

F550V-200317-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

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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 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

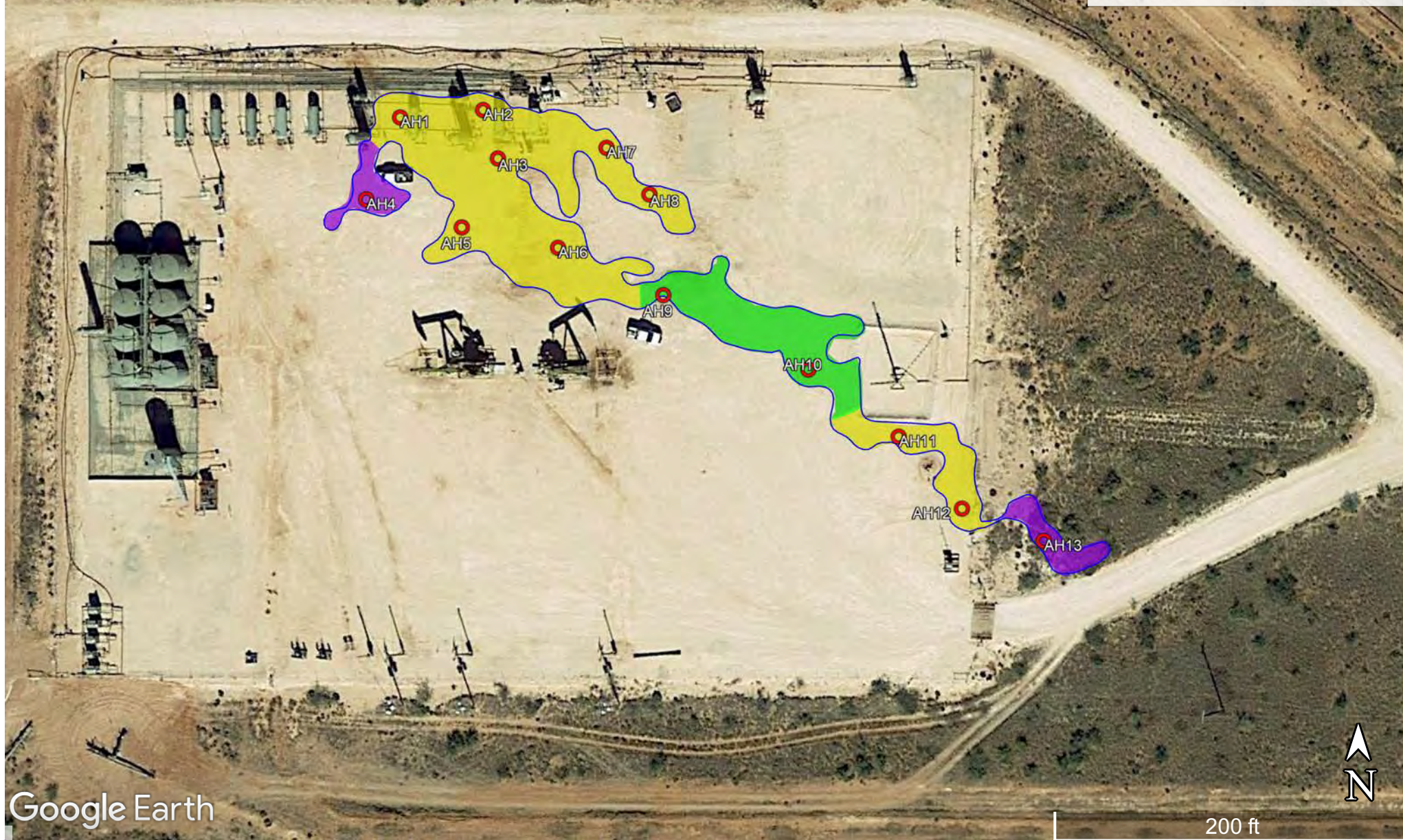
Devon, Thistle #44H

Lea County, NM

NAB1905153070 AND NRM2003159278

Legend

- 1 ft excavation
- 2 ft excavation
- No remediation necessary
- Sample points
- Spill Area 1 (blue)



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

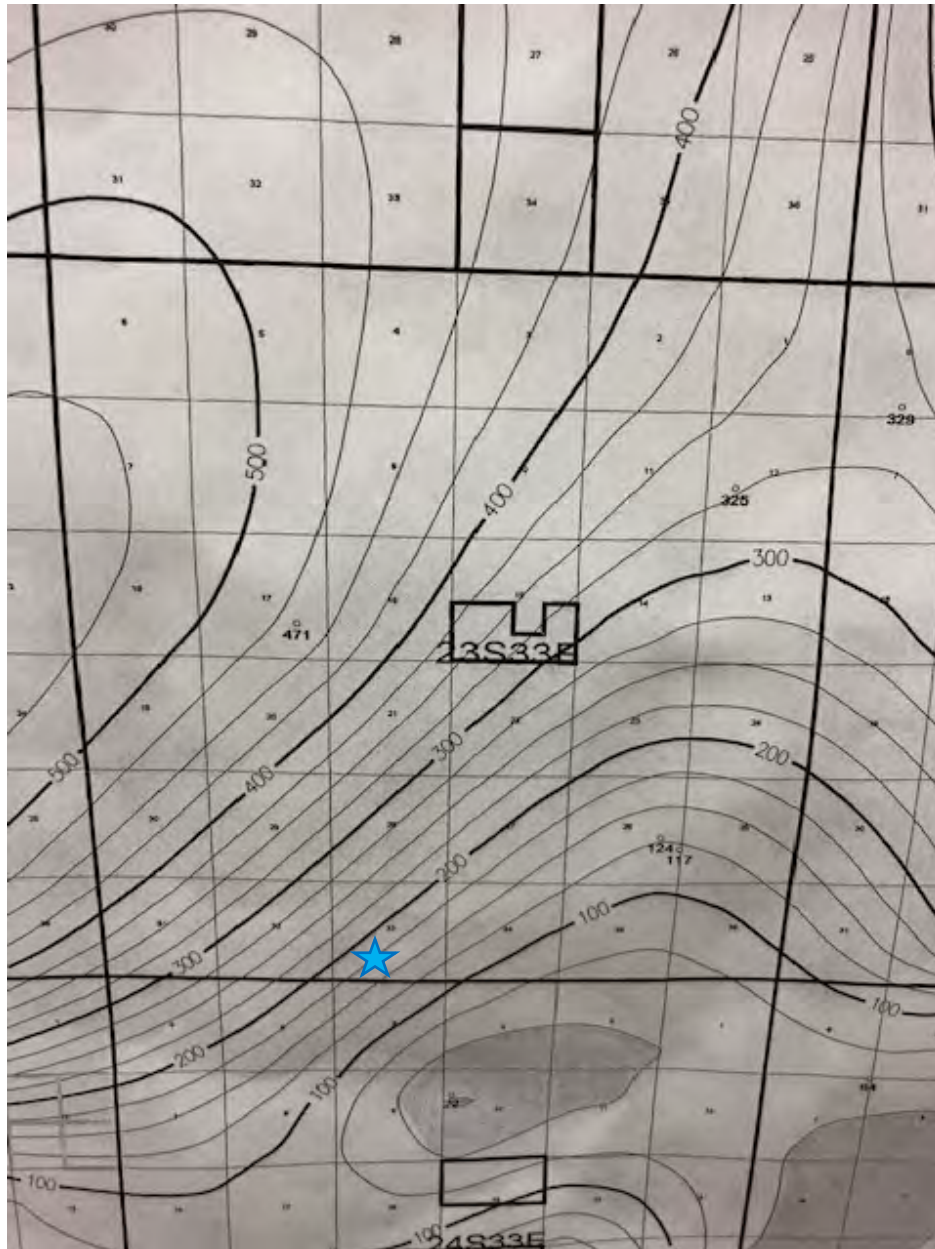
AH10, N 32.25487 W-103.57872

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'





USGS Home
Contact USGS
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National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater Geographic Area: New Mexico GO

Click to hide News Bulletins

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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.

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Title: Groundwater for New Mexico: Water Levels

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

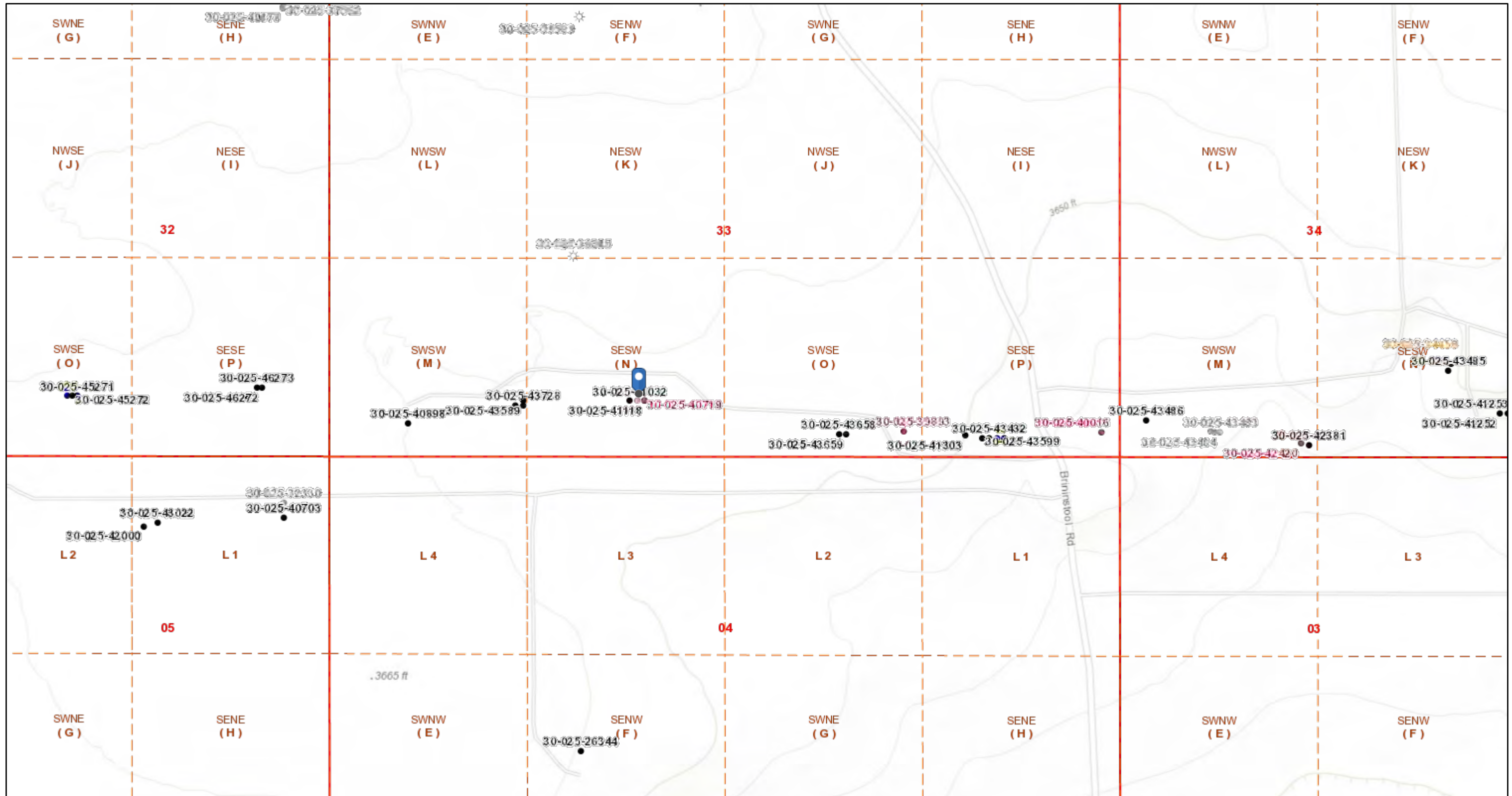


Page Contact Information: [New Mexico Water Data Maintainer](#)































Page Last Modified: 2020-03-03 09:36:18 EST

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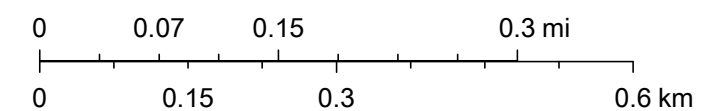
Devon, Thistle Unit #44H



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

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

1:9,028





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

Google Earth



National Flood Hazard Layer FIRMette



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 Cross Sections with 1% Annual Chance Water Surface Elevation
		17.5 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

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.



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 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:

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

Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	12/26/2019	ND						

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Safety & Environmental Solutions
 Bob Allen
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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	12/26/2019	ND						

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<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

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

BTX 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 BTX	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

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

BTX 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 BTX	14.0	0.300	12/26/2019	ND					

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

Chloride, SM4500CI-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

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	12/26/2019	ND						

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

Chloride, SM4500CI-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

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

BTX 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 BTX	14.3	0.300	12/26/2019	ND					

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

Chloride, SM4500CI-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

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	12/26/2019	ND						

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

Chloride, SM4500CI-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

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	12/26/2019	ND					

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

Chloride, SM4500CI-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

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Analytical Results For:

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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Analytical Results For:

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Received: 12/20/2019
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 12/30/2019
 Project Name: DEV-19-009
 Project Number: NONE GIVEN
 Project Location: NOT GIVEN

Sampling Date: 12/19/2019
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	12/23/2019	ND					

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

Chloride, SM4500CI-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

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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-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

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

Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

[illegible]

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

[illegible]



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 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:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/20/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/20/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/20/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND						

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

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

Received: 01/17/2020
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND					

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

Chloride, SM4500CI-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

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Celey D. Keene, Lab Director/Quality Manager



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
 Reported: 01/22/2020
 Project Name: DEV-19-009
 Project Number: DEVON - THISTLE 44
 Project Location: NOT GIVEN

Sampling Date: 01/17/2020
 Sampling Type: Soil
 Sampling Condition: Cool & Intact
 Sample Received By: Tamara Oldaker

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

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	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 BTX	<0.300	0.300	01/21/2020	ND					

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

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	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

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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



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

ANALYSIS REQUEST

Company Name: Safety and Environmental Solutions
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 #:

FOR LAB USE ONLY

MATRIX

PRESERV

SAMPLING

Lab I.D.

Sample I.D.

H030187

(G)RAB OR (C)OMP.

CONTAINERS

GROUNDWATER

WASTEWATER

SOIL

OIL

SLUDGE

OTHER :

ACID/BASE:

ICE / COOL

OTHER :

DATE

TIME

TPH 8015 EA

BTEX

Chlorides

SP-1

147

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SP-4

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

Company Name: Safety and Environmental Solutions							BIO-TOX								ANALYSIS REQUEST					
Project Manager: Bob Allen																				
Address: 703 East Clinton, PO Box 1613							P.O. #:													
City: Hobbs State: NM Zip: 88240							Company: Same													
Phone #: 575 397-0510 Fax #: 575 393-4388							Attn:													
Project #: D&S-14-009 Project Owner:							Address:													
Project Name:							City:													
Project Location:							State: Zip:													
Sampler Name:							Phone #:													
FOR LAB USE ONLY							Fax #:													
Lab I.D.							Sample I.D.													
Hobbs 187							(G)RAB OR (C)OMP.							# CONTAINERS						
11 T-11 1 FT							GROUNDWATER							SOIL						
12 T-12 1 FT							WASTEWATER							OIL						
13 T-13 1 FT							SLUDGE							OTHER :						
14 T-14 2 FT							ACID/BASE:							ICE / COOL						
							DATE							TIME						
							TPH (8015 G/L)							BTEX						
							Chloride													

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?	<input type="checkbox"/> Yes <input 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input 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 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 type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input type="checkbox"/> No

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

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

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

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

State of New Mexico
Oil Conservation Division

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Incident ID	
District RP	
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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: _____