

Incident ID	nAPP2120041782
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: Connor Walker Title: Sr. Engineer  
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
email: cwalker@mewbourne.com Telephone: (806)202-5281

**OCD Only**

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

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

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

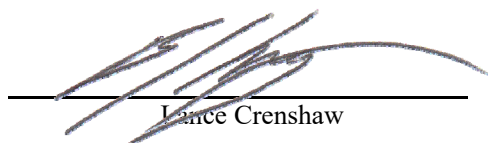
## Remediation Summary, Variance & Deferral Request (Revised)

### Mewbourne Oil Company Red Hills West 21 Fed Com #2H SWD Line

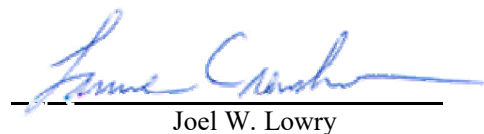
Lea County, New Mexico  
Unit Letter "N", Section 16, Township 26 South, Range 32 East  
Latitude 32.0358340 North, Longitude 103.680419 West  
NMOCD Reference No. nAPP2120041782

Prepared By:

**Etech Environmental & Safety Solutions, Inc.**  
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Lance Crenshaw



Joel W. Lowry



Midland • San Antonio • Lubbock • Hobbs • Lafayette

## TABLE OF CONTENTS

	<i>Section</i>
PROJECT INFORMATION.....	<b>1.0</b>
SITE CHARACTERIZATION.....	<b>2.0</b>
CLOSURE CRITERIA FOR SOILS IMPACTED BY A RELEASE.....	<b>3.0</b>
INITIAL SITE ASSESSMENT.....	<b>4.0</b>
REMEDIATION ACTIVITIES SUMMARY.....	<b>5.0</b>
IN-SITU CHLORIDE MIGRATION MODELING.....	<b>6.0</b>
VARIANCE REQUEST.....	<b>7.0</b>
DEFERRAL REQUEST.....	<b>8.0</b>
RESTORATION, RECLAMATION & RE-VEGETATION PLAN.....	<b>9.0</b>
LIMITATIONS.....	<b>10.0</b>
DISTRIBUTION.....	<b>11.0</b>

### FIGURES

Figure 1 - Topographic Map  
Figure 2 - Aerial Proximity Map  
Figure 3 - Site & Sample Location Map

### TABLES

Table 1 - Concentrations of BTEX, TPH & Chloride in Soil

### APPENDICES

Appendix A - Depth to Groundwater Information  
Appendix B - Field Data  
Appendix C - Photographic Log  
Appendix D - Multimedia Exposure Assessment Model (MULTIMED) - North Excavation  
Appendix E - Multimedia Exposure Assessment Model (MULTIMED) - South Excavation  
Appendix F - Multimedia Exposure Assessment Model (MULTIMED) - Deferral Area  
Appendix G - Laboratory Analytical Reports

## 1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of Mewbourne Oil Company, has prepared this *Remediation Summary, Variance & Deferral Request (Revised)* for the release site known as the Red Hills West 21 Fed Com #2H SWD Line (henceforth, "Red Hills West 21"). Details of the release are summarized below:

### Location of Release Source

Latitude: 32.0358340 Longitude: -103.680419

Provided GPS are in WGS84 format.

Site Name: Red Hills West 21 Fed Com #2H SWD Line	Site Type: Pipeline
Date Release Discovered: 7/11/2021	API # (if applicable): N/A

Unit Letter	Section	Township	Range	County
"N"	16	26S	32E	Lea

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

### Nature and Volume of Release

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 140	Volume Recovered (bbls) 70
	Is the concentration of total dissolved solids (TDS) in the produced water > 10,000 mg/L?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
<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	Volume/Weight Recovered

Cause of Release:  
A 3" poly Salt Water Disposal (SWD) line developed a leak.

### Initial Response

<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"/> Release materials have been contained via the use of berms or dikes, absorbent pad, or other containment devices
<input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.

Previously submitted portions of the NMOCD Form C-141 are available in the NMOCD Imaging System.



## 2.0 SITE CHARACTERIZATION

A search of groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey (USGS) was conducted in an effort to determine the horizontal distance to known water sources within a half-mile radius of the Red Hills West 21 release site. Probable groundwater depth was determined using data generated by numeric models based on available water well data and published information. Depth to groundwater information is provided as Appendix A.

What is the shallowest depth to groundwater beneath the area affected by the release?	210'	
Did the 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 any 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 the 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 checked="" type="checkbox"/> Yes	<input 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 not on an exploration, development, production or storage site?	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

NMOCD Siting Criteria data was gathered from available resources including Bureau of Land Management (BLM) and Fish & Wildlife Services (FWS) shapefiles, topographic maps, NMOSE and USGS databases, and aerial imagery. The results are depicted in Figures 1, 2, 4, and 5.

## 3.0 CLOSURE CRITERIA FOR SOILS IMPACTED BY A RELEASE

Based on the volume and nature of the release, inferred depth to groundwater, and NMOCD Siting Criteria, the NMOCD Closure Criteria and NMOCD Reclamation Standards for the Red Hills West 21 release site are as follows:

Probable Depth to Groundwater	Constituent	Laboratory Analytical Method	Closure Criteria*†	Reclamation Standard*‡
210'	Chloride (Cl-)	EPA 300.0 or SM4500 Cl B	600	600
	Total Petroleum Hydrocarbons (TPH)	EPA SW-846 Method 8015M Ext	100	100
	Gas Range Organics + Diesel Range Organics (GRO + DRO)	EPA SW-846 Method 8015M	N/A	N/A
	Benzene	EPA SW-846 Methods 8021b or 8260b	10	10
	Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX)	EPA SW-846 Methods 8021b or 8260b	50	50

\* Measured in milligrams per kilogram (mg/kg)

† Table I, Section 19.15.29.12 of the New Mexico Administrative Code (NMAC).

‡ The NMOCD Reclamation Standard applies only to the top 4' of soil in non-production areas. Section 19.15.29.13 D.(1) NMAC.

## 4.0 INITIAL SITE ASSESSMENT

On March 3 and 4, 2022, Etech conducted an initial site assessment. During the site assessment, a series of soil bores and/or test trenches (SP1 through SP8) were advanced within the release margins in an effort to determine the vertical extent of impacted soil. In addition, a series of hand-augered soil bores (NH1, EH1, EH2, EH3, EH4, EH5, SH1, WH1, WH2, WH3, WH4, and WH5) were advanced at the inferred edges of the affected area in an effort to determine the horizontal extent of impacted soil. During the advancement of the soil bores/test trenches, soil samples were collected and field-screened for concentrations of chloride utilizing a Hach Quantab ® chloride test kit and/or the presence of Volatile Organic Compounds (VOCs) utilizing olfactory/visual senses.

Based on field observations and field test data, a total of 40 delineation soil samples (NH1 @ Surface, NH1 @ 1', EH1 @ Surface, EH1 @ 1', EH2 @ Surface, EH2 @ 1', EH3 @ Surface, EH3 @ 1', EH4 @ Surface, EH4 @ 1', EH5 @ Surface, EH5 @ 1', SH1 @ Surface, SH1 @ 1', WH1 @ Surface, WH1 @ 1', WH2 @ Surface, WH2 @ 1', WH3 @ Surface, WH3 @ 1', WH4 @ Surface, WH4 @ 1', WH5 @ Surface, WH5 @ 1', SP1 @ Surface, SP1 @ 8', SP2 @ Surface, SP2 @ 14', SP3 @ Surface, SP3 @ 6', SP4 @ Surface, SP4 @ 4', SP5 @ Surface, SP5 @ 4', SP6 @ Surface, SP6 @ 8', SP7 @ Surface, SP7 @ 6', SP8 @ Surface, and SP8 @ 8') were submitted to a certified, commercial laboratory (henceforth, "the laboratory") for analysis of BTEX, TPH, and chloride. Based on laboratory analytical results, the horizontal and vertical extent of impacted soil was adequately defined and ranged from approximately four (4) feet below ground surface (bgs) in the areas characterized by sample points SP4 and SP5 to eight (8) feet bgs in the areas characterized by sample points SP1, SP6, and SP8. Soil was not affected beyond ground surface in the area characterized by sample point SP2.

The locations of the hand-augered soil bores are depicted in Figure 3, "Site & Sample Location Map".

## 5.0 REMEDIATION ACTIVITIES SUMMARY

On May 9, 2022, remediation activities commenced at the release site. Due to the size and nature of the release, the affected area was divided into three (3) sections: North Excavation, which is in the pasture north of the Red Hills West SWD; South Excavation, which is in the pasture south of the SWD; and the Pad, which includes portions of the production pad and encompasses the SWD facility itself. In accordance with NMOCD regulatory guidelines, impacted soil affected above the NMOCD Closure Criteria and NMOCD Reclamation Standards was excavated to the extent practicable and stockpiled on-site, pending transfer to an NMOCD-permitted surface waste facility for disposal. Olfactory/visual senses and/or a chloride test kit were utilized to field-screen the horizontal extent of impacted soil and to guide the excavation. The sidewalls of the excavations were advanced to the extent practicable or until field tests and field observations suggested BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards. The excavations were advanced vertically to approximately four (4) feet bgs.

On May 11, 2022, Etech collected six (6) confirmation soil samples (NW 1A, SW 1B, SW 2B, SW 3B, WW 1E, and WW 2A) from the sidewalls of the South Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory method detection limit (MDL). Chloride concentrations ranged from 32.0 mg/kg in soil sample WW 1E to 480 mg/kg in soil sample SW 2B.

On May 13, 2022, Etech collected nine (9) confirmation soil samples (NW 2C, NW 3B, EW 1B, EW 2B, EW 3A, SW 4A, SW 5A, WW 3B, and WW 4) from the sidewalls of the South Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from 16.0 mg/kg in soil samples EW 3A and WW 3B to 208 mg/kg in soil sample SW 5A.

On May 17, 2022, Etech collected seven (7) confirmation soil samples (NW 4, EW 4, EW 5, EW 6A, WW 5, WW 6, and WW 7) from the sidewalls of the South Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from 16.0 mg/kg in soil sample WW 6 to 144 mg/kg in soil sample NW 4.

On May 20, 2022, Etech collected seven (7) confirmation soil samples (NW 5A, EW 7B, EW 8B, SW 6A, SW 7A, WW 8B, and WW 9A) from the sidewalls of the South Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from less than the laboratory MDL in soil sample SW 6A to 208 mg/kg in soil sample WW 9A.

On May 26, 2022, Etech collected 15 confirmation soil samples (NW 6, EW 9A, EW 10B, EW 11A, EW 12A, SW 8A, SW 9B, SW 10, SW 11C, WW 10, WW 11B, WW 12A, WW 13A, WW 14, and WW 15) from the sidewalls of the South Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from less than the laboratory MDL in soil samples EW 10B and SW 8A to 528 mg/kg in soil sample WW 13A.

On May 27, 2022, Etech advanced a series of six (6) test trenches (DFS1 through DFS6) within the release margins in an effort to further characterize the affected soil in the Pad requiring deferral of remediation. During the advancement of the test trenches, soil samples were collected and field-screened for concentrations of chloride utilizing a chloride test kit and/or the presence of VOCs utilizing olfactory/visual senses.

Based on field observations and field test data, a total of 37 deferral characterization soil samples (DFS 1 @ Surface through DFS 1 @ 9', DFS 2 @ Surface through DFS 2 @ 3', DFS 3 @ Surface through DFS 3 @ 4', DFS 4 @ Surface through DFS 4 @ 4', DFS 5 @ Surface through DFS 5 @ 14', and DFS 6 @ Surface through DFS 6 @ 22') were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX and TPH concentrations were below the applicable NMOCD Closure Criteria, NMOCD Reclamation Standards, and laboratory MDL in each of the submitted soil samples, with the exceptions of soil samples DFS 2 @ Surface, DFS 4 @ Surface, and DFS 4 @ 1', which exhibited TPH concentrations ranging from 11.3 mg/kg (DFS 2 @ Surface) to 433 mg/kg (DFS 4 @ Surface). Chloride concentrations ranged from 32.0 mg/kg in soil sample DFS 2 @ 1' to 19,300 mg/kg in soil sample DFS 3 @ Surface. Based on laboratory analytical data, the extent of impacted soil was adequately defined and ranged from less than one (1) foot bgs in the area characterized by sample point DFS4 to approximately 16 feet bgs in the area characterized by sample point DFS6. Soil was not affected beyond ground surface in the area characterized by sample point DFS2.

On June 9, 2022, Etech collected four (4) confirmation soil samples (EW 13, EW 14, SW 12, and SW 13) from the sidewalls of the South Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from less than the laboratory MDL in soil sample EW 14 to 32.0 mg/kg in soil samples EW 13 and SW 12.

On June 13, 2022, Etech collected nine (9) confirmation soil samples (EW 15A, EW 16A, EW 17B, EW 18A, WW 16B, WW 17B, WW 18B, WW 19B, and WW 20B) from the sidewalls of the North Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX and TPH concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples.

BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from 16.0 mg/kg in soil sample EW 18A to 640 mg/kg in soil sample WW 18B, which exceeded the NMOCD Closure Criterion and Reclamation Standard.

On June 16, 2022, Etech collected six (6) confirmation soil samples (NW 7, EW 19A, EW 20A, EW 21, WW 21, and WW 22B) from the sidewalls of the North Excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations ranged from 80.0 mg/kg in soil sample EW 21 to 240 mg/kg in soil sample WW 21.

Etech also advanced a hand-augered soil bore (OSS) to determine the extent of impacted soil in an area of the pasture adjacent to the North Excavation inferred to have been affected by a light overspray from the release. During the advancement of the hand-augered soil bore, soil samples were collected and field-screened for the presence of VOCs utilizing olfactory/visual senses and/or concentrations of chloride utilizing a chloride test kit. Based on field observations and field test data, two (2) delineation soil samples (OSS @ Surface and OSS @ 1') were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also below the applicable laboratory MDL. Chloride concentrations were 448 mg/kg in soil sample OSS @ Surface and 112 mg/kg in soil sample OSS @ 1'. Based on these laboratory analytical results, the extent of impacted soil was adequately defined and did not extend beyond ground surface.

On June 20, 2022, based on laboratory analytical results, the excavation was further advanced in the area characterized by soil sample WW 18B. Etech collected one (1) confirmation soil samples (WW 18C) from the sidewall of the newly excavated area. The soil sample was submitted to the laboratory for analysis of chloride. Laboratory analytical results the chloride concentration was 48.0 mg/kg and below the NMOCD Closure Criterion and NMOCD Reclamation Standard.

On June 28, 2022, based on laboratory analytical results, field observations, and in-situ chloride migration modeling, Mewbourne submitted a *Remediation Summary, Variance & Deferral Request* to the NMOCD requesting approval to defer remediation of chloride-impacted soil affected above the NMOCD Closure Criteria remaining in-situ in the Pad until decommissioning and abandonment of the SWD facility. Permission was also requested to install 20-mil, string-reinforced liners on the floors of the North and South Excavations atop impacted soil affected above the NMOCD Closure Criteria. The requests were subsequently denied by the NMOCD, with mandates to (a) more clearly identify areas on the production pad requiring major reconstruction, as deferral of the entire pad was not permissible, and (b) perform a more thorough investigation to determine the concentrations of contaminants of concern at and below four (4) feet bgs to remain in-situ beneath the proposed liners.

On August 10, 2022, in accordance with the NMOCD, Etech advanced test trenches in the areas characterized by sample points SP1, SP2, SP3, SP4, SP7, and SP8 in an effort to further characterize the affected soil to remain in-situ beneath the proposed liners. The trenches were advanced in one (1) foot increments to total depths ranging from five (5) feet bgs (SP3 and SP7) to 13 feet bgs (SP2). During the advancement of the test trenches, soil samples were collected and field-screened for concentrations of chloride utilizing a chloride test kit and/or the presence of VOCs utilizing olfactory/visual senses.

Based on field observations and field test data, a total of 25 delineation soil samples (SP1 @ 5' through SP1 @ 7', SP2 @ 4' through SP2 @ 13', SP3 @ 4', SP3 @ 5', SP4 @ 4' through SP4 @ 7', SP7 @ 4', SP7 @ 5', and SP8 @ 4' through SP8 @ 7') were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria and NMOCD Reclamation Standards in each of the submitted soil samples. BTEX and TPH concentrations were also less than the laboratory MDL, with the exception of soil sample SP 2 @ 13', which exhibited a TPH concentration of 137 mg/kg. Chloride concentrations ranged from 32.0 mg/kg in soil sample DFS 2 @ 1' to 19,300 mg/kg in soil sample DFS 3 @ Surface. Based on laboratory analytical data, impacted soil to remain in-situ beneath the proposed liners was adequately characterized.

On September 2, 2022, Etech advanced a hand-augered soil bore in the area characterized by sample point SP6 in an effort to further characterize the affected soil to remain in-situ beneath the proposed liner in the South Excavation. The soil bore was advanced in two (2) foot increments to a total depth of six (6) feet bgs, and two (2) delineation soil samples (SP6 @ 4' and SP6 @ 6') were submitted to the laboratory for analysis of BTEX, TPH, and chloride. Laboratory analytical results indicated BTEX, TPH, and chloride concentrations were below the applicable NMOCD Closure Criteria, NMOCD Reclamation Standards, and laboratory MDL in each of the submitted soil samples, with the exception of soil sample SP6 @ 4', which exhibited a chloride concentration of 32.0 mg/kg. Based on laboratory analytical data, impacted soil to remain in-situ beneath the proposed liner in the South Excavation was adequately characterized.

The extents of the North and South Excavations, the area to be deferred, and the locations of the confirmation and deferral characterization samples are depicted in Figure 3, "Site & Sample Location Map". Soil chemistry data is summarized in Table 1. Field data is provided in Appendix B. General photographs of the site are provided in Appendix C. Laboratory analytical reports are provided in Appendix G.

## 6.0 IN-SITU CHLORIDE MIGRATION MODELING

Review of the most recent GIS map data published by the BLM's Carlsbad Field Office on January 14, 2021, indicates the Red Hills West 21 release site is in an area of "medium" potential for karst occurrence. However, it is located in a zone that was previously identified as having a "high" karst potential and is potentially unstable. Due to the possible presence of karst and unstable soil, Mewbourne affirms that deeper excavation in this area poses a risk to human health and safety that exceeds the benefits of the removal of additional soil affected above the NMOCD Closure Criteria.

Etech utilized the Environmental Protection Agency's (EPA) Multimedia Exposure Assessment Model (MULTIMED) to determine if the chloride contamination remaining in-situ below four (4) feet bgs in the North Excavation and South Excavation poses a threat to groundwater quality, as well as to simulate the efficacy of installing a geosynthetic liner on the floor of the excavations. The most appropriate and conservative parameter values possible for the site were used for the assessment model in regard to depth to groundwater (125 feet bgs), deepest depth investigated, etc. Additional parameter values were utilized that have been previously approved by the NMOCD as being representative of the general area and for simulating lined versus unlined excavations and/or oil and gas facilities. The model indicates the peak concentration of chloride in the underlying groundwater contributed by the contamination remaining in-situ in the North Excavation would be approximately 71.58 mg/L in 993 years if a liner were installed on the floor of the excavated area, versus 908.8 mg/L in 268 years if the excavation is not lined (see Appendix D). The model indicates the peak concentration of chloride in the underlying groundwater contributed by the contamination remaining in-situ in the South Excavation would be approximately 83.99 mg/L in 1,000 years if a liner were to be installed on the floor of the excavated area, versus 1,302 mg/L in 290 years if the excavation is not lined (see Appendix E).

Since the estimated peak concentrations of chloride are below the standard of 250.0 mg/L specified in Section 20.6.2.3103 B.(1) NMAC, pursuant to Section 19.15.29.14.A(2) NMAC, the migration models effectively demonstrate that the four (4) foot bgs excavations and installation of geosynthetic liners provide an "equal or better protection of fresh water, public health and the environment" as compared to deeper excavations.

Etech also utilized the EPA MULTIMED simulator to determine if the contamination remaining in-situ adjacent to and/or beneath the on-site storage tanks and associated containment area, pipes, appurtenances, and electrical facilities (characterized by sample points DFS5 and DFS6) poses a threat to groundwater quality. Again, using the most appropriate and conservative parameters possible for the site and area of concern, the model indicates that the concentration of chloride contributed to the underlying groundwater will not exceed the standard of 250 mg/L until approximately 172 years have lapsed (see Appendix F).

Pursuant to Section 19.15.29.12.C(2) NMAC, the model effectively demonstrates that leaving the contamination in-situ in the areas characterized by sample points DFS5 and DFS6 (henceforth, "Deferral Area") does not cause an imminent risk to human health, the environment, or ground water".



## 7.0 VARIANCE REQUEST

Pursuant to Section 19.15.29.14 NMAC, Mewbourne requests a variance to install 20-mil, string-reinforced liners on the floors of the North and South Excavations atop impacted soil affected above the NMOCD Closure Criteria. Approximately six (6) inches of pad material will be installed both above and below the liners in an effort to maintain their integrity during backfilling activities. The liners will be sloped to facilitate shedding of moisture outside both the footprints of the excavated areas and the maximum horizontal extent of impacted soil. These engineered controls are designed to inhibit the vertical migration of chloride contamination remaining in-situ.

Immediately following installation of the liners and pad material, the excavated areas will be backfilled with locally sourced, non-impacted, "like" material placed at or near original relative positions and compacted/contoured to achieve erosion control, stability, and preservation of surface water flow to the extent practicable.

## 8.0 DEFERRAL REQUEST

Impacted soil affected above the NMOCD Closure Criteria in the Pad will be excavated to the extent practicable, as depicted in Figure 3, "Site & Sample Location Map". Remediation of chloride-impacted soil affected above the NMOCD Closure Criteria remaining in-situ in the Deferral Area will be completed upon decommissioning and abandonment of the SWD facility, in accordance with Sections 19.15.29.12 and 19.15.29.13 NMAC.

## 9.0 RESTORATION, RECLAMATION & RE-VEGETATION PLAN

Areas affected by remediation and closure activities will be substantially restored to the condition that existed prior to the release, to the extent practicable. Excavated areas will be backfilled with locally sourced, non-impacted, "like" material placed at or near original relative positions. The affected areas will be compacted and contoured to achieve erosion control, stability, and preservation of surface water flow, to the extent practicable. Affected areas not on production pads, pipeline right-of-ways, and/or lease roads will be reseeded with an agency and/or landowner-approved seed mixture during the first favorable growing season following closure of the site. Final reclamation and re-vegetation of the Deferral Area will be conducted upon decommissioning and abandonment of the active SWD facility.

## 10.0 LIMITATIONS

Etech Environmental & Safety Solutions, Inc., has prepared this *Remediation Summary, Variance & Deferral Request (Revised)* to the best of its ability. No other warranty, expressed or implied, is made or intended. Etech has examined and relied upon documents reference in the report and on oral statements made by certain individuals. Etech has not conducted an independent examination of the facts contained in referenced materials and statements. Etech has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Etech has prepared the report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Etech notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Mewbourne Oil Company. Use of the information contained in this report is prohibited without the consent of Etech and/or Mewbourne Oil Company.

## **11.0 DISTRIBUTION**

***Mewbourne Oil Company***

*4801 Business Park Blvd.*

*Hobbs, NM 88240*

***New Mexico Energy, Minerals and Natural Resources Department***

*Oil Conservation Division, District 1*

*1220 South St. Francis Drive*

*Santa Fe, NM 87505*

***Hobbs Field Office***

*New Mexico State Land Office*

*2827 North Dal Paso Street*

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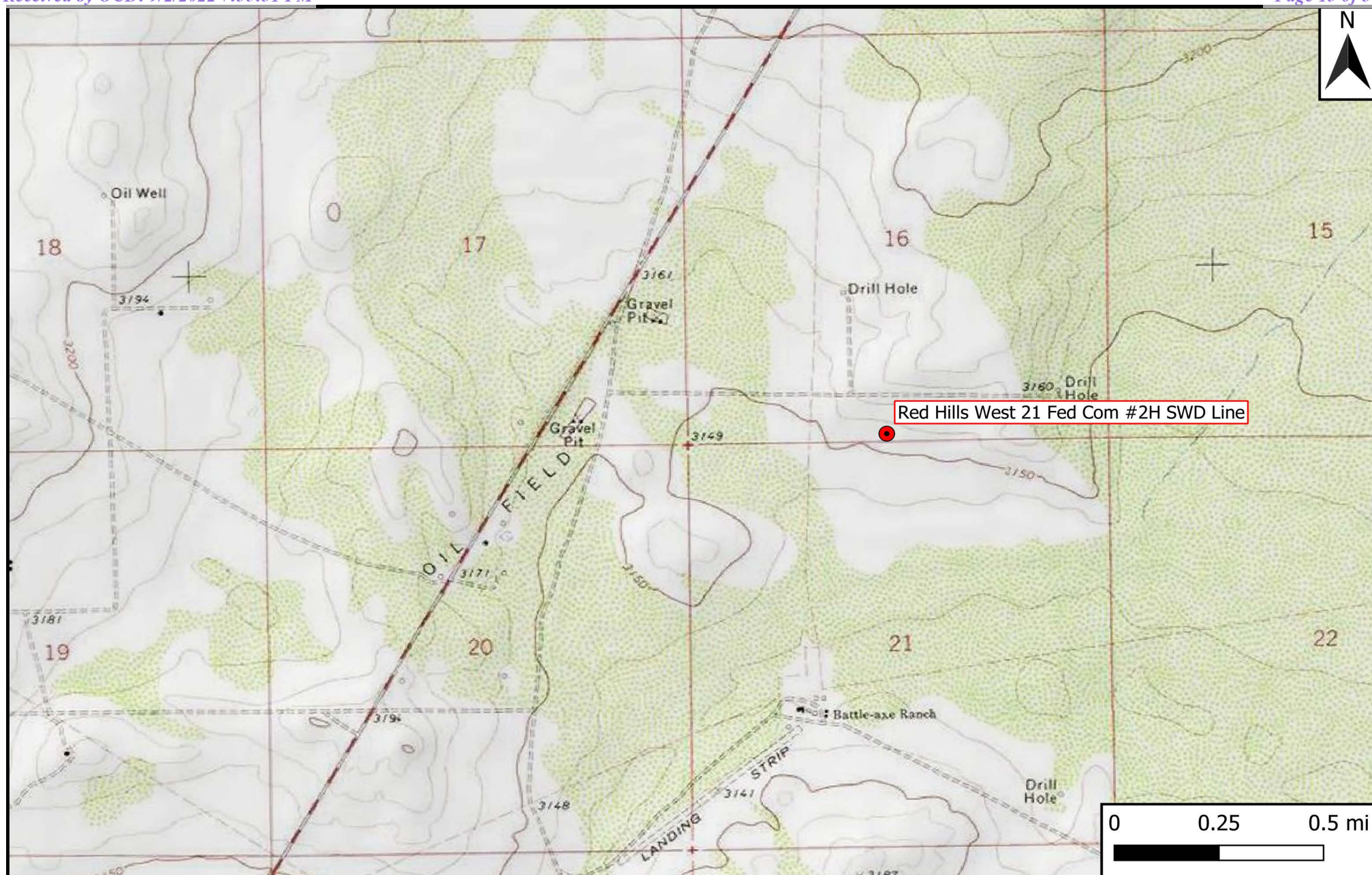
*Hobbs, NM 88240*

*(Electronic Submission)*

# **Figure 1**

## **Topographic Map**





## Legend

- Site Location

## Figure 1

Topographic Map  
 Mewbourne Oil Company  
 Red Hills West 21 Fed Com #2H SWD Line  
 GPS: 32.035834, -103.680419  
 Lea County

**eTECH**  
 Environmental & Safety Solutions, Inc.

Drafted: bja

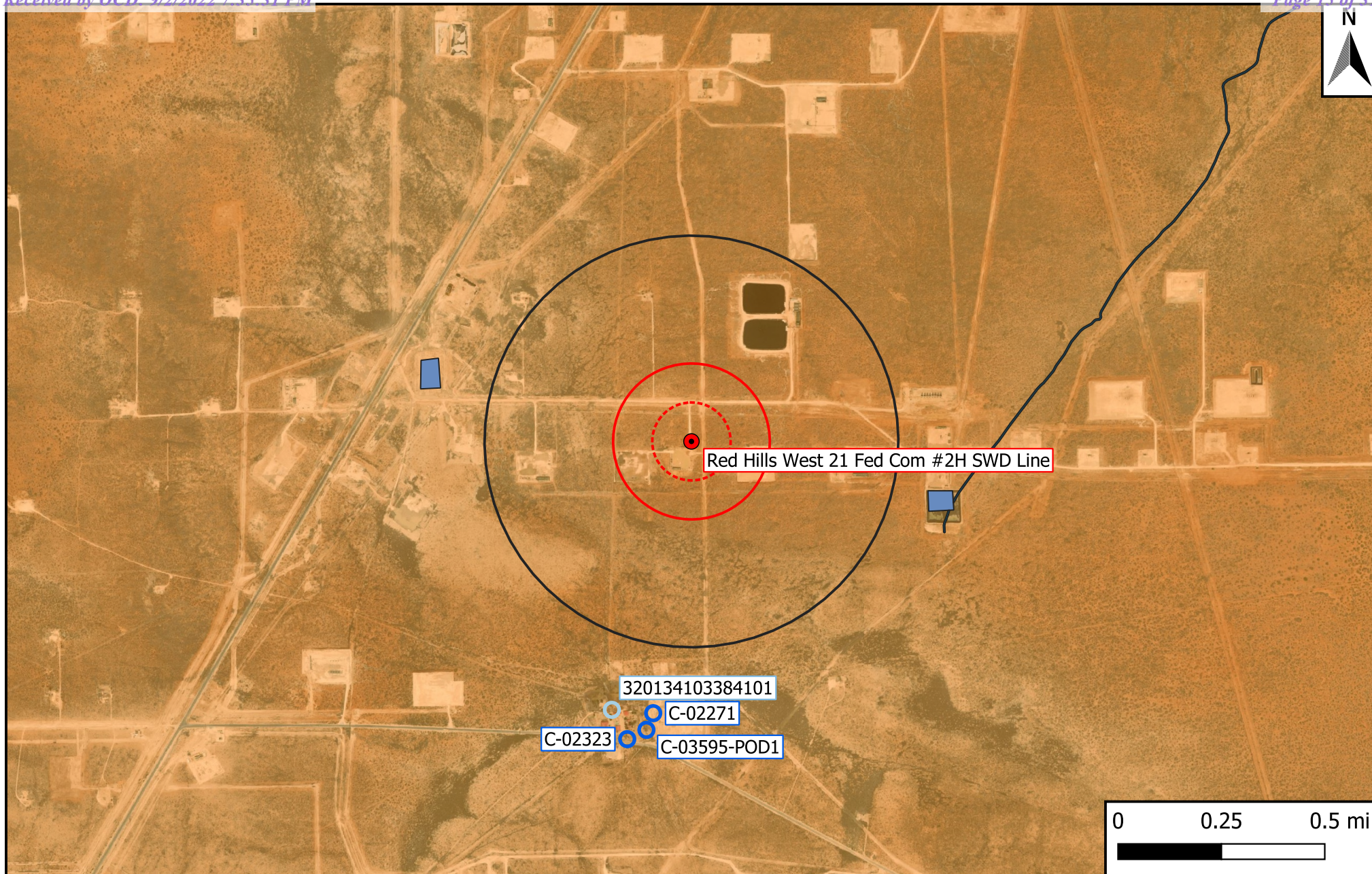
Checked: jwl

Date: 6/21/22

## **Figure 2**

### **Aerial Proximity Map**





## Legend

- |                              |                              |                   |
|------------------------------|------------------------------|-------------------|
| ● Site Location              | ■ 1% Annual Flood Chance     | ⋯ 500-Ft Radius   |
| ○ Well - NMOSE               | ■ Emergent/Forested Wetlands | ⋯ 1,000-Ft Radius |
| ○ Well - USGS                | ■ Freshwater Pond/Lake       | ⋯ 0.5-Mi Radius   |
| ○ Well - Exploratory/Monitor | ■ Medium/High Karst          |                   |
| — Potash Mine Workings       | ■ Riverine                   |                   |

**Figure 2**  
Aerial Proximity Map  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line  
GPS: 32.035834, -103.680419  
Lea County, NM



Drafted: bja

Checked: jwl

Date: 6/21/22



## **Figure 3**

### **Site & Sample Location Map**





Legend	
	Excavation (4' bgs)
	Composite Wall Sample
	Deferral Characterization Sample
	Delineation Sample Point
	Proposed Deferral Area
	Proposed Surface Scrape
	Proposed Excavation (3' bgs)
	Proposed Excavation (4' bgs)
	Proposed Liner

Figure 3  
Site & Sample Location Map  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line  
GPS: 32.035834, -103.680419  
Lea County



Environmental & Safety Solutions, Inc.

Drafted: bja

Checked: lc

Date: 9/1/2022



**Table 1**  
**Concentrations of BTEX, TPH & Chloride in Soil**

**Table 1**  
**Concentrations of BTEX, TPH & Chloride in Soil**  
**Mewbourne Oil Company**  
**Red Hills West 21 Fed Com #2H SWD Line**  
**NMOCD Ref. #: nAPP2120041782**

NMOCD Closure Criteria				10	50	N/A	N/A	N/A	N/A	100	600
NMOCD Reclamation Standard				10	50	N/A	N/A	N/A	N/A	100	600
Sample ID	Date	Depth (Feet)	Soil Status	SW 846 8021B		a					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
Delineation Samples											
NH1 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
NH1 @ 1'	3/3/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EH1 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EH1 @ 1'	3/3/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EH2 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EH2 @ 1'	3/3/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EH3 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EH3 @ 1'	3/3/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EH4 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EH4 @ 1'	3/3/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EH5 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EH5 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	80.0
SH1 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	256
SH1 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
WH1 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
WH1 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
WH2 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
WH2 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
WH3 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
WH3 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
WH4 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
WH4 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
WH5 @ Surf.	3/4/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
WH5 @ 1'	3/4/2022	1	In-Situ	<0.050	<0.300	<10.0	21.8	21.8	<10.0	21.8	48.0
SP1 @ Surf.	3/3/2022	0	Excavated	<0.050	<0.300	<10.0	57.6	57.6	12.3	69.9	1,490
SP1 @ 4'	8/10/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	5,080
SP1 @ 5'	8/10/2022	5	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,200
SP1 @ 6'	8/10/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,870
SP1 @ 7'	8/10/2022	7	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,120
SP1 @ 8'	3/3/2022	8	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
SP2 @ Surf.	3/3/2022	0	Excavated	<0.050	<0.300	<10.0	33.9	33.9	<10.0	33.9	336
SP2 @ 4'	8/10/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	704
SP2 @ 5'	8/10/2022	5	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,710
SP2 @ 6'	8/10/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,710
SP2 @ 7'	8/10/2022	7	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,210
SP2 @ 8'	8/10/2022	8	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,320
SP2 @ 9'	8/10/2022	9	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	6,240
SP2 @ 10'	8/10/2022	10	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	4,800
SP2 @ 11'	8/10/2022	11	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	4,160
SP2 @ 12'	8/10/2022	12	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,160
SP2 @ 13'	8/10/2022	13	In-Situ	<0.050	<0.300	<10.0	73.2	73.2	64.0	137	1,410

Dash (-): Sample not analyzed for that constituent.

Bold: NMOCD Closure Criteria exceedance.

Red: NMOCD Reclamation Standard exceedance.

**Table 1**  
**Concentrations of BTEX, TPH & Chloride in Soil**  
**Mewbourne Oil Company**  
**Red Hills West 21 Fed Com #2H SWD Line**  
**NMOCD Ref. #: nAPP2120041782**

NMOCD Closure Criteria				10	50	N/A	N/A	N/A	N/A	100	600
NMOCD Reclamation Standard				10	50	N/A	N/A	N/A	N/A	100	600
Sample ID	Date	Depth (Feet)	Soil Status	SW 846 8021B		a					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
SP2 @ 14'	3/3/2022	14	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	160
SP3 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	23.1	23.1	<10.0	23.1	2,600
SP3 @ 4'	8/10/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	672
SP3 @ 5'	8/10/2022	5	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	704
SP3 @ 6'	3/3/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	160
SP4 @ Surf.	3/3/2022	0	In-Situ	<0.050	<0.300	<10.0	178	178	81.6	260	1,620
SP4 @ 4'	3/3/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	592
SP4 @ 4'	8/10/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	384
SP4 @ 5'	8/10/2022	5	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	464
SP4 @ 6'	8/10/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	192
SP4 @ 7'	8/10/2022	7	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	192
SP5 @ Surf.	3/4/2022	0	Excavated	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,520
SP5 @ 4'	3/4/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
SP6 @ Surf.	3/4/2022	0	Excavated	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	6,080
SP6 @ 4'	9/2/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
SP6 @ 6'	9/2/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16
SP6 @ 8'	3/4/2022	8	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	464
SP7 @ Surf.	3/4/2022	0	Excavated	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	6,560
SP7 @ 4'	8/10/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,600
SP7 @ 5'	8/10/2022	5	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	6,720
SP7 @ 6'	3/4/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	368
SP8 @ Surf.	3/4/2022	0	Excavated	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	4,800
SP8 @ 4'	8/10/2022	4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,080
SP8 @ 5'	8/10/2022	5	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	736
SP8 @ 6'	8/10/2022	6	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,040
SP8 @ 7'	8/10/2022	7	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	176
SP8 @ 8'	3/4/2022	8	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	64.0
OSS @ Sur.	6/16/2022	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	448
OSS @ 1	6/16/2022	1	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	112
Deferral Characterization Samples											
DFS 1 @ Surf.	5/27/2022	0	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,700
DFS 1 @ 4'	5/27/2022	4	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	992
DFS 1 @ 6'	5/27/2022	6	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,040
DFS 1 @ 8'	5/27/2022	8	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	800
DFS 1 @ 9'	5/27/2022	9	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	400
DFS 2 @ Surf.	5/27/2022	0	Deferral	<0.050	<0.300	<10.0	11.3	11.3	<10.0	11.3	592
DFS 2 @ 1'	5/27/2022	1	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
DFS 2 @ 2'	5/27/2022	2	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	64.0
DFS 2 @ 3'	5/27/2022	3	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	80.0
DFS 3 @ Surf.	5/27/2022	0	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	19,300
DFS 3 @ 3'	5/27/2022	3	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	464
DFS 3 @ 4'	5/27/2022	4	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	96.0

Dash (-): Sample not analyzed for that constituent.

Bold: NMOCD Closure Criteria exceedance.

Red: NMOCD Reclamation Standard exceedance.



**Table 1**  
**Concentrations of BTEX, TPH & Chloride in Soil**  
**Mewbourne Oil Company**  
**Red Hills West 21 Fed Com #2H SWD Line**  
**NMOCD Ref. #: nAPP2120041782**

NMOCD Closure Criteria				10	50	N/A	N/A	N/A	N/A	100	600
NMOCD Reclamation Standard				10	50	N/A	N/A	N/A	N/A	100	600
Sample ID	Date	Depth (Feet)	Soil Status	SW 846 8021B		a					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
DFS 4 @ Surf.	5/27/2022	0	Deferral	<0.050	<0.300	<10.0	316	316	117	433	240
DFS 4 @ 1'	5/27/2022	1	Deferral	<0.050	<0.300	<10.0	75.8	75.8	16.6	92.4	176
DFS 4 @ 2'	5/27/2022	2	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	272
DFS 4 @ 3'	5/27/2022	3	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	304
DFS 4 @ 4'	5/27/2022	4	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	592
DFS 5 @ Surf.	5/27/2022	0	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	6,800
DFS 5 @ 1'	5/27/2022	1	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	816
DFS 5 @ 2'	5/27/2022	2	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,440
DFS 5 @ 3'	5/27/2022	3	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,760
DFS 5 @ 4'	5/27/2022	4	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	496
DFS 5 @ 6'	5/27/2022	6	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	3,520
DFS 5 @ 8'	5/27/2022	8	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,520
DFS 5 @ 10'	5/27/2022	10	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	224
DFS 5 @ 12'	5/27/2022	12	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	160
DFS 5 @ 14'	5/27/2022	14	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	432
DFS 6 @ Surf.	5/27/2022	0	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	5,040
DFS 6 @ 4'	5/27/2022	4	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	9,520
DFS 6 @ 6'	5/27/2022	6	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	10,300
DFS 6 @ 8'	5/27/2022	8	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,440
DFS 6 @ 12'	5/27/2022	12	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,710
DFS 6 @ 14'	5/27/2022	14	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,540
DFS 6 @ 16'	5/27/2022	16	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	240
DFS 6 @ 18'	5/27/2022	18	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	144
DFS 6 @ 20'	5/27/2022	20	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	224
DFS 6 @ 22'	5/27/2022	22	Deferral	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	256
Confirmation Samples - North Excavation											
NW 7	6/16/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	144
EW 15A	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
EW 16A	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	192
EW 17B	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
EW 18A	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
EW 19A	6/16/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	208
EW 20A	6/16/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	176
EW 21	6/16/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	80.0
WW 16B	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	160
WW 17B	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	160
WW 18B	6/13/2022	0-4	Excavated	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	640
WW 18C	6/20/2022	0-4	In-Situ	-	-	-	-	-	-	-	48.0
WW 19B	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	160
WW 20B	6/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	112
WW 21	6/16/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	240
WW 22B	6/16/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	112

Dash (-): Sample not analyzed for that constituent.

Bold: NMOCD Closure Criteria exceedance.

Red: NMOCD Reclamation Standard exceedance.

**Table 1**  
**Concentrations of BTEX, TPH & Chloride in Soil**  
**Mewbourne Oil Company**  
**Red Hills West 21 Fed Com #2H SWD Line**  
**NMOCD Ref. #: nAPP2120041782**

NMOCD Closure Criteria				10	50	N/A	N/A	N/A	N/A	100	600
NMOCD Reclamation Standard				10	50	N/A	N/A	N/A	N/A	100	600
Sample ID	Date	Depth (Feet)	Soil Status	SW 846 8021B		a					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
Confirmation Samples - South Excavation											
NW 1A	5/11/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
NW 2C	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
NW 3B	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
NW 4	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	144
NW 5A	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
NW 6	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	112
EW 1B	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
EW 2B	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 3A	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
EW 4	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 5	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 6A	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	112
EW 7B	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 8B	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	112
EW 9A	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 10B	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
EW 11A	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 12A	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	208
EW 13	6/9/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
EW 14	6/9/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
SW 1B	5/11/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	96.0
SW 2B	5/11/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	480
SW 3B	5/11/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	96.0
SW 4A	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	176
SW 5A	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	208
SW 6A	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
SW 7A	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
SW 8A	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	<16.0
SW 9B	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
SW 10	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	208
SW 11C	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	192
SW 12	6/9/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
SW 13	6/9/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
WW 1E	5/11/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
WW 2A	5/11/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
WW 3B	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
WW 4	5/13/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	48.0
WW 5	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	96.0
WW 6	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
WW 7	5/17/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
WW 8B	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	64.0

Dash (-): Sample not analyzed for that constituent.

Bold: NMOCD Closure Criteria exceedance.

Red: NMOCD Reclamation Standard exceedance.

<b>Table 1</b> <b>Concentrations of BTEX, TPH &amp; Chloride in Soil</b> <b>Mewbourne Oil Company</b> <b>Red Hills West 21 Fed Com #2H SWD Line</b> <b>NMOCD Ref. #: nAPP2120041782</b>											
NMOCD Closure Criteria				10	50	N/A	N/A	N/A	N/A	100	600
NMOCD Reclamation Standard				10	50	N/A	N/A	N/A	N/A	100	600
Sample ID	Date	Depth (Feet)	Soil Status	SW 846 8021B		a					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
WW 9A	5/20/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	208
WW 10	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	128
WW 11B	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	32.0
WW 12A	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	16.0
WW 13A	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	528
WW 14	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	208
WW 15	5/26/2022	0-4	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	512

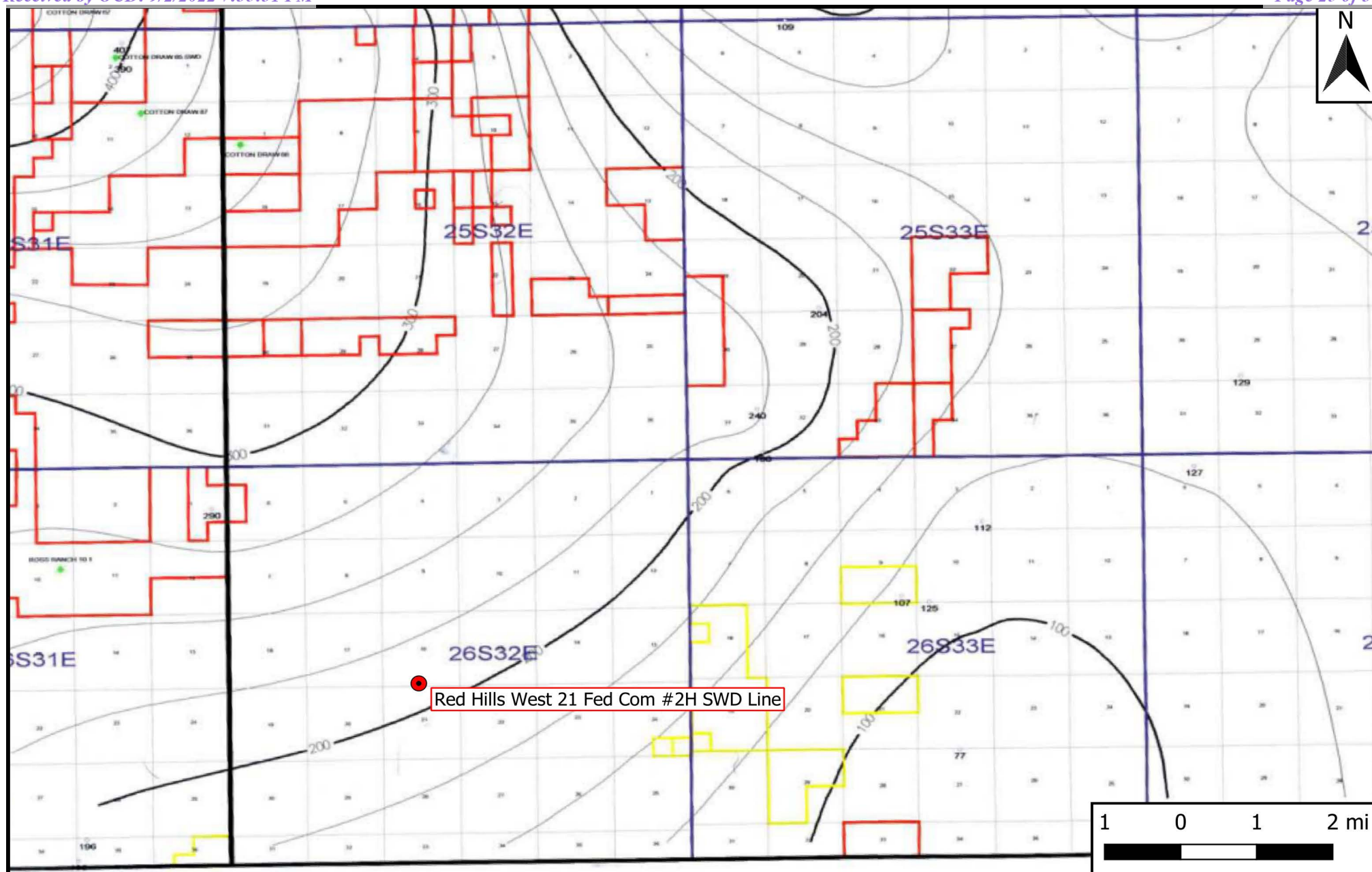
Dash (-): Sample not analyzed for that constituent.

Bold: NMOCD Closure Criteria exceedance.

Red: NMOCD Reclamation Standard exceedance.

## **Appendix A**

### **Depth to Groundwater Information**



## Legend

- Site Location

## Figure 4

Inferred Depth to Groundwater Trend Map  
 Mewbourne Oil Company  
 Red Hills West 21 Fed Com #2H SWD Line  
 GPS: 32.035834, -103.680419  
 Lea County

**eTECH**  
 Environmental & Safety Solutions, Inc.

Drafted: bja

Checked: jwl

Date: 6/21/22



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced,  
O=orphaned,  
C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
<a href="#">C_02271</a>	R	CUB	LE	2	3	21	26S	32E		624449	3544111*	1068	150	125	25
<a href="#">C_03595 POD1</a>		CUB	LE	4	2	3	21	26S	32E	624423	3544045	1136	280	180	100
<a href="#">C_02271 POD2</a>		CUB	LE	3	2	3	21	26S	32E	624348	3544010*	1185	270	250	20
<a href="#">C_02323</a>		C	LE	3	2	3	21	26S	32E	624348	3544010*	1185	405	405	0
<a href="#">C_03537 POD1</a>		CUB	LE	3	2	3	21	26S	32E	624250	3543985	1233	850		

Average Depth to Water: **240 feet**

Minimum Depth: **125 feet**

Maximum Depth: **405 feet**

**Record Count:** 5

### UTMNAD83 Radius Search (in meters):

**Easting (X):** 624597.83

**Northing (Y):** 3545168.8

**Radius:** 1610

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/21/22 2:16 PM

WATER COLUMN/ AVERAGE DEPTH TO  
WATER



# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)						(NAD83 UTM in meters)	
		(quarters are smallest to largest)							
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
C	02271	2	3	21	26S	32E		624449	3544111*
<b>Driller License:</b>		<b>Driller Company:</b>							
<b>Driller Name:</b>		UNKNOWN							
<b>Drill Start Date:</b>		<b>Drill Finish Date:</b>				12/31/1909			
<b>Log File Date:</b>		<b>PCW Rev Date:</b>				<b>Source:</b>			
<b>Pump Type:</b>		<b>Pipe Discharge Size:</b>				<b>Estimated Yield:</b>			
<b>Casing Size:</b>		<b>Depth Well:</b>				<b>Depth Water:</b>			
8.00		150 feet				125 feet			

\*UTM location was derived from PLSS - see Help

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2/9/22 9:32 AM

POINT OF DIVERSION SUMMARY



# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)							
		(quarters are smallest to largest)				(NAD83 UTM in meters)			
<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
C	03595 POD1	4	2	3	21	26S	32E	624423	3544045 

---

<b>Driller License:</b>	1654	<b>Driller Company:</b>	NOT WORKING FOR HIRE--SIRMAN DRILLING AND CONSTRUC	
<b>Driller Name:</b>				
<b>Drill Start Date:</b>	09/30/2013	<b>Drill Finish Date:</b>	09/30/2013	<b>Plug Date:</b>
<b>Log File Date:</b>	10/29/2013	<b>PCW Rev Date:</b>		<b>Source:</b> Shallow
<b>Pump Type:</b>		<b>Pipe Discharge Size:</b>		<b>Estimated Yield:</b>
<b>Casing Size:</b>	6.00	<b>Depth Well:</b>	280 feet	<b>Depth Water:</b> 180 feet

---

<b>Water Bearing Stratifications:</b>	<b>Top</b>	<b>Bottom</b>	<b>Description</b>
	160	200	Sandstone/Gravel/Conglomerate

---

<b>Casing Perforations:</b>	<b>Top</b>	<b>Bottom</b>
	200	240

---

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POINT OF DIVERSION SUMMARY





# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02271 POD2	3	2	3	21	26S	32E	624348	3544010*
Driller License: 208		Driller Company:				VAN NOY, W.L.			
Driller Name:		W.L. VAN NOY							
Drill Start Date: 08/28/1992		Drill Finish Date:				09/09/1992		Plug Date:	
Log File Date: 10/28/1992		PCW Rcv Date:						Source: Shallow	
Pump Type: SUBMER		Pipe Discharge Size:						Estimated Yield: 15 GPM	
Casing Size: 6.38		Depth Well:				270 feet		Depth Water: 250 feet	
Water Bearing Stratifications:					Top	Bottom	Description		
					225	265	Sandstone/Gravel/Conglomerate		
Casing Perforations:					Top	Bottom			
					205	265			

\*UTM location was derived from PLSS - see Help

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2/9/22 9:32 AM

POINT OF DIVERSION SUMMARY



# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE) (quarters are smallest to largest)						(NAD83 UTM in meters)	
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02323	3	2	3	21	26S	32E	624348	3544010* 

X

<b>Driller License:</b>	1292	<b>Driller Company:</b>	BENTLE WATER WELL SERVICE	
<b>Driller Name:</b>	BENTLE, BILLY L.			
<b>Drill Start Date:</b>	05/25/1993	<b>Drill Finish Date:</b>	06/16/1993	<b>Plug Date:</b>
<b>Log File Date:</b>	06/24/1993	<b>PCW Rcv Date:</b>		<b>Source:</b> Shallow
<b>Pump Type:</b>		<b>Pipe Discharge Size:</b>		<b>Estimated Yield:</b>
<b>Casing Size:</b>		<b>Depth Well:</b>	405 feet	<b>Depth Water:</b> 405 feet

\*UTM location was derived from PLSS - see Help

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2/9/22 9:32 AM

POINT OF DIVERSION SUMMARY



# New Mexico Office of the State Engineer

## Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)							
		(quarters are smallest to largest)						(NAD83 UTM in meters)	
<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
C	03537 POD1	3	2	3	21	26S	32E	624250	3543985 

Driller License:

Driller Company:

Driller Name:

Drill Start Date:

Drill Finish Date:

Plug Date:

Log File Date:

PCW Rev Date:

Source:

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size: 8.63

Depth Well: 850 feet

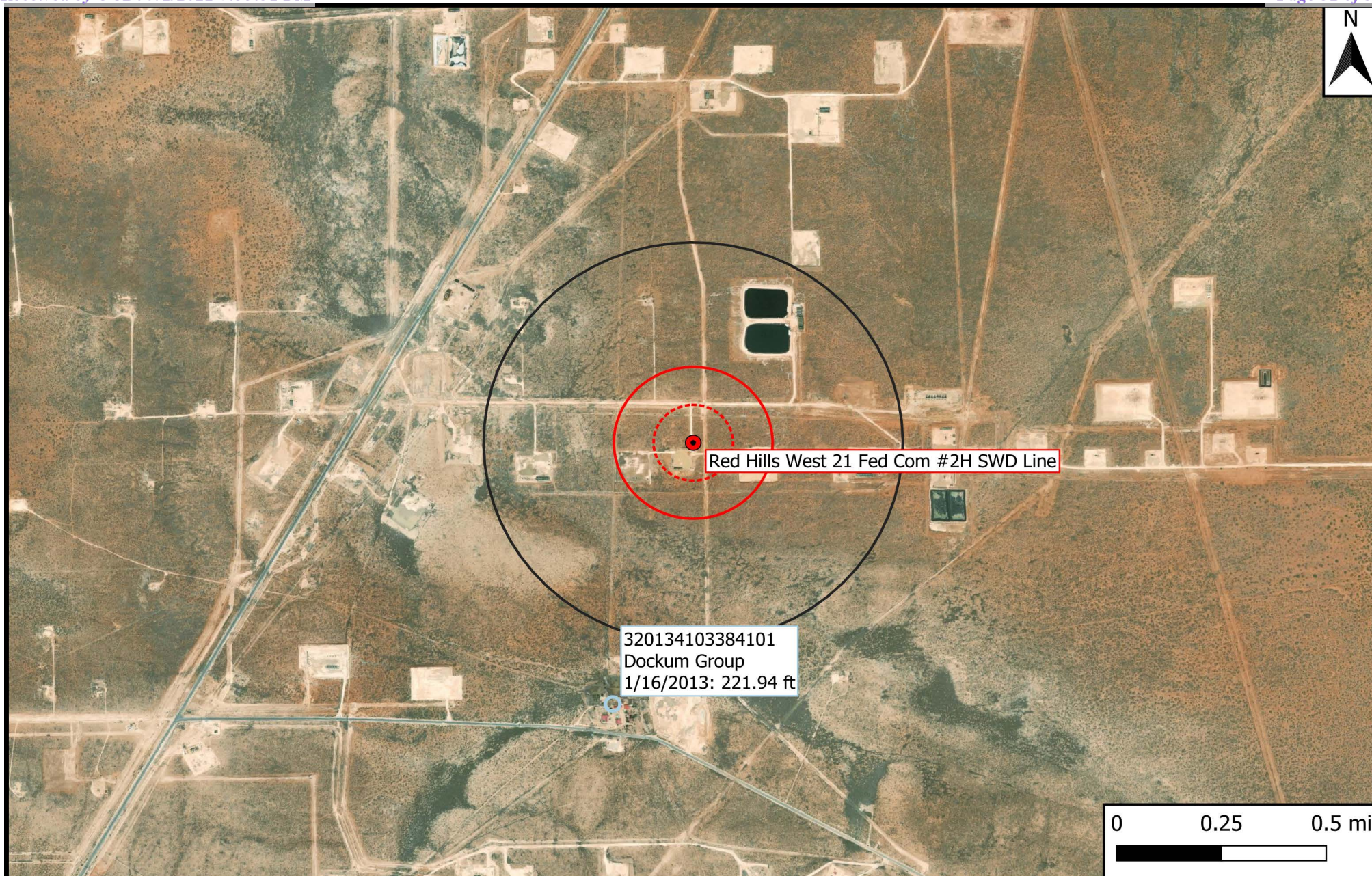
Depth Water:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

2/9/22 9:32 AM

POINT OF DIVERSION SUMMARY





## Legend

- Site Location
- Well - USGS
- ⋯ 500-Ft Radius
- ▭ 1,000-Ft Radius
- ▭ 0.5-Mi Radius

## Figure 5

USGS Well Proximity Map  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line  
GPS: 32.035834, -103.680419  
Lea County

**eTECH**  
Environmental & Safety Solutions, Inc.

Drafted: bja

Checked: jwl

Date: 6/21/22





USGS Home  
Contact USGS  
Search USGS

## National Water Information System: Web Interface

[USGS Water Resources](#)

Data Category:

Groundwater

Geographic Area:

United States

GO



Click for News Bulletins

Groundwater levels for the Nation



Important: [Next Generation Monitoring Location Page](#)

### Search Results -- 1 sites found

Agency code = usgs

site\_no list =

- 320134103384101

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

### USGS 320134103384101 26S.32E.21.32311

Lea County, New Mexico

Latitude 32°01'35.2", Longitude 103°41'01.8" NAD83

Land-surface elevation 3,130 feet above NAVD88

The depth of the well is 405 feet below land surface.

The depth of the hole is 405 feet below land surface.

This well is completed in the Pecos River Basin alluvial aquifer (N100PCSRVR) national aquifer.

This well is completed in the Dockum Group (231DCKM) local aquifer.

#### Output formats

[Table of data](#)

[Tab-separated data](#)

[Graph of data](#)

[Reselect period](#)

Date	Time	Water-level date-time accuracy	Parameter code	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	Status	Method of measurement	Measuring agency	Source of measurement	Water-level approval status
1993-06-16		D	72019	405.00			1	L			A
2013-01-16	19:10 UTC	m	72019	221.94			P	S	USGS	S	A

Explanation		
Section	Code	Description
Water-level date-time accuracy	D	Date is accurate to the Day
Water-level date-time accuracy	m	Date is accurate to the Minute
Parameter code	62610	Groundwater level above NGVD 1929, feet
Parameter code	62611	Groundwater level above NAVD 1988, feet
Parameter code	72019	Depth to water level, feet below land surface
Referenced vertical datum	NAVD88	North American Vertical Datum of 1988
Referenced vertical datum	NGVD29	National Geodetic Vertical Datum of 1929
Status	1	Static
Status	P	Pumping
Method of measurement	L	Interpreted from geophysical logs.
Method of measurement	S	Steel-tape measurement.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement		Not determined
Source of measurement	S	Measured by personnel of reporting agency.
Water-level approval status	A	Approved for publication -- Processing and review completed.

[Questions about sites/data?](#)

[Feedback on this web site](#)

[Automated retrievals](#)

[Help](#)

[Data Tips](#)

[Explanation of terms](#)

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[Accessibility](#) [FOIA](#) [Privacy](#) [Policies and Notices](#)

[U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

**Title: Groundwater for USA: Water Levels**

**URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>**



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2022-04-11 14:04:53 EDT

0.43 0.32 nadww01

## **Appendix B**

### **Field Data**

## Sample Log

Date:

project:

Project Number:

Latitude:

Longitude:

Sample ID	PID/Odor	Chloride Conc.	GPS
DFS #1 @ Surf	—	2,188	
DFS #1 @ 1	—	1,348	
DFS #1 @ 2	—	1,896	
DFS #1 @ 3	—	640	
DFS #1 @ 4	—	726	
DFS #1 @ 5	—	592	
DFS #1 @ 6	—	1,044	
DFS #1 @ 7	—	704	
DFS #1 @ 8 ft	—	648	
DFS #1 @ 9 ft	—	440	
DFS #6 @ Surf	—	2,552 Over	
DFS #6 @ 1	—	1,772	
DFS #6 @ 2	—	2,552 over	
DFS #6 @ 3	—	2,552 over	
DFS #6 @ 4	—	2,552 over	
DFS #6 @ 6	—	2,552 over	
DFS #6 @ 8	—	2,188	
DFS #6 @ 10	—	1,772	
DFS #6 @ 12	—	1,652	
DFS #6 @ 14	—	1,176	
DFS #6 @ 16	—	756	
DFS #6 @ 18	—	640	
DFS #6 @ 20	—	536	
DFS #6 @ 22	—	480	
DFS #3 @ Surf	—	Over 2,500	
DFS #3 @ 1	—	1,812	
DFS #3 @ 2		Over 2,500	
DFS #3 @ 3		536	
DFS #3 @ 4		188	
DFS #3 @ 5		316	

Sample Point = SP #1 @ ## etc  
Floor = FL #1 etc

Test Trench = TT #1 @ ##  
Refusal =

Resamples =

**Sample Point = SP #1 @ ## etc**

**Floor = FL #1 etc**

Sidewall = SW #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

Resamples= SP #1 @ 5b or SW #1b

Stockpile = Stockpile #1

GPS Sample Points, Center of Comp Areas





## Sample Log

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

Project: \_\_\_\_\_

Project Number: \_\_\_\_\_ Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Sample ID	PID/Odor	Chloride Conc.	GPS
DFS 4 @ Surf	—	606	
DFS 4 @ 1	—	440	
DFS 4 @ 2	—	316	
DFS 4 @ 3	—	356	
DFS 4 @ 4	—	396	
DFS 5 @ Surf	—	2500 Over	
DFS 5 @ 1	—	948	
DFS 5 @ 2	—	2,500 Over	
DFS 5 @ 3	—	2500	
DFS 5 @ 4	—	1096	
DFS 5 @ 5	—	2500	
DFS 5 @ 8	—	1444	
DFS 5 @ 10	—	640	
DFS 5 @ 12	—	644	
DFS 5 @ 12	—	356	
DFS 2 @ Surf	—	704	
DFS 2 @ 1	—	204	
DFS 2 @ 2	—	160	
DFS 2 @ 3	—	216	

Sample Point = SP #1 @ ## etc

Floor = FL #1 etc

Sidewall = SW #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

Resamples = SP #1 @ 5b or SW #1b

Stockpile = Stockpile #1

GPS Sample Points, Center of Comp Areas





## Sample Log

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

Project: Red Hills West 21 Fed Com 2H Battery

Project Number: \_\_\_\_\_

15507

Latitude: \_\_\_\_\_

32.03517

Longitude: \_\_\_\_\_

-103.68083

Sample ID	PID/Odor	Chloride Conc.	GPS
FLI 01	NONE	1204	
FLI 03	NONE	2,584	
WW1A	NONE	648	
WW1B	NONE	2,228	
WW1C	NONE	900	
WW1D	NONE	900	
WW1E	NONE	440	
SW1A	NONE	1204	
NW1A	NONE	440	
SW2A	NONE	2,228	
NW2A	NONE	2,584	
SW2B	NONE	648	
NW2A	NONE	160	
SW2B	NONE	524	
SW3A	NONE	628	
SW3B	NONE	312	
SW4A	NONE	524	
SW5	NONE	388	
NW2B	NONE	996	
NW3A	NONE	2,584	
EW1A	NONE	1,308	
WW4A	NONE	928	
WW3A	NONE	740	
EW2A	NONE	928	
EW1B	NONE	388	
WW4B	NONE	440	
WW3B	NONE	312	
EW2B	NONE	524	
NW3	NONE	212	
NW2	NONE	524	
NW4A	NONE	1,596	
NW4B	NONE	1,704	
EW3A	NONE	432	
NW4C	NONE	400	
EW4A	NONE	928	
WW5A	NONE	2,584	

Sample Point = SP #1 @ ## etc

Floor = FL #1 etc

Sidewall = SW #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

Resamples = SP #1 @ 5b or S

Stockpile = Stockpile #1

GPS Sample Point =

June 22, 2022 at 10:23 AM  
+32.035033, -103.680391





## Sample Log

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

Project: Red Hills West 21 Fed Com 2HProject Number: 15007Latitude: 32.03517Longitude: 103.68083

Sample ID	PID/Odor	Chloride Conc.	GPS
EWBB	NONE	356	
WW5B	NONE	400	
EW5A	NONE	1020	
WW2A	NONE	2557	
EW5B	NONE	432	
WW6B	NONE	400	
EW6	NONE	356	
WW7A	NONE	316	
SW6A	NONE	400	
WW8A	NONE	696	
WW8B	NONE	488	
EW7A	NONE	840	
EW7B	NONE	244	
WW9A	NONE	400	
EW8A	NONE	640	
NW5A	NONE	488	
SW7A	NONE	244	
EW8B	NONE	400	
EW9A	NONE	400	
WW10A	NONE	536	
WW11A	NONE	696	
WW11B	NONE	488	
EW10A	NONE	696	
SW8A	NONE	444	
WW12A	NONE	356	
EW10B	NONE	444	
EW11A	NONE	400	
SW9A	NONE	1096	
SW9B	NONE	488	
EW12	NONE	356	
WW13	NONE	400	
WW14A	NONE	1772	
WW14B	NONE	1260	
NW6A	NONE	1544	
WW14C	NONE	880	
WW18A	NONE	540	

Sample Point = SP #1 @ ## etc

Floor = FL #1 etc

Sidewall = SW #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

Resamples = SP #1 @ 5b or SW #1b

Stockpile = Stockpile #1

GPS Sample Points, Center of Comp Area

June 22, 2022 at 10:23 AM  
+32.035033,-103.680391





Environmental &amp; Safety Solutions, Inc.

## Sample Log

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

Project: \_\_\_\_\_

Project Number: \_\_\_\_\_

Latitude: \_\_\_\_\_

Longitude: \_\_\_\_\_

Sample ID	PID/Odor	Chloride Conc.	GPS
NW5b	None	756	
NW5c	None	756	
NW5D	None	712	
WW5D 14	-	212	
SW810	-	576	
WW15A	-	388	
SW11A	-	1544	
SW11B	-	1260	
SW11C	-	576	
SW12A	-	212	
SW13	-	406	
EW513	-	168	
EW514	-	144	
WW16A	-	1772	
EW15A	-	180	
WW16B	-	1260	
WW16C	-	444	
WW17A	-	880	
WW17B	-	536	
EW16A	-	880	
EW16B	-	588	
EW17A	-	588	
EW18A	-	388	
WW19A	-	880	
WW19B	-	316	
WW20A	-	949	
WW20B	-	444	
EW19A	-	588	
EW20A	-	356	
WW21A	-	886	
WW21B	-	440	
WW22A	-	1196	
EW21A	-	192	
WW22B	-	356	
NW7A	-	356	
WW18	-	444	

Sample Point = SP #1 @ ## etc

Floor = FL #1 etc

Test Trench = TT #1 @ ##

Refusal = SP #1 @ 4'-R

Resamples = SP #1 @ 4'-R

Stockpile = Stockpile #1

Soil Intended to be Deferred = SP #1 @ 4' In-Situ


June 22, 2022 at 10:22 AM  
+32.035033, -103.680391


## **Appendix C**

### **Photographic Log**




## Photographic Log


<b>Photo Number:</b> 1	
<b>Photo Direction:</b> North	
<b>Photo Description:</b>  View of the affected area.	

<b>Photo Number:</b> 2	
<b>Photo Direction:</b> North	
<b>Photo Description:</b>  View of the affected area.	





## Photographic Log

<b>Photo Number:</b> 3	
<b>Photo Direction:</b> Southwest	
<b>Photo Description:</b>  View of the affected area.	

<b>Photo Number:</b> 4	
<b>Photo Direction:</b> Northwest	
<b>Photo Description:</b>  View of the affected area.	


## Photographic Log

<b>Photo Number:</b> 5	
<b>Photo Direction:</b> West-Southwest	
<b>Photo Description:</b>  View of the affected area.	

<b>Photo Number:</b> 6	
<b>Photo Direction:</b> North	
<b>Photo Description:</b>  View of the North Excavation.	




## Photographic Log

<b>Photo Number:</b> 7	
<b>Photo Direction:</b> West-Southwest	
<b>Photo Description:</b>  View of the South Excavation.	

<b>Photo Number:</b> 8	
<b>Photo Direction:</b> Southwest	
<b>Photo Description:</b>  View of the South Excavation.	



## Photographic Log

<b>Photo Number:</b> 9	
<b>Photo Direction:</b> South	
<b>Photo Description:</b>  View of the South Excavation.	

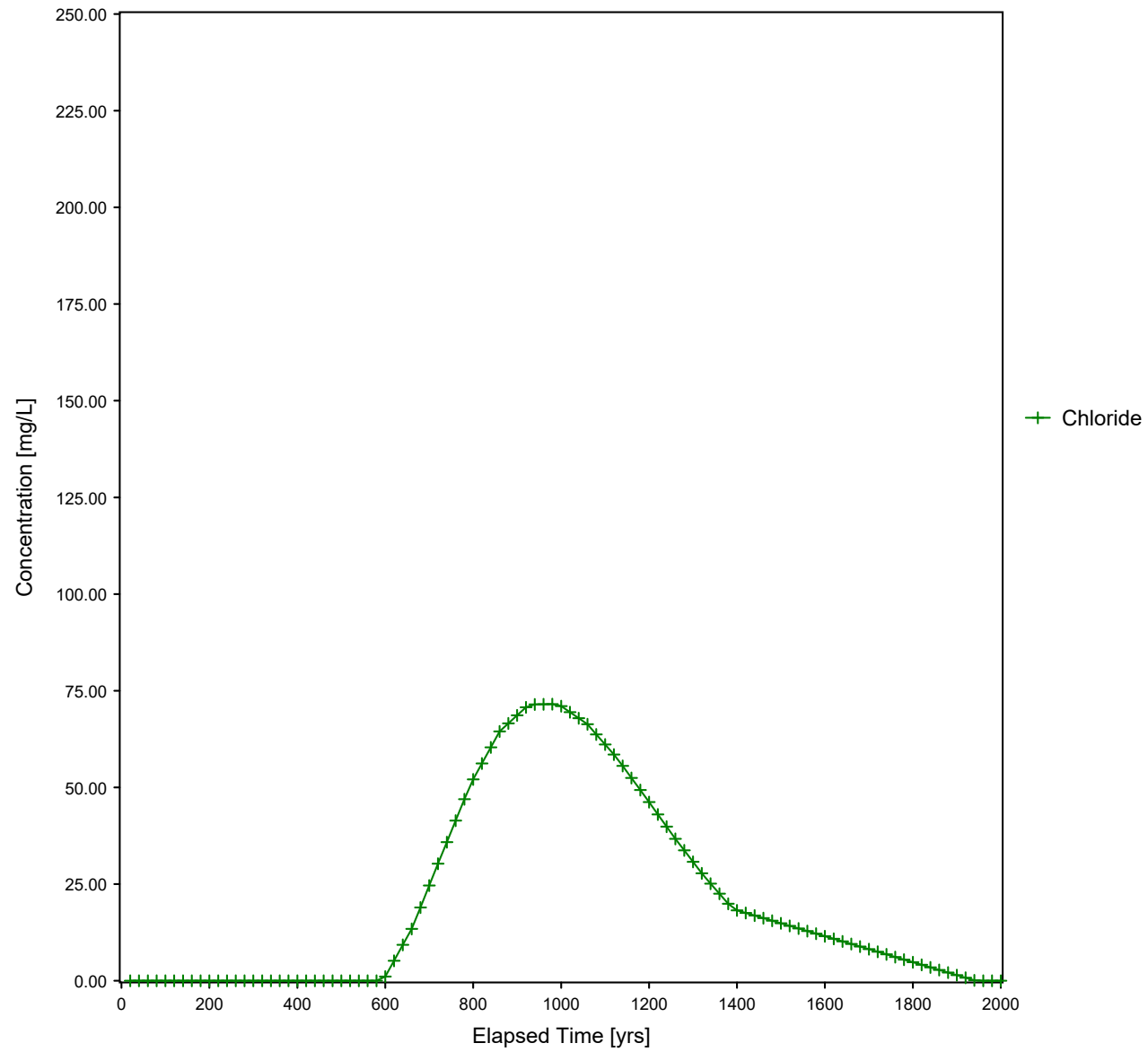
<b>Photo Number:</b> 10	
<b>Photo Direction:</b> East	
<b>Photo Description:</b>  View of the South Excavation.	

## **Appendix D**

### **Multimedia Exposure Assessment Model (MULTIMED)**

#### **North Excavation**

**Chloride Concentration At The Receptor Well (North Excavation - Lined)**  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line



Released to Imaging 9/13/2023 11:58:28 AM

U. S. ENVIRONMENTAL PROTECTION AGENCY  
EXPOSURE ASSESSMENT  
MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

Switched to Stehfest algorithm to avoid numerical problems  
with Convolution algorithm. Problems were caused by  
high source decay rate. Everything ok now, execution continuing...

Run options  
-----

Mt. Airy Oil Company  
Red Hills West 21 Fed Com #2H SWD Line

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models  
Run was DETERMIN  
Infiltration Specified By User: 7.620E-03 m/yr  
Run was transient  
Well Times: Find Maximum Concentration  
Reject runs if Y coordinate outside plume  
Reject runs if Z coordinate outside plume  
Gaussian source used in saturated zone model

UNSATURATED ZONE FLOW MODEL PARAMETERS  
(input parameter description and value)

NP	- Total number of nodal points	240
NMAT	- Number of different porous materials	1
KPROP	- Van Genuchten or Brooks and Corey	1
IMSHGN	- Spatial discretization option	1
NVFLAYR	- Number of layers in flow model	1

OPTIONS CHOSEN  
-----  
Van Genuchten functional coefficients  
User defined coordinate system

Layer information

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	32.90	1

DATA FOR MATERIAL 1  
-----  
VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	32.9	0.000	0.000	0.000

DATA FOR MATERIAL 1  
-----  
VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	1
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	3
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	-- 0.0
WTFUN	- Weighting factor	-- 1.2

OPTIONS CHOSEN

-----

Stehfest numerical inversion algorithm  
Exponentially decaying continuous source  
Computer generated times for computing concentrations

1

.

DATA FOR LAYER 1  
-----  
VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	32.9	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry's law constant	atm-m^3/M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.762E-02	-999.	-999.	-999.
Area of waste disposal unit	m^2	CONSTANT	567.	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.624E+04	-999.	-999.	-999.

Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

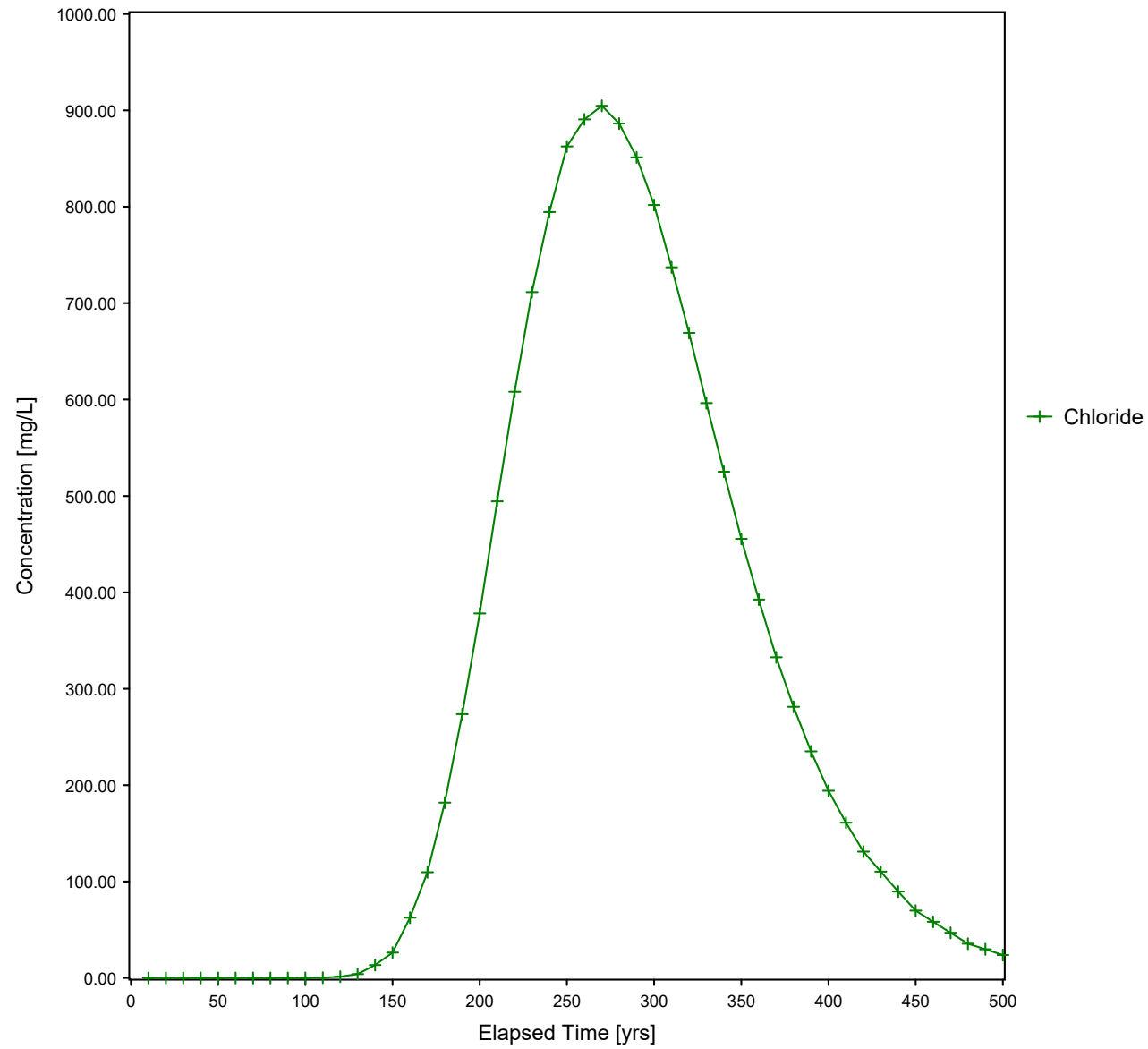
AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

MAXIMUM WELL CONCENTRATION IS 71.58 AT 993 YEARS



**Chloride Concentration At The Receptor Well (North Excavation - Unlined)**  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line



U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1  
Run options  
-----

Mowbourne Oil Company  
Fed Hills West 21 Fed Com #2H SWD Line

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models  
Run was DETERMIN  
Infiltration Specified By User: 3.048E-02 m/yr  
Run was transient  
Well Times: Find Maximum Concentration  
Reject runs if Y coordinate outside plume  
Reject runs if Z coordinate outside plume  
Gaussian source used in saturated zone model

1  
1

UNSATURATED ZONE FLOW MODEL PARAMETERS  
(input parameter description and value)  
NP - Total number of nodal points 240  
NMAT - Number of different porous materials 1  
KPROP - Van Genuchten or Brooks and Corey 1  
IMSHGN - Spatial discretization option 1  
NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN  
-----  
Van Genuchten functional coefficients  
User defined coordinate system

1

Layer information  
-----  
LAYER NO. LAYER THICKNESS MATERIAL PROPERTY  
-----  
1 32.90 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	32.9	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY - Number of different layers used 1  
 NTSTPS - Number of time values concentration calc 40  
 DUMMY - Not presently used 1  
 ISOL - Type of scheme used in unsaturated zone 2  
 N - Stehfest terms or number of increments 18  
 NTEL - Points in Lagrangian interpolation 3  
 NGPTS - Number of Gauss points 104  
 NIT - Convolution integral segments 2  
 IBOUND - Type of boundary condition 3  
 ITSGEN - Time values generated or input 1  
 TMAX - Max simulation time -- 0.0  
 WTFUN - Weighting factor -- 1.2

OPTIONS CHOSEN

-----  
 Convolution integral approach  
 Exponentially decaying continuous source  
 Computer generated times for computing concentrations

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	32.9	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

## CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm <sup>2</sup> /s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry's law constant	atm-m <sup>3</sup> /M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

## SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.	-999.	-999.
Area of waste disposal unit	m <sup>2</sup>	CONSTANT	567.	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.624E+04	-999.	-999.	-999.
Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00



## AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

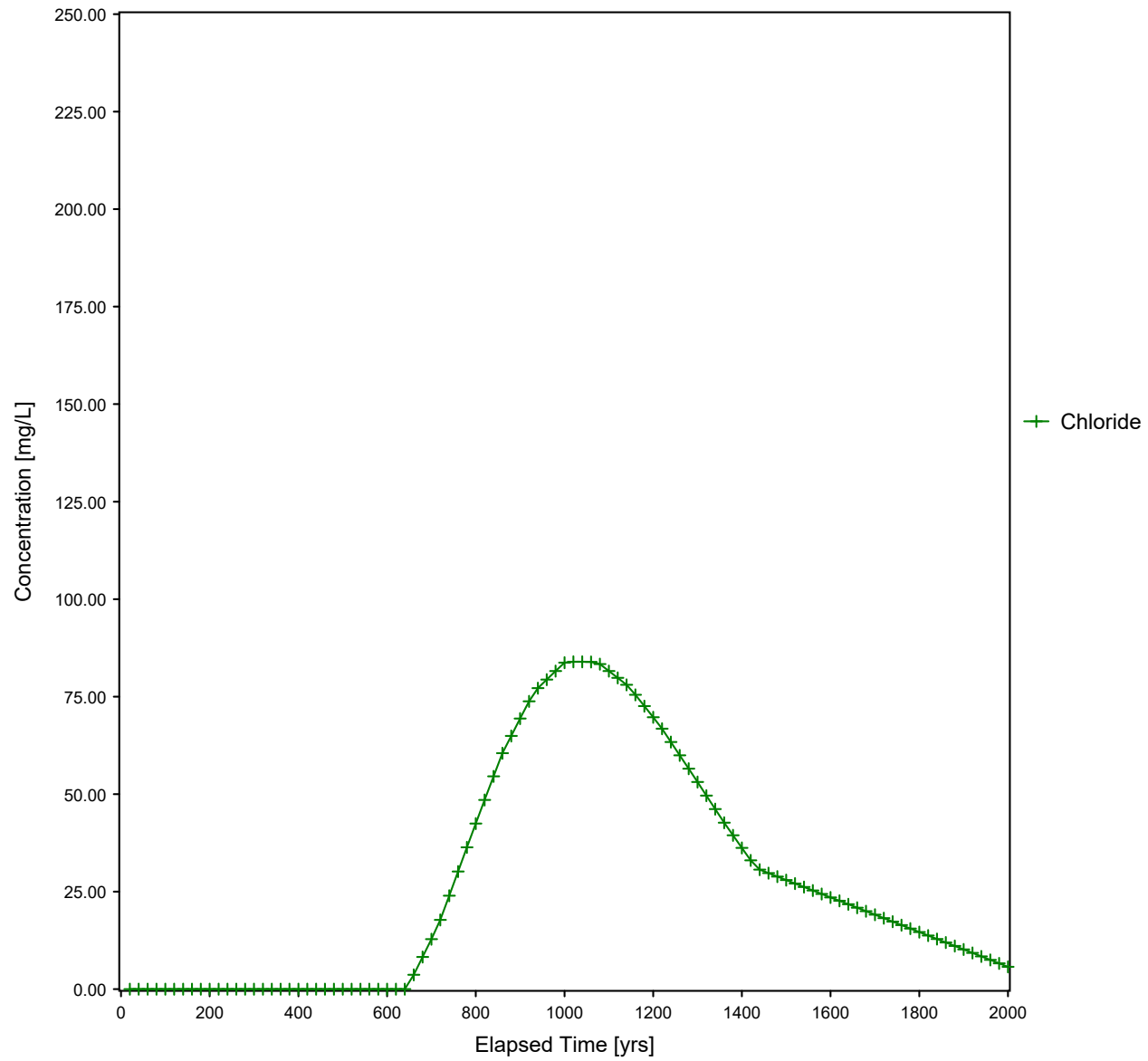
MAXIMUM WELL CONCENTRATION IS 908.8 AT 268 YEARS

## **Appendix E**

### **Multimedia Exposure Assessment Model (MULTIMED)**

#### **South Excavation**

**Chloride Concentration At The Receptor Well (South Excavation - Lined)**  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line



Released to Imaging 9/13/2023 11:58:28 AM

U. S. ENVIRONMENTAL PROTECTION AGENCY  
EXPOSURE ASSESSMENT  
MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

Switched to Stehfest algorithm to avoid numerical problems  
with Convolution algorithm. Problems were caused by  
high source decay rate. Everything ok now, execution continuing...

Run options  
-----

Mt. Airy Oil Company  
Red Hills West 21 Fed Com #2H SWD Line

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models  
Run was DETERMIN  
Infiltration Specified By User: 7.620E-03 m/yr  
Run was transient  
Well Times: Find Maximum Concentration  
Reject runs if Y coordinate outside plume  
Reject runs if Z coordinate outside plume  
Gaussian source used in saturated zone model

UNSATURATED ZONE FLOW MODEL PARAMETERS  
(input parameter description and value)

NP	- Total number of nodal points	240
NMAT	- Number of different porous materials	1
KPROP	- Van Genuchten or Brooks and Corey	1
IMSHGN	- Spatial discretization option	1
NVFLAYR	- Number of layers in flow model	1

OPTIONS CHOSEN  
-----  
Van Genuchten functional coefficients  
User defined coordinate system

Layer information  
-----

LAYER NO.	LAYER THICKNESS	MATERIAL PROPERTY
1	35.66	1



DATA FOR MATERIAL 1  
-----  
VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	35.7	0.000	0.000	0.000

DATA FOR MATERIAL 1  
-----  
VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	1
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	3
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	-- 0.0
WTFUN	- Weighting factor	-- 1.2

OPTIONS CHOSEN  
-----

Stehfest numerical inversion algorithm  
Exponentially decaying continuous source  
Computer generated times for computing concentrations

1

## VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	35.7	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

## CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm2/s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry's law constant	atm-m^3/M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

## SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.762E-02	-999.	-999.	-999.
Area of waste disposal unit	m^2	CONSTANT	0.397E+04	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.672E+04	-999.	-999.	-999.

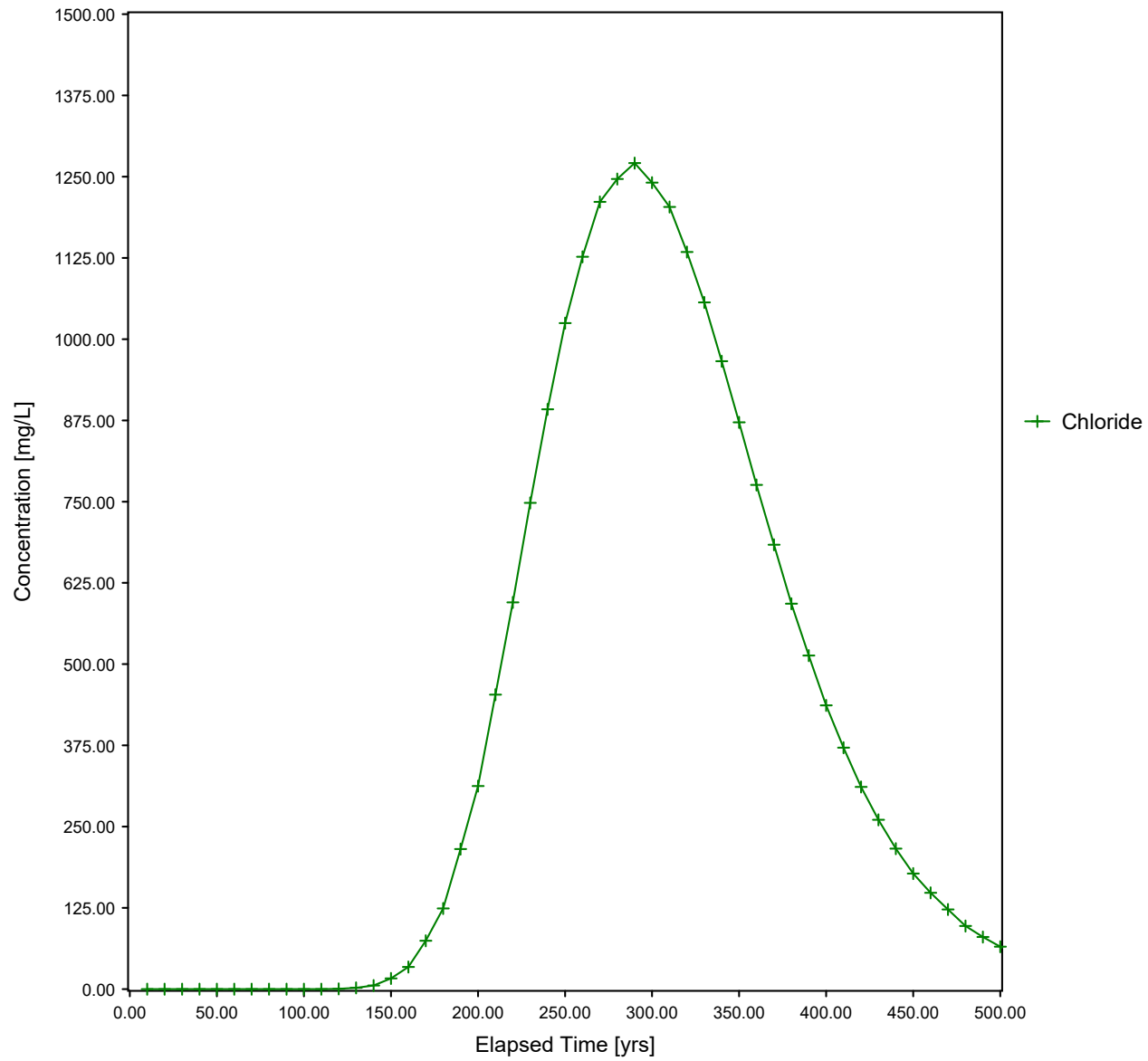
Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

## AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

MAXIMUM WELL CONCENTRATION IS 83.99 AT 1000 YEARS

**Chloride Concentration At The Receptor Well (South Excavation - No Liner)**  
Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line





U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1  
Run options  
-----

Mowbourne Oil Company  
Fed Hills West 21 Fed Com #2H SWD Line

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models  
Run was DETERMIN  
Infiltration Specified By User: 3.048E-02 m/yr  
Run was transient  
Well Times: Find Maximum Concentration  
Reject runs if Y coordinate outside plume  
Reject runs if Z coordinate outside plume  
Gaussian source used in saturated zone model

1  
1  
UNSATURATED ZONE FLOW MODEL PARAMETERS  
(input parameter description and value)  
NP - Total number of nodal points 240  
NMAT - Number of different porous materials 1  
KPROP - Van Genuchten or Brooks and Corey 1  
IMSHGN - Spatial discretization option 1  
NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN  
-----  
Van Genuchten functional coefficients  
User defined coordinate system

1  
Layer information  
-----  
LAYER NO. LAYER THICKNESS MATERIAL PROPERTY  
-----  
1 35.66 1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	35.7	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	2
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	3
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	-- 0.0
WTFUN	- Weighting factor	-- 1.2

OPTIONS CHOSEN

-----  
Convolution integral approach  
Exponentially decaying continuous source  
Computer generated times for computing concentrations

1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	35.7	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

## CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm <sup>2</sup> /s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry's law constant	atm-m <sup>3</sup> /M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

## SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.	-999.	-999.
Area of waste disposal unit	m <sup>2</sup>	CONSTANT	0.397E+04	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.672E+04	-999.	-999.	-999.
Length scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Width scale of facility	m	DERIVED	-999.	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

## AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

MAXIMUM WELL CONCENTRATION IS 1302. AT 290 YEARS



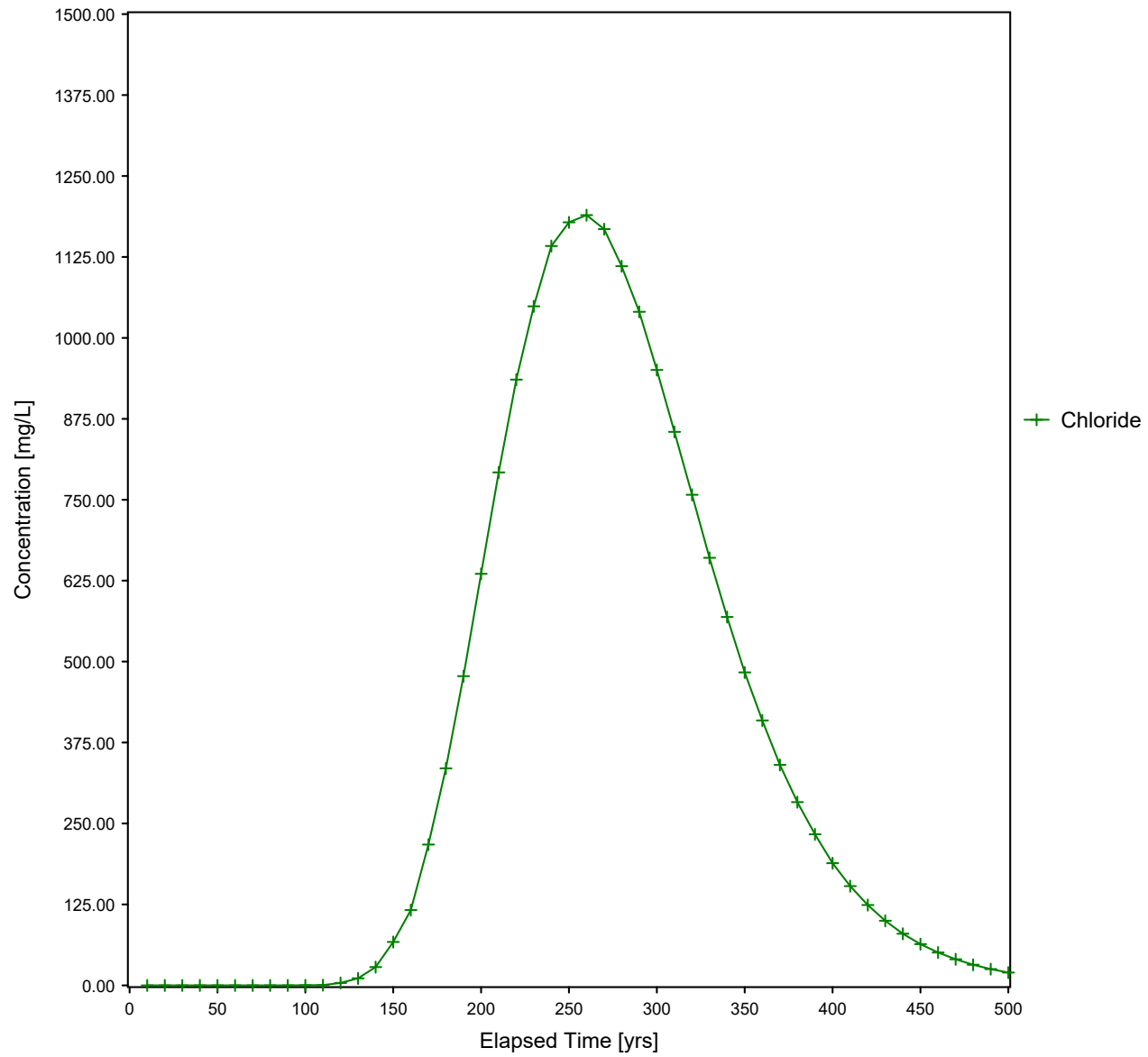
## **Appendix F**

### **Multimedia Exposure Assessment Model (MULTIMED)**

#### **Deferral Area**

# Chloride Concentration At The Receptor Well (Deferral Area)

Mewbourne Oil Company  
Red Hills West 21 Fed Com #2H SWD Line



U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1  
Run options  
-----

Mowbourne Oil Company  
Fed Hills West 21 Fed Com #2H SWD Line

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models  
Run was DETERMIN  
Infiltration Specified By User: 3.048E-02 m/yr  
Run was transient  
Well Times: Find Maximum Concentration  
Reject runs if Y coordinate outside plume  
Reject runs if Z coordinate outside plume  
Gaussian source used in saturated zone model

1  
1  
UNSATURATED ZONE FLOW MODEL PARAMETERS  
(input parameter description and value)  
NP - Total number of nodal points 240  
NMAT - Number of different porous materials 1  
KPROP - Van Genuchten or Brooks and Corey 1  
IMSHGN - Spatial discretization option 1  
NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN  
-----  
Van Genuchten functional coefficients  
User defined coordinate system

1  
Layer information  
-----  
LAYER NO. LAYER THICKNESS MATERIAL PROPERTY  
-----  
1 31.39 1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	31.4	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	2
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	3
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	-- 0.0
WTFUN	- Weighting factor	-- 1.2

OPTIONS CHOSEN

-----  
Convolution integral approach  
Exponentially decaying continuous source  
Computer generated times for computing concentrations

1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES



VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	31.4	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

## CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm <sup>2</sup> /s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry's law constant	atm-m <sup>3</sup> /M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

## SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.	-999.	-999.
Area of waste disposal unit	m <sup>2</sup>	DERIVED	0.343E+04	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.606E+04	-999.	-999.	-999.
Length scale of facility	m	CONSTANT	34.8	-999.	-999.	-999.
Width scale of facility	m	CONSTANT	1.83	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00

## AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

MAXIMUM WELL CONCENTRATION IS 1198. AT 256 YEARS

U. S. ENVIRONMENTAL PROTECTION AGENCY

EXPOSURE ASSESSMENT

MULTIMEDIA MODEL

MULTIMED (Version 1.50, 2005)

1  
Run options  
-----

Mowbourne Oil Company  
Fed Hills West 21 Fed Com #2H SWD Line

Chemical simulated is Chloride

Option Chosen Saturated and unsaturated zone models  
Run was DETERMIN  
Infiltration Specified By User: 3.048E-02 m/yr  
Run was transient  
Well Times: Entered Explicitly  
Reject runs if Y coordinate outside plume  
Reject runs if Z coordinate outside plume  
Gaussian source used in saturated zone model

1  
1  
UNSATURATED ZONE FLOW MODEL PARAMETERS  
(input parameter description and value)  
NP - Total number of nodal points 240  
NMAT - Number of different porous materials 1  
KPROP - Van Genuchten or Brooks and Corey 1  
IMSHGN - Spatial discretization option 1  
NVFLAYR - Number of layers in flow model 1

OPTIONS CHOSEN  
-----  
Van Genuchten functional coefficients  
User defined coordinate system

1  
Layer information  
-----  
LAYER NO. LAYER THICKNESS MATERIAL PROPERTY  
-----  
1 31.39 1

DATA FOR MATERIAL 1

VADOSE ZONE MATERIAL VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Saturated hydraulic conductivity	cm/hr	CONSTANT	3.60	-999.	-999.	-999.
Unsaturated zone porosity	--	CONSTANT	0.250	-999.	-999.	-999.
Air entry pressure head	m	CONSTANT	0.700	-999.	-999.	-999.
Depth of the unsaturated zone	m	CONSTANT	31.4	0.000	0.000	0.000

DATA FOR MATERIAL 1

VADOSE ZONE FUNCTION VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Residual water content	--	CONSTANT	0.116	-999.	-999.	-999.
Brook and Corey exponent, EN	--	CONSTANT	-999.	-999.	-999.	-999.
ALFA coefficient	1/cm	CONSTANT	0.500E-02	-999.	-999.	-999.
Van Genuchten exponent, ENN	--	CONSTANT	1.09	-999.	-999.	-999.

1

UNSATURATED ZONE TRANSPORT MODEL PARAMETERS

NLAY	- Number of different layers used	1
NTSTPS	- Number of time values concentration calc	40
DUMMY	- Not presently used	1
ISOL	- Type of scheme used in unsaturated zone	2
N	- Stehfest terms or number of increments	18
NTEL	- Points in Lagrangian interpolation	3
NGPTS	- Number of Gauss points	104
NIT	- Convolution integral segments	2
IBOUND	- Type of boundary condition	3
ITSGEN	- Time values generated or input	1
TMAX	- Max simulation time	-- 0.0
WTFUN	- Weighting factor	-- 1.2

OPTIONS CHOSEN

-----  
Convolution integral approach  
Exponentially decaying continuous source  
Computer generated times for computing concentrations

1

DATA FOR LAYER 1

VADOSE TRANSPORT VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Thickness of layer	m	CONSTANT	31.4	-999.	-999.	-999.
Longitudinal dispersivity of layer	m	DERIVED	-999.	-999.	-999.	-999.
Percent organic matter	--	CONSTANT	0.000	-999.	-999.	-999.
Bulk density of soil for layer	g/cc	CONSTANT	1.99	-999.	-999.	-999.
Biological decay coefficient	1/yr	CONSTANT	0.000	-999.	-999.	-999.

## CHEMICAL SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Solid phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Dissolved phase decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Overall chemical decay coefficient	1/yr	DERIVED	-999.	-999.	-999.	-999.
Acid catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Neutral hydrolysis rate constant	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Base catalyzed hydrolysis rate	1/M-yr	CONSTANT	0.000	-999.	-999.	-999.
Reference temperature	C	CONSTANT	25.0	-999.	-999.	-999.
Normalized distribution coefficient	ml/g	CONSTANT	0.000	-999.	-999.	-999.
Distribution coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Biodegradation coefficient (sat. zone)	1/yr	CONSTANT	0.000	-999.	-999.	-999.
Air diffusion coefficient	cm <sup>2</sup> /s	CONSTANT	-999.	-999.	-999.	-999.
Reference temperature for air diffusion	C	CONSTANT	-999.	-999.	-999.	-999.
Molecular weight	g/M	CONSTANT	-999.	-999.	-999.	-999.
Mole fraction of solute	--	CONSTANT	-999.	-999.	-999.	-999.
Vapor pressure of solute	mm Hg	CONSTANT	-999.	-999.	-999.	-999.
Henry's law constant	atm-m <sup>3</sup> /M	CONSTANT	-999.	-999.	-999.	-999.
Overall 1st order decay sat. zone	1/yr	DERIVED	0.000	0.000	0.000	1.00
Not currently used		CONSTANT	0.000	0.000	0.000	0.000
Not currently used		CONSTANT	0.000	0.000	0.000	0.000

## SOURCE SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Infiltration rate	m/yr	CONSTANT	0.305E-01	-999.	-999.	-999.
Area of waste disposal unit	m <sup>2</sup>	DERIVED	0.343E+04	-999.	-999.	-999.
Duration of pulse	yr	DERIVED	0.100E-08	-999.	-999.	-999.
Spread of contaminant source	m	DERIVED	-999.	-999.	-999.	-999.
Recharge rate	m/yr	CONSTANT	0.000	-999.	-999.	-999.
Source decay constant	1/yr	CONSTANT	0.250E-01	0.000	0.000	0.000
Initial concentration at landfill	mg/l	CONSTANT	0.606E+04	-999.	-999.	-999.
Length scale of facility	m	CONSTANT	34.8	-999.	-999.	-999.
Width scale of facility	m	CONSTANT	1.83	-999.	-999.	-999.
Near field dilution		DERIVED	1.00	0.000	0.000	1.00



## AQUIFER SPECIFIC VARIABLES

VARIABLE NAME	UNITS	DISTRIBUTION	PARAMETERS		LIMITS	
			MEAN	STD DEV	MIN	MAX
Particle diameter	cm	CONSTANT	-999.	-999.	-999.	-999.
Aquifer porosity	--	CONSTANT	0.300	-999.	-999.	-999.
Bulk density	g/cc	CONSTANT	1.86	-999.	-999.	-999.
Aquifer thickness	m	CONSTANT	6.10	-999.	-999.	-999.
Source thickness (mixing zone depth)	m	DERIVED	-999.	-999.	-999.	-999.
Conductivity (hydraulic)	m/yr	CONSTANT	315.	-999.	-999.	-999.
Gradient (hydraulic)		CONSTANT	0.300E-02	-999.	-999.	-999.
Groundwater seepage velocity	m/yr	DERIVED	-999.	-999.	-999.	-999.
Retardation coefficient	--	DERIVED	-999.	-999.	-999.	-999.
Longitudinal dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Transverse dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Vertical dispersivity	m	FUNCTION OF X	-999.	-999.	-999.	-999.
Temperature of aquifer	C	CONSTANT	20.0	-999.	-999.	-999.
pH	--	CONSTANT	7.00	-999.	-999.	-999.
Organic carbon content (fraction)		CONSTANT	0.000	-999.	-999.	-999.
Well distance from site	m	CONSTANT	1.00	-999.	-999.	-999.
Angle off center	degree	CONSTANT	0.000	-999.	-999.	-999.
Well vertical distance	m	CONSTANT	0.000	-999.	-999.	-999.

TIME            CONCENTRATION

0.100E+02	0.00000E+00
0.200E+02	0.00000E+00
0.300E+02	0.00000E+00
0.400E+02	0.00000E+00
0.500E+02	0.00000E+00
0.600E+02	0.00000E+00
0.700E+02	0.00000E+00
0.800E+02	0.00000E+00
0.900E+02	0.00000E+00
0.100E+03	0.17232E+00
0.110E+03	0.54975E+00
0.120E+03	0.37397E+01
0.130E+03	0.10883E+02
0.140E+03	0.28383E+02
0.150E+03	0.67030E+02
0.160E+03	0.11629E+03
0.170E+03	0.21742E+03
0.180E+03	0.33515E+03
0.190E+03	0.47756E+03
0.200E+03	0.63547E+03
0.210E+03	0.79215E+03
0.220E+03	0.93545E+03
0.230E+03	0.10488E+04
0.240E+03	0.11419E+04
0.250E+03	0.11785E+04

0.260E+03	0.11896E+04
0.270E+03	0.11679E+04
0.280E+03	0.11107E+04
0.290E+03	0.10403E+04
0.300E+03	0.95035E+03
0.310E+03	0.85486E+03
0.320E+03	0.75779E+03
0.330E+03	0.66028E+03
0.340E+03	0.56884E+03
0.350E+03	0.48347E+03
0.360E+03	0.40921E+03
0.370E+03	0.34049E+03
0.380E+03	0.28292E+03
0.390E+03	0.23323E+03
0.400E+03	0.18884E+03
0.410E+03	0.15342E+03
0.420E+03	0.12404E+03
0.430E+03	0.99794E+02
0.440E+03	0.79821E+02
0.450E+03	0.63814E+02
0.460E+03	0.50802E+02
0.470E+03	0.40331E+02
0.480E+03	0.31860E+02
0.490E+03	0.25200E+02
0.500E+03	0.19869E+02

## **Appendix G**

### **Laboratory Analytical Reports**



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

---

March 08, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 03/03/22 15:50.

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 fluid and cursive, with the first name "Celey" and last name "Keene" clearly distinguishable.

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: NH 1 @ SURFACE (H220846-01)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTEX	<0.300	0.300	03/05/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	03/07/2022	ND	416	104	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 81.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 89.2 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: NH 1 @ 1' (H220846-02)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTEx	<0.300	0.300	03/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	<16.0	16.0	03/07/2022	ND	416	104	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 81.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 88.9 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 1 @ SURFACE (H220846-03)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTEx	<0.300	0.300	03/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	32.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 80.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 1 @ 1' (H220846-04)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTEx	<0.300	0.300	03/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 86.6 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.3 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 2 @ SURFACE (H220846-05)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTX	<0.300	0.300	03/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	32.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 90.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 98.8 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 2 @ 1' (H220846-06)**

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	03/05/2022	ND	2.19	109	2.00	0.514		
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485		
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478		
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663		
Total BTEx	<0.300	0.300	03/05/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 81.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.6 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 3 @ SURFACE (H220846-07)**

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	03/05/2022	ND	2.19	109	2.00	0.514		
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485		
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478		
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663		
Total BTEx	<0.300	0.300	03/05/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 88.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 96.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 3 @ 1' (H220846-08)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTEx	<0.300	0.300	03/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 82.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 88.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 4 @ SURFACE (H220846-09)**

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	03/05/2022	ND	2.19	109	2.00	0.514	
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485	
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478	
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663	
Total BTEx	<0.300	0.300	03/05/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	32.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 82.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 91.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/03/2022	Sampling Date:	03/03/2022
Reported:	03/08/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE		

**Sample ID: EH 4 @ 1' (H220846-10)**

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	03/05/2022	ND	2.19	109	2.00	0.514		
Toluene*	<0.050	0.050	03/05/2022	ND	2.15	107	2.00	0.0485		
Ethylbenzene*	<0.050	0.050	03/05/2022	ND	2.12	106	2.00	0.478		
Total Xylenes*	<0.150	0.150	03/05/2022	ND	6.55	109	6.00	0.663		
Total BTEx	<0.300	0.300	03/05/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/07/2022	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	03/07/2022	ND	208	104	200	1.13	
DRO >C10-C28*	<10.0	10.0	03/07/2022	ND	200	99.8	200	3.01	
EXT DRO >C28-C36	<10.0	10.0	03/07/2022	ND					

Surrogate: 1-Chlorooctane 77.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 84.9 % 59.5-142

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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 "C. D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager





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

---

March 10, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 03/04/22 15:45.

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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 1 @ SURFACE (H220874-01)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTEX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1490	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	195	97.6	200	26.1	
DRO >C10-C28*	57.6	10.0	03/09/2022	ND	197	98.4	200	13.0	
EXT DRO >C28-C36	12.3	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 86.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 98.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 1 @ 8' (H220874-02)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	32.0	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	195	97.6	200	26.1	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	197	98.4	200	13.0	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 87.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 96.7 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 2 @ SURFACE (H220874-03)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTEX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 110 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	336	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	195	97.6	200	26.1	
DRO >C10-C28*	33.9	10.0	03/09/2022	ND	197	98.4	200	13.0	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 83.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.8 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 2 @ 14' (H220874-04)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTEx	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	160	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	195	97.6	200	26.1	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	197	98.4	200	13.0	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 81.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 91.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 3 @ SURFACE (H220874-05)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTEx	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 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	2600	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	23.1	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 82.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 81.9 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 3 @ 6' (H220874-06)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 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	160	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 88.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 84.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 4 @ SURFACE (H220874-07)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	1620	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	178	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	81.6	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 84.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 90.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/03/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 4 @ 4' (H220874-08)**

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	03/08/2022	ND	2.04	102	2.00	4.39		
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51		
Total BTX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 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	592	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 100 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.6 % 59.5-142

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 5 @ SURFACE (H220874-09)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTEx	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 109 % 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	3520	16.0	03/08/2022	ND	432	108	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 96.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 91.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 5 @ 4' (H220874-10)**

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	03/08/2022	ND	2.04	102	2.00	4.39	
Toluene*	<0.050	0.050	03/08/2022	ND	2.05	103	2.00	7.97	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	2.02	101	2.00	7.48	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	6.30	105	6.00	7.51	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	48.0	16.0	03/08/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 89.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 85.0 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 6 @ SURFACE (H220874-11)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTEX	<0.300	0.300	03/08/2022	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	6080	16.0	03/08/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 91.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 86.8 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 6 @ 8' (H220874-12)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTEx	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	464	16.0	03/08/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 88.6 % 66.9-136

Surrogate: 1-Chlorooctadecane 85.2 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 7 @ SURFACE (H220874-13)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTEx	<0.300	0.300	03/08/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6560	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 91.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 86.8 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 7 @ 6' (H220874-14)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTEX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	368	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 91.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.1 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 8 @ SURFACE (H220874-15)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	4800	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 96.4 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SP 8 @ 8' (H220874-16)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	64.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 92.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.7 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: EH 5 @ SURFACE (H220874-17)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	32.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 98.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 93.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: EH 5 @ 1' (H220874-18)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	80.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 97.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 91.9 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SH 1 @ SURFACE (H220874-19)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTEX	<0.300	0.300	03/08/2022	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 88.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 85.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: SH 1 @ 1' (H220874-20)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	48.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 99.7 % 66.9-136

Surrogate: 1-Chlorooctadecane 94.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 1 @ SURFACE (H220874-21)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 91.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 1 @ 1' (H220874-22)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTEX	<0.300	0.300	03/08/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 96.9 % 66.9-136

Surrogate: 1-Chlorooctadecane 93.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 2 @ SURFACE (H220874-23)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 97.1 % 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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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 2 @ 1' (H220874-24)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	198	99.2	200	4.39	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	186	92.8	200	1.74	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 95.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 92.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 3 @ SURFACE (H220874-25)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	<16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	211	105	200	14.0	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	193	96.4	200	18.5	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 82.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 77.7 % 59.5-142

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 3 @ 1' (H220874-26)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	211	105	200	14.0	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	193	96.4	200	18.5	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 84.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 80.6 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 4 @ SURFACE (H220874-27)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35		
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59		
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47		
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37		
Total BTEX	<0.300	0.300	03/08/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	<16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	211	105	200	14.0	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	193	96.4	200	18.5	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 92.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 90.0 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 4 @ 1' (H220874-28)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTEX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 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	<16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	211	105	200	14.0	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	193	96.4	200	18.5	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 86.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 81.9 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 5 @ SURFACE (H220874-29)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTEX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	211	105	200	14.0	
DRO >C10-C28*	<10.0	10.0	03/09/2022	ND	193	96.4	200	18.5	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 94.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 89.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	03/04/2022	Sampling Date:	03/04/2022
Reported:	03/10/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	Cool & Intact
Project Number:	15507	Sample Received By:	Jodi Henson
Project Location:	MEWBOURNE		

**Sample ID: WH 5 @ 1' (H220874-30)**

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	03/08/2022	ND	1.97	98.4	2.00	5.35	
Toluene*	<0.050	0.050	03/08/2022	ND	1.98	99.1	2.00	5.59	
Ethylbenzene*	<0.050	0.050	03/08/2022	ND	1.91	95.6	2.00	5.47	
Total Xylenes*	<0.150	0.150	03/08/2022	ND	5.97	99.5	6.00	4.37	
Total BTX	<0.300	0.300	03/08/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	48.0	16.0	03/09/2022	ND	416	104	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	03/09/2022	ND	211	105	200	14.0	
DRO >C10-C28*	21.8	10.0	03/09/2022	ND	193	96.4	200	18.5	
EXT DRO >C28-C36	<10.0	10.0	03/09/2022	ND					

Surrogate: 1-Chlorooctane 106 % 66.9-136

Surrogate: 1-Chlorooctadecane 107 % 59.5-142

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---

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-04	The RPD for the BS/BSD was outside of historical limits.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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





No Rush

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

1.f3

Page 33 of 35

## CARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

**(575) 393-2326 FAX (575) 393-2476**

[illegible]

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

2 of 3

## ARDINAL LABORATORIES

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

Company Name: Etech Environmental & Safety Solutions, Inc.				BILL TO				ANALYSIS REQUEST																																	
Project Manager: Lance Crenshaw				P.O. #:				Chloride TPH (8015M) BTEX (8021B)																																	
Address: P.O. Box 301				Company: Mowhorne																																					
City: Lovington Hobbs State: NM Zip: 88260 88240				Attn: Robbie Runnels																																					
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address:																																					
Project #: 15507 Project Owner: Robbie Runnels				City:																																					
Project Name: Red Hills West 21 Fed Com 2 H Battery				State: Zip:																																					
Project Location: Mowhorne Oil Company				Phone #:																																					
Sampler Name: Eric Mojica				Fax #:																																					
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																															
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER:		ACID/BASE:		ICE / COOL		OTHER:		DATE		TIME													
11		SP 60 Surf.		G		1						✓										✓		✓		3-4-22				✓											
12		SP 60 8'		G		1						✓										✓		✓						✓											
13		SP 70 Surf.		G		1						✓										✓		✓						✓											
14		SP 70 6'		G		1						✓										✓		✓						✓											
15		SP 80 Surf.		G		1						✓										✓		✓						✓											
16		SP 80 8'		G		1						✓										✓		✓						✓											
17		EH 50 Surf.		G		1						✓										✓		✓						✓											
18		EH 50 1'		G		1						✓										✓		✓						✓											
19		SH 10 Surf.		G		1						✓										✓		✓						✓											
20		SH 10 1'		G		1						✓										✓		✓						✓											
PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.																																									
Relinquished By:				Date: 3-4-22		Received By:				Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:																											
Eric Mojica				Time: 15:45		Jodi Benson				Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Fax #:																											
Relinquished By:				Date:		Received By:				REMARKS:																															
				Time:																																					
Delivered By: (Circle One)				Sample Condition				CHECKED BY:				Please email results to pm@etechenv.com.																													
Sampler - UPS - Bus - Other:				Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>				(Initials)																																	
				<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				5.4 #113																																	
				<input type="checkbox"/> No <input type="checkbox"/> Yes				5.10																																	

FORM-006  
Revision 1.0

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## ARDINAL LABORATORIES

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

No Rush

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

3 of 3

Page 35 of 35

Company Name: Etech Environmental & Safety Solutions, Inc.				BILL TO				ANALYSIS REQUEST																					
Project Manager: Lance Crenshaw				P.O. #:				Chloride TPH (8015M) BTEX (8021B)																					
Address: P.O. Box 301				Company: Mawbourne																									
City: Lovington Hobbs State: NM Zip: 88260 88240				Attn: Robbie Runnels																									
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address:																									
Project #: 15507 Project Owner: Robbie Runnels				City:																									
Project Name: Red Hills West 21 Fed Com 2H Battery				State: Zip:																									
Project Location: Mawbourne Oil Company				Phone #:																									
Sampler Name: Eric Mojica				Fax #:																									
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																			
Lab I.D.		Sample I.D.		GRAB OR (COMP. # CONTAINERS		GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER:		ACID/BASE: ICE / COOL OTHER:		DATE TIME																			
21		WH1eSurf.		G 1				✓		✓		3.4.22		✓		✓		✓											
22		WH1e1'		G 1				✓		✓				✓		✓		✓											
23		WH2eSurf.		G 1				✓		✓				✓		✓		✓											
24		WH2e1'		G 1				✓		✓				✓		✓		✓											
25		WH3eSurf.		G 1				✓		✓				✓		✓		✓											
26		WH3e1'		G 1				✓		✓				✓		✓		✓											
27		WH4eSurf.		G 1				✓		✓				✓		✓		✓											
28		WH4e1'		G 1				✓		✓				✓		✓		✓											
29		WH5eSurf.		G 1				✓		✓				✓		✓		✓											
30		WH5e1'		G 1				✓		✓				✓		✓		✓											
<p>PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																													
Relinquished By: Eric Mojica				Date: 3.4.22 Time: 15:45		Received By: Jodi Hanson				Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No RE:MARKS:				Add'l Phone #:				Add'l Fax #:											
Relinquished By:				Date: Time:		Received By:																							
Delivered By: (Circle One) 562 #113				Sampler - UPS - Bus - Other: -1.5 2.12		Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> No				CHECKED BY: (Initials) GH				Please email results to pm@etechenv.com.															



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

---

May 13, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/11/22 16:42.

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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/11/2022	Sampling Date:	05/11/2022
Reported:	05/13/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: SW 1 B (H222002-01)**

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	05/12/2022	ND	2.10	105	2.00	1.39	
Toluene*	<0.050	0.050	05/12/2022	ND	2.07	103	2.00	2.06	
Ethylbenzene*	<0.050	0.050	05/12/2022	ND	1.95	97.7	2.00	1.31	
Total Xylenes*	<0.150	0.150	05/12/2022	ND	6.06	101	6.00	1.97	
Total BTEX	<0.300	0.300	05/12/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	96.0	16.0	05/12/2022	ND	432	108	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	05/12/2022	ND	211	105	200	10.8	
DRO >C10-C28*	<10.0	10.0	05/12/2022	ND	198	99.1	200	6.15	
EXT DRO >C28-C36	<10.0	10.0	05/12/2022	ND					

Surrogate: 1-Chlorooctane 116 % 66.9-136

Surrogate: 1-Chlorooctadecane 117 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/11/2022	Sampling Date:	05/11/2022
Reported:	05/13/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 1 E (H222002-02)**

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	05/12/2022	ND	2.10	105	2.00	1.39	
Toluene*	<0.050	0.050	05/12/2022	ND	2.07	103	2.00	2.06	
Ethylbenzene*	<0.050	0.050	05/12/2022	ND	1.95	97.7	2.00	1.31	
Total Xylenes*	<0.150	0.150	05/12/2022	ND	6.06	101	6.00	1.97	
Total BTX	<0.300	0.300	05/12/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	32.0	16.0	05/12/2022	ND	432	108	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	05/12/2022	ND	211	105	200	10.8	
DRO >C10-C28*	<10.0	10.0	05/12/2022	ND	198	99.1	200	6.15	
EXT DRO >C28-C36	<10.0	10.0	05/12/2022	ND					

Surrogate: 1-Chlorooctane 116 % 66.9-136

Surrogate: 1-Chlorooctadecane 118 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/11/2022	Sampling Date:	05/11/2022
Reported:	05/13/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: NW 1 A (H222002-03)**

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	05/12/2022	ND	2.10	105	2.00	1.39	
Toluene*	<0.050	0.050	05/12/2022	ND	2.07	103	2.00	2.06	
Ethylbenzene*	<0.050	0.050	05/12/2022	ND	1.95	97.7	2.00	1.31	
Total Xylenes*	<0.150	0.150	05/12/2022	ND	6.06	101	6.00	1.97	
Total BTX	<0.300	0.300	05/12/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	48.0	16.0	05/12/2022	ND	432	108	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	05/12/2022	ND	211	105	200	10.8	
DRO >C10-C28*	<10.0	10.0	05/12/2022	ND	198	99.1	200	6.15	
EXT DRO >C28-C36	<10.0	10.0	05/12/2022	ND					

Surrogate: 1-Chlorooctane 115 % 66.9-136

Surrogate: 1-Chlorooctadecane 114 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/11/2022	Sampling Date:	05/11/2022
Reported:	05/13/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: SW 3 B (H222002-04)**

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	05/13/2022	ND	2.10	105	2.00	1.39		
Toluene*	<0.050	0.050	05/13/2022	ND	2.07	103	2.00	2.06		
Ethylbenzene*	<0.050	0.050	05/13/2022	ND	1.95	97.7	2.00	1.31		
Total Xylenes*	<0.150	0.150	05/13/2022	ND	6.06	101	6.00	1.97		
Total BTEx	<0.300	0.300	05/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	96.0	16.0	05/12/2022	ND	432	108	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	05/12/2022	ND	211	105	200	10.8	
DRO >C10-C28*	<10.0	10.0	05/12/2022	ND	198	99.1	200	6.15	
EXT DRO >C28-C36	<10.0	10.0	05/12/2022	ND					

Surrogate: 1-Chlorooctane 115 % 66.9-136

Surrogate: 1-Chlorooctadecane 116 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/11/2022	Sampling Date:	05/11/2022
Reported:	05/13/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 2 A (H222002-05)**

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	05/13/2022	ND	2.10	105	2.00	1.39	
Toluene*	<0.050	0.050	05/13/2022	ND	2.07	103	2.00	2.06	
Ethylbenzene*	<0.050	0.050	05/13/2022	ND	1.95	97.7	2.00	1.31	
Total Xylenes*	<0.150	0.150	05/13/2022	ND	6.06	101	6.00	1.97	
Total BTEx	<0.300	0.300	05/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 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	48.0	16.0	05/12/2022	ND	432	108	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	05/12/2022	ND	211	105	200	10.8	
DRO >C10-C28*	<10.0	10.0	05/12/2022	ND	198	99.1	200	6.15	
EXT DRO >C28-C36	<10.0	10.0	05/12/2022	ND					

Surrogate: 1-Chlorooctane 118 % 66.9-136

Surrogate: 1-Chlorooctadecane 120 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/11/2022	Sampling Date:	05/11/2022
Reported:	05/13/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	NOT GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: SW 2 B (H222002-06)**

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	05/13/2022	ND	2.10	105	2.00	1.39		
Toluene*	<0.050	0.050	05/13/2022	ND	2.07	103	2.00	2.06		
Ethylbenzene*	<0.050	0.050	05/13/2022	ND	1.95	97.7	2.00	1.31		
Total Xylenes*	<0.150	0.150	05/13/2022	ND	6.06	101	6.00	1.97		
Total BTEX	<0.300	0.300	05/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.5 % 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	480	16.0	05/12/2022	ND	432	108	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	05/12/2022	ND	211	105	200	10.8	
DRO >C10-C28*	<10.0	10.0	05/12/2022	ND	198	99.1	200	6.15	
EXT DRO >C28-C36	<10.0	10.0	05/12/2022	ND					

Surrogate: 1-Chlorooctane 113 % 66.9-136

Surrogate: 1-Chlorooctadecane 114 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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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

---

Cardinal Laboratories

\*=Accredited Analyte

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

---

Celey D. Keene, Lab Director/Quality Manager

**ARDINAL LABORATORIES**

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.				BILL TO				ANALYSIS REQUEST																	
Project Manager: Lance Crenshaw				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>																	
Address: P.O. Box 301				Company: Etech																					
City: Lovington State: NM Zip: 88260				Attn:																					
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address:																					
Project #: Project Owner:				City:																					
Project Name: Red Hills West #21 Fed Can 2H				State: NM Zip: 8200																					
Project Location: rural Jct NM				Phone #:																					
Sampler Name: Dominic Casarez				Fax #:																					
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													
4222002												5/11 4:40													
1 SW1B												5/11 4:40													
2 WW1E												5/11 4:40													
3 NW1A												5/11 4:40													
4 SW3B												5/11 4:40													
5 WW2A												5/11 4:40													
6 SW2B												5/11 4:40													

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<b>Relinquished By:</b> <div style="font-family: cursive; font-size: 1.2em;">Dominic Casarez</div>	<b>Date:</b> 5-11-22 <b>Time:</b> 1642	<b>Received By:</b> <div style="font-family: cursive; font-size: 1.2em;">Tamara Roldan</div>	<b>Phone Result:</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Phone #:</b> <b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Add'l Fax #:</b> <b>REMARKS:</b>
<b>Relinquished By:</b>	<b>Date:</b> <b>Time:</b>	<b>Received By:</b>	Please email results to pm@etechenv.com.
<b>Delivered By: (Circle One)</b> 27.0°C C-0.5°C <b>Sampler - UPS - Bus - Other:</b> 26.5°C #13	<b>Sample Condition</b> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	<b>CHECKED BY:</b> (Initials) <div style="font-family: cursive; font-size: 1.2em;">T-R</div>	

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

---

June 23, 2022

LANCE CRENSHAW

Etech Environmental &amp; Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/13/22 16:19.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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,

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW 4 A	H222057-01	Soil	13-May-22 16:16	13-May-22 16:19
EW 1 B	H222057-02	Soil	13-May-22 16:16	13-May-22 16:19
NW 3 B	H222057-03	Soil	13-May-22 16:16	13-May-22 16:19
EW 2 B	H222057-04	Soil	13-May-22 16:16	13-May-22 16:19
SW 5 A	H222057-05	Soil	13-May-22 16:16	13-May-22 16:19
WW 3 B	H222057-06	Soil	13-May-22 16:16	13-May-22 16:19
NW 2 C	H222057-07	Soil	13-May-22 16:16	13-May-22 16:19
WW 4	H222057-08	Soil	13-May-22 16:16	13-May-22 16:19
EW 3 A	H222057-09	Soil	13-May-22 16:16	13-May-22 16:19

06/23/22 - Client changed the sample ID on -08. This is the revised report and will replace the one sent on 05/18/22.

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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:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**SW 4 A**  
**H222057-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>176</b>		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051604	JH	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051604	JH	17-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 109 % 69.9-140 2051604 JH 17-May-22 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	

Surrogate: 1-Chlorooctane 90.9 % 66.9-136 2051609 MS 16-May-22 8015B

Surrogate: 1-Chlorooctadecane 100 % 59.5-142 2051609 MS 16-May-22 8015B

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**EW 1 B**  
**H222057-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051604	JH	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051604	JH	17-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			104 %	69.9-140		2051604	JH	17-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	

Surrogate: 1-Chlorooctane			96.4 %	66.9-136		2051609	MS	16-May-22	8015B	
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Surrogate: 1-Chlorooctadecane			106 %	59.5-142		2051609	MS	16-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**NW 3 B**  
**H222057-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>48.0</b>		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051604	JH	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051604	JH	17-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			104 %		69.9-140	2051604	JH	17-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			85.7 %		66.9-136	2051609	MS	16-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			94.5 %		59.5-142	2051609	MS	16-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**EW 2 B**  
**H222057-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>32.0</b>		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051604	JH	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051604	JH	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051604	JH	17-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			105 %	69.9-140		2051604	JH	17-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	

Surrogate: 1-Chlorooctane			89.1 %	66.9-136		2051609	MS	16-May-22	8015B	
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Surrogate: 1-Chlorooctadecane			98.3 %	59.5-142		2051609	MS	16-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**SW 5 A**  
**H222057-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>208</b>		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Toluene*	<0.050	0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	2051630	MS\	17-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	103 %	69.9-140	2051630	MS\	17-May-22	8021B
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	mg/kg	1	2051609	MS	16-May-22	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	2051609	MS	16-May-22	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	2051609	MS	16-May-22	8015B

Surrogate: 1-Chlorooctane	89.1 %	66.9-136	2051609	MS	16-May-22	8015B
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Surrogate: 1-Chlorooctadecane	98.4 %	59.5-142	2051609	MS	16-May-22	8015B
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**WW 3 B**  
**H222057-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>16.0</b>		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	2051630	MS\	17-May-22	8021B
Toluene*	<0.050	0.050	mg/kg	50	2051630	MS\	17-May-22	8021B
Ethylbenzene*	<0.050	0.050	mg/kg	50	2051630	MS\	17-May-22	8021B
Total Xylenes*	<0.150	0.150	mg/kg	50	2051630	MS\	17-May-22	8021B
Total BTEX	<0.300	0.300	mg/kg	50	2051630	MS\	17-May-22	8021B

Surrogate: 4-Bromofluorobenzene (PID)	101 %	69.9-140	2051630	MS\	17-May-22	8021B
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	mg/kg	1	2051609	MS	16-May-22	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	2051609	MS	16-May-22	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	2051609	MS	16-May-22	8015B

Surrogate: 1-Chlorooctane	86.4 %	66.9-136	2051609	MS	16-May-22	8015B
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Surrogate: 1-Chlorooctadecane	95.5 %	59.5-142	2051609	MS	16-May-22	8015B
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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**NW 2 C**  
**H222057-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>48.0</b>		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051630	MS\	17-May-22	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			101 %	69.9-140		2051630	MS\	17-May-22	8021B	

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
Surrogate: 1-Chlorooctane			87.2 %	66.9-136		2051609	MS	16-May-22	8015B	
Surrogate: 1-Chlorooctadecane			96.3 %	59.5-142		2051609	MS	16-May-22	8015B	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**WW 4****H222057-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	48.0		16.0	mg/kg	4	2051702	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051630	MS\	17-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)		101 %		69.9-140		2051630	MS\	17-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	

Surrogate: 1-Chlorooctane		85.4 %		66.9-136		2051609	MS	16-May-22	8015B	
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Surrogate: 1-Chlorooctadecane		95.3 %		59.5-142		2051609	MS	16-May-22	8015B	
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Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**EW 3 A**  
**H222057-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>16.0</b>		16.0	mg/kg	4	2051720	GM	17-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2051630	MS\	17-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2051630	MS\	17-May-22	8021B	
Surrogate: 4-Bromofluorobenzene (PID)			102 %	69.9-140		2051630	MS\	17-May-22	8021B	

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2051609	MS	16-May-22	8015B	
Surrogate: 1-Chlorooctane			85.3 %	66.9-136		2051609	MS	16-May-22	8015B	
Surrogate: 1-Chlorooctadecane			94.6 %	59.5-142		2051609	MS	16-May-22	8015B	

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2051702 - 1:4 DI Water****Blank (2051702-BLK1)**

Prepared &amp; Analyzed: 17-May-22

Chloride	ND	16.0	mg/kg
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**LCS (2051702-BS1)**

Prepared &amp; Analyzed: 17-May-22

Chloride	416	16.0	mg/kg	400	104	80-120
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**LCS Dup (2051702-BSD1)**

Prepared &amp; Analyzed: 17-May-22

Chloride	432	16.0	mg/kg	400	108	80-120	3.77	20
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**Batch 2051720 - 1:4 DI Water****Blank (2051720-BLK1)**

Prepared &amp; Analyzed: 17-May-22

Chloride	ND	16.0	mg/kg
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**LCS (2051720-BS1)**

Prepared &amp; Analyzed: 17-May-22

Chloride	416	16.0	mg/kg	400	104	80-120
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**LCS Dup (2051720-BSD1)**

Prepared &amp; Analyzed: 17-May-22

Chloride	416	16.0	mg/kg	400	104	80-120	0.00	20
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2051604 - Volatiles****Blank (2051604-BLK1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0517		mg/kg	0.0500		103	69.9-140			

**LCS (2051604-BS1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Benzene	1.97	0.050	mg/kg	2.00		98.6	83.4-122			
Toluene	2.00	0.050	mg/kg	2.00		100	84.2-126			
Ethylbenzene	2.00	0.050	mg/kg	2.00		99.8	84.2-121			
m,p-Xylene	4.08	0.100	mg/kg	4.00		102	89.9-126			
o-Xylene	2.01	0.050	mg/kg	2.00		101	84.3-123			
Total Xylenes	6.09	0.150	mg/kg	6.00		101	89.1-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0525		mg/kg	0.0500		105	69.9-140			

**LCS Dup (2051604-BSD1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Benzene	2.04	0.050	mg/kg	2.00		102	83.4-122	3.29	12.6	
Toluene	2.04	0.050	mg/kg	2.00		102	84.2-126	2.20	13.3	
Ethylbenzene	2.05	0.050	mg/kg	2.00		102	84.2-121	2.67	13.9	
m,p-Xylene	4.16	0.100	mg/kg	4.00		104	89.9-126	2.13	13.6	
o-Xylene	2.05	0.050	mg/kg	2.00		103	84.3-123	2.01	14.1	
Total Xylenes	6.21	0.150	mg/kg	6.00		104	89.1-124	2.09	13.4	
Surrogate: 4-Bromofluorobenzene (PID)	0.0527		mg/kg	0.0500		105	69.9-140			

**Batch 2051630 - Volatiles****Blank (2051630-BLK1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2051630 - Volatiles****Blank (2051630-BLK1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0501		mg/kg	0.0500		100	69.9-140			

**LCS (2051630-BS1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Benzene	1.97	0.050	mg/kg	2.00		98.6	83.4-122			
Toluene	1.94	0.050	mg/kg	2.00		97.0	84.2-126			
Ethylbenzene	1.91	0.050	mg/kg	2.00		95.4	84.2-121			
m,p-Xylene	4.01	0.100	mg/kg	4.00		100	89.9-126			
o-Xylene	1.88	0.050	mg/kg	2.00		93.9	84.3-123			
Total Xylenes	5.89	0.150	mg/kg	6.00		98.1	89.1-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0491		mg/kg	0.0500		98.1	69.9-140			

**LCS Dup (2051630-BSD1)**

Prepared: 16-May-22 Analyzed: 17-May-22

Benzene	2.13	0.050	mg/kg	2.00		107	83.4-122	7.84	12.6	
Toluene	2.10	0.050	mg/kg	2.00		105	84.2-126	8.15	13.3	
Ethylbenzene	2.06	0.050	mg/kg	2.00		103	84.2-121	7.74	13.9	
m,p-Xylene	4.29	0.100	mg/kg	4.00		107	89.9-126	6.83	13.6	
o-Xylene	2.03	0.050	mg/kg	2.00		102	84.3-123	8.04	14.1	
Total Xylenes	6.33	0.150	mg/kg	6.00		105	89.1-124	7.22	13.4	
Surrogate: 4-Bromofluorobenzene (PID)	0.0493		mg/kg	0.0500		98.5	69.9-140			

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:25

**Petroleum Hydrocarbons by GC FID - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2051609 - General Prep - Organics****Blank (2051609-BLK1)**

Prepared &amp; Analyzed: 16-May-22

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	39.9		mg/kg	50.0		79.9	66.9-136			
Surrogate: 1-Chlorooctadecane	44.2		mg/kg	50.0		88.4	59.5-142			

**LCS (2051609-BS1)**

Prepared &amp; Analyzed: 16-May-22

GRO C6-C10	190	10.0	mg/kg	200		95.0	78.5-128			
DRO >C10-C28	191	10.0	mg/kg	200		95.3	75.8-135			
Total TPH C6-C28	380	10.0	mg/kg	400		95.1	81.5-127			
Surrogate: 1-Chlorooctane	42.2		mg/kg	50.0		84.4	66.9-136			
Surrogate: 1-Chlorooctadecane	49.1		mg/kg	50.0		98.1	59.5-142			

**LCS Dup (2051609-BS1)**

Prepared &amp; Analyzed: 16-May-22

GRO C6-C10	193	10.0	mg/kg	200		96.4	78.5-128	1.45	21.4	
DRO >C10-C28	200	10.0	mg/kg	200		100	75.8-135	5.06	17.9	
Total TPH C6-C28	393	10.0	mg/kg	400		98.3	81.5-127	3.27	17.6	
Surrogate: 1-Chlorooctane	43.1		mg/kg	50.0		86.3	66.9-136			
Surrogate: 1-Chlorooctadecane	48.9		mg/kg	50.0		97.8	59.5-142			

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\*=Accredited Analyte

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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 that reads "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager

**ARDINAL LABORATORIES**

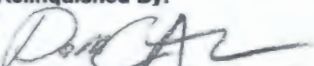
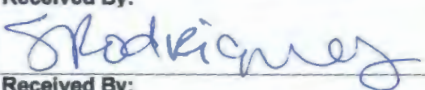
**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.				BILL TO				ANALYSIS REQUEST																																			
Project Manager: Lance Crenshaw				P.O. #:				Chloride TPH (8015M) BTEX (8021B)																																			
Address: P.O. Box 301				Company: Etech																																							
City: Lovington State: NM Zip: 88260				Attn:																																							
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address:																																							
Project #: 15507 Project Owner: McWhorter oil				City: Hobbs																																							
Project Name: Red Hill 21 Fed Com 24				State: NM Zip:																																							
Project Location: Lea				Phone #:																																							
Sampler Name: Dominick Casarez				Fax #:																																							
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																																	
Lab I.D.		Sample I.D.		(G)RAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME															
H222057																																											
1		SW4A																								5/13		4/16															
2		EW1B																																									
3		NW3B																																									
4		EW2B																																									
5		SW5A																																									
6		WW3B																																									
7		NW2C																																									
8		WW2B WW4*																																									
9		EW3A																																									

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Relinquished By: 		Date: 5/13/22 Time: 1619		Received By: 		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By:		Date:		Received By:		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Fax #:	
		Time:				REMARKS: *Sample ID changed as per Ben 6/22/22 ch	

Delivered By: (Circle One) 28.9% K-0.5%  
Sampler - UPS - Bus - Other: 28.4% #113

Sample Condition  
Cool Intact  
☐ Yes ☒ No  
☐ No ☒ Yes

CHECKED BY:  
(Initials)  
SR

Please email results to pm@etechenv.com.

FORM-006  
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



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

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May 19, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/17/22 16:20.

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".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: EW 4 (H222100-01)**

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	05/18/2022	ND	2.05	102	2.00	3.84	
Toluene*	<0.050	0.050	05/18/2022	ND	2.02	101	2.00	2.94	
Ethylbenzene*	<0.050	0.050	05/18/2022	ND	2.00	100	2.00	3.78	
Total Xylenes*	<0.150	0.150	05/18/2022	ND	6.21	103	6.00	3.85	
Total BTX	<0.300	0.300	05/18/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 112 % 66.9-136

Surrogate: 1-Chlorooctadecane 137 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 6 (H222100-02)**

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	05/18/2022	ND	2.05	102	2.00	3.84		
Toluene*	<0.050	0.050	05/18/2022	ND	2.02	101	2.00	2.94		
Ethylbenzene*	<0.050	0.050	05/18/2022	ND	2.00	100	2.00	3.78		
Total Xylenes*	<0.150	0.150	05/18/2022	ND	6.21	103	6.00	3.85		
Total BTEx	<0.300	0.300	05/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	16.0	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 104 % 66.9-136

Surrogate: 1-Chlorooctadecane 124 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 7 (H222100-03)**

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	05/18/2022	ND	2.05	102	2.00	3.84		
Toluene*	<0.050	0.050	05/18/2022	ND	2.02	101	2.00	2.94		
Ethylbenzene*	<0.050	0.050	05/18/2022	ND	2.00	100	2.00	3.78		
Total Xylenes*	<0.150	0.150	05/18/2022	ND	6.21	103	6.00	3.85		
Total BTEx	<0.300	0.300	05/18/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	32.0	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 104 % 66.9-136

Surrogate: 1-Chlorooctadecane 125 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 5 (H222100-04)**

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	05/19/2022	ND	2.01	100	2.00	5.45		
Toluene*	<0.050	0.050	05/19/2022	ND	1.97	98.4	2.00	5.82		
Ethylbenzene*	<0.050	0.050	05/19/2022	ND	1.95	97.4	2.00	4.99		
Total Xylenes*	<0.150	0.150	05/19/2022	ND	6.03	100	6.00	5.26		
Total BTEx	<0.300	0.300	05/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 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	96.0	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 101 % 66.9-136

Surrogate: 1-Chlorooctadecane 121 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: EW 6 A (H222100-05)**

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	05/19/2022	ND	2.01	100	2.00	5.45	
Toluene*	<0.050	0.050	05/19/2022	ND	1.97	98.4	2.00	5.82	
Ethylbenzene*	<0.050	0.050	05/19/2022	ND	1.95	97.4	2.00	4.99	
Total Xylenes*	<0.150	0.150	05/19/2022	ND	6.03	100	6.00	5.26	
Total BTX	<0.300	0.300	05/19/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	112	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 103 % 66.9-136

Surrogate: 1-Chlorooctadecane 121 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: NW 4 (H222100-06)**

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	05/19/2022	ND	2.01	100	2.00	5.45		
Toluene*	<0.050	0.050	05/19/2022	ND	1.97	98.4	2.00	5.82		
Ethylbenzene*	<0.050	0.050	05/19/2022	ND	1.95	97.4	2.00	4.99		
Total Xylenes*	<0.150	0.150	05/19/2022	ND	6.03	100	6.00	5.26		
Total BTX	<0.300	0.300	05/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	144	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 98.9 % 66.9-136

Surrogate: 1-Chlorooctadecane 115 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/17/2022	Sampling Date:	05/17/2022
Reported:	05/19/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: EW 5 (H222100-07)**

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	05/19/2022	ND	2.01	100	2.00	5.45		
Toluene*	<0.050	0.050	05/19/2022	ND	1.97	98.4	2.00	5.82		
Ethylbenzene*	<0.050	0.050	05/19/2022	ND	1.95	97.4	2.00	4.99		
Total Xylenes*	<0.150	0.150	05/19/2022	ND	6.03	100	6.00	5.26		
Total BTEx	<0.300	0.300	05/19/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	32.0	16.0	05/18/2022	ND	432	108	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	05/18/2022	ND	214	107	200	4.44	
DRO >C10-C28*	<10.0	10.0	05/18/2022	ND	223	111	200	0.778	
EXT DRO >C28-C36	<10.0	10.0	05/18/2022	ND					

Surrogate: 1-Chlorooctane 103 % 66.9-136

Surrogate: 1-Chlorooctadecane 123 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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



# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Page 10 of 10

Company Name: Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																																	
Project Manager: Lance Crenshaw				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>																																	
Address: P.O. Box 301 1 <sup>st</sup>				Company: Mewbourn Oil Co																																					
City: Lovington State: NM Zip: 88260				Attn: Robbie Runnels																																					
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address: 4801 Busn Park																																					
Project #: 15507 Project Owner: Mewbourn				City: Hobbs																																					
Project Name: Red Hills 21 Fed Com 2H				State: NM Zip:																																					
Project Location: Rural Jail				Phone #:																																					
Sampler Name: Dominic Casarez				Fax #:																																					
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																															
Lab I.D.		Sample I.D.		GRAB OR (C)OMP.		# CONTAINERS		GROUNDWATER		WASTEWATER		SOIL		OIL		SLUDGE		OTHER :		ACID/BASE:		ICE / COOL		OTHER :		DATE		TIME													
H222100																																									
1		EW4																								5/7		4:00													
2		WW6																																							
3		WW7																																							
4		WW5																																							
5		EW6A																																							
6		WW4																																							
7		EW5																																							
<p>PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																																									
Relinquished By: Dominic Casarez				Date: 5/7/22		Received By: [Signature]				Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:																											
				Time: 11:20						Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Fax #:																											
Relinquished By:				Date:		Received By:				REMARKS:																															
				Time:																																					
Delivered By: (Circle One) 35.4°C - 0.5°C				Sample Condition Cool Intact				CHECKED BY: (Initials)				Please email results to pm@etechenv.com.																													
Sampler - UPS - Bus - Other: 34.9°C #113				Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				[Signature]																																	



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

---

May 27, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/20/22 16:08.

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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: NW 5 A (H222174-01)**

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	05/26/2022	ND	2.01	101	2.00	0.885	
Toluene*	<0.050	0.050	05/26/2022	ND	2.08	104	2.00	2.13	
Ethylbenzene*	<0.050	0.050	05/26/2022	ND	1.99	99.6	2.00	1.33	
Total Xylenes*	<0.150	0.150	05/26/2022	ND	5.95	99.2	6.00	1.20	
Total BTX	<0.300	0.300	05/26/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	05/26/2022	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2022	ND	197	98.6	200	6.84	
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	187	93.5	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND					

Surrogate: 1-Chlorooctane 139 % 66.9-136

Surrogate: 1-Chlorooctadecane 138 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 8 B (H222174-02)**

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	05/26/2022	ND	2.01	101	2.00	0.885		
Toluene*	<0.050	0.050	05/26/2022	ND	2.08	104	2.00	2.13		
Ethylbenzene*	<0.050	0.050	05/26/2022	ND	1.99	99.6	2.00	1.33		
Total Xylenes*	<0.150	0.150	05/26/2022	ND	5.95	99.2	6.00	1.20		
Total BTX	<0.300	0.300	05/26/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	64.0	16.0	05/26/2022	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	05/26/2022	ND	197	98.6	200	6.84	
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	187	93.5	200	2.54	
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND					

Surrogate: 1-Chlorooctane 138 % 66.9-136

Surrogate: 1-Chlorooctadecane 138 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: SW 7 A (H222174-03)**

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	05/26/2022	ND	2.01	101	2.00	0.885		
Toluene*	<0.050	0.050	05/26/2022	ND	2.08	104	2.00	2.13		
Ethylbenzene*	<0.050	0.050	05/26/2022	ND	1.99	99.6	2.00	1.33		
Total Xylenes*	<0.150	0.150	05/26/2022	ND	5.95	99.2	6.00	1.20		
Total BTEx	<0.300	0.300	05/26/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	32.0	16.0	05/26/2022	ND	432	108	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	05/26/2022	ND	189	94.6	200	7.35	
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	197	98.5	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND					

Surrogate: 1-Chlorooctane 98.4 % 66.9-136

Surrogate: 1-Chlorooctadecane 102 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: WW 9 A (H222174-04)**

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	05/27/2022	ND	2.01	101	2.00	0.885		
Toluene*	<0.050	0.050	05/27/2022	ND	2.08	104	2.00	2.13		
Ethylbenzene*	<0.050	0.050	05/27/2022	ND	1.99	99.6	2.00	1.33		
Total Xylenes*	<0.150	0.150	05/27/2022	ND	5.95	99.2	6.00	1.20		
Total BTX	<0.300	0.300	05/27/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	208	16.0	05/26/2022	ND	432	108	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	05/26/2022	ND	189	94.6	200	7.35		
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	197	98.5	200	2.02		
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND						

Surrogate: 1-Chlorooctane 104 % 66.9-136

Surrogate: 1-Chlorooctadecane 107 % 59.5-142

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: EW 7 B (H222174-05)**

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	05/27/2022	ND	2.01	101	2.00	0.885	
Toluene*	<0.050	0.050	05/27/2022	ND	2.08	104	2.00	2.13	
Ethylbenzene*	<0.050	0.050	05/27/2022	ND	1.99	99.6	2.00	1.33	
Total Xylenes*	<0.150	0.150	05/27/2022	ND	5.95	99.2	6.00	1.20	
Total BTX	<0.300	0.300	05/27/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	32.0	16.0	05/26/2022	ND	432	108	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	05/26/2022	ND	189	94.6	200	7.35	
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	197	98.5	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND					

Surrogate: 1-Chlorooctane 106 % 66.9-136

Surrogate: 1-Chlorooctadecane 110 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: SW 6 A (H222174-06)**

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	05/27/2022	ND	2.01	101	2.00	0.885		
Toluene*	<0.050	0.050	05/27/2022	ND	2.08	104	2.00	2.13		
Ethylbenzene*	<0.050	0.050	05/27/2022	ND	1.99	99.6	2.00	1.33		
Total Xylenes*	<0.150	0.150	05/27/2022	ND	5.95	99.2	6.00	1.20		
Total BTX	<0.300	0.300	05/27/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	<16.0	16.0	05/26/2022	ND	432	108	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	05/26/2022	ND	189	94.6	200	7.35	
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	197	98.5	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND					

Surrogate: 1-Chlorooctane 105 % 66.9-136

Surrogate: 1-Chlorooctadecane 108 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/20/2022	Sampling Date:	05/20/2022
Reported:	05/27/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: EW 8 B (H222174-07)**

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	05/27/2022	ND	2.01	101	2.00	0.885		
Toluene*	<0.050	0.050	05/27/2022	ND	2.08	104	2.00	2.13		
Ethylbenzene*	<0.050	0.050	05/27/2022	ND	1.99	99.6	2.00	1.33		
Total Xylenes*	<0.150	0.150	05/27/2022	ND	5.95	99.2	6.00	1.20		
Total BTEX	<0.300	0.300	05/27/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	112	16.0	05/26/2022	ND	432	108	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	05/26/2022	ND	189	94.6	200	7.35	
DRO >C10-C28*	<10.0	10.0	05/26/2022	ND	197	98.5	200	2.02	
EXT DRO >C28-C36	<10.0	10.0	05/26/2022	ND					

Surrogate: 1-Chlorooctane 93.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 97.0 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



---

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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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

---

Cardinal Laboratories

\*=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

**ARDINAL LABORATORIES**

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

---

June 23, 2022

LANCE CRENSHAW

Etech Environmental &amp; Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/26/22 16:38.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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,

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW 13 A	H222263-01	Soil	26-May-22 00:00	26-May-22 16:38
EW 11 A	H222263-02	Soil	26-May-22 00:00	26-May-22 16:38
WW 10	H222263-03	Soil	26-May-22 00:00	26-May-22 16:38
EW 12 A	H222263-04	Soil	26-May-22 00:00	26-May-22 16:38
WW 12 A	H222263-05	Soil	26-May-22 00:00	26-May-22 16:38
SW 8 A	H222263-06	Soil	26-May-22 00:00	26-May-22 16:38
WW 15	H222263-07	Soil	26-May-22 00:00	26-May-22 16:38
SW 9 B	H222263-08	Soil	26-May-22 00:00	26-May-22 16:38
WW 11 B	H222263-09	Soil	26-May-22 00:00	26-May-22 16:38
SW 10	H222263-10	Soil	26-May-22 00:00	26-May-22 16:38
EW 9 A	H222263-11	Soil	26-May-22 16:30	26-May-22 16:38
EW 10 B	H222263-12	Soil	26-May-22 16:30	26-May-22 16:38
NW 6	H222263-13	Soil	26-May-22 16:30	26-May-22 16:38
WW 14	H222263-14	Soil	26-May-22 16:30	26-May-22 16:38
SW 11 C	H222263-15	Soil	26-May-22 16:30	26-May-22 16:38

06/23/22 - Client changed the sample ID on -13. This is the revised report and will replace the one sent on 06/03/22.

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**WW 13 A**  
**H222263-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>528</b>		16.0	mg/kg	4	2053122	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 97.8 % 69.9-140 2053110 CK 31-May-22 8021B

**Petroleum Hydrocarbons by GC FID****S-04**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

Surrogate: 1-Chlorooctane 140 % 66.9-136 2052714 MS 28-May-22 8015B

Surrogate: 1-Chlorooctadecane 160 % 59.5-142 2052714 MS 28-May-22 8015B

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**EW 11 A**  
**H222263-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>32.0</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
<b>Toluene*</b>	<b>0.123</b>		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			98.8 %		69.9-140	2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			120 %		66.9-136	2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			137 %		59.5-142	2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**WW 10**  
**H222263-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>128</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
<b>Toluene*</b>	<b>0.122</b>		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			101 %	69.9-140		2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			122 %	66.9-136		2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			138 %	59.5-142		2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**EW 12 A**  
**H222263-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>208</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
<b>Toluene*</b>	<b>0.124</b>		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.6 %		69.9-140	2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			122 %		66.9-136	2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			138 %		59.5-142	2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**WW 12 A**  
**H222263-05 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>16.0</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			103 %	69.9-140		2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			120 %	66.9-136		2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			135 %	59.5-142		2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**SW 8 A**  
**H222263-06 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	<16.0		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
<b>Toluene*</b>	<b>0.098</b>		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			101 %	69.9-140		2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

Surrogate: 1-Chlorooctane			116 %	66.9-136		2052714	MS	28-May-22	8015B	
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Surrogate: 1-Chlorooctadecane			131 %	59.5-142		2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**WW 15**  
**H222263-07 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>512</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050	0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	99.2 %	69.9-140	2053110	CK	31-May-22	8021B
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B

Surrogate: 1-Chlorooctane	119 %	66.9-136	2052714	MS	28-May-22	8015B
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Surrogate: 1-Chlorooctadecane	134 %	59.5-142	2052714	MS	28-May-22	8015B
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**SW 9 B**  
**H222263-08 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>32.0</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			100 %	69.9-140		2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID****S-04**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			156 %	66.9-136		2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			175 %	59.5-142		2052714	MS	28-May-22	8015B	
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Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**WW 11 B**  
**H222263-09 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>32.0</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	69.9-140		2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			120 %	66.9-136		2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			134 %	59.5-142		2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**SW 10**  
**H222263-10 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>208</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	69.9-140		2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			121 %	66.9-136		2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			137 %	59.5-142		2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**EW 9 A**  
**H222263-11 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>32.0</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053110	CK	31-May-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053110	CK	31-May-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053110	CK	31-May-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			99.0 %		69.9-140	2053110	CK	31-May-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			117 %		66.9-136	2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			132 %		59.5-142	2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**EW 10 B**  
**H222263-12 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	<16.0		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053111	CK	01-Jun-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			100 %	69.9-140		2053111	CK	01-Jun-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

Surrogate: 1-Chlorooctane			121 %	66.9-136		2052714	MS	28-May-22	8015B	
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Surrogate: 1-Chlorooctadecane			137 %	59.5-142		2052714	MS	28-May-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**NW 6**  
**H222263-13 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>112</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Toluene*	<0.050	0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	2053111	CK	01-Jun-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>	<i>101 %</i>	<i>69.9-140</i>			<i>2053111</i>	CK	<i>01-Jun-22</i>	<i>8021B</i>	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>	<i>112 %</i>	<i>66.9-136</i>			<i>2052714</i>	MS	<i>28-May-22</i>	<i>8015B</i>	
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<i>Surrogate: 1-Chlorooctadecane</i>	<i>127 %</i>	<i>59.5-142</i>			<i>2052714</i>	MS	<i>28-May-22</i>	<i>8015B</i>	
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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**WW 14**  
**H222263-14 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>208</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050	0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Toluene*	<0.050	0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Ethylbenzene*	<0.050	0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total Xylenes*	<0.150	0.150	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total BTEX	<0.300	0.300	mg/kg	50	2053111	CK	01-Jun-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)	97.5 %	69.9-140	2053111	CK	01-Jun-22	8021B
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B
DRO >C10-C28*	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B
EXT DRO >C28-C36	<10.0	10.0	mg/kg	1	2052714	MS	28-May-22	8015B

Surrogate: 1-Chlorooctane	121 %	66.9-136	2052714	MS	28-May-22	8015B
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Surrogate: 1-Chlorooctadecane	138 %	59.5-142	2052714	MS	28-May-22	8015B
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**SW 11 C**  
**H222263-15 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>192</b>		16.0	mg/kg	4	2053123	GM	31-May-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
<b>Toluene*</b>	<b>0.067</b>		0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2053111	CK	01-Jun-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2053111	CK	01-Jun-22	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	69.9-140		2053111	CK	01-Jun-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2052714	MS	28-May-22	8015B	

<i>Surrogate: 1-Chlorooctane</i>			121 %	66.9-136		2052714	MS	28-May-22	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			137 %	59.5-142		2052714	MS	28-May-22	8015B	
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Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	----------------	-----	--------------	-------

**Batch 2053122 - 1:4 DI Water****Blank (2053122-BLK1)**

Prepared &amp; Analyzed: 31-May-22

Chloride	ND	16.0	mg/kg						
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**LCS (2053122-BS1)**

Prepared &amp; Analyzed: 31-May-22

Chloride	416	16.0	mg/kg	400	104	80-120			
----------	-----	------	-------	-----	-----	--------	--	--	--

**LCS Dup (2053122-BSD1)**

Prepared &amp; Analyzed: 31-May-22

Chloride	416	16.0	mg/kg	400	104	80-120	0.00	20	
----------	-----	------	-------	-----	-----	--------	------	----	--

**Batch 2053123 - 1:4 DI Water****Blank (2053123-BLK1)**

Prepared &amp; Analyzed: 31-May-22

Chloride	ND	16.0	mg/kg						
----------	----	------	-------	--	--	--	--	--	--

**LCS (2053123-BS1)**

Prepared &amp; Analyzed: 31-May-22

Chloride	416	16.0	mg/kg	400	104	80-120			
----------	-----	------	-------	-----	-----	--------	--	--	--

**LCS Dup (2053123-BSD1)**

Prepared &amp; Analyzed: 31-May-22

Chloride	416	16.0	mg/kg	400	104	80-120	0.00	20	
----------	-----	------	-------	-----	-----	--------	------	----	--

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2053110 - Volatiles****Blank (2053110-BLK1)**

Prepared &amp; Analyzed: 31-May-22

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0503		mg/kg	0.0500		101	69.9-140			

**LCS (2053110-BS1)**

Prepared &amp; Analyzed: 31-May-22

Benzene	1.95	0.050	mg/kg	2.00		97.3	83.4-122			
Toluene	2.06	0.050	mg/kg	2.00		103	84.2-126			
Ethylbenzene	1.99	0.050	mg/kg	2.00		99.5	84.2-121			
m,p-Xylene	4.01	0.100	mg/kg	4.00		100	89.9-126			
o-Xylene	1.96	0.050	mg/kg	2.00		97.9	84.3-123			
Total Xylenes	5.97	0.150	mg/kg	6.00		99.5	89.1-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0534		mg/kg	0.0500		107	69.9-140			

**LCS Dup (2053110-BSD1)**

Prepared &amp; Analyzed: 31-May-22

Benzene	2.05	0.050	mg/kg	2.00		102	83.4-122	5.00	12.6	
Toluene	2.13	0.050	mg/kg	2.00		106	84.2-126	3.20	13.3	
Ethylbenzene	2.03	0.050	mg/kg	2.00		102	84.2-121	2.12	13.9	
m,p-Xylene	4.08	0.100	mg/kg	4.00		102	89.9-126	1.66	13.6	
o-Xylene	2.00	0.050	mg/kg	2.00		100	84.3-123	2.10	14.1	
Total Xylenes	6.08	0.150	mg/kg	6.00		101	89.1-124	1.80	13.4	
Surrogate: 4-Bromofluorobenzene (PID)	0.0515		mg/kg	0.0500		103	69.9-140			

**Batch 2053111 - Volatiles****Blank (2053111-BLK1)**

Prepared: 31-May-22 Analyzed: 01-Jun-22

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2053111 - Volatiles****Blank (2053111-BLK1)**

Prepared: 31-May-22 Analyzed: 01-Jun-22

Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	0.0506		mg/kg	0.0500		101	69.9-140			

**LCS (2053111-BS1)**

Prepared: 31-May-22 Analyzed: 01-Jun-22

Benzene	1.96	0.050	mg/kg	2.00		98.2	83.4-122			
Toluene	1.98	0.050	mg/kg	2.00		99.2	84.2-126			
Ethylbenzene	1.93	0.050	mg/kg	2.00		96.6	84.2-121			
m,p-Xylene	3.87	0.100	mg/kg	4.00		96.8	89.9-126			
o-Xylene	1.89	0.050	mg/kg	2.00		94.7	84.3-123			
Total Xylenes	5.76	0.150	mg/kg	6.00		96.1	89.1-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0507		mg/kg	0.0500		101	69.9-140			

**LCS Dup (2053111-BSD1)**

Prepared: 31-May-22 Analyzed: 01-Jun-22

Benzene	2.00	0.050	mg/kg	2.00		99.8	83.4-122	1.68	12.6	
Toluene	2.03	0.050	mg/kg	2.00		101	84.2-126	2.08	13.3	
Ethylbenzene	1.97	0.050	mg/kg	2.00		98.6	84.2-121	2.01	13.9	
m,p-Xylene	3.98	0.100	mg/kg	4.00		99.4	89.9-126	2.73	13.6	
o-Xylene	1.95	0.050	mg/kg	2.00		97.4	84.3-123	2.91	14.1	
Total Xylenes	5.93	0.150	mg/kg	6.00		98.8	89.1-124	2.79	13.4	
Surrogate: 4-Bromofluorobenzene (PID)	0.0510		mg/kg	0.0500		102	69.9-140			

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 13:28

**Petroleum Hydrocarbons by GC FID - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2052714 - General Prep - Organics****Blank (2052714-BLK1)**

Prepared: 27-May-22 Analyzed: 28-May-22

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	60.1		mg/kg	50.0		120	66.9-136			
Surrogate: 1-Chlorooctadecane	68.0		mg/kg	50.0		136	59.5-142			

**LCS (2052714-BS1)**

Prepared &amp; Analyzed: 27-May-22

GRO C6-C10	190	10.0	mg/kg	200		94.9	78.5-128			
DRO >C10-C28	193	10.0	mg/kg	200		96.5	75.8-135			
Total TPH C6-C28	383	10.0	mg/kg	400		95.7	81.5-127			
Surrogate: 1-Chlorooctane	64.4		mg/kg	50.0		129	66.9-136			
Surrogate: 1-Chlorooctadecane	73.5		mg/kg	50.0		147	59.5-142			

**LCS Dup (2052714-BS1)**

Prepared &amp; Analyzed: 27-May-22

GRO C6-C10	188	10.0	mg/kg	200		94.1	78.5-128	0.799	21.4	
DRO >C10-C28	179	10.0	mg/kg	200		89.7	75.8-135	7.31	17.9	
Total TPH C6-C28	368	10.0	mg/kg	400		91.9	81.5-127	4.03	17.6	
Surrogate: 1-Chlorooctane	67.2		mg/kg	50.0		134	66.9-136			
Surrogate: 1-Chlorooctadecane	72.6		mg/kg	50.0		145	59.5-142			

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Celey D. Keene, Lab Director/Quality Manager



---

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---

### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
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



# ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 23 of 24

Company Name: Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>													
Project Manager: <u>Kane Crenshaw</u>				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>													
Address: P.O. Box 301				Company: <u>Mewbourne oil</u>																	
City: Lovington State: NM Zip: 88260				Attn: <u>Robbie Runnels</u>																	
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address: <u>4801 Busia Park Blvd</u>																	
Project #: Project Owner:				City: <u>Hobbs</u>																	
Project Name: <u>Red Hills 21 Fed Com 2H</u>				State: <u>NM</u> Zip:																	
Project Location: <u>Rural Jct N-M</u>				Phone #:																	
Sampler Name: <u>Dominic Casarez</u>				Fax #:																	
FOR LAB USE ONLY																					
Lab I.D.	Sample I.D.	(GRAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME							
<u>H2022013</u>																					
<u>1</u>	<u>WW 13 A</u>												<u>5 26</u>								
<u>2</u>	<u>Ey 11 A</u>																				
<u>3</u>	<u>WW 10</u>																				
<u>4</u>	<u>EW 12 A</u>																				
<u>5</u>	<u>WW 12 A</u>																				
<u>6</u>	<u>SW 8 A</u>																				
<u>7</u>	<u>WW 15</u>																				
<u>8</u>	<u>SW 9 B</u>																				
<u>9</u>	<u>WW 11 B</u>																				
<u>10</u>	<u>SW 10</u>																				
<p>PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																					
Relinquished By: <u>Dom CAZ</u>				Date: <u>5/26</u>		Received By: <u>SPodRiqueney</u>				Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:							
				Time: <u>1638</u>						Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Fax #:							
Relinquished By:				Date:		Received By:				REMARKS:											
				Time:																	
Delivered By: (Circle One)				Sample Condition				CHECKED BY:													
<u>2420°C - 0.52</u>				Cool Intact				(initials)													
Sampler - UPS - Bus - Other:				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				<u>SR</u>													
<u>23.8°C #113</u>				<input type="checkbox"/> Yes <input type="checkbox"/> No																	

FORM-006  
Revision 1.0

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 24 of 24

<b>Company Name:</b> Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
<b>Project Manager:</b> Lane Crenshaw				<b>P.O. #:</b>				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>											
<b>Address:</b> P.O. Box 301				<b>Company:</b> Mowbourne oil															
<b>City:</b> Lovington <b>State:</b> NM <b>Zip:</b> 88260				<b>Attn:</b> Robbie Runnels															
<b>Phone #:</b> (575) 396-2378 <b>Fax #:</b> (575) 396-1429				<b>Address:</b> 4801 Bussia Park Blvd															
<b>Project #:</b> <b>Project Owner:</b>				<b>City:</b> Hobbs															
<b>Project Name:</b> Red Hills 21 Fed Com 2H				<b>State:</b> NM <b>Zip:</b>															
<b>Project Location:</b> Rural Jcl NM				<b>Phone #:</b>															
<b>Sampler Name:</b> Dominic Casarez				<b>Fax #:</b>															
<small>FOR LAB USE ONLY</small>																			
<b>Lab I.D.</b>		<b>Sample I.D.</b>		(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX			PRESERV.		SAMPLING								
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME					
H022203													526	430					
11		EW9A																	
12		EW10B																	
13		-NW5D NW6*																	
14		W/W 14																	
15		SW11C																	
<small>PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</small>																			
<b>Relinquished By:</b> Dom CAZ				<b>Date:</b> 5/26		<b>Received By:</b> S. Rodriguez				<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Add'l Phone #:</b>							
				<b>Time:</b> 11:38						<b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No		<b>Add'l Fax #:</b>							
<b>Relinquished By:</b>				<b>Date:</b>		<b>Received By:</b>				<b>REMARKS:</b>									
				<b>Time:</b>						* Sample ID changed as per Ben. 6/12/22 OK									
Please email results to pm@etechenv.com.																			
<b>Delivered By: (Circle One)</b> 2428 JC-0.52						<b>Sample Condition</b>				<b>CHECKED BY:</b>									
<b>Sampler - UPS - Bus - Other:</b> 237C #113						Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				(Initials) SR									

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---

June 01, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 05/27/22 15:46.

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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 4 @ SURFACE (H222278-01)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEX	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	240	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	200	99.8	200	2.39	
DRO >C10-C28*	316	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	117	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 82.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 96.6 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 4 @ 1 (H222278-02)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39	
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83	
Total BTX	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	176	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	200	99.8	200	2.39	
DRO >C10-C28*	75.8	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	16.6	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 81.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 84.0 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 4 @ 2 (H222278-03)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39	
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	272	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 86.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 85.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 4 @ 3 (H222278-04)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	304	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 85.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 84.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 4 @ 4 (H222278-05)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEX	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	592	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 91.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 90.2 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ SURFACE (H222278-06)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	6800	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 72.9 % 66.9-136

Surrogate: 1-Chlorooctadecane 74.0 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 1 (H222278-07)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	816	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 75.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 75.7 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 2 (H222278-08)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	2440	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 78.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 78.9 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 3 (H222278-09)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	1760	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 80.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 80.7 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 4 (H222278-10)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	496	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 85.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 85.5 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 6 (H222278-11)**

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	05/31/2022	ND	1.91	95.6	2.00	2.39		
Toluene*	<0.050	0.050	05/31/2022	ND	1.94	96.8	2.00	1.73		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	1.84	92.1	2.00	2.45		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	5.74	95.7	6.00	2.83		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	3520	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 75.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 74.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 8 (H222278-12)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTX	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	1520	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 72.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 72.1 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 10 (H222278-13)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEX	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 78.6 % 66.9-136

Surrogate: 1-Chlorooctadecane 79.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 12 (H222278-14)**

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	05/31/2022	ND	2.03	102	2.00	3.58		
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	160	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 74.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 74.8 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 5 @ 14 (H222278-15)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	432	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 79.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 77.0 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 1 @ SURFACE (H222278-16)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTX	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	1700	16.0	06/01/2022	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	05/31/2022	ND	200	99.8	200	2.39	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.7	200	4.46	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 75.9 % 66.9-136

Surrogate: 1-Chlorooctadecane 73.7 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 1 @ 4 (H222278-17)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	992	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 88.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 89.7 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 1 @ 6 (H222278-18)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	1040	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 93.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 89.7 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 1 @ 8 (H222278-19)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	800	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 88.6 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 1 @ 9 (H222278-20)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 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	400	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 91.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 90.9 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 2 @ SURFACE (H222278-21)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTX	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	592	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	11.3	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 74.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 73.9 % 59.5-142

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**Analytical Results For:**

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 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 2 @ 1 (H222278-22)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTX	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	32.0	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 94.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 92.8 % 59.5-142

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**Analytical Results For:**

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 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 2 @ 2 (H222278-23)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	64.0	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 94.8 % 66.9-136

Surrogate: 1-Chlorooctadecane 91.7 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 2 @ 3 (H222278-24)**

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	05/31/2022	ND	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	05/31/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 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	80.0	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 89.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 87.8 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 3 @ SURFACE (H222278-25)**

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	05/31/2022	ND	2.03	102	2.00	3.58		
Toluene*	<0.050	0.050	05/31/2022	ND	2.03	102	2.00	2.66		
Ethylbenzene*	<0.050	0.050	05/31/2022	ND	2.01	101	2.00	3.16		
Total Xylenes*	<0.150	0.150	05/31/2022	ND	6.23	104	6.00	2.71		
Total BTEx	<0.300	0.300	05/31/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	19300	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 88.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 85.3 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 3 @ 3 (H222278-26)**

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	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	06/01/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	464	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 90.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 86.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 3 @ 4 (H222278-27)**

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	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	06/01/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	96.0	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 84.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 81.4 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ SURFACE (H222278-28)**

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	2.03	102	2.00	3.58		
Toluene*	<0.050	0.050	06/01/2022	ND	2.03	102	2.00	2.66		
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	2.01	101	2.00	3.16		
Total Xylenes*	<0.150	0.150	06/01/2022	ND	6.23	104	6.00	2.71		
Total BTEx	<0.300	0.300	06/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.9 % 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	5040	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 96.4 % 66.9-136

Surrogate: 1-Chlorooctadecane 92.8 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 4 (H222278-29)**

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	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	06/01/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	9520	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 105 % 66.9-136

Surrogate: 1-Chlorooctadecane 101 % 59.5-142

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**Analytical Results For:**

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 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 6 (H222278-30)**

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	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	06/01/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	10300	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 102 % 66.9-136

Surrogate: 1-Chlorooctadecane 99.0 % 59.5-142

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**Analytical Results For:**

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 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 8 (H222278-31)**

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	2.03	102	2.00	3.58	
Toluene*	<0.050	0.050	06/01/2022	ND	2.03	102	2.00	2.66	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	2.01	101	2.00	3.16	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	6.23	104	6.00	2.71	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	2440	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 92.6 % 66.9-136

Surrogate: 1-Chlorooctadecane 90.5 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 12 (H222278-32)**

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	1.97	98.6	2.00	1.11	
Toluene*	<0.050	0.050	06/01/2022	ND	1.99	99.4	2.00	1.27	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.88	93.9	2.00	1.42	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.88	98.0	6.00	0.922	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	1710	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 96.0 % 66.9-136

Surrogate: 1-Chlorooctadecane 92.3 % 59.5-142

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**Analytical Results For:**

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 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 14 (H222278-33)**

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	1.97	98.6	2.00	1.11		
Toluene*	<0.050	0.050	06/01/2022	ND	1.99	99.4	2.00	1.27		
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.88	93.9	2.00	1.42		
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.88	98.0	6.00	0.922		
Total BTEx	<0.300	0.300	06/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	1540	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 90.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 86.1 % 59.5-142

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**Analytical Results For:**

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 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 16 (H222278-34)**

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	1.97	98.6	2.00	1.11	
Toluene*	<0.050	0.050	06/01/2022	ND	1.99	99.4	2.00	1.27	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.88	93.9	2.00	1.42	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.88	98.0	6.00	0.922	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	240	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 104 % 66.9-136

Surrogate: 1-Chlorooctadecane 100 % 59.5-142

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Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 18 (H222278-35)**

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	1.97	98.6	2.00	1.11	
Toluene*	<0.050	0.050	06/01/2022	ND	1.99	99.4	2.00	1.27	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.88	93.9	2.00	1.42	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.88	98.0	6.00	0.922	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	144	16.0	06/01/2022	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	05/31/2022	ND	199	99.7	200	4.22	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	181	90.3	200	5.98	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 93.2 % 66.9-136

Surrogate: 1-Chlorooctadecane 88.3 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 20 (H222278-36)**

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	1.97	98.6	2.00	1.11		
Toluene*	<0.050	0.050	06/01/2022	ND	1.99	99.4	2.00	1.27		
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.88	93.9	2.00	1.42		
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.88	98.0	6.00	0.922		
Total BTEx	<0.300	0.300	06/01/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	224	16.0	06/01/2022	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	05/31/2022	ND	183	91.6	200	8.60	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.5	200	14.6	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 113 % 66.9-136

Surrogate: 1-Chlorooctadecane 128 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	05/27/2022	Sampling Date:	05/27/2022
Reported:	06/01/2022	Sampling Type:	Soil
Project Name:	RED HILLS WEST 21 FED COM 2H BATTI	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Shalyn Rodriguez
Project Location:	MEWBOURNE - JAL, NM		

**Sample ID: DFS 6 @ 22 (H222278-37)**

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	1.97	98.6	2.00	1.11	
Toluene*	<0.050	0.050	06/01/2022	ND	1.99	99.4	2.00	1.27	
Ethylbenzene*	<0.050	0.050	06/01/2022	ND	1.88	93.9	2.00	1.42	
Total Xylenes*	<0.150	0.150	06/01/2022	ND	5.88	98.0	6.00	0.922	
Total BTEx	<0.300	0.300	06/01/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 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	256	16.0	06/01/2022	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	05/31/2022	ND	183	91.6	200	8.60	
DRO >C10-C28*	<10.0	10.0	05/31/2022	ND	177	88.5	200	14.6	
EXT DRO >C28-C36	<10.0	10.0	05/31/2022	ND					

Surrogate: 1-Chlorooctane 80.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 90.8 % 59.5-142

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\*=Accredited Analyte

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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", is written over a horizontal line.

---

Celey D. Keene, Lab Director/Quality Manager



## ARDINAL LABORATORIES

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



**(575) 393-2326 FAX (575) 393-2476**

~~Page 41 of 43~~

Released to Imaging: 9/12/2022 11:58:28 AM



# ARDINAL LABORATORIES

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 42 of 43

Company Name: Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																		
Project Manager: <u>Lanc Crenshaw</u>				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>																		
Address: P.O. Box 301				Company: <u>Newbourn oil</u>																						
City: Lovington State: NM Zip: 88260				Attn: <u>Rebbie Runnels</u>																						
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address: <u>4801 Basin Park Blvd</u>																						
Project #: <u>15507</u> Project Owner:				City: <u>Hobbs</u>																						
Project Name: <u>Red Hills 21 Fed Com 2H</u>				State: <u>N.M.</u> Zip:																						
Project Location: <u>Rural Just N.M.</u>				Phone #:																						
Sampler Name: <u>Dominic Casarez</u>				Fax #:																						
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME												
<u>H222278</u>																										
<u>21</u>	<u>DFS 2@ Surf</u>						*						<u>5 27</u>													
<u>22</u>	<u>DFS 2@ 1</u>																									
<u>23</u>	<u>DFS 2@ 2</u>																									
<u>24</u>	<u>DFS 2@ 3</u>																									
<u>25</u>	<u>DFS 3@ Surf</u>																									
<u>26</u>	<u>DFS 3@ 3</u>																									
<u>27</u>	<u>DFS 3@ 4</u>																									
<u>28</u>	<u>DFS 6@ Surf</u>																									
<u>29</u>	<u>DFS 6@ 4</u>																									
<u>30</u>	<u>DFS 6@ 6</u>																									

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Relinquished By:	Date: <u>5 27</u>	Received By:	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
<u>[Signature]</u>	Time: <u>1546</u>	<u>[Signature]</u>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:	
	Time:			
Delivered By: (Circle One) <u>22.0°C - 0.5°C</u>			Please email results to pm@etechenv.com.	
Sampler - UPS - Bus - Other: <u>21.5°C #113</u>				
Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			CHECKED BY: (Initials) <u>[Signature]</u>	

FORM-006  
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476







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June 23, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS WEST 21 FED COM 2H BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 06/09/22 16:40.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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".

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW 12	H222473-01	Soil	09-Jun-22 00:00	09-Jun-22 16:40
SW 13	H222473-02	Soil	09-Jun-22 00:00	09-Jun-22 16:40
EW 14	H222473-03	Soil	09-Jun-22 00:00	09-Jun-22 16:40
EW 13	H222473-04	Soil	09-Jun-22 00:00	09-Jun-22 16:40

06/23/22 - Client changed the sample ID on -03. This is the revised report and will replace the one sent on 06/14/22.

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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



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**SW 12**  
**H222473-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	32.0		16.0	mg/kg	4	2061019	AC	10-Jun-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2061016	JH/	10-Jun-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID) 95.9 % 69.9-140 2061016 JH/ 10-Jun-22 8021B

**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2061011	MS	10-Jun-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2061011	MS	10-Jun-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2061011	MS	10-Jun-22	8015B	

Surrogate: 1-Chlorooctane 71.8 % 66.9-136 2061011 MS 10-Jun-22 8015B

Surrogate: 1-Chlorooctadecane 80.2 % 59.5-142 2061011 MS 10-Jun-22 8015B

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**SW 13****H222473-02 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	16.0		16.0	mg/kg	4	2061019	AC	10-Jun-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2061016	JH/	10-Jun-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			97.0 %		69.9-140	2061016	JH/	10-Jun-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2061011	MS	14-Jun-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2061011	MS	14-Jun-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2061011	MS	14-Jun-22	8015B	

Surrogate: 1-Chlorooctane			123 %		66.9-136	2061011	MS	14-Jun-22	8015B	
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Surrogate: 1-Chlorooctadecane			128 %		59.5-142	2061011	MS	14-Jun-22	8015B	
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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**EW 14**  
**H222473-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	<16.0		16.0	mg/kg	4	2061019	AC	10-Jun-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2061016	JH/	10-Jun-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			96.5 %		69.9-140	2061016	JH/	10-Jun-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2061011	MS	13-Jun-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2061011	MS	13-Jun-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2061011	MS	13-Jun-22	8015B	

Surrogate: 1-Chlorooctane			89.0 %		66.9-136	2061011	MS	13-Jun-22	8015B	
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Surrogate: 1-Chlorooctadecane			93.8 %		59.5-142	2061011	MS	13-Jun-22	8015B	
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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:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**EW 13****H222473-04 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

Chloride	32.0		16.0	mg/kg	4	2061019	AC	10-Jun-22	4500-Cl-B	
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**Volatile Organic Compounds by EPA Method 8021**

Benzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Toluene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	2061016	JH/	10-Jun-22	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	2061016	JH/	10-Jun-22	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			97.1 %		69.9-140	2061016	JH/	10-Jun-22	8021B	
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**Petroleum Hydrocarbons by GC FID**

GRO C6-C10*	<10.0		10.0	mg/kg	1	2061011	MS	10-Jun-22	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	2061011	MS	10-Jun-22	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	2061011	MS	10-Jun-22	8015B	

Surrogate: 1-Chlorooctane			67.2 %		66.9-136	2061011	MS	10-Jun-22	8015B	
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Surrogate: 1-Chlorooctadecane			72.7 %		59.5-142	2061011	MS	10-Jun-22	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2061019 - 1:4 DI Water</b>										
<b>Blank (2061019-BLK1)</b>				Prepared & Analyzed: 10-Jun-22						
Chloride	ND	16.0	mg/kg							
<b>LCS (2061019-BS1)</b>				Prepared & Analyzed: 10-Jun-22						
Chloride	432	16.0	mg/kg	400		108	80-120			
<b>LCS Dup (2061019-BSD1)</b>				Prepared & Analyzed: 10-Jun-22						
Chloride	416	16.0	mg/kg	400		104	80-120	3.77	20	

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**Volatile Organic Compounds by EPA Method 8021 - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2061016 - Volatiles****Blank (2061016-BLK1)**

Prepared &amp; Analyzed: 10-Jun-22

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	ND		mg/kg	0.0500		99.3	69.9-140			

**LCS (2061016-BS1)**

Prepared &amp; Analyzed: 10-Jun-22

Benzene	2.21	0.050	mg/kg	2.00		110	83.4-122			
Toluene	2.18	0.050	mg/kg	2.00		109	84.2-126			
Ethylbenzene	2.12	0.050	mg/kg	2.00		106	84.2-121			
m,p-Xylene	4.47	0.100	mg/kg	4.00		112	89.9-126			
o-Xylene	2.09	0.050	mg/kg	2.00		104	84.3-123			
Total Xylenes	6.56	0.150	mg/kg	6.00		109	89.1-124			
Surrogate: 4-Bromofluorobenzene (PID)	0.0477		mg/kg	0.0500		95.4	69.9-140			

**LCS Dup (2061016-BSD1)**

Prepared &amp; Analyzed: 10-Jun-22

Benzene	1.98	0.050	mg/kg	2.00		99.2	83.4-122	10.7	12.6	
Toluene	1.97	0.050	mg/kg	2.00		98.4	84.2-126	10.1	13.3	
Ethylbenzene	1.89	0.050	mg/kg	2.00		94.4	84.2-121	11.5	13.9	
m,p-Xylene	3.99	0.100	mg/kg	4.00		99.7	89.9-126	11.4	13.6	
o-Xylene	1.89	0.050	mg/kg	2.00		94.3	84.3-123	10.3	14.1	
Total Xylenes	5.87	0.150	mg/kg	6.00		97.9	89.1-124	11.0	13.4	
Surrogate: 4-Bromofluorobenzene (PID)	0.0479		mg/kg	0.0500		95.7	69.9-140			

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS WEST 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 14:08

**Petroleum Hydrocarbons by GC FID - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch 2061011 - General Prep - Organics****Blank (2061011-BLK1)**

Prepared &amp; Analyzed: 10-Jun-22

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	47.0		mg/kg	50.0		93.9	66.9-136			
Surrogate: 1-Chlorooctadecane	51.2		mg/kg	50.0		102	59.5-142			

**LCS (2061011-BS1)**

Prepared &amp; Analyzed: 10-Jun-22

GRO C6-C10	180	10.0	mg/kg	200		90.1	78.5-128			
DRO >C10-C28	192	10.0	mg/kg	200		96.0	75.8-135			
Total TPH C6-C28	372	10.0	mg/kg	400		93.0	81.5-127			
Surrogate: 1-Chlorooctane	52.2		mg/kg	50.0		104	66.9-136			
Surrogate: 1-Chlorooctadecane	55.5		mg/kg	50.0		111	59.5-142			

**LCS Dup (2061011-BSD1)**

Prepared &amp; Analyzed: 10-Jun-22

GRO C6-C10	184	10.0	mg/kg	200		92.2	78.5-128	2.37	21.4	
DRO >C10-C28	189	10.0	mg/kg	200		94.5	75.8-135	1.65	17.9	
Total TPH C6-C28	373	10.0	mg/kg	400		93.3	81.5-127	0.315	17.6	
Surrogate: 1-Chlorooctane	44.0		mg/kg	50.0		87.9	66.9-136			
Surrogate: 1-Chlorooctadecane	47.4		mg/kg	50.0		94.8	59.5-142			

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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".

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Celey D. Keene, Lab Director/Quality Manager



# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Page 11 of 11

Company Name: Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																			
Project Manager: <u>Lance Crenshaw</u>				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>																			
Address: P.O. Box 301				Company: <u>Mewbourne</u>																							
City: Lovington State: NM Zip: 88260				Attn: <u>Robbie Runnels</u>																							
Phone #: (575) 396-2378 Fax #: (575) 396-1429				Address: <u>1801 Business Park</u>																							
Project #: <u>15507</u> Project Owner: <u>Mewbourne</u>				City: <u>Hobbs</u>																							
Project Name: <u>Red Hills West 2L Fed Com 2H</u>				State: <u>NM</u> Zip:																							
Project Location: <u>Rural Jct NM</u>				Phone #:																							
Sampler Name: <u>Dominic Casarez</u>				Fax #:																							
FOR LAB USE ONLY						MATRIX		PRESERV.		SAMPLING																	
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE	ICE / COOL	OTHER:	DATE	TIME													
<u>H022473</u>																											
DC 1	SW 12												6/9														
2	SW 13												6/9														
3	EW 12 EW 14 *												6/9														
4	EW 13												6/9														
<p>PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.</p>																											
Relinquished By: <u>Dominic Casarez</u>		Date: <u>6/21</u>		Received By: <u>Shodriquer</u>		Date: <u>6/23</u>		Time: <u>1640</u>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No		Add'l Phone #:													
Relinquished By:		Date:		Received By:		Date:		Time:		REMARKS:																	
										*Sample ID changed as per Ben. 6/23/22																	
										Please email results to pm@etechenv.com.																	
Delivered By: (Circle One) <u>29.18 C-0.5°</u>				Sample Condition				CHECKED BY:																			
Sampler - UPS - Bus - Other: <u>28.10° #115</u>				Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No				(Initials) <u>SC</u>																			

FORM-006  
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476





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---

June 17, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS 21 FED COM 2H

Enclosed are the results of analyses for samples received by the laboratory on 06/13/22 16:47.

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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WW 16 B (H222529-01)**

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	06/14/2022	ND	2.02	101	2.00	0.465	
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23	
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76	
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40	
Total BTX	<0.300	0.300	06/14/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	06/15/2022	ND	448	112	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	06/15/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/15/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/15/2022	ND					

Surrogate: 1-Chlorooctane 130 % 66.9-136

Surrogate: 1-Chlorooctadecane 134 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WW 17 B (H222529-02)**

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	06/14/2022	ND	2.02	101	2.00	0.465	
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23	
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76	
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40	
Total BTEx	<0.300	0.300	06/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.0 % 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	160	16.0	06/15/2022	ND	448	112	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 101 % 66.9-136

Surrogate: 1-Chlorooctadecane 102 % 59.5-142

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WW 18 B (H222529-03)**

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	06/14/2022	ND	2.02	101	2.00	0.465	
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23	
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76	
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40	
Total BTX	<0.300	0.300	06/14/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	640	16.0	06/15/2022	ND	448	112	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 78.4 % 66.9-136

Surrogate: 1-Chlorooctadecane 81.1 % 59.5-142

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WW 19 B (H222529-04)**

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	06/14/2022	ND	2.02	101	2.00	0.465	
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23	
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76	
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40	
Total BTX	<0.300	0.300	06/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	160	16.0	06/15/2022	ND	448	112	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 92.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 97.5 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: WW 20 B (H222529-05)**

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	06/14/2022	ND	2.02	101	2.00	0.465	
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23	
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76	
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40	
Total BTEx	<0.300	0.300	06/14/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	112	16.0	06/15/2022	ND	432	108	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 84.4 % 66.9-136

Surrogate: 1-Chlorooctadecane 88.7 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: EW 15 A (H222529-06)**

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	06/14/2022	ND	2.02	101	2.00	0.465		
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23		
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76		
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40		
Total BTEX	<0.300	0.300	06/14/2022	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	06/15/2022	ND	432	108	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 99.1 % 66.9-136

Surrogate: 1-Chlorooctadecane 103 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: EW 16 A (H222529-07)**

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	06/14/2022	ND	2.02	101	2.00	0.465		
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23		
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76		
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40		
Total BTX	<0.300	0.300	06/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	192	16.0	06/15/2022	ND	432	108	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 107 % 66.9-136

Surrogate: 1-Chlorooctadecane 112 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: EW 17 B (H222529-08)**

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	06/14/2022	ND	2.02	101	2.00	0.465		
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23		
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76		
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40		
Total BTEx	<0.300	0.300	06/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	48.0	16.0	06/15/2022	ND	432	108	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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 110 % 66.9-136

Surrogate: 1-Chlorooctadecane 114 % 59.5-142

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/13/2022  
 Reported: 06/17/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/13/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: EW 18 A (H222529-09)**

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	06/14/2022	ND	2.02	101	2.00	0.465		
Toluene*	<0.050	0.050	06/14/2022	ND	2.03	102	2.00	1.23		
Ethylbenzene*	<0.050	0.050	06/14/2022	ND	1.94	96.8	2.00	1.76		
Total Xylenes*	<0.150	0.150	06/14/2022	ND	6.02	100	6.00	2.40		
Total BTX	<0.300	0.300	06/14/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	16.0	16.0	06/15/2022	ND	432	108	400	3.64		

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	06/14/2022	ND	196	98.2	200	3.39	
DRO >C10-C28*	<10.0	10.0	06/14/2022	ND	200	100	200	4.20	
EXT DRO >C28-C36	<10.0	10.0	06/14/2022	ND					

Surrogate: 1-Chlorooctane 117 % 66.9-136

Surrogate: 1-Chlorooctadecane 121 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager

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---

### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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", is written over a horizontal line.

---

Celey D. Keene, Lab Director/Quality Manager

**ARDINAL LABORATORIES**

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>																																	
Project Manager: Lance Crenshaw				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>																																	
Address: P.O. Box 301				Company: McNamee																																					
City: Lovington		State: NM		Zip: 88260		Attn: Robbie Runnels																																			
Phone #: (575) 396-2378		Fax #: (575) 396-1429		Address: 4801 Bos Ark		City: Hobbs																																			
Project #: 15507		Project Owner:		State: NM		Zip:																																			
Project Name: Red Hills 21 Fed Cont 2H				Phone #:																																					
Project Location: Rural Jal N.M.				Fax #:																																					
Sampler Name: Dominic Casarez																																									
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													
H222529																																									
1		WW 16 B																																							
2		WW 17 B																																							
3		WW 18 B																																							
4		WW 19 B																																							
5		WW 20 B																																							
6		EW 15 A																																							
7		EW 16 A																																							
8		EW 17 B																																							
9		EW 18 A																																							
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Relinquished By: [Signature]				Date: 6/13				Received By: [Signature]				Phone Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Phone #:																									
Relinquished By:				Time:				Received By:				Fax Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				Add'l Fax #:																									
Relinquished By:				Date:				Received By:				REMARKS:																													
Relinquished By:				Time:				Received By:																																	
Delivered By: (Circle One) 29.4% C-0.5%								Sample Condition								CHECKED BY:								Please email results to pm@etechenv.com.																	
Sampler - UPS - Bus - Other: 28.9% #113								Cool Intact								(Initials)																									
								<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No								[Signature]																									





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

---

June 21, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS 21 FED COM 2H

Enclosed are the results of analyses for samples received by the laboratory on 06/16/22 16:21.

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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: OSS @ SUR (H222584-01)**

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	06/17/2022	ND	2.03	102	2.00	2.58		
Toluene*	<0.050	0.050	06/17/2022	ND	2.04	102	2.00	3.01		
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	1.92	95.9	2.00	2.71		
Total Xylenes*	<0.150	0.150	06/17/2022	ND	5.96	99.3	6.00	2.77		
Total BTX	<0.300	0.300	06/17/2022	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	448	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	195	97.4	200	1.54	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	201	100	200	1.38	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 98.5 % 66.9-136

Surrogate: 1-Chlorooctadecane 108 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: OSS @ 1 (H222584-02)**

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	06/17/2022	ND	2.03	102	2.00	2.58		
Toluene*	<0.050	0.050	06/17/2022	ND	2.04	102	2.00	3.01		
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	1.92	95.9	2.00	2.71		
Total Xylenes*	<0.150	0.150	06/17/2022	ND	5.96	99.3	6.00	2.77		
Total BTEx	<0.300	0.300	06/17/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	112	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	195	97.4	200	1.54	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	201	100	200	1.38	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 91.3 % 66.9-136

Surrogate: 1-Chlorooctadecane 100 % 59.5-142

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: WW21 (H222584-03)**

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	06/17/2022	ND	2.03	102	2.00	2.58	
Toluene*	<0.050	0.050	06/17/2022	ND	2.04	102	2.00	3.01	
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	1.92	95.9	2.00	2.71	
Total Xylenes*	<0.150	0.150	06/17/2022	ND	5.96	99.3	6.00	2.77	
Total BTEx	<0.300	0.300	06/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 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	240	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	195	97.4	200	1.54	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	201	100	200	1.38	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 107 % 66.9-136

Surrogate: 1-Chlorooctadecane 118 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received:	06/16/2022	Sampling Date:	06/16/2022
Reported:	06/21/2022	Sampling Type:	Soil
Project Name:	RED HILLS 21 FED COM 2H	Sampling Condition:	** (See Notes)
Project Number:	15507	Sample Received By:	Tamara Oldaker
Project Location:	MEWBOURNE - RURAL JAL, NM		

**Sample ID: EW 20 A (H222584-04)**

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	06/17/2022	ND	2.03	102	2.00	2.58		
Toluene*	<0.050	0.050	06/17/2022	ND	2.04	102	2.00	3.01		
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	1.92	95.9	2.00	2.71		
Total Xylenes*	<0.150	0.150	06/17/2022	ND	5.96	99.3	6.00	2.77		
Total BTEx	<0.300	0.300	06/17/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	176	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	195	97.4	200	1.54	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	201	100	200	1.38	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 108 % 66.9-136

Surrogate: 1-Chlorooctadecane 119 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: NW 7 (H222584-05)**

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	06/17/2022	ND	2.03	102	2.00	2.58	
Toluene*	<0.050	0.050	06/17/2022	ND	2.04	102	2.00	3.01	
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	1.92	95.9	2.00	2.71	
Total Xylenes*	<0.150	0.150	06/17/2022	ND	5.96	99.3	6.00	2.77	
Total BTEx	<0.300	0.300	06/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 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	144	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	195	97.4	200	1.54	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	201	100	200	1.38	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 103 % 66.9-136

Surrogate: 1-Chlorooctadecane 114 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: WW 22 B (H222584-06)**

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	06/17/2022	ND	2.20	110	2.00	3.98	
Toluene*	<0.050	0.050	06/17/2022	ND	2.19	109	2.00	3.94	
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	2.12	106	2.00	3.81	
Total Xylenes*	<0.150	0.150	06/17/2022	ND	6.57	109	6.00	3.50	
Total BTEx	<0.300	0.300	06/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.2 % 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	112	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	203	101	200	1.85	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	208	104	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 105 % 66.9-136

Surrogate: 1-Chlorooctadecane 115 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: EW 19 A (H222584-07)**

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	06/17/2022	ND	2.20	110	2.00	3.98	
Toluene*	<0.050	0.050	06/17/2022	ND	2.19	109	2.00	3.94	
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	2.12	106	2.00	3.81	
Total Xylenes*	<0.150	0.150	06/17/2022	ND	6.57	109	6.00	3.50	
Total BTX	<0.300	0.300	06/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 96.5 % 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	208	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	203	101	200	1.85	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	208	104	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 100 % 66.9-136

Surrogate: 1-Chlorooctadecane 109 % 59.5-142

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 06/16/2022  
 Reported: 06/21/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 06/16/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Tamara Oldaker

**Sample ID: EW 21 (H222584-08)**

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	06/17/2022	ND	2.20	110	2.00	3.98	
Toluene*	<0.050	0.050	06/17/2022	ND	2.19	109	2.00	3.94	
Ethylbenzene*	<0.050	0.050	06/17/2022	ND	2.12	106	2.00	3.81	
Total Xylenes*	<0.150	0.150	06/17/2022	ND	6.57	109	6.00	3.50	
Total BTX	<0.300	0.300	06/17/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.3 % 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	80.0	16.0	06/17/2022	ND	448	112	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	06/17/2022	ND	203	101	200	1.85	
DRO >C10-C28*	<10.0	10.0	06/17/2022	ND	208	104	200	1.04	
EXT DRO >C28-C36	<10.0	10.0	06/17/2022	ND					

Surrogate: 1-Chlorooctane 101 % 66.9-136

Surrogate: 1-Chlorooctadecane 111 % 59.5-142

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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

---

### 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", is written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager



# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240

(575) 393-2326 FAX (575) 393-2476

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 11 of 11

<b>Company Name:</b> Etech Environmental & Safety Solutions, Inc.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>															
<b>Project Manager:</b> Lance Crenshaw				<b>P.O. #:</b>				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>															
<b>Address:</b> P.O. Box 301				<b>Company:</b> Menbourne																			
<b>City:</b> Lovington		<b>State:</b> NM		<b>Zip:</b> 88260		<b>Attn:</b> Robbie Runnels																	
<b>Phone #:</b> (575) 396-2378		<b>Fax #:</b> (575) 396-1429		<b>Address:</b> 4861 pms RRL Blvd																			
<b>Project #:</b> 15507		<b>Project Owner:</b> Menbourne		<b>City:</b> Hobbs																			
<b>Project Name:</b> Red Hills 21 Fed Cam 2H				<b>State:</b> NM																<b>Zip:</b>			
<b>Project Location:</b> Rural 5el N.m.				<b>Phone #:</b>																			
<b>Sampler Name:</b> Dominick Casarez				<b>Fax #:</b>																			

FOR LAB USE ONLY		Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.		SAMPLING		DATE	TIME	Chloride	TPH (8015M)	BTEX (8021B)
						GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER	ACID/BASE	ICE / COOL	OTHER						
4222584	OC	1	OSSQ 5v												6/16					
		2	OSSQ 1																	
		3	WW21																	
		4	EW20 A																	
		5	NW7																	
		6	VW22 B																	
		7	EW19 A																	
		8	EW21																	

PLEASE NOTE: Liability and Damages, Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

<b>Relinquished By:</b> 	<b>Date:</b> 6/16 <b>Time:</b> 1621	<b>Received By:</b> 	<b>Phone Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>Fax Result:</b> <input type="checkbox"/> Yes <input type="checkbox"/> No <b>REMARKS:</b>
<b>Relinquished By:</b>	<b>Date:</b> <b>Time:</b>	<b>Received By:</b>	<b>Add'l Phone #:</b> <b>Add'l Fax #:</b>

Please email results to pm@etechenv.com.

<b>Delivered By: (Circle One)</b> 34.0°C C-0.5°C <b>Sampler - UPS - Bus - Other:</b> 33.5°C #113	<b>Sample Condition</b> Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>CHECKED BY:</b> (Initials) TO.
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FORM-006  
Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



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

---

June 23, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS 21 FED COM 2H

Enclosed are the results of analyses for samples received by the laboratory on 06/20/22 16:15.

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/ga/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/ga/lab_accred_certif.html).

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 16:26

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WW 18 C	H222629-01	Soil	20-Jun-22 16:15	20-Jun-22 16:15

06/23/22 - Client changed the sample ID (See COC). This is the revised report and will replace the one sent earlier 06/23/22.

Cardinal Laboratories

\*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 16:26

**WW 18 C**  
**H222629-01 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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**Cardinal Laboratories****Inorganic Compounds**

<b>Chloride</b>	<b>48.0</b>		16.0	mg/kg	4	2062128	GM	21-Jun-22	4500-Cl-B	
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Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
2617 W MARLAND  
HOBBS NM, 88240

Project: RED HILLS 21 FED COM 2H  
Project Number: 15507  
Project Manager: LANCE CRENSHAW  
Fax To:

Reported:  
23-Jun-22 16:26

**Inorganic Compounds - Quality Control****Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2062128 - 1:4 DI Water</b>									
<b>Blank (2062128-BLK1)</b>				Prepared & Analyzed: 21-Jun-22					
Chloride	ND	16.0	mg/kg						
<b>LCS (2062128-BS1)</b>				Prepared & Analyzed: 21-Jun-22					
Chloride	416	16.0	mg/kg	400		104	80-120		
<b>LCS Dup (2062128-BSD1)</b>				Prepared & Analyzed: 21-Jun-22					
Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20

Cardinal Laboratories

\*=Accredited Analyte

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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





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

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August 16, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS 21 FED COM 2H

Enclosed are the results of analyses for samples received by the laboratory on 08/10/22 17:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 10' (H223622-01)**

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	08/13/2022	ND	1.77	88.7	2.00	0.864		
Toluene*	<0.050	0.050	08/13/2022	ND	1.88	93.8	2.00	1.35		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.80	89.8	2.00	2.09		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	5.50	91.7	6.00	3.26		
Total BTX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	4800	16.0	08/16/2022	ND	432	108	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	08/13/2022	ND	189	94.4	200	3.24	
DRO >C10-C28*	<10.0	10.0	08/13/2022	ND	209	105	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	08/13/2022	ND					

Surrogate: 1-Chlorooctane 80.5 % 43-149

Surrogate: 1-Chlorooctadecane 95.0 % 42.5-161

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 11' (H223622-02)**

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	08/13/2022	ND	1.77	88.7	2.00	0.864		
Toluene*	<0.050	0.050	08/13/2022	ND	1.88	93.8	2.00	1.35		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.80	89.8	2.00	2.09		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	5.50	91.7	6.00	3.26		
Total BTEx	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	4160	16.0	08/16/2022	ND	432	108	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	08/13/2022	ND	189	94.4	200	3.24	
DRO >C10-C28*	<10.0	10.0	08/13/2022	ND	209	105	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	08/13/2022	ND					

Surrogate: 1-Chlorooctane 89.1 % 43-149

Surrogate: 1-Chlorooctadecane 105 % 42.5-161

Cardinal Laboratories

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Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 12' (H223622-03)**

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	08/13/2022	ND	1.77	88.7	2.00	0.864		
Toluene*	<0.050	0.050	08/13/2022	ND	1.88	93.8	2.00	1.35		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.80	89.8	2.00	2.09		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	5.50	91.7	6.00	3.26		
Total BTEx	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	2160	16.0	08/16/2022	ND	432	108	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	08/13/2022	ND	189	94.4	200	3.24	
DRO >C10-C28*	<10.0	10.0	08/13/2022	ND	209	105	200	1.90	
EXT DRO >C28-C36	<10.0	10.0	08/13/2022	ND					

Surrogate: 1-Chlorooctane 85.4 % 43-149

Surrogate: 1-Chlorooctadecane 101 % 42.5-161

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 13' (H223622-04)**

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	08/13/2022	ND	1.77	88.7	2.00	0.864		
Toluene*	<0.050	0.050	08/13/2022	ND	1.88	93.8	2.00	1.35		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.80	89.8	2.00	2.09		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	5.50	91.7	6.00	3.26		
Total BTEx	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	1410	16.0	08/16/2022	ND	432	108	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	08/13/2022	ND	189	94.4	200	3.24	
DRO >C10-C28*	73.2	10.0	08/13/2022	ND	209	105	200	1.90	
EXT DRO >C28-C36	64.0	10.0	08/13/2022	ND					

Surrogate: 1-Chlorooctane 86.1 % 43-149

Surrogate: 1-Chlorooctadecane 103 % 42.5-161

Cardinal Laboratories

\*=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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 3 @ 4' (H223622-05)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	672	16.0	08/16/2022	ND	432	108	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	08/11/2022	ND	189	94.5	200	10.7	
DRO >C10-C28*	<10.0	10.0	08/11/2022	ND	199	99.4	200	13.1	
EXT DRO >C28-C36	<10.0	10.0	08/11/2022	ND					

Surrogate: 1-Chlorooctane 86.4 % 43-149

Surrogate: 1-Chlorooctadecane 86.5 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 3 @ 5' (H223622-06)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	704	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 91.6 % 43-149

Surrogate: 1-Chlorooctadecane 98.4 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 4 @ 4' (H223622-07)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	384	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 91.5 % 43-149

Surrogate: 1-Chlorooctadecane 95.6 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 4 @ 5' (H223622-08)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	464	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 95.4 % 43-149

Surrogate: 1-Chlorooctadecane 99.8 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 4 @ 6' (H223622-09)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTEx	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 92.0 % 43-149

Surrogate: 1-Chlorooctadecane 100 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 4 @ 7' (H223622-10)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 90.5 % 43-149

Surrogate: 1-Chlorooctadecane 97.8 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 1 @ 4' (H223622-11)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	5080	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 88.6 % 43-149

Surrogate: 1-Chlorooctadecane 95.7 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 1 @ 5' (H223622-12)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	1200	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 87.0 % 43-149

Surrogate: 1-Chlorooctadecane 92.5 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 1 @ 6' (H223622-13)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	1870	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 93.8 % 43-149

Surrogate: 1-Chlorooctadecane 101 % 42.5-161

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 1 @ 7' (H223622-14)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTEX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	2120	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 94.2 % 43-149

Surrogate: 1-Chlorooctadecane 101 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 4' (H223622-15)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	704	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 93.5 % 43-149

Surrogate: 1-Chlorooctadecane 100 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 5' (H223622-16)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	1710	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 84.7 % 43-149

Surrogate: 1-Chlorooctadecane 90.9 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 6' (H223622-17)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	1710	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 89.4 % 43-149

Surrogate: 1-Chlorooctadecane 95.2 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 7' (H223622-18)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	2210	16.0	08/16/2022	ND	432	108	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	08/12/2022	ND	185	92.4	200	11.8	
DRO >C10-C28*	<10.0	10.0	08/12/2022	ND	211	106	200	3.52	
EXT DRO >C28-C36	<10.0	10.0	08/12/2022	ND					

Surrogate: 1-Chlorooctane 86.7 % 43-149

Surrogate: 1-Chlorooctadecane 92.7 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 8' (H223622-19)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	3320	16.0	08/16/2022	ND	432	108	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	08/15/2022	ND	213	106	200	2.49	
DRO >C10-C28*	<10.0	10.0	08/15/2022	ND	240	120	200	9.69	
EXT DRO >C28-C36	<10.0	10.0	08/15/2022	ND					

Surrogate: 1-Chlorooctane 83.1 % 43-149

Surrogate: 1-Chlorooctadecane 84.7 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 2 @ 9' (H223622-20)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383		
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647		
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03		
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792		
Total BTEX	<0.300	0.300	08/13/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	6240	16.0	08/16/2022	ND	432	108	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	08/15/2022	ND	213	106	200	2.49	
DRO >C10-C28*	<10.0	10.0	08/15/2022	ND	240	120	200	9.69	
EXT DRO >C28-C36	<10.0	10.0	08/15/2022	ND					

Surrogate: 1-Chlorooctane 76.5 % 43-149

Surrogate: 1-Chlorooctadecane 77.3 % 42.5-161

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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 7 @ 4' (H223622-21)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	3600	16.0	08/16/2022	ND	432	108	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	08/15/2022	ND	213	106	200	2.49	
DRO >C10-C28*	<10.0	10.0	08/15/2022	ND	240	120	200	9.69	
EXT DRO >C28-C36	<10.0	10.0	08/15/2022	ND					

Surrogate: 1-Chlorooctane 80.2 % 43-149

Surrogate: 1-Chlorooctadecane 82.3 % 42.5-161

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 7 @ 5' (H223622-22)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 116 % 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	6720	16.0	08/16/2022	ND	432	108	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	08/15/2022	ND	213	106	200	2.49	
DRO >C10-C28*	<10.0	10.0	08/15/2022	ND	240	120	200	9.69	
EXT DRO >C28-C36	<10.0	10.0	08/15/2022	ND					

Surrogate: 1-Chlorooctane 90.9 % 43-149

Surrogate: 1-Chlorooctadecane 92.4 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 8 @ 4' (H223622-23)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 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	3080	16.0	08/16/2022	ND	432	108	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	08/15/2022	ND	213	106	200	2.49	
DRO >C10-C28*	<10.0	10.0	08/15/2022	ND	240	120	200	9.69	
EXT DRO >C28-C36	<10.0	10.0	08/15/2022	ND					

Surrogate: 1-Chlorooctane 87.3 % 43-149

Surrogate: 1-Chlorooctadecane 89.6 % 42.5-161

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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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 8 @ 5' (H223622-24)**

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	08/13/2022	ND	1.89	94.6	2.00	0.383	
Toluene*	<0.050	0.050	08/13/2022	ND	1.95	97.3	2.00	0.647	
Ethylbenzene*	<0.050	0.050	08/13/2022	ND	1.96	98.2	2.00	1.03	
Total Xylenes*	<0.150	0.150	08/13/2022	ND	6.05	101	6.00	0.792	
Total BTX	<0.300	0.300	08/13/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 115 % 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	736	16.0	08/16/2022	ND	432	108	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	08/15/2022	ND	213	106	200	2.49	
DRO >C10-C28*	<10.0	10.0	08/15/2022	ND	240	120	200	9.69	
EXT DRO >C28-C36	<10.0	10.0	08/15/2022	ND					

Surrogate: 1-Chlorooctane 83.7 % 43-149

Surrogate: 1-Chlorooctadecane 84.8 % 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:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 8 @ 6' (H223622-25)**

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	08/15/2022	ND	2.03	101	2.00	0.364	
Toluene*	<0.050	0.050	08/15/2022	ND	1.96	98.1	2.00	0.122	
Ethylbenzene*	<0.050	0.050	08/15/2022	ND	1.93	96.7	2.00	0.831	
Total Xylenes*	<0.150	0.150	08/15/2022	ND	6.00	100	6.00	1.75	
Total BTEx	<0.300	0.300	08/15/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 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	1040	16.0	08/16/2022	ND	432	108	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	08/13/2022	ND	214	107	200	1.67	
DRO >C10-C28*	<10.0	10.0	08/13/2022	ND	208	104	200	1.80	
EXT DRO >C28-C36	<10.0	10.0	08/13/2022	ND					

Surrogate: 1-Chlorooctane 97.9 % 43-149

Surrogate: 1-Chlorooctadecane 103 % 42.5-161

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 08/10/2022  
 Reported: 08/16/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: 15507  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 08/10/2022  
 Sampling Type: Soil  
 Sampling Condition: \*\* (See Notes)  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 8 @ 7' (H223622-26)**

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	08/15/2022	ND	2.03	101	2.00	0.364		
Toluene*	<0.050	0.050	08/15/2022	ND	1.96	98.1	2.00	0.122		
Ethylbenzene*	<0.050	0.050	08/15/2022	ND	1.93	96.7	2.00	0.831		
Total Xylenes*	<0.150	0.150	08/15/2022	ND	6.00	100	6.00	1.75		
Total BTX	<0.300	0.300	08/15/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 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	176	16.0	08/16/2022	ND	432	108	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	08/13/2022	ND	214	107	200	1.67	
DRO >C10-C28*	<10.0	10.0	08/13/2022	ND	208	104	200	1.80	
EXT DRO >C28-C36	<10.0	10.0	08/13/2022	ND					

Surrogate: 1-Chlorooctane 95.0 % 43-149

Surrogate: 1-Chlorooctadecane 101 % 42.5-161

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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 "C. D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



# **CARDINAL LABORATORIES**

101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603  
(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: Etch Environmental & Safety Solutions				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: <i>Lance Crenshaw</i>				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>											
Address: 2617 West Marland				Company: <i>Mawbourne</i>															
City: Hobbs State: NM Zip: 88240				Attn: <i>Curtis Walker</i>															
Phone #: (575) 264-9884 Fax #:				Address:															
Project #: Project Owner:				City:															
Project Name: <i>Red Hills 21 Fed Com 2H</i>				State: Zip:															
Project Location:				Phone #:															
Sampler Name: <i>Alicia Ros</i>				Fax #:															
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			
<i>12236822</i>																			
<i>1</i>	<i>SP</i>	<i>2</i>	<i>G 10 FT</i>		<i>X</i>										<i>8-10-22</i>				
<i>2</i>	<i>SP</i>	<i>2</i>	<i>G 11 FT</i>																
<i>3</i>	<i>SP</i>	<i>2</i>	<i>G 12 FT</i>																
<i>4</i>	<i>SP</i>	<i>2</i>	<i>G 13 FT</i>																
<i>5</i>	<i>SP</i>	<i>3</i>	<i>G 4 FT</i>																
<i>6</i>	<i>SP</i>	<i>3</i>	<i>G 5 FT</i>																
<i>7</i>	<i>SP</i>	<i>4</i>	<i>G 4 FT</i>																
<i>8</i>	<i>SP</i>	<i>4</i>	<i>G 5 FT</i>																
<i>9</i>	<i>SP</i>	<i>4</i>	<i>G 6 FT</i>																
<i>10</i>	<i>SP</i>	<i>4</i>	<i>G 7 FT</i>																

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Relinquished By: <i>[Signature]</i>	Date: <i>8/10/22</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
	Time: <i>1700</i>		REMARKS:	
	Time:		email results	
Delivered By: (Circle One)		Sample Condition	CHECKED BY: (Initials)	
Sampler - UPS - Bus - Other: <i>6:8:0 C.D.V. 6:2: #113</i>		Cool Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<i>[Signature]</i>	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476





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(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020

## **CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

Company Name: Etech Environmental & Safety Solutions				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: <i>Lance Crenshaw</i>				P.O. #:				<div style="display: flex; justify-content: space-around;"> <div>Chloride</div> <div>TPH (8015M)</div> <div>BTEX (8021B)</div> </div>											
Address: 2617 West Marland				Company: <i>Mewharne</i>															
City: Hobbs State: NM Zip: 88240				Attn: <i>Connor Walker</i>															
Phone #: (575) 264-9884 Fax #:				Address:															
Project #: Project Owner:				City:															
Project Name: <i>Red Hills 21 Fed Com 2H</i>				State: Zip:															
Project Location:				Phone #:															
Sampler Name: <i>Aaron Rios</i>				Fax #:															
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			
<i>42231622</i>	<i>SP</i>	<i>1.</i>	<i>4 Ft</i>	<i>X</i>				<i>X</i>							<i>8-10-22</i>				
<i>11</i>	<i>SP</i>	<i>1.</i>	<i>5 Ft</i>																
<i>12</i>	<i>SP</i>	<i>1.</i>	<i>6 Ft</i>																
<i>13</i>	<i>SP</i>	<i>1.</i>	<i>7 Ft</i>																
<i>14</i>	<i>SP</i>	<i>2.</i>	<i>4 Ft</i>																
<i>15</i>	<i>SP</i>	<i>2.</i>	<i>5 Ft</i>																
<i>16</i>	<i>SP</i>	<i>2.</i>	<i>6 Ft</i>																
<i>17</i>	<i>SP</i>	<i>2.</i>	<i>7 Ft</i>																
<i>18</i>	<i>SP</i>	<i>2.</i>	<i>8 Ft</i>																
<i>19</i>	<i>SP</i>	<i>2.</i>	<i>9 Ft</i>																
<i>20</i>	<i>SP</i>	<i>2.</i>	<i>9 Ft</i>																

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Relinquished By: <i>[Signature]</i>	Date: <i>8/10/22</i>	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #:
Relinquished By:	Date:	Received By:	Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Fax #:
Delivered By: (Circle One) <i>u.s. c-o.u.s.</i>	Sample Condition	CHECKED BY: <i>[Signature]</i>	REMARKS: email results	
<input checked="" type="checkbox"/> Sampler - UPS - Bus - Other: <i>u.s. #113</i>	Cool Intact: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	(Initials)		

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476



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**101 East Marland, Hobbs, NM 88240 2111 Beechwood, Abilene, TX 79603**  
**(505) 393-2326 FAX (505) 393-2476 (325) 673-7001 FAX (325) 673-7020**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

**PLEASE NOTE:** Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the services. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable services. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries affiliates or successors arising out of or related to the performance of services rendered by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: <i>Arnon Hies</i>	Date: <i>8/10/00</i> Time: <i>1:00</i>	Received By: <i>Shadrighney</i>	Phone Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Add'l Phone #: Add'l Fax #:
Relinquished By:	Date: Time:	Received By:	REMARKS:  email results	
Delivered By: (Circle One) (Sampler) - UPS - Bus - Other			Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> No	
6.8°C / C.O. 6.0°C 6.7°C #1B			CHECKED BY: (Initials) <i>SHL</i>	

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September 02, 2022

LANCE CRENSHAW

Etech Environmental & Safety Solutions

2617 W MARLAND

HOBBS, NM 88240

RE: RED HILLS 21 FED COM 2H

Enclosed are the results of analyses for samples received by the laboratory on 09/02/22 11:10.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. 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



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 09/02/2022  
 Reported: 09/02/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: NONE GIVEN  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 09/01/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 6 @ 4' (H224040-01)**

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	09/02/2022	ND	1.84	92.1	2.00	5.60	
Toluene*	<0.050	0.050	09/02/2022	ND	1.81	90.6	2.00	7.10	
Ethylbenzene*	<0.050	0.050	09/02/2022	ND	1.79	89.5	2.00	8.10	
Total Xylenes*	<0.150	0.150	09/02/2022	ND	5.53	92.2	6.00	8.44	
Total BTEx	<0.300	0.300	09/02/2022	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	09/02/2022	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	09/02/2022	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	09/02/2022	ND	188	93.8	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	09/02/2022	ND					

Surrogate: 1-Chlorooctane 89.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 96.1 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

Etech Environmental & Safety Solutions  
 LANCE CRENSHAW  
 2617 W MARLAND  
 HOBBS NM, 88240  
 Fax To:

Received: 09/02/2022  
 Reported: 09/02/2022  
 Project Name: RED HILLS 21 FED COM 2H  
 Project Number: NONE GIVEN  
 Project Location: MEWBOURNE - RURAL JAL, NM

Sampling Date: 09/01/2022  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Shalyn Rodriguez

**Sample ID: SP 6 @ 6' (H224040-02)**

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	09/02/2022	ND	1.84	92.1	2.00	5.60	
Toluene*	<0.050	0.050	09/02/2022	ND	1.81	90.6	2.00	7.10	
Ethylbenzene*	<0.050	0.050	09/02/2022	ND	1.79	89.5	2.00	8.10	
Total Xylenes*	<0.150	0.150	09/02/2022	ND	5.53	92.2	6.00	8.44	
Total BTX	<0.300	0.300	09/02/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 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	<16.0	16.0	09/02/2022	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	09/02/2022	ND	192	96.2	200	1.21	
DRO >C10-C28*	<10.0	10.0	09/02/2022	ND	188	93.8	200	1.20	
EXT DRO >C28-C36	<10.0	10.0	09/02/2022	ND					

Surrogate: 1-Chlorooctane 76.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 82.8 % 46.3-178

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\*=Accredited Analyte

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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".

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Celey D. Keene, Lab Director/Quality Manager



## ARDINAL LABORATORIES

**101 East Marland, Hobbs, NM 88240**

**(575) 393-2326 FAX (575) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.				BILL TO				ANALYSIS REQUEST																							
Project Manager: Lance Crumley				P.O. #:				Chloride TPH (8015M) BTEX (8021B)																							
Address: 2617 W Marland				Company: Newbauer																											
City: Hobbs State: NM Zip: 88240				Attn: Lance Walker																											
Phone #: (575) 264-9884 Fax #:				Address:																											
Project #: Project Owner:				City:																											
Project Name: Red Hills 21 Fed Con 2				State: Zip:																											
Project Location:				Phone #:																											
Sampler Name: Lance Crumley				Fax #:																											
FOR LAB USE ONLY																															
Lab I.D.				Sample I.D.																											

**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 140581

**CONDITIONS**

Operator: MEWBOURNE OIL CO P.O. Box 5270 Hobbs, NM 88241	OGRID: 14744
	Action Number: 140581
	Action Type: [C-141] Release Corrective Action (C-141)

**CONDITIONS**

Created By	Condition	Condition Date
jnobui	Remediation Plan Approved with Conditions. HOLD Deferral Request. Variance Approved for the installation of a liner in the northern and southern sections of the release. Do not backfill excavation on pad (proposed deferred area) until OCD can review lab data from confirmation samples.	9/12/2022