State of New Mexico
Oil Conservation Division

Incident ID	NAPP2315954357
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2315954357
District RP	
Facility ID	
Application ID	

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: Mitch Killough Title: Environmental Specialist

Signature: _____ _____ Date: 8/11/2023

email: mkillough@hilcorp.com Telephone: 713-757-5247

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2315954357
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

☐ Extents of contamination must be fully delineated.

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

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

Printed Name: Mitch Killough Title: Environmental Specialist

Signature: _____ Date: 8/11/2023

email: mkillough@hilcorp.com Telephone: 713-757-5247

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Incident ID	NAPP2315954357
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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☒ Scaled sitemap with GPS coordinates showing delineation points
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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: Mitch Killough Title: Environmental Specialist

Signature: _____ Date: 8/11/2023

email: mkillough@hilcorp.com Telephone: 713-757-5247

OCD Only

Received by: _____ Date: _____

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

Signature: Nelson Velez Date: 11/28/2023

Remediation plan is approved with the following conditions;

1. **Soil Vapor Extraction Pilot Test to be completed by 02/26/2024.**
2. **Report of Pilot Test to be completed and submitted to OCD by 03/26/2024.**

ENSOLUM

August 11, 2023

New Mexico Oil Conservation Division
New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: **Site Characterization and Remediation Work Plan**
Pipkin Gas Com A #1E
San Juan County, New Mexico
Hilcorp Energy Company
NMOCD Incident Number: NAPP2315954357

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Hilcorp Energy Company (Hilcorp), presents this *Site Characterization and Remediation Work Plan* associated with a release discovered at the Pipkin Gas Com A #1E natural gas production well pad (Site). The Site is located on federal land managed by the United States Bureau of Land Management (BLM) in Unit C, Section 7, Township 27 North, Range 10 West in San Juan County, New Mexico (Figure 1).

SITE BACKGROUND

Historical petroleum hydrocarbon impacts related to a below-grade tank (BGT) were discovered during BGT closure and well pad reclamation activities conducted on July 26, 2022. Analytical results collected on July 29, 2022 confirmed the presence of total petroleum hydrocarbon (TPH) concentrations exceeding the applicable New Mexico Oil Conservation Division (NMOCD) closure criteria. Once delineation activities were completed at the Site in April and May 2023 (as described in this document), Hilcorp estimated the release volume to be approximately 23 barrels based on laboratory analytical results obtained from soil samples and the approximate extent of soil impacts. The release was reported to the NMOCD on June 8, 2023 on a Form C-141, *Release Notification*. The release was assigned NMOCD Incident Number NAPP2315954357.

SITE CHARACTERIZATION AND CLOSURE CRITERIA

As part of the Site investigation, local geology/hydrogeology and nearby sensitive receptors were assessed in accordance with Title 19, Chapter 15, Part 29, Sections 11 and 12 (19.15.29.11 and 12) of the New Mexico Administrative Code (NMAC).

The Site is located within the Nacimiento Geologic Formation. In the report titled "*Hydrogeology and Water Resources of San Juan Basin, New Mexico*" (Stone, et. al., 1983), the Nacimiento Formation is characterized by interbedded black carbonaceous mudstones and white, coarse-grained sandstones, which ranges in thickness from 418 feet to 2,232 feet. The hydrogeologic properties of the Nacimiento Formation display variable properties dependent on location. Where sufficient yield is present, the primary use of water from this formation is for domestic and/or livestock supply. The Nacimiento Formation is underlain by the Ojo Alamo sandstone (Stone et. al., 1983).

The closest significant watercourse and wetland is an unnamed dry wash located 240 feet to the northeast of the Site. The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake (Figure 1). The nearest fresh-water well is New Mexico Office of the State Engineer (NMOSE) permitted well SJ-00034 (Appendix A), located approximately 7,905 feet east of the Site. The recorded depth to water on the NMOSE database is 170 feet below ground surface (bgs). No wellhead protection areas, springs, or domestic/stock wells are located within a ½-mile from the Site. The Site is not within a 100-year floodplain, overlying a subsurface mine, or located within an area underlain by unstable geology (area designated as low potential karst by the BLM). Schools, hospitals, institutions, churches, and/or other occupied permanent residence or structures are not located within 300 feet of the Site.

Based on the information presented above and in accordance with the *Table I, Closure Criteria for Soils Impacted by a Release* (19.15.29.12 NMAC), the following Closure Criteria will be applied to the Site constituents of concern (COCs):

- Benzene: 10 milligrams per kilogram (mg/kg)
- Benzene, toluene, ethylbenzene, and xylenes (BTEX): 50 mg/kg
- Total petroleum hydrocarbons (TPH) as a combination of gasoline range organics (GRO), diesel range organics (DRO), and motor oil range organics (MRO): 100 mg/kg
- Chloride: 600 mg/kg

SITE INVESTIGATION ACTIVITIES

In response to the discovery of soil impacts beneath the former BGT, Hilcorp performed initial delineation activities using a backhoe to pothole at the center of the former BGT location on October 28, 2022. Due to limitations of the equipment, samples were collected at a maximum depth of 14 feet bgs. During this event, samples were collected at depths of 8, 10, 12, and 14 feet bgs and submitted to Hall Environmental Analysis Laboratory (Hall) for analysis of BTEX by United States Environmental Protection Agency (EPA) Method 8021B, TPH by EPA Method 8015M/D, and chloride by EPA Method 300.0. The soil sample was collected directly into laboratory-provided jars and immediately placed on ice. Laboratory analytical results indicated the presence of TPH at concentrations exceeding the NMOCD Table I Closure Criteria in all collected samples. A summary of analytical results is included in Table 1, with the complete laboratory analytical report attached as Appendix B.

Based on the initial field screening and sampling results, additional vertical and horizontal delineation with a drill rig was required. Ensolum submitted notice of sampling to the NMOCD at least 48 hours in advance of sampling activities (Appendix C). Due to inclement weather through the winter and spring of 2022 and 2023, additional delineation activities could not be performed until April 2023. Drilling activities took place on April 14, 2023 utilizing a Central Mining Equipment (CME) 75 hollow-stem auger drill rig operated by Enviro-Drill, Inc. with split-spoon sampling to advance a total of three borings (BH01 to BH03) to depths up to 35 feet bgs (Figure 2). Photographs taken during delineation activities are included in Appendix D. Because of the open pothole in the center of the former BGT location, as shown on Photograph 2 in Appendix D, a boring was not able to be advanced at this location during the April 2023 drilling effort.

During drilling, an Ensolum geologist logged lithology, inspected the soil for petroleum hydrocarbon staining and odors, and field screened for volatile organic compounds (VOCs) using a photoionization detector (PID), with results noted on the field logs (attached as Appendix E). In general, soil samples were collected from depth intervals indicating the greatest impacts based on field screening results and from the terminal depth of the borehole. Soil samples were collected directly into laboratory-provided jars and immediately placed on ice. Samples were submitted to Envirotech, Inc. or Hall for analysis of BTEX; TPH-GRO, TPH-DRO, TPH-MRO; and chloride by EPA Method 300.0.

Soil composition at the Site was homogenous and primarily brown, dry, poorly sorted sand from the ground surface to depths up to 30 feet bgs. The poorly sorted sand was generally underlain by blue-grey, dry, sandy silt and/or siltstone/shale at an approximate depth of 30 feet bgs. Groundwater and/or saturated soils were not encountered in any of the borings during drilling. Laboratory analysis of the soil sample collected from boring BH01 at a depth of 25 feet bgs identified elevated concentrations of TPH exceeding the Table I Closure Criteria. All other soil samples analyzed during this delineation effort were in compliance with the applicable Closure Criteria for TPH, BTEX, and chloride. Laboratory analytical results from the initial drilling effort are summarized in Table 1 and Figure 2, with the complete laboratory analytical report attached in Appendix B.

ADDITIONAL DELINEATION ACTIVITIES

Based on the laboratory analytical results gathered during the April 2023 drilling event, additional drilling was conducted on May 17 and 18, 2023 to further delineate lateral impacts west of boring BH01 and to advance a boring at the center of the former BGT location. Field screening and soil sampling during the May 2023 drilling was performed as described above. All soil samples analyzed during the May 2023 delineation effort were in compliance with the applicable Closure Criteria for TPH, BTEX, and chloride. Laboratory analytical results from this event are included in Table 1 and Figure 2, with the complete laboratory analytical report also attached in Appendix B.

SVE WELL CONSTRUCTION AND INSTALLATION

Based on field screening during drilling, borings BH01 and BH04 were completed as soil vapor extraction (SVE) wells to be used for future remediation. Screened casing was installed across the subsurface interval with the highest petroleum hydrocarbon impacts based on PID readings in order to direct the applied vacuum to these depth intervals. Two nested SVE wells, SVE-1S (shallow) and SVE-1D (deep) were installed in boring BH04, located at the center of the former BGT. To address both shallow and deep impacts at this location, SVE-1S was constructed with 10 feet of screen placed at a depth of 5 feet to 15 feet bgs. SVE-1D was screened from 24 feet to 34 feet bgs in order to address potential deep impacts in this area and to provide an observation point for future pilot test activities. SVE well SVE-2 was installed in boring BH01 and was screened at a depth of 20 feet to 30 feet bgs.

SVE wells were constructed with 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing and 2-inch Schedule 40 PVC 0.010-inch slotted screen. Wells were completed with 10-20 silica sand pack to 2 feet above the screened interval, then hydrated bentonite seal to the ground surface. SVE well locations are shown on Figure 3.

REMEDIATION WORK PLAN

Based on the vertical extent of soil impacts and favorable soil lithology, Ensolum recommends the use of SVE techniques to remediate soil at the Site. As described by the EPA, SVE is an in-situ technique for the removal of VOCs and some semi-volatile organic compounds (SVOCs) from vadose zone soil through the application of vacuum to the subsurface. When air is removed from the soil, contaminants are volatilized and removed. Depending on contaminant concentrations in the removed air, the SVE system may emit exhaust directly to the atmosphere.

SVE PILOT TEST

Ensolum recommends performing an SVE pilot test to evaluate the effectiveness of SVE for the Site and, if applicable, assess the Site-specific flow and vacuum rates required to volatilize and remove contaminants from the impacted subsurface. Data collected during the SVE pilot test will be used to estimate the system's radius-of-influence (ROI) and radius-of-effect (ROE) to determine well spacing and the need for additional SVE wells at the Site.

A vacuum truck will be used to remove air at one SVE well at a time (used as the "extraction" well). Flow and vacuum rates will be measured at the extraction well using an adjustable manifold and vacuum responses will be measured in the other SVE wells at the Site (used as "observation" wells). The pilot-test manifold will be used to control and incrementally increase vacuum being applied to the extraction well to assess the relationship between flow and vacuum. Vacuum measurements collected at the observation wells will be used to assess the ROI and ROE achievable at the Site. The following general procedures will be used to perform the SVE pilot test:

1. Collect initial VOC measurements using a PID from all SVE wells.
2. Attach a flexible hose from the vacuum truck to the SVE pilot test manifold. Connect the manifold to the first extraction well, start the vacuum truck, and slowly open the valve to increase flow and vacuum at the well.
3. During each test, apply a vacuum of approximately 10 inches of water column (IWC) and allow flow/vacuum measurements to stabilize for up to 15 minutes. Collect vacuum measurements and PID readings at each observation well once flow and vacuum have stabilized.
4. Increase the extraction well vacuum by 10 to 20 IWC, allow the vacuum/flow to stabilize, and collect observation well measurements as described below. Continue Steps 3 and 4 until 100 IWC is being applied at the extraction well or the vacuum truck capabilities are reached.
5. Close the manifold valve, allow the vacuum to dissipate, and collect PID readings from each observation well.
6. Collect air samples from the extraction wells in 1-liter Tedlar® bags and submit to Hall for analysis of BTEX and total volatile petroleum hydrocarbons (TVPH).

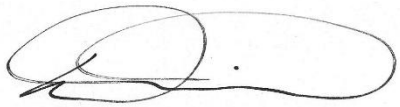
After completion of the SVE pilot test, Ensolum will prepare a *Pilot Test Report* summarizing the results of the test and recommendations for the design and construction of the full-scale SVE system. The report will include the calculations for ROI and ROE, system specifications required to remediate subsurface impacts, and, if determined feasible, an operation and maintenance (O&M) plan for the system and the proposed remediation schedule and timeline.

REFERENCES

Stone, W., Lyford, F., Frenzel, P., Mizell, N., & Padgett, E. (1983). Hydrogeology and Water Resources of San Juan Basin, New Mexico. New Mexico Bureau of Mines & Mineral Resources.

We appreciate the opportunity to provide this document to the NMOCD. If you should have any questions or comments regarding this document, please contact the undersigned.

Sincerely,
Ensolum, LLC



Stuart Hyde, LG
Senior Geologist
(970) 903-1607
shyde@ensolum.com

Daniel R. Moir, PG
Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

Attachments:

Figure 1: Site Location Map
Figure 2: Soil Sample Analytical Results
Figure 3: SVE Well Locations

Table 1: Delineation Soil Sample Analytical Results

Appendix A: NMOSE Point of Diversion Summary
Appendix B: Laboratory Analytical Reports
Appendix C: Agency Sampling Notifications
Appendix D: Photographic Log
Appendix E: Boring Logs

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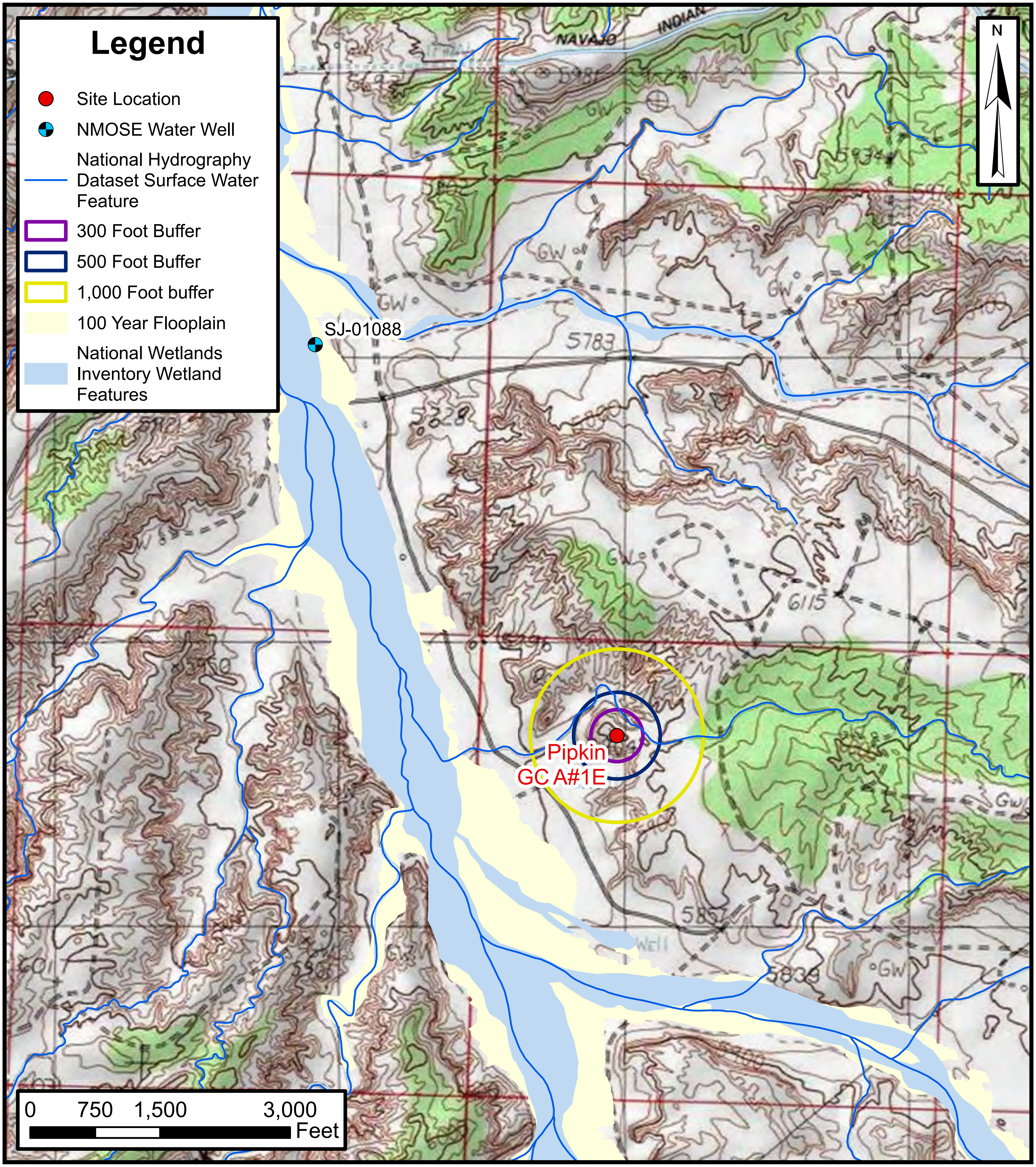
FIGURES



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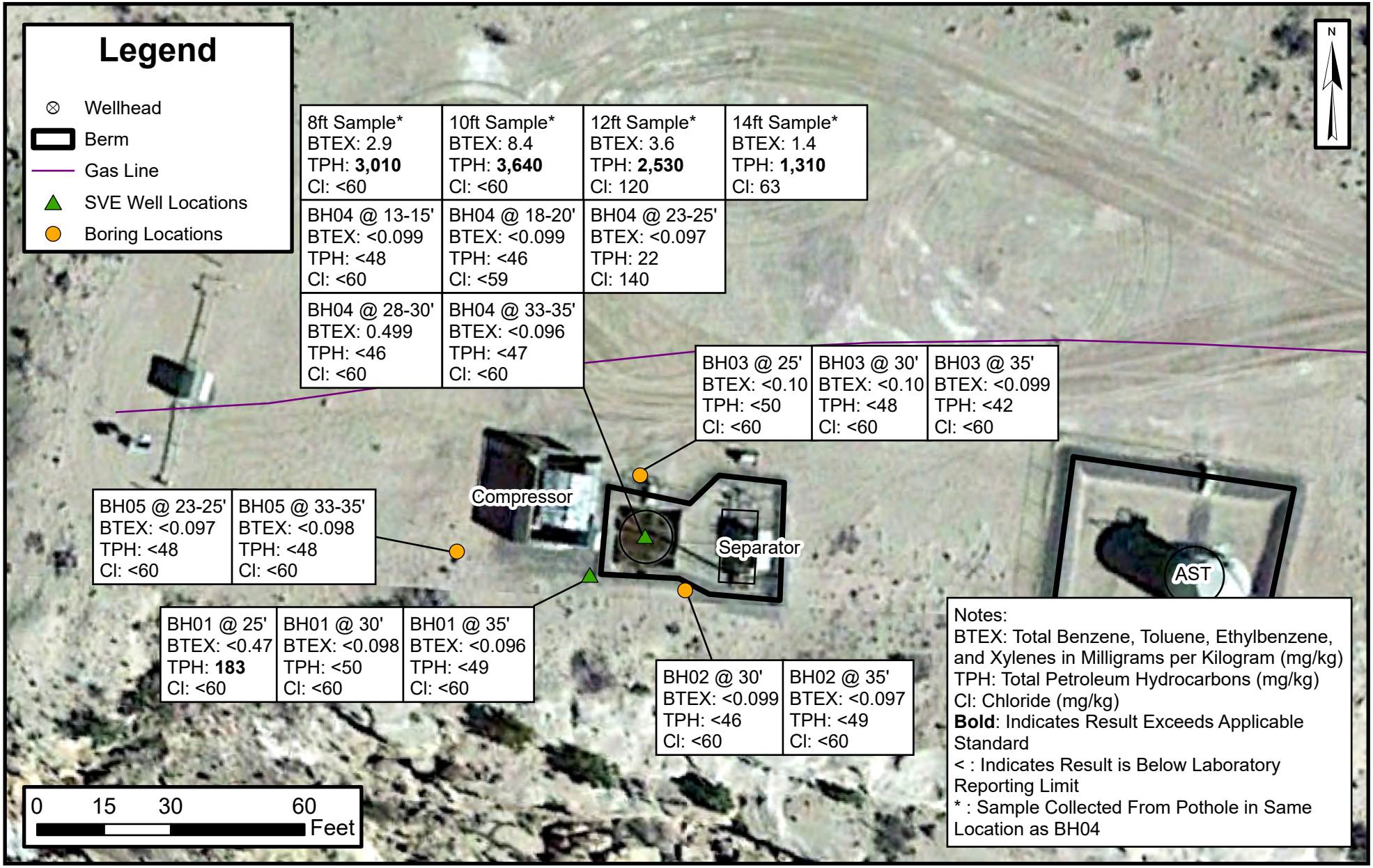
Environmental, Engineering and Hydrogeologic Consultants

Site Location Map

Pipkin Gas Com A #1E
Hilcorp Energy Company
Unit C, Sec 7, T27N, R10W
36.59396, -107.94056
San Juan County, New Mexico

FIGURE
1

Sources: Environmental Systems Research Institute (ESRI), National Geographic Society, i-cubed, United States Geologic Survey (USGS), United States Fish and Wildlife Service (USFWS), New Mexico Office of the State Engineer (NMOSE)



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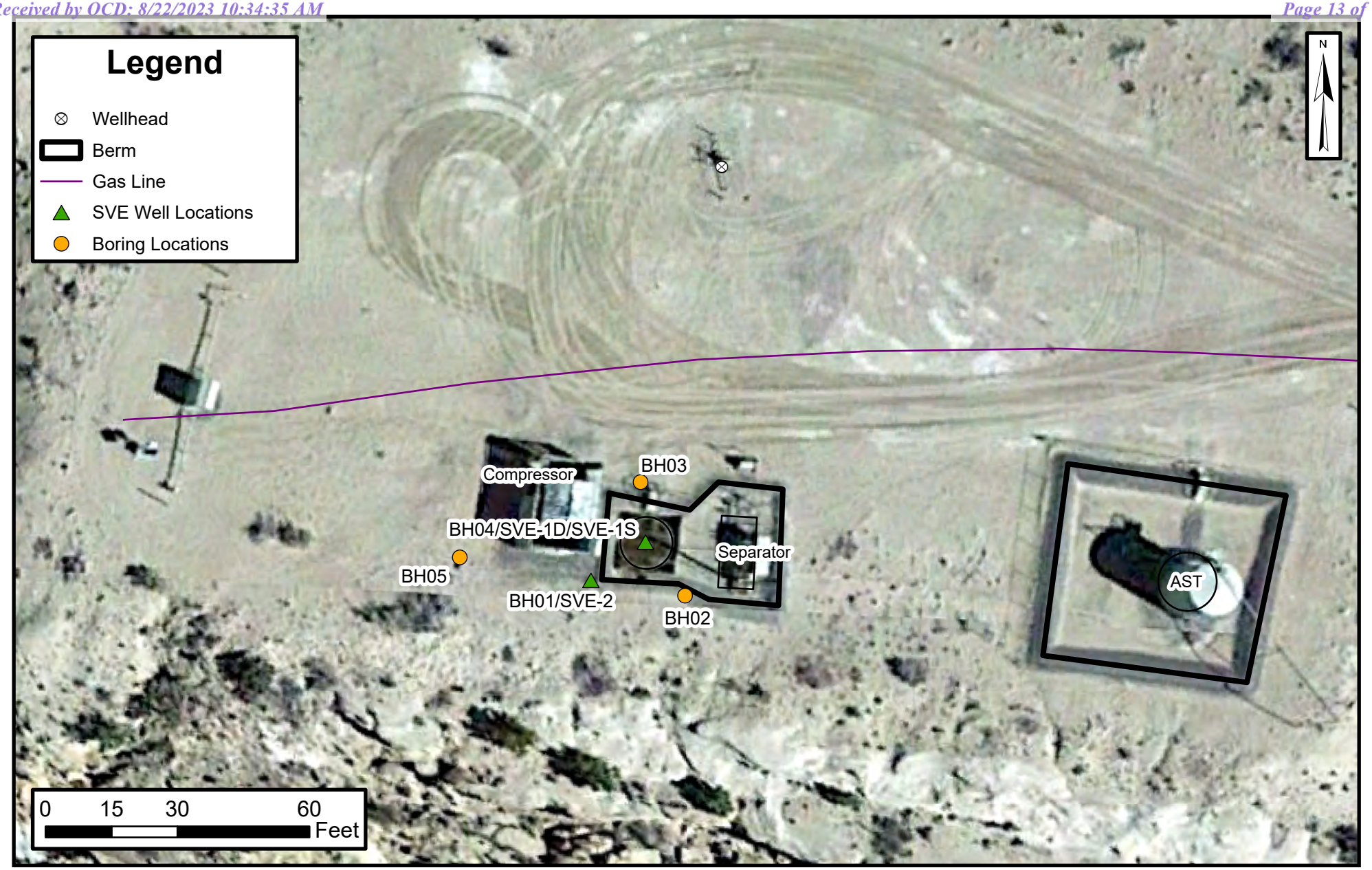
Environmental, Engineering and Hydrogeologic Consultants

Soil Sample Analytical Results

Pipkin Gas Com A #1E
Hilcorp Energy Company
Unit C, Sec 7, T27N, R10W
36.59396, -107.94056
San Juan County, New Mexico

FIGURE
2

Sources: Google Earth



ENSOLUM
Environmental, Engineering and Hydrogeologic Consultants

SVE Well Locations

Pipkin Gas Com A #1E
Hilcorp Energy Company
Unit C, Sec 7, T27N, R10W
36.59396, -107.94056
San Juan County, New Mexico

FIGURE
3

Sources: Google Earth

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TABLES

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TABLE 1
DELINEATION SOIL SAMPLE ANALYTICAL RESULTS
Pipkin Gas Com A #1E
Hilcorp Energy Company
San Juan County, New Mexico

Sample ID	Date	Depth (feet bgs)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH MRO (mg/kg)	Total TPH (mg/kg)	Chloride (mg/kg)
NMOCD Closure Criteria for Soils Impacted by a Release			**10**	**50**	NE	NE	NE	**100**	**600**
8ft Sample (1)	10/28/2022	8	<0.021	2.9	110	1,900	1,000	**3,010**	<60
10ft Sample (1)	10/28/2022	10	<0.018	8.4	260	2,400	980	**3,640**	<60
12ft Sample (1)	10/28/2022	12	<0.020	3.6	200	1,700	630	**2,530**	120
14ft Sample (1)	10/28/2022	14	<0.017	1.4	110	1,200	<500	**1,310**	63
BH01 @ 25'	4/14/2023	25	<0.12	<0.47	<23	120	63	**183**	<60
BH01 @ 30'	4/14/2023	30	<0.024	<0.098	<4.9	<10	<50	<50	<60
BH01 @ 35'	4/14/2023	35	<0.024	<0.096	<4.8	<9.7	<49	<49	<60
BH02 @ 30'	4/14/2023	30	<0.025	<0.099	<4.9	<9.2	<46	<46	<60
BH02 @ 35'	4/14/2023	35	<0.024	<0.097	<4.8	<9.7	<49	<49	<60
BH03 @ 25'	4/14/2023	25	<0.025	<0.10	<5.0	<8.8	<50	<50	<60
BH03 @ 30'	4/14/2023	30	<0.025	<0.10	<5.0	<9.6	<48	<48	<60
BH03 @ 35'	4/14/2023	35	<0.025	<0.099	<5.0	<8.4	<42	<42	<60
BH-04 (13-15ft)	5/17/2023	13-15	<0.025	<0.099	<4.9	<9.6	<48	<48	<60
BH-04 (18-20ft)	5/17/2023	18-20	<0.025	<0.099	<4.9	<9.3	<46	<46	<59
BH-04 (23-25ft)	5/17/2023	23-25	<0.024	<0.097	<4.8	22	<47	22	140
BH-04 (28-30ft)	5/17/2023	28-30	<0.025	0.499	<4.9	<9.3	<46	<46	<60
BH-04 (33-35ft)	5/17/2023	33-35	<0.024	<0.096	<4.8	<9.4	<47	<47	<60
BH05 23-25'	5/18/2023	23-25	<0.024	<0.097	<4.9	<9.7	<48	<48	<60
BH05 33-35'	5/18/2023	33-35	<0.025	<0.098	<4.9	<9.7	<48	<48	<60

Notes:

(1): sample collected from pothole in same location as BH04

bgs: below ground surface

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes

mg/kg: milligrams per kilogram

NE: Not Established

NMOCD: New Mexico Oil Conservation Division

': feet

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

MRO: Motor Oil/Lube Oil Range Organics

TPH: Total Petroleum Hydrocarbon

< : indicates result less than the stated laboratory reporting limit (RL)

*Concentrations in **bold** and shaded exceed the New Mexico Oil Conservation Division Table I Closure Criteria for Soils Impacted by a Release*

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APPENDIX A

NMOSE Point of Diversion Summary

New Mexico Office of the State Engineer

Point of Diversion Summary

Well Tag	POD Number	(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest) Q64	Q16	Q4	Sec	Tws	Rng	(NAD83 UTM in meters) X	Y
	SJ 00034	3	2	2	08	27N	10W	239378	4053822*

Driller License:		**Driller Company:**			
Driller Name:	CONLEY COX				
Drill Start Date:	10/01/1951	**Drill Finish Date:**	10/09/1951	**Plug Date:**	
Log File Date:	12/16/1953	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	
Casing Size:	10.00	**Depth Well:**	235 feet	**Depth Water:**	170 feet

Water Bearing Stratifications:	Top	Bottom	Description
	170	230	Other/Unknown

Casing Perforations:	Top	Bottom
	170	235

***UTM location was derived from PLSS - see Help**

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APPENDIX B

Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

November 07, 2022

Fasho Trujillo
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Pipkin Gas Com A1E OrderNo.: 2210E71

Dear Fasho Trujillo:

Hall Environmental Analysis Laboratory received 4 sample(s) on 10/29/2022 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 or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2210E71**
Date Reported: **11/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** 8ft Sample
Project: Pipkin Gas Com A1E **Collection Date:** 10/28/2022 8:40:00 AM
Lab ID: 2210E71-001 **Matrix:** MEOH (SOIL) **Received Date:** 10/29/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1900	150		mg/Kg	10	11/1/2022 9:54:16 AM
Motor Oil Range Organics (MRO)	1000	500		mg/Kg	10	11/1/2022 9:54:16 AM
Surr: DNOP	0	21-129	S	%Rec	10	11/1/2022 9:54:16 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	110	4.2		mg/Kg	1	10/30/2022 7:21:30 AM
Surr: BFB	733	37.7-212	S	%Rec	1	10/30/2022 7:21:30 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.021		mg/Kg	1	10/30/2022 7:21:30 AM
Toluene	ND	0.042		mg/Kg	1	10/30/2022 7:21:30 AM
Ethylbenzene	ND	0.042		mg/Kg	1	10/30/2022 7:21:30 AM
Xylenes, Total	2.9	0.084		mg/Kg	1	10/30/2022 7:21:30 AM
Surr: 4-Bromofluorobenzene	117	70-130		%Rec	1	10/30/2022 7:21:30 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	11/1/2022 4:08:16 PM

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	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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2210E71**
Date Reported: **11/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** 10ft Sample
Project: Pipkin Gas Com A1E **Collection Date:** 10/28/2022 8:52:00 AM
Lab ID: 2210E71-002 **Matrix:** MEOH (SOIL) **Received Date:** 10/29/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	2400	150		mg/Kg	10	11/1/2022 11:35:21 AM
Motor Oil Range Organics (MRO)	980	480		mg/Kg	10	11/1/2022 11:35:21 AM
Surr: DNOP	0	21-129	S	%Rec	10	11/1/2022 11:35:21 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	260	3.7		mg/Kg	1	10/30/2022 7:44:52 AM
Surr: BFB	2060	37.7-212	S	%Rec	1	10/30/2022 7:44:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.018		mg/Kg	1	10/30/2022 7:44:52 AM
Toluene	ND	0.037		mg/Kg	1	10/30/2022 7:44:52 AM
Ethylbenzene	0.49	0.037		mg/Kg	1	10/30/2022 7:44:52 AM
Xylenes, Total	7.9	0.74		mg/Kg	10	10/31/2022 11:20:45 AM
Surr: 4-Bromofluorobenzene	252	70-130	S	%Rec	1	10/30/2022 7:44:52 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	ND	60		mg/Kg	20	11/1/2022 5:10:20 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210E71**
Date Reported: **11/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** 12ft Sample
Project: Pipkin Gas Com A1E **Collection Date:** 10/28/2022 9:06:00 AM
Lab ID: 2210E71-003 **Matrix:** MEOH (SOIL) **Received Date:** 10/29/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1700	150		mg/Kg	10	11/1/2022 12:07:23 PM
Motor Oil Range Organics (MRO)	630	500		mg/Kg	10	11/1/2022 12:07:23 PM
Surr: DNOP	0	21-129	S	%Rec	10	11/1/2022 12:07:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	200	3.9		mg/Kg	1	10/30/2022 8:31:34 AM
Surr: BFB	1810	37.7-212	S	%Rec	1	10/30/2022 8:31:34 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.020		mg/Kg	1	10/30/2022 8:31:34 AM
Toluene	ND	0.039		mg/Kg	1	10/30/2022 8:31:34 AM
Ethylbenzene	ND	0.039		mg/Kg	1	10/30/2022 8:31:34 AM
Xylenes, Total	3.6	0.079		mg/Kg	1	10/30/2022 8:31:34 AM
Surr: 4-Bromofluorobenzene	228	70-130	S	%Rec	1	10/30/2022 8:31:34 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	120	60		mg/Kg	20	11/1/2022 5:22:44 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2210E71**
Date Reported: **11/7/2022**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** 14ft Sample
Project: Pipkin Gas Com A1E **Collection Date:** 10/28/2022 9:19:00 AM
Lab ID: 2210E71-004 **Matrix:** MEOH (SOIL) **Received Date:** 10/29/2022 8:45:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	1200	74		mg/Kg	5	11/3/2022 12:43:06 PM
Motor Oil Range Organics (MRO)	530	250		mg/Kg	5	11/3/2022 12:43:06 PM
Surr: DNOP	112	21-129		%Rec	5	11/3/2022 12:43:06 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	110	3.5		mg/Kg	1	10/30/2022 8:54:57 AM
Surr: BFB	1260	37.7-212	S	%Rec	1	10/30/2022 8:54:57 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.017		mg/Kg	1	10/30/2022 8:54:57 AM
Toluene	ND	0.035		mg/Kg	1	10/30/2022 8:54:57 AM
Ethylbenzene	ND	0.035		mg/Kg	1	10/30/2022 8:54:57 AM
Xylenes, Total	1.4	0.070		mg/Kg	1	10/30/2022 8:54:57 AM
Surr: 4-Bromofluorobenzene	144	70-130	S	%Rec	1	10/30/2022 8:54:57 AM
EPA METHOD 300.0: ANIONS						Analyst: **NAI**
Chloride	63	60		mg/Kg	20	11/1/2022 5:35:09 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210E71**

07-Nov-22

Client: HILCORP ENERGY

Project: Pipkin Gas Com A1E

Sample ID: **MB-71198**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **71198**	RunNo: **92252**
Prep Date: **11/1/2022**	Analysis Date: **11/1/2022**	SeqNo: **3313633** Units: **mg/Kg**

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

Sample ID: **LCS-71198**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **71198**	RunNo: **92252**
Prep Date: **11/1/2022**	Analysis Date: **11/1/2022**	SeqNo: **3313634** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.5	90	110			

Sample ID: **MB-71218**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **71218**	RunNo: **92252**
Prep Date: **11/1/2022**	Analysis Date: **11/1/2022**	SeqNo: **3313663** Units: **mg/Kg**

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

Sample ID: **LCS-71218**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **71218**	RunNo: **92252**
Prep Date: **11/1/2022**	Analysis Date: **11/1/2022**	SeqNo: **3313664** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.0	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 Quanitative 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#: **2210E71**

07-Nov-22

Client: HILCORP ENERGY

Project: Pipkin Gas Com A1E

Sample ID: **LCS-71171**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **71171**	RunNo: **92198**
Prep Date: **10/31/2022**	Analysis Date: **10/31/2022**	SeqNo: **3311075** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	15	50.00	0	92.2	64.4	127			
Surr: DNOP	4.4		5.000		88.2	21	129			

Sample ID: **MB-71171**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **71171**	RunNo: **92198**
Prep Date: **10/31/2022**	Analysis Date: **10/31/2022**	SeqNo: **3311076** Units: **mg/Kg**

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	9.0		10.00		90.3	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 Quanitative 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#: **2210E71**

07-Nov-22

Client: HILCORP ENERGY

Project: Pipkin Gas Com A1E

Sample ID: **mb-II**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **B92186**	RunNo: **92186**
Prep Date:	Analysis Date: **10/30/2022**	SeqNo: **3309782** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.6	37.7	212			

Sample ID: **2.5ug gro lcs-II**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **B92186**	RunNo: **92186**
Prep Date:	Analysis Date: **10/30/2022**	SeqNo: **3309783** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	99.4	72.3	137			
Surr: BFB	1900		1000		195	37.7	212			

Qualifiers:

*	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2210E71**

07-Nov-22

Client: HILCORP ENERGY

Project: Pipkin Gas Com A1E

Sample ID: **mb-II**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **D92186**	RunNo: **92186**
Prep Date:	Analysis Date: **10/30/2022**	SeqNo: **3309819** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	70	130			

Sample ID: **100ng btex lcs-II**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **D92186**	RunNo: **92186**
Prep Date:	Analysis Date: **10/30/2022**	SeqNo: **3309820** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	1.0		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 Quanitative 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

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: HILCORP ENERGY Work Order Number: 2210E71 RcptNo: 1

Received By: Tracy Casarrubias 10/29/2022 8:45:00 AM

Completed By: Tracy Casarrubias 10/29/2022 9:45:11 AM

Reviewed By:

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. 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: TMC 10/29/22

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	2.5	Good	Yes			

Chain-of-Custody Record

Client: Hilcorp

Mailing Address: 382CR3100
Aztec 87410

Phone #: 5055993400

email or Fax#: KKaufman@hilcorp.com

QA/QC Package: ETrujillo@hilcorp.com

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 2-Day

Project Name:
Pipkin Gas Com A1E

Project #:

Project Manager:
Fasho Trujillo

Sampler: FTrujillo

On Ice: ☑ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 2.4 +0.1 = 2.5 (°C)

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

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2210671	BTEX / MTBE / TMB's (8021)	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_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
10/28/22	8:40	Soil	8ft Sample	4oz Glass/1	Cold	001	X	X					X			
10/28/22	8:52	Soil	10ft Sample	4oz Glass/1	Cold	002	X	X					X			
10/28/22	9:06	Soil	12ft Sample	4oz Glass/1	Cold	003	X	X					X			
10/28/22	9:19	Soil	14ft Sample	4oz Glass/1	Cold	004	X	X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/28/22	1315			Walk	10/28/22	1315
10/28/22	1816					

Remarks:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

April 24, 2023

Stuart Hyde
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX:

RE: Pipkin GC A 1E OrderNo.: 2304669

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 8 sample(s) on 4/15/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH01@25'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 10:50:00 AM
Lab ID: 2304669-001 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	120	9.6		mg/Kg	1	4/20/2023 4:58:44 PM
Motor Oil Range Organics (MRO)	63	48		mg/Kg	1	4/20/2023 4:58:44 PM
Surr: DNOP	90.3	69-147		%Rec	1	4/20/2023 4:58:44 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	23	D	mg/Kg	5	4/20/2023 2:33:00 PM
Surr: BFB	97.9	37.7-212	D	%Rec	5	4/20/2023 2:33:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.12	D	mg/Kg	5	4/20/2023 2:33:00 PM
Toluene	ND	0.23	D	mg/Kg	5	4/20/2023 2:33:00 PM
Ethylbenzene	ND	0.23	D	mg/Kg	5	4/20/2023 2:33:00 PM
Xylenes, Total	ND	0.47	D	mg/Kg	5	4/20/2023 2:33:00 PM
Surr: 4-Bromofluorobenzene	93.3	70-130	D	%Rec	5	4/20/2023 2:33:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 6:10:10 PM

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	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 Quanitative Limit
RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH01@30'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 11:00:00 AM
Lab ID: 2304669-002 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/20/2023 5:09:25 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/20/2023 5:09:25 PM
Surr: DNOP	82.9	69-147		%Rec	1	4/20/2023 5:09:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/20/2023 2:54:00 PM
Surr: BFB	139	37.7-212		%Rec	1	4/20/2023 2:54:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/20/2023 2:54:00 PM
Toluene	ND	0.049		mg/Kg	1	4/20/2023 2:54:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/20/2023 2:54:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/20/2023 2:54:00 PM
Surr: 4-Bromofluorobenzene	131	70-130	S	%Rec	1	4/20/2023 2:54:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 6:22:35 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH01@35'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 11:10:00 AM
Lab ID: 2304669-003 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/20/2023 5:20:07 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/20/2023 5:20:07 PM
Surr: DNOP	103	69-147		%Rec	1	4/20/2023 5:20:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/20/2023 3:16:00 PM
Surr: BFB	89.0	37.7-212		%Rec	1	4/20/2023 3:16:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/20/2023 3:16:00 PM
Toluene	ND	0.048		mg/Kg	1	4/20/2023 3:16:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/20/2023 3:16:00 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/20/2023 3:16:00 PM
Surr: 4-Bromofluorobenzene	87.3	70-130		%Rec	1	4/20/2023 3:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 6:34:59 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH02@30'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 12:40:00 PM
Lab ID: 2304669-004 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	4/20/2023 5:41:20 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	4/20/2023 5:41:20 PM
Surr: DNOP	84.8	69-147		%Rec	1	4/20/2023 5:41:20 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/20/2023 3:37:00 PM
Surr: BFB	92.0	37.7-212		%Rec	1	4/20/2023 3:37:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/20/2023 3:37:00 PM
Toluene	ND	0.049		mg/Kg	1	4/20/2023 3:37:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/20/2023 3:37:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/20/2023 3:37:00 PM
Surr: 4-Bromofluorobenzene	86.8	70-130		%Rec	1	4/20/2023 3:37:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 6:47:24 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH02@35'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 12:50:00 PM
Lab ID: 2304669-005 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/20/2023 5:52:00 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/20/2023 5:52:00 PM
Surr: DNOP	92.3	69-147		%Rec	1	4/20/2023 5:52:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/20/2023 3:59:00 PM
Surr: BFB	90.4	37.7-212		%Rec	1	4/20/2023 3:59:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.024		mg/Kg	1	4/20/2023 3:59:00 PM
Toluene	ND	0.048		mg/Kg	1	4/20/2023 3:59:00 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/20/2023 3:59:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	4/20/2023 3:59:00 PM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	4/20/2023 3:59:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 6:59:48 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH03@25'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 2:00:00 PM
Lab ID: 2304669-006 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.8		mg/Kg	1	4/20/2023 6:02:40 PM
Motor Oil Range Organics (MRO)	ND	44		mg/Kg	1	4/20/2023 6:02:40 PM
Surr: DNOP	83.8	69-147		%Rec	1	4/20/2023 6:02:40 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/20/2023 4:42:00 PM
Surr: BFB	90.4	37.7-212		%Rec	1	4/20/2023 4:42:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/20/2023 4:42:00 PM
Toluene	ND	0.050		mg/Kg	1	4/20/2023 4:42:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/20/2023 4:42:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/20/2023 4:42:00 PM
Surr: 4-Bromofluorobenzene	84.5	70-130		%Rec	1	4/20/2023 4:42:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 7:37:02 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH03@30'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 2:20:00 PM
Lab ID: 2304669-007 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	4/20/2023 6:13:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/20/2023 6:13:24 PM
Surr: DNOP	73.2	69-147		%Rec	1	4/20/2023 6:13:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/20/2023 5:03:00 PM
Surr: BFB	90.2	37.7-212		%Rec	1	4/20/2023 5:03:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/20/2023 5:03:00 PM
Toluene	ND	0.050		mg/Kg	1	4/20/2023 5:03:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/20/2023 5:03:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	4/20/2023 5:03:00 PM
Surr: 4-Bromofluorobenzene	86.4	70-130		%Rec	1	4/20/2023 5:03:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 7:49:26 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2304669**
Date Reported: **4/24/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH03@35'
Project: Pipkin GC A 1E
Collection Date: 4/14/2023 2:30:00 PM
Lab ID: 2304669-008 **Matrix:** SOIL **Received Date:** 4/15/2023 8:40:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	8.4		mg/Kg	1	4/20/2023 6:24:07 PM
Motor Oil Range Organics (MRO)	ND	42		mg/Kg	1	4/20/2023 6:24:07 PM
Surr: DNOP	69.4	69-147		%Rec	1	4/20/2023 6:24:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **CCM**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/20/2023 5:25:00 PM
Surr: BFB	91.1	37.7-212		%Rec	1	4/20/2023 5:25:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **CCM**
Benzene	ND	0.025		mg/Kg	1	4/20/2023 5:25:00 PM
Toluene	ND	0.050		mg/Kg	1	4/20/2023 5:25:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	4/20/2023 5:25:00 PM
Xylenes, Total	ND	0.099		mg/Kg	1	4/20/2023 5:25:00 PM
Surr: 4-Bromofluorobenzene	88.6	70-130		%Rec	1	4/20/2023 5:25:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	4/21/2023 8:01:51 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2304669**

24-Apr-23

Client: HILCORP ENERGY

Project: Pipkin GC A 1E

Sample ID: **MB-74444**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **74444**	RunNo: **96239**
Prep Date: **4/20/2023**	Analysis Date: **4/21/2023**	SeqNo: **3484717** Units: **mg/Kg**

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

Sample ID: **LCS-74444**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **74444**	RunNo: **96239**
Prep Date: **4/20/2023**	Analysis Date: **4/21/2023**	SeqNo: **3484718** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.4	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 Quanitative 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#: **2304669**

24-Apr-23

Client: HILCORP ENERGY

Project: Pipkin GC A 1E

Sample ID: **MB-74430**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74430**	RunNo: **96162**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3482718** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.9		10.00		79.3	69	147			

Sample ID: **LCS-74430**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74430**	RunNo: **96162**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3482719** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.8		5.000		96.6	69	147			

Sample ID: **MB-74418**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **74418**	RunNo: **96162**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3482949** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		104	69	147			

Sample ID: **LCS-74418**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **74418**	RunNo: **96162**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483127** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.6	61.9	130			
Surr: DNOP	4.0		5.000		79.1	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2304669**

24-Apr-23

Client: HILCORP ENERGY

Project: Pipkin GC A 1E

Sample ID: **lcs-74410**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74410**	RunNo: **96201**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483284** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	2000		1000		195	37.7	212			

Sample ID: **mb-74410**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74410**	RunNo: **96201**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483285** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	900		1000		89.6	37.7	212			

Sample ID: **lcs-74401**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **74401**	RunNo: **96201**
Prep Date: **4/18/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483312** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.2	70	130			
Surr: BFB	2000		1000		201	37.7	212			

Sample ID: **mb-74401**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **74401**	RunNo: **96201**
Prep Date: **4/18/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483313** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.4	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 Quanitative 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#: **2304669**

24-Apr-23

Client: HILCORP ENERGY

Project: Pipkin GC A 1E

Sample ID: **lcs-74401**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74401**	RunNo: **96201**
Prep Date: **4/18/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483335** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	87.1	80	120			
Toluene	0.87	0.050	1.000	0	87.4	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.8	80	120			
Xylenes, Total	2.5	0.10	3.000	0	84.7	80	120			
Surr: 4-Bromofluorobenzene	0.88		1.000		88.2	70	130			

Sample ID: **mb-74401**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74401**	RunNo: **96201**
Prep Date: **4/18/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483336** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.85		1.000		85.1	70	130			

Sample ID: **lcs-74410**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **74410**	RunNo: **96201**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483359** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.87		1.000		86.9	70	130			

Sample ID: **mb-74410**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **74410**	RunNo: **96201**
Prep Date: **4/19/2023**	Analysis Date: **4/20/2023**	SeqNo: **3483360** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.85		1.000		85.1	70	130			

Qualifiers:

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

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: HILCORP ENERGY Work Order Number: 2304669 RcptNo: 1

Received By: Cheyenne Cason 4/15/2023 8:40:00 AM

Completed By: Desiree Dominguez 4/17/2023 9:39:46 AM

Reviewed By: 4/17/23

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: JM 4/17/23

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Yes	Morty		

Chain-of-Custody Record

Client: Hilcorp Energy

Attn: Kate Kaufman

Mailing Address:

Phone #:

email or Fax#: KKaufman@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

5 Day TAT

☒ Standard ☐ Rush

Project Name: Pipkin GC #1E

Project #:

Project Manager: Stuart Hyde

Sampler: Danny Burns

On Ice: ☒ Yes ☐ No Mardy

# of Coolers: 1

Cooler Temp(Including CF): 4.8-0.1=4.7(°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2304669	BTEX / MTBE / TMB's (8021)	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_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4-14-23	1050	Soil	BH01 @ 25'	1-4oz	cool	-001	X	X					X			
	1100		BH01 @ 30'			-002										
	1110		BH01 @ 35'			-003										
	1240		BH02 @ 30'			-004										
	1250		BH02 @ 35'			-005										
	1400		BH03 @ 25'			-006										
	1420		BH03 @ 30'			-007										
	1430		BH03 @ 35'			-008										

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
4-14-23	16:00		emc courier		4/15/23	0840
Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time

Remarks:

cc: shyde @ ensolum.com
dburns

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

May 31, 2023

Stuart Hyde
HILCORP ENERGY
PO Box 4700
Farmington, NM 87499
TEL: (505) 564-0733
FAX

RE: Pipkin OrderNo.: 2305B01

Dear Stuart Hyde:

Hall Environmental Analysis Laboratory received 7 sample(s) on 5/20/2023 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH-04(13-15ft)
Project: Pipkin
Collection Date: 5/17/2023 2:00:00 PM
Lab ID: 2305B01-001 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	5/25/2023 10:35:27 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/25/2023 10:35:27 AM
Surr: DNOP	106	69-147		%Rec	1	5/25/2023 10:35:27 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/26/2023 12:01:00 AM
Surr: BFB	88.2	15-244		%Rec	1	5/26/2023 12:01:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/26/2023 12:01:00 AM
Toluene	ND	0.049		mg/Kg	1	5/26/2023 12:01:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/26/2023 12:01:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/26/2023 12:01:00 AM
Surr: 4-Bromofluorobenzene	83.9	39.1-146		%Rec	1	5/26/2023 12:01:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/25/2023 1:49:02 AM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH-04(18-20ft)
Project: Pipkin
Collection Date: 5/17/2023 2:05:00 PM
Lab ID: 2305B01-002 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/25/2023 10:46:02 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/25/2023 10:46:02 AM
Surr: DNOP	110	69-147		%Rec	1	5/25/2023 10:46:02 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/26/2023 12:23:00 AM
Surr: BFB	83.4	15-244		%Rec	1	5/26/2023 12:23:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/26/2023 12:23:00 AM
Toluene	ND	0.049		mg/Kg	1	5/26/2023 12:23:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/26/2023 12:23:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	5/26/2023 12:23:00 AM
Surr: 4-Bromofluorobenzene	82.0	39.1-146		%Rec	1	5/26/2023 12:23:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	59		mg/Kg	20	5/25/2023 2:01:27 AM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH-04(23-25ft)
Project: Pipkin
Collection Date: 5/17/2023 2:10:00 PM
Lab ID: 2305B01-003 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	22	9.4		mg/Kg	1	5/25/2023 10:56:37 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/25/2023 10:56:37 AM
Surr: DNOP	103	69-147		%Rec	1	5/25/2023 10:56:37 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/26/2023 12:44:00 AM
Surr: BFB	109	15-244		%Rec	1	5/26/2023 12:44:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/26/2023 12:44:00 AM
Toluene	ND	0.048		mg/Kg	1	5/26/2023 12:44:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/26/2023 12:44:00 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/26/2023 12:44:00 AM
Surr: 4-Bromofluorobenzene	86.2	39.1-146		%Rec	1	5/26/2023 12:44:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	140	60		mg/Kg	20	5/25/2023 2:13:52 AM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH-04(28-30ft)
Project: Pipkin
Collection Date: 5/17/2023 2:15:00 PM
Lab ID: 2305B01-004 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	5/25/2023 11:07:11 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	5/25/2023 11:07:11 AM
Surr: DNOP	77.6	69-147		%Rec	1	5/25/2023 11:07:11 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/26/2023 1:05:00 AM
Surr: BFB	95.7	15-244		%Rec	1	5/26/2023 1:05:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.025		mg/Kg	1	5/26/2023 1:05:00 AM
Toluene	0.14	0.049		mg/Kg	1	5/26/2023 1:05:00 AM
Ethylbenzene	0.059	0.049		mg/Kg	1	5/26/2023 1:05:00 AM
Xylenes, Total	0.30	0.098		mg/Kg	1	5/26/2023 1:05:00 AM
Surr: 4-Bromofluorobenzene	85.4	39.1-146		%Rec	1	5/26/2023 1:05:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/25/2023 2:26:16 AM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH-04(33-35ft)
Project: Pipkin
Collection Date: 5/17/2023 2:20:00 PM
Lab ID: 2305B01-005 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	5/25/2023 11:17:48 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	5/25/2023 11:17:48 AM
Surr: DNOP	85.4	69-147		%Rec	1	5/25/2023 11:17:48 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **KMN**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	5/26/2023 1:27:00 AM
Surr: BFB	87.3	15-244		%Rec	1	5/26/2023 1:27:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **KMN**
Benzene	ND	0.024		mg/Kg	1	5/26/2023 1:27:00 AM
Toluene	ND	0.048		mg/Kg	1	5/26/2023 1:27:00 AM
Ethylbenzene	ND	0.048		mg/Kg	1	5/26/2023 1:27:00 AM
Xylenes, Total	ND	0.096		mg/Kg	1	5/26/2023 1:27:00 AM
Surr: 4-Bromofluorobenzene	82.5	39.1-146		%Rec	1	5/26/2023 1:27:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **CAS**
Chloride	ND	60		mg/Kg	20	5/25/2023 2:38:41 AM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH05 23-25'
Project: Pipkin
Collection Date: 5/18/2023 11:20:00 AM
Lab ID: 2305B01-006 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/26/2023 12:45:30 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2023 12:45:30 PM
Surr: DNOP	101	69-147		%Rec	1	5/26/2023 12:45:30 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/26/2023 12:07:10 AM
Surr: BFB	65.1	15-244		%Rec	1	5/26/2023 12:07:10 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.024		mg/Kg	1	5/26/2023 12:07:10 AM
Toluene	ND	0.049		mg/Kg	1	5/26/2023 12:07:10 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/26/2023 12:07:10 AM
Xylenes, Total	ND	0.097		mg/Kg	1	5/26/2023 12:07:10 AM
Surr: 4-Bromofluorobenzene	88.0	39.1-146		%Rec	1	5/26/2023 12:07:10 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/26/2023 5:29:05 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

Analytical Report
Lab Order **2305B01**
Date Reported: **5/31/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH05 33-35'
Project: Pipkin
Collection Date: 5/18/2023 11:40:00 AM
Lab ID: 2305B01-007 **Matrix:** SOIL **Received Date:** 5/20/2023 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	5/26/2023 12:56:10 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	5/26/2023 12:56:10 PM
Surr: DNOP	89.2	69-147		%Rec	1	5/26/2023 12:56:10 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **JJP**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	5/26/2023 1:16:58 AM
Surr: BFB	75.7	15-244		%Rec	1	5/26/2023 1:16:58 AM
EPA METHOD 8021B: VOLATILES						Analyst: **JJP**
Benzene	ND	0.025		mg/Kg	1	5/26/2023 1:16:58 AM
Toluene	ND	0.049		mg/Kg	1	5/26/2023 1:16:58 AM
Ethylbenzene	ND	0.049		mg/Kg	1	5/26/2023 1:16:58 AM
Xylenes, Total	ND	0.098		mg/Kg	1	5/26/2023 1:16:58 AM
Surr: 4-Bromofluorobenzene	91.7	39.1-146		%Rec	1	5/26/2023 1:16:58 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	5/26/2023 5:41:29 PM

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	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **MB-75159**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75159**	RunNo: **96996**							
Prep Date: **5/24/2023**	Analysis Date: **5/24/2023**	SeqNo: **3520080**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75159**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75159**	RunNo: **96996**							
Prep Date: **5/24/2023**	Analysis Date: **5/24/2023**	SeqNo: **3520082**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

Sample ID: **MB-75213**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **75213**	RunNo: **97064**							
Prep Date: **5/26/2023**	Analysis Date: **5/26/2023**	SeqNo: **3522775**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-75213**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **75213**	RunNo: **97064**							
Prep Date: **5/26/2023**	Analysis Date: **5/26/2023**	SeqNo: **3522776**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.2	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 Quanitative 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#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **2305B01-005AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH-04(33-35ft)** Batch ID: **75149** RunNo: **97035**
Prep Date: **5/24/2023** Analysis Date: **5/25/2023** SeqNo: **3521086** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.5	47.53	0	89.1	54.2	135			
Surr: DNOP	4.5		4.753		95.7	69	147			

Sample ID: **2305B01-005AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH-04(33-35ft)** Batch ID: **75149** RunNo: **97035**
Prep Date: **5/24/2023** Analysis Date: **5/25/2023** SeqNo: **3521087** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	8.7	43.74	0	88.6	54.2	135	8.83	29.2	
Surr: DNOP	4.1		4.374		94.5	69	147	0	0	

Sample ID: **LCS-75149** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75149** RunNo: **97035**
Prep Date: **5/24/2023** Analysis Date: **5/25/2023** SeqNo: **3521099** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.7	61.9	130			
Surr: DNOP	4.7		5.000		94.0	69	147			

Sample ID: **MB-75149** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75149** RunNo: **97035**
Prep Date: **5/24/2023** Analysis Date: **5/25/2023** SeqNo: **3521101** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	13		10.00		126	69	147			

Sample ID: **2305B01-006AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH05 23-25'** Batch ID: **75197** RunNo: **97073**
Prep Date: **5/25/2023** Analysis Date: **5/27/2023** SeqNo: **3523121** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	38	9.7	48.64	0	78.0	54.2	135			
Surr: DNOP	4.6		4.864		95.5	69	147			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **2305B01-006AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH05 23-25'** Batch ID: **75197** RunNo: **97073**
Prep Date: **5/25/2023** Analysis Date: **5/27/2023** SeqNo: **3523122** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.6	48.12	0	87.5	54.2	135	10.4	29.2	
Surr: DNOP	4.3		4.812		89.9	69	147	0	0	

Sample ID: **LCS-75186** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75186** RunNo: **97073**
Prep Date: **5/25/2023** Analysis Date: **5/26/2023** SeqNo: **3523198** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.4	69	147			

Sample ID: **LCS-75197** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **75197** RunNo: **97073**
Prep Date: **5/25/2023** Analysis Date: **5/26/2023** SeqNo: **3523201** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	10	50.00	0	84.4	61.9	130			
Surr: DNOP	4.5		5.000		89.5	69	147			

Sample ID: **MB-75186** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75186** RunNo: **97073**
Prep Date: **5/25/2023** Analysis Date: **5/26/2023** SeqNo: **3523202** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.0		10.00		89.5	69	147			

Sample ID: **MB-75197** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **75197** RunNo: **97073**
Prep Date: **5/25/2023** Analysis Date: **5/26/2023** SeqNo: **3523205** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		112	69	147			

Qualifiers:

*	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **mb-75132**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **75132**	RunNo: **97020**							
Prep Date: **5/23/2023**	Analysis Date: **5/25/2023**	SeqNo: **3521524**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	900		1000		90.2	15	244			

Sample ID: **lcs-75132**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **75132**	RunNo: **97020**							
Prep Date: **5/23/2023**	Analysis Date: **5/25/2023**	SeqNo: **3521525**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	81.5	70	130			
Surr: BFB	1900		1000		190	15	244			

Sample ID: **lcs-75150**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **75150**	RunNo: **97018**							
Prep Date: **5/24/2023**	Analysis Date: **5/25/2023**	SeqNo: **3521588**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	85.6	70	130			
Surr: BFB	4700		1000		472	15	244			S

Sample ID: **mb-75150**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **75150**	RunNo: **97018**							
Prep Date: **5/24/2023**	Analysis Date: **5/25/2023**	SeqNo: **3521589**	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	640		1000		64.4	15	244			

Sample ID: **2305B01-006AMS**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH05 23-25'**	Batch ID: **75150**	RunNo: **97018**							
Prep Date: **5/24/2023**	Analysis Date: **5/26/2023**	SeqNo: **3521599**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	4.9	24.41	0	86.1	70	130			
Surr: BFB	4600		976.6		475	15	244			S

Sample ID: **2305B01-006AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH05 23-25'**	Batch ID: **75150**	RunNo: **97018**							
Prep Date: **5/24/2023**	Analysis Date: **5/26/2023**	SeqNo: **3521600**	Units: **mg/Kg**						
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 Quanitative 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#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **2305B01-006AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH05 23-25'** Batch ID: **75150** RunNo: **97018**
Prep Date: **5/24/2023** Analysis Date: **5/26/2023** SeqNo: **3521600** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.9	24.27	0	83.6	70	130	3.60	20	
Surr: BFB	4500		970.9		468	15	244	0	0	S

Qualifiers:

*	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 Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of standard limits. If undiluted results may be estimated.		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **mb-75132** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **75132** RunNo: **97020**
Prep Date: **5/23/2023** Analysis Date: **5/25/2023** SeqNo: **3521548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.86		1.000		86.2	39.1	146			

Sample ID: **lcs-75132** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **75132** RunNo: **97020**
Prep Date: **5/23/2023** Analysis Date: **5/25/2023** SeqNo: **3521549** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.000	0	86.9	70	130			
Toluene	0.87	0.050	1.000	0	87.1	70	130			
Ethylbenzene	0.86	0.050	1.000	0	85.6	70	130			
Xylenes, Total	2.6	0.10	3.000	0	85.1	70	130			
Surr: 4-Bromofluorobenzene	0.87		1.000		86.8	39.1	146			

Sample ID: **LCS-75150** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **75150** RunNo: **97018**
Prep Date: **5/24/2023** Analysis Date: **5/25/2023** SeqNo: **3521629** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	1.000	0	80.6	70	130			
Toluene	0.83	0.050	1.000	0	83.4	70	130			
Ethylbenzene	0.85	0.050	1.000	0	84.7	70	130			
Xylenes, Total	2.5	0.10	3.000	0	84.6	70	130			
Surr: 4-Bromofluorobenzene	0.93		1.000		92.6	39.1	146			

Sample ID: **mb-75150** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **75150** RunNo: **97018**
Prep Date: **5/24/2023** Analysis Date: **5/25/2023** SeqNo: **3521630** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.88		1.000		88.0	39.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of 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#: **2305B01**
31-May-23

Client: HILCORP ENERGY
Project: Pipkin

Sample ID: **2305B01-007AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH05 33-35'** Batch ID: **75150** RunNo: **97018**
Prep Date: **5/24/2023** Analysis Date: **5/26/2023** SeqNo: **3521633** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.81	0.025	0.9862	0	82.1	70	130			
Toluene	0.85	0.049	0.9862	0.01591	84.6	70	130			
Ethylbenzene	0.87	0.049	0.9862	0	88.0	70	130			
Xylenes, Total	2.6	0.099	2.959	0	87.3	70	130			
Surr: 4-Bromofluorobenzene	0.92		0.9862		93.4	39.1	146			

Sample ID: **2305B01-007AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH05 33-35'** Batch ID: **75150** RunNo: **97018**
Prep Date: **5/24/2023** Analysis Date: **5/26/2023** SeqNo: **3521634** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.76	0.025	0.9872	0	76.9	70	130	6.36	20	
Toluene	0.79	0.049	0.9872	0.01591	78.6	70	130	7.08	20	
Ethylbenzene	0.80	0.049	0.9872	0	81.4	70	130	7.61	20	
Xylenes, Total	2.4	0.099	2.962	0	82.4	70	130	5.68	20	
Surr: 4-Bromofluorobenzene	0.90		0.9872		91.0	39.1	146	0	0	

Qualifiers:

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

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: Hilcorp Energy | Work Order Number: 2305B01 | RcptNo: 1

Received By: **Tracy Casarrubias** 5/20/2023 9:30:00 AM

Completed By: **Tracy Casarrubias** 5/20/2023 1:15:05 PM

Reviewed By: JM 5/22/23

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. 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: MB 5/22/23

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: Email is mising on COC -TMC 5/20/23

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes	Yogi		

Chain-of-Custody Record

Client: HilCorp / Ensolum

Attn: Kate Kaufman

Mailing Address: 776 E. 2nd Ave.

Durango CO. 81301

Phone #: 970-903-1607

email or Fax#:

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard (5-day) ☐ Rush

Project Name: Pipkin

Project #:

Project Manager: Stuart Hyde

Sampler:

On Ice: ☒ Yes ☐ No 4oz

# of Coolers: 1

Cooler Temp(Including CF): 2.4-0.1=2.3 (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2305801	BTEX / MTBE / TMB's (8021)	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_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
5-17-23	14:00	S	BH-04 (13-15ft)	4oz glass / 1	None	001	X	X					X			
	14:05		BH-04 (18-20ft)			002										
	14:10		BH-04 (23-25ft)			003										
	14:15		BH-04 (28-30ft)			004										
	14:20		BH-04 (33-35ft)			005										
5-18	11:20	S	BH05 23-25'			006	X	X					X			
5-18	11:40	S	BH05 33-35'			007	X	X					X			

Date: 5/19/23 Time: 1435 Relinquished by:

Date: 5/19/23 Time: 1820 Relinquished by:

Received by: Via: Date: 5/19/23 Time: 1435

Received by: Via: Courier Date: 5/20/23 Time: 9:30

Remarks:

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.

ENSOLUM

APPENDIX C

Agency Sampling Notifications

From: Burdine, Jaclyn, EMNRD
To: Stuart Hyde
Cc: Kate Kaufman; Devin Hencmann; Danny Burns
Subject: RE: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification
Date: Thursday, April 6, 2023 9:47:33 AM
Attachments: image001.png
image002.png
image003.png
image004.png

[**EXTERNAL EMAIL**]

Thank you for the notice, it has been received and noted.

Jackie Burdine ● Environmental Specialist-Advanced – Administrative Permitting Program
EMNRD - Oil Conservation Division
1220 S. St. Francis Drive | Santa Fe, NM 87505
505.469.6769 Jaclyn.Burdine1@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Stuart Hyde <shyde@ensolum.com>
Sent: Monday, April 3, 2023 5:05 PM
To: Burdine, Jaclyn, EMNRD <Jaclyn.Burdine1@emnrd.nm.gov>
Cc: Kate Kaufman <kkaufman@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>; Danny Burns <dburns@ensolum.com>
Subject: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

On behalf of Hilcorp Energy Company, Ensolum is submitting this delineation sampling notification for the Pipkin Gas Com A1E site located in San Juan County, NM (coordinates 36.593965, -107.940397). Drilling and sampling work will begin at 10 AM on Thursday April 13, 2023 to assess potential impacts related to the removal of an onsite below-grade tank. Please reach out with any questions or comments at this time. Thank you.

Stuart Hyde, LG
Senior Geologist
970-903-1607
Ensolum, LLC

From: Wells, Shelly, EMNRD
To: Stuart Hyde
Cc: Kate Kaufman; Devin Hencmann
Subject: RE: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification
Date: Tuesday, May 16, 2023 9:40:57 AM
Attachments: image001.png
image002.png
image003.png
image004.png

[**EXTERNAL EMAIL**]

Good morning Stuart,

Thank you for letting me know!

Shelly

From: Stuart Hyde <shyde@ensolum.com>
Sent: Tuesday, May 16, 2023 9:38 AM
To: Wells, Shelly, EMNRD <Shelly.Wells@emnrd.nm.gov>
Cc: Kate Kaufman <kkaufman@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>
Subject: RE: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification

Shelly,

Due to delays in other drilling projects, we have had to push back the Pipkin drilling and sampling work to Thursday and Friday May 18th and 19th. Please reach out with any questions. Thanks.

Stuart Hyde, LG
Senior Geologist
970-903-1607
Ensolum, LLC

From: Stuart Hyde
Sent: Tuesday, May 9, 2023 3:45 PM
To: Burdine, Jaclyn, EMNRD <Jaclyn.Burdine1@emnrd.nm.gov>
Cc: Kate Kaufman <kkaufman@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>; Danny Burns <dburns@ensolum.com>; Eric Carroll <ecarroll@ensolum.com>
Subject: RE: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification

All,

On behalf of Hilcorp Energy Company, Ensolum is submitting this additional delineation sampling notification for the Pipkin Gas Com A1E site located in San Juan County, NM (coordinates 36.593965,

-107.940397). Drilling and sampling work will begin at 9 AM on May 15 and 16, 2023 to assess potential impacts related to the removal of an onsite below-grade tank. Please reach out with any questions or comments at this time. Thank you.

Stuart Hyde, LG
Senior Geologist
970-903-1607
Ensolum, LLC

From: Burdine, Jaclyn, EMNRD <Jaclyn.Burdine1@emnrd.nm.gov>
Sent: Thursday, April 6, 2023 9:47 AM
To: Stuart Hyde <shyde@ensolum.com>
Cc: Kate Kaufman <kkaufman@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>; Danny Burns <dburns@ensolum.com>
Subject: RE: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification

[**EXTERNAL EMAIL**]

Thank you for the notice, it has been received and noted.

Jackie Burdine ● Environmental Specialist-Advanced – Administrative Permitting Program
EMNRD - Oil Conservation Division
1220 S. St. Francis Drive | Santa Fe, NM 87505
505.469.6769 Jaclyn.Burdine1@emnrd.nm.gov
http://www.emnrd.nm.gov/ocd

From: Stuart Hyde <shyde@ensolum.com>
Sent: Monday, April 3, 2023 5:05 PM
To: Burdine, Jaclyn, EMNRD <Jaclyn.Burdine1@emnrd.nm.gov>
Cc: Kate Kaufman <kkaufman@hilcorp.com>; Devin Hencmann <dhencmann@ensolum.com>; Danny Burns <dburns@ensolum.com>
Subject: [EXTERNAL] Pipkin Gas Com A1E - Drilling and Sampling Notification

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

On behalf of Hilcorp Energy Company, Ensolum is submitting this delineation sampling notification for the Pipkin Gas Com A1E site located in San Juan County, NM (coordinates 36.593965, -107.940397). Drilling and sampling work will begin at 10 AM on Thursday April 13, 2023 to assess potential impacts related to the removal of an onsite below-grade tank. Please reach out with any questions or comments at this time. Thank you.

Stuart Hyde, LG
Senior Geologist
970-903-1607
Ensolum, LLC

ENSOLUM

APPENDIX D

Photographic Log

ENSOLUM

Photographic Log
Hilcorp Energy Company
Pipkin Gas Com A #1E
San Juan County, New Mexico

Photograph: 1 Date: 4/14/2023
Description: View of Site and former BGT location
View: West

Photograph: 2 Date: 4/15/2023
Description: View of pothole advanced on 10/28/2022
View: South

Photograph: 3 Date: 4/14/2023
Description: Drilling boring BH01
View: West

Photograph: 4 Date: 4/15/2023
Description: Drilling boring BH03
View: Southwest

ENSOLUM

APPENDIX E

Boring Logs

ENSOLUM

Client: Hilcorp Energy Co.
Project Name: Pipkin GC A #1E
Project Location: 36.593957° N, 107.940560° W
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH01
Project No.: 07A1988057

Date Sampled: 4-14-23
Drilled By: Enviro-Drill
Driller: Juan
Logged By: Danny Burns

Ground Surface Elevation: 5,900'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: —
Well Materials: —
Surface Completion: —
Boring Method: HSA

	DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
50-5"	0–4		25%	2.4		SW	Lt. Brown/tan medium sand. Dry, loose, No stain/odor (s/o)	
50-4"	6–10		25%	0.8		SW	Lt. Brown, med-med fn. sand Dry, No s/o	
50-4"	12–14		25%	0.2		SW	Same As Above. Dry. No s/o	
50-4"	16–20		25%	2.1		SW	SAA, Dry, No s/o	
43 50-2"	22–24	Time 1050	50%	38.1		SW	SAA, Dry, No stain, very slight HC odor, degraded.	
42 50-2"	26–30	1100	75%	44.2		SW-SM	Lt. Brown/tan med-med coarse sand, w/ TR. silt. Dry, No stain v. slt. HC degrad. odor	
28 50-2"	32–34	1110	100%	0.8		SM	Lt. bluish gray, fn-sandy silt Dry, dense, compact. No s/o.	
	36–50						No well set, borehole left open. Bucket placed over hole.	

ENSOLUM

Client: Hilcorp Energy Co.
Project Name: Pipkin GC A #1E
Project Location: 36.593957° N, 107.940560° W
Project Manager: Stuart Hyde

BORING LOG NUMBER BH02
Project No.: 07A1988057

Date Sampled: 4-14-23
Drilled By: EnviroDrill
Driller: Juan
Logged By: Danny Burns

Ground Surface Elevation: 5,900'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: —
Well Materials:
Surface Completion: —
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0–4		25%	2.3		SW	Lt. Brown/tan med.-sand. Dry, loose, No s/o	
50-5"							
6–10		25%	0.0		SW	Lt. Brown med-med. fn. sand. Dry, No s/o.	
50-4"							
12–16		25%	0.0		SW	Tan, Lt. Brown, med. sand. Dry. No s/o.	
50-5"							
18–20		10%	0.0		SW	SAA, No s/o.	
50-5"							
22–26		25%	0.0		SW	SAA. No s/o.	
50-5"							
28–30	12:40	50%	8.7		SW	Tan, med.-med coarse sand Dry, Dense, No s/o	
28/50-5"							
32–36	12:50	75%	0.1		SM	Gray, Lt. Blue-gray, fn. sandy silt + Dense siltstone. Dry. No s/o	
32/50-5"							
38–50						No well set.	

ENSOLUM

Client: Hilcorp Energy Co.
Project Name: Pipkin GC A #1E
Project Location: 36.593957° N, 107.940560° W
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH03
Project No.: 07A1988057

Date Sampled: 4-14-23
Drilled By: Enviro-Drill
Driller: Juan
Logged By: Danny Burns

Ground Surface Elevation: 5,900'
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter:
Well Materials:
Surface Completion:
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0							
2						Tan, med. sand. Dry No s/o.	
4		25%	0.0		SW		
6							
8						Tan med-fn. sand. Dry No s/o.	
10		25%	0.0		SW		
12							
14		25%	0.0		SW	Lt. Brown/tan med. sand. Dry No s/o.	
16							
18							
20		25%	0.0		SW	SAA. Dry, No s/o.	
22							
24	1400	50%	7.8		SW	Brown, med-coarse sand Dry, No s/o.	
26							
28							
30	1420	100%	2.1		SW-SM	Lt. gray, med-coarse sand w/ silt. No s/o. Dry.	
32							
34	1430	100%	0.1		SM	Gray, lt blue, fn. sandy silt. Dense, Dry, No s/o	
36							
38							
40						No well set.	
42							
44							
46							
48							
50							

50-5"
50-5"
50-5"
50-5"
30/50-3"
19/38/50-3"
22/50-4"

ENSOLUM

Client: HilcorP
Project Name: Pitkin
Project Location: NM
Project Manager: Stuart Hyde

BORING LOG NUMBER BH-04

Project No.:

Date Sampled: 5-17-23
Drilled By: Enviro-Drill
Driller: Juan
Logged By: W. Weichert

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter: 8"
Casing Diameter: 2"
Well Materials: SCH 40 PVC
Surface Completion: SVE
Boring Method: HSA

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
0–5	X	50%	1.3 PPM		SW	SILTY SAND w/ GRAVEL light brown, Fine-Coarse, w/ gravel, Moderate-Poorly Sorted, Unconsolidated, Dry, No Odor, Fill?	TBD
6–8						As Above Fill?	
9–10	X	60%	1.6 PPM		SW		
11–13						SANDSTONE - gray M-C, Moderate-Well Sorted, Consolidated but Weakly Cemented, Dry, no odor	
14–15	X	70%	2.7 PPM		SP	* Slow Drilling + ROP.	
16–18							
19–20	X	70%	7.2 PPM		SP	SANDSTONE - light gray F-M, Well Sorted, friable + Weakly Cemented Dry, No odor	
21–23							
24–25	X	60%	559.2 PPM			As Above, M-C, Slight Petro odor	

ENSOLUM

Client: Hilcorp
Project Name: Pitkin
Project Location: NM
Project Manager: Stuart Hyde

BORING LOG NUMBER: BH-04
Project No.:

Date Sampled: 5-17-23
Drilled By: Enviro-Drill
Driller: Juan
Logged By: W. Weichert

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:

Borehole Diameter:
Casing Diameter:
Well Materials:
Surface Completion:
Boring Method:

DEPTH (FEET)	SAMPLE INTERVAL	RECOVERY (%)	FID/PID READING (PPM)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING/WELL COMPLETION
25–30	X	70%	10.4 PPM		SP	SANDSTONE - Gray & black, F-M, Well Sorted, Consolidated but Weakly Cemented & Friable, Organic rich w/ black Woody Material, no odor	TBD
31–35	X	80%	9.9 PPM		CL	SHALE - gray-black, Fissle, little silt, Consoldated, Dry no odor	
36–50							

INCREASING

STEP 3: CONTINUE WITH

ENSOLUM

Client: HEC
Project Name: Pipkin
Project Location: NM
Project Manager: S. Hyde

BORING LOG NUMBER
BH05
Project No.

Date Sampled: 5-18-23
Drilled by: Enviro-Drill
Driller: Juan
Logged by: E. Carroll
Sampler: E. Carroll

Ground Surface Elevation:
Top of Casing Elevation:
North Coordinate:
West Coordinate:
Bench Mark Elevation:
At Completion
At Well Stabilization

Borehole Diameter: 8"
Casing Diameter: NA
Well Materials: NA
Surface Completion: NA
Boring Method: HSA

DEPTH (ft)	SAMPLE INTERVAL	SAMPLE ID	RECOVERY (%)	PID/FID READING (ppm)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING / WELL COMPLETION (GRAPHIC DEPICTION)
							BH05 west of BH01	NO well installed
0	1 0-5		100	0.2		SP	lt. brown, Dry, Coarse Sand No Stain/Odor	
5	2 5-10		100	0.2		SP	SAA NO Stain/Odor	
10	3 10-15		100	0.2		SP	lt brown, dry, coarse, Sand, weathered Sand stone No Stain/odor	
15	4 15-20		100	0.3		SS	lt. gray brown, coarse, Sandstone Poorly cemented No Stain/odor	
20	5 20-25		100	0.4			SAA NO Stain/Odor	
25	6 25-30							

ENSOLUM

Client: _____
Project Name: _____
Project Location: _____
Project Manager: _____

BORING LOG NUMBER

Project No. _____

Date Sampled: _____
Drilled by: _____
Driller: _____
Logged by: _____
Sampler: _____

Ground Surface Elevation: _____
Top of Casing Elevation: _____
North Coordinate: _____
West Coordinate: _____
Bench Mark Elevation: _____
▽ At Completion
▽ At Well Stabilization

Borehole Diameter: _____
Casing Diameter: _____
Well Materials: _____
Surface Completion: _____
Boring Method: _____

DEPTH (ft)	SAMPLE INTERVAL	SAMPLE ID	RECOVERY (%)	FID/PID READING (ppm)	POTENTIOMETRIC SURFACE	GEOLOGIC LOG SYMBOL	GEOLOGIC DESCRIPTION	BORING / WELL COMPLETION (GRAPHIC DEPICTION)
25	7 25-30			0.0			lt. gray brown, coarse sandstone	
30							lt brown, dry, med-coarse sandstone	
10								
15								
20								
25								

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 255416

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 255416
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	Remediation plan is approved with the following conditions; 1. Soil Vapor Extraction Pilot Test to be completed by 02/26/2024. 2. Report of Pilot Test to be completed and submitted to OCD by 03/26/2024.	11/28/2023