2VSUH-200320-C-1410

DEVON ENERGY
Thistle Unit #44H

Work Plan

U/L N, Section 33, T23S, R33E
Lea County, New Mexico

NAB1905153070 AND NRM2003159278

March 10, 2020

Prepared for:

Devon Energy
6488 Seven Rivers Hwy
Artesia, NM 88210

By:

Safety & Environmental Solutions, Inc.
703 East Clinton
Hobbs, New Mexico 88240
(575) 397-0510

Table of Contents

I. Company Contacts

Representative	Company	Telephone	E-mail
Tom Bynum	Devon Energy	580-748-1613	Tom.Bynum@dvn.com
Bob Allen	SESI	575-397-0510	ballen@sesi-nm.com

II. Background

Safety and Environmental Solutions, Inc., hereinafter referred to as (SESI) was contracted by Devon Energy to assess a spill at the Thistle Unit #44H location. This site is situated in U/L N, Section 33, Township 23S and Range 33E, in Lea County New Mexico. We are addressing two separate leaks in this plan which will be remediated upon approval of the plan.

According to the C-141 for incident NAB1905153070, the dump was stuck open causing the free water knockout to pop off which resulted in a 4 bbl release of oil and and a 18.38 bbls release of produced water. A vacuum truck was dispatched to recover all free-standing fluids.

Incident NRM2003159278 was caused by a line leak in the heater treater water dump line releasing 32.9 bbls of produced water. A vacuum truck was dispatched to recover all free-standing fluids.

II. Surface and Ground Water

According to the NMOCD Oil and Gas Map, there is no surface water within 3,000 feet of this location and spill areas. Based on the trend map and the USGS web interface, depth to groundwater in this area is over 100 feet.

IV. Characterization

The site has been fully delineated according to the NMOCD NMAC 19.15.29 published guidelines. All samples were below the standard of 50 mg/kg for BTEX. Samples 9 and 10, which are located on the pad, were both below the standard of 20,000 mg/kg for chlorides and below the standard of 1,000 for TPH at the surface. Samples 1-8 and 11-12 were not below the standards at the surface, but did meet the requirements set forth in the spill rule at the 1 ft bgs level or at 2 ft bgs at Sample 4. Sample 13 is located off the pad and meets the requirements of 600 mg/kg for Chlorides and 100 mg/kg for TPH at 2 ft bgs.

V. Work Performed

On December 19, 2019 SESI personnel gathered surface samples at thirteen different positions; the first twelve were on location and the last was slightly off location. The samples were field tested for TPH and Chloride concentrations then properly packaged, preserved, and transported to Cardinal Laboratories.

On January 17, 2020, SESI personnel returned to the leak area and performed additional samples and test trenches to achieve vertical extent. The samples were field tested for TPH and Chloride concentrations then properly packaged, preserved, and transported to Cardinal Laboratories. All of the samples were tested for BTEX using method BTEX 8021B, for Chlorides using method SM4500Cl-B, and for TPH using method TPH 8015M. The results of the tests are captured in the table below:

Devon Energy Thistle Unit #44H Soil Sample Results: Cardinal Laboratories 12/19/19 and (1/17/20)									
SAMPLE ID	Benzene	Toluene	Ethyl-benzene	Total Xylenes	Total BTEX	Chlorides	TPH GRO	TPH DRO	EXT DRO
AH1 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**35600**	<10.0	<10.0	<10.0
(SP1 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**128**	<10.0	<10.0	<10.0
AH2 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**752**	**57**	**3110**	**572**
(SP2 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**1060**	<10.0	<10.0	<10.0
AH3 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**768**	**71.4**	**3730**	**687**
(SP3 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**1090**	<10.0	<10.0	<10.0
AH4 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**752**	**62.6**	**3270**	**566**
(TT-4 @ 2')	<0.050	<0.050	<0.050	<0.150	<0.300	**528**	<10.0	<10.0	<10.0
AH5 @ Surface	<0.050	**0.387**	**2.91**	**15.7**	**18.9**	**3240**	**521**	**8990**	**1480**
(TT-5 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**448**	<10.0	<10.0	<10.0
AH6 @ Surface	<0.050	**0.269**	**2.29**	**11.5**	**14**	**3600**	**545**	**10200**	**1590**
(TT-6 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**608**	<10.0	<10.0	<10.0
AH7 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**21600**	<10.0	<10.0	<10.0
(TT-7 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**4720**	<10.0	<10.0	<10.0
AH8 @ Surface	<0.050	**0.291**	**2.35**	**11.6**	**14.3**	**3080**	**563**	**10300**	**1670**
(TT-8 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**4720**	<10.0	<10.0	<10.0
AH9 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**16400**	<10.0	<10.0	<10.0
(TT-9 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**1410**	<10.0	<10.0	<10.0
AH10 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**14000**	<10.0	<10.0	<10.0
(TT-10 @1')	<0.050	<0.050	<0.050	<0.150	<0.300	**5040**	<10.0	<10.0	<10.0
AH11 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**20000**	<10.0	<10.0	<10.0
(TT-11 @1')	<0.050	<0.050	<0.050	<0.150	<0.300	**1460**	<10.0	<10.0	<10.0
AH12 @ Surface	<0.050	<0.050	<0.050	<0.150	<0.300	**20800**	<10.0	<10.0	<10.0
(TT-12 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**4640**	<10.0	<10.0	<10.0
AH13 @ 1'	<0.050	<0.050	<0.050	<0.150	<0.300	**3640**	<10.0	<10.0	<10.0
(TT-13 @ 1')	<0.050	<0.050	<0.050	<0.150	<0.300	**1100**	<10.0	<10.0	<10.0
(TT-13 @ 2')	<0.050	<0.050	<0.050	<0.150	<0.300	**80**	<10.0	<10.0	<10.0

VI. Action Plan

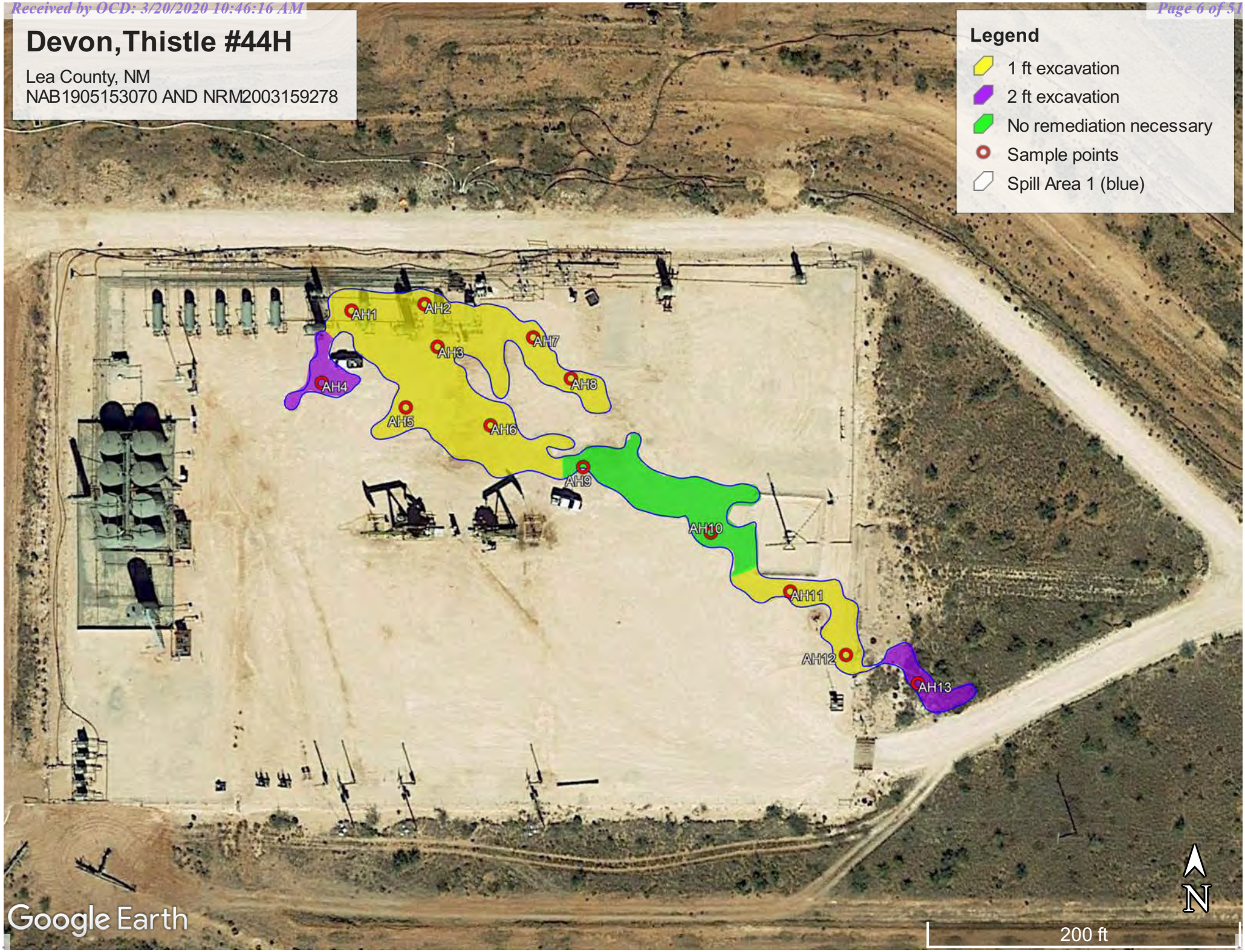
Based on the results of the lab analysis, depth to groundwater, and the additional supplemental information provided in this report, SESI recommends feasible hand and mechanical removal of the contaminated material to a depth of one foot at sample locations 1-3, 5-8, 11, and 12. Excavation to a depth of 2 feet in the areas of samples 4 and 13 is recommended, and no remediation is recommended at samples 9 and 10. Approximately 17,000 ft3 of material will be removed and disposed in a NMOCD approved facility. Bottom and Sidewall confirmation samples will be obtained and sent to a lab to verify that remediation efforts were successful. Once the lab results verify that removal of the contaminated material has been achieved and closure requirements have been met, the excavated area will be backfilled with clean soil. SESI respectfully submits this work plan and requests approval by both NMCOD and the NMSLO. Upon approval, remediation efforts will be conducted within 90 days.

VII. Supplemental and Supporting Documentation

Evidence Document 1: Map of leak area, sample point GPS, and excavation proposal
Evidence Document 2: Groundwater data including trend map and USGS information
Evidence Document 3: NMOCD Oil and Gas Topo map detailing area water features
Evidence Document 4: BLM Cave Karst map showing location in low potential area
Evidence Document 5: FEMA demonstrating minimal flood hazards for this area
Evidence Document 6: Lab analysis from Cardinal Laboratories
Evidence Document 7: C-141, pgs. 3-5

Devon,Thistle #44H

Lea County, NM
NAB1905153070 AND NRM2003159278



Devon, Thistle Unit #44H

Sample points

AH1, N 32.25525 W-103.57946

AH2, N 32.25527 W-103.57931

AH3, N 32.25519 W-103.57928

AH4, N 32.25513 W-103.57952

AH5, N 32.25509 W-103.57935

AH6, N 32.25506 W-103.57917

AH7, N 32.25521 W-103.57908

AH8, N 32.25514 W-103.57901

AH9, N 32.25498 W-103.57898

AH10, N 32.25487 W-103.57872

AH11, N 32.25477 W-103.57856

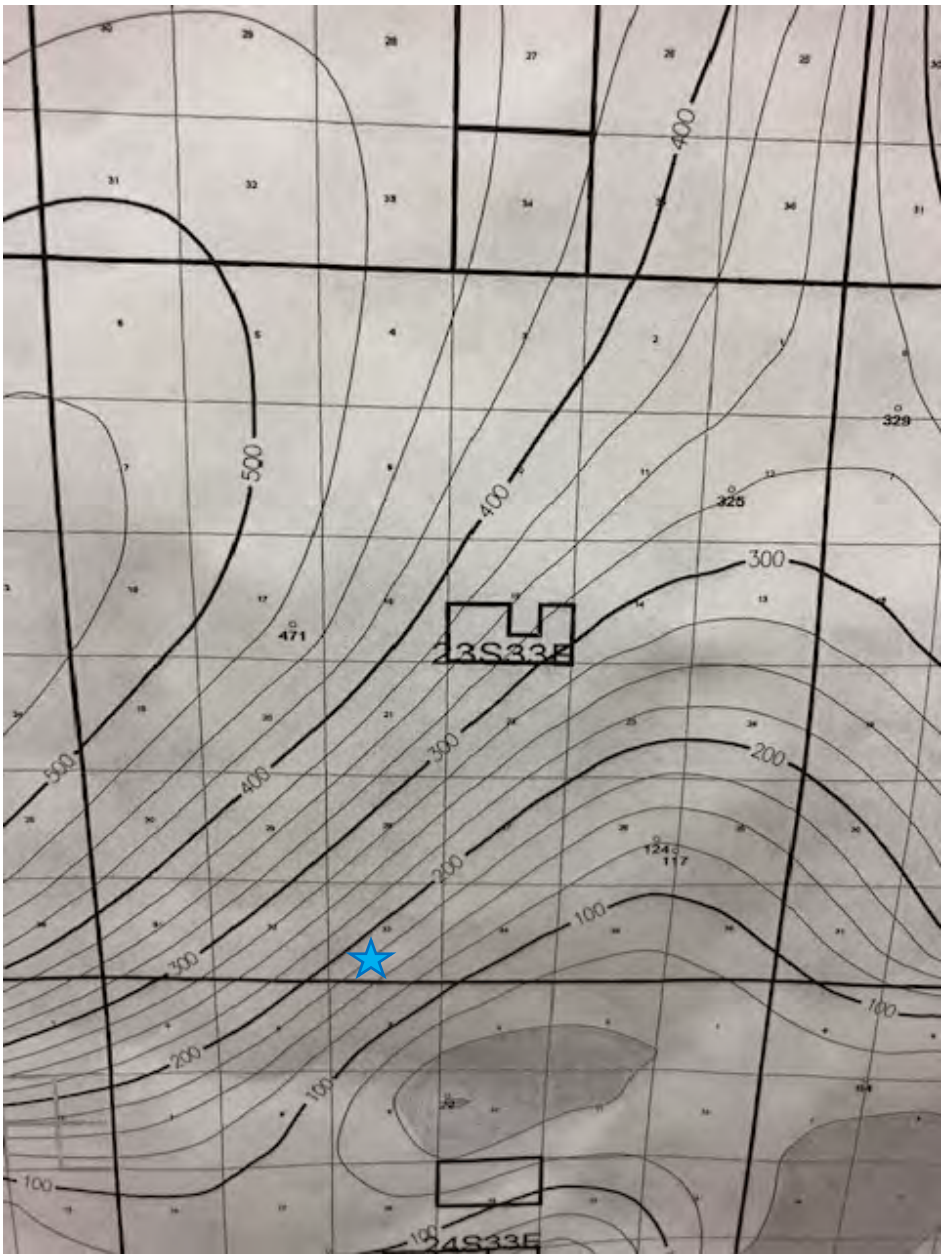
AH12, N 32.25466 W-103.57844

AH13, N 32.25461 W-103.57829

Devon, Thistle Unit #44H

U/L N, Section 33, T23S, R33E

Groundwater: 175’



Click to hideNews Bulletins

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

Groundwater levels for New Mexico

Click to hide state-specific text

Search Results -- 1 sites found

Agency code = usgs
site_no list =
- 321611103321601

Minimum number of levels = 1
Save file of selected sites to local disk for future upload

USGS 321611103321601 23S.33E.26.42100

Lea County, New Mexico
Latitude 32°16'28.0", Longitude 103°32'15.6" NAD83
Land-surface elevation 3,641 feet above NAVD88
The depth of the well is 190 feet below land surface.
This well is completed in the Chinle Formation (231CHNL) local aquifer.

Output formats

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

Date	Time	? Water-level date-time accuracy	Water level, feet below land surface	Water level, feet above specific vertical datum	Referenced vertical datum	? Water-level accuracy	? Status	? Method of measurement	? Measuring agency	? Source of measurement
1972-09-21		D	184.00			2	P	U		
1981-03-27		D	173.92			2	P	U		
1986-04-16		D	126.52			2		U		
1991-05-24		D	124.56			2		U		
1996-03-13		D	124.07			2		S		
2015-12-18	15:00 MST	m					P	S	USGS	

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
Water-level accuracy		Not determined
Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Status		The reported water-level measurement represents a static level
Status	P	Site was being pumped.

Section	Code	Description
Method of measurement	S	Steel-tape measurement.
Method of measurement	U	Unknown method.
Measuring agency		Not determined
Measuring agency	USGS	U.S. Geological Survey
Source of measurement	S	Measured by personnel of reporting agency.
Source of measurement	U	Source is unknown.
Water-level approval status	A	Approved for publication -- Processing and review completed.

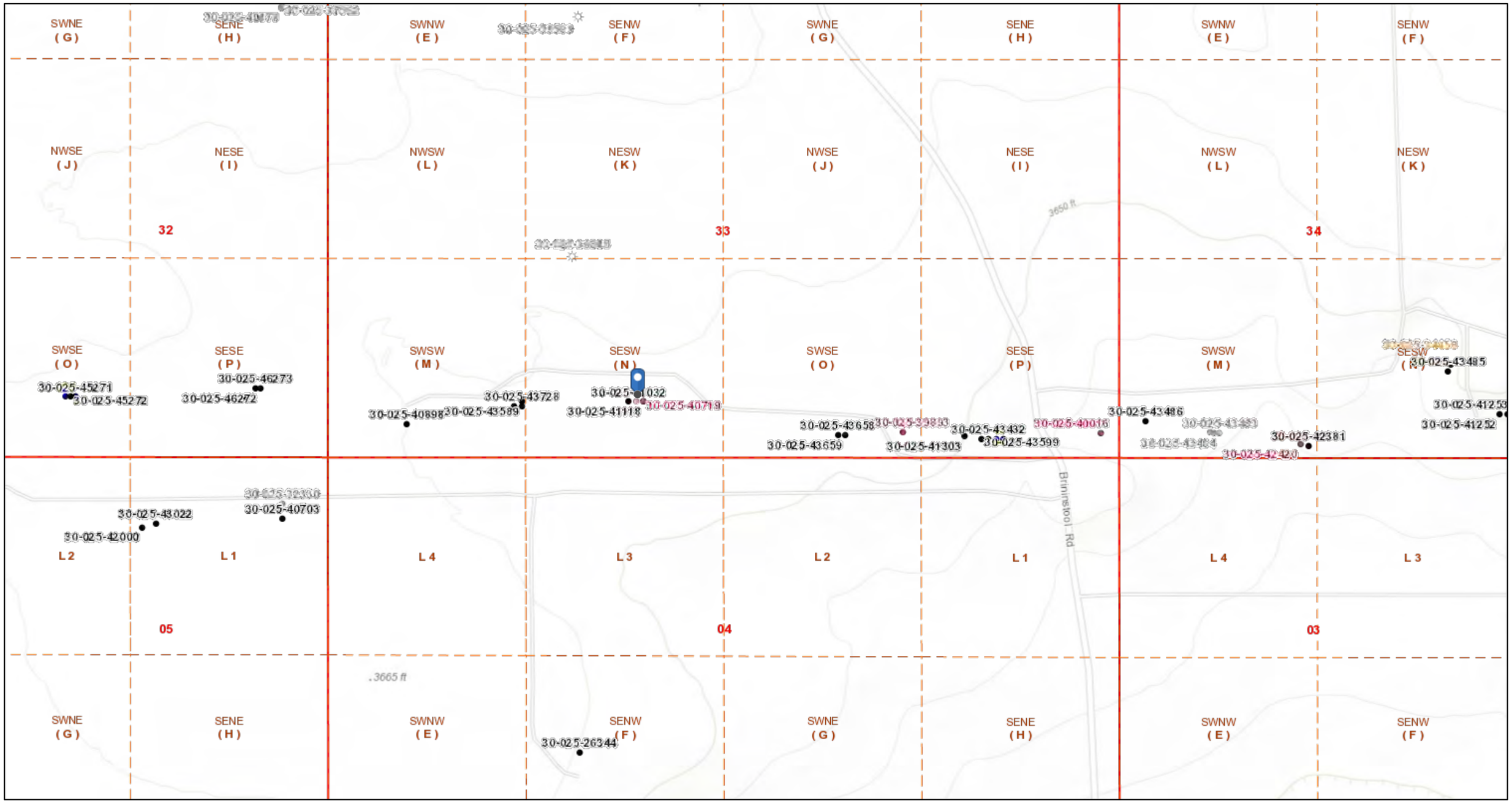
Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey
Title: Groundwater for New Mexico: Water Levels
URL: https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?

Page Contact Information: New Mexico Water Data Maintainer
Page Last Modified: 2020-03-03 09:36:18 EST
0.28 0.25 nadww01

Devon, Thistle Unit #44H



3/4/2020, 10:38:55 AM

1:9,028

0 0.07 0.15 0.3 mi

0 0.15 0.3 0.6 km

Wells - Large Scale
- undefined
- Miscellaneous
- CO2, Active
- CO2, Cancelled
- CO2, New
- CO2, Plugged
- CO2, Temporarily Abandoned
- Gas, Active
- Gas, Cancelled
- Gas, New
- Gas, Plugged
- Gas, Temporarily Abandoned
- Injection, Active
- Injection, Cancelled
- Injection, New
- Injection, Plugged
- Injection, Temporarily Abandoned
- Oil, Active
- Oil, Cancelled
- Oil, New
- Oil, Plugged
- Oil, Temporarily Abandoned
- Salt Water Injection, Active
- Salt Water Injection, Cancelled
- Salt Water Injection, New
- Salt Water Injection, Plugged
- Salt Water Injection, Temporarily Abandoned
- Water, Active
- Water, Cancelled
- Water, New

Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,

Devon, Thistle Unit #44H

Lea County, NM
NAB1905153070 AND NRM2003159278

Legend

- LOW POTENTIAL
- SPILL AREA (YELLOW)

Co Rd 2-A

N

1000 ft

Google Earth

National Flood Hazard Layer FIRMette

FEMA

32°34'59.60"N

103°15'37.23"W

103°14'59.78"W

32°34'29.28"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN — Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 — Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/9/2020 at 5:28:05 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

CARDINAL Laboratories

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

December 30, 2019

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: DEV-19-009

Enclosed are the results of analyses for samples received by the laboratory on 12/20/19 9:30.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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.

Cardinal Laboratories is accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 1 SURFACE (H904254-01)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**35600**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *119 %* *41-142*

Surrogate: 1-Chlorooctadecane *129 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 2 SURFACE (H904254-02)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**752**	16.0	12/23/2019	ND	416	104	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*	**57.0**	10.0	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	**3110**	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	**572**	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *142 %* *41-142*

Surrogate: 1-Chlorooctadecane *228 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 3 SURFACE (H904254-03)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *112 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**768**	16.0	12/23/2019	ND	416	104	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*	**71.4**	10.0	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	**3730**	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	**687**	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *150 %* *41-142*

Surrogate: 1-Chlorooctadecane *251 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 4 SURFACE (H904254-04)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**752**	16.0	12/23/2019	ND	416	104	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*	**62.6**	10.0	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	**3270**	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	**566**	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *147 %* *41-142*

Surrogate: 1-Chlorooctadecane *235 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 5 SURFACE (H904254-05)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	**0.387**	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	**2.91**	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	**15.7**	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	**18.9**	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *164 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3240**	16.0	12/23/2019	ND	416	104	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*	**521**	10.0	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	**8990**	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	**1480**	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *214 %* *41-142*

Surrogate: 1-Chlorooctadecane *391 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 6 SURFACE (H904254-06)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	**0.269**	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	**2.29**	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	**11.5**	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	**14.0**	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *155 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3600**	16.0	12/23/2019	ND	416	104	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*	**545**	10.0	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	**10200**	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	**1590**	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *229 %* *41-142*

Surrogate: 1-Chlorooctadecane *429 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 7 SURFACE (H904254-07)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.8 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**21600**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *119 %* *41-142*

Surrogate: 1-Chlorooctadecane *128 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 8 SURFACE (H904254-08)

BTEX 8021B mg/kg Analyzed By: MS S-04

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	**0.291**	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	**2.35**	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	**11.6**	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	**14.3**	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *144 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3080**	16.0	12/23/2019	ND	416	104	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*	**563**	10.0	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	**10300**	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	**1670**	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *179 %* *41-142*

Surrogate: 1-Chlorooctadecane *438 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 9 SURFACE (H904254-09)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.2 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16400**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *117 %* *41-142*

Surrogate: 1-Chlorooctadecane *129 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 10 SURFACE (H904254-10)

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	12/26/2019	ND	1.64	82.0	2.00	14.7	
Toluene*	<0.050	0.050	12/26/2019	ND	1.64	81.8	2.00	14.5	
Ethylbenzene*	<0.050	0.050	12/26/2019	ND	1.67	83.7	2.00	14.5	
Total Xylenes*	<0.150	0.150	12/26/2019	ND	4.86	81.0	6.00	15.0	
Total BTEX	<0.300	0.300	12/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.3 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**14000**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *117 %* *41-142*

Surrogate: 1-Chlorooctadecane *128 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 11 SURFACE (H904254-11)

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	12/23/2019	ND	1.64	82.2	2.00	16.6	
Toluene*	<0.050	0.050	12/23/2019	ND	1.65	82.4	2.00	17.3	
Ethylbenzene*	<0.050	0.050	12/23/2019	ND	1.65	82.6	2.00	13.1	
Total Xylenes*	<0.150	0.150	12/23/2019	ND	5.00	83.3	6.00	17.1	
Total BTEX	<0.300	0.300	12/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.4 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**20000**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *118 %* *41-142*

Surrogate: 1-Chlorooctadecane *129 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 12 SURFACE (H904254-12)

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	12/23/2019	ND	1.64	82.2	2.00	16.6	
Toluene*	<0.050	0.050	12/23/2019	ND	1.65	82.4	2.00	17.3	
Ethylbenzene*	<0.050	0.050	12/23/2019	ND	1.65	82.6	2.00	13.1	
Total Xylenes*	<0.150	0.150	12/23/2019	ND	5.00	83.3	6.00	17.1	
Total BTEX	<0.300	0.300	12/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**20800**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *117 %* *41-142*

Surrogate: 1-Chlorooctadecane *128 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	12/20/2019	Sampling Date:	12/19/2019
Reported:	12/30/2019	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: AH - 13 1' (H904254-13)

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	12/23/2019	ND	1.64	82.2	2.00	16.6	
Toluene*	<0.050	0.050	12/23/2019	ND	1.65	82.4	2.00	17.3	
Ethylbenzene*	<0.050	0.050	12/23/2019	ND	1.65	82.6	2.00	13.1	
Total Xylenes*	<0.150	0.150	12/23/2019	ND	5.00	83.3	6.00	17.1	
Total BTEX	<0.300	0.300	12/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.2 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3640**	16.0	12/23/2019	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	12/23/2019	ND	218	109	200	8.26	
DRO >C10-C28*	<10.0	10.0	12/23/2019	ND	220	110	200	6.72	
EXT DRO >C28-C36	<10.0	10.0	12/23/2019	ND					

Surrogate: 1-Chlorooctane *123 %* *41-142*

Surrogate: 1-Chlorooctadecane *133 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Safety and Environmental Solutions	BILL TO	
Project Manager:	Bob Allen	P.O. #:	
Address:	703 East Clinton, PO Box 1613	Company:	Same
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	575 397-0510 Fax #: 575 393-4388	Address:	
Project #:	DEV-19-009 Project Owner:	City:	
Project Name:		State: Zip:	
Project Location:		Phone #:	
Sampler Name:	Sean Jones	Fax #:	

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH	Chlorides									
H904254																										
1	AH-1 Surface	G	1			X					X		12/19	1030	X	X	X									
2	AH-2 " "	G	1			X					X		12/19	1045												
3	AH-3 " "	G	1			X					X		12/19	1105												
4	AH-4 " "	G	1			X					X		12/19	1125												
5	AH-5 " "	G	1			X					X		12/19	1135												
6	AH-6 " "	G	1			X					X		12/19	1150												
7	AH-7 " "	G	1			X					X		12/19	1210												
8	AH-8 " "	G	1			X					X		12/19	1230												
9	AH-9 " "	G	1			X					X		12/19	1255												
10	AH-10 " "	G	1			X					X		12/19	0115	X	X	X									

Relinquished By:	Date: 12/20/19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 0930		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		
Delivered By: (Circle One)	2.9° #197	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:	Corrected 3.3		TO

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Safety and Environmental Solutions
Project Manager:	Bob Allen
Address:	703 East Clinton, PO Box 1613
City:	Hobbs State: NM Zip: 88240
Phone #:	575 397-0510 Fax #: 575 393-4388
Project #:	DEV-19-009 Project Owner:
Project Name:	
Project Location:	
Sampler Name:	Sosa Jerry

BILL TO

P.O. #:	
Company:	Same
Attn:	
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	BTEX	TPH	Chlorides
H904254														PM			
11	Aff-11 Surface	G	1			X					X		12/19	0135	X	X	X
12	Aff-12 Surface	G	1			X					X		12/19	0149	X	X	X
13	Aff-13 1FT	G	1			X					X		12/19	0200	X	X	X

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: 12/20/19	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 0930		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		
Delivered By: (Circle One)	2.9° #97	Sample Condition: Cool ☑ Yes ☐ No; Intact ☑ Yes ☐ No	CHECKED BY: (Initials) TC
Sampler - UPS - Bus - Other:	Corrected 3.3°		

CARDINAL Laboratories

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

January 22, 2020

Bob Allen

Safety & Environmental Solutions

703 East Clinton

Hobbs, NM 88240

RE: DEV-19-009

Enclosed are the results of analyses for samples received by the laboratory on 01/17/20 15:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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.

Cardinal Laboratories is accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP - 1 1' (H000187-01)

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	01/20/2020	ND	1.82	91.2	2.00	14.1	
Toluene*	<0.050	0.050	01/20/2020	ND	1.89	94.5	2.00	14.3	
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	1.88	94.2	2.00	13.7	
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.60	93.3	6.00	13.9	
Total BTEX	<0.300	0.300	01/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**128**	16.0	01/22/2020	ND	400	100	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *98.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *102 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP - 2 1' (H000187-02)

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	01/20/2020	ND	1.82	91.2	2.00	14.1	
Toluene*	<0.050	0.050	01/20/2020	ND	1.89	94.5	2.00	14.3	
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	1.88	94.2	2.00	13.7	
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.60	93.3	6.00	13.9	
Total BTEX	<0.300	0.300	01/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.8 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1060**	16.0	01/22/2020	ND	400	100	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *95.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *96.2 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: SP - 3 1' (H000187-03)

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	01/20/2020	ND	1.82	91.2	2.00	14.1	
Toluene*	<0.050	0.050	01/20/2020	ND	1.89	94.5	2.00	14.3	
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	1.88	94.2	2.00	13.7	
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.60	93.3	6.00	13.9	
Total BTEX	<0.300	0.300	01/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1090**	16.0	01/22/2020	ND	400	100	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *97.6 %* *41-142*

Surrogate: 1-Chlorooctadecane *98.0 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 4 2' (H000187-04)

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	01/20/2020	ND	1.82	91.2	2.00	14.1	
Toluene*	<0.050	0.050	01/20/2020	ND	1.89	94.5	2.00	14.3	
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	1.88	94.2	2.00	13.7	
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.60	93.3	6.00	13.9	
Total BTEX	<0.300	0.300	01/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**528**	16.0	01/22/2020	ND	400	100	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *93.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.3 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 5 1' (H000187-05)

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	01/20/2020	ND	1.82	91.2	2.00	14.1	
Toluene*	<0.050	0.050	01/20/2020	ND	1.89	94.5	2.00	14.3	
Ethylbenzene*	<0.050	0.050	01/20/2020	ND	1.88	94.2	2.00	13.7	
Total Xylenes*	<0.150	0.150	01/20/2020	ND	5.60	93.3	6.00	13.9	
Total BTEX	<0.300	0.300	01/20/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *95.7 %* *73.3-129*

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	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *89.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.7 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 6 1' (H000187-06)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *92.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**608**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *94.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 7 1' (H000187-07)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.4 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4720**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *95.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *96.4 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 8 1' (H000187-08)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4720**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *96.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *95.1 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 9 1' (H000187-09)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.2 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1410**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *93.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.2 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 10 1' (H000187-10)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.7 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5040**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *98.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *98.2 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 11 1' (H000187-11)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1460**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *93.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.3 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 12 1' (H000187-12)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *96.8 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4640**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *98.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *97.8 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 13 1' (H000187-13)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *94.7 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1100**	16.0	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *95.0 %* *41-142*

Surrogate: 1-Chlorooctadecane *96.2 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

Safety & Environmental Solutions
Bob Allen
703 East Clinton
Hobbs NM, 88240
Fax To: (575) 393-4388

Received:	01/17/2020	Sampling Date:	01/17/2020
Reported:	01/22/2020	Sampling Type:	Soil
Project Name:	DEV-19-009	Sampling Condition:	Cool & Intact
Project Number:	DEVON - THISTLE 44	Sample Received By:	Tamara Oldaker
Project Location:	NOT GIVEN		

Sample ID: TT - 13 2' (H000187-14)

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	01/21/2020	ND	1.88	94.2	2.00	3.12	
Toluene*	<0.050	0.050	01/21/2020	ND	1.95	97.4	2.00	2.86	
Ethylbenzene*	<0.050	0.050	01/21/2020	ND	1.94	96.9	2.00	2.76	
Total Xylenes*	<0.150	0.150	01/21/2020	ND	5.76	96.0	6.00	2.53	
Total BTEX	<0.300	0.300	01/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.5 %* *73.3-129*

Chloride, SM4500Cl-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	01/22/2020	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	01/21/2020	ND	213	106	200	0.170	
DRO >C10-C28*	<10.0	10.0	01/21/2020	ND	201	100	200	2.69	
EXT DRO >C28-C36	<10.0	10.0	01/21/2020	ND					

Surrogate: 1-Chlorooctane *94.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.1 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Safety and Environmental Solutions	BILL TO	
Project Manager:	Bob Allen	P.O. #:	
Address:	703 East Clinton, PO Box 1613	Company:	Same
City:	Hobbs State: NM Zip: 88240	Attn:	
Phone #:	575 397-0510 Fax #: 575 393-4388	Address:	
Project #:	DEV-19-009 Project Owner:	City:	
Project Name:	DEVON-Thistle 44	State: Zip:	
Project Location:		Phone #:	
Sampler Name:		Fax #:	

ANALYSIS REQUEST: TPH 8015 Ext | BTEX | Chlorides

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME
H000187														
1	SP-1 1Ft	G	1			X					X		01/17	1315
2	SP-2 1Ft	G	1			X					X			1340
3	SP-3 1Ft	G	1			X					X			1401
4	H-4 2Ft	G	1			X					X			0930
5	H-5 1Ft	G	1			X					X			0950
6	H-6 1Ft	G	1			X					X			1015
7	H-7 1Ft	G	1			X					X			1035
8	H-8 1Ft	G	1			X					X			1050
9	H-9 1Ft	G	1			X					X			1110
10	H-10 1Ft	G	1			X					X			1135

Relinquished By:	Date: 01/17/20	Received By:	
	Time: 1500		
Relinquished By:	Date:	Received By:	
	Time:		

Phone Result: ☐ Yes ☐ No Add'l Phone #:
Fax Result: ☐ Yes ☐ No Add'l Fax #:
REMARKS:

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: 3.6° #113

Sample Condition: Cool ☑ Yes ☐ No Intact ☑ Yes ☐ No
CHECKED BY: (Initials)

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name:	Safety and Environmental Solutions	BILL TO	
Project Manager:	Bob Allen	P.O. #:	
Address:	703 East Clinton, PO Box 1613	Company:	Same
City:	Hobbs	State: NM Zip: 88240	Attn:
Phone #:	575 397-0510	Fax #: 575 393-4388	Address:
Project #:	DCU-19-009	Project Owner:	City:
Project Name:			State: Zip:
Project Location:			Phone #:
Sampler Name:			Fax #:

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST												
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	TPH (8015 Ext)	BTEX	Chlorides											
H000187																												
11	TP-11	1ft	G	1			X					X		01/17	1145	X	X	X										
12	TP-12	1ft	G	1			X					X		01/17	1215	X	X	X										
13	TP-13	1ft	G	1			X					X		01/17	1245	X	X	X										
14	TP-13	2ft	G	1			X					X		01/17	1300	X	X	X										

Relinquished By:	Date: 01/17/20	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 0950		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS:
	Time:		

Delivered By: (Circle One)	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other: 3.6° #113	Cool: Yes Intact: Yes	(Initials)

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☐ No

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: _____ Title: _____

Signature: Tom Bynum Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

☐ Extents of contamination must be fully delineated.

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

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

Printed Name: _____ Title: _____

Signature: Tom Bynum Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____