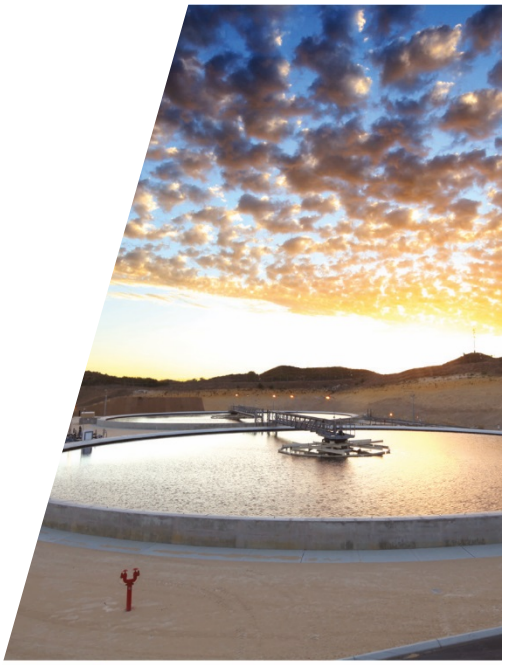
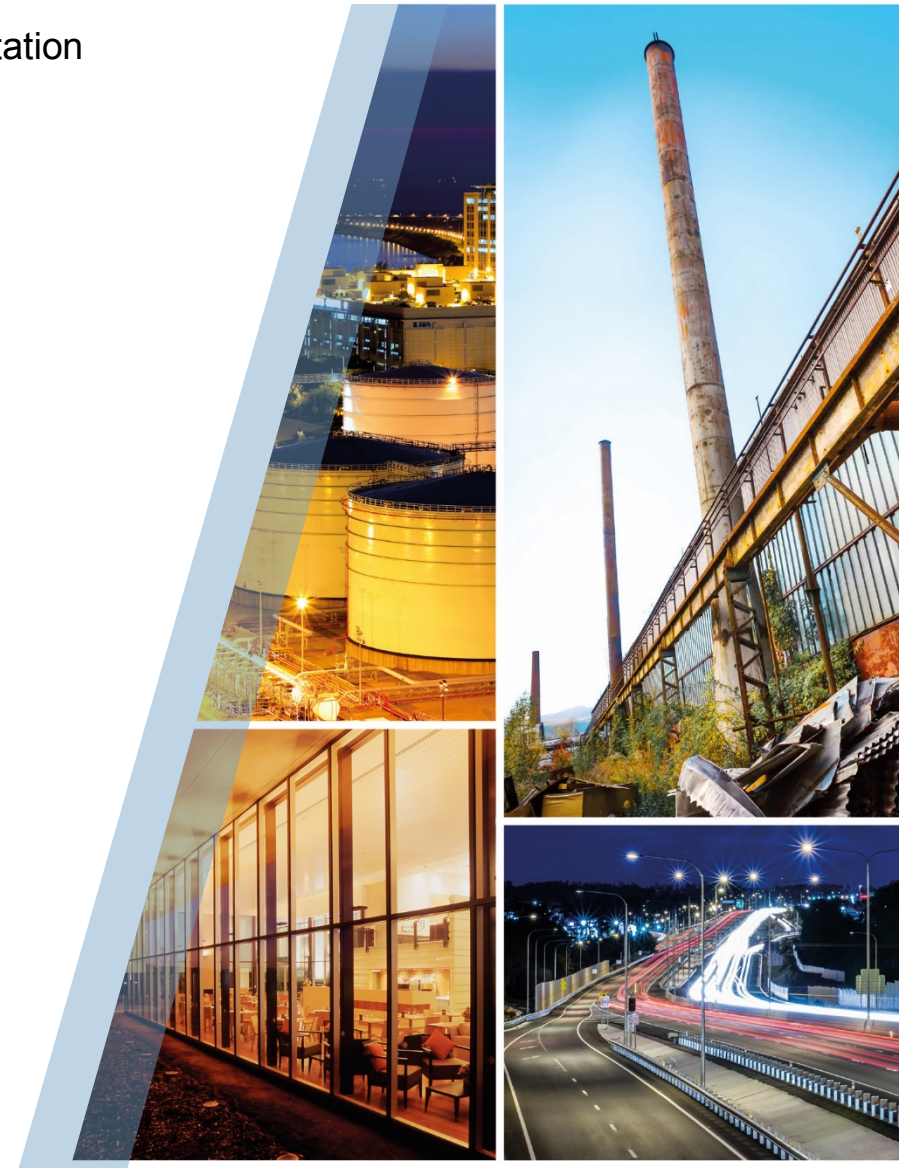


# Site Characterization and Closure Report

Rattlesnake SWD Pump Station
Produced Water Release
Lea County, New Mexico

Lucid Energy Group



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# Figure Index



# Table Index



# Appendix Index

# 1. Introduction

GHD is pleased to present this Soil Characterization and Site Closure Report to Lucid Energy Group (Lucid) for the Rattlesnake SWD Pump Station release location (hereafter referred to as the "Site"). The Site is located in Unit P, Section 16, Township 26 South, Range 34 East, approximately 17 miles southwest of Jal, in southern Lea County, New Mexico (refer to Figure 1). The Site is on land administered by the United States Bureau of Land Management.

# 2. Project Information and Background

Lucid submitted an initial C-141 Form to the NMOCD dated August 15, 2019, describing a release of 15 to 20 barrels (bbls) produced water with zero volume being recovered; stating the cause of the release as, "*Flange on pumping station failed causing the release of water*." The C141 Release Notification is included in Appendix B. At this writing, NMOCD has not provided a Remediation Permit number for this release.

Following discovery of the release, Lucid immediately performed surface soil remediation activities. Initial assessment included a site visit, photograph collection, and a preliminary inspection of impacts to the surrounding environment. Photographs of the site are included in Appendix C. GHD conducted follow-up site characterization activities on August 16, 2019.

# 3. NMOCD Closure Criteria for Soils

Subsurface investigation activities were completed in accordance with the 19.15.29 New Mexico Administrative Code (NMAC) from the New Mexico Oil Conservation Division (NMOCD) dated August 14, 2018.

The following criteria from Table 1 (below) within NMAC 19.15.29.12 was utilized to determine site-specific screening limits.

| Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS | Constituent | Limit* |
|---|---|---|
| 51 feet-100 feet | Chloride* | 10,000 mg/kg |
| | TPH (GRO+DRO+M | 2,500 mg/kg |
| | GRO+DRO | 1,000 mg/kg |
| | BTEX | 50 mg/kg |
| | Benzene | 10 mg/kg |

* This applies to releases of produced water or other fluids, which may contain chloride.

Based on the most current data listed within the New Mexico Office of the State Engineer (NMOSE) and U.S. Geological Survey's (USGS) groundwater databases, the nearest wells with a recorded depth to groundwater indicate a depth of over 100 feet (ft.) below ground surface (bgs). The NMOSE and USGS wells are over 1 mile from the site. A depth to groundwater of over 100 feet bgs is also

interpreted from Chevron Texaco groundwater trend maps. Groundwater is therefore interpreted to be greater than 100 ft. bgs, however, a Site-specific depth is not known. Therefore, a conservative 51 to 100 feet screening criteria was utilized for this assessment. Additionally, information available from the USGS National Map concludes:

a) the depth to groundwater at the Site is believed greater than 100-feet bgs;

b) the site is not within 300 feet of any continuously flowing watercourse;

c) the site is not within 200 feet of any lakebed, sinkhole or playa lake;

d) the site is not within 300 feet of an occupied permanent residence, school, etc.;

e) the site is not within 500 feet of a spring or private, domestic fresh water well;

f) the site is not within 1,000 feet of a fresh water well or spring;

g) the site is not within incorporated municipal boundaries or within a defined municipal fresh water well field;

h) the site is not within 300 feet of a wetland;

i) the site is not within an area overlying a subsurface mine;

j) the site is not within an unstable area; and

k) the site is not within a 100-year floodplain.

*Consequently, the anticipated site-specific screening limits to be applied to this location by the NMOCD based on the NMAC 19.15.29.12 are 10 mg/kg for benzene, 50 mg/kg for total BTEX, 2,500 mg/kg for total TPH, and 10,000 mg/kg for chloride*. A list of surrounding wells with reported depth to groundwater, obtained from the NMOSE New Mexico Water Rights Reporting System database and USGS National Water Information System Mapper is included in Appendix A.

Per 19.15.29.13, Restoration, Reclamation, and Re-vegetation, the impacted area must be remediated a minimum of 4-feet bgs with non-waste containing, uncontaminated, earthen material with chloride concentrations less than 600 mg/kg. Soil cover must consist of topsoil at a thickness comparable to background topsoil thicknesses, or one foot of suitable earthen material capable of establishing and maintaining vegetation at the site. Reclamation is considered complete when all disturbed areas have established vegetative cover with a life-form ratio of plus or minus 50 percent of pre-remedial levels, and plant cover of a minimum of 70 percent of previous levels, excluding noxious weeds.

# 4. Soil Assessment and Remediation

The initial Site assessment sampling was conducted by Lucid on August 14, 2019. Lucid hand augured and collected samples in the center, and four cardinal directions of the spill footprint. The center sample (HA-C-12) was collected at a depth of 12-inches below ground surface (bgs) and the remaining samples at 6-inches bgs. Samples were submitted to Hall Environmental Analysis Laboratory (Hall) in Albuquerque, New Mexico. All samples were analyzed for chloride concentrations by EPA Method 300. Sample HA-C-12 was also analyzed for total petroleum hydrocarbons (TPH) by EPA method 8015 and for benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA method 8021.

GHD conducted additional field assessment activities at the Site on August 16, 2019. Backhoe test pits were excavated on the north and south ends of the visibly stained release area. A third test pit, TP-3 was also dug to the west of the release area and west of Lucid's gas and water lines. Background sample BG-1 was collected in pasture east of the release are, between the Targa gas line east of the release area and the access road. Samples were collected at depths of 1 and 3 feet (ft.) bgs (except BG-1, collected at 1 ft. only) and field screened using HACH test kits. Test pit locations are depicted on Figure 2.

GHD returned on August 23, 2019 to oversee the Lucid contractor during a surface scraping of impacted soils. The contractor scraped an area of approximate dimensions of 70 ft. by 70 feet to a depth of 6 to 8 inches. The impacted soils were hauled away for off Site disposal. An attempt was also made to dig additional test pits, however, the equipment on Site could not dig beyond 3.5 feet through the caliche.

On August 26, the Lucid contractor dug test pits TP-4 and TP-5. Samples were collected at depths of 6 ft. and 10 ft. bgs and field screened for chlorides. Samples were also submitted to Hall for chloride analysis. All samples were below the LRL. It is therefore evident from these results that impacts from the small release did not penetrate below 3 to 4 ft. bgs across the Site.

Lucid ultimately excavated an area depicted in Figure 2 representing approximately 360 cubic yards (cy) of impacted soils. The remediated area was excavated generally to a depth of 4 ft. bgs. Five point composite confirmation soil samples were collected from each of the four sidewalls of the excavation and submitted for chloride laboratory analysis. The red shaded area in the figure was not excavated due to production equipment including the pump, generator and electrical panel. A deferral from remediation for this area will be requested. Disposal manifests for removed soils are included in Appendix C. Photographs of the Site equipment/deferral area and excavation are included in Appendix D.

Because the Site equipment is not housed in a fenced, secure facility, the excavated area has been backfilled with clean imported fill material.

## 4.1 Soil Sampling Analytical Results

Soil analytical summary results from the Site assessment are presented in Table 1. A Release Assessment map is presented as Figure 2.

- Chloride concentrations from hand augured samples (8/14/2019) ranged from 3,800 milligrams per kilogram (mg/kg) at HA-S-6 to 6,800 mg/kg (HA-C-12). Results for TPH and BTEX were at concentrations below the laboratory reporting limit (LRL), or, non-detect.
- Field screening results from TP-1 and TP-2 at 1 to 3 ft. bgs were generally over range so samples were not submitted for laboratory analysis. The TP-3 and BG-1 samples were submitted to Hall for chloride analysis. These results were all less that the LRL.
- Laboratory results for samples collected from TP-4 and TP-5 and 6 ft. and 10 ft. bgs were at concentrations below the LRL.

- Excavation sidewall confirmation sample results were all below the LRL.

  Soils laboratory analytical reports are included in Appendix E.

# 5. Deferral and Site Closure Requests

Evaluation of the analytical data obtained from soil assessment and delineation activities performed in August and September 2019 indicate horizontal and vertical delineation of chloride, BTEX, and TPH impacts has been achieved at the Site in accordance with 19.15.29 NMAC. Though none of the soil samples submitted for laboratory analyses were above the NMAC Table 1 closure criteria for the Site, as a precaution, Lucid excavated approximately 360 cy of soil for off Site disposal. The excavation has been backfilled with clean, imported fill material as a safety precaution because the site is not fenced. Lucid requests to postpone additional remediation efforts in the deferral area until any future Site alteration or final abandonment activities. GHD and Lucid do not believe deferment will result in imminent risk to human health, the environment or the groundwater. The majority of the impacted soil material has been excavated and transported off-site for disposal.

GHD and Lucid therefore request no further action for this release described herein.

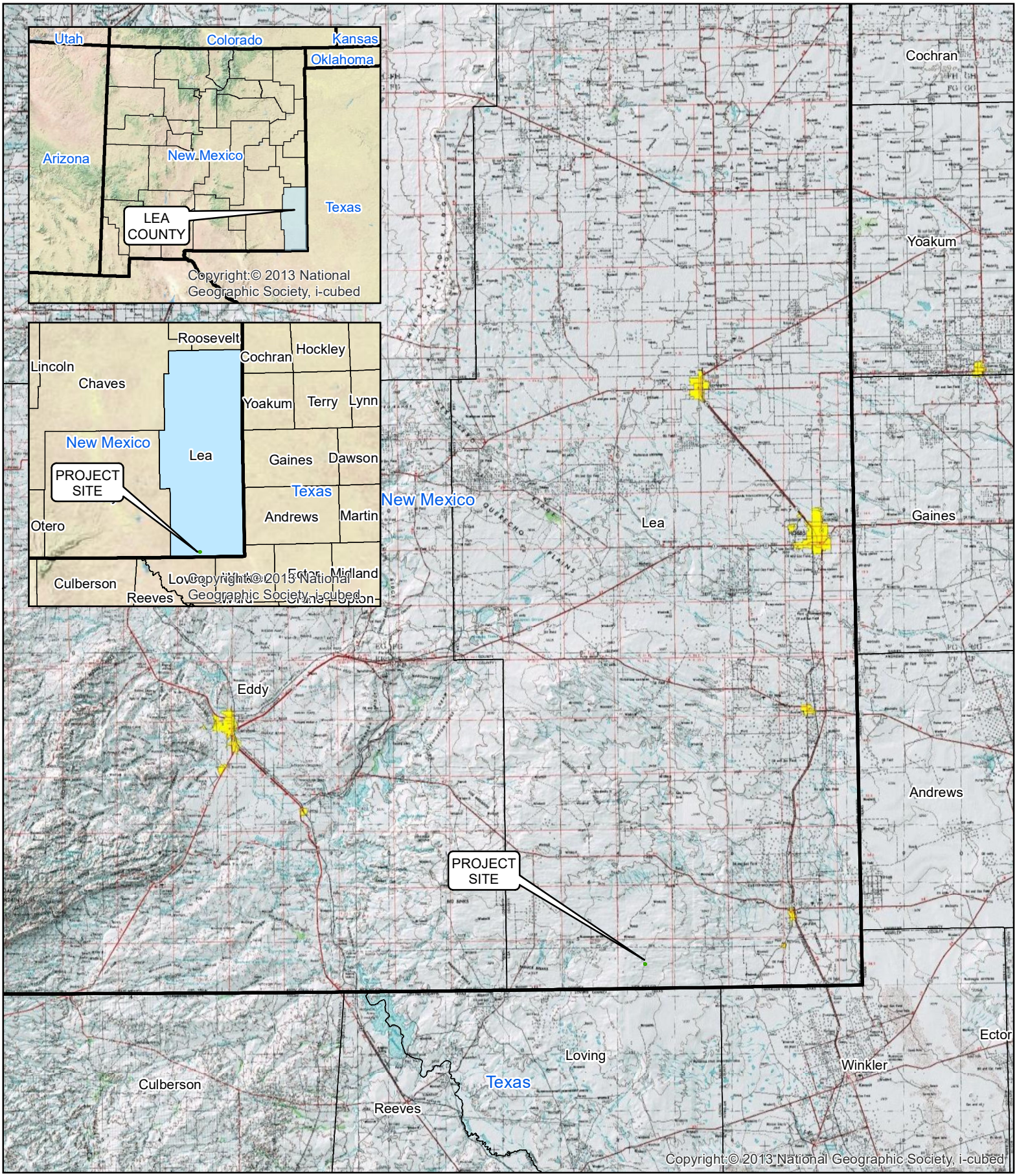
Submitted by:

**GHD Services, Inc.**

Jeff Walker, Project Manager

Tom Larson, P.G., Operations Manager

# Figures




Coordinate System:
WGS 1984 UTM Zone 13N

N

GHD

LUCID ENERGY GROUP
RATTLESNAKE SWD
LEA COUNTY, NM

SITE MAP

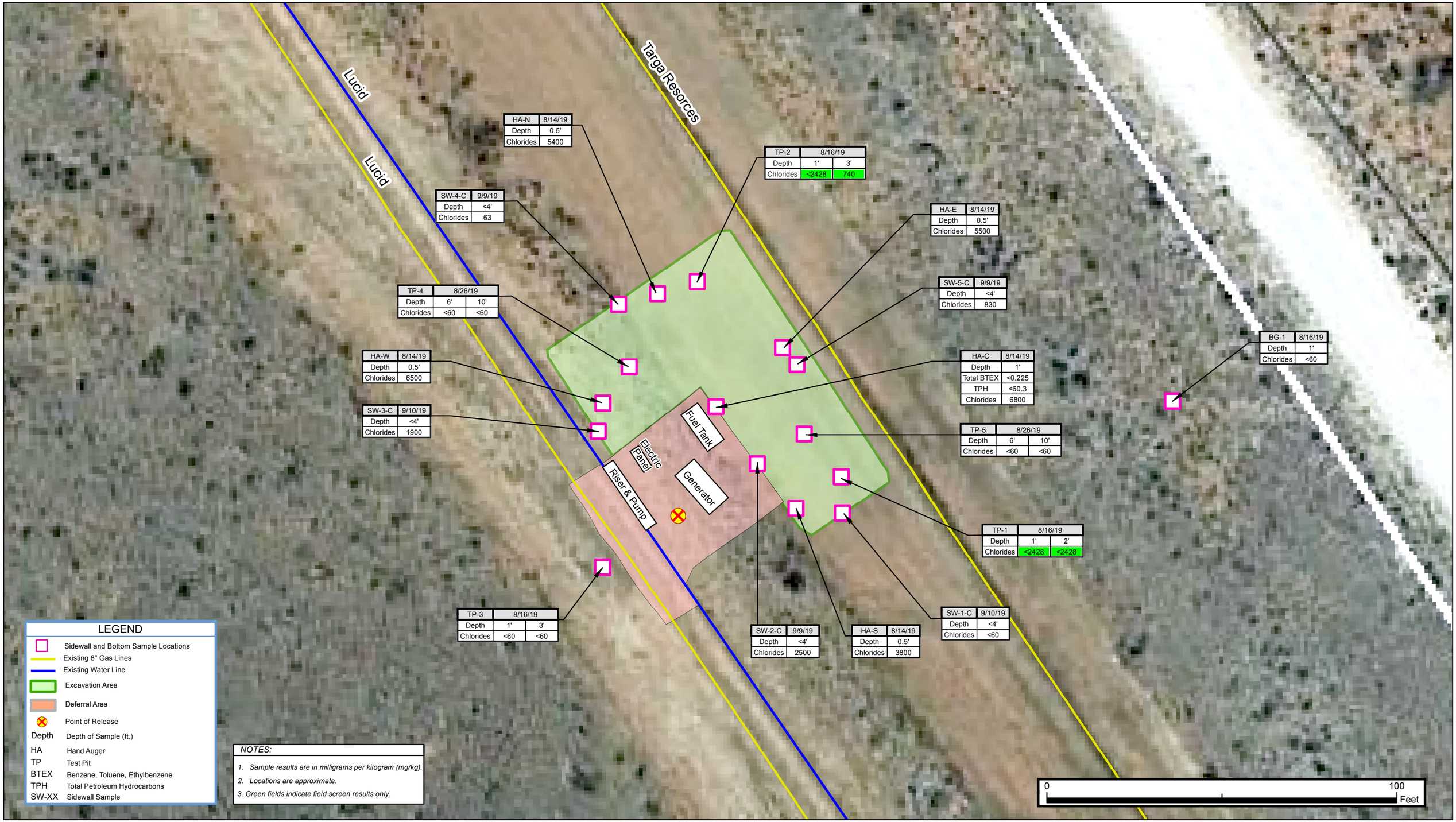
11201757

32.0388N
103.4665W

Sep 25, 2019

FIGURE 1

GIS File: C:\Users\plorang\Documents\Projects\Rattlesnake SWD\Maps\Rattlesnake_SWD_Fig1.mxd




32.0387°N
103.4665°W

Coordinate System:
WGS 1984 UTM Zone 13N

LUCID ENERGY GROUP
RATTLESNAKE SWD
LEA COUNTY, NM

# RELEASE ASSESSMENT

11201757
Oct 8, 2019

FIGURE 2

GIS File: N:\US\Midland\Legacy\Projects_In_Progress\Artesia-Phil\Rattlesnake SWD\Maps\Rattlesnake_SWD_Fig2.mxd

# Table

**Table 1**

**Rattlesnake SWD Pump Station - Summary of Soil Analytical Data**

| Sample ID | Depth (feet) | Date | Benzene | Toluene | Ethyl-benzene | Xylenes | BTEX | TPH (GRO) | TPH (DRO) | TPH (MRO) | Total TPH | Chloride | Chloride Field Screen (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HA-S-6" | 0.5 | 8/14/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 3800 | NA |
| HA-C-12" | 1 | 8/14/2019 | <0.025 | <0.050 | <0.050 | <0.10 | <0.225 | <5.0 | <9.3 | <46 | <60.3 | 6800 | NA |
| HA-E-6" | 0.5 | 8/14/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 5500 | NA |
| HA-N-6" | 0.5 | 8/14/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 5400 | NA |
| HA-W-6" | 0.5 | 8/14/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 6500 | NA |
| TP-1-1 | 1 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | NA | <2428 |
| TP-1-3 | 2 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | NA | <2428 |
| TP-2-1 | 1 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | NA | <2428 |
| TP-2-3 | 3 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | NA | 740 |
| TP-3-1 | 1 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <114 |
| TP-3-3 | 3 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <114 |
| B-G-1 | 1 | 8/16/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <108 |
| TP-4-6 | 6 | 8/26/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <114 |
| TP-4-10 | 10 | 8/26/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <298 |
| TP-5-6 | 6 | 8/26/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <298 |
| TP-5-10 | 10 | 8/26/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <298 |
| SW-1-C | 1-4 | 9/10/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | <60 | <108 |
| SW-2-C | 1-4 | 9/9/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 2500 | <2428 |
| SW-3-C | 1-4 | 9/10/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 1900 | NA |
| SW-4-C | 1-4 | 9/9/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 63 | <108 |
| SW-5-C | 1-4 | 9/9/2019 | NA | NA | NA | NA | -- | NA | NA | NA | -- | 830 | 556 |
| **NMOCD Table 1 Closure Limits** | | | **10** | **Total BTEX: 50** | | | | **Total TPH: 2,500** | | | | **20,000** | |

Notes:

All sample results are in milligrams per kilogram

NMOCD = New Mexico Oil Conservation Division

Table 1 Closure Limits = In accordance with 19.15.29 Release Rule
NA = Not Analyzed

BTEX =Benzene, Toluene, Ethylbenzene, Xylenes

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

MRO = Motor Oil Range Organics

# Appendices

# Appendix A
# NMOSE Water Well Survey

*New Mexico Office of the State Engineer*

# Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

| Well Tag | POD Number | Q64 | Q16 | Q4 | Sec | Tws | Rng | X | Y |
|---|---|---|---|---|---|---|---|---|---|
| | C 02295 | 2 | 2 | 4 | 12 | 26S | 33E | 639850 | 3547710* |

**Driller License:** 122 **Driller Company:** UNKNOWN

**Driller Name:** UNKNOWN

**Drill Start Date:** **Drill Finish Date:** 12/31/1949 **Plug Date:**

**Log File Date:** **PCW Rcv Date:** **Source:**

**Pump Type:** **Pipe Discharge Size:** **Estimated Yield:** 12 GPM

**Casing Size:** 8.00 **Depth Well:** 250 feet **Depth Water:** 200 feet

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

# National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater ▼ Geographic Area: United States ▼ GO

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

## Search Results -- 1 sites found

**site_no list =**

- 320419103302201

**Minimum number of levels =** 1

Save file of selected sites to local disk for future upload

---

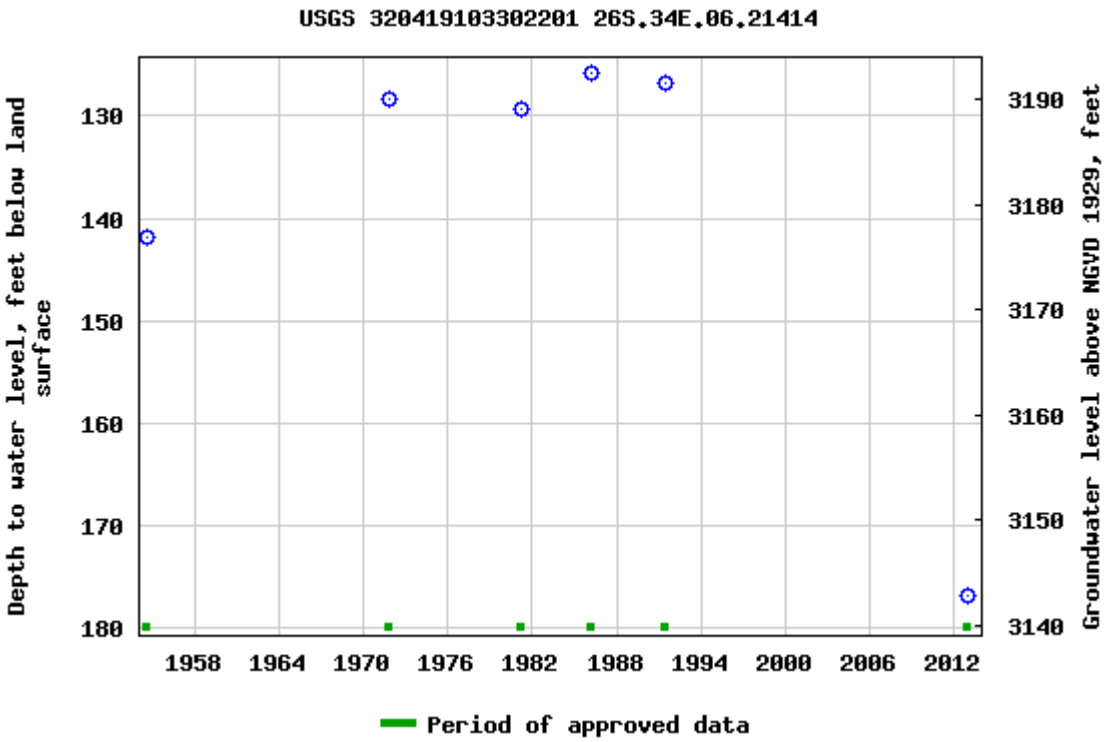
## USGS 320419103302201 26S.34E.06.21414

Available data for this site Groundwater: Field measurements ▼ GO

Lea County, New Mexico
Hydrologic Unit Code 13070007
Latitude 32°04'37.9", Longitude 103°30'20.5" NAD83
Land-surface elevation 3,319.00 feet above NGVD29
The depth of the well is 360 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

**Output formats**

| |
|---|
| Table of data |
| Tab-separated data |
| Graph of data |
| Reselect period |




Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

---

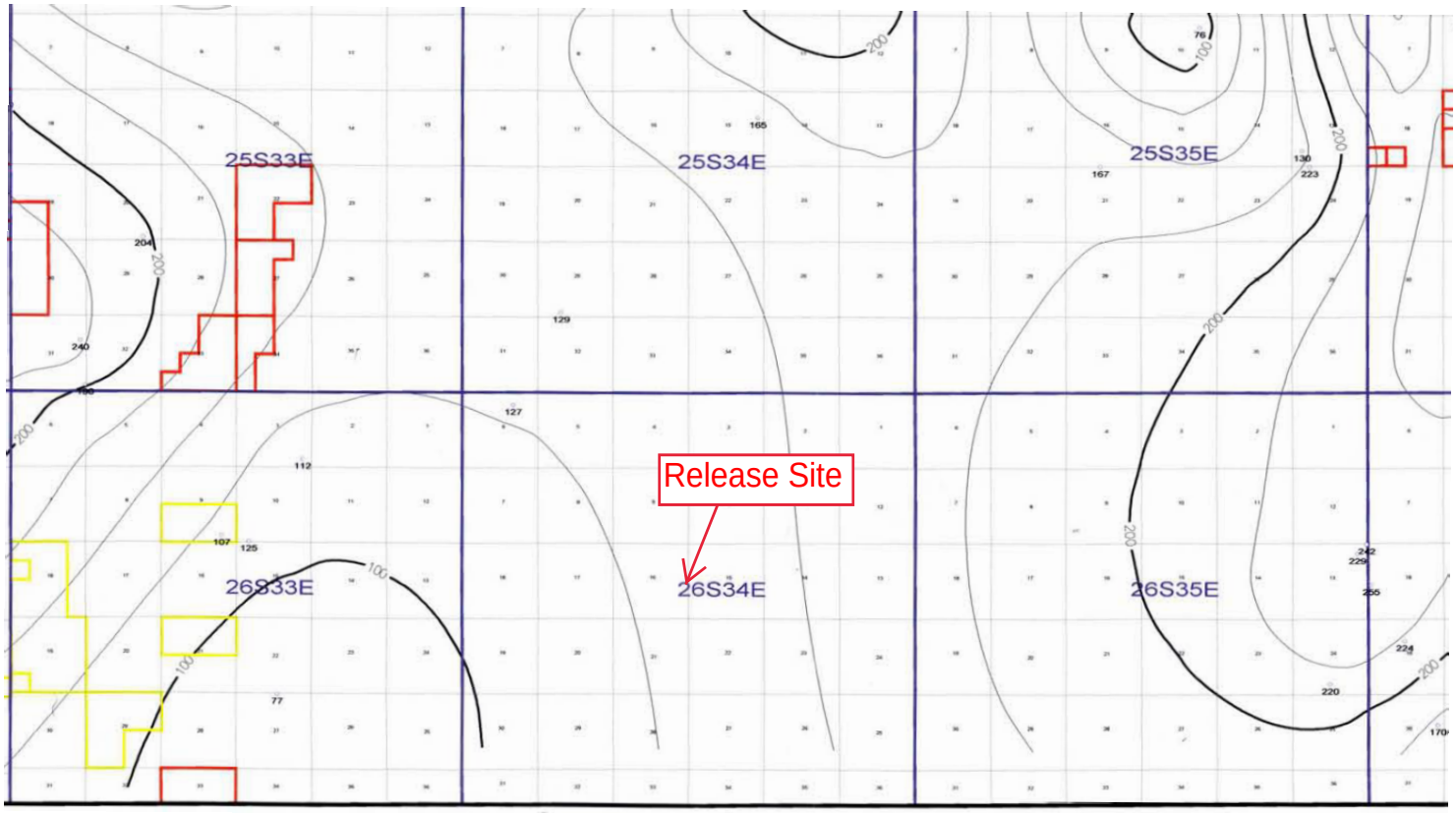
Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

**Title: Groundwater for USA: Water Levels**
**URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?**

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2019-09-10 17:12:27 EDT
1.04 0.93 nadww01


25S33E
25S34E
25S35E
26S33E
26S34E
26S35E
Release Site

# Appendix B
# C-141 Final

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 | |

# Release Notification

## Responsible Party

| | |
|---|---|
| Responsible Party Lucid Energy Delaware, LLC | OGRID 372422 |
| Contact Name Michael Gant | Contact Telephone 575.748.4555 |
| Contact email Mgant@lucid-energy.com | Incident # *(assigned by OCD)* |
| Contact mailing address 201 South 4th Street, Artesia, NM 88210 | |

## Location of Release Source

Latitude 32.038807° Longitude -103.466545°
*(NAD 83 in decimal degrees to 5 decimal places)*

| | |
|---|---|
| Site Name Rattlesnake SWD Pump Station | Site Type Produced water pump station |
| Date Release Discovered 8-7-2019 | API# *(if applicable)* |

| Unit Letter | Section | Township | Range | County |
|---|---|---|---|---|
| P | 16 | 26S | 34E | Lea |

Surface Owner: ☐ State ☑ Federal ☐ Tribal ☐ Private (*Name:* Bureau of Land Management )

## 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) 15-20 bbls | Volume Recovered (bbls) |
| | Is the concentration of total dissolved solids (TDS) 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
Flange on pumping station failed causing the release of water.

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?<br><br>☐ 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: Michael Gant Title: Environmental Coordinator

Signature: MGant Date: 8/15/19

email: mgant@lucid-energy.com Telephone: 314 330 7876

**OCD Only**

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| 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.

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| 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: Michael Gant Title: Environmental Coordinator

Signature: MGant Date: 10.7.2019

email: mgant@lucid-energy.com Telephone: 314 330 7876

**OCD Only**

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

# Remediation Plan

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

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

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

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

☑ Extents of contamination must be fully delineated.

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

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

Printed Name: Michael Gant  Title: Environmental Coordinator

Signature: MGant  Date: 10.7.2019

email: mgant@lucid-energy.com  Telephone: 314 330 7876

**OCD Only**

Received by: _____  Date: _____

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

Signature: _____  Date: _____

State of New Mexico
Oil Conservation Division

| | |
|---|---|
| Incident ID | |
| District RP | |
| Facility ID | |
| Application ID | |

# Closure

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

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

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

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

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

☑ Description of remediation activities

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

Printed Name: Michael Gant Title: Environmental Coordinator

Signature: _____ Date: 10.7.2019

email: mgant@lucid-energy.com Telephone: 314 330 7876

**OCD Only**

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____

# Appendix C
# Waste Disposal Manifests

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047391 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKJE | Date: | 8/28/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | C138 | Well Ser. #: | 999908 |
| Manif. Date: | 8/28/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | KYS TRUCKING | Well #: | |
| Driver | JULIAN | Field: | |
| Truck # | 15 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046785 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402948 | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | LONE RANGER TRUCKING LL( | Well #: | |
| Driver | GUILLERMO | Field: | |
| Truck # | 103 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity Units |
|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Lab Analysis.* | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

Guillermo [illegible]

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046992 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402300 | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | LONE RANGER TRUCKING LL( | Well #: | |
| Driver | GUILERMO | Field: | |
| Truck # | 103 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity Units |
|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Lab Analysis.* | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

**THIS IS NOT AN INVOICE!**

Approved By: _____ Date: _____

8/27/2019 4:35:35PM

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer | LUCID ENERGY DELAWARE, L | Ticket # | 700-1046982 |
| Customer # | CRI3795 | Bid # | Walk-in Bid |
| Ordered by | GLEN BLAKE | Date | 8/27/2019 |
| AFE # | | Generator | LUCID ENERGY DELAWARE,I |
| PO # | | Generator # | |
| Manifest # | 402293 | Well Ser. # | 999908 |
| Manif. Date | 8/27/2019 | Well Name | RATTLE SNAKE SWD PUMP S |
| Hauler | LONE RANGER TRUCKING LL( | Well # | |
| Driver | OSCAR | Field | |
| Truck # | 107 | Field # | |
| Card # | | Rig | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity Units |
|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Lab Analysis.* | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature**

_____

**R360 Representative Signature**

_____

**Customer Approval**

**THIS IS NOT AN INVOICE!**

Approved By: _____ Date: _____

I6UJ9A019Q7D

8/27/2019 4:25:14PM

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046783 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402949 | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | LONE RANGER TRUCKING LL( | Well #: | |
| Driver | OSCAR | Field: | |
| Truck # | 107 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity Units |
|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Lab Analysis* | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** _____

**R360 Representative Signature** _____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046958 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | NA | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | KYS TRUCKING | Well #: | |
| Driver | JULIAN | Field: | |
| Truck # | 15 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

**Permian Basin**

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046977 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLE BLAKE | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402946 | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | RJO TRUCKING LLC | Well #: | |
| Driver | RAUL | Field: | |
| Truck # | 04 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

# THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046784 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402945 | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | RJO TRUCKING LLC | Well #: | |
| Driver | RAUL | Field: | |
| Truck # | 04 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047255 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BALKE | Date: | 8/28/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | NA | Well Ser. #: | 999908 |
| Manif. Date: | 8/28/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | KYS TRUCKING | Well #: | |
| Driver | JUNIOR | Field: | |
| Truck # | 15 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

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_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID E GY DELAWARE, L | Ticket #: | 700-1046779 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLA | Date: | 8/27/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | C138 | Well Ser. #: | 999908 |
| Manif. Date: | 8/27/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | KYS TRUCKING | Well #: | |
| Driver | JULIAN | Field: | |
| Truck # | 15 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046431 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BAKE | Date: | 8/26/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402943 | Well Ser. #: | 999908 |
| Manif. Date: | 8/26/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | RJO TRUCKING LLC | Well #: | |
| Driver | RAUL | Field: | |
| Truck # | 4 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

**Permian Basin**

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1046434 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/26/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | 402944 | Well Ser. #: | 999908 |
| Manif. Date: | 8/26/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | KYS TRUCKING | Well #: | |
| Driver | JULIAN | Field: | |
| Truck # | 15 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY I WARE, L | Ticket #: | 700-1047250 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/28/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | NA | Well Ser. #: | 999908 |
| Manif. Date: | 8/28/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | RJO TRUCKING LLC | Well #: | |
| Driver | RAUL | Field: | |
| Truck # | 04 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047715 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/29/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | NA | Well Ser. #: | 999908 |
| Manif. Date: | 8/29/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | KYS TRUCKING | Well #: | |
| Driver | JULIAN | Field: | |
| Truck # | 15 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047393 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/28/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | NA | Well Ser. #: | 999908 |
| Manif. Date: | 8/28/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | LONE RANGER TRUCKING LL( | Well #: | |
| Driver | GUILLERMO | Field: | |
| Truck # | 103 | Field #: | |
| Card #: | | Rig: | NON-DRILLING |
| Job Ref #: | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity | Units |
|---|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 | yards |

| | Cell | pH | Cl | Cond | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Analysis | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

Driver/ Agent Signature

R360 Representative Signature

Customer Approval

**THIS IS NOT AN INVOICE!**

Approved By: _____ Date: _____

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8/28/2019 2:23:20PM

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047252 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/28/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | NA | Well Ser. #: | 999908 |
| Manif. Date: | 8/28/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | LONE RANGER TRUCKING LL( | Well #: | |
| Driver | EUILLERMO | Field: | |
| Truck # | 103 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity Units |
|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Analysis: | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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__ MSDS Information __ RCRA Hazardous Waste Analysis __ Process Knowledge __ Other (Provide description above)

**Driver/ Agent Signature**

_____

**R360 Representative Signature**

_____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

8/28/2019 10:39:43AM

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R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047729 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/29/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | C138 | Well Ser. #: | 999908 |
| Manif. Date: | 8/29/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | RJO TRUCKING LLC | Well #: | |
| Driver | RAUL | Field: | |
| Truck # | 04 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

**Facility: CRI**

| Product / Service | Quantity Units |
|---|---|
| **Contaminated Soil (RCRA Exempt)** | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ***Lab Analysis:*** | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt wast

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_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature** **R360 Representative Signature**

_____ _____

**Customer Approval**

## THIS IS NOT AN INVOICE!

Approved By: _____ Date: _____

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

| | | | |
|---|---|---|---|
| Customer: | LUCID ENERGY DELAWARE, L | Ticket #: | 700-1047717 |
| Customer #: | CRI3795 | Bid #: | Walk-in Bid |
| Ordered by: | GLEN BLAKE | Date: | 8/29/2019 |
| AFE #: | | Generator: | LUCID ENERGY DELAWARE,I |
| PO #: | | Generator #: | |
| Manifest #: | C138 | Well Ser. #: | 999908 |
| Manif. Date: | 8/29/2019 | Well Name: | RATTLE SNAKE SWD PUMP S |
| Hauler: | LONE RANGER TRUCKING LL( | Well #: | |
| Driver | OSCAR | Field: | |
| Truck # | 107 | Field #: | |
| Card # | | Rig: | NON-DRILLING |
| Job Ref # | | County | LEA (NM) |

Facility: CRI

| Product / Service | Quantity Units |
|---|---|
| Contaminated Soil (RCRA Exempt) | 20.00 yards |

| | Cell | pH | Cl | Cond. | %Solids | TDS | PCI/GM | MR/HR | H2S | % Oil | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Lab Analysis. | 50/51 | 0.00 | 0.00 | 0.00 | 0 | | | | | | |

**Generator Certification Statement of Waste Status**

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

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_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

**Driver/ Agent Signature**

_____

**R360 Representative Signature**

_____

**Customer Approval**

**THIS IS NOT AN INVOICE!**

Approved By: _____ Date: _____

16UJ9A019RNR

8/29/2019 11:19:42AM

# Appendix D
# Photographs


Photo 1 - View of pumping equipment looking northwest.


Photo 2 - View of Site excavation

# Site Photographs

Photo 3 - View of excavated area looking southeast.

Photo 4 - View of backfilled excavation looking southeast. Deferral/equipment area in background.

Appendix E

# Soil Laboratory Analytical Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

August 21, 2019

Michael Gant

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Rattlesnake Pump OrderNo.: 1908854

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 5 sample(s) on 8/15/2019 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 **1908854**
Date Reported: **8/21/2019**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** HA-5-6"
**Project:** Rattlesnake Pump
**Collection Date:** 8/14/2019 11:00:00 AM
**Lab ID:** 1908854-001 **Matrix:** SOIL **Received Date:** 8/15/2019 8:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | 3800 | 150 | | mg/Kg | 50 | 8/19/2019 6:41:13 PM | 46834 |

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 | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** HA-C-12"
**Project:** Rattlesnake Pump
**Collection Date:** 8/14/2019 11:02:00 AM
**Lab ID:** 1908854-002 **Matrix:** SOIL
**Received Date:** 8/15/2019 8:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | 6800 | 300 | | mg/Kg | 100 | 8/20/2019 2:00:03 PM | 46894 |
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **JME** | |
| Diesel Range Organics (DRO) | ND | 9.3 | | mg/Kg | 1 | 8/17/2019 9:30:36 PM | 46852 |
| Motor Oil Range Organics (MRO) | ND | 46 | | mg/Kg | 1 | 8/17/2019 9:30:36 PM | 46852 |
| Surr: DNOP | 92.9 | 70-130 | | %Rec | 1 | 8/17/2019 9:30:36 PM | 46852 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 8/16/2019 6:15:09 PM | 46828 |
| Surr: BFB | 100 | 77.4-118 | | %Rec | 1 | 8/16/2019 6:15:09 PM | 46828 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 8/16/2019 6:15:09 PM | 46828 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 8/16/2019 6:15:09 PM | 46828 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 8/16/2019 6:15:09 PM | 46828 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 8/16/2019 6:15:09 PM | 46828 |
| Surr: 4-Bromofluorobenzene | 93.6 | 80-120 | | %Rec | 1 | 8/16/2019 6:15:09 PM | 46828 |

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 | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** HA-E-6"
**Project:** Rattlesnake Pump
**Collection Date:** 8/14/2019 11:10:00 AM
**Lab ID:** 1908854-003 **Matrix:** SOIL **Received Date:** 8/15/2019 8:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | 5500 | 300 | | mg/Kg | 100 | 8/19/2019 6:53:38 PM | 46834 |

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 | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** HA-N-6"
**Project:** Rattlesnake Pump
**Collection Date:** 8/14/2019 11:15:00 AM
**Lab ID:** 1908854-004 **Matrix:** SOIL **Received Date:** 8/15/2019 8:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | 5400 | 300 | | mg/Kg | 100 | 8/19/2019 7:30:52 PM | 46834 |

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 | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** HA-W-6"
**Project:** Rattlesnake Pump
**Collection Date:** 8/14/2019 11:20:00 AM
**Lab ID:** 1908854-005 **Matrix:** SOIL **Received Date:** 8/15/2019 8:30:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | 6500 | 300 | | mg/Kg | 100 | 8/19/2019 7:43:17 PM | 46834 |

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#: **1908854**

***21-Aug-19***

**Client:** Lucid Energy Delaware

**Project:** Rattlesnake Pump

Sample ID: **MB-46834** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **46834** RunNo: **62163**

Prep Date: **8/15/2019** Analysis Date: **8/16/2019** SeqNo: **2111451** Units: **mg/Kg**

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

Sample ID: **LCS-46834** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **46834** RunNo: **62163**

Prep Date: **8/15/2019** Analysis Date: **8/16/2019** SeqNo: **2111452** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 95.5 | 90 | 110 | | | |

Sample ID: **MB-46834** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **46834** RunNo: **62226**

Prep Date: **8/15/2019** Analysis Date: **8/16/2019** SeqNo: **2113641** Units: **mg/Kg**

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

Sample ID: **LCS-46834** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **46834** RunNo: **62226**

Prep Date: **8/15/2019** Analysis Date: **8/16/2019** SeqNo: **2113642** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 93.4 | 90 | 110 | | | |

Sample ID: **MB-46894** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**

Client ID: **PBS** Batch ID: **46894** RunNo: **62256**

Prep Date: **8/19/2019** Analysis Date: **8/19/2019** SeqNo: **2114836** Units: **mg/Kg**

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

Sample ID: **LCS-46894** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**

Client ID: **LCSS** Batch ID: **46894** RunNo: **62256**

Prep Date: **8/19/2019** Analysis Date: **8/19/2019** SeqNo: **2114837** Units: **mg/Kg**

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 95.6 | 90 | 110 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1908854**

***21-Aug-19***

**Client:** Lucid Energy Delaware

**Project:** Rattlesnake Pump

| Sample ID: **MB-46851** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **46851** | RunNo: **62213** |
| Prep Date: **8/16/2019** | Analysis Date: **8/17/2019** | SeqNo: **2112564** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 9.2 | | 10.00 | | 92.3 | 70 | 130 | | | |

| Sample ID: **MB-46852** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **46852** | RunNo: **62213** |
| Prep Date: **8/16/2019** | Analysis Date: **8/17/2019** | SeqNo: **2112565** 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 | 8.3 | | 10.00 | | 83.0 | 70 | 130 | | | |

| Sample ID: **LCS-46851** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **46851** | RunNo: **62213** |
| Prep Date: **8/16/2019** | Analysis Date: **8/17/2019** | SeqNo: **2112567** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 3.9 | | 5.000 | | 77.7 | 70 | 130 | | | |

| Sample ID: **LCS-46852** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **46852** | RunNo: **62213** |
| Prep Date: **8/16/2019** | Analysis Date: **8/17/2019** | SeqNo: **2112568** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 47 | 10 | 50.00 | 0 | 93.5 | 63.9 | 124 | | | |
| Surr: DNOP | 3.6 | | 5.000 | | 72.9 | 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#: **1908854**

***21-Aug-19***

**Client:** Lucid Energy Delaware

**Project:** Rattlesnake Pump

| Sample ID: **MB-46828** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **46828** | RunNo: **62171** |
| Prep Date: **8/15/2019** | Analysis Date: **8/16/2019** | SeqNo: **2112322** 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 | 77.4 | 118 | | | |

| Sample ID: **LCS-46828** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **46828** | RunNo: **62171** |
| Prep Date: **8/15/2019** | Analysis Date: **8/16/2019** | SeqNo: **2112323** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 25 | 5.0 | 25.00 | 0 | 99.9 | 80 | 120 | | | |
| Surr: BFB | 1200 | | 1000 | | 118 | 77.4 | 118 | | | S |

**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#: **1908854**

***21-Aug-19***

**Client:** Lucid Energy Delaware

**Project:** Rattlesnake Pump

| Sample ID: **MB-46828** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **46828** | RunNo: **62171** |
| Prep Date: **8/15/2019** | Analysis Date: **8/16/2019** | SeqNo: **2112357** 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 | 0.95 | | 1.000 | | 95.0 | 80 | 120 | | | |

| Sample ID: **LCS-46828** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **46828** | RunNo: **62171** |
| Prep Date: **8/15/2019** | Analysis Date: **8/16/2019** | SeqNo: **2112358** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.96 | 0.025 | 1.000 | 0 | 96.1 | 80 | 120 | | | |
| Toluene | 1.0 | 0.050 | 1.000 | 0 | 102 | 80 | 120 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 105 | 80 | 120 | | | |
| Xylenes, Total | 3.1 | 0.10 | 3.000 | 0 | 105 | 80 | 120 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 102 | 80 | 120 | | | |

| Sample ID: **1908854-002AMS** | SampType: **MS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **HA-C-12"** | Batch ID: **46828** | RunNo: **62171** |
| Prep Date: **8/15/2019** | Analysis Date: **8/16/2019** | SeqNo: **2112360** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.91 | 0.024 | 0.9718 | 0.004980 | 93.5 | 63.9 | 127 | | | |
| Toluene | 0.99 | 0.049 | 0.9718 | 0 | 101 | 69.9 | 131 | | | |
| Ethylbenzene | 1.0 | 0.049 | 0.9718 | 0 | 106 | 71 | 132 | | | |
| Xylenes, Total | 3.1 | 0.097 | 2.915 | 0 | 105 | 71.8 | 131 | | | |
| Surr: 4-Bromofluorobenzene | 0.98 | | 0.9718 | | 101 | 80 | 120 | | | |

| Sample ID: **1908854-002AMSD** | SampType: **MSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **HA-C-12"** | Batch ID: **46828** | RunNo: **62171** |
| Prep Date: **8/15/2019** | Analysis Date: **8/16/2019** | SeqNo: **2112361** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.89 | 0.025 | 0.9862 | 0.004980 | 89.4 | 63.9 | 127 | 3.00 | 20 | |
| Toluene | 0.97 | 0.049 | 0.9862 | 0 | 98.3 | 69.9 | 131 | 1.72 | 20 | |
| Ethylbenzene | 1.0 | 0.049 | 0.9862 | 0 | 102 | 71 | 132 | 2.38 | 20 | |
| Xylenes, Total | 3.0 | 0.099 | 2.959 | 0 | 102 | 71.8 | 131 | 1.45 | 20 | |
| Surr: 4-Bromofluorobenzene | 0.98 | | 0.9862 | | 99.6 | 80 | 120 | 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: www.hallenvironmental.com*

# Sample Log-In Check List

Client Name: **LUCID ENERGY DELAW** Work Order Number: **1908854** RcptNo: 1

Received By: Daniel H **8/15/2019 8:30:00 AM**

Completed By: **Erin Melendrez** **8/15/2019 10:27:22 AM**

Reviewed By: LA 8/15/19

## Chain of Custody

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

## Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (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: DAD 8/15/19

## 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 | 1.1 | Good | Yes | | | |
| 2 | 4.3 | Good | Yes | | | |
| 3 | 4.5 | Good | Yes | | | |

# Chain-of-Custody Record

Client: Lucid Energy Group

Mailing Address: on file

Phone #: 3143307876

email or Fax#: mgant@lucid-energy.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day
☐ Standard ☐ Rush

Project Name: Rattlesnake Pump

Project #:

Project Manager: Michael Gant

Sampler: MG

On Ice: ☑ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): Remarks (°C)

**HALL ENVIRONMENTAL ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

| Date | Time | Matrix | Sample Name | Container Type and # | Preservative Type | HEAL No. 1908854 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/14 | 1100 | S | HA.S.6" | 4oz Soil | ICE | -001 | | | | | | | X | | | |
| | 1102 | | HA.C.12" | | | -002 | X | X | | | | | X | | | |
| | 1110 | | HA.E.6" | | | -003 | | | | | | | X | | | |
| | 1115 | | HA.N.6" | | | -004 | | | | | | | X | | | |
| | 1120 | | HA.W.6" | | | -005 | | | | | | | X | | | |

| Date | Time | Relinquished by: | Received by: | Via: | Date | Time |
|---|---|---|---|---|---|---|
| 8/14 | 1400 | | | | 8/14/19 | 1400 |
| 8/14/19 | 1900 | | | Courier | 8/15/19 | 8:30 |

Remarks: 0.9+0.2+1.1°c, 4.1+0.2=4.3°F 4.3+0.2=4.5°c

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*

August 26, 2019

Michael Gant

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX:

RE: Rattlesnake SWD Pump Station OrderNo.: 1908B92

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/21/2019 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 **1908B92**
Date Reported: **8/26/2019**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** TP-3-1
**Project:** Rattlesnake SWD Pump Station
**Collection Date:** 8/16/2019 1:35:00 PM
**Lab ID:** 1908B92-001 **Matrix:** SOIL
**Received Date:** 8/21/2019 9:02:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | ND | 60 | | mg/Kg | 20 | 8/24/2019 5:24:53 AM | 47025 |

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 | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** TP-3-3
**Project:** Rattlesnake SWD Pump Station
**Collection Date:** 8/16/2019 2:15:00 PM
**Lab ID:** 1908B92-002 **Matrix:** SOIL
**Received Date:** 8/21/2019 9:02:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | ND | 60 | | mg/Kg | 20 | 8/24/2019 5:37:18 AM | 47025 |

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 | | |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** BG-1
**Project:** Rattlesnake SWD Pump Station
**Collection Date:** 8/16/2019 10:10:00 AM
**Lab ID:** 1908B92-003 **Matrix:** SOIL
**Received Date:** 8/21/2019 9:02:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CAS** | |
| Chloride | ND | 60 | | mg/Kg | 20 | 8/24/2019 5:49:43 AM | 47025 |

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#: **1908B92**

***26-Aug-19***

**Client:** Lucid Energy Delaware

**Project:** Rattlesnake SWD Pump Station

| Sample ID: **MB-47025** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **47025** | RunNo: **62388** |
| Prep Date: **8/23/2019** | Analysis Date: **8/24/2019** | SeqNo: **2121577** Units: **mg/Kg** |

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

| Sample ID: **LCS-47025** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **47025** | RunNo: **62388** |
| Prep Date: **8/23/2019** | Analysis Date: **8/24/2019** | SeqNo: **2121579** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 95.8 | 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 |

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: **LUCID ENERGY DELAW** Work Order Number: **1908B92** RcptNo: **1**

Received By: **Isaiah Ortiz** **8/21/2019 9:02:00 AM** I-OK

Completed By: **Erin Melendrez** **8/21/2019 9:42:07 AM** [illegible]

Reviewed By: [illegible] 08/21/19

## Chain of Custody

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

## Log In

| | | | |
|---|---|---|---|
| 3. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 4. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 5. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 6. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 7. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 8. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 9. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 10. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 11. Does paperwork match bottle labels? (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: DAD 8/21/19

## 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 | 2.7 | Good | Yes | | | |
| 2 | 2.3 | Good | Yes | | | |

# Chain-of-Custody Record

Client: Lucid

Mailing Address: on File

Phone #: (314) 330-7876

email or Fax#: Mgant@lucid-energy.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☑ Rush 3 day

Project Name: Rattlesnake SWD Pump Station

Project #: Rattlesnake SWD

Project Manager: Michael Gant

Sampler: Joshua Pigg [GHD]

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 2.8 -0.1 (CF) 2.7(°C)
2.4 -0.1 (CF) 2.3°C


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


| Date | Time | Matrix | Sample Name | Container Type and # | Preservative Type | HEAL No. 1908B92 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-16-19 | 1335 | S | TP-3-1 | 1 gal Sample bag | NA | -001 | | | | | | | X | | | |
| 8-16-19 | 1415 | S | TP-3-3 | 1 gal Sample bag | NA | -002 | | | | | | | X | | | |
| 8/16/19 | 1010 | S | BG-1 | | | -003 | | | | | | | X | | | |
| | | | mgn 8/21 | | | | | | | | | | | | | |

Analysis Request

Remarks:
EPA 300 chloride
As per Michael Gant. Added -003 to WO. mgn 8/21

| Date: | Time: | Relinquished by: | Received by: | Via: | Date | Time |
|---|---|---|---|---|---|---|
| 8-20-19 | 7:30 | | | | 8/20/19 | 0930 |
| 8/20/19 | 1900 | | Ian Corrie | | 8/21/19 | 0802 |

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*
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*Website: www.hallenvironmental.com*

September 05, 2019

Michael Gant

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX

RE: Rattlesnake SWD OrderNo.: 1908G59

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/28/2019 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 **1908G59**
Date Reported: **9/5/2019**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** TP-4-6'
**Project:** Rattlesnake SWD
**Collection Date:** 8/26/2019 10:45:00 AM
**Lab ID:** 1908G59-001 **Matrix:** SOIL **Received Date:** 8/28/2019 8:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CJS** |
| Chloride | ND | 60 | | mg/Kg | 20 | 9/4/2019 7:34:37 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 |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** TP-4-10'
**Project:** Rattlesnake SWD
**Collection Date:** 8/26/2019 11:00:00 AM
**Lab ID:** 1908G59-002 **Matrix:** SOIL **Received Date:** 8/28/2019 8:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CJS** |
| Chloride | ND | 60 | | mg/Kg | 20 | 9/4/2019 8:36:41 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 |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** TP-5-6'
**Project:** Rattlesnake SWD
**Collection Date:** 8/26/2019 11:35:00 AM
**Lab ID:** 1908G59-003 **Matrix:** SOIL **Received Date:** 8/28/2019 8:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CJS** |
| Chloride | ND | 60 | | mg/Kg | 20 | 9/4/2019 8:49:06 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 |

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Lucid Energy Delaware
**Client Sample ID:** TP-5-10'
**Project:** Rattlesnake SWD
**Collection Date:** 8/26/2019 11:55:00 AM
**Lab ID:** 1908G59-004 **Matrix:** SOIL **Received Date:** 8/28/2019 8:45:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed |
|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **CJS** |
| Chloride | ND | 60 | | mg/Kg | 20 | 9/4/2019 9:01:31 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#: **1908G59**
***05-Sep-19***

**Client:** Lucid Energy Delaware
**Project:** Rattlesnake SWD

| Sample ID: **MB-47268** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **47268** | RunNo: **62664** | | | | | | | |
| Prep Date: **9/4/2019** | Analysis Date: **9/4/2019** | SeqNo: **2133793** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | ND | 1.5 | | | | | | | | |

| Sample ID: **LCS-47268** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **47268** | RunNo: **62664** | | | | | | | |
| Prep Date: **9/4/2019** | Analysis Date: **9/4/2019** | SeqNo: **2133794** | Units: **mg/Kg** | | | | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Chloride | 15 | 1.5 | 15.00 | 0 | 101 | 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 |

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: LUCID ENERGY DELAW  Work Order Number: 1908G59  RcptNo: 1

Received By: Daniel M.  8/28/2019 8:45:00 AM
Completed By: **Michelle Garcia**  8/28/2019 2:26:50 PM  Michelle Garcia
Reviewed By: DAD 8/28/19

## Chain of Custody

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

## Log In

| | | | |
|---|---|---|---|
| 3. Was an attempt made to cool the samples? | Yes ☑ | No ☐ | NA ☐ |
| 4. Were all samples received at a temperature of >0° C to 6.0°C | Yes ☑ | No ☐ | NA ☐ |
| 5. Sample(s) in proper container(s)? | Yes ☑ | No ☐ | |
| 6. Sufficient sample volume for indicated test(s)? | Yes ☑ | No ☐ | |
| 7. Are samples (except VOA and ONG) properly preserved? | Yes ☑ | No ☐ | |
| 8. Was preservative added to bottles? | Yes ☐ | No ☑ | NA ☐ |
| 9. VOA vials have zero headspace? | Yes ☐ | No ☐ | No VOA Vials ☑ |
| 10. Were any sample containers received broken? | Yes ☐ | No ☑ | |
| 11. Does paperwork match bottle labels? (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 ☐ | |

JO 8/28/19

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

## Special Handling (if applicable)

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

Person Notified: _____ Date: _____
By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: _____
Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 3.7 | Good | Yes | | | |
| 2 | 4.0 | Good | Yes | | | |

# Chain-of-Custody Record

Client: Lucid

Mailing Address: on File

Phone #:

email or Fax#: Mgant@lucid-energy.com Jeff.walker@ghd.com

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day Turn
☑ Standard ☐ Rush

Project Name: Rattlesnake SWD

Project #: 11201757

Project Manager: Michael Gant, Jeffrey Walker

Sampler: Joshua Pigg

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.1-0.4-3.7°C / 1.4-0.4-4.0°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 Request ID | Container Type and # | Preservative Type | HEAL No. | BTEX + MTBE + TMB's (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / MRO) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | | Chloride 300 | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8-26-19 | 1045 | S | TP-4-6' | 4oz glass Jar | NA | 1908G59-001 | | | | | | | | | | | | | X | | | |
| | 1100 | | TP-4-10' | | | -002 | | | | | | | | | | | | | X | | | |
| | 1135 | | TP-5-6' | | | -003 | | | | | | | | | | | | | X | | | |
| | 1155 | | TP-5-10' | | | -004 | | | | | | | | | | | | | X | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 8-26-19 | 2000 | | | 8/27/19 | 0900 |
| 8/27/19 | 1900 | | Courier FedEx | 8/28/19 | 8:45 |

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*
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*Albuquerque, NM 87109*
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*Website: www.hallenvironmental.com*

September 19, 2019

Michael Gant

Lucid Energy Delaware
201 South 4th St.
Artesia, NM 88210
TEL: (575) 513-8988
FAX

RE: Rattlesnake SWD OrderNo.: 1909636

Dear Michael Gant:

Hall Environmental Analysis Laboratory received 5 sample(s) on 9/12/2019 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:** Lucid Energy Delaware
**Project:** Rattlesnake SWD
**Lab Order:** 1909636

**Lab ID:** 1909636-001 **Collection Date:** 9/9/2019 11:20:00 AM
**Client Sample ID:** SW-2-C **Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | 2500 | 150 | | mg/Kg | 50 | 9/19/2019 12:02:19 AM | 47517 |

**Lab ID:** 1909636-002 **Collection Date:** 9/9/2019 11:50:00 AM
**Client Sample ID:** SW-4-C **Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | 63 | 60 | | mg/Kg | 20 | 9/17/2019 1:21:05 PM | 47517 |

**Lab ID:** 1909636-003 **Collection Date:** 9/9/2019 12:25:00 PM
**Client Sample ID:** SW-5-C **Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | 830 | 60 | | mg/Kg | 20 | 9/17/2019 1:33:29 PM | 47517 |

**Lab ID:** 1909636-004 **Collection Date:** 9/10/2019 12:00:00 PM
**Client Sample ID:** SW-1-C **Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | ND | 60 | | mg/Kg | 20 | 9/17/2019 1:45:54 PM | 47517 |

**Lab ID:** 1909636-005 **Collection Date:** 9/10/2019 12:30:00 PM
**Client Sample ID:** SW-3-C **Matrix:** SOIL

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch ID |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | 1900 | 60 | | mg/Kg | 20 | 9/17/2019 1:58:18 PM | 47517 |

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 |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1909636**

***19-Sep-19***

**Client:** Lucid Energy Delaware

**Project:** Rattlesnake SWD

| Sample ID: **MB-47517** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **47517** | RunNo: **62982** |
| Prep Date: **9/17/2019** | Analysis Date: **9/17/2019** | SeqNo: **2148372** Units: **mg/Kg** |

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

| Sample ID: **LCS-47517** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **47517** | RunNo: **62982** |
| Prep Date: **9/17/2019** | Analysis Date: **9/17/2019** | SeqNo: **2148373** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 95.9 | 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 |

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: **LUCID ENERGY DELAW** Work Order Number: **1909636** RcptNo: **1**

Received By: **Erin Melendrez** **9/12/2019 9:00:00 AM**

Completed By: **Yazmine Garduno** **9/12/2019 2:23:51 PM**

Reviewed By: D M 9/12/19

## Chain of Custody

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

## Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (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: YG 9/12/19

## 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 | 3.8 | Good | | | | |

# Chain-of-Custody Record

Client: Lucid

Mailing Address: on File

Phone #: 314 330 7876

email or Fax#: MGant@lucid-energy.com

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day Turn
☑ Standard ☐ Rush

Project Name: Rattlesnake SWD

Project #:

Project Manager: Michael Gant

Sampler: Joshua Pigg
On Ice: ☑ Yes ☐ No
# of Coolers: 1
Cooler Temp(including CF): 4.2-0.4(CF)= 3.8 (°C)

| Date | Time | Matrix | Sample Name | Container Type and # | Preservative Type | HEAL No. 1909034 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9-9-19 | 1120 | S | SW-2-C | 4oz Soil Jar | ICE | -001 | | | | | | | X | | | |
| | 1150 | | SW-4-C | | | -002 | | | | | | | X | | | |
| | 1225 | | SW-5-C | | | -003 | | | | | | | X | | | |
| 9/10/19 | 1200 | | SW-1-C | | | -004 | | | | | | | X | | | |
| | 1230 | | SW-3-C | | | -005 | | | | | | | X | | | |

| Date | Time | Relinquished by: | Received by: | Via: | Date | Time |
|---|---|---|---|---|---|---|
| 9-11-19 | 1112 | | | | 9/11/19 | 1112 |
| 9/11/19 | 1900 | | | Fedex courier | 9/12/19 | 0900 |

Remarks:

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

Analysis Request

# about GHD

GHD is one of the world's leading professional services companies operating in the global markets of water, energy and resources, environment, property and buildings, and transportation. We provide engineering, environmental, and construction services to private and public sector clients.

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