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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	NAPP2126347976
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: Hilcorp Energy Company	OGRID: 372171
Contact Name: Billy Ginn	Contact Telephone: 346-237-2073
Contact email: William.ginn@hilcorp.com	Incident # *(assigned by OCD): nAPP2126347976*
Contact mailing address: 1111 Travis Street, Houston, TX 77002	

Location of Release Source

Latitude 36.867111 Longitude -107.444045
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: San Juan 31-6 #230A	Site Type: Gas production well
Date Release Discovered: 9/14/2021	API# *(if applicable): 30-039-27401*

Unit Letter	Section	Township	Range	County
I	27	31N	6W	Rio Arriba

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls): 20	Volume Recovered (bbls): 18
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release:
On September 14, 2021, a Hilcorp operator arrived at the like to check the pumping unit after receiving a shutdown alarm. Upon arrival, it was discovered that the Site transfer pump failed to turn on for two ASTs storing produced water. Additionally, the high tank level switch malfunctioned on the ASTs and failed to shut down the well pumping unit. As such, the ASTs overflowed approximately 20 barrels (bbls) of produced water, as determined by the operator's tank gauging data.

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2126347976
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Facility ID	
Application ID	

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

Initial Response

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

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

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

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

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

Printed Name: Billy Ginn Title: Environmental Specialist

Signature: Date: 11/17/2021

email: William.ginn@hilcorp.com Telephone: 346-237-2073

OCD Only

Received by: Ramona Marcus Date: 11/17/2021

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2126347976
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?	120 (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	NAPP2126347976
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: Billy Ginn Title: Environmental Specialist

Signature: Date: 11/17/2021

email: William.ginn@hilcorp.com Telephone: 346-237-2073

OCD Only

Received by: Ramona Marcus Date: 11/17/2021

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2126347976
District RP	
Facility ID	
Application ID	

Closure

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

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

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

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

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

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Billy Ginn Title: Environmental Specialist

Signature: Date: 11/17/2021

email: William.ginn@hilcorp.com Telephone: 346-237-2073

OCD Only

Received by: Ramona Marcus Date: 11/17/2021

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

Closure Approved by: Nelson Velez Date: 01/10/2022

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
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District III
1000 Rio Brazos Rd., Aztec, NM 87410
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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

QUESTIONS

Action 50231

QUESTIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 50231
	Action Type: [NOTIFY] Notification Of Release (NOR)

QUESTIONS

Location of Release Source	
Please answer all of the questions in this group.	
Site Name	San Juan 31-6 #230A
Date Release Discovered	09/14/2021
Surface Owner	State

Incident Details	
Please answer all of the questions in this group.	
Incident Type	Produced Water Release
Did this release result in a fire or is the result of a fire	No
Has this release reached or does it have a reasonable probability of reaching a watercourse	No
Has this release endangered or does it have a reasonable probability of endangering public health	No
Has this release substantially damaged or will it substantially damage property or the environment	No
Is this release of a volume that is or may with reasonable probability be detrimental to fresh water	No

Nature and Volume of Release	
Material(s) released, please answer all that apply below. Any calculations or specific justifications for the volumes provided should be attached to the follow-up C-141 submission.	
Crude Oil Released (bbls) Details	Cause: Other | Other (Specify) | Crude Oil | Released: 0 BBL | Recovered: 0 BBL | Lost: 0 BBL]
Produced Water Released (bbls) Details	Cause: Overflow - Tank, Pit, Etc. | Water Tank | Produced Water | Released: 20 BBL | Recovered: 18 BBL | Lost: 2 BBL]
Is the concentration of dissolved chloride in the produced water >10,000 mg/l	No
Condensate Released (bbls) Details	Cause: Other | Other (Specify) | Condensate | Released: 0 BBL | Recovered: 0 BBL | Lost: 0 BBL]
Natural Gas Vented (Mcf) Details	Cause: Other | Other (Specify) | Natural Gas Vented | Released: 0 Mcf | Recovered: 0 Mcf | Lost: 0 Mcf]
Natural Gas Flared (Mcf) Details	Cause: Other | Other (Specify) | Natural Gas Flared | Released: 0 Mcf | Recovered: 0 Mcf | Lost: 0 Mcf]
Other Released Details	Cause: Other | Other (Specify) | Other (Specify) | Released: 0 BBL | Recovered: 0 BBL | Lost: 0 BBL]
Are there additional details for the questions above (i.e. any answer containing Other, Specify, Unknown, and/or Fire, or any negative lost amounts)	Only produced water released.
Is this a gas only submission (i.e. only significant Mcf values reported)	**No, according to supplied volumes this does not appear to be a "gas only" report.**
Was this a major release as defined by 19.15.29.7(A) NMAC	**No, minor release.**
Reasons why this would be considered a submission for a notification of a major release	
If YES, was immediate notice given to the OCD, by whom	*Not answered.*
If YES, was immediate notice given to the OCD, to whom	*Not answered.*
If YES, was immediate notice given to the OCD, when	*Not answered.*
If YES, was immediate notice given to the OCD, by what means (phone, email, etc.)	*Not answered.*
With the implementation of the 19.15.27 NMAC (05/25/2021), venting and/or flaring of natural gas (i.e. gas only) are to be submitted on the C-129 form.	

Initial Response	
The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury.	
The source of the release has been stopped	True
The impacted area has been secured to protect human health and the environment	True

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices	True
All free liquids and recoverable materials have been removed and managed appropriately	True
If all the actions described above have not been undertaken, explain why	N/A

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please prepare and attach a narrative of actions to date in the follow-up C-141 submission. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please prepare and attach all information needed for closure evaluation in the follow-up C-141 submission.

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Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

ACKNOWLEDGMENTS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 50231
	Action Type: [NOTIFY] Notification Of Release (NOR)

ACKNOWLEDGMENTS

☑	I acknowledge that I am authorized to submit notification of a releases on behalf of my operator.
☑	I acknowledge that upon submitting this application, I will be creating an new incident file (assigned to my operator) to track the notification(s) and corrective action(s) for a release, pursuant to NMAC 19.15.29.
☑	I acknowledge that creating a new incident file will require my operator to file subsequent submission(s) of form "C-141, Application for administrative approval of a release notification and corrective action", pursuant to NMAC 19.15.29.
☑	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.
☑	I acknowledge the fact that 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.
☑	I acknowledge the fact that, 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.

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NAPP2126347976

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

CONDITIONS

Action 50231

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 50231
	Action Type: [NOTIFY] Notification Of Release (NOR)

CONDITIONS

Created By	Condition	Condition Date
danielburns	When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.	9/20/2021

NAPP2126347976

November 11, 2021

New Mexico Energy, Minerals and Natural Resources Department
New Mexico Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410

Subject: **Site Characterization Report and Closure Request**
San Juan 31-6 #230A
Rio Arriba County, New Mexico
NMOCD Incident Number: nAPP2126347976

To Whom It May Concern:

On behalf of Hilcorp Energy Company (Hilcorp), WSP USA Inc. (WSP) has prepared this *Site Characterization Report and Closure Request* for the San Juan 28-6 #230 natural gas production well (Site) located in Rio Arriba County, New Mexico (Figure 1). WSP conducted soil delineation activities to investigate a release of produced water from two aboveground storage tanks (ASTs) due to an overflow. As reported on the *Release Notification Form C-141* to the New Mexico Oil Conservation Division (NMOCD) on September 14, 2021, a Hilcorp operator arrived at the like to check the pumping unit after receiving a shutdown alarm. Upon arrival, it was discovered that the Site transfer pump failed to turn on for two ASTs storing produced water. Additionally, the high tank level switch malfunctioned on the ASTs and failed to shut down the well pumping unit. As such, the ASTs overflowed approximately 20 barrels (bbls) of produced water, as determined by the operator's tank gauging data. Of the released volume, 18 bbls were recovered by vacuum truck and disposed off-Site. The released water remained on location and inside the bermed containment in the area immediately around the ASTs. NMOCD has assigned Incident Number nAPP2126347976 to the Site.

SITE CHARACTERIZATION

The Site is located in a New Mexico State Wildlife Area in Unit I of Section 27, Township 31 North, Range 6 West, Rio Arriba County, New Mexico (Figure 1). The Site is approximately 11 miles northeast of Navajo Dam, New Mexico, north of New Mexico State Route 527. As part of the site investigation, local geology/hydrogeology and nearby sensitive receptors were accessed in accordance with 19.15.29.11 of the New Mexico Administrative Code (NMAC). This information is further discussed below.

GEOLOGY AND HYDROGEOLOGY

Based on United States Geological Survey (USGS) geologic mapping, the Site is located within the Tertiary San Jose Formation. In the report titled "Hydrogeology and Water Resources of San Juan Basin, New Mexico" (Stone, Lyford, Frenzel, Mizell, & Padgett, 1983), the San Jose Formation as characterized by various lithologies including course-grained arkose, mudstones, and lenses of claystone, siltstone, and poorly consolidated sandstone. This formation ranges in thickness from 200 to 2,700 feet. The San Jose Formation is the youngest Tertiary bedrock unit in the San Juan Basin and is underlain by the Nacimiento Formation.

SITE CHARACTERIZATION AND POTENTIAL RECEPTORS

Assessment of potential nearby receptors was conducted through desktop reviews of topographic maps, Federal Emergency Management Administration (FEMA) Geographic Information System (GIS) maps, United States Geological Survey (USGS) GIS maps, New Mexico Office of the State Engineer database, and aerial photographs, as well as site-specific observations.

The Site is at an elevation of approximately 6,446 feet above mean sea level (amsl). The data sheet for a deep ground bed cathodic protection well (included as Enclosure A) for the Site indicates that groundwater in the area is approximately 120 feet below ground surface (bgs). The nearest groundwater well to the Site (well SJ-04225) is located approximately 1.0 miles north (Figure 2) and has reported depth-to-groundwater at 60 feet bgs at the time of drilling in 2017 (ground surface elevation at this well location is approximately 6,240 feet amsl). Based on this information, groundwater at the Site is estimated to be greater than 100 feet bgs.

WSP USA
848 EAST 2ND AVENUE
DURANGO CO 81301

Tel.: 970-385-1096
wsp.com

The Site is greater than 200 feet from any lakebed, sinkhole, or playa lake, and greater than 300 feet from any significant watercourse and/or wetland (Figure 2). The nearest wetland/watercourse are located approximately 600 feet south of the Site. Surface land use surrounding the Site consists primarily of oil and gas development and livestock grazing. No occupied permanent residence or structures, including schools, hospitals, institutions, and/or churches, are located within 300 feet of the Site. The Site is not within the area of a subsurface mine or unstable area and is not within the 100-year floodplain.

SITE CLOSURE CRITERIA

WSP has characterized the Site according to *Table 1, Closure Criteria for Soils Impacted by a Release* of 19.15.29.12 NMAC. The following NMOCD Table 1 closure criteria apply: 10 milligrams per kilogram (mg/kg) benzene; 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX); 1,000 mg/kg total petroleum hydrocarbons (TPH) as a combination of gasoline range organics (GRO) and diesel range organics (DRO); 2,500 mg/kg TPH as a combination of GRO, DRO, and motor oil range organics (MRO); and 20,000 mg/kg chloride.

SITE SAMPLING

After the discovery of the release, Hilcorp retained WSP to conduct a site investigation in an attempt to define the vertical and lateral extent of petroleum-hydrocarbon impacted soil. WSP advanced four borings at the Site using a hand auger. Soil lithology was logged by a WSP geologist and described based on the Unified Soil Classification System (USCS) as specified in American Society for Testing and Materials (ASTM) D2488. Soil also was inspected for visual staining and the presence or absence of odor. The soil was characterized by visually inspecting the soil samples and field screening the soil headspace using a photoionization detector (PID) to monitor for the presence of organic vapors. Hach® chloride QuanTab® test strips were also used to field screen for chloride concentrations in soil. Field screening results are summarized in Table 1. Boring logs are attached as Enclosure B.

SITE CHARACTERIZATION SAMPLING AND RESULTS

WSP advanced four soil borings on October 7, 2021 to the north, south, east, and west of the ASTs. Three of the borings (BH01, BH02, and BH03) were advanced inside the bermed area. The west side within the bermed area contained standing water from a recent rainstorm, therefore BH04 was advanced just to the west and outside of the berm (borings shown on Figure 3). Soil was field screened using a PID at the surface and at 2-foot depth intervals. Two samples were collected from each boring, one sample from the interval with the highest PID reading and one sample from the terminus of each boring. Samples were submitted to Hall Environmental Analysis Laboratory (Hall) for analysis of BTEX by United States Environmental Protection Agency (EPA) method 8021, TPH- GRO, TPH-DRO, TPH-motor oil range organics (MRO) by EPA Method 8015, and chloride by EPA method 300.0. Laboratory analytical results indicated that TPH, BTEX, and chloride constituents were not present in any of the samples at concentrations above NMOCD Table 1 Closure Criteria.

Sample results are summarized in Table 1, with laboratory analytical reports included in Enclosure C. Boring locations were recorded using a handheld Global Positing System (GPS) unit. The attached Photographic Log includes photographs taken during characterization and sampling activities.

CONCLUSIONS AND CLOSURE REQUEST

In response to the release of produced water, Hilcorp captured a majority of the released liquids on September 14, 2021. Delineation soil samples indicate that concentrations on TPH, BTEX, and chloride do not exceed applicable closure criteria in Site soils. As such, Hilcorp formally requests Site closure from the NMOCD and BLM, as well as approval that no further action is necessary to remediate the Site.

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.

WSP appreciates the opportunity to provide this report to you. If you have any questions or comments regarding this report, do not hesitate to contact Stuart Hyde at (970) 903-1607 or at stuart.hyde@wsp.com, or Billy Ginn at (346) 237-2073 or at William.ginn@hilcorp.com.

Kind regards,

Stuart Hyde, L.G.
Senior Geologist

Ashley Ager, M.S., P.G.
Managing Director, Geologist

Enclosed:

Figure 1: Site Location Map
Figure 2: Site Receptor Map
Figure 3: Delineation Soil Boring Locations

Table 1: Soil Analytical Results

Photographic Log

Enclosure A: Deep Ground Bed Cathodic Protection Well Log
Enclosure B: Boring Logs
Enclosure C: Analytical Laboratory Reports

FIGURES

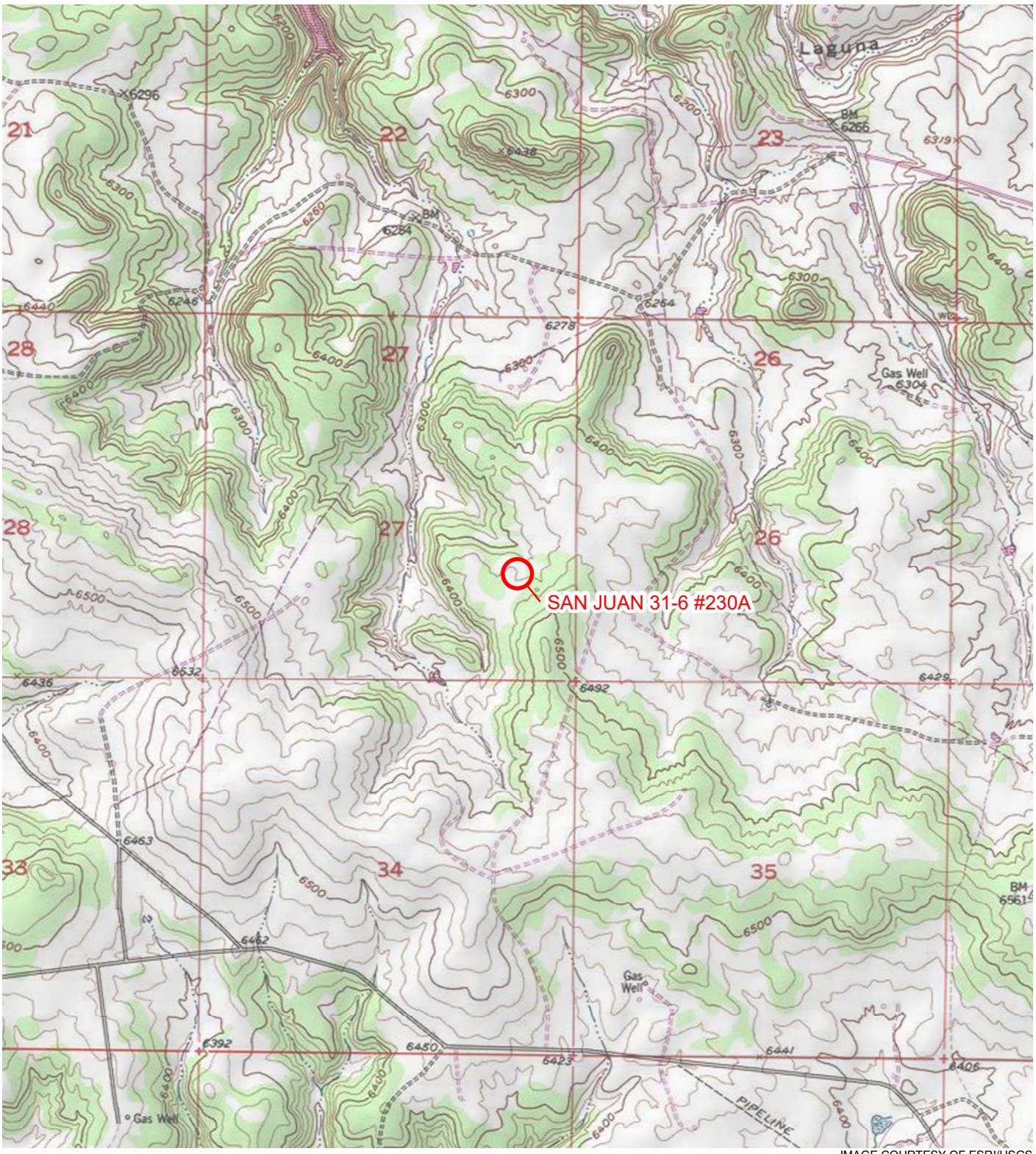


IMAGE COURTESY OF ESRI/USGS

LEGEND

SITE LOCATION

0 2,000 4,000

Feet

N

NEW MEXICO

FIGURE 1
SITE LOCATION MAP
SAN JUAN 31-6 #230A
NESE SEC 27-T31N-R6W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

C:\Users\USJG689584\OneDrive - WSP O365\Documents\TE017821037_SAN JUAN 31-6 #230A\MXD\017821037_FIG01_SJ 31-6 #230A_SL_2021.mxd

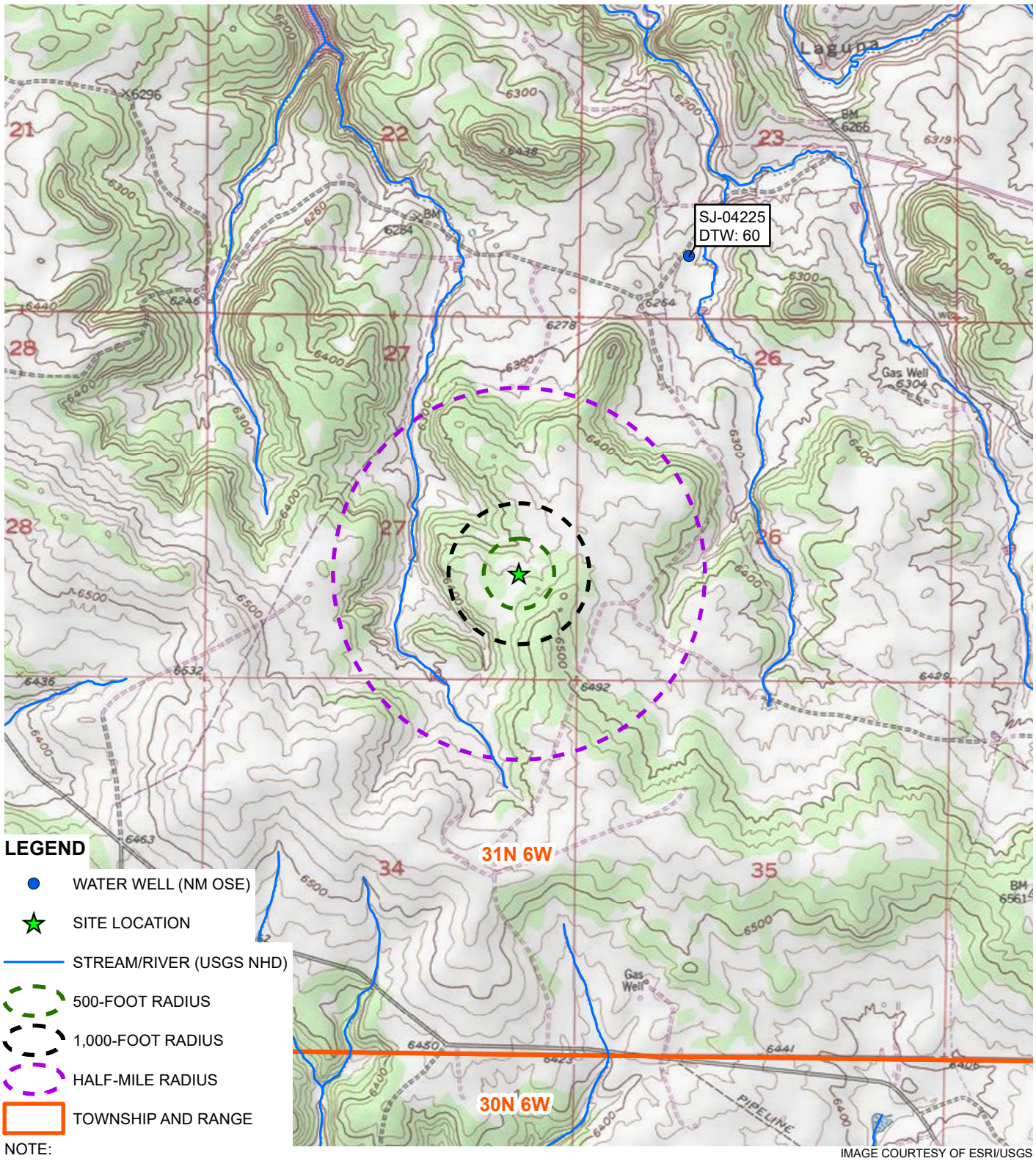


IMAGE COURTESY OF ESRI/USGS

NOTE:
ACCORDING TO 19.15.2 NMAC, A WELLHEAD PROTECTION AREA CONSISTS OF THE AREA WITHIN 200 HORIZONTAL FEET OF A PRIVATE, DOMESTIC FRESH WATER WELL OR SPRING USED BY <5 HOUSEHOLDS FOR DOMESTIC OR STOCK WATERING PURPOSE, OR WITHIN 1,000 HORIZONTAL FEET OF ANY OTHER FRESH WATER WELL OR SPRING. NO USGS WELLS IN AREA PER NWIS.

DTW: DEPTH TO WATER
ELEV: APPROXIMATE ELEVATION IN FEET ABOVE MEAN SEA LEVEL
NM OSE: NEW MEXICO OFFICE OF THE STATE ENGINEER
': FEET

FIGURE 2
SITE RECEPTOR MAP
SAN JUAN 31-6 #230A
NESE SEC 27-T31N-R6W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

C:\Users\USJG689584\OneDrive - WSP O365\Documents\TE017821037_SAN JUAN 31-6 #230A\MXD\017821037_FIG02_SJ 31-6 #230A_RECEPTOR_2021.mxd

IMAGE COURTESY OF ESRI

LEGEND

- SOIL BORING
- CONTAINMENT BERM

0 60 120

Feet

N

FIGURE 3
DELINEATION SOIL BORING LOCATIONS
SAN JUAN 31-6 #230A
NESE SEC 27-T31N-R6W
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

C:\Users\USJG689584\OneDrive - WSP O365\Documents\TE017821037_SAN JUAN 31-6 #230A\MXD\017821037_FIG03_SJ 31-6 #230A_DEL_BORINGS_2021.mxd

TABLES

TABLE 1
SOIL ANALYTICAL RESULTS

SAN JUAN 31-6 #230A
RIO ARRIBA COUNTY, NEW MEXICO
HILCORP ENERGY COMPANY

Soil Sample Identification	Sample Date	PID (ppm)	Chloride Field Test (ppm)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-benzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	GRO + DRO (mg/kg)	MRO (mg/kg)	TPH (mg/kg)
NMOCD Table 1 Closure Criteria				**10**	NE	NE	NE	**50**	**20,000**	NE	NE	**1,000**	NE	**2,500**
BH01@0-3"	10/7/2021	3.0	120	<0.025	<0.050	<0.050	<0.10	<0.10	110	<5.0	<9.0	<9.0	<45	<45
BH01@4'	10/7/2021	0.8	76	<0.024	<0.049	<0.049	<0.098	<0.098	80	<4.9	<9.9	<9.9	<49	<49
BH02@0-3"	10/7/2021	3.0	266	<0.025	<0.050	<0.050	<0.10	<0.10	740	<5.0	<9.6	<9.6	<48	<48
BH02@2'	10/7/2021	2.3	<64	<0.024	<0.049	<0.049	<0.097	<0.097	<60	<4.9	<9.7	<9.7	<48	<48
BH03@0-3"	10/7/2021	0.9	156	<0.024	<0.049	<0.049	<0.098	<0.098	240	<4.9	<9.3	<9.3	<47	<47
BH03@4'	10/7/2021	1.8	<64	<0.024	<0.049	<0.049	<0.097	<0.097	<60	<4.9	<9.8	<9.8	<49	<49
BH04@0-3"	10/7/2021	2.0	218	<0.024	<0.049	<0.049	<0.098	<0.098	310	<4.9	<9.1	<9.1	<46	<46
BH04@4'	10/7/2021	0.8	156	<0.025	<0.049	<0.049	<0.099	<0.099	190	<4.9	<9.2	<4.9	<46	<46

Notes:
mg/kg - milligrams per kilogram
BTEX - benzene, toluene, ethylbenzene, and total xylenes analyzed by US EPA method 8021B
GRO - gasoline range organics analyzed by US EPA method 8015D
DRO - Diesel Range Organics analyzed by US EPA method 8015D
MRO - motor oil range organics analyzed by US EPA method 8015D
TPH - total petroleum hydrocarbons (sum of GRO, DRO and MRO)
NE - not established
NMOCD - New Mexico Oil Conservation Division
PID - photoionization detector
ppm - parts per million
Bold - indicates value exceeds stated NMOCD closure criteria
< - indicates value is less than the stated laboratory reporting limit
(1) - five-point composite sample collected from surface soils within containment berm

PHOTOGRAPH LOG

PHOTOGRAPHIC LOG		
HILCORP ENERGY COMPANY	SAN JUAN 31-6 230A RIO ARRIBA COUNTY, NEW MEXICO	TE017821037

Photo No.	Date
1	10/7/2021

View looking west of the bermed area. Produced water overflowed from the top of the two aboveground storage tanks. Standing water present in the photograph is from recent rainfall.

Photo No.	Date
2	10/7/2021

View looking west of boring BH02.

PHOTOGRAPHIC LOG		
HILCORP ENERGY COMPANY	SAN JUAN 31-6 230A RIO ARRIBA COUNTY, NEW MEXICO	TE017821037

Photo No.	Date
3	10/7/2021

View looking south at BH03.

Photo No.	Date
4	10/7/2021

View looking east at boring BH04.

ENCLOSURE A – DEEP GROUND BED CATHODIC PROTECTION WELL LOG

OCD CATHODIC PROTECTION DEEPWELL GROUNDBED REPORT
DATA SHEET: NORTHWESTERN NEW MEXICO

OPERATOR: ConocoPhillips CO.
FARMINGTON, NM 87401
PHONE: 599-3400

SUBMIT 2 COPIES TO O.C.D. AZTEC OFFICE

LOCATION INFORMATION

API Number: 30-039-27401

WELL NAME OR PIPELINE SERVED: 31-6 230A
LEGAL LOCATION: P 27 31 6
INSTALLATION DATE: 9/21/2003
PPCO. RECTIFIER NO.: FM-520
ADDITIONAL WELLS: 36E, 230A
TYPE OF LEASE: FEDERAL
LEASE NUMBER: SF-078999

GROUND BED INFORMATION

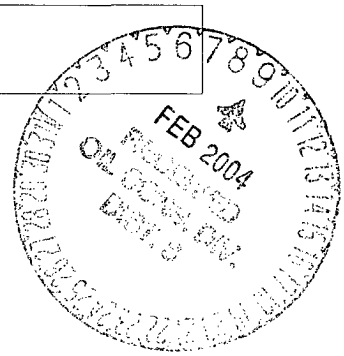
TOTAL DEPTH: 320
CASING DIAMETER: 8-IN
TYPE OF CASING: PVC
CASING DEPTH: 20
CASING CEMENTED: ☐
TOP ANODE DEPTH: 190
BOTTOM ANODE DEPTH: 280
ANODE DEPTHS: 190,200,210,220,230,240,250,260,270,280
AMOUNT OF COKE: 2500 LBS

WATER INFORMATION

WATER DEPTH [1]: 120
WATER DEPTH [2]:
GAS DEPTH:
CEMENT PLUGS:

OTHER INFORMATION

TOP OF VENT PERFORATIONS: 170
VENT PIPE DEPTH: 320
REMARKS:



IF ANY OF THE ABOVE DATA IS UNAVAILABLE, PLEASE INDICATE SO. COPIES OF ALL LOGS, INCLUDING DRILLERS LOGS, WATER ANALYSIS, AND WELL BORE SCHEMATICS SHOULD BE SUBMITTED WHEN AVAILABLE. UNPLUGGED UNABANDONED WELLS ARE TO BE INCLUDED.

*- LAND TYPE MAY BE SHOWN: F-FEDERAL; I-INDIAN; S-STATE; P-FEE
IF FEDERAL OR INDIAN, ADD LEASE NUMBER.

ENCLOSURE B – BORING LOGS

N

Advancing Opportunity

848 E. 2nd Ave
Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: ~~BGT~~ BH01	Project: ~~2R~~ 31-6 #3304 ~~Bisti Landfarm~~
Date: 10/7/2021	Project Number: ~~020520002~~ TC01781037
Logged By: SH	Drilled By: ~~LTE~~ WSP
Elevation:	Detector: PID
Drilling Method: Hand Auger	Sampling Method: Continuous
Gravel Pack:	Seal: Bentonite
Grout: Bentonite	
Casing Type:	Diameter: Length:
Hole Diameter: 3"	Depth to Liquid:
Screen Type:	Slot: Diameter: Length:
Total Depth:	Depth to Water:

Penetration Resistance	Moisture Content	Vapor (ppm)	~~HC Staining~~ Staining (ppm)	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	0-3"	~~3.0~~	120	BH01 0-3" 1250	0				0-3" Gravel w/ sand,	
	6"	2.0	64		1				3"-1' silty CLAY w/ sand, brown, very moist, no odor or staining	
	2'	1.1	<64		2				1'-4': ~~silty Cl~~ SANDY CLAY brown/gray-brown, no odor or staining, dry	
					3					
	4'	0.8	76	BH01 @4' 1256	4					
					5					
					6				Hand Auger refusal @ 4'	
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					

N

Advancing Opportunity

848 E. 2nd Ave
Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: BH02	Project: SJ 31-6 #230A ~~Bisti Landfarm~~
Date: 10/7/2021	Project Number: TE017821037 ~~029520002~~
Logged By: S Hyde	Drilled By: ~~LTE~~ WSP
Elevation:	Detector: PID
Drilling Method: Hand Auger	Sampling Method: Continuous
Gravel Pack:	Seal: Bentonite
Grout: Bentonite	
Casing Type:	Diameter: Length:
Hole Diameter: 3"	Depth to Liquid:
Screen Type: Slot:	Diameter: Length:
Total Depth:	Depth to Water:

Penetration Resistance	Moisture Content	Vapor (ppm)	Cl (ppm) HC ~~Staining~~?	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	0-3"	3.0	266	BH02 @0-3" 1415	0				0-3", gravel	
	6"	1.9	218		1				3"-1', silty clay w/ sand, gray-brown, dry, no o/s	
	2'	2.3	<64	BH02 @ 2' 1420	2				More sand 1-2 ft	
					3					
					4					
					5				Hand Auger refusal at 2.5'	
					6				Felt like bedrock	
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					

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BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring Well Number: BH03	Project: SJ 31-6 #230A ~~Bisti Landfarm~~
Date: 10/7/2021	Project Number: TE017821037 ~~029520002~~
Logged By: S Hyde	Drilled By: ~~LTE~~ WSP
Elevation:	Detector: PID
Drilling Method: Hand Auger	Sampling Method: Continuous
Gravel Pack:	Seal: Bentonite
Grout: Bentonite	
Casing Type:	Diameter: Length:
Hole Diameter: 3"	Depth to Liquid:
Screen Type:	Slot: Diameter: Length:
Total Depth:	Depth to Water:

Penetration Resistance	Moisture Content	~~Vapor (ppm)~~ SVE	~~HC Staining?~~ CL Gram	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	0-3"	0.9	156	BH03 @0-3" 1405	0				0-3" gravel	
	6"	2.2	156		1				3"-4', Brown, moist, clayey SAND, no O/S	
	2'	1.1	120		2					
					3					
	4'	1.8	<64	BH03 @4' 1430	4					
					5					
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					

N

Advancing Opportunity

848 E. 2nd Ave
Durango, Colorado 81301

BORING LOG/MONITORING WELL COMPLETION DIAGRAM

Boring/Well Number: BH04	Project: ~~Bisti Landfarm~~ SJ 31-6 #230A
Date: 10/7/2021	Project Number: ~~029520002~~ TE01721037
Logged By: S Hyde	Drilled By: ~~LTE~~ WSP
Elevation:	Detector: PID
Drilling Method: Hand Auger	Sampling Method: Continuous
Gravel Pack:	Seal: Bentonite
Grout: Bentonite	
Casing Type:	Diameter: Length:
Hole Diameter: 3"	Depth to Liquid:
Screen Type: Slot:	Diameter: Length:
Total Depth:	Depth to Water:

Penetration Resistance	Moisture Content	Vapor (ppm)	Cl (ppm) / ~~HC Staining~~	Sample #	Depth (ft. bgs.)	Sample Run	Recovery	Soil/Rock Type	Lithology/Remarks	Well Completion
	0-3"	2.0	218	BH04 @0-3" 1535	0				0-2.5' silty, sandy, CLAY no odor/staining, gray-brown, moist to dry	
	6"	1.9	218		1					
	2'	0.8	156	BH04 @2' 1530	2					
					3					
					4				Refusal @ 2.5' on bedrock	
					5					
					6					
					7					
					8					
					9					
					10					
					11					
					12					
					13					
					14					
					15					

ENCLOSURE C – 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: clients.hallenvironmental.com

October 26, 2021

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

RE: San Juan 31 6 230A OrderNo.: 2110523

Dear Billy Ginn:

Hall Environmental Analysis Laboratory received 12 sample(s) on 10/9/2021 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com 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 **2110523**
Date Reported: **10/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: NE@0-3"
Project: San Juan 31 6 230A
Collection Date: 10/7/2021 3:12:00 PM
Lab ID: 2110523-002 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	320	60		mg/Kg	20	10/24/2021 1:41:25 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2110523**
Date Reported: **10/26/2021**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: SW@0-3"
Project: San Juan 31 6 230A
Collection Date: 10/7/2021 3:10:00 PM
Lab ID: 2110523-003 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	230	60		mg/Kg	20	10/24/2021 1:53:45 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH01@0-3"
Project: San Juan 31 6 230A
Collection Date: 10/7/2021 12:50:00 PM
Lab ID: 2110523-005 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	10/15/2021 1:40:30 AM
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	10/15/2021 1:40:30 AM
Surr: DNOP	89.9	70-130		%Rec	1	10/15/2021 1:40:30 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/13/2021 11:10:00 PM
Surr: BFB	95.4	70-130		%Rec	1	10/13/2021 11:10:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	10/13/2021 11:10:00 PM
Toluene	ND	0.050		mg/Kg	1	10/13/2021 11:10:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/13/2021 11:10:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/13/2021 11:10:00 PM
Surr: 4-Bromofluorobenzene	82.8	70-130		%Rec	1	10/13/2021 11:10:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	110	61		mg/Kg	20	10/24/2021 2:06:08 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH01@4'
Project: San Juan 31 6 230A
Collection Date: 10/7/2021 12:56:00 PM
Lab ID: 2110523-006 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	10/15/2021 2:12:19 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/15/2021 2:12:19 AM
Surr: DNOP	125	70-130		%Rec	1	10/15/2021 2:12:19 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/13/2021 11:30:00 PM
Surr: BFB	95.1	70-130		%Rec	1	10/13/2021 11:30:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	10/13/2021 11:30:00 PM
Toluene	ND	0.049		mg/Kg	1	10/13/2021 11:30:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/13/2021 11:30:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/13/2021 11:30:00 PM
Surr: 4-Bromofluorobenzene	83.6	70-130		%Rec	1	10/13/2021 11:30:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	80	60		mg/Kg	20	10/24/2021 2:18:29 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** BH02@0-3"
Project: San Juan 31 6 230A **Collection Date:** 10/7/2021 2:15:00 PM
Lab ID: 2110523-007 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/15/2021 2:22:56 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/15/2021 2:22:56 AM
Surr: DNOP	93.6	70-130		%Rec	1	10/15/2021 2:22:56 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/13/2021 11:49:00 PM
Surr: BFB	95.2	70-130		%Rec	1	10/13/2021 11:49:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	10/13/2021 11:49:00 PM
Toluene	ND	0.050		mg/Kg	1	10/13/2021 11:49:00 PM
Ethylbenzene	ND	0.050		mg/Kg	1	10/13/2021 11:49:00 PM
Xylenes, Total	ND	0.10		mg/Kg	1	10/13/2021 11:49:00 PM
Surr: 4-Bromofluorobenzene	82.1	70-130		%Rec	1	10/13/2021 11:49:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	740	60		mg/Kg	20	10/24/2021 2:55:35 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** BH02@2'
Project: San Juan 31 6 230A **Collection Date:** 10/7/2021 2:20:00 PM
Lab ID: 2110523-008 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/15/2021 2:33:35 AM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/15/2021 2:33:35 AM
Surr: DNOP	112	70-130		%Rec	1	10/15/2021 2:33:35 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/14/2021 12:48:00 AM
Surr: BFB	97.8	70-130		%Rec	1	10/14/2021 12:48:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	10/14/2021 1:16:00 PM
Toluene	ND	0.049		mg/Kg	1	10/14/2021 1:16:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/14/2021 1:16:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/14/2021 1:16:00 PM
Surr: 4-Bromofluorobenzene	83.8	70-130		%Rec	1	10/14/2021 1:16:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	10/24/2021 3:07:57 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: BH03@0-3"
Project: San Juan 31 6 230A
Collection Date: 10/7/2021 2:25:00 PM
Lab ID: 2110523-009 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	10/15/2021 2:44:14 AM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	10/15/2021 2:44:14 AM
Surr: DNOP	173	70-130	S	%Rec	1	10/15/2021 2:44:14 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/14/2021 1:08:00 AM
Surr: BFB	90.4	70-130		%Rec	1	10/14/2021 1:08:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	10/14/2021 1:36:00 PM
Toluene	ND	0.049		mg/Kg	1	10/14/2021 1:36:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/14/2021 1:36:00 PM
Xylenes, Total	ND	0.098		mg/Kg	1	10/14/2021 1:36:00 PM
Surr: 4-Bromofluorobenzene	81.7	70-130		%Rec	1	10/14/2021 1:36:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	240	60		mg/Kg	20	10/24/2021 3:20:18 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** BH03@4'
Project: San Juan 31 6 230A **Collection Date:** 10/7/2021 2:30:00 PM
Lab ID: 2110523-010 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	10/15/2021 2:54:54 AM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/15/2021 2:54:54 AM
Surr: DNOP	146	70-130	S	%Rec	1	10/15/2021 2:54:54 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/14/2021 1:28:00 AM
Surr: BFB	92.2	70-130		%Rec	1	10/14/2021 1:28:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	10/14/2021 2:35:00 PM
Toluene	ND	0.049		mg/Kg	1	10/14/2021 2:35:00 PM
Ethylbenzene	ND	0.049		mg/Kg	1	10/14/2021 2:35:00 PM
Xylenes, Total	ND	0.097		mg/Kg	1	10/14/2021 2:35:00 PM
Surr: 4-Bromofluorobenzene	86.6	70-130		%Rec	1	10/14/2021 2:35:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	ND	60		mg/Kg	20	10/24/2021 3:32:39 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** BH04@0-3'''
Project: San Juan 31 6 230A **Collection Date:** 10/7/2021 3:25:00 PM
Lab ID: 2110523-011 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.1		mg/Kg	1	10/15/2021 3:05:35 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/15/2021 3:05:35 AM
Surr: DNOP	104	70-130		%Rec	1	10/15/2021 3:05:35 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/19/2021 3:57:00 AM
Surr: BFB	105	70-130		%Rec	1	10/19/2021 3:57:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.024		mg/Kg	1	10/19/2021 3:57:00 AM
Toluene	ND	0.049		mg/Kg	1	10/19/2021 3:57:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	10/19/2021 3:57:00 AM
Xylenes, Total	ND	0.098		mg/Kg	1	10/19/2021 3:57:00 AM
Surr: 4-Bromofluorobenzene	90.7	70-130		%Rec	1	10/19/2021 3:57:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	310	59		mg/Kg	20	10/24/2021 3:45:00 PM

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

Qualifiers:

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

Analytical Report
Lab Order **2110523**
Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** BH04@2'
Project: San Juan 31 6 230A **Collection Date:** 10/7/2021 3:30:00 PM
Lab ID: 2110523-012 **Matrix:** SOIL **Received Date:** 10/9/2021 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	10/15/2021 3:16:16 AM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	10/15/2021 3:16:16 AM
Surr: DNOP	95.6	70-130		%Rec	1	10/15/2021 3:16:16 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **mb**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	10/19/2021 4:56:00 AM
Surr: BFB	101	70-130		%Rec	1	10/19/2021 4:56:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **mb**
Benzene	ND	0.025		mg/Kg	1	10/19/2021 4:56:00 AM
Toluene	ND	0.049		mg/Kg	1	10/19/2021 4:56:00 AM
Ethylbenzene	ND	0.049		mg/Kg	1	10/19/2021 4:56:00 AM
Xylenes, Total	ND	0.099		mg/Kg	1	10/19/2021 4:56:00 AM
Surr: 4-Bromofluorobenzene	88.7	70-130		%Rec	1	10/19/2021 4:56:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **JMT**
Chloride	190	59		mg/Kg	20	10/24/2021 3:57:21 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	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2110523**

26-Oct-21

Client: HILCORP ENERGY

Project: San Juan 31 6 230A

Sample ID: **MB-63510**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **63510**	RunNo: **82306**
Prep Date: **10/22/2021**	Analysis Date: **10/24/2021**	SeqNo: **2918361** Units: **mg/Kg**

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

Sample ID: **LCS-63510**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **63510**	RunNo: **82306**
Prep Date: **10/22/2021**	Analysis Date: **10/24/2021**	SeqNo: **2918362** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2110523**

26-Oct-21

Client: HILCORP ENERGY

Project: San Juan 31 6 230A

Sample ID: **MB-63271**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **63271**	RunNo: **82009**
Prep Date: **10/13/2021**	Analysis Date: **10/14/2021**	SeqNo: **2906719** 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		105	70	130			

Sample ID: **2110523-005AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH01@0-3"**	Batch ID: **63271**	RunNo: **82083**
Prep Date: **10/13/2021**	Analysis Date: **10/15/2021**	SeqNo: **2907736** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	8.8	44.21	0	92.1	39.3	155			
Surr: DNOP	4.7		4.421		106	70	130			

Sample ID: **2110523-005AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **BH01@0-3"**	Batch ID: **63271**	RunNo: **82083**
Prep Date: **10/13/2021**	Analysis Date: **10/15/2021**	SeqNo: **2907737** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	8.9	44.44	0	93.9	39.3	155	2.50	23.4	
Surr: DNOP	4.4		4.444		100	70	130	0	0	

Sample ID: **LCS-63271**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **63271**	RunNo: **82083**
Prep Date: **10/13/2021**	Analysis Date: **10/15/2021**	SeqNo: **2907748** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	59	10	50.00	0	118	68.9	135			
Surr: DNOP	6.0		5.000		120	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2110523**
26-Oct-21

Client: HILCORP ENERGY
Project: San Juan 31 6 230A

Sample ID: **mb-63251**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **63251**	RunNo: **82003**							
Prep Date: **10/12/2021**	Analysis Date: **10/13/2021**	SeqNo: **2903907**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		95.8	70	130			

Sample ID: **lcs-63251**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **63251**	RunNo: **82003**							
Prep Date: **10/12/2021**	Analysis Date: **10/13/2021**	SeqNo: **2904113**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	110	78.6	131			
Surr: BFB	1100		1000		113	70	130			

Sample ID: **mb-63259**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **63259**	RunNo: **82140**							
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910076**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		104	70	130			

Sample ID: **lcs-63259**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **63259**	RunNo: **82140**							
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910082**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	78.6	131			
Surr: BFB	1100		1000		114	70	130			

Sample ID: **2110523-011ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH04@0-3'"**	Batch ID: **63259**	RunNo: **82140**							
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910085**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.65	0	97.2	61.3	114			
Surr: BFB	1200		986.2		118	70	130			

Sample ID: **2110523-011amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **BH04@0-3'"**	Batch ID: **63259**	RunNo: **82140**							
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910088**	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2110523**
26-Oct-21

Client: HILCORP ENERGY
Project: San Juan 31 6 230A

Sample ID: **2110523-011amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **BH04@0-3'"** Batch ID: **63259** RunNo: **82140**
Prep Date: **10/13/2021** Analysis Date: **10/19/2021** SeqNo: **2910088** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	24.90	0	96.9	61.3	114	0.661	20	
Surr: BFB	1100		996.0		114	70	130	0	0	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2110523**

26-Oct-21

Client: HILCORP ENERGY

Project: San Juan 31 6 230A

Sample ID: **mb-63251**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **63251**	RunNo: **82003**
Prep Date: **10/12/2021**	Analysis Date: **10/13/2021**	SeqNo: **2903908** 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	0.81		1.000		81.1	70	130			

Sample ID: **lcs-63251**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **63251**	RunNo: **82003**
Prep Date: **10/12/2021**	Analysis Date: **10/13/2021**	SeqNo: **2904792** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.86	0.025	1.000	0	85.7	80	120			
Toluene	0.87	0.050	1.000	0	86.7	80	120			
Ethylbenzene	0.86	0.050	1.000	0	85.9	80	120			
Xylenes, Total	2.7	0.10	3.000	0	88.9	80	120			
Surr: 4-Bromofluorobenzene	0.82		1.000		81.7	70	130			

Sample ID: **mb-63259**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **63259**	RunNo: **82140**
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910131** 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		85.2	70	130			

Sample ID: **lcs-63259**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **63259**	RunNo: **82140**
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910134** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	1.000	0	91.1	80	120			
Toluene	0.90	0.050	1.000	0	90.2	80	120			
Ethylbenzene	0.92	0.050	1.000	0	92.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.8	80	120			
Surr: 4-Bromofluorobenzene	0.94		1.000		94.1	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 range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2110523**

26-Oct-21

Client: HILCORP ENERGY

Project: San Juan 31 6 230A

Sample ID: **2110523-012ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH04@2'**	Batch ID: **63259**	RunNo: **82140**
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910137** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.72	0.023	0.9294	0	77.9	80	120			S
Toluene	0.77	0.046	0.9294	0	83.3	80	120			
Ethylbenzene	0.77	0.046	0.9294	0	82.7	80	120			
Xylenes, Total	2.3	0.093	2.788	0	84.0	80	120			
Surr: 4-Bromofluorobenzene	0.82		0.9294		88.1	70	130			

Sample ID: **2110523-012amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **BH04@2'**	Batch ID: **63259**	RunNo: **82140**
Prep Date: **10/13/2021**	Analysis Date: **10/19/2021**	SeqNo: **2910140** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.76	0.023	0.9320	0	82.0	80	120	5.44	20	
Toluene	0.77	0.047	0.9320	0	83.2	80	120	0.151	20	
Ethylbenzene	0.77	0.047	0.9320	0	82.1	80	120	0.467	20	
Xylenes, Total	2.4	0.093	2.796	0	84.3	80	120	0.665	20	
Surr: 4-Bromofluorobenzene	0.78		0.9320		83.6	70	130	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: HILCORP ENERGY | Work Order Number: 2110523 | RcptNo: 1

Received By: Isaiah Ortiz 10/9/2021 8:00:00 AM I-Ox

Completed By: Sean Livingston 10/11/2021 10:01:15 AM Sean Livingston

Reviewed By: DAD 10/11/21

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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 10/11/21

Special Handling (if applicable)

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

Person Notified: _____ Date: _____

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

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.7	Good				

Chain-of-Custody Record

Client: Hilcorp

Attn Billy Ginn

Mailing Address: 1111 Travis St

Houston TX

Phone #: 346-237-2073

email or Fax#: william.ginn@hilcorp

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: San Juan 31-6 #270A

Project #:

Project Manager: Stuart Hyde

Stuart.hyde@wsp.com

Sampler: S Hyde

On Ice: ☐ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 3.7°C +0° (°C)

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2110523	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)						
10/7	1515	S	NW @0-3"	1-4oz jar	cool	001	✓											Hold				
	1512		NE @ 0-3"			002							X									
	1510		SW @ 0-3"			003							X									
	1505		SE @ 0-3"			004												Hold				
	1250		BH01 @ 0-3"			005	X	X					X									
	1256		BH01 @ 4'			006	X	X					X									
	1415		BH02 @ 0-3"			007	X	X					X									
	1420		BH02 @ 2'			008	X	X					X									
	1425		BH03 @ 0-3"			009	X	X					X									
	1430		BH03 @ 4'			010	X	X					X									
	1525		BH04 @ 0-3"			011	X	X					X									
	1530		BH04 @ 2'			012	X	X					X									

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
10/8	1032				10/8/21	1032
10/8/21	1700	Christine Walker		courier	10/9/21	0800

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.

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 62227

CONDITIONS

Operator:	OGRID:
HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	372171
	Action Number: 62227
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	1/10/2022