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

State of New Mexico
Energy Minerals and Natural Resources Department

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

I Release Notification

Responsible Party

Responsible Party: Hilcorp Energy	OGRID 372171
Contact Name: Kate Kaufman	Contact Telephone: 346-237-2275
Contact email: kkaufman@hilcorp.com	Incident # *(assigned by OCD)*
Contact mailing address: 1111 Travis St. Houston, TX 77471	

Location of Release Source

Latitude 36.590745 Longitude -107.789532
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: Riddle Gas Com A #1R	Site Type: Well Site
Date Release Discovered: 8/25/2022	API# *(if applicable)* 30-045-31138

Unit Letter	Section	Township	Range	County
G	09	027N	009W	San Juan

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

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) 3.0	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☒ No
☒ Condensate	Volume Released (bbls) 13.36	Volume Recovered (bbls) 0
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe) Unknown hydrocarbon	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
Hilcorp operator discovered release due to corrosion around the man door on an above ground tank. The tank was emptied and will undergo an integrity inspection and coating before being put back into service.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

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: __Kate Kaufman_____ Title: __Environmental Specialist_____

Signature: Kathy Kaufman _____ Date: __9/1/2022_____

email: __kkaufman@hilcorp.com_____ Telephone: _____346-237-2275_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2224436644
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	NAPP2224436644
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: ____Kathryn H Kaufman_____ Title: ____Environmental Specialist_____

Signature:  _____ Date: __1/12/2023_____

email: ___kkaufman@hilcorp.com_____ Telephone: __346-237-2275_____

OCD Only

Received by: _____Jocelyn Harimon_____ Date: ___01/12/2023___

State of New Mexico
Oil Conservation Division

Incident ID	NAPP2224436644
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: _Kathryn H. Kaufman_____ Title: _Environmental Specialist_____

Signature: ____ _____ Date: ____1-12-2023_____

email: kkaufman@hilcorp.com_____ Telephone: _346-237-2275_____

OCD Only

Received by: ___Jocelyn Harimon_____ Date: ___01/12/2023___

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

Closure Approved by: _____ Date: 03/23/2023

Printed Name: Nelson Velez Title: Environmental Specialist – Adv

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

January 05, 2023

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

RE: Riddle Gas Com A 1R OrderNo.: 2212E58

Dear Fasho Trujillo:

Hall Environmental Analysis Laboratory received 6 sample(s) on 12/29/2022 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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Base #1
Project: Riddle Gas Com A 1R
Collection Date: 12/27/2022 3:20:00 PM
Lab ID: 2212E58-001 **Matrix:** SOIL
Received Date: 12/29/2022 7:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	670	14		mg/Kg	1	12/30/2022 3:56:23 PM
Motor Oil Range Organics (MRO)	420	46		mg/Kg	1	12/30/2022 3:56:23 PM
Surr: DNOP	118	21-129		%Rec	1	12/30/2022 3:56:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	32	19		mg/Kg	5	12/29/2022 11:56:32 AM
Surr: BFB	150	37.7-212		%Rec	5	12/29/2022 11:56:32 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.097		mg/Kg	5	12/29/2022 11:56:32 AM
Toluene	ND	0.19		mg/Kg	5	12/29/2022 11:56:32 AM
Ethylbenzene	ND	0.19		mg/Kg	5	12/29/2022 11:56:32 AM
Xylenes, Total	1.0	0.39		mg/Kg	5	12/29/2022 11:56:32 AM
Surr: 4-Bromofluorobenzene	91.8	70-130		%Rec	5	12/29/2022 11:56:32 AM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/30/2022 1:00:21 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	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.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Base #2
Project: Riddle Gas Com A 1R
Collection Date: 12/27/2022 3:30:00 PM
Lab ID: 2212E58-002 **Matrix:** SOIL
Received Date: 12/29/2022 7:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	42	15		mg/Kg	1	12/30/2022 11:06:17 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/30/2022 11:06:17 AM
Surr: DNOP	115	21-129		%Rec	1	12/30/2022 11:06:17 AM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/29/2022 12:20:21 PM
Surr: BFB	95.9	37.7-212		%Rec	1	12/29/2022 12:20:21 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	12/29/2022 12:20:21 PM
Toluene	ND	0.050		mg/Kg	1	12/29/2022 12:20:21 PM
Ethylbenzene	ND	0.050		mg/Kg	1	12/29/2022 12:20:21 PM
Xylenes, Total	ND	0.10		mg/Kg	1	12/29/2022 12:20:21 PM
Surr: 4-Bromofluorobenzene	88.4	70-130		%Rec	1	12/29/2022 12:20:21 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/30/2022 2:02:05 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.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: Wall North
Project: Riddle Gas Com A 1R
Collection Date: 12/27/2022 3:35:00 PM
Lab ID: 2212E58-003 **Matrix:** SOIL
Received Date: 12/29/2022 7:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	47	13		mg/Kg	1	12/29/2022 9:20:15 PM
Motor Oil Range Organics (MRO)	200	43		mg/Kg	1	12/29/2022 9:20:15 PM
Surr: DNOP	113	21-129		%Rec	1	12/29/2022 9:20:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	3.6		mg/Kg	1	12/29/2022 1:08:02 PM
Surr: BFB	95.7	37.7-212		%Rec	1	12/29/2022 1:08:02 PM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.018		mg/Kg	1	12/29/2022 1:08:02 PM
Toluene	ND	0.036		mg/Kg	1	12/29/2022 1:08:02 PM
Ethylbenzene	ND	0.036		mg/Kg	1	12/29/2022 1:08:02 PM
Xylenes, Total	ND	0.071		mg/Kg	1	12/29/2022 1:08:02 PM
Surr: 4-Bromofluorobenzene	89.2	70-130		%Rec	1	12/29/2022 1:08:02 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/30/2022 2:14:27 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.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: West Wall 1N
Project: Riddle Gas Com A 1R
Collection Date: 12/27/2022 3:45:00 PM
Lab ID: 2212E58-004 **Matrix:** SOIL
Received Date: 12/29/2022 7:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **SB**
Diesel Range Organics (DRO)	50	14		mg/Kg	1	12/30/2022 4:43:43 PM
Motor Oil Range Organics (MRO)	71	46		mg/Kg	1	12/30/2022 4:43:43 PM
Surr: DNOP	99.7	21-129		%Rec	1	12/30/2022 4:43:43 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	3.7		mg/Kg	1	12/29/2022 3:03:00 PM
Surr: BFB	119	37.7-212		%Rec	1	12/29/2022 3:03:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.018		mg/Kg	1	12/29/2022 3:03:00 PM
Toluene	ND	0.037		mg/Kg	1	12/29/2022 3:03:00 PM
Ethylbenzene	ND	0.037		mg/Kg	1	12/29/2022 3:03:00 PM
Xylenes, Total	ND	0.074		mg/Kg	1	12/29/2022 3:03:00 PM
Surr: 4-Bromofluorobenzene	121	70-130		%Rec	1	12/29/2022 3:03:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	59		mg/Kg	20	12/30/2022 2:26:48 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.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: West Wall S1
Project: Riddle Gas Com A 1R
Collection Date: 12/27/2022 3:55:00 PM
Lab ID: 2212E58-005 **Matrix:** SOIL
Received Date: 12/29/2022 7:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	44	14		mg/Kg	1	12/29/2022 9:41:23 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/29/2022 9:41:23 PM
Surr: DNOP	117	21-129		%Rec	1	12/29/2022 9:41:23 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	3.9		mg/Kg	1	12/29/2022 3:23:00 PM
Surr: BFB	106	37.7-212		%Rec	1	12/29/2022 3:23:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.019		mg/Kg	1	12/29/2022 3:23:00 PM
Toluene	ND	0.039		mg/Kg	1	12/29/2022 3:23:00 PM
Ethylbenzene	ND	0.039		mg/Kg	1	12/29/2022 3:23:00 PM
Xylenes, Total	ND	0.077		mg/Kg	1	12/29/2022 3:23:00 PM
Surr: 4-Bromofluorobenzene	114	70-130		%Rec	1	12/29/2022 3:23:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/30/2022 2:39:08 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	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.		

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY
Client Sample ID: East Wall N1
Project: Riddle Gas Com A 1R
Collection Date: 12/27/2022 4:10:00 PM
Lab ID: 2212E58-006 **Matrix:** SOIL
Received Date: 12/29/2022 7:22:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **DGH**
Diesel Range Organics (DRO)	550	14		mg/Kg	1	12/29/2022 9:51:57 PM
Motor Oil Range Organics (MRO)	290	46		mg/Kg	1	12/29/2022 9:51:57 PM
Surr: DNOP	113	21-129		%Rec	1	12/29/2022 9:51:57 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**
Gasoline Range Organics (GRO)	ND	21		mg/Kg	5	12/29/2022 3:43:00 PM
Surr: BFB	137	37.7-212		%Rec	5	12/29/2022 3:43:00 PM
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**
Benzene	ND	0.11		mg/Kg	5	12/29/2022 3:43:00 PM
Toluene	ND	0.21		mg/Kg	5	12/29/2022 3:43:00 PM
Ethylbenzene	ND	0.21		mg/Kg	5	12/29/2022 3:43:00 PM
Xylenes, Total	ND	0.42		mg/Kg	5	12/29/2022 3:43:00 PM
Surr: 4-Bromofluorobenzene	120	70-130		%Rec	5	12/29/2022 3:43:00 PM
EPA METHOD 300.0: ANIONS						Analyst: **JTT**
Chloride	ND	60		mg/Kg	20	12/30/2022 2:51:30 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#: **2212E58**

05-Jan-23

Client: HILCORP ENERGY

Project: Riddle Gas Com A 1R

Sample ID:	**MB-72385**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**72385**	RunNo:	**93648**					
Prep Date:	**12/29/2022**	Analysis Date:	**12/30/2022**	SeqNo:	**3380968**	Units:	**mg/Kg**			

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

Sample ID:	**LCS-72385**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**72385**	RunNo:	**93648**					
Prep Date:	**12/29/2022**	Analysis Date:	**12/30/2022**	SeqNo:	**3380969**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.7	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#: **2212E58**

05-Jan-23

Client: HILCORP ENERGY

Project: Riddle Gas Com A 1R

Sample ID: **LCS-72368**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **72368**	RunNo: **93614**
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3378145** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	15	50.00	0	89.3	64.4	127			
Surr: DNOP	5.8		5.000		115	21	129			

Sample ID: **MB-72368**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **72368**	RunNo: **93614**
Prep Date: **12/29/2022**	Analysis Date: **12/29/2022**	SeqNo: **3378147** 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	11		10.00		110	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#: **2212E58**

05-Jan-23

Client: HILCORP ENERGY

Project: Riddle Gas Com A 1R

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **A93633**	RunNo: **93633**							
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378840**	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	940		1000		94.0	37.7	212			

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **A93633**	RunNo: **93633**							
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378841**	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	102	72.3	137			
Surr: BFB	1900		1000		194	37.7	212			

Sample ID: **2212e58-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **Base #1**	Batch ID: **A93633**	RunNo: **93633**							
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378858**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	140	19	96.82	32.26	110	70	130			
Surr: BFB	9900		3873		255	37.7	212			S

Sample ID: **2212e58-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **Base #1**	Batch ID: **A93633**	RunNo: **93633**							
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378867**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	140	19	96.82	32.26	115	70	130	3.46	20	
Surr: BFB	10000		3873		257	37.7	212	0	0	S

Sample ID: **lcs-72341**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **LCSS**	Batch ID: **72341**	RunNo: **93636**							
Prep Date: **12/28/2022**	Analysis Date: **12/29/2022**	SeqNo: **3378986**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	72.3	137			
Surr: BFB	2300		1000		225	37.7	212			S

Sample ID: **mb-72341**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**							
Client ID: **PBS**	Batch ID: **72341**	RunNo: **93636**							
Prep Date: **12/28/2022**	Analysis Date: **12/29/2022**	SeqNo: **3378987**	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#: **2212E58**

05-Jan-23

Client: HILCORP ENERGY

Project: Riddle Gas Com A 1R

Sample ID: **mb-72341**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **72341**	RunNo: **93636**
Prep Date: **12/28/2022**	Analysis Date: **12/29/2022**	SeqNo: **3378987** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		113	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#: **2212E58**

05-Jan-23

Client: HILCORP ENERGY

Project: Riddle Gas Com A 1R

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **C93633**	RunNo: **93633**
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378924** 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	0.90		1.000		89.6	70	130			

Sample ID: **100ng btex lcs**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **C93633**	RunNo: **93633**
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378925** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.7	80	120			
Toluene	0.89	0.050	1.000	0	89.3	80	120			
Ethylbenzene	0.90	0.050	1.000	0	89.8	80	120			
Xylenes, Total	2.7	0.10	3.000	0	89.5	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		91.4	70	130			

Sample ID: **2212e58-002ams**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Base #2**	Batch ID: **C93633**	RunNo: **93633**
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378929** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.83	0.025	1.006	0	82.9	68.8	120			
Toluene	0.86	0.050	1.006	0	86.0	73.6	124			
Ethylbenzene	0.88	0.050	1.006	0	87.0	72.7	129			
Xylenes, Total	2.6	0.10	3.018	0.01851	85.8	75.7	126			
Surr: 4-Bromofluorobenzene	0.90		1.006		89.9	70	130			

Sample ID: **2212e58-002amsd**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Base #2**	Batch ID: **C93633**	RunNo: **93633**
Prep Date:	Analysis Date: **12/29/2022**	SeqNo: **3378930** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.025	1.006	0	86.1	68.8	120	3.72	20	
Toluene	0.88	0.050	1.006	0	87.5	73.6	124	1.80	20	
Ethylbenzene	0.89	0.050	1.006	0	88.2	72.7	129	1.31	20	
Xylenes, Total	2.7	0.10	3.018	0.01851	87.4	75.7	126	1.88	20	
Surr: 4-Bromofluorobenzene	0.94		1.006		93.9	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	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#: **2212E58**

05-Jan-23

Client: HILCORP ENERGY

Project: Riddle Gas Com A 1R

Sample ID: **lcs-72341**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **72341**	RunNo: **93636**
Prep Date: **12/28/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379011** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	110	80	120			
Toluene	1.1	0.050	1.000	0	111	80	120			
Ethylbenzene	1.1	0.050	1.000	0	111	80	120			
Xylenes, Total	3.4	0.10	3.000	0	112	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		124	70	130			

Sample ID: **mb-72341**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **72341**	RunNo: **93636**
Prep Date: **12/28/2022**	Analysis Date: **12/29/2022**	SeqNo: **3379012** 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	1.2		1.000		124	70	130			

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.		

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: 2212E58 RcptNo: 1

Received By: **Cheyenne Cason** 12/29/2022 7:22:00 AM

Completed By: **Sean Livingston** 12/29/2022 7:56:49 AM

Reviewed By: JM 12/29/22

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° 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: KPC 12.29.22

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	2.2	Good	Yes			

Chain-of-Custody Record

Client: HILCORP ENERGY

Mailing Address: 382 CR 3100

AZTEC, NM 87410

Phone #: 505.599.3400

email or Fax#: kkaufman@hilcorp.com etrujillo@hilcorp.com

QA/QC Package:

☐ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☐ Standard ☒ Rush 2 DAY

Project Name: RIDDLE GAS COM A 1R

Project #:

Project Manager: FASHO TRUJILLO

Sampler: F.T.

On Ice: ☒ Yes ☐ No

# of Coolers: 1 IR Yogi

Cooler Temp (Including CF): 2.2-0=2.2

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. 22122658	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)
12/27/2022	3:20 PM	soil	BASE #1	4oz glass/1	cold	001	■	■					■			
	3:30 PM		BASE #2			002										
	3:35 PM		WALL NORTH			003										
	3:45 PM		WEST WALL IN			004										
	3:55 AM		WEST WALL S1			005										
	4:10 PM		EAST WALL N #1			006										

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
12/28/22	1144				12/28/22	1144
12/28/22	1720					0722

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

March 16, 2023

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

RE: Riddle GC A I R OrderNo.: 2303484

Dear Kate Kaufman:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/9/2023 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 **2303484**
Date Reported: **3/16/2023**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: HILCORP ENERGY **Client Sample ID:** South Sidewall
Project: Riddle GC A I R **Collection Date:** 3/8/2023 2:00:00 PM
Lab ID: 2303484-001 **Matrix:** MEOH (SOIL) **Received Date:** 3/9/2023 7:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **PRD**
Diesel Range Organics (DRO)	380	9.7		mg/Kg	1	3/9/2023 4:17:51 PM
Motor Oil Range Organics (MRO)	230	49		mg/Kg	1	3/9/2023 4:17:51 PM
Surr: DNOP	112	69-147		%Rec	1	3/9/2023 4:17:51 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **BFR**
Gasoline Range Organics (GRO)	ND	3.5		mg/Kg	1	3/9/2023 11:00:00 AM
Surr: BFB	90.0	37.7-212		%Rec	1	3/9/2023 11:00:00 AM
EPA METHOD 8021B: VOLATILES						Analyst: **BFR**
Benzene	ND	0.018		mg/Kg	1	3/9/2023 11:00:00 AM
Toluene	ND	0.035		mg/Kg	1	3/9/2023 11:00:00 AM
Ethylbenzene	ND	0.035		mg/Kg	1	3/9/2023 11:00:00 AM
Xylenes, Total	ND	0.071		mg/Kg	1	3/9/2023 11:00:00 AM
Surr: 4-Bromofluorobenzene	91.6	70-130		%Rec	1	3/9/2023 11:00:00 AM
EPA METHOD 300.0: ANIONS						Analyst: **SNS**
Chloride	ND	60		mg/Kg	20	3/9/2023 10:26:45 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.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2303484**

16-Mar-23

Client: HILCORP ENERGY

Project: Riddle GC A I R

Sample ID: **MB-73604**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **73604**	RunNo: **95145**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441856**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-73604**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **73604**	RunNo: **95145**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441857**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.0	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#: **2303484**

16-Mar-23

Client: HILCORP ENERGY

Project: Riddle GC A I R

Sample ID: **MB-73602**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **73602**	RunNo: **95144**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3440731**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	10		10.00		102	69	147			

Sample ID: **LCS-73602**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **73602**	RunNo: **95144**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3440732**	Units: **%Rec**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.8	69	147			

Sample ID: **MB-73615**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **PBS**	Batch ID: **73615**	RunNo: **95144**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441953**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.9		10.00		99.0	69	147			

Sample ID: **LCS-73615**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **LCSS**	Batch ID: **73615**	RunNo: **95144**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441955**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.0	61.9	130			
Surr: DNOP	4.3		5.000		86.8	69	147			

Sample ID: **2303484-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **South Sidewall**	Batch ID: **73615**	RunNo: **95144**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441993**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	340	9.5	47.39	381.8	-91.1	54.2	135			S
Surr: DNOP	5.5		4.739		116	69	147			

Sample ID: **2303484-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**							
Client ID: **South Sidewall**	Batch ID: **73615**	RunNo: **95144**							
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441995**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	400	9.9	49.60	381.8	44.7	54.2	135	17.6	29.2	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#: **2303484**

16-Mar-23

Client: HILCORP ENERGY

Project: Riddle GC A I R

Sample ID: **2303484-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **South Sidewall**	Batch ID: **73615**	RunNo: **95144**
Prep Date: **3/9/2023**	Analysis Date: **3/9/2023**	SeqNo: **3441995** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.7		4.960		114	69	147	0	0	

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#: **2303484**

16-Mar-23

Client: HILCORP ENERGY

Project: Riddle GC A I R

Sample ID: **2.5ug gro lcs**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **GS95142**	RunNo: **95142**
Prep Date:	Analysis Date: **3/9/2023**	SeqNo: **3440720** 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	91.1	70	130			
Surr: BFB	2100		1000		213	37.7	212			S

Sample ID: **mb**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **GS95142**	RunNo: **95142**
Prep Date:	Analysis Date: **3/9/2023**	SeqNo: **3440721** 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		101	37.7	212			

Sample ID: **2303484-001ams**	SampType: **MS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **South Sidewall**	Batch ID: **GS95142**	RunNo: **95142**
Prep Date:	Analysis Date: **3/9/2023**	SeqNo: **3440725** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.72	0	95.4	70	130			
Surr: BFB	1400		708.7		196	37.7	212			

Sample ID: **2303484-001amsd**	SampType: **MSD**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **South Sidewall**	Batch ID: **GS95142**	RunNo: **95142**
Prep Date:	Analysis Date: **3/9/2023**	SeqNo: **3440726** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	17	3.5	17.72	0	94.7	70	130	0.758	20	
Surr: BFB	1400		708.7		193	37.7	212	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: 2303484 RcptNo: 1

Received By: **Tracy Casarrubias** 3/9/2023 7:15:00 AM

Completed By: **Tracy Casarrubias** 3/9/2023 7:36:03 AM

Reviewed By: JA 3/9/23

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: JA 3-9-23

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	1.9	Good	Yes	Yogi		

Chain-of-Custody Record

Client: Hilcorp

Mailing Address:

Phone #:

email or Fax#: brandon.sinclair@hilcorp.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush Same Day 3-9-23

Project Name: Riddle GC A 1R

Project #:

Project Manager: Kate Kaufman

Sampler: Brandon Sinclair

On Ice: ☑ Yes ☐ No 40gj

# of Coolers: 1

Cooler Temp(Including CF): 1.9 - 0 = 1.9 (°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. 2303484	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)
3-8	1400	soil	South Sidewall	4oz jar	cool	001	✓	✓					✓			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
3-8	1637				3/8/23	1637
3/8/23	1806			courier	3/9/23	7:15

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.

Executive Summary – Incident #nAPP2224436644

On August 25, 2022, approximately 13 barrels of condensate and 3 barrels of produced water were released from an above ground storage tank at the Riddle Gas Com A #1R wellsite (30-045-31138) S09, T27N, R09W, Unit G. The release was due to corrosion around the manway door of the tank. The release was discovered at 1:00 PM MST on August 25, 2022 and was reported to NMOCD on 9/1/2022.

The operator conducting daily checks discovered corrosion around the man way door. The release remained inside the berm. No fluids were recovered. There was no immediate danger to the public and no fire occurred as a result of the release. The well was shut in and the tank drained for inspection and repair prior to being put back into service.

Impacted soil was removed and transported offsite for disposal. Six (6) 5-point composite samples were collected from the excavated area on December 27, 2022. One additional 5-point composite sample was collected from the south sidewall on March 8, 2023. Analytical results from this sampling event were below NMOCD action criteria noted in NMAC 19.15.29 Table 1. Sample diagram and analytical results are included in this summary report.

Scaled Site Map

Lat: 36.590745
Long: -107.789532

Riddle Gas Com A #1R Wellsite
API: 30-045-31138

Release Area

N

Depth to groundwater determination.

BGT Siting Criteria for Riddle Gas Com A #1R

Estimated depth to groundwater is greater than 100'.

Lodestar Services, Inc.
PO Box 4465, Durango, CO 81302

Pit Permit Siting Criteria Information Sheet

Client:	XTO Energy		
Project:	Pit Permits		
Revised:	21-Nov-08		
Prepared by:	Devin Hencmann		
API#:	3004531138	USPLSS:	27N, 09W, 09G
Name:	RIDDLE GAS COM A #1R	Lat/Long:	36.58389/-107.78417
Depth to groundwater:	>100'	Geologic formation:	Naciemento
Distance to closest continuously flowing watercourse:	9 miles N to the 'San Juan River'		
Distance to closest significant watercourse, lakebed, playa lake, or sinkhole:	1 mile S to Jaques Canyon wash		
		Soil Type:	Entisols
Permanent residence, school, hospital, institution or church within 300'	No		
		Annual Precipitation:	Bloomfield: 8.71" , Farmington: 8.21", Otis: 10.41"
Domestic fresh water well or spring within 500'	No	Precipitation Notes:	Historical daily max: Bloomfield (4.19")
Any other fresh water well or spring within 1000'	No		
Within incorporated municipal boundaries	No	Attached Documents:	27N 11W i-Waters pdf,27N 12W i-Waters pdf
Within defined municipal fresh water well field	No		Topo map pdf, Aerial pdf, Mines and Quarries Map pdf,i-Waters Ground Water Data Map pdf, FEMA flood zone map pdf
Wetland within 500'	No	Mining Activity:	None
Within unstable area	No		
Within 100 year flood plain	No-FEMA Zone 'X'		

Depth to groundwater determination.

BGT Siting Criteria for Riddle Gas Com A #1R

Estimated depth to groundwater is greater than 100'.

Site Specific Hydrogeology

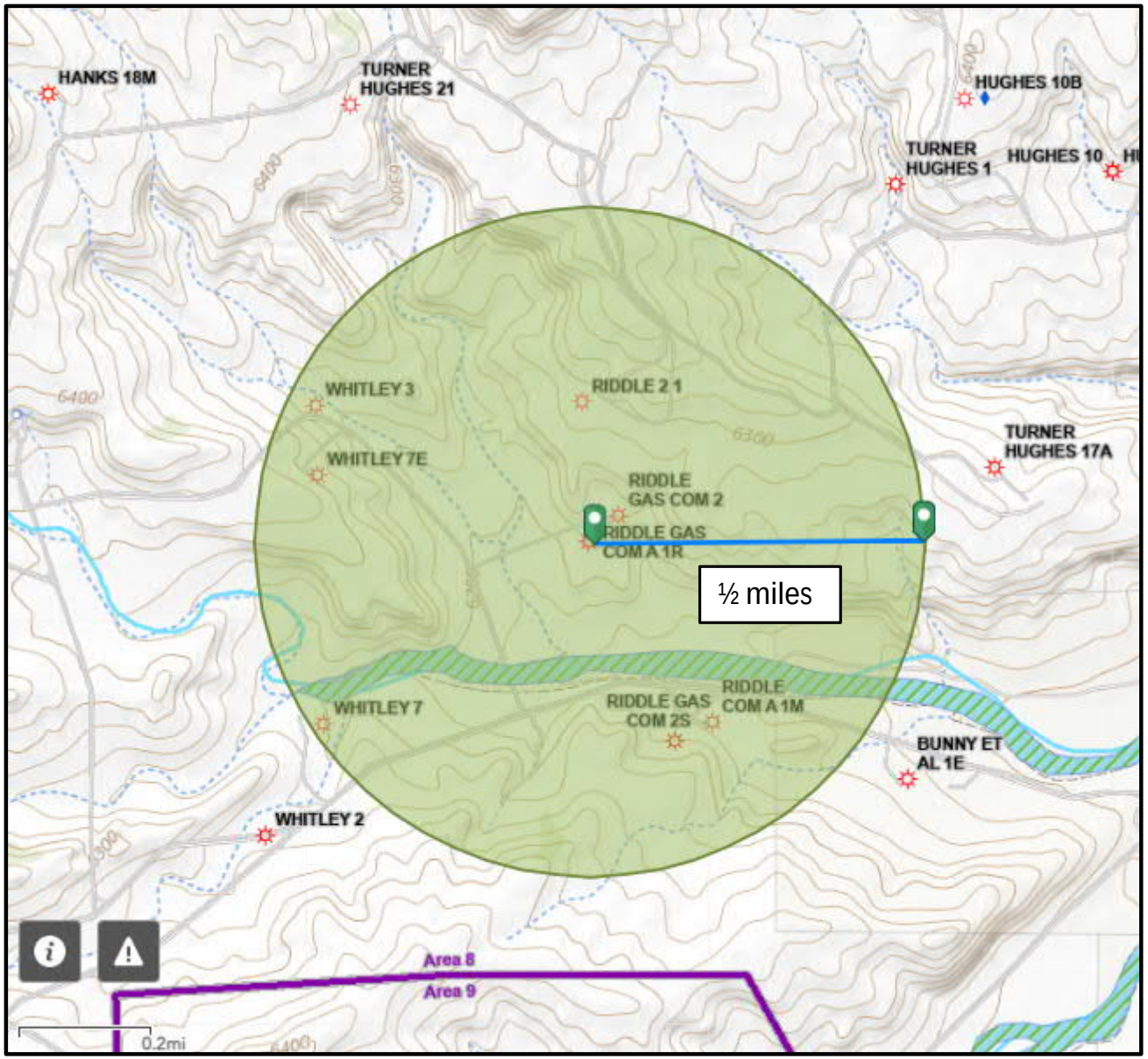
Depth to groundwater is estimated to be greater than 100'. This estimation is based on data from Stone and others (1983), the USGS Groundwater Atlas of the United States and depth to groundwater data published on the New Mexico State Engineer's iWaters Database website. Local topography and proximity to surface hydrologic features are also taken into consideration.

Beds of water-yielding sandstone are present in the Nacimiento Formation, which are fluvial in origin and are interbedded with siltstone, shale and coal. Porous sandstones form the principal aquifers, while relatively impermeable shales form confining units between the aquifers (Stone et al., 1983). Local aquifers exist within the Nacimiento Formation at depth s greater than 100 feet and thicknesses of the aquifer can be up to 3500 feet (USGS, Groundwater Atlas of the US).

The site in question is located near the edge of Largo Canyon, where deeply eroded sandstone-capped mesas and slope-forming mudstones occur in a sparsely vegetated and arid badlands-type setting. Broad shalely hills are interspersed with occasional sandstone outcrops, and systems of dry washes and their tributaries are evident on the attached aerial image.

The pit will be located on a relatively flat mesa top at an elevation of approximately 6221 feet near the head of Largo Wash. It will be approximately 700 feet from the Largo Canyon tributary system and 6.4 miles west of Largo Wash. Groundwater is expected to be shallow within Largo Wash. But the significant distance between the Canyon and the site, as well as an elevation difference of over 400 feet suggest groundwater is greater than 100 feet at the proposed site.

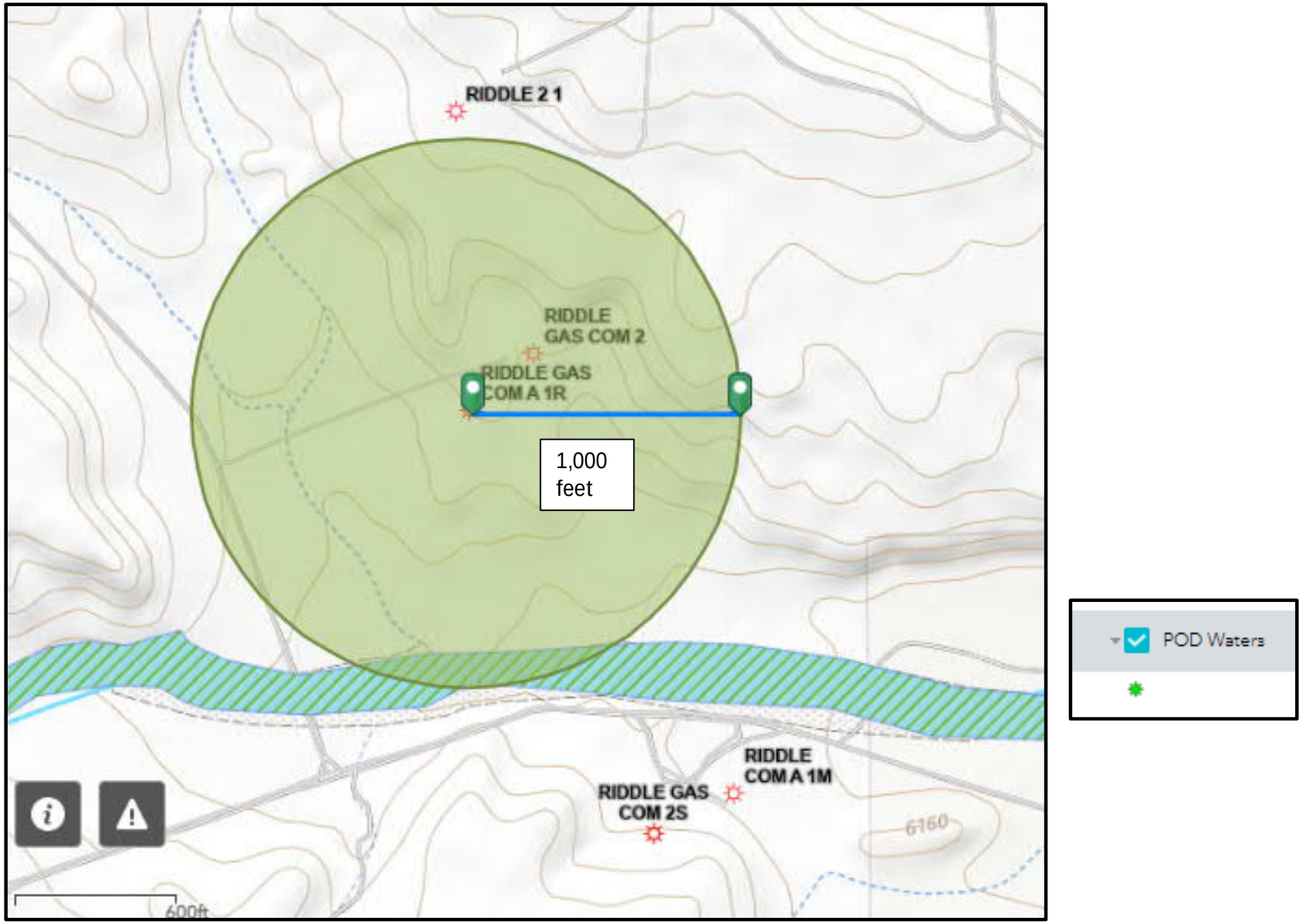
Determination of water sources and significant watercourses within ½ mile of the lateral extent of the release



Note 1: Release point is not within 300 ft of a continuously flowing watercourse or other significant water course.

Note 2: The lateral extents of the release point are not shown to be within 300 feet of a mapped wetland.

Distance to mapped water wells.



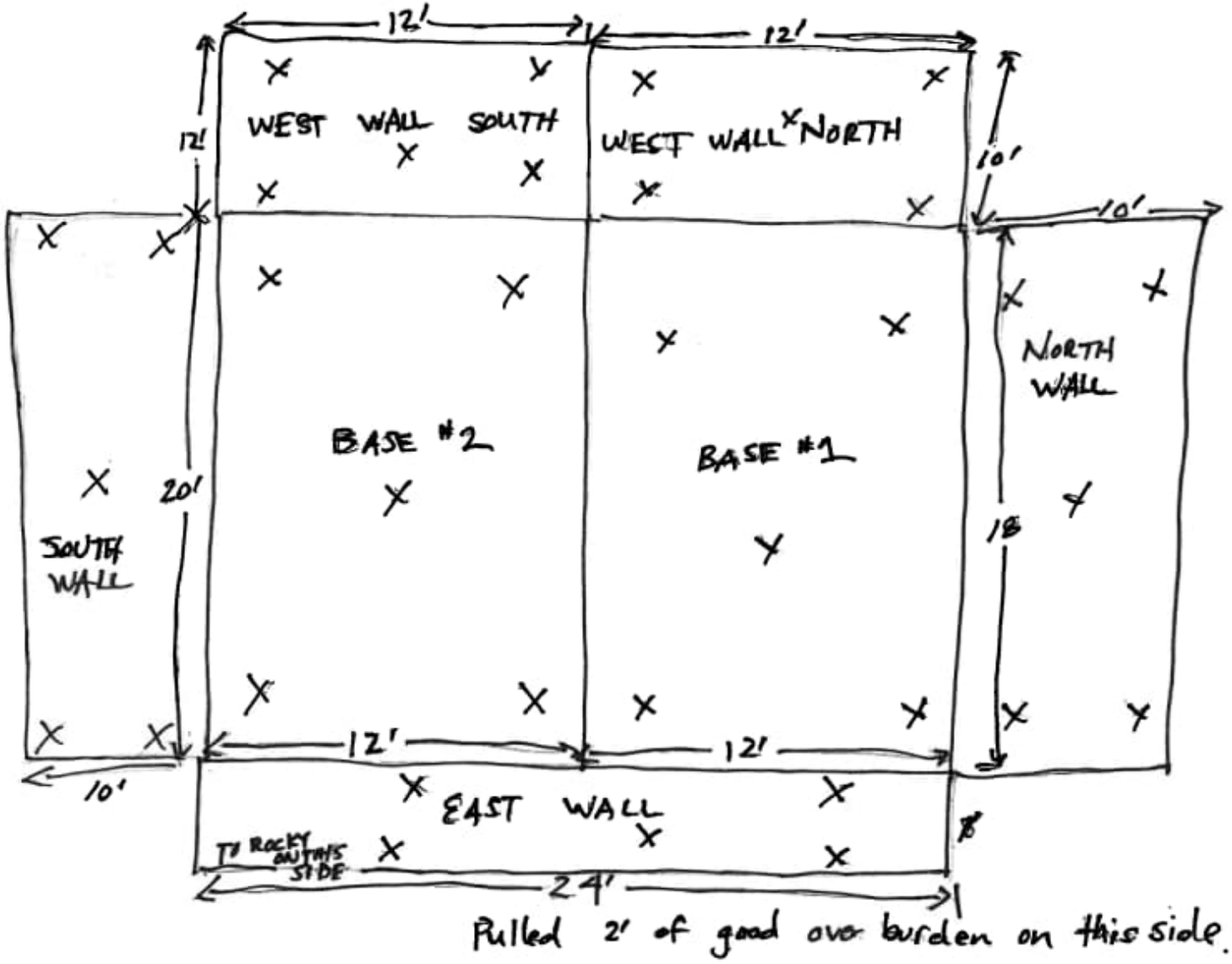
Note: The lateral extents of the release point are not shown to be within 500 ft of a spring or domestic freshwater well used by less than 5 households (or stock watering) or within 1,000 ft of any freshwater water well or spring.

Data table of soil contaminant concentrations

Sample Name	Sample Date	Field VOCs by PID (ppm)	Riddle Gas Com A #1R Laboratory Results										
			Chloride (mg/kg)	TPH as DRO (mg/kg)	TPH as GRO (mg/kg)	TPH as MRO (mg/kg)	Total TPH (mg/kg)	TPH as GRO + DRO (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylene (mg/kg)	Total BTEX (mg/kg)
19.15.29 Table 1 Closure Criteria			**20,000**	-	-	-	**2,500**	**1,000**	**10**	-	-	-	**50**
Base #1	12/27/2022	-	ND	670	32	420	1,122	702	ND	ND	ND	1	1
Base #2	12/27/2022	-	ND	42	ND	ND	42	42	ND	ND	ND	ND	ND
Wall North	12/27/2022	-	ND	42	ND	200	242	42	ND	ND	ND	ND	ND
West Wall North	12/27/2022	-	ND	50	ND	71	121	50	ND	ND	ND	ND	ND
West Wall South	12/27/2022	-	ND	44	ND	ND	44	44	ND	ND	ND	ND	ND
East Wall	12/27/2022	-	ND	550	ND	290	840	550	ND	ND	ND	ND	ND
South Sidewall	3/8/2023	-	ND	380	ND	230	610	380	ND	ND	ND	ND	ND

Confirmation samples were collected on 12/27/2022 and 3/8/2023 by Hilcorp personnel and all results were below NMOCD 19.15.29.12.D Table 1 closure criteria.

Field Sample Diagram



Sample Photos – Base 1 (left) and Base 2 (right)

Sample Photos – East Wall

Sample Photos – North Wall

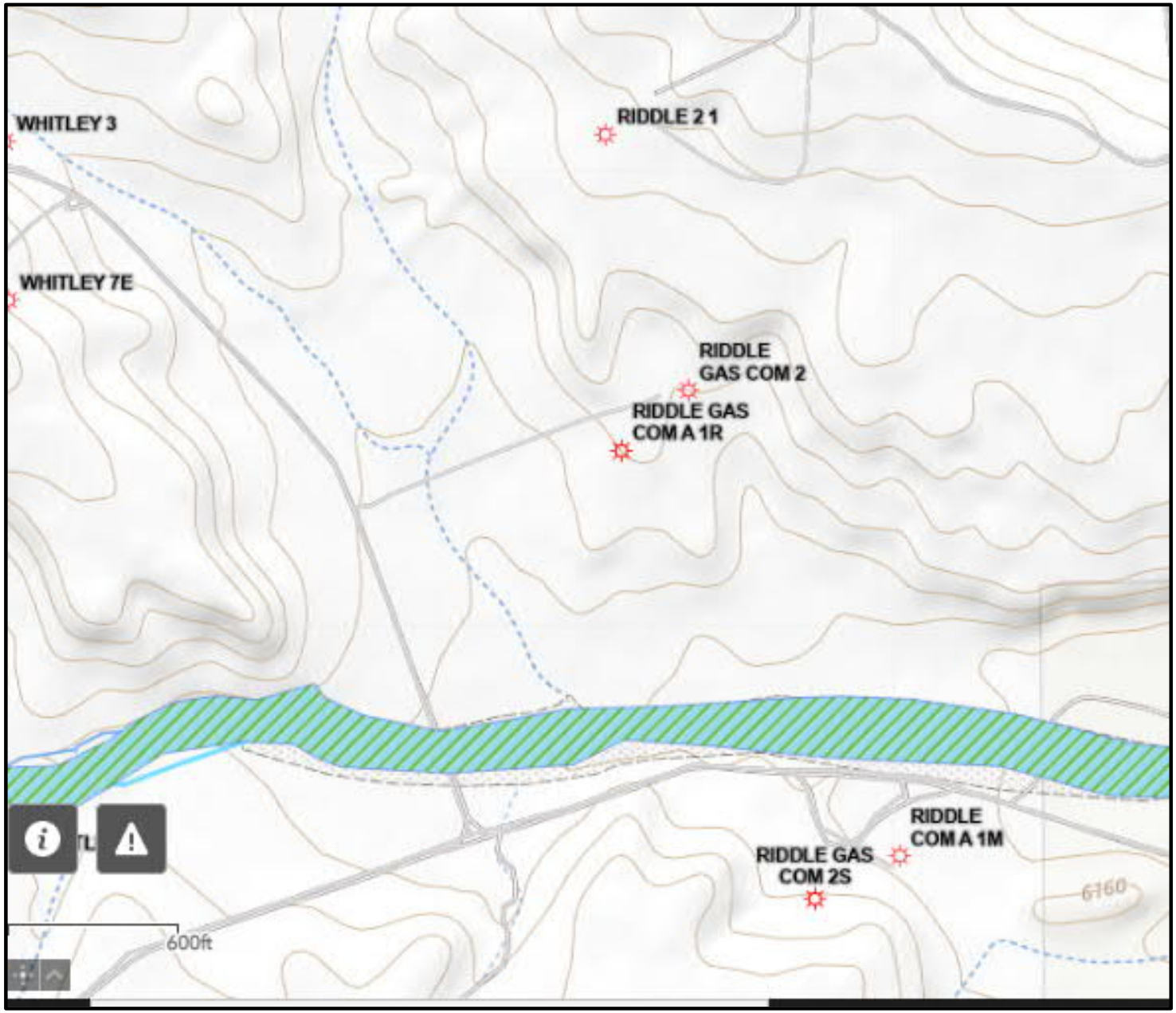
Sample Photos – North Wall and Base with BGT Removed

Sample Photos – West Wall North

Sample Photos – West Wall South

Sample Photos – South Side Wall

Topographic Map



N

Analytical Data, Sample Collected 12/27/2022.

See attached Lab 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 175586

CONDITIONS

Operator: HILCORP ENERGY COMPANY 1111 Travis Street Houston, TX 77002	OGRID: 372171
	Action Number: 175586
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	3/23/2023