51:00 PM	60288
Surr: BFB	87.4	70-130		%Rec	1	5/27/2021 8:51:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	5/27/2021 8:51:00 PM	60288
Toluene	ND	0.048		mg/Kg	1	5/27/2021 8:51:00 PM	60288
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2021 8:51:00 PM	60288
Xylenes, Total	ND	0.095		mg/Kg	1	5/27/2021 8:51:00 PM	60288
Surr: 4-Bromofluorobenzene	81.8	70-130		%Rec	1	5/27/2021 8:51:00 PM	60288

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

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

## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Jackson B 17 Wellhead

**Lab Order:** 2105A89

**Lab ID:** 2105A89-006

**Collection Date:** 5/24/2021 11:20:00 AM

**Client Sample ID:** TP4-S

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	ND	60		mg/Kg	20	6/1/2021 4:39:07 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	5/28/2021 3:38:14 PM	60297
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/28/2021 3:38:14 PM	60297
Surr: DNOP	101	70-130		%Rec	1	5/28/2021 3:38:14 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/27/2021 9:11:00 PM	60288
Surr: BFB	83.1	70-130		%Rec	1	5/27/2021 9:11:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	5/27/2021 9:11:00 PM	60288
Toluene	ND	0.049		mg/Kg	1	5/27/2021 9:11:00 PM	60288
Ethylbenzene	ND	0.049		mg/Kg	1	5/27/2021 9:11:00 PM	60288
Xylenes, Total	ND	0.097		mg/Kg	1	5/27/2021 9:11:00 PM	60288
Surr: 4-Bromofluorobenzene	81.8	70-130		%Rec	1	5/27/2021 9:11:00 PM	60288

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

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

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## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Jackson B 17 Wellhead

**Lab Order:** 2105A89

**Lab ID:** 2105A89-007

**Collection Date:** 5/24/2021 11:25:00 AM

**Client Sample ID:** TP4-2

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	ND	60		mg/Kg	20	6/1/2021 4:51:31 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/28/2021 3:48:10 PM	60297
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/28/2021 3:48:10 PM	60297
Surr: DNOP	114	70-130		%Rec	1	5/28/2021 3:48:10 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	5/27/2021 9:31:00 PM	60288
Surr: BFB	87.4	70-130		%Rec	1	5/27/2021 9:31:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.025		mg/Kg	1	5/27/2021 9:31:00 PM	60288
Toluene	ND	0.050		mg/Kg	1	5/27/2021 9:31:00 PM	60288
Ethylbenzene	ND	0.050		mg/Kg	1	5/27/2021 9:31:00 PM	60288
Xylenes, Total	ND	0.10		mg/Kg	1	5/27/2021 9:31:00 PM	60288
Surr: 4-Bromofluorobenzene	83.0	70-130		%Rec	1	5/27/2021 9:31:00 PM	60288

**Lab ID:** 2105A89-008

**Collection Date:** 5/24/2021 11:30:00 AM

**Client Sample ID:** TP5-S

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	110	60		mg/Kg	20	6/1/2021 5:03:56 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	170	9.5		mg/Kg	1	5/28/2021 2:41:02 PM	60297
Motor Oil Range Organics (MRO)	230	47		mg/Kg	1	5/28/2021 2:41:02 PM	60297
Surr: DNOP	80.3	70-130		%Rec	1	5/28/2021 2:41:02 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/27/2021 9:51:00 PM	60288
Surr: BFB	84.9	70-130		%Rec	1	5/27/2021 9:51:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	5/27/2021 9:51:00 PM	60288
Toluene	ND	0.048		mg/Kg	1	5/27/2021 9:51:00 PM	60288
Ethylbenzene	ND	0.048		mg/Kg	1	5/27/2021 9:51:00 PM	60288
Xylenes, Total	ND	0.096		mg/Kg	1	5/27/2021 9:51:00 PM	60288
Surr: 4-Bromofluorobenzene	80.3	70-130		%Rec	1	5/27/2021 9:51:00 PM	60288

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

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

## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Jackson B 17 Wellhead

**Lab Order:** 2105A89

**Lab ID:** 2105A89-009

**Collection Date:** 5/24/2021 11:35:00 AM

**Client Sample ID:** TP5-2

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	93	60		mg/Kg	20	6/1/2021 5:16:21 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/28/2021 3:58:05 PM	60297
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	5/28/2021 3:58:05 PM	60297
Surr: DNOP	109	70-130		%Rec	1	5/28/2021 3:58:05 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	5/27/2021 10:10:00 PM	60288
Surr: BFB	84.4	70-130		%Rec	1	5/27/2021 10:10:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	ND	0.024		mg/Kg	1	5/27/2021 10:10:00 PM	60288
Toluene	ND	0.047		mg/Kg	1	5/27/2021 10:10:00 PM	60288
Ethylbenzene	ND	0.047		mg/Kg	1	5/27/2021 10:10:00 PM	60288
Xylenes, Total	ND	0.094		mg/Kg	1	5/27/2021 10:10:00 PM	60288
Surr: 4-Bromofluorobenzene	81.3	70-130		%Rec	1	5/27/2021 10:10:00 PM	60288

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

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

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## Analytical Report

Lab Order: 2105A89

Date Reported: 6/2/2021

## Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** GHD  
**Project:** Jackson B 17 Wellhead

**Lab Order:** 2105A89

**Lab ID:** 2105A89-010

**Collection Date:** 5/25/2021 10:45:00 AM

**Client Sample ID:** TP1-20

**Matrix:** SOIL

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	560	60		mg/Kg	20	6/1/2021 5:53:35 PM	60357
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	3500	440		mg/Kg	50	5/28/2021 2:00:01 PM	60297
Motor Oil Range Organics (MRO)	2500	2200		mg/Kg	50	5/28/2021 2:00:01 PM	60297
Surr: DNOP	0	70-130	S	%Rec	50	5/28/2021 2:00:01 PM	60297
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>CCM</b>
Gasoline Range Organics (GRO)	570	23		mg/Kg	5	5/27/2021 10:30:00 PM	60288
Surr: BFB	213	70-130	S	%Rec	5	5/27/2021 10:30:00 PM	60288
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>CCM</b>
Benzene	0.87	0.12		mg/Kg	5	5/27/2021 10:30:00 PM	60288
Toluene	0.38	0.23		mg/Kg	5	5/27/2021 10:30:00 PM	60288
Ethylbenzene	10	0.23		mg/Kg	5	5/27/2021 10:30:00 PM	60288
Xylenes, Total	9.2	0.47		mg/Kg	5	5/27/2021 10:30:00 PM	60288
Surr: 4-Bromofluorobenzene	143	70-130	S	%Rec	5	5/27/2021 10:30:00 PM	60288

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

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



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A89

02-Jun-21

Client: GHD

Project: Jackson B 17 Wellhead

Sample ID: <b>MB-60357</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>PBS</b>	Batch ID: <b>60357</b>	RunNo: <b>78785</b>
Prep Date: <b>6/1/2021</b>	Analysis Date: <b>6/1/2021</b>	SeqNo: <b>2762658</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: <b>LCS-60357</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 300.0: Anions</b>
Client ID: <b>LCSS</b>	Batch ID: <b>60357</b>	RunNo: <b>78785</b>
Prep Date: <b>6/1/2021</b>	Analysis Date: <b>6/1/2021</b>	SeqNo: <b>2762659</b> Units: <b>mg/Kg</b>
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 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 Limit

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

WO#: 2105A89

02-Jun-21

**Client:** GHD**Project:** Jackson B 17 Wellhead

Sample ID: <b>MB-60287</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60287</b>	RunNo: <b>77689</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2758381</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		111	70	130			

Sample ID: <b>LCS-60287</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60287</b>	RunNo: <b>77689</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2758383</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	10	50.00	0	118	68.9	141			
Surr: DNOP	6.0		5.000		121	70	130			

Sample ID: <b>LCS-60304</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60304</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2759335</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.8		5.000		115	70	130			

Sample ID: <b>MB-60304</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60304</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2759336</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	13		10.00		127	70	130			

Sample ID: <b>2105A89-002AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>TP2-S</b>	Batch ID: <b>60297</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2759627</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	8.4	41.91	0	104	15	184			
Surr: DNOP	4.3		4.191		103	70	130			

Sample ID: <b>LCS-60297</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60297</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2759631</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	10	50.00	0	116	68.9	141			

**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 Limit

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

WO#: 2105A89

02-Jun-21

**Client:** GHD**Project:** Jackson B 17 Wellhead

Sample ID: <b>LCS-60297</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60297</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2759631</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.4		5.000		109	70	130			

Sample ID: <b>MB-60297</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60297</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2759632</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		113	70	130			

Sample ID: <b>2105A89-002AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>TP2-S</b>	Batch ID: <b>60297</b>	RunNo: <b>77729</b>								
Prep Date: <b>5/27/2021</b>	Analysis Date: <b>5/28/2021</b>	SeqNo: <b>2760890</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	43	9.0	45.13	0	95.5	15	184	0.988	23.9	
Surr: DNOP	4.5		4.513		99.8	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 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 Limit



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

WO#: 2105A89

02-Jun-21

**Client:** GHD**Project:** Jackson B 17 Wellhead

Sample ID: <b>mb-60281</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60281</b>	RunNo: <b>77699</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2758755</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		102	70	130			

Sample ID: <b>lcs-60281</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60281</b>	RunNo: <b>77699</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2758756</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	78.6	131			
Surr: BFB	1100		1000		112	70	130			

Sample ID: <b>LCS-60288</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60288</b>	RunNo: <b>77731</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2759007</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.8	78.6	131			
Surr: BFB	970		1000		96.5	70	130			

Sample ID: <b>MB-60288</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60288</b>	RunNo: <b>77731</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2759008</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	830		1000		83.2	70	130			

Sample ID: <b>2105A89-002ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>TP2-S</b>	Batch ID: <b>60288</b>	RunNo: <b>77731</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2759010</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.37	0	101	61.3	114			
Surr: BFB	960		974.7		98.6	70	130			

Sample ID: <b>2105A89-002amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>TP2-S</b>	Batch ID: <b>60288</b>	RunNo: <b>77731</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2759011</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**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 Limit

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2105A89

02-Jun-21

Client: GHD

Project: Jackson B 17 Wellhead

Sample ID: 2105A89-002amsd		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range						
Client ID: TP2-S		Batch ID: 60288		RunNo: 77731						
Prep Date: 5/26/2021		Analysis Date: 5/27/2021		SeqNo: 2759011		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.58	0	98.3	61.3	114	2.09	20	
Surr: BFB	970		983.3		98.9	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 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 Limit

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

WO#: 2105A89

02-Jun-21

**Client:** GHD**Project:** Jackson B 17 Wellhead

Sample ID: <b>mb-60281</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60281</b>	RunNo: <b>77699</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2758801</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		103	70	130			

Sample ID: <b>LCS-60281</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60281</b>	RunNo: <b>77699</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2758802</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	101	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.0	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		105	70	130			

Sample ID: <b>LCS-60288</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>60288</b>	RunNo: <b>77731</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2759025</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.6	80	120			
Toluene	0.89	0.050	1.000	0	89.3	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.3	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.2	80	120			
Surr: 4-Bromofluorobenzene	0.84		1.000		83.8	70	130			

Sample ID: <b>MB-60288</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>60288</b>	RunNo: <b>77731</b>								
Prep Date: <b>5/26/2021</b>	Analysis Date: <b>5/27/2021</b>	SeqNo: <b>2759026</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.80		1.000		80.2	70	130			

**Qualifiers:**

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



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

WO#: 2105A89

02-Jun-21

**Client:** GHD**Project:** Jackson B 17 Wellhead

Sample ID: 2105A89-003ams		SampType: MS		TestCode: EPA Method 8021B: Volatiles						
Client ID: TP2-2		Batch ID: 60288		RunNo: 77731						
Prep Date: 5/26/2021		Analysis Date: 5/27/2021		SeqNo: 2759029		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.024	0.9634	0	98.0	76.3	120			
Toluene	0.93	0.048	0.9634	0	96.5	78.5	120			
Ethylbenzene	0.96	0.048	0.9634	0	100	78.1	124			
Xylenes, Total	2.8	0.096	2.890	0	97.4	79.3	125			
Surr: 4-Bromofluorobenzene	0.80		0.9634		83.4	70	130			

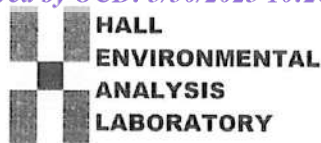
Sample ID: 2105A89-003amsd		SampType: MSD		TestCode: EPA Method 8021B: Volatiles						
Client ID: TP2-2		Batch ID: 60288		RunNo: 77731						
Prep Date: 5/26/2021		Analysis Date: 5/27/2021		SeqNo: 2759030		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	0.9911	0	95.6	76.3	120	0.425	20	
Toluene	0.94	0.050	0.9911	0	94.9	78.5	120	1.21	20	
Ethylbenzene	0.97	0.050	0.9911	0	97.6	78.1	124	0.466	20	
Xylenes, Total	2.8	0.099	2.973	0	95.3	79.3	125	0.671	20	
Surr: 4-Bromofluorobenzene	0.83		0.9911		83.6	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 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 Limit

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

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 2105A89

RcptNo: 1

Received By: Juan Rojas

5/26/2021 7:30:00 AM

*Juan Rojas*

Completed By: Cheyenne Cason

5/26/2021 8:02:09 AM

*Cheyenne Cason*

Reviewed By: SPA 5.26.21

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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
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: 10  
5.26.21  
( $<2$  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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.4	Good				

## Chain-of-Custody Record

Client:

GHD

Mailing Address:

324 W. Main St Suite 108, Alameda, NM 87002

Phone #: (505) 377-4218

email or Fax#: Becky.Haskell@GHD.com

QA/QC Package: Check - Settle @ pressurizers.com

☐ Standard
 ☐ Level 4 (Full Validation)
Accreditation: ☐ Az Compliance☐ NELAC☐ EDD (Type)

Sampler: Zach Comino

On Ice: ☒ Yes ☐ No

# of Coolers: 1 3/25/2021

Cooler Temp (including CF): 5.5-0.5-5.4°C

Date Time Matrix Sample Name

03/29/2021 1045 TP1-8

1100 TP2-S

1105 TP2-2

1110 TP3-S

1115 TP3-2

1120 TP4-S

1125 TP4-2

1130 TP5-S

1135 TP5-2

03/29/2021 1045 TP1-20

Date:

03/29/2021

Relinquished by:

Zach Comino / 3/29/21

Received by:

Mumma

Date

5/23/21

Time

0900

Received by:

Mumma

Date

5/23/21

Time

0900

Received by:

Mumma

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5/23/21

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5/23/21





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

July 30, 2021

Tom Larson  
GHD Midland  
2135 S Loop 250 W  
Midland, TX 79703  
TEL: (432) 686-0086  
FAX

RE: Jackson B 17 Well Head

OrderNo.: 2107C47

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 11 sample(s) on 7/24/2021 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2107C47

Date Reported: 7/30/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: TP1-25

Project: Jackson B 17 Well Head

Collection Date: 7/22/2021 8:20:00 AM

Lab ID: 2107C47-001

Matrix: SOIL

Received Date: 7/24/2021 7:48:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	430	60		mg/Kg	20	7/30/2021 3:06:05 AM	61662
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/27/2021 4:20:14 PM	61572
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/27/2021 4:20:14 PM	61572
Surr: DNOP	138	70-130	S	%Rec	1	7/27/2021 4:20:14 PM	61572
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/29/2021 5:48:47 AM	61570
Surr: BFB	106	70-130		%Rec	1	7/29/2021 5:48:47 AM	61570
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	7/29/2021 5:48:47 AM	61570
Toluene	ND	0.048		mg/Kg	1	7/29/2021 5:48:47 AM	61570
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2021 5:48:47 AM	61570
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2021 5:48:47 AM	61570
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	7/29/2021 5:48:47 AM	61570

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

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

Page 1 of 7

## Analytical Report

Lab Order 2107C47

Date Reported: 7/30/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: TP1-30

Project: Jackson B 17 Well Head

Collection Date: 7/22/2021 8:40:00 AM

Lab ID: 2107C47-002

Matrix: SOIL

Received Date: 7/24/2021 7:48:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	380	59		mg/Kg	20	7/30/2021 3:43:19 AM	61662
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/27/2021 4:30:08 PM	61572
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/27/2021 4:30:08 PM	61572
Surr: DNOP	151	70-130	S	%Rec	1	7/27/2021 4:30:08 PM	61572
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/29/2021 6:12:13 AM	61570
Surr: BFB	106	70-130		%Rec	1	7/29/2021 6:12:13 AM	61570
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.024		mg/Kg	1	7/29/2021 6:12:13 AM	61570
Toluene	ND	0.048		mg/Kg	1	7/29/2021 6:12:13 AM	61570
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2021 6:12:13 AM	61570
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2021 6:12:13 AM	61570
Surr: 4-Bromofluorobenzene	100	70-130		%Rec	1	7/29/2021 6:12:13 AM	61570

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

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

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## Analytical Report

Lab Order 2107C47

Date Reported: 7/30/2021

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: TP1-35

Project: Jackson B 17 Well Head

Collection Date: 7/22/2021 8:50:00 AM

Lab ID: 2107C47-003

Matrix: SOIL

Received Date: 7/24/2021 7:48:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>VP</b>
Chloride	598	59.6		mg/Kg	20	7/30/2021 3:55:44 AM	61662
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/27/2021 4:39:59 PM	61572
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/27/2021 4:39:59 PM	61572
Surr: DNOP	148	70-130	S	%Rec	1	7/27/2021 4:39:59 PM	61572
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/29/2021 6:35:48 AM	61570
Surr: BFB	106	70-130		%Rec	1	7/29/2021 6:35:48 AM	61570
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>RAA</b>
Benzene	ND	0.025		mg/Kg	1	7/29/2021 6:35:48 AM	61570
Toluene	ND	0.050		mg/Kg	1	7/29/2021 6:35:48 AM	61570
Ethylbenzene	ND	0.050		mg/Kg	1	7/29/2021 6:35:48 AM	61570
Xylenes, Total	ND	0.099		mg/Kg	1	7/29/2021 6:35:48 AM	61570
Surr: 4-Bromofluorobenzene	99.3	70-130		%Rec	1	7/29/2021 6:35:48 AM	61570

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

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

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2107C47  
30-Jul-21

Client: GHD Midland  
Project: Jackson B 17 Well Head

Sample ID: MB-61662	SampType: MBLK	TestCode: EPA Method 300.0: Anions
Client ID: PBS	Batch ID: 61662	RunNo: 80187
Prep Date: 7/29/2021	Analysis Date: 7/30/2021	SeqNo: 2823381 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	ND	1.5

Sample ID: LCS-61662	SampType: LCS	TestCode: EPA Method 300.0: Anions
Client ID: LCSS	Batch ID: 61662	RunNo: 80187
Prep Date: 7/29/2021	Analysis Date: 7/30/2021	SeqNo: 2823382 Units: mg/Kg
Analyte	Result	PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Chloride	14	1.5 15.00 0 96.6 90 110

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- 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 Limit

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

WO#: 2107C47

30-Jul-21

**Client:** GHD Midland**Project:** Jackson B 17 Well Head

Sample ID: <b>MB-61572</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>61572</b>	RunNo: <b>80098</b>								
Prep Date: <b>7/26/2021</b>	Analysis Date: <b>7/27/2021</b>	SeqNo: <b>2820635</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		123	70	130			

Sample ID: <b>LCS-61572</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>61572</b>	RunNo: <b>80098</b>								
Prep Date: <b>7/26/2021</b>	Analysis Date: <b>7/27/2021</b>	SeqNo: <b>2820636</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	106	68.9	141			
Surr: DNOP	4.9		5.000		97.3	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 Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2107C47  
30-Jul-21

Client: GHD Midland  
Project: Jackson B 17 Well Head

Sample ID: lcs-61570	SampType: LCS	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: LCSS	Batch ID: 61570	RunNo: 80156								
Prep Date: 7/26/2021	Analysis Date: 7/28/2021	SeqNo: 2822398		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	78.6	131			
Surr: BFB	1200		1000		120	70	130			

Sample ID: mb-61570	SampType: MBLK	TestCode: EPA Method 8015D: Gasoline Range								
Client ID: PBS	Batch ID: 61570	RunNo: 80156								
Prep Date: 7/26/2021	Analysis Date: 7/29/2021	SeqNo: 2822400		Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	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 Limit

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

WO#: 2107C47

30-Jul-21

**Client:** GHD Midland**Project:** Jackson B 17 Well Head

Sample ID: <b>LCS-61570</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>61570</b>			RunNo: <b>80156</b>						
Prep Date: <b>7/26/2021</b>	Analysis Date: <b>7/28/2021</b>			SeqNo: <b>2822450</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.8	80	120			
Toluene	0.91	0.050	1.000	0	91.1	80	120			
Ethylbenzene	0.91	0.050	1.000	0	91.0	80	120			
Xylenes, Total	2.8	0.10	3.000	0	91.7	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	70	130			

Sample ID: <b>mb-61570</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>61570</b>			RunNo: <b>80156</b>						
Prep Date: <b>7/26/2021</b>	Analysis Date: <b>7/29/2021</b>			SeqNo: <b>2822452</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

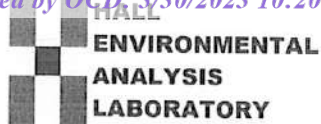
**Qualifiers:**

\* 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 Limit

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

## Sample Log-In Check List

Client Name: GHD Midland

Work Order Number: 2107C47

RcptNo: 1

Received By: Cheyenne Cason 7/24/2021 7:48:00 AM

Completed By: Cheyenne Cason 7/24/2021 8:04:30 AM

Reviewed By: SPA 7.24.21

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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒  
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: CCL 7/24/21

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	2.4	Good				

## Chain-of-Custody Record

Client: GHD

Mailing Address:

324 W. Main St. Suite 108, Artesia NM 88210

Phone #: (505)377-4218

email or Fax#: Becky.Haskell@ghd.com

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)

Accreditation:

☐ Az Compliance☐ NELAC☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush 5-day

Project Name:

Jackson B #17 Wellhead

Project #:

1228313

Project Manager:

Becky Haskell

Tom Larson

Sampler: Zach Comino

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 2.6 - 0.2 = 2.4

Container Type and #

Preservative Type

HEAL No.

2107047

Jan

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

March 01, 2022

Becky Haskell  
GHD Midland  
2135 S Loop 250 W  
Midland, TX 79703  
TEL: (432) 686-0086  
FAX:

RE: Jackson B 17 Wellhead

OrderNo.: 2202831

Dear Becky Haskell:

Hall Environmental Analysis Laboratory received 18 sample(s) on 2/17/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-1

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 9:50:00 AM

Lab ID: 2202831-001

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	240	60		mg/Kg	20	2/23/2022 2:49:54 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	54	9.6		mg/Kg	1	2/22/2022 10:18:25 PM	65649
Motor Oil Range Organics (MRO)	84	48		mg/Kg	1	2/22/2022 10:18:25 PM	65649
Surr: DNOP	86.3	51.1-141		%Rec	1	2/22/2022 10:18:25 PM	65649
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/19/2022 5:54:00 PM	65624
Surr: BFB	102	70-130		%Rec	1	2/19/2022 5:54:00 PM	65624
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/19/2022 5:54:00 PM	65624
Toluene	ND	0.048		mg/Kg	1	2/19/2022 5:54:00 PM	65624
Ethylbenzene	ND	0.048		mg/Kg	1	2/19/2022 5:54:00 PM	65624
Xylenes, Total	ND	0.097		mg/Kg	1	2/19/2022 5:54:00 PM	65624
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	2/19/2022 5:54:00 PM	65624

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		



## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-2

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 9:55:00 AM

Lab ID: 2202831-002

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	2/23/2022 3:02:20 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	14	9.4		mg/Kg	1	2/22/2022 10:47:02 PM	65649
Motor Oil Range Organics (MRO)	71	47		mg/Kg	1	2/22/2022 10:47:02 PM	65649
Surr: DNOP	88.5	51.1-141		%Rec	1	2/22/2022 10:47:02 PM	65649
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/19/2022 6:13:00 PM	65624
Surr: BFB	105	70-130		%Rec	1	2/19/2022 6:13:00 PM	65624
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/19/2022 6:13:00 PM	65624
Toluene	ND	0.049		mg/Kg	1	2/19/2022 6:13:00 PM	65624
Ethylbenzene	ND	0.049		mg/Kg	1	2/19/2022 6:13:00 PM	65624
Xylenes, Total	ND	0.098		mg/Kg	1	2/19/2022 6:13:00 PM	65624
Surr: 4-Bromofluorobenzene	89.8	70-130		%Rec	1	2/19/2022 6:13:00 PM	65624

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-3

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:00:00 AM

Lab ID: 2202831-003

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	130	60		mg/Kg	20	2/23/2022 3:14:45 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	11	9.5		mg/Kg	1	2/22/2022 11:15:00 PM	65649
Motor Oil Range Organics (MRO)	98	47		mg/Kg	1	2/22/2022 11:15:00 PM	65649
Surr: DNOP	88.7	51.1-141		%Rec	1	2/22/2022 11:15:00 PM	65649
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/19/2022 6:33:00 PM	65624
Surr: BFB	97.9	70-130		%Rec	1	2/19/2022 6:33:00 PM	65624
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	2/19/2022 6:33:00 PM	65624
Toluene	ND	0.047		mg/Kg	1	2/19/2022 6:33:00 PM	65624
Ethylbenzene	ND	0.047		mg/Kg	1	2/19/2022 6:33:00 PM	65624
Xylenes, Total	ND	0.094		mg/Kg	1	2/19/2022 6:33:00 PM	65624
Surr: 4-Bromofluorobenzene	84.4	70-130		%Rec	1	2/19/2022 6:33:00 PM	65624

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-4

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:05:00 AM

Lab ID: 2202831-004

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	2/23/2022 3:27:10 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	2/22/2022 11:42:31 PM	65649
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/22/2022 11:42:31 PM	65649
Surr: DNOP	85.7	51.1-141		%Rec	1	2/22/2022 11:42:31 PM	65649
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/19/2022 6:53:00 PM	65624
Surr: BFB	100	70-130		%Rec	1	2/19/2022 6:53:00 PM	65624
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/19/2022 6:53:00 PM	65624
Toluene	ND	0.048		mg/Kg	1	2/19/2022 6:53:00 PM	65624
Ethylbenzene	ND	0.048		mg/Kg	1	2/19/2022 6:53:00 PM	65624
Xylenes, Total	ND	0.096		mg/Kg	1	2/19/2022 6:53:00 PM	65624
Surr: 4-Bromofluorobenzene	86.4	70-130		%Rec	1	2/19/2022 6:53:00 PM	65624

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-5

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:10:00 AM

Lab ID: 2202831-005

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	90	60		mg/Kg	20	2/23/2022 3:39:34 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	78	9.3		mg/Kg	1	2/22/2022 11:56:07 PM	65649
Motor Oil Range Organics (MRO)	380	46		mg/Kg	1	2/22/2022 11:56:07 PM	65649
Surr: DNOP	84.7	51.1-141		%Rec	1	2/22/2022 11:56:07 PM	65649
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/19/2022 7:13:00 PM	65624
Surr: BFB	101	70-130		%Rec	1	2/19/2022 7:13:00 PM	65624
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/19/2022 7:13:00 PM	65624
Toluene	ND	0.049		mg/Kg	1	2/19/2022 7:13:00 PM	65624
Ethylbenzene	ND	0.049		mg/Kg	1	2/19/2022 7:13:00 PM	65624
Xylenes, Total	ND	0.099		mg/Kg	1	2/19/2022 7:13:00 PM	65624
Surr: 4-Bromofluorobenzene	87.0	70-130		%Rec	1	2/19/2022 7:13:00 PM	65624

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-6

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:15:00 AM

Lab ID: 2202831-006

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	570	60		mg/Kg	20	2/23/2022 3:51:59 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/24/2022 4:22:54 AM	65649
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/24/2022 4:22:54 AM	65649
Surr: DNOP	100	51.1-141		%Rec	1	2/24/2022 4:22:54 AM	65649
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/19/2022 7:32:00 PM	65624
Surr: BFB	99.0	70-130		%Rec	1	2/19/2022 7:32:00 PM	65624
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/19/2022 7:32:00 PM	65624
Toluene	ND	0.050		mg/Kg	1	2/19/2022 7:32:00 PM	65624
Ethylbenzene	ND	0.050		mg/Kg	1	2/19/2022 7:32:00 PM	65624
Xylenes, Total	ND	0.099		mg/Kg	1	2/19/2022 7:32:00 PM	65624
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	2/19/2022 7:32:00 PM	65624

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-7

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:20:00 AM

Lab ID: 2202831-007

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	110	60		mg/Kg	20	2/23/2022 4:04:24 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	2/23/2022 12:36:27 AM	65645
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/23/2022 12:36:27 AM	65645
Surr: DNOP	119	51.1-141		%Rec	1	2/23/2022 12:36:27 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/19/2022 9:31:00 PM	65635
Surr: BFB	102	70-130		%Rec	1	2/19/2022 9:31:00 PM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/19/2022 9:31:00 PM	65635
Toluene	ND	0.048		mg/Kg	1	2/19/2022 9:31:00 PM	65635
Ethylbenzene	ND	0.048		mg/Kg	1	2/19/2022 9:31:00 PM	65635
Xylenes, Total	ND	0.095		mg/Kg	1	2/19/2022 9:31:00 PM	65635
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	2/19/2022 9:31:00 PM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-8

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:25:00 AM

Lab ID: 2202831-008

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	390	60		mg/Kg	20	2/23/2022 4:16:49 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/23/2022 12:49:41 AM	65645
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/23/2022 12:49:41 AM	65645
Surr: DNOP	95.9	51.1-141		%Rec	1	2/23/2022 12:49:41 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/19/2022 10:30:00 PM	65635
Surr: BFB	102	70-130		%Rec	1	2/19/2022 10:30:00 PM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/19/2022 10:30:00 PM	65635
Toluene	ND	0.050		mg/Kg	1	2/19/2022 10:30:00 PM	65635
Ethylbenzene	ND	0.050		mg/Kg	1	2/19/2022 10:30:00 PM	65635
Xylenes, Total	ND	0.10		mg/Kg	1	2/19/2022 10:30:00 PM	65635
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	2/19/2022 10:30:00 PM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-9

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 10:30:00 AM

Lab ID: 2202831-009

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	3100	150		mg/Kg	50	2/23/2022 1:17:44 PM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	870	50		mg/Kg	5	2/23/2022 1:02:47 AM	65645
Motor Oil Range Organics (MRO)	600	250		mg/Kg	5	2/23/2022 1:02:47 AM	65645
Surr: DNOP	105	51.1-141		%Rec	5	2/23/2022 1:02:47 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	23		mg/Kg	5	2/19/2022 11:29:00 PM	65635
Surr: BFB	103	70-130		%Rec	5	2/19/2022 11:29:00 PM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.11		mg/Kg	5	2/19/2022 11:29:00 PM	65635
Toluene	ND	0.23		mg/Kg	5	2/19/2022 11:29:00 PM	65635
Ethylbenzene	ND	0.23		mg/Kg	5	2/19/2022 11:29:00 PM	65635
Xylenes, Total	ND	0.46		mg/Kg	5	2/19/2022 11:29:00 PM	65635
Surr: 4-Bromofluorobenzene	87.0	70-130		%Rec	5	2/19/2022 11:29:00 PM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		



## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-10

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:10:00 PM

Lab ID: 2202831-010

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	760	60		mg/Kg	20	2/23/2022 4:41:38 AM	65736
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	2/23/2022 1:16:00 AM	65645
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/23/2022 1:16:00 AM	65645
Surr: DNOP	72.0	51.1-141		%Rec	1	2/23/2022 1:16:00 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/19/2022 11:48:00 PM	65635
Surr: BFB	103	70-130		%Rec	1	2/19/2022 11:48:00 PM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/19/2022 11:48:00 PM	65635
Toluene	ND	0.049		mg/Kg	1	2/19/2022 11:48:00 PM	65635
Ethylbenzene	ND	0.049		mg/Kg	1	2/19/2022 11:48:00 PM	65635
Xylenes, Total	ND	0.098		mg/Kg	1	2/19/2022 11:48:00 PM	65635
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	2/19/2022 11:48:00 PM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-11

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:15:00 PM

Lab ID: 2202831-011

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	1000	60		mg/Kg	20	2/23/2022 8:51:23 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/23/2022 1:29:02 AM	65645
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/23/2022 1:29:02 AM	65645
Surr: DNOP	123	51.1-141		%Rec	1	2/23/2022 1:29:02 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/20/2022 12:08:00 AM	65635
Surr: BFB	99.9	70-130		%Rec	1	2/20/2022 12:08:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.023		mg/Kg	1	2/20/2022 12:08:00 AM	65635
Toluene	ND	0.047		mg/Kg	1	2/20/2022 12:08:00 AM	65635
Ethylbenzene	ND	0.047		mg/Kg	1	2/20/2022 12:08:00 AM	65635
Xylenes, Total	ND	0.094		mg/Kg	1	2/20/2022 12:08:00 AM	65635
Surr: 4-Bromofluorobenzene	86.9	70-130		%Rec	1	2/20/2022 12:08:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-12

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:20:00 PM

Lab ID: 2202831-012

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	720	60		mg/Kg	20	2/23/2022 9:28:36 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/23/2022 1:42:03 AM	65645
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/23/2022 1:42:03 AM	65645
Surr: DNOP	122	51.1-141		%Rec	1	2/23/2022 1:42:03 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/20/2022 12:28:00 AM	65635
Surr: BFB	100	70-130		%Rec	1	2/20/2022 12:28:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/20/2022 12:28:00 AM	65635
Toluene	ND	0.049		mg/Kg	1	2/20/2022 12:28:00 AM	65635
Ethylbenzene	ND	0.049		mg/Kg	1	2/20/2022 12:28:00 AM	65635
Xylenes, Total	ND	0.098		mg/Kg	1	2/20/2022 12:28:00 AM	65635
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	2/20/2022 12:28:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-13

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:25:00 PM

Lab ID: 2202831-013

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	420	60		mg/Kg	20	2/23/2022 9:41:00 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/23/2022 1:55:04 AM	65645
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/23/2022 1:55:04 AM	65645
Surr: DNOP	114	51.1-141		%Rec	1	2/23/2022 1:55:04 AM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/20/2022 12:47:00 AM	65635
Surr: BFB	101	70-130		%Rec	1	2/20/2022 12:47:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/20/2022 12:47:00 AM	65635
Toluene	ND	0.048		mg/Kg	1	2/20/2022 12:47:00 AM	65635
Ethylbenzene	ND	0.048		mg/Kg	1	2/20/2022 12:47:00 AM	65635
Xylenes, Total	ND	0.096		mg/Kg	1	2/20/2022 12:47:00 AM	65635
Surr: 4-Bromofluorobenzene	86.7	70-130		%Rec	1	2/20/2022 12:47:00 AM	65635

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-14

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:30:00 PM

Lab ID: 2202831-014

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	370	60		mg/Kg	20	2/23/2022 9:53:26 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	8.9		mg/Kg	1	2/22/2022 3:31:15 PM	65645
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	2/22/2022 3:31:15 PM	65645
Surr: DNOP	149	51.1-141	S	%Rec	1	2/22/2022 3:31:15 PM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/20/2022 1:07:00 AM	65635
Surr: BFB	104	70-130		%Rec	1	2/20/2022 1:07:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/20/2022 1:07:00 AM	65635
Toluene	ND	0.049		mg/Kg	1	2/20/2022 1:07:00 AM	65635
Ethylbenzene	ND	0.049		mg/Kg	1	2/20/2022 1:07:00 AM	65635
Xylenes, Total	ND	0.097		mg/Kg	1	2/20/2022 1:07:00 AM	65635
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	2/20/2022 1:07:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-15

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:35:00 PM

Lab ID: 2202831-015

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	660	60		mg/Kg	20	2/23/2022 10:05:50 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	790	47		mg/Kg	5	2/22/2022 3:55:46 PM	65645
Motor Oil Range Organics (MRO)	250	240		mg/Kg	5	2/22/2022 3:55:46 PM	65645
Surr: DNOP	164	51.1-141	S	%Rec	5	2/22/2022 3:55:46 PM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	2/20/2022 1:26:00 AM	65635
Surr: BFB	98.2	70-130		%Rec	5	2/20/2022 1:26:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.12		mg/Kg	5	2/20/2022 1:26:00 AM	65635
Toluene	ND	0.24		mg/Kg	5	2/20/2022 1:26:00 AM	65635
Ethylbenzene	ND	0.24		mg/Kg	5	2/20/2022 1:26:00 AM	65635
Xylenes, Total	ND	0.47		mg/Kg	5	2/20/2022 1:26:00 AM	65635
Surr: 4-Bromofluorobenzene	86.5	70-130		%Rec	5	2/20/2022 1:26:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-16

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:40:00 PM

Lab ID: 2202831-016

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	660	60		mg/Kg	20	2/23/2022 10:18:14 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	2/22/2022 4:45:20 PM	65645
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	2/22/2022 4:45:20 PM	65645
Surr: DNOP	165	51.1-141	S	%Rec	1	2/22/2022 4:45:20 PM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/20/2022 1:46:00 AM	65635
Surr: BFB	101	70-130		%Rec	1	2/20/2022 1:46:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/20/2022 1:46:00 AM	65635
Toluene	ND	0.049		mg/Kg	1	2/20/2022 1:46:00 AM	65635
Ethylbenzene	ND	0.049		mg/Kg	1	2/20/2022 1:46:00 AM	65635
Xylenes, Total	ND	0.098		mg/Kg	1	2/20/2022 1:46:00 AM	65635
Surr: 4-Bromofluorobenzene	87.8	70-130		%Rec	1	2/20/2022 1:46:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-17

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:45:00 PM

Lab ID: 2202831-017

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	750	60		mg/Kg	20	2/23/2022 10:55:29 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	5200	180		mg/Kg	20	2/22/2022 5:10:05 PM	65645
Motor Oil Range Organics (MRO)	2300	910		mg/Kg	20	2/22/2022 5:10:05 PM	65645
Surr: DNOP	0	51.1-141	S	%Rec	20	2/22/2022 5:10:05 PM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	58	23		mg/Kg	5	2/20/2022 2:45:00 AM	65635
Surr: BFB	167	70-130	S	%Rec	5	2/20/2022 2:45:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.12		mg/Kg	5	2/20/2022 2:45:00 AM	65635
Toluene	ND	0.23		mg/Kg	5	2/20/2022 2:45:00 AM	65635
Ethylbenzene	0.47	0.23		mg/Kg	5	2/20/2022 2:45:00 AM	65635
Xylenes, Total	0.53	0.47		mg/Kg	5	2/20/2022 2:45:00 AM	65635
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	5	2/20/2022 2:45:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202831

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-18

Project: Jackson B 17 Wellhead

Collection Date: 2/15/2022 12:50:00 PM

Lab ID: 2202831-018

Matrix: SOIL

Received Date: 2/17/2022 8:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	800	60		mg/Kg	20	2/23/2022 11:07:53 PM	65769
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	3200	99		mg/Kg	10	2/22/2022 5:34:50 PM	65645
Motor Oil Range Organics (MRO)	1700	500		mg/Kg	10	2/22/2022 5:34:50 PM	65645
Surr: DNOP	0	51.1-141	S	%Rec	10	2/22/2022 5:34:50 PM	65645
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	35	4.8		mg/Kg	1	2/20/2022 3:04:00 AM	65635
Surr: BFB	190	70-130	S	%Rec	1	2/20/2022 3:04:00 AM	65635
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/20/2022 3:04:00 AM	65635
Toluene	ND	0.048		mg/Kg	1	2/20/2022 3:04:00 AM	65635
Ethylbenzene	0.14	0.048		mg/Kg	1	2/20/2022 3:04:00 AM	65635
Xylenes, Total	0.19	0.096		mg/Kg	1	2/20/2022 3:04:00 AM	65635
Surr: 4-Bromofluorobenzene	126	70-130		%Rec	1	2/20/2022 3:04:00 AM	65635

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	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2202831

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>MB-65736</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65736</b>		RunNo: <b>85985</b>							
Prep Date: <b>2/22/2022</b>	Analysis Date: <b>2/22/2022</b>		SeqNo: <b>3030667</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-65736</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65736</b>		RunNo: <b>85985</b>							
Prep Date: <b>2/22/2022</b>	Analysis Date: <b>2/22/2022</b>		SeqNo: <b>3030668</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Sample ID: <b>MB-65769</b>	SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65769</b>		RunNo: <b>86027</b>							
Prep Date: <b>2/23/2022</b>	Analysis Date: <b>2/23/2022</b>		SeqNo: <b>3032376</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-65769</b>	SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65769</b>		RunNo: <b>86027</b>							
Prep Date: <b>2/23/2022</b>	Analysis Date: <b>2/23/2022</b>		SeqNo: <b>3032377</b>	Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.2	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 interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2202831

01-Mar-22

**Client:** GHD Midland**Project:** Jackson B 17 Wellhead

Sample ID: <b>MB-65649</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65649</b>	RunNo: <b>85962</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028002</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		106	51.1	141			

Sample ID: <b>LCS-65649</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65649</b>	RunNo: <b>85962</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028003</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	68.9	135			
Surr: DNOP	5.3		5.000		107	51.1	141			

Sample ID: <b>MB-65645</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65645</b>	RunNo: <b>85962</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028713</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	14		10.00		141	51.1	141			

Sample ID: <b>LCS-65645</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65645</b>	RunNo: <b>85962</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028714</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	10	50.00	0	107	68.9	135			
Surr: DNOP	5.8		5.000		116	51.1	141			

Sample ID: <b>2202831-007AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SW-7</b>	Batch ID: <b>65645</b>	RunNo: <b>85989</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/22/2022</b>	SeqNo: <b>3031320</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.7	48.45	0	117	39.3	155			
Surr: DNOP	4.9		4.845		102	51.1	141			

**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 interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2202831  
01-Mar-22

Client: GHD Midland  
Project: Jackson B 17 Wellhead

Sample ID: 2202831-007AMSD		SampType: MSD		TestCode: EPA Method 8015M/D: Diesel Range Organics						
Client ID: SW-7		Batch ID: 65645		RunNo: 85989						
Prep Date: 2/18/2022		Analysis Date: 2/22/2022		SeqNo: 3031321		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	9.3	46.38	0	123	39.3	155	1.01	23.4	
Surr: DNOP	5.2		4.638		113	51.1	141	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 Quantitative Limit
S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

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

WO#: 2202831

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>ics-65624</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65624</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027147</b>		Units: <b>mg/Kg</b>					
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	78.6	131			
Surr: BFB	1300		1000		129	70	130			

Sample ID: <b>mb-65624</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65624</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027148</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1200		1000		115	70	130			

Sample ID: <b>ics-65635</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65635</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027165</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	78.6	131			
Surr: BFB	1200		1000		117	70	130			

Sample ID: <b>mb-65635</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65635</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027166</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		103	70	130			

Sample ID: <b>2202831-007ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>SW-7</b>	Batch ID: <b>65635</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027168</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.90	0	103	70	130			
Surr: BFB	1100		956.0		112	70	130			

Sample ID: <b>2202831-007amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>SW-7</b>	Batch ID: <b>65635</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027169</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**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 interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2202831  
01-Mar-22

Client: GHD Midland  
Project: Jackson B 17 Wellhead

Sample ID: 2202831-007amsd		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range						
Client ID: SW-7		Batch ID: 65635		RunNo: 85948						
Prep Date: 2/17/2022		Analysis Date: 2/19/2022		SeqNo: 3027169		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	23.79	0	104	70	130	1.19	20	
Surr: BFB	1100		951.5		115	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 Quantitative Limit
S	% Recovery outside of range due to dilution or matrix interference

B	Analyte detected in the associated Method Blank
E	Estimated value
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

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

WO#: 2202831

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>ics-65624</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65624</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027211</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	90.8	80	120			
Toluene	0.93	0.050	1.000	0	93.1	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.1	80	120			
Xylenes, Total	2.8	0.10	3.000	0	94.3	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	70	130			

Sample ID: <b>mb-65624</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65624</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027212</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: <b>ics-65635</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65635</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027231</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	96.5	80	120			
Toluene	0.99	0.050	1.000	0	98.6	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.5	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.7	80	120			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.9	70	130			

Sample ID: <b>mb-65635</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8021B: Volatiles</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65635</b>		RunNo: <b>85948</b>							
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>		SeqNo: <b>3027232</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.88		1.000		88.2	70	130			

**Qualifiers:**

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

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2202831

01-Mar-22

**Client:** GHD Midland**Project:** Jackson B 17 Wellhead

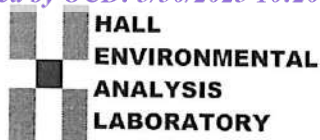
Sample ID: <b>2202831-008ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SW-8</b>	Batch ID: <b>65635</b>	RunNo: <b>85948</b>								
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>	SeqNo: <b>3027235</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	0.9980	0	93.9	80	120			
Toluene	0.97	0.050	0.9980	0	96.7	80	120			
Ethylbenzene	0.98	0.050	0.9980	0	98.6	80	120			
Xylenes, Total	3.0	0.10	2.994	0	98.9	80	120			
Surr: 4-Bromofluorobenzene	0.88		0.9980		87.9	70	130			

Sample ID: <b>2202831-008amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SW-8</b>	Batch ID: <b>65635</b>	RunNo: <b>85948</b>								
Prep Date: <b>2/17/2022</b>	Analysis Date: <b>2/19/2022</b>	SeqNo: <b>3027236</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	0.9950	0	90.2	80	120	4.30	20	
Toluene	0.93	0.050	0.9950	0	93.5	80	120	3.68	20	
Ethylbenzene	0.95	0.050	0.9950	0	95.1	80	120	3.86	20	
Xylenes, Total	2.8	0.10	2.985	0	95.3	80	120	4.00	20	
Surr: 4-Bromofluorobenzene	0.87		0.9950		87.7	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 Quantitative Limit  
S % Recovery outside of range due to dilution or matrix interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



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

## Sample Log-In Check List

Client Name: GHD

Work Order Number: 2202831

RcptNo: 1

Received By: Cheyenne Cason

2/17/2022 8:00:00 AM

*Handwritten signature*

Completed By: Cheyenne Cason

2/17/2022 8:45:12 AM

*Handwritten signature*Reviewed By: *Handwritten signature* 2-17-22

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
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: *Handwritten signature* 2/17/22

### 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: \_\_\_\_\_

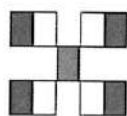
16. Additional remarks: \_\_\_\_\_

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.2	Good	Not Present			
2	4.8	Good	Not Present			

## Chain-of-Custody Record

Client: <u>GHD</u>		Turn-Around Time: <u>Standard</u> <input checked="" type="checkbox"/> <u>Rush</u> <input type="checkbox"/> <u>5 Day</u>	
Mailing Address: <u>2135 S. Loop 250 W.</u>		Project Name: <u>Jackson B # 17 Wellhead</u>	
Phone #: <u>(432) 686-0086</u>		Project #: <u>11228303</u>	
email or Fax#: <u>Becky.Haskew@GHD.com</u>		Project Manager: <u>Becky Haskew</u>	
QA/QC Package: <input type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: <u>Heath Boyd</u>	
Accreditation: <input type="checkbox"/> Az Compliance <input type="checkbox"/> NELAC <input type="checkbox"/> Other		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> EDD (Type)		# of Coolers: <u>2</u> <u>1.2-0-1.2</u>	
		Cooler Temp (including CF): <u>4.8-0-4.8 (°C)</u>	
Date	Time	Matrix	Sample Name
2/15/24	950	S	SW-1
	955		SW-2
	1000		SW-3
	1005		SW-4
	1010		SW-5
	1015		SW-6
	1020		SW-7
	1025		SW-8
	1030		SW-9
	1035		SW-10
	1040		SW-11
	1045		SW-12
Date:	Time:	Relinquished by:	Relinquished by:
2/15/24	1600	<u>[Signature]</u>	<u>[Signature]</u>
Date:	Time:	Relinquished by:	Relinquished by:
2/16/24	1900	<u>[Signature]</u>	<u>[Signature]</u>



# HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

Analysis Request	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chloride 300m
BTEX / MTBE / TMB's (8021)	X	X	X	X	X	X	X	X	X
TPH:8015D(GRO / DRO / MRO)	X	X	X	X	X	X	X	X	X
8081 Pesticides/8082 PCB's	X	X	X	X	X	X	X	X	X
EDB (Method 504.1)	X	X	X	X	X	X	X	X	X
PAHs by 8310 or 8270SIMS	X	X	X	X	X	X	X	X	X
RCRA 8 Metals	X	X	X	X	X	X	X	X	X
Cl, F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO <sub>4</sub> , SO <sub>4</sub>	X	X	X	X	X	X	X	X	X
8260 (VOA)	X	X	X	X	X	X	X	X	X
8270 (Semi-VOA)	X	X	X	X	X	X	X	X	X
Total Coliform (Present/Absent)	X	X	X	X	X	X	X	X	X
Chloride 300m	X	X	X	X	X	X	X	X	X

Remarks:

Received by:	Via:	Date	Time
<u>[Signature]</u>	<u>Car</u>	2/16/24	0800
Received by:	Via:	Date	Time
<u>[Signature]</u>	<u>Car</u>	2/16/24	0800



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



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

March 01, 2022

Tom Larson  
GHD Midland  
2135 S Loop 250 W  
Midland, TX 79703  
TEL: (432) 686-0086  
FAX:

RE: Jackson B 17 Wellhead

OrderNo.: 2202906

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 19 sample(s) on 2/18/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-1

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 12:30:00 PM

Lab ID: 2202906-001

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	690	60		mg/Kg	20	2/25/2022 9:36:45 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	140	10		mg/Kg	1	2/24/2022 5:04:36 AM	65678
Motor Oil Range Organics (MRO)	150	50		mg/Kg	1	2/24/2022 5:04:36 AM	65678
Surr: DNOP	120	51.1-141		%Rec	1	2/24/2022 5:04:36 AM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/22/2022 11:11:31 AM	65658
Surr: BFB	104	70-130		%Rec	1	2/22/2022 11:11:31 AM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2022 11:11:31 AM	65658
Toluene	ND	0.047		mg/Kg	1	2/22/2022 11:11:31 AM	65658
Ethylbenzene	ND	0.047		mg/Kg	1	2/22/2022 11:11:31 AM	65658
Xylenes, Total	ND	0.094		mg/Kg	1	2/22/2022 11:11:31 AM	65658
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	2/22/2022 11:11:31 AM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-2

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 12:35:00 PM

Lab ID: 2202906-002

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	480	60		mg/Kg	20	2/25/2022 9:49:09 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	280	9.8		mg/Kg	1	2/25/2022 11:34:43 AM	65678
Motor Oil Range Organics (MRO)	160	49		mg/Kg	1	2/25/2022 11:34:43 AM	65678
Surr: DNOP	87.5	51.1-141		%Rec	1	2/25/2022 11:34:43 AM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	25		mg/Kg	5	2/22/2022 11:35:10 AM	65658
Surr: BFB	109	70-130		%Rec	5	2/22/2022 11:35:10 AM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.12		mg/Kg	5	2/22/2022 11:35:10 AM	65658
Toluene	ND	0.25		mg/Kg	5	2/22/2022 11:35:10 AM	65658
Ethylbenzene	ND	0.25		mg/Kg	5	2/22/2022 11:35:10 AM	65658
Xylenes, Total	ND	0.49		mg/Kg	5	2/22/2022 11:35:10 AM	65658
Surr: 4-Bromofluorobenzene	99.3	70-130		%Rec	5	2/22/2022 11:35:10 AM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-3

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 12:40:00 PM

Lab ID: 2202906-003

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	2/25/2022 10:01:34 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	56	9.4		mg/Kg	1	2/24/2022 5:25:25 AM	65678
Motor Oil Range Organics (MRO)	140	47		mg/Kg	1	2/24/2022 5:25:25 AM	65678
Surr: DNOP	103	51.1-141		%Rec	1	2/24/2022 5:25:25 AM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 11:59:02 AM	65658
Surr: BFB	111	70-130		%Rec	1	2/22/2022 11:59:02 AM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2022 11:59:02 AM	65658
Toluene	ND	0.049		mg/Kg	1	2/22/2022 11:59:02 AM	65658
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 11:59:02 AM	65658
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2022 11:59:02 AM	65658
Surr: 4-Bromofluorobenzene	99.6	70-130		%Rec	1	2/22/2022 11:59:02 AM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-4

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 12:45:00 PM

Lab ID: 2202906-004

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	2/25/2022 10:13:58 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/22/2022 4:22:21 PM	65678
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2022 4:22:21 PM	65678
Surr: DNOP	101	51.1-141		%Rec	1	2/22/2022 4:22:21 PM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/22/2022 12:22:52 PM	65658
Surr: BFB	111	70-130		%Rec	1	2/22/2022 12:22:52 PM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2022 12:22:52 PM	65658
Toluene	ND	0.048		mg/Kg	1	2/22/2022 12:22:52 PM	65658
Ethylbenzene	ND	0.048		mg/Kg	1	2/22/2022 12:22:52 PM	65658
Xylenes, Total	ND	0.097		mg/Kg	1	2/22/2022 12:22:52 PM	65658
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	1	2/22/2022 12:22:52 PM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-5

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 12:50:00 PM

Lab ID: 2202906-005

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	2/25/2022 10:26:22 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/22/2022 4:33:22 PM	65678
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2022 4:33:22 PM	65678
Surr: DNOP	79.4	51.1-141		%Rec	1	2/22/2022 4:33:22 PM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 12:46:37 PM	65658
Surr: BFB	109	70-130		%Rec	1	2/22/2022 12:46:37 PM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	2/22/2022 12:46:37 PM	65658
Toluene	ND	0.049		mg/Kg	1	2/22/2022 12:46:37 PM	65658
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 12:46:37 PM	65658
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2022 12:46:37 PM	65658
Surr: 4-Bromofluorobenzene	98.5	70-130		%Rec	1	2/22/2022 12:46:37 PM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-6

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 12:55:00 PM

Lab ID: 2202906-006

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	240	60		mg/Kg	20	2/25/2022 11:03:57 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	12	9.8		mg/Kg	1	2/24/2022 5:46:14 AM	65678
Motor Oil Range Organics (MRO)	72	49		mg/Kg	1	2/24/2022 5:46:14 AM	65678
Surr: DNOP	117	51.1-141		%Rec	1	2/24/2022 5:46:14 AM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 1:58:08 PM	65658
Surr: BFB	113	70-130		%Rec	1	2/22/2022 1:58:08 PM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2022 1:58:08 PM	65658
Toluene	ND	0.049		mg/Kg	1	2/22/2022 1:58:08 PM	65658
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 1:58:08 PM	65658
Xylenes, Total	ND	0.097		mg/Kg	1	2/22/2022 1:58:08 PM	65658
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	2/22/2022 1:58:08 PM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-7

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:00:00 PM

Lab ID: 2202906-007

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	5200	300		mg/Kg	100	2/25/2022 2:34:52 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2022 4:55:19 PM	65678
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2022 4:55:19 PM	65678
Surr: DNOP	119	51.1-141		%Rec	1	2/22/2022 4:55:19 PM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	2/22/2022 2:21:57 PM	65658
Surr: BFB	114	70-130		%Rec	1	2/22/2022 2:21:57 PM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	2/22/2022 2:21:57 PM	65658
Toluene	ND	0.047		mg/Kg	1	2/22/2022 2:21:57 PM	65658
Ethylbenzene	ND	0.047		mg/Kg	1	2/22/2022 2:21:57 PM	65658
Xylenes, Total	ND	0.094		mg/Kg	1	2/22/2022 2:21:57 PM	65658
Surr: 4-Bromofluorobenzene	104	70-130		%Rec	1	2/22/2022 2:21:57 PM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-8

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:05:00 PM

Lab ID: 2202906-008

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	2100	60		mg/Kg	20	2/25/2022 11:28:45 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2022 5:06:16 PM	65678
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/22/2022 5:06:16 PM	65678
Surr: DNOP	113	51.1-141		%Rec	1	2/22/2022 5:06:16 PM	65678
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/22/2022 2:45:36 PM	65658
Surr: BFB	113	70-130		%Rec	1	2/22/2022 2:45:36 PM	65658
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	2/22/2022 2:45:36 PM	65658
Toluene	ND	0.048		mg/Kg	1	2/22/2022 2:45:36 PM	65658
Ethylbenzene	ND	0.048		mg/Kg	1	2/22/2022 2:45:36 PM	65658
Xylenes, Total	ND	0.095		mg/Kg	1	2/22/2022 2:45:36 PM	65658
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	1	2/22/2022 2:45:36 PM	65658

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-9

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:10:00 PM

Lab ID: 2202906-009

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	720	60		mg/Kg	20	2/25/2022 11:41:10 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/22/2022 11:19:47 PM	65677
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2022 11:19:47 PM	65677
Surr: DNOP	124	51.1-141		%Rec	1	2/22/2022 11:19:47 PM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	2/21/2022 9:59:00 PM	65664
Surr: BFB	104	70-130		%Rec	1	2/21/2022 9:59:00 PM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/21/2022 9:59:00 PM	65664
Toluene	ND	0.048		mg/Kg	1	2/21/2022 9:59:00 PM	65664
Ethylbenzene	ND	0.048		mg/Kg	1	2/21/2022 9:59:00 PM	65664
Xylenes, Total	ND	0.096		mg/Kg	1	2/21/2022 9:59:00 PM	65664
Surr: 4-Bromofluorobenzene	90.1	70-130		%Rec	1	2/21/2022 9:59:00 PM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-10

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:15:00 PM

Lab ID: 2202906-010

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	220	61		mg/Kg	20	2/25/2022 11:53:34 AM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	55	10		mg/Kg	1	2/24/2022 6:07:21 AM	65677
Motor Oil Range Organics (MRO)	100	50		mg/Kg	1	2/24/2022 6:07:21 AM	65677
Surr: DNOP	97.6	51.1-141		%Rec	1	2/24/2022 6:07:21 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/21/2022 10:58:00 PM	65664
Surr: BFB	103	70-130		%Rec	1	2/21/2022 10:58:00 PM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/21/2022 10:58:00 PM	65664
Toluene	ND	0.049		mg/Kg	1	2/21/2022 10:58:00 PM	65664
Ethylbenzene	ND	0.049		mg/Kg	1	2/21/2022 10:58:00 PM	65664
Xylenes, Total	ND	0.098		mg/Kg	1	2/21/2022 10:58:00 PM	65664
Surr: 4-Bromofluorobenzene	88.1	70-130		%Rec	1	2/21/2022 10:58:00 PM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-11

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:20:00 PM

Lab ID: 2202906-011

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	440	61		mg/Kg	20	2/25/2022 12:05:59 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	120	9.9		mg/Kg	1	2/24/2022 6:28:25 AM	65677
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	2/24/2022 6:28:25 AM	65677
Surr: DNOP	99.2	51.1-141		%Rec	1	2/24/2022 6:28:25 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/21/2022 11:57:00 PM	65664
Surr: BFB	101	70-130		%Rec	1	2/21/2022 11:57:00 PM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/21/2022 11:57:00 PM	65664
Toluene	ND	0.049		mg/Kg	1	2/21/2022 11:57:00 PM	65664
Ethylbenzene	ND	0.049		mg/Kg	1	2/21/2022 11:57:00 PM	65664
Xylenes, Total	ND	0.097		mg/Kg	1	2/21/2022 11:57:00 PM	65664
Surr: 4-Bromofluorobenzene	86.3	70-130		%Rec	1	2/21/2022 11:57:00 PM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-12

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:25:00 PM

Lab ID: 2202906-012

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	270	61		mg/Kg	20	2/25/2022 12:18:23 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	2/22/2022 11:51:32 PM	65677
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/22/2022 11:51:32 PM	65677
Surr: DNOP	102	51.1-141		%Rec	1	2/22/2022 11:51:32 PM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2022 12:17:00 AM	65664
Surr: BFB	103	70-130		%Rec	1	2/22/2022 12:17:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/22/2022 12:17:00 AM	65664
Toluene	ND	0.050		mg/Kg	1	2/22/2022 12:17:00 AM	65664
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2022 12:17:00 AM	65664
Xylenes, Total	ND	0.099		mg/Kg	1	2/22/2022 12:17:00 AM	65664
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	2/22/2022 12:17:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-13

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:30:00 PM

Lab ID: 2202906-013

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	390	60		mg/Kg	20	2/25/2022 12:30:48 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/23/2022 12:02:09 AM	65677
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/23/2022 12:02:09 AM	65677
Surr: DNOP	101	51.1-141		%Rec	1	2/23/2022 12:02:09 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 12:37:00 AM	65664
Surr: BFB	105	70-130		%Rec	1	2/22/2022 12:37:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/22/2022 12:37:00 AM	65664
Toluene	ND	0.049		mg/Kg	1	2/22/2022 12:37:00 AM	65664
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 12:37:00 AM	65664
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2022 12:37:00 AM	65664
Surr: 4-Bromofluorobenzene	88.8	70-130		%Rec	1	2/22/2022 12:37:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-14

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:35:00 PM

Lab ID: 2202906-014

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	1200	60		mg/Kg	20	2/25/2022 12:43:13 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/23/2022 12:12:46 AM	65677
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/23/2022 12:12:46 AM	65677
Surr: DNOP	98.0	51.1-141		%Rec	1	2/23/2022 12:12:46 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2022 12:56:00 AM	65664
Surr: BFB	105	70-130		%Rec	1	2/22/2022 12:56:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/22/2022 12:56:00 AM	65664
Toluene	ND	0.050		mg/Kg	1	2/22/2022 12:56:00 AM	65664
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2022 12:56:00 AM	65664
Xylenes, Total	ND	0.10		mg/Kg	1	2/22/2022 12:56:00 AM	65664
Surr: 4-Bromofluorobenzene	89.0	70-130		%Rec	1	2/22/2022 12:56:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-15

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:40:00 PM

Lab ID: 2202906-015

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	410	59		mg/Kg	20	2/25/2022 12:55:37 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	72	9.7		mg/Kg	1	2/23/2022 12:23:23 AM	65677
Motor Oil Range Organics (MRO)	56	49		mg/Kg	1	2/23/2022 12:23:23 AM	65677
Surr: DNOP	92.9	51.1-141		%Rec	1	2/23/2022 12:23:23 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2022 1:16:00 AM	65664
Surr: BFB	100	70-130		%Rec	1	2/22/2022 1:16:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/22/2022 1:16:00 AM	65664
Toluene	ND	0.050		mg/Kg	1	2/22/2022 1:16:00 AM	65664
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2022 1:16:00 AM	65664
Xylenes, Total	ND	0.099		mg/Kg	1	2/22/2022 1:16:00 AM	65664
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	2/22/2022 1:16:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-16

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:45:00 PM

Lab ID: 2202906-016

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	560	60		mg/Kg	20	2/25/2022 1:32:51 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/23/2022 12:33:59 AM	65677
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	2/23/2022 12:33:59 AM	65677
Surr: DNOP	119	51.1-141		%Rec	1	2/23/2022 12:33:59 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 1:36:00 AM	65664
Surr: BFB	103	70-130		%Rec	1	2/22/2022 1:36:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/22/2022 1:36:00 AM	65664
Toluene	ND	0.049		mg/Kg	1	2/22/2022 1:36:00 AM	65664
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 1:36:00 AM	65664
Xylenes, Total	ND	0.099		mg/Kg	1	2/22/2022 1:36:00 AM	65664
Surr: 4-Bromofluorobenzene	89.3	70-130		%Rec	1	2/22/2022 1:36:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: Ramp-1

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:50:00 PM

Lab ID: 2202906-017

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	670	60		mg/Kg	20	2/25/2022 1:45:15 PM	65794
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	2/23/2022 12:44:39 AM	65677
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	2/23/2022 12:44:39 AM	65677
Surr: DNOP	90.0	51.1-141		%Rec	1	2/23/2022 12:44:39 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	2/22/2022 1:56:00 AM	65664
Surr: BFB	104	70-130		%Rec	1	2/22/2022 1:56:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/22/2022 1:56:00 AM	65664
Toluene	ND	0.050		mg/Kg	1	2/22/2022 1:56:00 AM	65664
Ethylbenzene	ND	0.050		mg/Kg	1	2/22/2022 1:56:00 AM	65664
Xylenes, Total	ND	0.099		mg/Kg	1	2/22/2022 1:56:00 AM	65664
Surr: 4-Bromofluorobenzene	88.2	70-130		%Rec	1	2/22/2022 1:56:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: Ramp-2

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 1:55:00 PM

Lab ID: 2202906-018

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	520	60		mg/Kg	20	2/25/2022 9:47:37 AM	65795
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	2/23/2022 12:55:18 AM	65677
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	2/23/2022 12:55:18 AM	65677
Surr: DNOP	105	51.1-141		%Rec	1	2/23/2022 12:55:18 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 2:15:00 AM	65664
Surr: BFB	102	70-130		%Rec	1	2/22/2022 2:15:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.025		mg/Kg	1	2/22/2022 2:15:00 AM	65664
Toluene	ND	0.049		mg/Kg	1	2/22/2022 2:15:00 AM	65664
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 2:15:00 AM	65664
Xylenes, Total	ND	0.098		mg/Kg	1	2/22/2022 2:15:00 AM	65664
Surr: 4-Bromofluorobenzene	87.7	70-130		%Rec	1	2/22/2022 2:15:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2202906

Date Reported: 3/1/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: Ramp-3

Project: Jackson B 17 Wellhead

Collection Date: 2/16/2022 2:00:00 PM

Lab ID: 2202906-019

Matrix: SOIL

Received Date: 2/18/2022 7:36:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	1000	60		mg/Kg	20	2/25/2022 10:00:01 AM	65795
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: SB
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	2/23/2022 1:05:56 AM	65677
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	2/23/2022 1:05:56 AM	65677
Surr: DNOP	103	51.1-141		%Rec	1	2/23/2022 1:05:56 AM	65677
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	2/22/2022 3:14:00 AM	65664
Surr: BFB	106	70-130		%Rec	1	2/22/2022 3:14:00 AM	65664
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	2/22/2022 3:14:00 AM	65664
Toluene	ND	0.049		mg/Kg	1	2/22/2022 3:14:00 AM	65664
Ethylbenzene	ND	0.049		mg/Kg	1	2/22/2022 3:14:00 AM	65664
Xylenes, Total	ND	0.097		mg/Kg	1	2/22/2022 3:14:00 AM	65664
Surr: 4-Bromofluorobenzene	88.3	70-130		%Rec	1	2/22/2022 3:14:00 AM	65664

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2202906

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>MB-65795</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65795</b>	RunNo: <b>86105</b>								
Prep Date: <b>2/24/2022</b>	Analysis Date: <b>2/25/2022</b>	SeqNo: <b>3034737</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-65795</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65795</b>	RunNo: <b>86105</b>								
Prep Date: <b>2/24/2022</b>	Analysis Date: <b>2/25/2022</b>	SeqNo: <b>3034738</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.0	90	110			

Sample ID: <b>MB-65794</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65794</b>	RunNo: <b>86104</b>								
Prep Date: <b>2/24/2022</b>	Analysis Date: <b>2/25/2022</b>	SeqNo: <b>3035064</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-65794</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65794</b>	RunNo: <b>86104</b>								
Prep Date: <b>2/24/2022</b>	Analysis Date: <b>2/25/2022</b>	SeqNo: <b>3035065</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2202906

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>LCS-65678</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65678</b>	RunNo: <b>85993</b>								
Prep Date: <b>2/21/2022</b>	Analysis Date: <b>2/22/2022</b>	SeqNo: <b>3029333</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	101	68.9	135			
Surr: DNOP	5.4		5.000		108	51.1	141			

Sample ID: <b>MB-65678</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65678</b>	RunNo: <b>85993</b>								
Prep Date: <b>2/21/2022</b>	Analysis Date: <b>2/22/2022</b>	SeqNo: <b>3029334</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.0	51.1	141			

Sample ID: <b>2202906-009AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BH-9</b>	Batch ID: <b>65677</b>	RunNo: <b>85993</b>								
Prep Date: <b>2/21/2022</b>	Analysis Date: <b>2/23/2022</b>	SeqNo: <b>3030840</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	49.95	7.183	88.8	39.3	155			
Surr: DNOP	4.7		4.995		93.8	51.1	141			

Sample ID: <b>2202906-009AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>BH-9</b>	Batch ID: <b>65677</b>	RunNo: <b>85993</b>								
Prep Date: <b>2/21/2022</b>	Analysis Date: <b>2/23/2022</b>	SeqNo: <b>3030841</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.9	49.55	7.183	85.8	39.3	155	3.71	23.4	
Surr: DNOP	4.6		4.955		92.6	51.1	141	0	0	

Sample ID: <b>LCS-65677</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65677</b>	RunNo: <b>85993</b>								
Prep Date: <b>2/21/2022</b>	Analysis Date: <b>2/22/2022</b>	SeqNo: <b>3030888</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.5	68.9	135			
Surr: DNOP	4.7		5.000		94.3	51.1	141			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2202906

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>MB-65677</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65677</b>	RunNo: <b>85993</b>								
Prep Date: <b>2/21/2022</b>	Analysis Date: <b>2/22/2022</b>	SeqNo: <b>3030891</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.8		10.00		98.1	51.1	141			

Sample ID: <b>LCS-65742</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65742</b>	RunNo: <b>86063</b>								
Prep Date: <b>2/23/2022</b>	Analysis Date: <b>2/24/2022</b>	SeqNo: <b>3033006</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.1		5.000		81.2	51.1	141			

Sample ID: <b>LCS-65766</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65766</b>	RunNo: <b>86063</b>								
Prep Date: <b>2/23/2022</b>	Analysis Date: <b>2/24/2022</b>	SeqNo: <b>3033009</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.4	51.1	141			

Sample ID: <b>MB-65742</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65742</b>	RunNo: <b>86063</b>								
Prep Date: <b>2/23/2022</b>	Analysis Date: <b>2/24/2022</b>	SeqNo: <b>3033010</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.2		10.00		92.5	51.1	141			

Sample ID: <b>MB-65766</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65766</b>	RunNo: <b>86063</b>								
Prep Date: <b>2/23/2022</b>	Analysis Date: <b>2/24/2022</b>	SeqNo: <b>3033013</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		95.5	51.1	141			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2202906

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>mb-65658</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65658</b>		RunNo: <b>85971</b>							
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>		SeqNo: <b>3028349</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		111	70	130			

Sample ID: <b>lcs-65658</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65658</b>		RunNo: <b>85971</b>							
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>		SeqNo: <b>3028350</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.3	78.6	131			
Surr: BFB	1200		1000		124	70	130			

Sample ID: <b>lcs-65664</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>65664</b>		RunNo: <b>85977</b>							
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>		SeqNo: <b>3028617</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	78.6	131			
Surr: BFB	1200		1000		120	70	130			

Sample ID: <b>mb-65664</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>65664</b>		RunNo: <b>85977</b>							
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>		SeqNo: <b>3028618</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		105	70	130			

Sample ID: <b>2202906-009ams</b>	SampType: <b>MS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BH-9</b>	Batch ID: <b>65664</b>		RunNo: <b>85977</b>							
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>		SeqNo: <b>3028620</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.9	24.44	0	88.8	70	130			
Surr: BFB	1200		977.5		120	70	130			

Sample ID: <b>2202906-009amsd</b>	SampType: <b>MSD</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>BH-9</b>	Batch ID: <b>65664</b>		RunNo: <b>85977</b>							
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>		SeqNo: <b>3028621</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2202906  
01-Mar-22

Client: GHD Midland  
Project: Jackson B 17 Wellhead

Sample ID: 2202906-009amsd		SampType: MSD		TestCode: EPA Method 8015D: Gasoline Range						
Client ID: BH-9		Batch ID: 65664		RunNo: 85977						
Prep Date: 2/18/2022		Analysis Date: 2/21/2022		SeqNo: 3028621		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	24.80	0	93.5	70	130	6.66	20	
Surr: BFB	1100		992.1		112	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 Quantitative Limit

S % Recovery outside of range due to dilution or matrix interference
- B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

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

WO#: 2202906

01-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>mb-65658</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65658</b>	RunNo: <b>85971</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028396</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	70	130			

Sample ID: <b>LCS-65658</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65658</b>	RunNo: <b>85971</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028397</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.025	1.000	0	88.8	80	120			
Toluene	0.96	0.050	1.000	0	95.7	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.5	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.6	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		105	70	130			

Sample ID: <b>lcs-65664</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>65664</b>	RunNo: <b>85977</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028671</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	94.6	80	120			
Toluene	0.98	0.050	1.000	0	97.5	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.0	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.0	80	120			
Surr: 4-Bromofluorobenzene	0.89		1.000		89.2	70	130			

Sample ID: <b>mb-65664</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>65664</b>	RunNo: <b>85977</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028672</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		89.3	70	130			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2202906

01-Mar-22

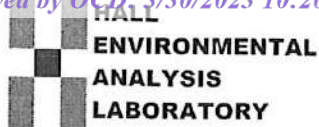
**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>2202906-010ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BH-10</b>	Batch ID: <b>65664</b>	RunNo: <b>85977</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028675</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9699	0	91.4	80	120			
Toluene	0.92	0.048	0.9699	0	95.0	80	120			
Ethylbenzene	0.94	0.048	0.9699	0	96.8	80	120			
Xylenes, Total	2.8	0.097	2.910	0	96.8	80	120			
Surr: 4-Bromofluorobenzene	0.86		0.9699		88.4	70	130			

Sample ID: <b>2202906-010amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>BH-10</b>	Batch ID: <b>65664</b>	RunNo: <b>85977</b>								
Prep Date: <b>2/18/2022</b>	Analysis Date: <b>2/21/2022</b>	SeqNo: <b>3028676</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	0.9804	0	89.8	80	120	0.671	20	
Toluene	0.93	0.049	0.9804	0	94.7	80	120	0.703	20	
Ethylbenzene	0.95	0.049	0.9804	0	96.9	80	120	1.18	20	
Xylenes, Total	2.8	0.098	2.941	0	96.7	80	120	0.993	20	
Surr: 4-Bromofluorobenzene	0.87		0.9804		89.0	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	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		



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

## Sample Log-In Check List

Client Name: GHD Midland

Work Order Number: 2202906

RcptNo: 1

Received By: Tracy Casarrubias

2/18/2022 7:36:00 AM

Completed By: Tracy Casarrubias

2/18/2022 9:07:09 AM

Reviewed By:

JA 2-18-22

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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
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: JA 2/18/22

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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Not Present			
2	4.2	Good	Not Present			



## Chain-of-Custody Record

Client: GHD

Mailing Address:

324 W. Main St. Suite 108, Artesia NM 88210

Phone #: (505)377-4218

email or Fax#: [Becky.Haskell@ghd.com](mailto:Becky.Haskell@ghd.com)

QA/QC Package:

☐ Standard☐ Level 4 (Full Validation)Accreditation: ☐ Az Compliance☐ NELAC ☐ Other☐ EDD (Type)

Turn-Around Time:

☒ Standard☒ Rush

5 Days

Project Name:

Jackson B #12 Wellhead

Project #:

11228313

Project Manager:

Becky Haskell

Tom Larson

Sampler: ~~Zach Comino~~ Heath BoydOn Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp (including CFI): 1) 4.6+0.1 = 4.7

Container Type and #

Preservative Type

HEAL No.

2) 4.1+0.1 = 4.2

2202906

4oz Jar/1

N/A

001

002

003

004

005

006

007

008

009

010

011

012

x

x

x

x

x

x

x

x

x

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x

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x

x

Received by:

Via:

Date

Time

2/17/22

7:30

2/18/22

7:30

2/18/22

7:30

7:30

Relinquished by:

Relinquished by:

Date:

Time:

2/16/22

1600

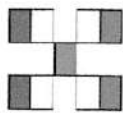
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2/17/22

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HALL ENVIRONMENTAL  
ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

TPH:8015D(GRO / DRO / MRO)

8081 Pesticides/8082 PCB's

EDB (Method 504.1)

PAHs by 8310 or 8270SIMS

RCRA 8 Metals

Cl, F, Br, NO<sub>3</sub>, PO<sub>4</sub>, SO<sub>4</sub>

8260 (VOA)

8270 (Semi-VOA)

Total Coliform (Present/Absent)

Chloride 300 M

Chloride 300 M

Chloride 300 M

Chloride 300 M

Chloride 300 M

Chloride 300 M

Chloride 300 M

Chloride 300 M

Chloride 300 M

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Chloride 300 M

Remarks: Please email: Chase\_Settle@eogresources.com;  
Tom.Larson@ghd.com; Zach.Comino@ghd.com; Along with  
Becky Haskell listed above.

Direct Bill to EOG Chase Settle

Heath.Boyd@ghd.com

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







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

March 21, 2022

Tom Larson  
GHD Midland  
2135 S Loop 250 W  
Midland, TX 79703  
TEL: (432) 686-0086  
FAX:

RE: Jackson B 17 Wellhead

OrderNo.: 2203921

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/17/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2203921

Date Reported: 3/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: Ramp-3A

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 10:30:00 AM

Lab ID: 2203921-001

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	120	60		mg/Kg	20	3/17/2022 9:49:48 PM	66250
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/17/2022 2:51:58 PM	66228
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/17/2022 2:51:58 PM	66228
Surr: DNOP	90.9	51.1-141		%Rec	1	3/17/2022 2:51:58 PM	66228
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	3/17/2022 4:18:04 PM	G86557
Surr: BFB	103	70-130		%Rec	1	3/17/2022 4:18:04 PM	G86557
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.017		mg/Kg	1	3/17/2022 4:18:04 PM	B86557
Toluene	ND	0.035		mg/Kg	1	3/17/2022 4:18:04 PM	B86557
Ethylbenzene	ND	0.035		mg/Kg	1	3/17/2022 4:18:04 PM	B86557
Xylenes, Total	ND	0.069		mg/Kg	1	3/17/2022 4:18:04 PM	B86557
Surr: 4-Bromofluorobenzene	94.5	70-130		%Rec	1	3/17/2022 4:18:04 PM	B86557

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 1 of 7

## Analytical Report

Lab Order 2203921

Date Reported: 3/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-22'-17

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:17:00 PM

Lab ID: 2203921-002

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	910	60		mg/Kg	20	3/17/2022 10:02:13 PM	66250
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	2700	200		mg/Kg	20	3/17/2022 3:02:43 PM	66228
Motor Oil Range Organics (MRO)	1000	1000		mg/Kg	20	3/17/2022 3:02:43 PM	66228
Surr: DNOP	0	51.1-141	S	%Rec	20	3/17/2022 3:02:43 PM	66228
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	18	16		mg/Kg	5	3/17/2022 4:41:41 PM	G86557
Surr: BFB	134	70-130	S	%Rec	5	3/17/2022 4:41:41 PM	G86557
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.082		mg/Kg	5	3/17/2022 4:41:41 PM	B86557
Toluene	ND	0.16		mg/Kg	5	3/17/2022 4:41:41 PM	B86557
Ethylbenzene	0.18	0.16		mg/Kg	5	3/17/2022 4:41:41 PM	B86557
Xylenes, Total	ND	0.33		mg/Kg	5	3/17/2022 4:41:41 PM	B86557
Surr: 4-Bromofluorobenzene	99.7	70-130		%Rec	5	3/17/2022 4:41:41 PM	B86557

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

## Analytical Report

Lab Order 2203921

Date Reported: 3/21/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-22'-18

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:20:00 PM

Lab ID: 2203921-003

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	780	60		mg/Kg	20	3/17/2022 10:14:37 PM	66250
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	3000	200		mg/Kg	20	3/17/2022 3:13:26 PM	66228
Motor Oil Range Organics (MRO)	1300	980		mg/Kg	20	3/17/2022 3:13:26 PM	66228
Surr: DNOP	0	51.1-141	S	%Rec	20	3/17/2022 3:13:26 PM	66228
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	20	16		mg/Kg	5	3/17/2022 6:16:42 PM	G86557
Surr: BFB	140	70-130	S	%Rec	5	3/17/2022 6:16:42 PM	G86557
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.080		mg/Kg	5	3/17/2022 6:16:42 PM	B86557
Toluene	ND	0.16		mg/Kg	5	3/17/2022 6:16:42 PM	B86557
Ethylbenzene	0.20	0.16		mg/Kg	5	3/17/2022 6:16:42 PM	B86557
Xylenes, Total	ND	0.32		mg/Kg	5	3/17/2022 6:16:42 PM	B86557
Surr: 4-Bromofluorobenzene	101	70-130		%Rec	5	3/17/2022 6:16:42 PM	B86557

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 3 of 7



QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2203921  
21-Mar-22

Client: GHD Midland

Project: Jackson B 17 Wellhead

Sample ID: <b>MB-66250</b>		SampType: <b>mblk</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>PBS</b>		Batch ID: <b>66250</b>		RunNo: <b>86570</b>						
Prep Date: <b>3/17/2022</b>		Analysis Date: <b>3/17/2022</b>		SeqNo: <b>3055565</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-66250</b>		SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>		Batch ID: <b>66250</b>		RunNo: <b>86570</b>						
Prep Date: <b>3/17/2022</b>		Analysis Date: <b>3/17/2022</b>		SeqNo: <b>3055566</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.5	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 interference

B Analyte detected in the associated Method Blank

E Estimated value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 4 of 7

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

WO#: 2203921

21-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>LCS-66228</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>66228</b>			RunNo: <b>86542</b>						
Prep Date: <b>3/17/2022</b>	Analysis Date: <b>3/17/2022</b>			SeqNo: <b>3055283</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.7	68.9	135			
Surr: DNOP	3.7		5.000		74.2	51.1	141			

Sample ID: <b>MB-66228</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>66228</b>			RunNo: <b>86542</b>						
Prep Date: <b>3/17/2022</b>	Analysis Date: <b>3/17/2022</b>			SeqNo: <b>3055287</b>	Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.3		10.00		82.6	51.1	141			

**Qualifiers:**

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Estimated value
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 Limit
S % Recovery outside of range due to dilution or matrix interference	

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

WO#: 2203921

21-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>PBS</b>	Batch ID: <b>G86557</b>		RunNo: <b>86557</b>							
Prep Date:	Analysis Date: <b>3/17/2022</b>		SeqNo: <b>3054763</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		107	70	130			

Sample ID: <b>2.5ug gro lcs</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015D: Gasoline Range</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>G86557</b>		RunNo: <b>86557</b>							
Prep Date:	Analysis Date: <b>3/17/2022</b>		SeqNo: <b>3054764</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.9	78.6	131			
Surr: BFB	1200		1000		122	70	130			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2203921

21-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>mb</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>B86557</b>	RunNo: <b>86557</b>								
Prep Date:	Analysis Date: <b>3/17/2022</b>	SeqNo: <b>3054808</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.4	70	130			

Sample ID: <b>100ng btex lcs</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>B86557</b>	RunNo: <b>86557</b>								
Prep Date:	Analysis Date: <b>3/17/2022</b>	SeqNo: <b>3054809</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	86.7	80	120			
Toluene	0.92	0.050	1.000	0	91.6	80	120			
Ethylbenzene	0.93	0.050	1.000	0	92.6	80	120			
Xylenes, Total	2.8	0.10	3.000	0	93.2	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		97.8	70	130			

**Qualifiers:**

* Value exceeds Maximum Contaminant Level.	B Analyte detected in the associated Method Blank
D Sample Diluted Due to Matrix	E Estimated value
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 Limit
S % Recovery outside of range due to dilution or matrix interference	



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

## Sample Log-In Check List

Client Name: GHD Midland

Work Order Number: 2203921

RcptNo: 1

Received By: Cheyenne Cason

3/15/2022 10:30:00 AM

Completed By: Tracy Casarrubias

3/17/2022 7:54:14 AM

Reviewed By: *3-17-22*

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
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: *jr 3/17/22*

### 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 $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Yes			







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

March 28, 2022

Tom Larson  
GHD Midland  
2135 S Loop 250 W  
Midland, TX 79703  
TEL: (432) 686-0086  
FAX

RE: Jackson B 17 Wellhead

OrderNo.: 2203927

Dear Tom Larson:

Hall Environmental Analysis Laboratory received 8 sample(s) on 3/17/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-S-21'-27

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:05:00 PM

Lab ID: 2203927-001

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	830	60		mg/Kg	20	3/23/2022 12:37:57 AM	66335
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	2600	190		mg/Kg	20	3/24/2022 10:32:55 AM	66315
Motor Oil Range Organics (MRO)	1400	950		mg/Kg	20	3/24/2022 10:32:55 AM	66315
Surr: DNOP	0	51.1-141	S	%Rec	20	3/24/2022 10:32:55 AM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	56	24		mg/Kg	5	3/22/2022 10:15:00 AM	66309
Surr: BFB	172	37.7-212		%Rec	5	3/22/2022 10:15:00 AM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.12		mg/Kg	5	3/22/2022 10:15:00 AM	66309
Toluene	ND	0.24		mg/Kg	5	3/22/2022 10:15:00 AM	66309
Ethylbenzene	0.45	0.24		mg/Kg	5	3/22/2022 10:15:00 AM	66309
Xylenes, Total	ND	0.47		mg/Kg	5	3/22/2022 10:15:00 AM	66309
Surr: 4-Bromofluorobenzene	103	70-130		%Rec	5	3/22/2022 10:15:00 AM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-E-21'-27

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:08:00 PM

Lab ID: 2203927-002

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	800	60		mg/Kg	20	3/23/2022 12:50:21 AM	66335
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	3300	200		mg/Kg	20	3/24/2022 11:04:14 AM	66315
Motor Oil Range Organics (MRO)	1100	990		mg/Kg	20	3/24/2022 11:04:14 AM	66315
Surr: DNOP	0	51.1-141	S	%Rec	20	3/24/2022 11:04:14 AM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	24		mg/Kg	5	3/22/2022 11:34:00 AM	66309
Surr: BFB	132	37.7-212		%Rec	5	3/22/2022 11:34:00 AM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.12		mg/Kg	5	3/22/2022 11:34:00 AM	66309
Toluene	ND	0.24		mg/Kg	5	3/22/2022 11:34:00 AM	66309
Ethylbenzene	ND	0.24		mg/Kg	5	3/22/2022 11:34:00 AM	66309
Xylenes, Total	ND	0.49		mg/Kg	5	3/22/2022 11:34:00 AM	66309
Surr: 4-Bromofluorobenzene	97.8	70-130		%Rec	5	3/22/2022 11:34:00 AM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-N-21'-27

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:11:00 PM

Lab ID: 2203927-003

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	240	60		mg/Kg	20	3/23/2022 1:02:45 AM	66335
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	3/23/2022 12:23:50 PM	66315
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/23/2022 12:23:50 PM	66315
Surr: DNOP	104	51.1-141		%Rec	1	3/23/2022 12:23:50 PM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/22/2022 12:33:00 PM	66309
Surr: BFB	105	37.7-212		%Rec	1	3/22/2022 12:33:00 PM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.023		mg/Kg	1	3/22/2022 12:33:00 PM	66309
Toluene	ND	0.047		mg/Kg	1	3/22/2022 12:33:00 PM	66309
Ethylbenzene	ND	0.047		mg/Kg	1	3/22/2022 12:33:00 PM	66309
Xylenes, Total	ND	0.094		mg/Kg	1	3/22/2022 12:33:00 PM	66309
Surr: 4-Bromofluorobenzene	89.1	70-130		%Rec	1	3/22/2022 12:33:00 PM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: SW-W-21'-27

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:14:00 PM

Lab ID: 2203927-004

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	740	60		mg/Kg	20	3/23/2022 1:15:10 AM	66335
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/23/2022 12:34:17 PM	66315
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/23/2022 12:34:17 PM	66315
Surr: DNOP	92.6	51.1-141		%Rec	1	3/23/2022 12:34:17 PM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	3/22/2022 12:53:00 PM	66309
Surr: BFB	98.2	37.7-212		%Rec	1	3/22/2022 12:53:00 PM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.025		mg/Kg	1	3/22/2022 12:53:00 PM	66309
Toluene	ND	0.050		mg/Kg	1	3/22/2022 12:53:00 PM	66309
Ethylbenzene	ND	0.050		mg/Kg	1	3/22/2022 12:53:00 PM	66309
Xylenes, Total	ND	0.10		mg/Kg	1	3/22/2022 12:53:00 PM	66309
Surr: 4-Bromofluorobenzene	83.2	70-130		%Rec	1	3/22/2022 12:53:00 PM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-25'-17

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:23:00 PM

Lab ID: 2203927-005

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	780	60		mg/Kg	20	3/23/2022 11:42:31 AM	66353
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	6300	200		mg/Kg	20	3/23/2022 10:40:46 PM	66315
Motor Oil Range Organics (MRO)	2700	1000		mg/Kg	20	3/23/2022 10:40:46 PM	66315
Surr: DNOP	0	51.1-141	S	%Rec	20	3/23/2022 10:40:46 PM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	150	23		mg/Kg	5	3/22/2022 1:13:00 PM	66309
Surr: BFB	228	37.7-212	S	%Rec	5	3/22/2022 1:13:00 PM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.11		mg/Kg	5	3/22/2022 1:13:00 PM	66309
Toluene	ND	0.23		mg/Kg	5	3/22/2022 1:13:00 PM	66309
Ethylbenzene	2.2	0.23		mg/Kg	5	3/22/2022 1:13:00 PM	66309
Xylenes, Total	1.8	0.46		mg/Kg	5	3/22/2022 1:13:00 PM	66309
Surr: 4-Bromofluorobenzene	112	70-130		%Rec	5	3/22/2022 1:13:00 PM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-25'-18

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:26:00 PM

Lab ID: 2203927-006

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	880	60		mg/Kg	20	3/23/2022 12:19:45 PM	66353
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	6400	200		mg/Kg	20	3/23/2022 10:51:16 PM	66315
Motor Oil Range Organics (MRO)	3000	1000		mg/Kg	20	3/23/2022 10:51:16 PM	66315
Surr: DNOP	0	51.1-141	S	%Rec	20	3/23/2022 10:51:16 PM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	170	24		mg/Kg	5	3/22/2022 1:32:00 PM	66309
Surr: BFB	237	37.7-212	S	%Rec	5	3/22/2022 1:32:00 PM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.12		mg/Kg	5	3/22/2022 1:32:00 PM	66309
Toluene	ND	0.24		mg/Kg	5	3/22/2022 1:32:00 PM	66309
Ethylbenzene	2.4	0.24		mg/Kg	5	3/22/2022 1:32:00 PM	66309
Xylenes, Total	1.9	0.47		mg/Kg	5	3/22/2022 1:32:00 PM	66309
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	5	3/22/2022 1:32:00 PM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-27'-17

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:29:00 PM

Lab ID: 2203927-007

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	820	60		mg/Kg	20	3/23/2022 12:32:10 PM	66353
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	6100	190		mg/Kg	20	3/23/2022 11:01:49 PM	66315
Motor Oil Range Organics (MRO)	2400	960		mg/Kg	20	3/23/2022 11:01:49 PM	66315
Surr: DNOP	0	51.1-141	S	%Rec	20	3/23/2022 11:01:49 PM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	100	24		mg/Kg	5	3/22/2022 1:52:00 PM	66309
Surr: BFB	205	37.7-212		%Rec	5	3/22/2022 1:52:00 PM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.12		mg/Kg	5	3/22/2022 1:52:00 PM	66309
Toluene	ND	0.24		mg/Kg	5	3/22/2022 1:52:00 PM	66309
Ethylbenzene	0.91	0.24		mg/Kg	5	3/22/2022 1:52:00 PM	66309
Xylenes, Total	0.50	0.48		mg/Kg	5	3/22/2022 1:52:00 PM	66309
Surr: 4-Bromofluorobenzene	109	70-130		%Rec	5	3/22/2022 1:52:00 PM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

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## Analytical Report

Lab Order 2203927

Date Reported: 3/28/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: GHD Midland

Client Sample ID: BH-27'-18

Project: Jackson B 17 Wellhead

Collection Date: 3/15/2022 4:32:00 PM

Lab ID: 2203927-008

Matrix: SOIL

Received Date: 3/17/2022 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>LRN</b>
Chloride	840	60		mg/Kg	20	3/23/2022 12:44:34 PM	66353
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	7300	200		mg/Kg	20	3/23/2022 11:12:22 PM	66315
Motor Oil Range Organics (MRO)	2300	990		mg/Kg	20	3/23/2022 11:12:22 PM	66315
Surr: DNOP	0	51.1-141	S	%Rec	20	3/23/2022 11:12:22 PM	66315
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>BRM</b>
Gasoline Range Organics (GRO)	110	24		mg/Kg	5	3/22/2022 2:12:00 PM	66309
Surr: BFB	200	37.7-212		%Rec	5	3/22/2022 2:12:00 PM	66309
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>BRM</b>
Benzene	ND	0.12		mg/Kg	5	3/22/2022 2:12:00 PM	66309
Toluene	ND	0.24		mg/Kg	5	3/22/2022 2:12:00 PM	66309
Ethylbenzene	0.95	0.24		mg/Kg	5	3/22/2022 2:12:00 PM	66309
Xylenes, Total	0.51	0.47		mg/Kg	5	3/22/2022 2:12:00 PM	66309
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	5	3/22/2022 2:12:00 PM	66309

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	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 Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 8 of 12



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

WO#: 2203927

28-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>MB-66335</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>66335</b>	RunNo: <b>86669</b>								
Prep Date: <b>3/22/2022</b>	Analysis Date: <b>3/22/2022</b>	SeqNo: <b>3060011</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-66335</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>66335</b>	RunNo: <b>86669</b>								
Prep Date: <b>3/22/2022</b>	Analysis Date: <b>3/22/2022</b>	SeqNo: <b>3060012</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.4	90	110			

Sample ID: <b>MB-66353</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>66353</b>	RunNo: <b>86719</b>								
Prep Date: <b>3/23/2022</b>	Analysis Date: <b>3/23/2022</b>	SeqNo: <b>3061682</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-66353</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>66353</b>	RunNo: <b>86719</b>								
Prep Date: <b>3/23/2022</b>	Analysis Date: <b>3/23/2022</b>	SeqNo: <b>3061683</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	91.8	90	110			

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2203927

28-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>LCS-66315</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>66315</b>		RunNo: <b>86676</b>							
Prep Date: <b>3/22/2022</b>	Analysis Date: <b>3/23/2022</b>		SeqNo: <b>3061338</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.8	68.9	135			
Surr: DNOP	4.2		5.000		83.9	51.1	141			

Sample ID: <b>MB-66315</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>66315</b>		RunNo: <b>86676</b>							
Prep Date: <b>3/22/2022</b>	Analysis Date: <b>3/23/2022</b>		SeqNo: <b>3061340</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	51.1	141			

**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 interference

B Analyte detected in the associated Method Blank  
E Estimated value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 10 of 12

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

WO#: 2203927

28-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>ics-66309</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>66309</b>				RunNo: <b>86664</b>					
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>				SeqNo: <b>3059691</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	113	72.3	137			
Surr: BFB	2500		1000		246	37.7	212			S

Sample ID: <b>mb-66309</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>66309</b>				RunNo: <b>86664</b>					
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>				SeqNo: <b>3059692</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		111	37.7	212			

Sample ID: <b>2203927-001ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>SW-S-21'-27</b>	Batch ID: <b>66309</b>				RunNo: <b>86664</b>					
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>				SeqNo: <b>3059694</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	88	24	23.63	55.61	137	70	130			S
Surr: BFB	9600		4726		203	37.7	212			

Sample ID: <b>2203927-001amsd</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>SW-S-21'-27</b>	Batch ID: <b>66309</b>				RunNo: <b>86664</b>					
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>				SeqNo: <b>3059695</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	86	23	23.47	55.61	131	70	130	1.90	20	S
Surr: BFB	9700		4695		206	37.7	212	0	0	

**Qualifiers:**

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		

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

WO#: 2203927

28-Mar-22

**Client:** GHD Midland  
**Project:** Jackson B 17 Wellhead

Sample ID: <b>lcs-66309</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>66309</b>			RunNo: <b>86664</b>						
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>			SeqNo: <b>3059742</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.1	80	120			
Toluene	0.97	0.050	1.000	0	96.9	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.0	80	120			
Xylenes, Total	2.9	0.10	3.000	0	97.8	80	120			
Surr: 4-Bromofluorobenzene	0.96		1.000		95.9	70	130			

Sample ID: <b>mb-66309</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>PBS</b>	Batch ID: <b>66309</b>			RunNo: <b>86664</b>						
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>			SeqNo: <b>3059743</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.1	70	130			

Sample ID: <b>2203927-002ams</b>	SampType: <b>MS</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>SW-E-21'-27</b>	Batch ID: <b>66309</b>			RunNo: <b>86664</b>						
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>			SeqNo: <b>3059746</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.12	0.9804	0	104	68.8	120			
Toluene	1.1	0.25	0.9804	0	112	73.6	124			
Ethylbenzene	1.3	0.25	0.9804	0.1441	120	72.7	129			
Xylenes, Total	3.5	0.49	2.941	0	117	75.7	126			
Surr: 4-Bromofluorobenzene	4.7		4.902		96.3	70	130			

Sample ID: <b>2203927-002amsd</b>	SampType: <b>MSD</b>			TestCode: <b>EPA Method 8021B: Volatiles</b>						
Client ID: <b>SW-E-21'-27</b>	Batch ID: <b>66309</b>			RunNo: <b>86664</b>						
Prep Date: <b>3/21/2022</b>	Analysis Date: <b>3/22/2022</b>			SeqNo: <b>3059747</b>			Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.12	0.9833	0	97.2	68.8	120	6.58	20	
Toluene	1.0	0.25	0.9833	0	102	73.6	124	8.84	20	
Ethylbenzene	1.2	0.25	0.9833	0.1441	110	72.7	129	7.48	20	
Xylenes, Total	3.2	0.49	2.950	0	107	75.7	126	8.83	20	
Surr: 4-Bromofluorobenzene	4.7		4.916		96.1	70	130	0	0	

**Qualifiers:**

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D	Sample Diluted Due to Matrix	E	Estimated value
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 Limit
S	% Recovery outside of range due to dilution or matrix interference		



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

## Sample Log-In Check List

Client Name: GHD Midland

Work Order Number: 2203927

RcptNo: 1

Received By: Cheyenne Cason

3/17/2022 7:00:00 AM

*Check*

Completed By: Tracy Casarrubias

3/17/2022 8:20:30 AM

Reviewed By:

*KAC 3/17/22*

### 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  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? 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. Received at least 1 vial with headspace  $<1/4$ " for AQ VOA? Yes ☐ No ☐ NA ☒
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: *JA 3/17/22*

### 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	3.4	Good	Yes			







---

PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

April 11, 2022

BECKY HASKELL

GHD SERVICES, INC.

6121 INDIAN SCHOOL RD, NE STE. 200

ALBUQUERQUE, NM 87110

RE: JACKSON B #17 WELLHEAD

Enclosed are the results of analyses for samples received by the laboratory on 04/06/22 14:50.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-21-14. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Total Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH - 17 B	H221388-01	Soil	06-Apr-22 10:45	06-Apr-22 14:50
BH - 18 B	H221388-02	Soil	06-Apr-22 10:50	06-Apr-22 14:50
SW - E 21'-30'	H221388-03	Soil	06-Apr-22 10:55	06-Apr-22 14:50
SW - S 21'-30'	H221388-04	Soil	06-Apr-22 11:00	06-Apr-22 14:50

04/11/22 - Client changed the sample IDs on -03 and -04. This is the revised report and will replace the one sent on 04/07/22.

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "C. D. Keene".

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**BH - 17 B**  
**H221388-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>928</b>		16.0	mg/kg	4	2040721	AC	07-Apr-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

<b>Benzene*</b>	<b>0.210</b>		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
<b>Toluene*</b>	<b>0.413</b>		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	GC-NC1
<b>Ethylbenzene*</b>	<b>1.20</b>		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
<b>Total Xylenes*</b>	<b>1.90</b>		0.150	mg/kg	50	2040701	MS/	07-Apr-22	8021B	GC-NC1
<b>Total BTEX</b>	<b>3.72</b>		0.300	mg/kg	50	2040701	MS/	07-Apr-22	8021B	GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 196 % 69.9-140 2040701 MS/ 07-Apr-22 8021B

**Petroleum Hydrocarbons by GC FID****S-04**

<b>GRO C6-C10*</b>	<b>215</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	
<b>DRO &gt;C10-C28*</b>	<b>4090</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>722</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	

Surrogate: 1-Chlorooctane 187 % 66.9-136 2040625 MS 07-Apr-22 8015B

Surrogate: 1-Chlorooctadecane 511 % 59.5-142 2040625 MS 07-Apr-22 8015B

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence or any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damage including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**BH - 18 B**  
**H221388-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>1010</b>		16.0	mg/kg	4	2040721	AC	07-Apr-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021****S-04**

<b>Benzene*</b>	<b>0.105</b>		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
<b>Toluene*</b>	<b>0.381</b>		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	GC-NC1
<b>Ethylbenzene*</b>	<b>2.23</b>		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
<b>Total Xylenes*</b>	<b>3.04</b>		0.150	mg/kg	50	2040701	MS/	07-Apr-22	8021B	GC-NC1
<b>Total BTEX</b>	<b>5.75</b>		0.300	mg/kg	50	2040701	MS/	07-Apr-22	8021B	GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 192 % 69.9-140 2040701 MS/ 07-Apr-22 8021B

**Petroleum Hydrocarbons by GC FID****S-04**

<b>GRO C6-C10*</b>	<b>241</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	
<b>DRO &gt;C10-C28*</b>	<b>4080</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	
<b>EXT DRO &gt;C28-C36</b>	<b>694</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	

Surrogate: 1-Chlorooctane 188 % 66.9-136 2040625 MS 07-Apr-22 8015B

Surrogate: 1-Chlorooctadecane 528 % 59.5-142 2040625 MS 07-Apr-22 8015B

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**SW - E 21'-30'****H221388-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>432</b>		16.0	mg/kg	4	2040724	AC	07-Apr-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B
Toluene*	<0.050	0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B
Ethylbenzene*	<0.050	0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B
Total Xylenes*	<0.150	0.150	mg/kg	50	2040701	MS/	07-Apr-22	8021B
Total BTEX	<0.300	0.300	mg/kg	50	2040701	MS/	07-Apr-22	8021B

Surrogate: 4-Bromofluorobenzene (PID)	102 %	69.9-140	2040701	MS/	07-Apr-22	8021B
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B

Surrogate: 1-Chlorooctane	100 %	66.9-136	2040625	MS	07-Apr-22	8015B
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Surrogate: 1-Chlorooctadecane	105 %	59.5-142	2040625	MS	07-Apr-22	8015B
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**SW - S 21'-30'****H221388-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>976</b>		16.0	mg/kg	4	2040724	AC	07-Apr-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2040701	MS/	07-Apr-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2040701	MS/	07-Apr-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			102 %	69.9-140		2040701	MS/	07-Apr-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	
DRO >C10-C28*	<b>107</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	
EXT DRO >C28-C36	<b>17.2</b>		10.0	mg/kg	1	2040625	MS	07-Apr-22	8015B	

Surrogate: 1-Chlorooctane			106 %	66.9-136		2040625	MS	07-Apr-22	8015B	
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Surrogate: 1-Chlorooctadecane			129 %	59.5-142		2040625	MS	07-Apr-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2040721 - 1:4 DI Water****Blank (2040721-BLK1)**

Prepared &amp; Analyzed: 07-Apr-22

Chloride	ND	16.0	mg/kg							
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**LCS (2040721-BS1)**

Prepared &amp; Analyzed: 07-Apr-22

Chloride	416	16.0	mg/kg	400		104	80-120			
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**LCS Dup (2040721-BSD1)**

Prepared &amp; Analyzed: 07-Apr-22

Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	
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**Batch 2040724 - 1:4 DI Water****Blank (2040724-BLK1)**

Prepared &amp; Analyzed: 07-Apr-22

Chloride	ND	16.0	mg/kg							
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**LCS (2040724-BS1)**

Prepared &amp; Analyzed: 07-Apr-22

Chloride	432	16.0	mg/kg	400		108	80-120			
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**LCS Dup (2040724-BSD1)**

Prepared &amp; Analyzed: 07-Apr-22

Chloride	432	16.0	mg/kg	400		108	80-120	0.00	20	
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**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2040701 - Volatiles****Blank (2040701-BLK1)**

Prepared &amp; Analyzed: 07-Apr-22

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0508		mg/kg	0.0500		102	69.9-140			

**LCS (2040701-BS1)**

Prepared &amp; Analyzed: 07-Apr-22

Benzene	2.02	0.050	mg/kg	2.00		101	83.4-122			
Toluene	1.95	0.050	mg/kg	2.00		97.7	84.2-126			
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.6	84.2-121			
m,p-Xylene	3.93	0.100	mg/kg	4.00		98.2	89.9-126			
o-Xylene	1.87	0.050	mg/kg	2.00		93.4	84.3-123			
Total Xylenes	5.79	0.150	mg/kg	6.00		96.6	89.1-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0501		mg/kg	0.0500		100	69.9-140			

**LCS Dup (2040701-BSD1)**

Prepared &amp; Analyzed: 07-Apr-22

Benzene	2.08	0.050	mg/kg	2.00		104	83.4-122	2.96	12.6	
Toluene	2.06	0.050	mg/kg	2.00		103	84.2-126	5.29	13.3	
Ethylbenzene	1.97	0.050	mg/kg	2.00		98.5	84.2-121	4.01	13.9	
m,p-Xylene	4.14	0.100	mg/kg	4.00		104	89.9-126	5.36	13.6	
o-Xylene	1.99	0.050	mg/kg	2.00		99.6	84.3-123	6.48	14.1	
Total Xylenes	6.13	0.150	mg/kg	6.00		102	89.1-124	5.72	13.4	
Surrogate: 4-Bromofluorobenzene (PID)	0.0499		mg/kg	0.0500		99.9	69.9-140			

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**Analytical Results For:**

GHD SERVICES, INC.  
6121 INDIAN SCHOOL RD, NE STE. 200  
ALBUQUERQUE NM, 87110

Project: JACKSON B #17 WELLHEAD  
Project Number: 11228313  
Project Manager: BECKY HASKELL  
Fax To:

Reported:  
11-Apr-22 13:31

**Petroleum Hydrocarbons by GC FID - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2040625 - General Prep - Organics****Blank (2040625-BLK1)**

Prepared &amp; Analyzed: 07-Apr-22

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	48.8		mg/kg	50.0		97.6	66.9-136			
Surrogate: 1-Chlorooctadecane	51.2		mg/kg	50.0		102	59.5-142			

**LCS (2040625-BS1)**

Prepared &amp; Analyzed: 07-Apr-22

GRO C6-C10	195	10.0	mg/kg	200		97.6	78.5-128			
DRO >C10-C28	213	10.0	mg/kg	200		106	75.8-135			
Total TPH C6-C28	408	10.0	mg/kg	400		102	81.5-127			
Surrogate: 1-Chlorooctane	65.2		mg/kg	50.0		130	66.9-136			
Surrogate: 1-Chlorooctadecane	61.7		mg/kg	50.0		123	59.5-142			

**LCS Dup (2040625-BS1)**

Prepared &amp; Analyzed: 07-Apr-22

GRO C6-C10	193	10.0	mg/kg	200		96.3	78.5-128	1.29	21.4	
DRO >C10-C28	207	10.0	mg/kg	200		104	75.8-135	2.45	17.9	
Total TPH C6-C28	400	10.0	mg/kg	400		100	81.5-127	1.89	17.6	
Surrogate: 1-Chlorooctane	61.7		mg/kg	50.0		123	66.9-136			
Surrogate: 1-Chlorooctadecane	58.0		mg/kg	50.0		116	59.5-142			

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager

**BILL TO**

## ANALYSIS REQUEST

<b>Company Name:</b> GHD <b>Project Manager:</b> Becky. Haskell @ GHD.com <b>Address:</b> 2135 S. Loop 250 W. <b>City:</b> Midland <b>State:</b> TX <b>Zip:</b> 79703 <b>Phone #:</b> (432) 686-0086 <b>Fax #:</b> - <b>Project #:</b> 11228313 <b>Project Owner:</b> EOG <b>Project Name:</b> Jackson B #17 Wellhead <b>Project Location:</b> Loco Hills <b>Sampler Name:</b> Heath Boyd <b>FOR LAB USE ONLY</b>										<b>BILL TO</b> <b>P.O. #:</b> <b>Company:</b> EOG <b>Attn:</b> Chase Settle <b>Address:</b> <b>City:</b> <b>State:</b> <b>Zip:</b> <b>Phone #:</b> <b>Fax #:</b>										<b>ANALYSIS REQUEST</b>									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>Matrix</b> <input type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input type="checkbox"/> SOIL <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE <input type="checkbox"/> OTHER : <b>ACID/BASE:</b> <b>ICE / COOL</b> <b>OTHER :</b>										<b>PRESERV.</b> <b>SAMPLING</b>									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									
<b>Lab I.D.</b> <b>Sample I.D.</b>										<b>DATE</b> <b>TIME</b>										<b>Chloride</b> 300 M 4500 <b>BTEX</b> (8021) <b>TPH:</b> 80150 <b>Rush</b> 24 hr.									

† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)

Email: Tom.Larson@GHD.Com, Heath.Boyd@GHD.Com



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

November 23, 2022

Chase Settle

EOG

105 South Fourth Street

Artesia, NM 88210

TEL:

FAX

RE: Jackson B 17 Well Head

OrderNo.: 2211721

Dear Chase Settle:

Hall Environmental Analysis Laboratory received 4 sample(s) on 11/11/2022 for the analyses presented in the following report.

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

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

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

Sincerely,

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

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2211721

Date Reported: 11/23/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CB-1 (30')

Project: Jackson B 17 Well Head

Collection Date: 11/10/2022 9:40:00 AM

Lab ID: 2211721-001

Matrix: SOIL

Received Date: 11/11/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	98	60		mg/Kg	20	11/17/2022 11:51:25 AM	71571
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	580	15		mg/Kg	1	11/17/2022 7:23:05 PM	71488
Motor Oil Range Organics (MRO)	300	49		mg/Kg	1	11/17/2022 7:23:05 PM	71488
Surr: DNOP	121	21-129		%Rec	1	11/17/2022 7:23:05 PM	71488
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/17/2022 3:16:57 AM	71483
Surr: BFB	82.6	37.7-212		%Rec	1	11/17/2022 3:16:57 AM	71483
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	11/17/2022 3:16:57 AM	71483
Toluene	ND	0.048		mg/Kg	1	11/17/2022 3:16:57 AM	71483
Ethylbenzene	ND	0.048		mg/Kg	1	11/17/2022 3:16:57 AM	71483
Xylenes, Total	ND	0.096		mg/Kg	1	11/17/2022 3:16:57 AM	71483
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	11/17/2022 3:16:57 AM	71483

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	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 Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 1 of 8

## Analytical Report

Lab Order 2211721

Date Reported: 11/23/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CB-1 (35')

Project: Jackson B 17 Well Head

Collection Date: 11/10/2022 9:50:00 AM

Lab ID: 2211721-002

Matrix: SOIL

Received Date: 11/11/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	180	60		mg/Kg	20	11/17/2022 12:28:38 PM	71571
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	2800	140		mg/Kg	10	11/16/2022 3:16:06 AM	71488
Motor Oil Range Organics (MRO)	1000	460		mg/Kg	10	11/16/2022 3:16:06 AM	71488
Surr: DNOP	0	21-129	S	%Rec	10	11/16/2022 3:16:06 AM	71488
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/17/2022 3:40:00 AM	71483
Surr: BFB	84.7	37.7-212		%Rec	1	11/17/2022 3:40:00 AM	71483
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/17/2022 3:40:00 AM	71483
Toluene	ND	0.050		mg/Kg	1	11/17/2022 3:40:00 AM	71483
Ethylbenzene	ND	0.050		mg/Kg	1	11/17/2022 3:40:00 AM	71483
Xylenes, Total	ND	0.099		mg/Kg	1	11/17/2022 3:40:00 AM	71483
Surr: 4-Bromofluorobenzene	88.0	70-130		%Rec	1	11/17/2022 3:40:00 AM	71483

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	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 Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Page 2 of 8



## Analytical Report

Lab Order 2211721

Date Reported: 11/23/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CB-2 (30')

Project: Jackson B 17 Well Head

Collection Date: 11/10/2022 10:30:00 AM

Lab ID: 2211721-003

Matrix: SOIL

Received Date: 11/11/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	340	60		mg/Kg	20	11/17/2022 12:41:03 PM	71571
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/16/2022 3:39:31 AM	71488
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2022 3:39:31 AM	71488
Surr: DNOP	132	21-129	S	%Rec	1	11/16/2022 3:39:31 AM	71488
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/17/2022 4:03:01 AM	71483
Surr: BFB	84.0	37.7-212		%Rec	1	11/17/2022 4:03:01 AM	71483
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/17/2022 4:03:01 AM	71483
Toluene	ND	0.050		mg/Kg	1	11/17/2022 4:03:01 AM	71483
Ethylbenzene	ND	0.050		mg/Kg	1	11/17/2022 4:03:01 AM	71483
Xylenes, Total	ND	0.10		mg/Kg	1	11/17/2022 4:03:01 AM	71483
Surr: 4-Bromofluorobenzene	92.8	70-130		%Rec	1	11/17/2022 4:03:01 AM	71483

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	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 Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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## Analytical Report

Lab Order 2211721

Date Reported: 11/23/2022

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: EOG

Client Sample ID: CB-2 (35')

Project: Jackson B 17 Well Head

Collection Date: 11/10/2022 10:40:00 AM

Lab ID: 2211721-004

Matrix: SOIL

Received Date: 11/11/2022 10:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: <b>NAI</b>
Chloride	490	60		mg/Kg	20	11/17/2022 12:53:27 PM	71571
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>SB</b>
Diesel Range Organics (DRO)	ND	14		mg/Kg	1	11/16/2022 4:02:59 AM	71488
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/16/2022 4:02:59 AM	71488
Surr: DNOP	115	21-129		%Rec	1	11/16/2022 4:02:59 AM	71488
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/17/2022 4:49:06 AM	71483
Surr: BFB	85.9	37.7-212		%Rec	1	11/17/2022 4:49:06 AM	71483
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	11/17/2022 4:49:06 AM	71483
Toluene	ND	0.049		mg/Kg	1	11/17/2022 4:49:06 AM	71483
Ethylbenzene	ND	0.049		mg/Kg	1	11/17/2022 4:49:06 AM	71483
Xylenes, Total	ND	0.099		mg/Kg	1	11/17/2022 4:49:06 AM	71483
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	11/17/2022 4:49:06 AM	71483

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

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Above Quantitation Range/Estimated Value
	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 Limit
	S	% Recovery outside of standard limits. If undiluted results may be estimated.		

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2211721

23-Nov-22

Client: EOG

Project: Jackson B 17 Well Head

Sample ID: MB-71571		SampType: mblk		TestCode: EPA Method 300.0: Anions						
Client ID: PBS		Batch ID: 71571		RunNo: 92691						
Prep Date: 11/17/2022		Analysis Date: 11/17/2022		SeqNo: 3335134			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: LCS-71571		SampType: lcs		TestCode: EPA Method 300.0: Anions						
Client ID: LCSS		Batch ID: 71571		RunNo: 92691						
Prep Date: 11/17/2022		Analysis Date: 11/17/2022		SeqNo: 3335135			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.2	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 standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank

E Above Quantitation Range/Estimated Value

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

Page 5 of 8

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

WO#: 2211721

23-Nov-22

**Client:** EOG**Project:** Jackson B 17 Well Head

Sample ID: <b>MB-71488</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>71488</b>		RunNo: <b>92577</b>							
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/15/2022</b>		SeqNo: <b>3332595</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	15								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.4		10.00		83.5	21	129			

Sample ID: <b>LCS-71488</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>71488</b>		RunNo: <b>92577</b>							
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/15/2022</b>		SeqNo: <b>3332597</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	15	50.00	0	83.9	64.4	127			
Surr: DNOP	3.7		5.000		73.8	21	129			

**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 standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

WO#: 2211721

23-Nov-22

**Client:** EOG**Project:** Jackson B 17 Well Head

Sample ID: <b>mb-71483</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71483</b>	RunNo: <b>92616</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>	SeqNo: <b>3332087</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		89.7	37.7	212			

Sample ID: <b>lcs-71483</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71483</b>	RunNo: <b>92616</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>	SeqNo: <b>3332088</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.3	72.3	137			
Surr: BFB	1800		1000		184	37.7	212			

**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 standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 7 of 8



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

WO#: 2211721

23-Nov-22

**Client:** EOG**Project:** Jackson B 17 Well Head

Sample ID: <b>mb-71483</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>71483</b>	RunNo: <b>92616</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>	SeqNo: <b>3332121</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		95.9	70	130			

Sample ID: <b>LCS-71483</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>71483</b>	RunNo: <b>92616</b>								
Prep Date: <b>11/14/2022</b>	Analysis Date: <b>11/16/2022</b>	SeqNo: <b>3332122</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	98.3	80	120			
Toluene	0.99	0.050	1.000	0	99.4	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.0	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.2	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of standard limits. If undiluted results may be estimated.

B Analyte detected in the associated Method Blank  
E Above Quantitation Range/Estimated Value  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



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: **EOG**

Work Order Number: **2211721**

RcptNo: **1**

Received By: **Juan Rojas**

11/11/2022 10:30:00 AM

*Juan Rojas*

Completed By: **Desiree Dominguez**

11/11/2022 11:32:07 AM

*Desiree Dominguez*

Reviewed By: *SEA 11/11/22*

### Chain of Custody

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

### 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. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☒
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: *KRA 11-11-22*

### 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	0.6	Good	Not Present			



# **Attachment D**

## **Photographic Log**





## Site Photograph

**EOG Jackson B #17 Wellhead  
Release Site.**

GHD | Report for EOG | 11228313



## Site Photograph

**EOG Jackson B #17 Wellhead  
Release Site.**

GHD | Report for EOG | 11228313





## Site Photograph

**EOG Jackson B #17 Wellhead  
Release Site.**

GHD | Report for EOG | 11228313

# **Attachment E**

## **Confirmation Sampling Notifications**

## Becky Haskell

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** Wednesday, February 9, 2022 10:24 AM  
**To:** Zach Comino; Becky Haskell  
**Subject:** FW: Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Wednesday, February 9, 2022 9:18 AM  
**To:** Robert.Hamlet@state.nm.us; blm\_nm\_cfo\_spill@blm.gov  
**Cc:** Artesia Regulatory <Artesia\_Regulatory@eogresources.com>; Bob Asher <Bob\_Asher@eogresources.com>; Chase Settle <Chase\_Settle@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Yvette Moore <Yvette\_Moore@eogresources.com>  
**Subject:** Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

Good morning,

EOG Resources, Inc. respectfully submits notification of sampling activities to be conducted at the below site.

Jackson B 17 Wellhead  
M-1-17S-30E  
Eddy County, NM  
nAPP211044488

Sampling will begin at 8:00 a.m. on Tuesday, February 15, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Becky Haskell**

---

**From:** Amber Griffin <Amber\_Griffin@eogresources.com>  
**Sent:** Wednesday, March 9, 2022 10:49 AM  
**To:** Zach Comino; Becky Haskell  
**Subject:** FW: [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

Thank you,  
Amber Griffin

---

**From:** Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>  
**Sent:** Wednesday, March 9, 2022 9:39 AM  
**To:** Tina Huerta <Tina\_Huerta@eogresources.com>; blm\_nm\_cfo\_spill@blm.gov  
**Cc:** Artesia Regulatory <Artesia\_Regulatory@eogresources.com>; Chase Settle <Chase\_Settle@eogresources.com>; Yvette Moore <Yvette\_Moore@eogresources.com>; Katie Jamison <Katie\_Jamison@eogresources.com>; Amber Griffin <Amber\_Griffin@eogresources.com>; BODEE EUDY <BODEE\_EUDY@eogresources.com>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>; Velez, Nelson, EMNRD <Nelson.Velez@state.nm.us>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>  
**Subject:** RE: [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Tina,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Robert Hamlet** • Environmental Specialist - Advanced  
Environmental Bureau  
EMNRD - Oil Conservation Division  
811 S. First Street | Artesia, NM 88210  
575.909.0302 | [robert.hamlet@state.nm.us](mailto:robert.hamlet@state.nm.us)  
<http://www.emnrd.state.nm.us/OCD/>



---

**From:** Tina Huerta <[Tina\\_Huerta@eogresources.com](mailto:Tina_Huerta@eogresources.com)>  
**Sent:** Wednesday, March 9, 2022 9:26 AM  
**To:** Hamlet, Robert, EMNRD <[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)>; [blm\\_nm\\_cfo\\_spill@blm.gov](mailto:blm_nm_cfo_spill@blm.gov)  
**Cc:** Artesia Regulatory <[Artesia\\_Regulatory@eogresources.com](mailto:Artesia_Regulatory@eogresources.com)>; Chase Settle <[Chase\\_Settle@eogresources.com](mailto:Chase_Settle@eogresources.com)>; Yvette Moore <[Yvette\\_Moore@eogresources.com](mailto:Yvette_Moore@eogresources.com)>; Katie Jamison <[Katie\\_Jamison@eogresources.com](mailto:Katie_Jamison@eogresources.com)>; Amber Griffin

<Amber\_Griffin@eogresources.com>; BODEE EUDY <BODEE\_EUDY@eogresources.com>

**Subject:** [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good morning,

EOG Resources, Inc. respectfully submits notification of sampling activities to be conducted at the below site.

Jackson B 17 Wellhead  
M-1-17S-30E  
Eddy County, NM  
nAPP211044488

Sampling will begin at 10:00 a.m. on Tuesday, March 15, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: tina\_huerta@eogresources.com*





**Becky Haskell**

---

**From:** Chase Settle <Chase\_Settle@eogresources.com>  
**Sent:** Thursday, March 31, 2022 4:45 PM  
**To:** Becky Haskell; Zach Comino  
**Subject:** FW: [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

---

**From:** Tina Huerta <Tina\_Huerta@eogresources.com>  
**Sent:** Thursday, March 31, 2022 2:57 PM  
**To:** Artesia S&E Spill Remediation <Artesia\_S&E\_Spill\_Remediation@eogresources.com>; Artesia Regulatory <Artesia\_Regulatory@eogresources.com>  
**Subject:** FW: [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

fyi

---

**From:** Hamlet, Robert, EMNRD <[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)>  
**Sent:** Thursday, March 31, 2022 2:18 PM  
**To:** Tina Huerta <[Tina\\_Huerta@eogresources.com](mailto:Tina_Huerta@eogresources.com)>  
**Cc:** Artesia Regulatory <[Artesia\\_Regulatory@eogresources.com](mailto:Artesia_Regulatory@eogresources.com)>; Bratcher, Mike, EMNRD <[mike.bratcher@state.nm.us](mailto:mike.bratcher@state.nm.us)>; Hensley, Chad, EMNRD <[Chad.Hensley@state.nm.us](mailto:Chad.Hensley@state.nm.us)>; Velez, Nelson, EMNRD <[Nelson.Velez@state.nm.us](mailto:Nelson.Velez@state.nm.us)>; Nobui, Jennifer, EMNRD <[Jennifer.Nobui@state.nm.us](mailto:Jennifer.Nobui@state.nm.us)>  
**Subject:** RE: [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

**CAUTION:** This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

Tina,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Robert Hamlet** • Environmental Specialist - Advanced  
Environmental Bureau  
EMNRD - Oil Conservation Division  
811 S. First Street | Artesia, NM 88210  
575.909.0302 | [robert.hamlet@state.nm.us](mailto:robert.hamlet@state.nm.us)  
<http://www.emnrd.state.nm.us/OCD/>



---

**From:** Tina Huerta <[Tina\\_Huerta@eogresources.com](mailto:Tina_Huerta@eogresources.com)>  
**Sent:** Thursday, March 31, 2022 9:39 AM  
**To:** Hamlet, Robert, EMNRD <[Robert.Hamlet@state.nm.us](mailto:Robert.Hamlet@state.nm.us)>; [blm\\_nm\\_cfo\\_spill@blm.gov](mailto:blm_nm_cfo_spill@blm.gov)  
**Cc:** Artesia S&E Spill Remediation <[Artesia\\_S&E\\_Spill\\_Remediation@eogresources.com](mailto:Artesia_S&E_Spill_Remediation@eogresources.com)>; Artesia Regulatory <[Artesia\\_Regulatory@eogresources.com](mailto:Artesia_Regulatory@eogresources.com)>  
**Subject:** [EXTERNAL] Jackson B 17 Wellhead (nAPP211044488) Sampling Notification

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Good Morning,

EOG Resources, Inc. respectfully submits notification of sampling to be conducted at the below location.

Jackson B 17 Wellhead  
M-1-17S-30E  
Eddy County, NM  
nAPP211044488

Sampling will begin at 10:00 a.m. on Monday, April 4, 2022, and will be continuous through Tuesday, April 5, 2022.

Thank you,

*Tina Huerta*  
*Regulatory Specialist*  
*Direct: 575.748.4168*  
*Cell: 575.703.3121*  
*Email: [tina\\_huerta@eogresources.com](mailto:tina_huerta@eogresources.com)*



**Artesia Division**

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 202269

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 202269
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
rhamlet	Thank you for the update regarding the sampling of backfill material. If soil from stockpile samples SP23, SP24, and SP32 were excavated from 4 feet below ground surface, samples should meet closure criteria standards from Table 1 of the OCD Spill Rule before soil is put back in excavation. Microbial injection treatment of soils at deeper depths should involve a thorough discussion outlining at a minimum, sampling treatment protocols, processes, and mechanics. Depending on final estimated depth of hydrocarbons, I would expect this to be a somewhat longer project than normal, involving Soil Vapor Extraction (SVE) at sample locations BH-17B and BH-18B. Please keep the OCD up to date on further soil treatment injections and the resulting change in hydrocarbons within the impacted soils. We may need to schedule a future meeting if you have questions or need additional input.	9/26/2023