

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	nAPP2209030874
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	Clearwater SWD, LLC	OGRID	371101
Contact Name	Larry Gandy	Contact Telephone	(575) 399-5721
Contact email	Lgandy@gandycorporation.com	Incident # (assigned by OCD)	nAPP2209030874
Contact mailing address	P.O. Box 1476, Lovington, NM 88260		

### Location of Release Source

Latitude 32.713806 Longitude -103.438859  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	South Vacuum #274 SWD	Site Type	SWD
Date Release Discovered	6/23/20	API# (if applicable)	30-025-37122

Unit Letter	Section	Township	Range	County
P	27	18S	35E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 285 bbls	Volume Recovered (bbls) 100 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

A valve broke on the makeup water tank in 2018 and the tank overflowed.

Form C-141

State of New Mexico  
Oil Conservation Division

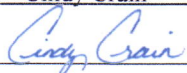
Page 2

Incident ID	nAPP2209030874
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?  There are no records of the historical release on the OCD website.	

**Initial Response**

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Cindy Crain</u>	Title: <u>Agent for Clearwater SWD, LLC</u>
Signature: <u></u>	Date: <u>3/31/22</u>
email: <u>cindy.crain@gmail.com</u>	Telephone: <u>(575) 441-7244</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	



Form C-141

Page 3

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2209030874
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?	<u>50</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

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

Form C-141

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	nAPP2209030874
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: Cindy Crain Title: Agent for Clearwater SWD, LLCSignature:  Date: 3/31/22email: cindy.crain@gmail.com Telephone: (575) 441-7244**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



Form C-141

Page 5

State of New Mexico  
Oil Conservation Division

Incident ID	nAPP2209030874
District RP	
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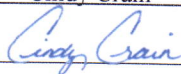
**Remediation Plan****Remediation Plan Checklist:** *Each of the following items must be included in the plan.*

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

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

- ☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- ☐ Extents of contamination must be fully delineated.
- ☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Cindy Crain Title: Agent for Clearwater SWD, LLC  
Signature:  Date: 3/31/22  
email: cindy.crain@gmail.com Telephone: (575) 441-7244

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

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

# Remediation Report and Closure Request

July 7, 2022

## South Vacuum #274 SWD Produced Water Release Incident # nAPP2209030874

### Prepared For:

Clearwater SWD, LLC  
P.O. Box 1476  
Lovington, New Mexico 88260

### Prepared By:

Crain Environmental  
2925 East 17<sup>th</sup> Street  
Odessa, Texas 79761



Cynthia K. Crain, P.G.

## Table of Contents

<b>1.0</b>	<b>INTRODUCTION.....</b>	<b>3</b>
<b>2.0</b>	<b>BACKGROUND.....</b>	<b>3</b>
<b>3.0</b>	<b>NMOCD CLOSURE CRITERIA.....</b>	<b>3</b>
3.1	Groundwater Evaluation .....	4
3.2	Surface Features and Other Development .....	4
3.3	Wetlands, Floodplain, and Karst Geology .....	5
3.4	Closure Criteria Currently Assumed Applicable to the Site .....	5
<b>4.0</b>	<b>SITE ASSESSMENT/CHARACTERIZATION RESULTS.....</b>	<b>6</b>
4.1	Site Map .....	6
4.2	Depth to Groundwater.....	6
4.3	Wellhead Protection Area .....	6
4.4	Distance to Nearest Significant Watercourse .....	6
4.5	Summary of Soil Remediation Activities .....	6
4.6	Laboratory Analytical Data Quality Assurance/Quality Control Results .....	7
<b>5.0</b>	<b>CLOSURE REQUEST.....</b>	<b>7</b>
<b>6.0</b>	<b>DISTRIBUTION.....</b>	<b>7</b>

## TABLE

Table 1: Summary of Soil Sample Analytical Results

## FIGURES

Figure 1 – Site Location Map  
 Figure 2 – Soil Sample Analytical Results Map  
 Figure 3 – Wellhead Protection Area Map  
 Figure 4 – FEMA Floodplain Map  
 Figure 5 – Karst Potential Map

## APPENDICES

Appendix A – New Mexico State Land Office Memorandum  
 Appendix B - New Mexico Oil Conservation Division Correspondence  
 Appendix C - Release Notification and Corrective Action Form (NMOCD Form C-141)  
 Appendix D – Photographic Documentation  
 Appendix E – Laboratory Analytical Reports



## 1.0 Introduction

Crain Environmental (CE), on behalf of Clearwater SWD, LLC (Clearwater), has prepared this *Remediation Report and Closure Request* for the produced water release at South Vacuum #274 SWD (Site), located approximately 16 miles west of Hobbs, in Lea County, New Mexico. The global positioning system (GPS) coordinates for the Release Site are 32.713806, -103.438859. The property surface rights are owned by the State of New Mexico. The location of the Release Site is depicted on Figure 1.

## 2.0 Background

In 2018 (prior to Clearwater ownership of the Site), a valve broke on the makeup water tank, causing a release of approximately 285 barrels (bbls) of produced water. The area was secured, the valve repaired, and approximately 100 bbls of fluid were recovered by vacuum truck.

On June 23, 2020, Clearwater received a Memorandum from the New Mexico State Land Office (SLO) that identified a "Potential Spill" at the Site. A copy of the SLO Memorandum is included in Appendix A.

On March 14, 2022, CE conducted an initial investigation at the Site and observed an affected area measuring approximately 90' by 80' to the east and southeast of the water tank. Produced water surface impacts at the Site cover approximately 7,200 square feet. The release point and the surface extent of the produced water release are depicted on Figure 2.

The initial New Mexico Oil Conservation Division (OCD) Form C-141 (Release Notification Report) was submitted with a *Site Characterization Report and Remediation Workplan* (Workplan) dated March 31, 2022. The Workplan was denied by the OCD on May 4, 2022, and a revised Remediation Plan was requested by June 6, 2022. On May 24, 2022, Clearwater requested a 30-day extension for submittal of a Closure Report. The extension, with a new due date of July 8, 2022, was approved by the OCD on May 25, 2022. A copy of the OCD email communication is provided in Appendix B.

This *Remediation Report and Closure Request* provides documentation of remediation activities conducted since March 31, 2022, and includes a copy of the initial/final OCD Form C-141 in Appendix C.

## 3.0 NMOCD Closure Criteria

Cleanup standards for produced water spills are provided in 19.15.29 NMAC. The cleanup standards (described in the rule as "Closure Criteria") are based primarily on depth to groundwater but are also based on other criteria. Three different Closure Criteria are provided in the rule. The most stringent apply to sites where groundwater is found within 50 feet of the ground surface or if the release occurred within one of the following areas:

- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
- Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
- Within 1,000 feet of any fresh water well or spring.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- Within 300 feet of a wetland.

- Within the area overlying a subsurface mine.
- Within an unstable area such as a karst formation.
- Within a 100-year floodplain.

CE reviewed available information to determine the Closure Criteria for the Site. The findings of this evaluation are summarized below.

### 3.1 Groundwater Evaluation

A review of the New Mexico Office of the State Engineer (NMOSE) records indicated there are three water wells located within 0.5 mile of the Site, and initial depth to groundwater measurements were provided for each well. Depth to groundwater in the three wells surrounding the Site ranged from 40 to 60 feet below ground surface (bgs). All wells except one were drilled prior to 1974. All wells located within 0.5 mile from the Site are listed in the table below. Figure 3 provides a 0.5 mile radius circle around the Site and shows the location of the three water wells within that radius. Based on the water well data available in NMOSE records, it is estimated that depth to groundwater at the Site is approximately 50 feet bgs.

#### Nearby Water Wells

Well ID	Location from Release Site	Year Installed	Use	Depth to Water (feet bgs)
L 06868	Approx. 2,600 feet to east	1971	N/A	57
L 06869	Approx. 1,800 feet to northeast	1971	N/A	60
L 07129	Approx. 1,600 feet to south	1973	N/A	40

### 3.2 Surface Features and Other Development

CE reviewed recent aerial photographs, topographic maps, the NMOSE Point of Discharge (POD) GIS website, and information available from the Lea County, New Mexico Central Appraisal District website. As shown on Figure 3, the Site is **not** located:

- Within 300 feet of any continuously flowing watercourse or any other significant watercourse.
  - No continuously flowing watercourses (rivers, streams, arroyos, etc.) are apparent within 300 feet of the Site in the topographic map (Figure 3). Figure 3 does show a stream feature located approximately 400 feet to the north of the Site; however, this feature is ephemeral and not a continuously flowing watercourse.
- Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary highwater mark).
  - The topographic map (Figure 3) indicates there is not a lakebed, sinkhole or playa lake located within 200 feet of the Site.
- Within 300 feet from an occupied permanent residence, school, hospital, institution or church.
  - The Site Location Map (Figure 1) and information available from the Lea County, New Mexico Central Appraisal District do not show or list any permanent residence, school, hospital, institution or church located within 300 feet of the Site.
- Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
  - No wells or springs located within 500 feet of the Site appear in any of the NMOSE records reviewed by CE.
- Within 1,000 feet of any fresh water well or spring.

- No fresh water wells or springs located within 1,000 feet of the Site appear in any of the records reviewed by CE.
- Within incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
  - Based on the property and other records review by CE, the Site is not located in incorporated municipal boundaries or within a defined municipal fresh water well field.
- Within the area overlying a subsurface mine
  - Based on the property and other records reviewed by CE, the Site is not located within an area overlying a subsurface mine.

### 3.3 Wetlands, Floodplain, and Karst Geology

A review of the United States Fish and Wildlife Service (USFWS) wetlands map indicated the Site is not located within 300 feet of a wetland. The New Mexico Bureau of Land Management (BLM) karst potential map indicates the Site is located within a “low karst potential” area. Finally, review of the Federal Emergency Management Act (FEMA) floodplain map indicates the release at the Site is not mapped but is assumed to be located outside of a 100-year floodplain. Figures 4 and 5 depict the FEMA floodplain information and the karst potential data, respectively.

### 3.4 Closure Criteria Currently Assumed Applicable to the Site

The Closure Criteria applicable to the Site will be based on the estimated depth to groundwater at the Release Site, which dictates the most stringent regulatory guidelines typically associated with groundwater depths of less than fifty (50) feet bgs. A summary of the Closure Criteria is provided in the table below and in Table 1.

**NMOCD Closure Criteria**

Constituent of Concern		Closure Criteria Based on Depth to Groundwater (mg/kg)		
		≤ 50 feet bgs	51 feet to 100 feet bgs	> 100 feet bgs
Chloride (EPA 300)		600	10,000	20,000
TPH (EPA 8015M)	GRO + DRO + MRO	100	2,500	2,500
	GRO + DRO	NA	1,000	1,000
Total BTEX (EPA 8021 or 8260)		50	50	50
Benzene (EPA 8021 or 8260)		10	10	10

Notes: NA = not applicable  
 bgs = below ground surface  
 mg/kg = milligrams per kilogram  
 GRO = gasoline range organics  
 DRO = diesel range organics  
 MRO = motor oil range organics  
 TPH = total petroleum hydrocarbons  
 BTEX = benzene, toluene, ethylbenzene, and total xylenes  
 Green highlighted cells denote applicable Closure Criteria.



## 4.0 Site Assessment/Characterization Results

As per 19.15.29.11 NMAC, a Site Characterization Report will have the components described in Sections 4.1 through 4.5 of this document.

### 4.1 Site Map

As required by 19.15.29.11 NMAC, a scaled diagram showing significant Site infrastructure, sample point locations, and known subsurface features such as utilities is provided as Figure 2.

### 4.2 Depth to Groundwater

As discussed in Section 3.1, the exact depth to groundwater beneath the Site is unknown. During investigation activities, a maximum depth of 4.5 feet bgs was reached, at which groundwater was not encountered. A review of the NMOSE water well records indicates that depth to groundwater within 0.5 mile of the Site ranges from 40 to 60 feet bgs.

### 4.3 Wellhead Protection Area

The 0.5-mile wellhead protection area is shown on Figure 3. No known water wells are located within 0.5 mile of the Site. There were no other water sources, springs, or other sources of fresh water extraction identified within 0.5-mile of the Site.

### 4.4 Distance to Nearest Significant Watercourse

The horizontal distance to the nearest significant watercourse as defined in Subsection P of 19.15.17.7 NMAC is greater than 0.5-mile from the Site.

### 4.5 Summary of Soil Remediation Activities

On March 14, 2022, test holes (S-1 through S-4) were excavated at four locations along the release path to collect soil samples. Depths were determined by visual evidence of removal of chloride impacted soil and ranged from one to four feet bgs. Soil samples were collected at depths of 2', 3', and 4' bgs from two of the test holes (S-1 and S-2), and at a depth of one-foot bgs at two other locations (S-3 and S-4).

Soil samples were placed in clean glass sample jars, properly labeled, immediately placed on ice and hand delivered to Cardinal Laboratories (Cardinal) in Hobbs, New Mexico under proper chain-of-custody control. All samples were analyzed for total petroleum hydrocarbons (TPH) by Environmental Protection Agency (EPA) SW-846 Method 8015 Modified, for benzene, toluene, ethylbenzene and xylenes (collectively referred to as BTEX) by EPA SW-846 Method 8021B, and for chlorides by EPA Method 300.

Table 1 provides a summary of the laboratory results, and sample locations with laboratory concentrations are provided on Figure 2. Photographs of the release area are provided in Appendix D. The laboratory report and chain-of-custody documentation is provided in Appendix E.

Referring to Table 1, concentrations of TPH and BTEX were reported below the test method detection limits and/or Closure Criteria in all samples. Chloride concentrations were reported below the Closure Criteria at a depth of 4' bgs at test hole S-1, and at a depth of 3' bgs at test hole S-2. Samples collected at a depth of 1' bgs from test hole S-3 and S-4 reported chloride concentrations above the Closure Criteria.

As chloride concentrations were reported above the Closure Criteria at sample points S-3 (5,760 mg/kg) and S-4 (1,090 mg/kg), additional excavation was conducted during April and May 2022, until all confirmation samples reported TPH, BTEX, and chloride concentrations below their respective Closure

Criteria. Pursuant to 19.15.29.12(D) NMAC, confirmation samples consisted of five-point composite samples, and no wet or discolored areas were observed.

Table 1 provides a summary of all laboratory results, and sample locations with laboratory concentrations are provided on Figure 2. Photographs of the release area are provided in Appendix D. The laboratory reports and chain-of-custody documentation are provided in Appendix E.

#### **4.6 Laboratory Analytical Data Quality Assurance/Quality Control Results**

Data reported in the laboratory reports generated by Cardinal, in Hobbs, New Mexico, was reviewed to ensure that reported analytical results met data quality objectives. It was determined by quality control data associated with analytical results that reported concentrations of target analytes are defensible and that measurement data reliability is within the expected limits of sampling and analytical error. All analytical results are usable for characterization of soil at the Site. The laboratory analytical results are provided as Appendix E.

#### **5.0 Closure Request**

As all final TPH, benzene, total BTEX, and chloride concentrations in samples collected from the base and sidewalls of the excavation were reported below the OCD Closure Criteria, Clearwater respectfully requests that the South Vacuum #274 SWD site (Incident #nAPP2209030874) be closed by the OCD.

Approximately 600 cubic yards (yd) of excavated soil is being transported under manifest to an OCD approved disposal facility. Upon OCD approval, the excavation will be backfilled to grade with non-impacted similar material. Pursuant to 19.15.29.13 NMAC, the impacted surface areas will be restored to pre-release conditions. Surface grading will be performed to near original conditions and contoured to prevent erosion and ponding, promote stability, and preserve storm water flow patterns.

#### **6.0 Distribution**

Copy 1: Mike Bratcher  
New Mexico Energy, Minerals, and Natural Resources Department  
Oil Conservation Division, District 2  
811 S. First Street  
Artesia, New Mexico 88210

Copy 2: Larry Gandy  
Gandy Corporation  
P.O. Box 1476  
Lovington, New Mexico 88260

Copy 3: Ryan Mann  
New Mexico State Land Office  
914 N. Linam Street  
Hobbs, New Mexico 88240

**TABLE**



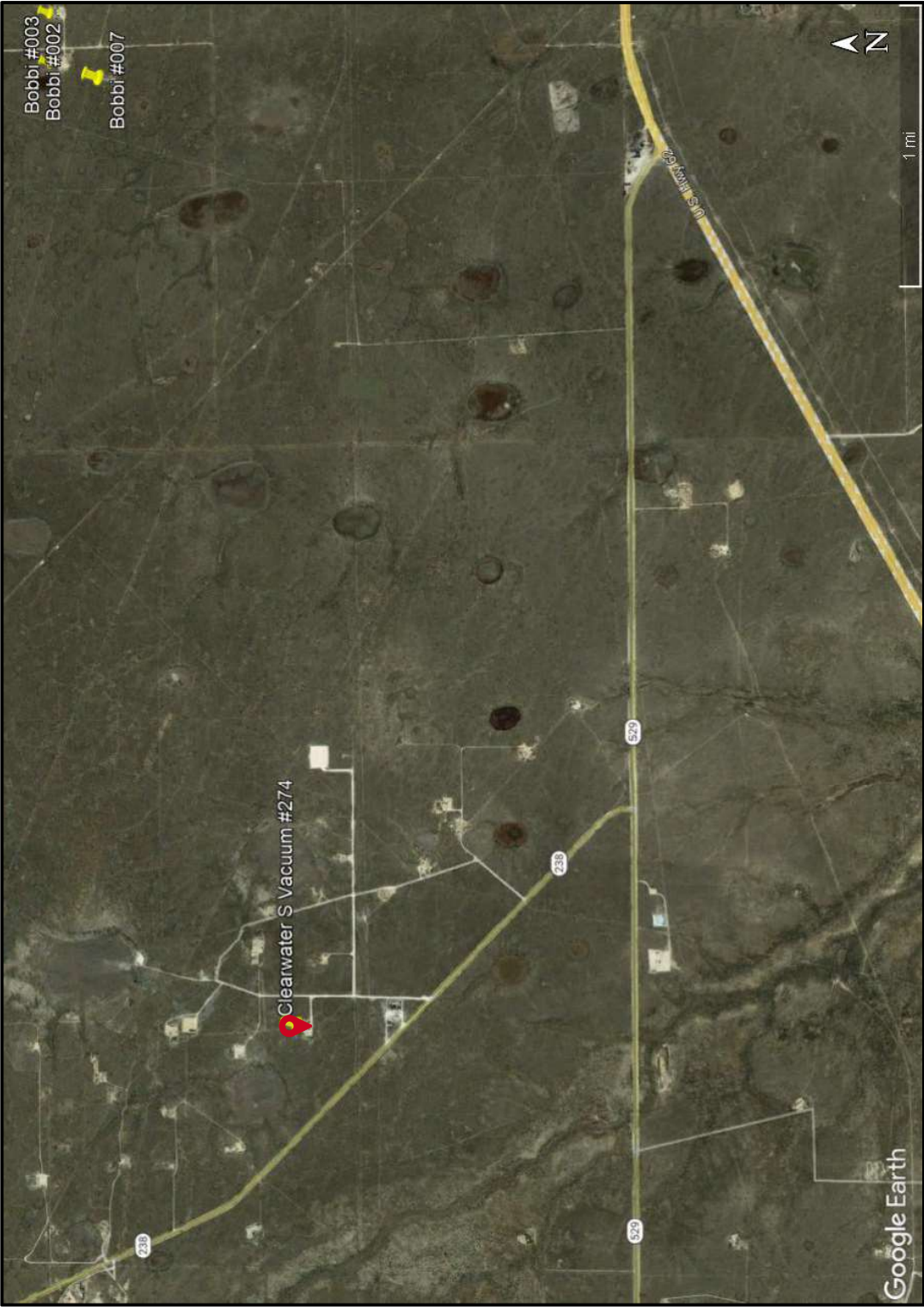
TABLE 1  
SUMMARY OF SOIL SAMPLE ANALYTICAL RESULTS  
CLEARWATER SWD, LLC  
SOUTH VACUUM #274 SWD 30-025-31722

Sample ID	Sample Date	Sample Depth (feet bgs)	Soil Status	TPH (GRO)	TPH (DRO)	TPH (MRO)	Total TPH	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	Chloride
NMOCD Closure Criteria													
S-1	03/14/22	2	Excavated	<10.0	12.0	<10.0	100	10	-	-	-	50	600
			Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,600
	03/14/22	3	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	768
			In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	144
S-2	03/14/22	2	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	688
			In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	224
	03/14/22	4	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	192
S-3	03/14/22	1	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	5,760
S-3	05/27/22	2	Excavated	-	-	-	-	-	-	-	-	-	1,300
S-3	05/27/22	3	Excavated	-	-	-	-	-	-	-	-	-	1,650
S-3	05/27/22	4	Excavated	-	-	-	-	-	-	-	-	-	1,420
S-3	06/24/22	4.5	In Situ	-	-	-	-	-	-	-	-	-	448
S-4	03/14/22	1	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,090
S-4	05/27/22	2	Excavated	-	-	-	-	-	-	-	-	-	2,960
S-4	05/27/22	3	Excavated	-	-	-	-	-	-	-	-	-	2,560
S-4	05/27/22	4	In Situ	-	-	-	-	-	-	-	-	-	256
S-6	05/27/22	1	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	0.076	<0.050	<0.150	<0.300	224
S-8	05/27/22	1.5	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	0.197	0.068	<0.150	0.417	768
S-8	06/24/22	2	In Situ	-	-	-	-	-	-	-	-	-	480
S-9	06/24/22	2	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	336
S-10	05/27/22	1.5	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	0.073	<0.050	<0.150	<0.300	960
S-10	06/24/22	2	In Situ	-	-	-	-	-	-	-	-	-	384
S-11	06/24/22	2	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	320
S-12	06/24/22	2	In Situ	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	320
S-13	05/27/22	2	Excavated	<10.0	<10.0	<10.0	<10.0	<0.050	0.112	<0.050	<0.150	<0.300	1,620
S-13	/202/242	2	In Situ	-	-	-	-	-	-	-	-	-	352

## Notes:

1. GRO: Gasoline Range Organics
2. DRO: Diesel Range Organics
3. MRO: Motor Oil Range Organics
4. -: No NMOCD Closure Criteria established.
5. Bold and highlighting indicates the COC was detected above the NMOCD Closure Criteria.
6. < indicates the COC was below the appropriate laboratory method/sample detection limit
7. Yellow highlighting indicates the COC concentration exceeds the NMOCD Closure Criteria.
8. Green highlighting indicates soil has been excavated and disposed.

## **FIGURES**



LEGEND:

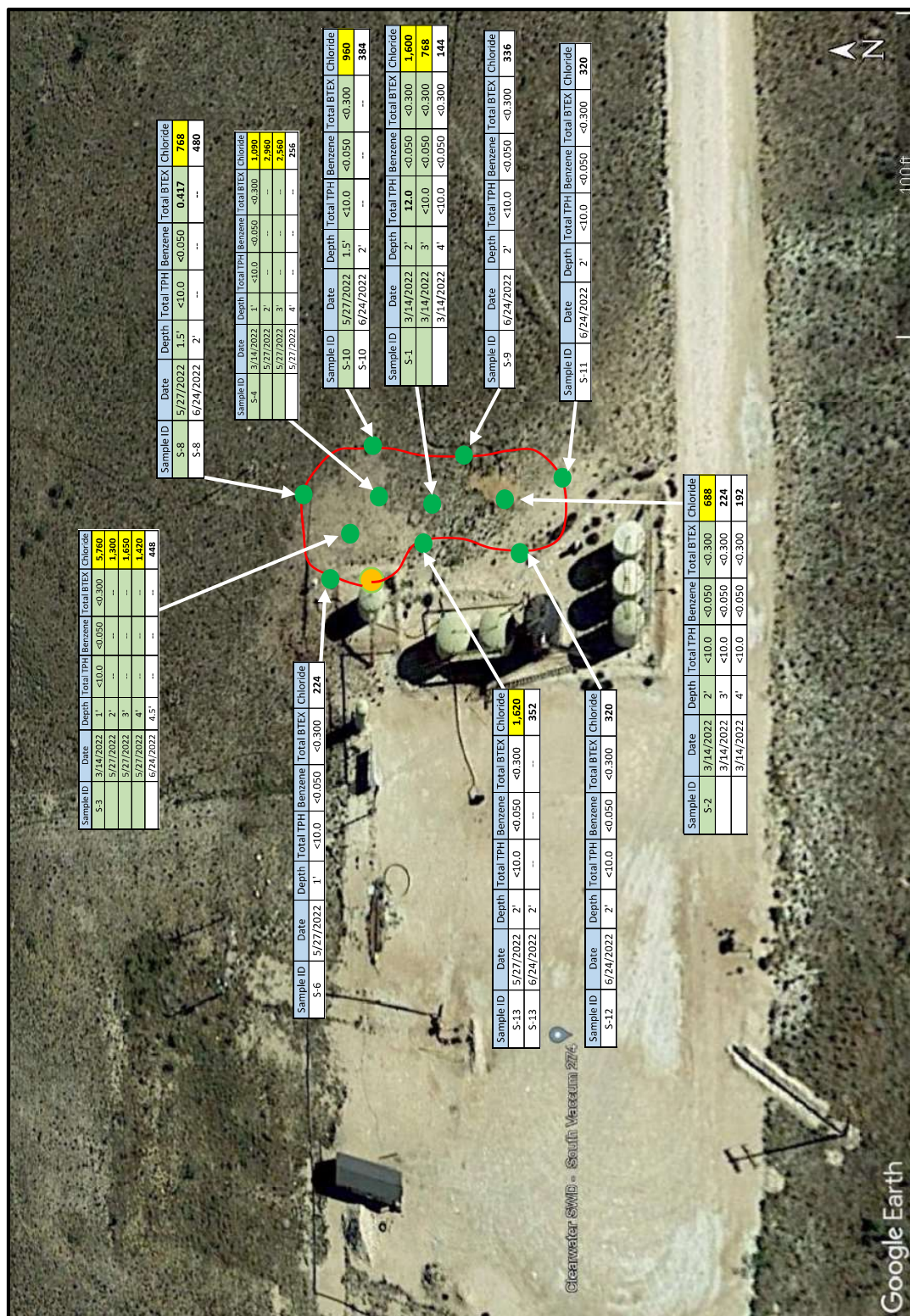
 Site Location

Figure 1  
Site Location Map  
Clearwater SWD, LLC  
South Vacuum #274 SWD  
Lea County, New Mexico

Drafted by: CC   Checked by: CC
Draft: March 23, 2022
GPS: 32.7138066° -103.438859°
Base Map from Google Earth







**LEGEND:**

- Sample Location With Date and Concentrations (mg/kg)
- Excavation Boundary
- Release Point
- Highlight indicates concentrations exceed NMOCD Closure
- Highlight indicates soil was excavated and disposed

**Figure 2**

Soil Sample Analytical Results Map

Clearwater SWD, LLC

South Vacuum #274 SWD

Lea County, New Mexico

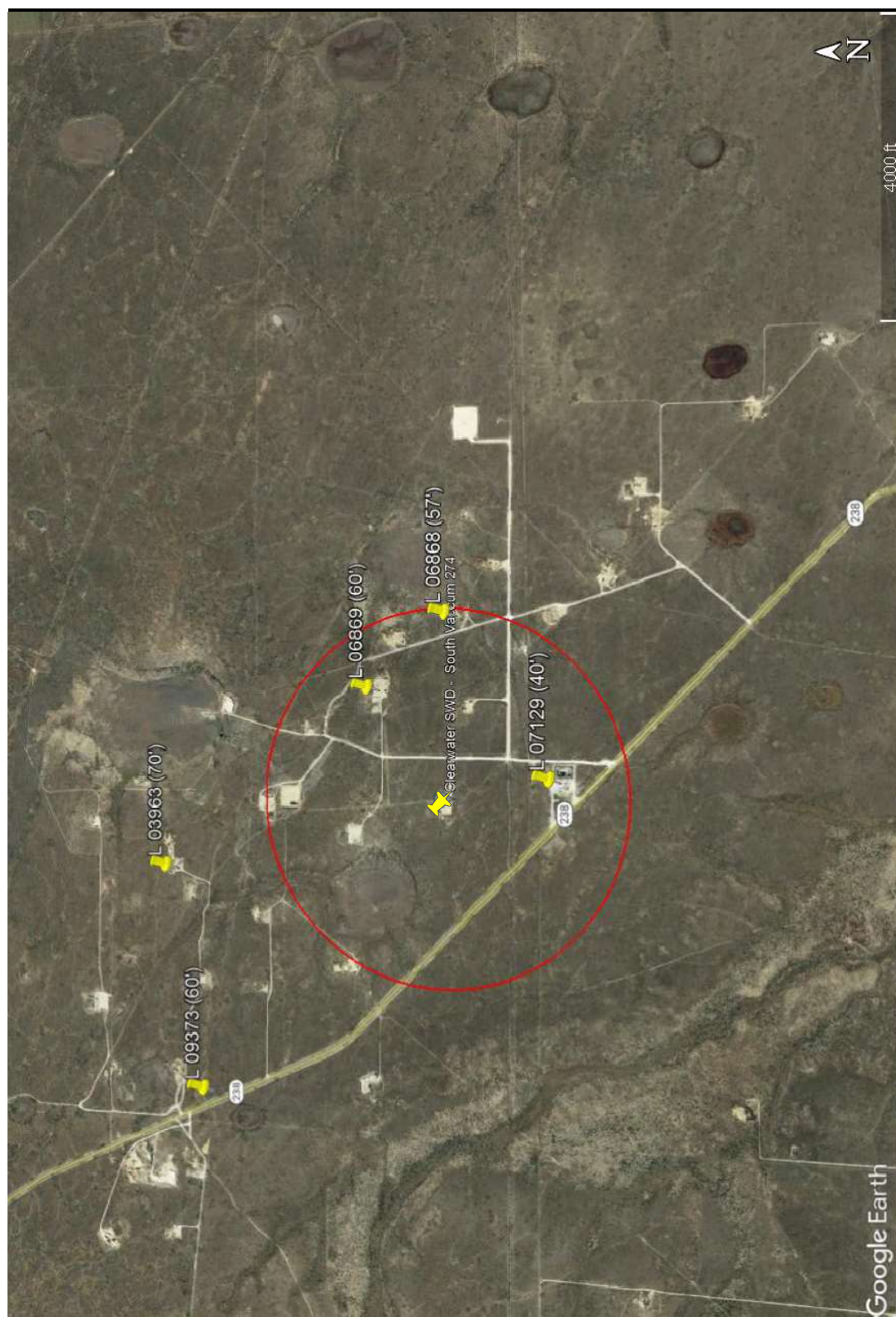
Drafted by: CC | Checked by: CC

Draft: June 30, 2022

GPS: 32.713806° -103.438859°

Base Map from Google Earth





**Figure 3**  
Wellhead Protection Area Map  
Clearwater SWD, LLC  
South Vacuum #274 SWD  
Lea County, New Mexico

LEGEND:

- Site and Water Well Locations With Depth to Groundwater  
(feet below ground surface)



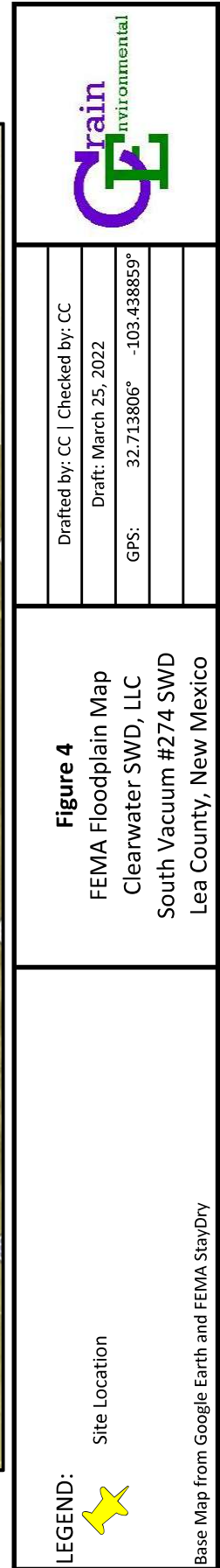
0.5 Mile Radius  
Base Map from Google Earth

Drafted by: CC | Checked by: CC

Draft: March 25, 2022

GPS:	32.713806°	-103.438859°
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LEGEND:



Site Location

Low Karst Potential

Medium Karst Potential

High Karst Potential

Base Map from Google Earth and WHYMAP

Figure 5

Karst Potential Map  
Clearwater SWD, LLC  
South Vacuum #274 SWD  
Lea County, New Mexico

Drafted by: CC | Checked by: CC

Draft: March 25, 2022

GPS: 32.713806° -103.438859°





## **Appendix A: New Mexico State Land Office Memorandum**



**OPEN  
FOR  
BUSINESS**

Agriculture  
Land Stewardship  
Renewable Energy  
Outdoor Recreation  
Oil, Gas and Minerals  
Business Development

## MEMORANDUM

6/23/2020

Author: Maria Pruett

Subject: South Vacuum #274 SWD 30-025-31722 Potential Spill

Site: South Vacuum #274	Location: P-27-18S-35E	SLO Estate: Full
API: 30-025-40519	Lease: SW-0392-0	SLO Spill ID: 2020-Lea-3636
Operator: Clearwater SWD	Lessee: Clearwater SWD LLC	Risk Assessment Score: 20

### Site Imagery





**OPEN  
FOR  
BUSINESS**

Agriculture  
Land Stewardship  
Renewable Energy  
Outdoor Recreation  
Oil, Gas and Minerals  
Business Development

**Summary:** During a routine inspection, SLO staff found what may be a spill from the tank battery of SWD 30-025-37122 in NAIP 2018 imagery. The site has been operated by Clearwater SWD since 2/6/2016.

Depth to groundwater is less than 50'. The spill is approximately 950' southeast of a playa. Spill path looks to be approximately 975 sqft. The Tertiary Ogallala Formation is at the surface which is characterized by shallow pockets of groundwater and multiple playas and surface waters present. Soils contain gravelly loam with high runoff potential.

## **Appendix B: New Mexico Oil Conservation Division Correspondence**



Cindy Crain <cindy.crain@gmail.com>

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## RE: South Vacuum #274 nAPP2209030874 Remediation Plan Denial and Request for Extension

4 messages

---

**cindy.crain@gmail.com** <cindy.crain@gmail.com>  
To: "Nobui, Jennifer, EMNRD" <Jennifer.Nobui@state.nm.us>  
Cc: "Billings, Bradford, EMNRD" <Bradford.Billings@state.nm.us>

Tue, May 24, 2022 at 11:09 PM

Jennifer,

Due to unavailability of equipment and operators, excavation of impacted soil has not yet been fully completed at the Clearwater South Vacuum #274. As a result, confirmation samples have not yet been collected.

As the due date for the Closure Report is June 6, 2022, Clearwater respectfully requests a 30-day extension to complete excavation, collect and analyze confirmation soil samples, and prepare a Closure Report.

Please let me know if you need additional information, and if you approve the extension request.

Thank you,  
Cindy Crain

Crain Environmental  
(575) 441-7244

---

**From:** Cindy Crain <cindy.crain@gmail.com>  
**Sent:** Thursday, May 5, 2022 9:02 AM  
**To:** Nobui, Jennifer, EMNRD <Jennifer.Nobui@state.nm.us>  
**Cc:** Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>  
**Subject:** Re: [EXTERNAL] Re: South Vacuum #274 nAPP2209030874 Remediation Plan Denial

Thank you, Jennifer!

I don't have any questions, but I will get back with you if we need to request an extension.



Sincerely,

Cindy Crain, P.G.

(575) 441-7244

[cindy.crain@gmail.com](mailto:cindy.crain@gmail.com)

On May 5, 2022, at 8:31 AM, Nobui, Jennifer, EMNRD <[Jennifer.Nobui@state.nm.us](mailto:Jennifer.Nobui@state.nm.us)> wrote:

Hi Cindy

I can't access that email once its been sent out, but below is the content.

Remediation Plan Denied. Vertical and horizontal delineation needs to be completed prior to remediation. Please resubmit a revised Remediation Plan by June 6, 2022.

Basically, we had to deny the Remediation Plan because you were not delineated. You can either complete delineation and resubmit a revised Remediation Plan or you can proceed with remediation and cover delineation during your remediation activities and include the delineation data in the Closure Report.

Thanks,

Jennifer Nobui

---

**From:** Cindy Crain <[cindy.crain@gmail.com](mailto:cindy.crain@gmail.com)>

**Sent:** Thursday, May 5, 2022 8:18 AM

**To:** Nobui, Jennifer, EMNRD <[Jennifer.Nobui@state.nm.us](mailto:Jennifer.Nobui@state.nm.us)>

**Subject:** [EXTERNAL] Re: South Vacuum #274 nAPP2209030874 Remediation Plan Denial

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

Hi Jennifer-

Could you please send me a copy of the denial email.

Thanks!

Cindy Crain, P.G.  
(575) 441-7244  
[cindy.crain@gmail.com](mailto:cindy.crain@gmail.com)

On May 4, 2022, at 5:36 PM, Nobui, Jennifer, EMNRD <[Jennifer.Nobui@state.nm.us](mailto:Jennifer.Nobui@state.nm.us)> wrote:

Hi Cindy

I wanted to see if you had any questions regarding the denial on the South Vacuum #274 site. While we had to deny the Remediation Plan, they are options to complete delineation during remediation. Borings S-3 and S-4 are not vertically delineated and you are not horizontally delineated from all 4 boring locations. Let me know if you want to discuss further.

Thanks,

**Jennifer Nobui, PG** • Environmental Specialist A

Environmental Bureau

EMNRD - Oil Conservation Division

5200 Oakland Avenue N.E Suite 100 | Albuquerque, NM 87113

505.470-3407 | [Jennifer.Nobui@state.nm.us](mailto:Jennifer.Nobui@state.nm.us)

<http://www.emnrd.state.nm.us/OCD/>

---

**Nobui, Jennifer, EMNRD** <[Jennifer.Nobui@state.nm.us](mailto:Jennifer.Nobui@state.nm.us)>  
To: "cindy.crain@gmail.com" <[cindy.crain@gmail.com](mailto:cindy.crain@gmail.com)>  
Cc: "Billings, Bradford, EMNRD" <[Bradford.Billings@state.nm.us](mailto:Bradford.Billings@state.nm.us)>

Wed, May 25, 2022 at 9:16 AM

Hi Cindy

Your request for a 30-day extension to July 8, 2022 has been approved to submit a Closure Report. Please include this e-mail correspondence in the remediation and/or closure report.

Thanks,

Jennifer Nobui

[Quoted text hidden]

**Cindy Crain** <cindy.crain@gmail.com>

Wed, May 25, 2022 at 10:08 AM

To: "Nobui, Jennifer, EMNRD" <Jennifer.Nobui@state.nm.us>

Cc: "Billings, Bradford, EMNRD" <Bradford.Billings@state.nm.us>, smcfarlin@gandycorporation.com

Thank you, Jennifer!

Cindy Crain, P.G.  
(575) 441-7244  
[cindy.crain@gmail.com](mailto:cindy.crain@gmail.com)

[Quoted text hidden]

---

**smcfarlin@gandycorporation.com** <smcfarlin@gandycorporation.com>

Wed, May 25, 2022 at 10:34 AM

To: Cindy Crain <cindy.crain@gmail.com>

Thank you!

Shonna

[Quoted text hidden]



This email has been checked for viruses by AVG antivirus software.

[www.avg.com](http://www.avg.com)

**Appendix C: Release Notification and Corrective Action Form  
(NMOCD Form C-141)**

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	nAPP2209030874
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	Clearwater SWD, LLC	OGRID	371101
Contact Name	Larry Gandy	Contact Telephone	(575) 399-5721
Contact email	Lgandy@gandycorporation.com	Incident # (assigned by OCD)	nAPP2209030874
Contact mailing address	P.O. Box 1476, Lovington, NM 88260		

### Location of Release Source

Latitude 32.713806

(NAD 83 in decimal degrees to 5 decimal places)

Longitude -103.438859

Site Name	South Vacuum #274 SWD	Site Type	SWD
Date Release Discovered	6/23/20	API# (if applicable)	30-025-37122

Unit Letter	Section	Township	Range	County
P	27	18S	35E	Lea

Surface Owner: ☒ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 285 bbls	Volume Recovered (bbls) 100 bbls
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

A valve broke on the makeup water tank in 2018 and the tank overflowed.

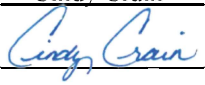


Incident ID	nAPP2209030874
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?  The release volume was greater than 25 barrels.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?  There are no records of the historical release on the OCD website.	

## Initial Response

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

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:  	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <u>Cindy Crain</u>	Title: <u>Agent for Clearwater SWD, LLC</u>
Signature: <u></u>	Date: <u>3/31/22</u>
email: <u>cindy.crain@gmail.com</u>	Telephone: <u>(575) 441-7244</u>
<b><u>OCD Only</u></b>  Received by: _____ Date: _____	

Incident ID	nAPP2209030874
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?	<u>50</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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

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

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

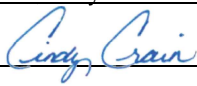
If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods,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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	nAPP2209030874
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: Cindy Crain Title: Agent for Clearwater SWD, LLC  
Signature:  Date: 3/31/22  
email: cindy.crain@gmail.com Telephone: (575) 441-7244

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	nAPP2209030874
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: Cindy Crain Title: Agent for Clearwater SWD, LLCSignature:  Date: 3/31/22email: cindy.crain@gmail.com Telephone: (575) 441-7244**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

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

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

Incident ID	nAPP2209030874
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: Cindy Crain Title: Agent for Clearwater SWD, LLC


Signature:  Date: 7/7/22 >

email: cindy.crain@gmail.com Telephone: (575) 441-7244

### 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: 07/19/2022

Printed Name: Jennifer Nobui Title: Environmental Specialist A



## **Appendix D: Photographic Documentation**

Appendix D  
Clearwater SWD, LLC  
South Vacuum #274 SWD



Well Sign (3/14/22).



View to S of release area (3/14/22).



View to W of release area (3/14/22).



View of equipment at release area (3.14.22).



View to SE of initial investigation (3/14/22).



View to S of initial investigation (3/14/22).



View to N of W side of excavation (5/27/22).



View to N of E side of excavation (5/27/22).

## **Appendix E: Laboratory Analytical Reports**



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

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March 18, 2022

CINDY CRAIN

CRAIN ENVIROMENTAL

2925 E. 17TH ST.

ODESSA, TX 79761

RE: SOUTH VACUUM #274

Enclosed are the results of analyses for samples received by the laboratory on 03/14/22 14:05.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 1 ( 2' ) (H221008-01)**

BTX 8021B			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8	
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7	
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5	
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3	
Total BTX	<0.300	0.300	03/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 104 % 69.9-140

Chloride, SM4500Cl-B			mg/kg		Analyzed By: GM				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1600	16.0	03/16/2022	ND	432	108	400	3.77	

TPH 8015M			mg/kg		Analyzed By: MS				
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88.8	200	2.65	
DRO >C10-C28*	12.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 92.4 % 66.9-136

Surrogate: 1-Chlorooctadecane 93.3 % 59.5-142

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 1 ( 3' ) (H221008-02)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEx	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	768	16.0	03/16/2022	ND	432	108	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88,8	200	2,65	
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 83.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 83.9 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 1 ( 4' ) (H221008-03)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEX	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	144	16.0	03/16/2022	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88.8	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 99.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 98.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 2 ( 2' ) (H221008-04)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEX	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 103 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	688	16.0	03/16/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88.8	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 94.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 93.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 2 ( 3' ) (H221008-05)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEx	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	03/16/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88.8	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 95.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 95.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 2 ( 4' ) (H221008-06)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEx	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 103 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	192	16.0	03/16/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88,8	200	2,65	
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 88.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.8 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 3 ( 1' ) (H221008-07)**

BTEx 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEx	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	5760	16.0	03/16/2022	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	178	88.8	200	2.65	
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	186	92.8	200	5.77	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 93.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 95.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 03/14/2022  
Reported: 03/18/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 03/14/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 4 ( 1' ) (H221008-08)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	03/15/2022	ND	1.82	91.2	2.00	12.8		
Toluene*	<0.050	0.050	03/15/2022	ND	1.83	91.3	2.00	13.7		
Ethylbenzene*	<0.050	0.050	03/15/2022	ND	1.78	88.8	2.00	13.5		
Total Xylenes*	<0.150	0.150	03/15/2022	ND	5.53	92.2	6.00	13.3		
Total BTEX	<0.300	0.300	03/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 103 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1090	16.0	03/16/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	03/17/2022	ND	238	119	200	11.2	QM-07
DRO >C10-C28*	<10.0	10.0	03/17/2022	ND	243	121	200	17.2	
EXT DRO >C28-C36	<10.0	10.0	03/17/2022	ND					

Surrogate: 1-Chlorooctane 67.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 67.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QR-04	The RPD for the BS/BSD was outside of historical limits.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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

---

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

Company Name: <u>Cain Environmental</u>		P.O. #:		ANALYSIS REQUEST		
Project Manager: <u>Lindy Cain</u>		Company: <u>Landy Corp.</u>				
Address: <u>2925 E. 1<sup>st</sup> St.</u>		Attn: <u>Larry Grady</u>				
City: <u>Edessa</u>		Address: <u>P.O. Box 1476</u>				
Phone #: <u>(575) 441-7244</u>		City: <u>Edessa</u>				
Fax #: <u>-</u>		State: <u>NM</u>				
Project #: <u>-</u>		Zip: <u>88240</u>				
Project Name: <u>South Vacuum # 274</u>		Phone #: <u>(575) 394-5721</u>				
Project Location: <u>Lea Co. NM</u>		Fax #: <u>(575) 396-0797</u>				
Sampler Name: <u>Lindy Cain</u>						
FOR LAB USE ONLY						
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX	PRESERV	SAMPLING
				GROUNDWATER		
				WASTEWATER		
				SOIL		
				OIL		
				SLUDGE		
				OTHER :		
				ACID/BASE:		
				ICE / COOL		
				OTHER :		
				DATE	TIME	
H221008	1 5-1 (2')	C 1	1	3/14/22	1100	TPH 8015 M
	2 5-1 (3')	C 1	1		1110	BTEX
	3 5-1 (4')	C 1	1		1120	Chlorides
	4 5-2 (2')	C 1	1		1130	
	5 5-2 (3')	C 1	1		1140	
	6 5-2 (4')	C 1	1		1150	
	7 5-3 (1')	C 1	1		1200	
	8 5-4 (1')	C 1	1		1205	
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Relinquished By: <u>[Signature]</u>		Date: <u>3/14/22</u>		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Add'l Phone #:		
Relinquished By: <u>[Signature]</u>		Date: <u>1/4/05</u>		All Results are emailed. Please provide Email address:		
Time: <u>1405</u>		Received By: <u>[Signature]</u>		REMARKS:		
Time: <u>1405</u>		Time: <u>1405</u>				
Delivered By: (Circle One)		Observed Temp. °C <u>13.3</u>		Sample Condition		
Sampler - UPS - Bus - Other:		Corrected Temp. °C <u>12.8</u>		Cool <input type="checkbox"/> Intact <input checked="" type="checkbox"/>		
FORM-006 R 3.2 10/07/21				No <input type="checkbox"/> Yes <input checked="" type="checkbox"/>		
				CHECKED BY: (Initials) <u>YG</u>		
				Turnaround Time: <u>Standard</u>		
				Thermometer ID #113 <u>Rush</u>		
				Correction Factor -0.5°C <input type="checkbox"/>		
				Bacteria (only) <input type="checkbox"/>		
				Cool <input type="checkbox"/> Intact <input type="checkbox"/>		
				Yes <input type="checkbox"/> No <input type="checkbox"/>		
				Sample Condition		
				Observed Temp. °C		
				Corrected Temp. °C		

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com



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

---

June 03, 2022

CINDY CRAIN

CRAIN ENVIROMENTAL

2925 E. 17TH ST.

ODESSA, TX 79761

RE: SOUTH VACUUM #274

Enclosed are the results of analyses for samples received by the laboratory on 05/27/22 12:12.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 05/27/2022  
Reported: 06/03/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 05/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S - 3 ( 2' ) (H222273-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1300	16.0	05/31/2022	ND	416	104	400	0.00	

**Sample ID: S - 3 ( 3' ) (H222273-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1650	16.0	05/31/2022	ND	416	104	400	0.00	

**Sample ID: S - 3 ( 4' ) (H222273-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1420	16.0	05/31/2022	ND	400	100	400	3.92	QM-07

**Sample ID: S - 4 ( 2' ) (H222273-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2960	16.0	05/31/2022	ND	400	100	400	3.92	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 05/27/2022  
Reported: 06/03/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 05/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S - 4 ( 3' ) (H222273-05)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	2560	16.0	05/31/2022	ND	400	100	400	3.92	

**Sample ID: S - 4 ( 4' ) (H222273-06)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	05/31/2022	ND	400	100	400	3.92		

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 05/27/2022  
Reported: 06/03/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 05/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S - 6 ( 1' ) (H222273-07)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/01/2022	ND	1.96	98.2	2.00	1.68		
Toluene*	0.076	0.050	06/01/2022	ND	1.98	99.2	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.93	96.6	2.00	2.01		
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.76	96.1	6.00	2.79		
Total BTEx	<0.300	0.300	06/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	05/31/2022	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/31/2022	ND	181	90.6	200	6.72	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	187	93.7	200	4.65	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 70.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 72.0 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 05/27/2022  
Reported: 06/03/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 05/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S - 8 ( 1.5' ) (H222273-08)**

BTEX 8021B		mg/kg	Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/01/2022	ND	1.96	98.2	2.00	1.68	
Toluene*	0.197	0.050	06/01/2022	ND	1.98	99.2	2.00	2.08	
Ethylbenzene*	0.068	0.050	06/01/2022	ND	1.93	96.6	2.00	2.01	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.76	96.1	6.00	2.79	
Total BTEX	0.417	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PI) 105 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	768	16.0	05/31/2022	ND	400	100	400	3.92	
TPH 8015M		mg/kg		Analyzed By: MS					

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2022	ND	181	90.6	200	6.72	
DRO >C10-C28*	<10.0	10.0	06/01/2022	ND	187	93.7	200	4.65	
EXT DRO >C28-C36	<10.0	10.0	06/01/2022	ND					

Surrogate: 1-Chlorooctane 74.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 73.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 05/27/2022  
Reported: 06/03/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 05/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S - 10 ( 1.5' ) (H222273-09)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/01/2022	ND	1.96	98.2	2.00	1.68		
Toluene*	0.073	0.050	06/01/2022	ND	1.98	99.2	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.93	96.6	2.00	2.01		
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.76	96.1	6.00	2.79		
Total BTEx	<0.300	0.300	06/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 101 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	960	16.0	05/31/2022	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2022	ND	181	90.6	200	6.72	
DRO >C10-C28*	<10.0	10.0	06/01/2022	ND	187	93.7	200	4.65	
EXT DRO >C28-C36	<10.0	10.0	06/01/2022	ND					

Surrogate: 1-Chlorooctane 80.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 80.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 05/27/2022  
Reported: 06/03/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 05/27/2022  
Sampling Type: Soil  
Sampling Condition: Cool & Intact  
Sample Received By: Tamara Oldaker

**Sample ID: S - 13 ( 2' ) (H222273-10)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/01/2022	ND	1.96	98.2	2.00	1.68		
Toluene*	0.112	0.050	06/01/2022	ND	1.98	99.2	2.00	2.08		
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.93	96.6	2.00	2.01		
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.76	96.1	6.00	2.79		
Total BTX	<0.300	0.300	06/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 102 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1620	16.0	05/31/2022	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/01/2022	ND	181	90.6	200	6.72	
DRO >C10-C28*	<10.0	10.0	06/01/2022	ND	187	93.7	200	4.65	
EXT DRO >C28-C36	<10.0	10.0	06/01/2022	ND					

Surrogate: 1-Chlorooctane 93.4 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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

---

Celey D. Keene, Lab Director/Quality Manager

1

## ANALYSIS REQUEST

**Company Name:** Chain Environmental

**Project Manager:** Cindy Grain

**Address:** 2235 E. 17th St.

**City:** Mesa

**Phone #:** (575) 441-7244

**Project #:** -

**Project Name:** South Vacuum #274

**Project Location:** Lea Co, NM

**Sampler Name:** Cindy Grain

**State:** TX

**Zip:** 79761

**Project Owner:** Clearwater

**City:** Lovington

**State:** NM

**Phone #:** (575) 396-0797

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**Relinquished By:** [Signature]

**Relinquished Date:** 5/27/02

**Relinquished By:** [Signature]

**Relinquished Date:** 5/27/02

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	TPH	BTEX	Chlorides
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H222273	5-3 (2)	C 1		X	X	X	X	X	X	5/27/02	1110			
	5-3 (3)	C 1		X	X	X	X	X	X		1115			
	5-3 (4)	C 1		X	X	X	X	X	X		1130			
	5-4 (2)	C 1		X	X	X	X	X	X		1040			
	5-4 (3)	C 1		X	X	X	X	X	X		1043			
	5-4 (4)	C 1		X	X	X	X	X	X		1045			
	5-4 (1)	C 1		X	X	X	X	X	X		0930			
	5-8 (1.5)	C 1		X	X	X	X	X	X		0940			
	5-10 (1.5)	C 1		X	X	X	X	X	X		0950			
	5-13 (2)	C 1		X	X	X	X	X	X		1000			

**Verbal Result:** ☐ Yes ☐ No ☒ Add'l Phone #:

**Remarks:** Cindy Grain; Lgandy@gmail.com; Lgandy@lgandyscorporation.com

**Turnaround Time:** Standard ☒ Rush ☐

**Thermometer ID #113** ☐ Bacteria (only) ☐

**Correction Factor -0.5°C** ☐ Cool Intact ☐ Observed Temp. °C

**Checked By:** [Signature]



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

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June 28, 2022

CINDY CRAIN

CRAIN ENVIROMENTAL

2925 E. 17TH ST.

ODESSA, TX 79761

RE: SOUTH VACUUM #274

Enclosed are the results of analyses for samples received by the laboratory on 06/24/22 13:00.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 06/24/2022  
Reported: 06/28/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 06/24/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 3 ( 4.5' ) (H222718-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	06/27/2022	ND	416	104	400	0.00	

**Sample ID: S - 8 ( 2' ) (H222718-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	480	16.0	06/27/2022	ND	416	104	400	0.00	

**Sample ID: S - 9 ( 2' ) (H222718-03)**

BTX 8021B		mg/kg		Analyzed By: JH					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	06/27/2022	ND	2.23	112	2.00	0.894	
Toluene*	<0.050	0.050	06/27/2022	ND	2.25	112	2.00	4.10	
Ethylbenzene*	<0.050	0.050	06/27/2022	ND	2.28	114	2.00	6.27	
Total Xylenes*	<0.150	0.150	06/27/2022	ND	6.90	115	6.00	6.24	
Total BTX	<0.300	0.300	06/27/2022	ND					

Surrogate: 4-Bromofluorobenzene (PIE) 98.8 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	336	16.0	06/27/2022	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 06/24/2022  
Reported: 06/28/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 06/24/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 9 ( 2' ) (H222718-03)**

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2022	ND	239	119	200	5.49	
DRO >C10-C28*	<10.0	10.0	06/27/2022	ND	220	110	200	0.0615	
EXT DRO >C28-C36	<10.0	10.0	06/27/2022	ND					
Surrogate: 1-Chlorooctane	90.5 %	43-149							
Surrogate: 1-Chlorooctadecane	109 %	42.5-161							

**Sample ID: S - 10 ( 2' ) (H222718-04)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	384	16.0	06/27/2022	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 06/24/2022  
Reported: 06/28/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 06/24/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 11 ( 2' ) (H222718-05)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2022	ND	2.19	110	2.00	0.730		
Toluene*	<0.050	0.050	06/27/2022	ND	2.19	110	2.00	0.460		
Ethylbenzene*	<0.050	0.050	06/27/2022	ND	2.20	110	2.00	0.463		
Total Xylenes*	<0.150	0.150	06/27/2022	ND	6.67	111	6.00	0.587		
Total BTEX	<0.300	0.300	06/27/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 103 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	06/27/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2022	ND	239	119	200	5.49	
DRO >C10-C28*	<10.0	10.0	06/27/2022	ND	220	110	200	0.0615	
EXT DRO >C28-C36	<10.0	10.0	06/27/2022	ND					

Surrogate: 1-Chlorooctane 74.2 % 43-149

Surrogate: 1-Chlorooctadecane 85.5 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 06/24/2022  
Reported: 06/28/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 06/24/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 12 ( 2' ) (H222718-06)**

BTEX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	06/27/2022	ND	2.19	110	2.00	0.730		
Toluene*	<0.050	0.050	06/27/2022	ND	2.19	110	2.00	0.460		
Ethylbenzene*	<0.050	0.050	06/27/2022	ND	2.20	110	2.00	0.463		
Total Xylenes*	<0.150	0.150	06/27/2022	ND	6.67	111	6.00	0.587		
Total BTEX	<0.300	0.300	06/27/2022	ND						

Surrogate: 4-Bromofluorobenzene (PI) 104 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	320	16.0	06/27/2022	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	06/27/2022	ND	239	119	200	5.49	
DRO >C10-C28*	<10.0	10.0	06/27/2022	ND	220	110	200	0.0615	
EXT DRO >C28-C36	<10.0	10.0	06/27/2022	ND					

Surrogate: 1-Chlorooctane 85.7 % 43-149

Surrogate: 1-Chlorooctadecane 102 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

CRAIN ENVIROMENTAL  
CINDY CRAIN  
2925 E. 17TH ST.  
ODESSA TX, 79761  
Fax To:

Received: 06/24/2022  
Reported: 06/28/2022  
Project Name: SOUTH VACUUM #274  
Project Number: NONE GIVEN  
Project Location: CLEAR WATER - LEA CO NM

Sampling Date: 06/24/2022  
Sampling Type: Soil  
Sampling Condition: \*\* (See Notes)  
Sample Received By: Tamara Oldaker

**Sample ID: S - 13 ( 2' ) (H222718-07)****Chloride, SM4500Cl-B****mg/kg****Analyzed By: AC**

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>352</b>	16.0	06/27/2022	ND	416	104	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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

---

Celey D. Keene, Lab Director/Quality Manager



**BILL TO**

## ANALYSIS REQUEST

Company: *Grady Corp.*  
Attn: *Larry Grady*  
Address: *P.O. Box 1474*  
City: *Livingston*  
State: *NM* Zip: *88240*  
Phone #: *(575) 349-5721*  
Fax #: *(575) 346-0747*

TPH 8015M  
BTEX  
Chlorides

Relinquished By:	Date:	Received By:
<i>[Signature]</i>	6/24/22	<i>[Signature]</i>

☐ Yes    ☐ No    Add'l Phone #: \_\_\_\_\_  
 If you are emailed, Please provide Email address: train@gmail.com; 1990

Verbal Result: ☐ Yes ☐ No Add'l Phone #:  
All Results are emailed. Please provide Email address:  
*Cindy.Crain@gmail.com; lgraydy@graydy.com*  
REMARKS:

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

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS  
  
Action 123793

CONDITIONS

Operator: CLEARWATER SWD, LLC P.O. Box 1476 Lovington, NM 88260	OGRID: 371101
	Action Number: 123793
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jnobui	Closure Report Approved. Going forward, please delineate laterally to the accepted criteria, in this case, lateral delineation to 600 mg/kg or less of chloride (S-8, S-10, & S-13).	7/19/2022