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P.O. Box 1708 • Artesia, NM 88211  
[www.hrlcomp.com](http://www.hrlcomp.com)

January 25, 2021

Mr. Lupe Carrasco  
Devon Energy Corporation  
P.O. Box 250  
Artesia, New Mexico 88211  
Email: [lupe.carrasco@devon.com](mailto:lupe.carrasco@devon.com)

**Subject:        Site Characterization, Remediation, and Closure Report**  
**Cotton Draw 172H (November 2015)**  
**2RP-3390**  
**Eddy County, New Mexico**

Dear Mr. Carrasco:

HRL Compliance Solutions, Inc. (HRL) is pleased to submit this site characterization, remediation, and closure report for the November 2015 release at the Cotton Draw Unit 172H facility (Site). The Site is at latitude 32.152763300 and longitude -103.726875990 in Eddy County, New Mexico (Figure 1).

### **Site Background**

On November 11, 2015, a release of crude oil was observed at the Cotton Draw Unit 172H facility. The release occurred when a tanker truck overflowed during a load-out operation from the lease-automated custody transfer (LACT) unit. Sixty-seven barrels of crude oil were released on the well pad; 44 were recovered via a vacuum truck.

Because the volume released was greater than 25 barrels, this is considered a major release according to the New Mexico Oil Conservation Division (NMOCD). On November 12, 2015, Devon reported the release to the NMOCD on a Release Notification and Corrective Action Form (Form C-141) (Attachment A). The release was assigned Remediation Permit (RP) number 2RP-3390.

### **New Mexico Administrative Code (NMAC) Site Characterization Criteria**

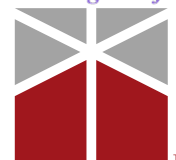
Title 19, Chapter 15, Part 29, Section 11 of the New Mexico Administrative Code (NMAC) provides requirements for release characterization once the free liquids and recoverable materials have been removed from the Site.

#### *Depth to groundwater*

Depth to groundwater at the release was estimated by evaluating data from the New Mexico Office of the State Engineer (NMOSE) and the United States Geological Survey (USGS) (Figure 2). The nearest

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Mr. Carrasco

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groundwater well was approximately one mile from the Site; the depth to water in this well was 390 feet below ground surface.

#### *Wellhead Protection Area*

There are no sources of water, including springs, wells, or other sources of fresh water, within one-half mile of the release (Figure 2).

#### *Distance to Nearest Significant Watercourse*

A significant watercourse is defined as "...a watercourse with a defined bed and bank either named or identified by a dashed blue line on a USGS 7.5-minute quadrangle map or the next lower order tributary with a defined bed and bank" (19.15.17.7 NMAC) (Figure 2). There are no significant watercourses within one-half mile of the lateral extents of the release.

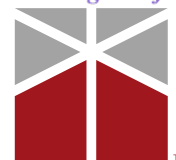
#### *Additional Site Characterization Criteria*

The following is additional information related to characterization of the Site.

Site Characterization	Response/Discussion
What is the shallowest depth to groundwater beneath the area affected by the release?	Greater than 100 feet
Did the release impact groundwater or surface water?	No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or other significant watercourse?	No
Are the lateral extents of the release within 200 feet of a lakebed, sinkhole, or playa lake?	No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital institution, or church?	No
Are the lateral extents of the release within 500 feet of a spring or private, domestic fresh water well used by less than five households for domestic or stock watering purposes?	No
Are the lateral extents of the release within 1,000 feet of any fresh water well or spring?	No
Are the lateral extents of the release within any incorporated municipal boundaries?	No
Are the lateral extents of the release within a defined municipal fresh water well field?	No
Are the lateral extents of the release within 300 feet of a wetland?	No
Are the lateral extents of the release overlying a subsurface mine?	No

Cotton Draw 172H (November 2015)

January 25, 2021



Mr. Carrasco

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Site Characterization	Response/Discussion
Are the lateral extents of the release overlying an unstable area such as karst geology?	The Site is in an area of low potential for karst topography
Are the lateral extents of the release within the 100-year floodplain?	No
Did the release impact areas not on an exploration, development, production, or storage site?	No

### Site Delineation

Prior to initiating field activities, HRL submitted a Mechanical Excavation Permit to Devon Energy and had subsurface utilities located at the Site. On April 3, 2020, HRL collected soil samples from five locations (SP1, SP2, SP11, SP12, and SP13) from depths ranging from ground surface to 44 inches bgs for laboratory analysis. Samples were immediately placed on ice and kept under strict chain of custody protocol prior to submission to Hall Environmental Analysis Laboratory, Inc. of Albuquerque, New Mexico for analysis of:

- Chloride by United States Environmental Protection Agency (US EPA) Method 300.0
- Benzene, toluene, ethyl benzene, and total xylenes (BTEX) by US EPA Method 8021B
- Total petroleum hydrocarbons (TPH) – gasoline range organics (GRO), diesel range organics (DRO), and oil range organics (ORO) by US EPA Method 8015M

Based on the laboratory results of the April 3, 2020 soil samples, HRL remobilized to the site on April 25, 2020 to collect additional soil samples (SP1, SP2, and SP3) and again on June 22, 2020 to collect soil samples from five locations (SB1 through SB5) (Attachment B, Laboratory Results).

### Closure Criteria

Based on the NMAC Site Characterization Criteria, HRL recommends the following NMOCD Closure Criteria to the Site:



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Depth to Groundwater	Parameter	Closure Criteria in milligrams per kilogram (mg/kg)
Greater than 100 feet below ground surface	Chloride	600 mg/kg or natural background, whichever is greater
	Total Petroleum Hydrocarbons (TPH) [ <i>Gasoline Range Organics (GRO) + Diesel Range Organics (DRO) + Oil Range Organics (ORO)</i> ]	2,500 mg/kg
	Gasoline Range Organics (GRO) + Diesel Range Organics (DRO)	1,000 mg/kg
	Benzene	10 mg/kg
	Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)	50 mg/kg

### Remediation Plan

A scaled diagram depicting the potentially impacted area and nearby significant features, such as roads, site infrastructure, location of borings, sample points, monitoring wells (if present) and subsurface features (if information was available) has been prepared (Figure 3). HRL utilized a Trimble GeoXT global positioning system (GPS) unit to collect latitude and longitude data for the sample locations (Figure 3). Based on evaluation of the laboratory results, the release impacted two areas: area A is approximately 1,578 square feet to a depth of 12 inches and area B is approximately 82 square feet to a depth of approximately 24 inches.

### Remediation

On November 3, 2020, HRL mobilized to the Site with its excavation contractor, Halo, to excavate the impacted soil. Two separate areas were excavated: the northern area and the southern area (Figure 4). The pad was approximately 12 inches thick, native soil was observed beneath that depth. Following excavation activities, HRL collected four confirmation soil samples in accordance with 19.15.29.12 NMAC. The northern area was approximately 849 square feet and depth ranged from six inches to two feet deep (Attachment C, Photographs). The southern area was approximately 176 square feet and depth ranged from one foot to three feet deep. Following excavation activities, HRL collected six confirmation samples from the northern area excavation floor (F1 through F6) and two confirmation samples from the southern area excavation floor (F7 and F8) (Figure 4). Additionally, HRL collected five sidewall confirmation samples from the northern area (S1 through S5) and four sidewall confirmation samples from the southern area (S6 through S9) (Figure 5). Each confirmation soil sample was a five-point composite soil sample representative of an area less than 200-square feet. The samples were submitted to Hall Environmental Analysis Laboratory, Inc in Albuquerque, New Mexico as stated above. Sample results were below applicable closure criteria (Table 2, Attachment D). The soil was hauled off-site for disposal at the R360 facility in Hobbs, New Mexico (Manifests, Attachment E). The excavation was backfilled with clean soil.

Cotton Draw 172H (November 2015)  
January 25, 2021



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### Scope and Limitations

The scope of HRL's services consists of performing site characterization, oversight of remediation, and preparation of this closure report. All work has been performed in accordance with generally accepted professional environmental consulting practices for oil and gas releases in the Permian Basin.

### Conclusions

The soil impacted by TPH above applicable closure criteria from the November 2015 release at the Site has been removed. Confirmation soil samples indicate the impacted soil has been removed from the Site; HRL recommends closure of this release.

We appreciate the opportunity to work with Devon on this project. If you have any questions or concerns, please do not hesitate to contact me at (970) 243-3271 or via email at [jlinn@hrlcomp.com](mailto:jlinn@hrlcomp.com).

Sincerely,

**HRL Compliance Solutions, Inc.**

Julie Linn, PG, RG  
Project Manager

### Figures:

Figure 1: Site Location

Figure 2: Depth to Groundwater

Figure 3: Characterization Sample Location and Results

Figure 4: Sidewall Confirmation Sample Location and Results

Figure 4: Excavation Floor Confirmation Sample Location and Results

### Tables:

Table 1: Site Characterization Soil Sample Results

Table 2: Confirmation Soil Sample Results

### Attachments:

Attachment A: NMOCD Form C-141

Attachment B: Characterization Samples Analytical Laboratory Report

Attachment C: Photographs

Attachment D: Confirmation Samples Analytical Laboratory Report

Attachment E: Soil Disposal Manifests

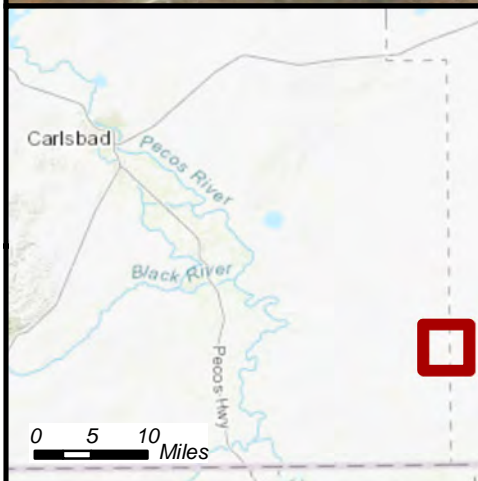
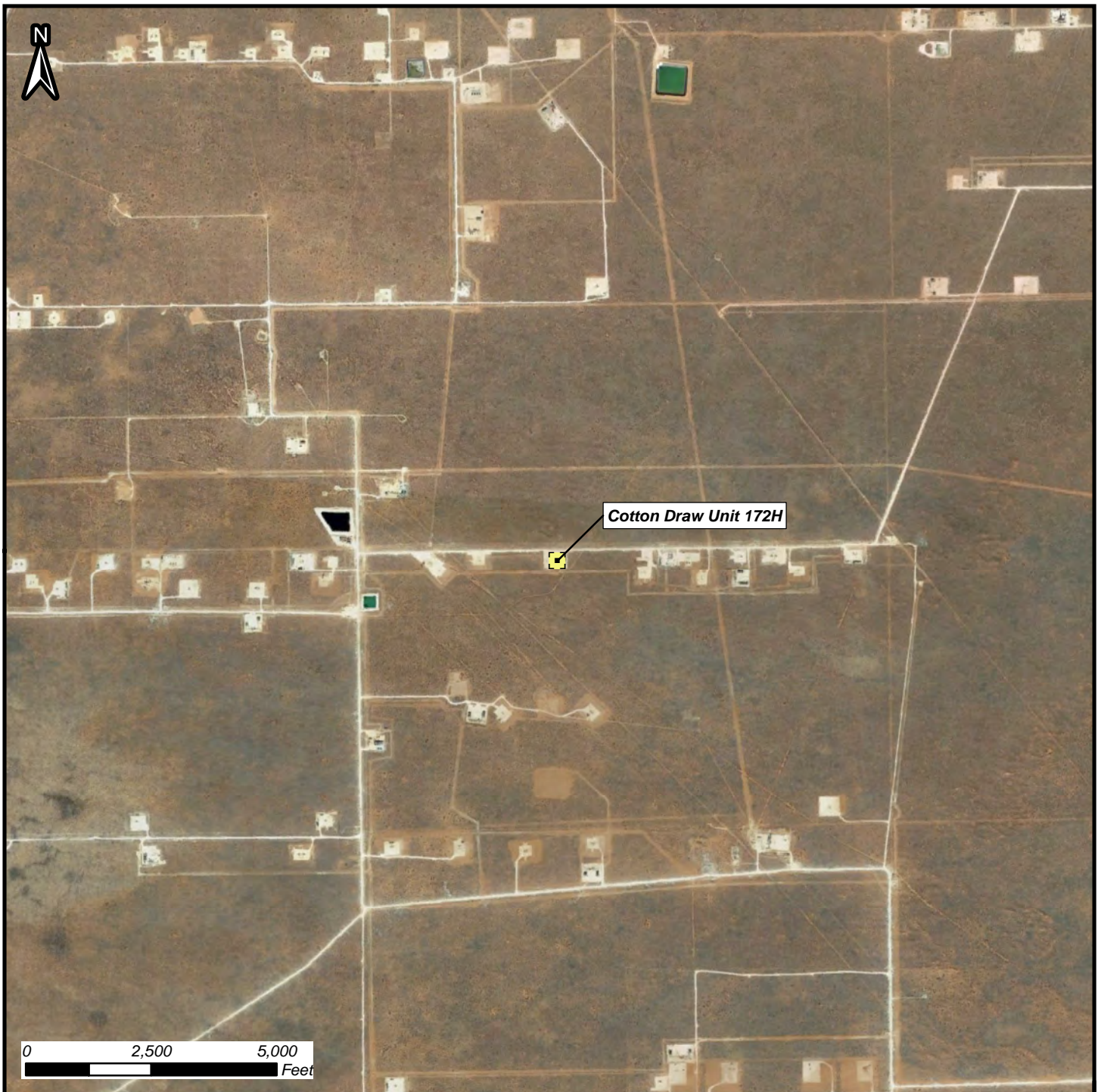
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Cotton Draw 172H (November 2015)  
January 25, 2021



## Figures





### Figure 1: Site Location Map

Cotton Draw Unit 172H  
November 2015 Spill

32.152763300, -103.726875990  
Section 1, Township 25 South, Range 31 East

NOTES / COMMENTS:

#### Mapped Features

 Facility Location

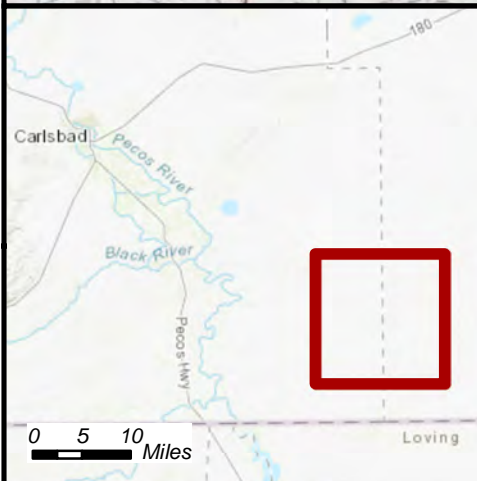
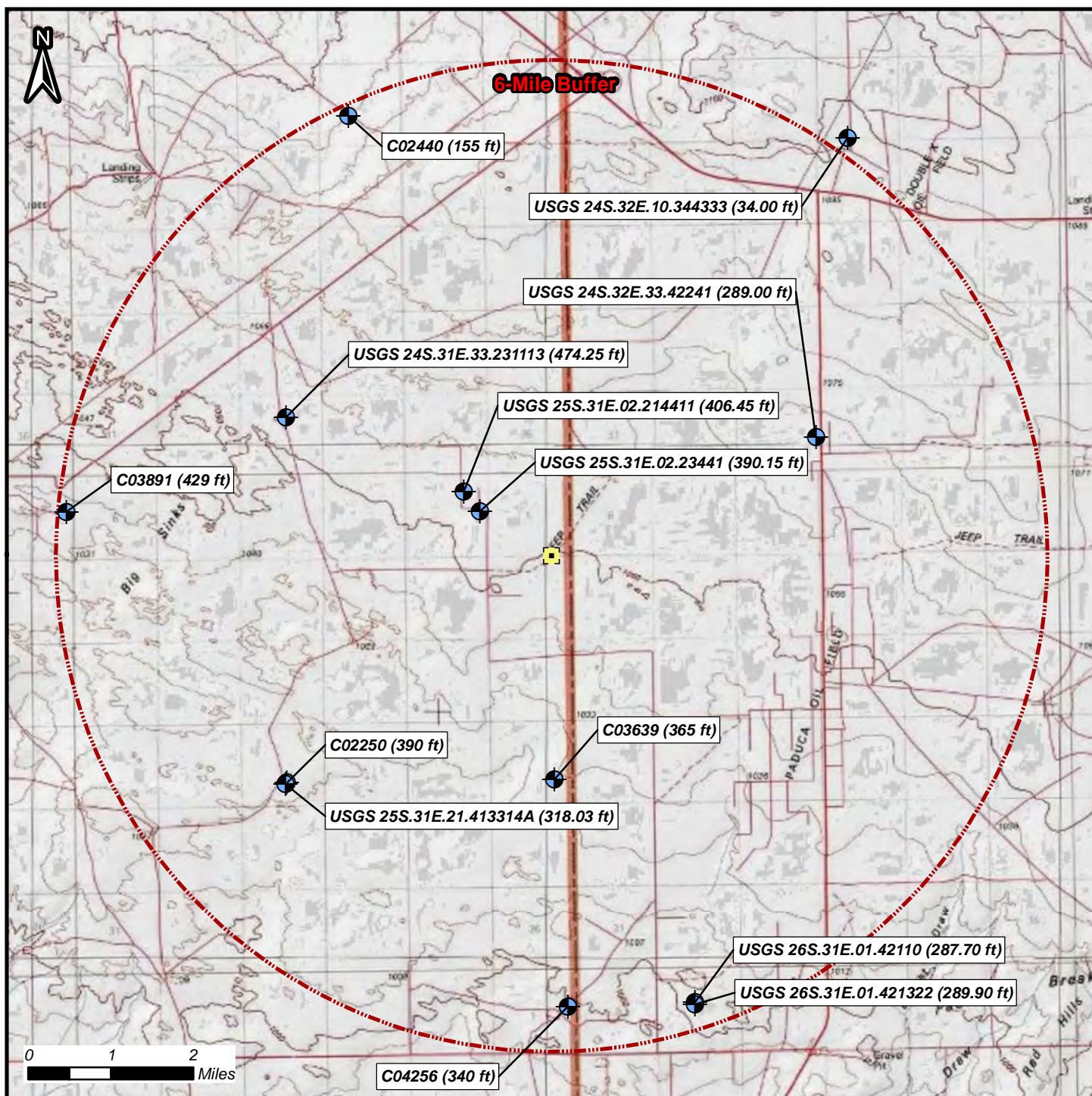
DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.



Author: A. Asay  
Revision: 0  
Date: 2/27/2020

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**Figure 2: Depth to Groundwater Map**

Cotton Draw Unit 172H

November 2015 Spill

32.152763300, -103.726875990

Section 1, Township 25 South, Range 31 East

Well Number	Water Level Below Ground Surface (ft)	Distance from Source (mi)
C02250	390.00	4.22
C03639	365.00	2.71
C04256	340.00	5.46
C02440	155.00	5.86
C03891	429.00	5.90
USGS 25S.31E.02.23441	390.15	1.03
USGS 25S.31E.02.214411	406.45	1.32
USGS 24S.31E.33.231113	474.25	3.63
USGS 24S.32E.33.42241	289.00	3.51
USGS 25S.31E.21.413314A	318.03	4.25
USGS 26S.31E.01.42110	287.70	5.68
USGS 26S.31E.01.421322	289.90	5.70
USGS 24S.32E.10.344333	34.00	6.19

### Mapped Features



Point of Release



Groundwater Well



6-Mile Buffer



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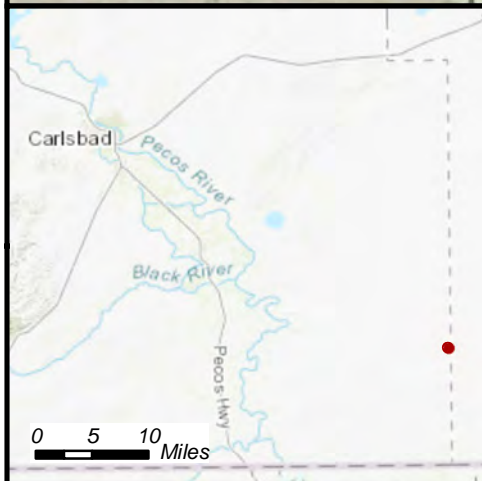
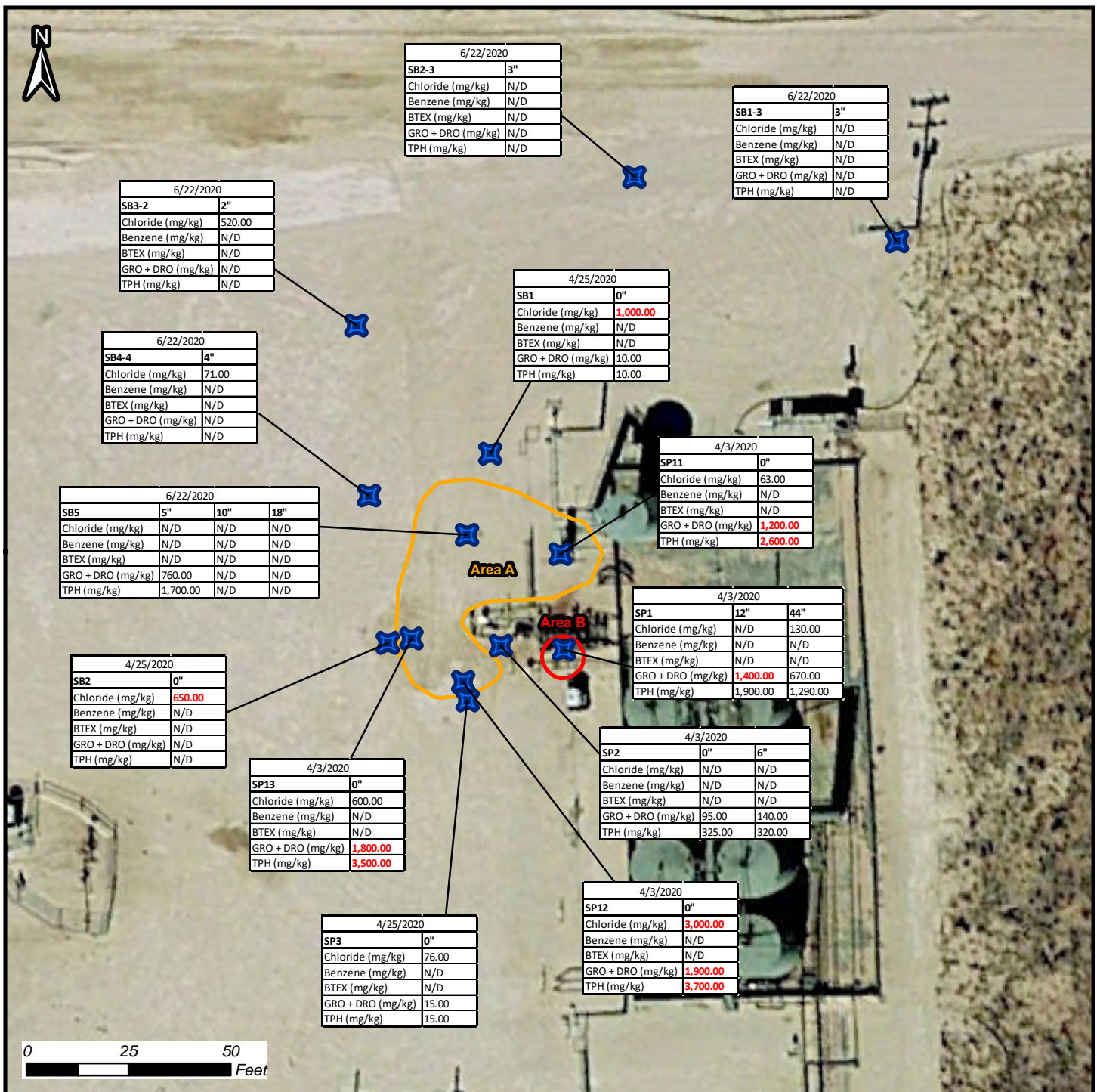
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Author: A. Asay

Revision: 0

Date: 5/18/2020





### Figure 3: Sample Location and Proposed Excavation Map

Cotton Draw Unit 172H

November 2015 Spill

32.152763300, -103.726875990

Section 1, Township 25 South, Range 31 East

#### NOTES / COMMENTS:

Area A is approximately 1,578 square feet. Area B is approximately 82 square feet.

Results in red exceed closure criteria.

#### Mapped Features

- Sample Location (Submitted for Lab Analysis)
- Area A (Excavate to 12")
- Area B (Excavate to 24")



DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.

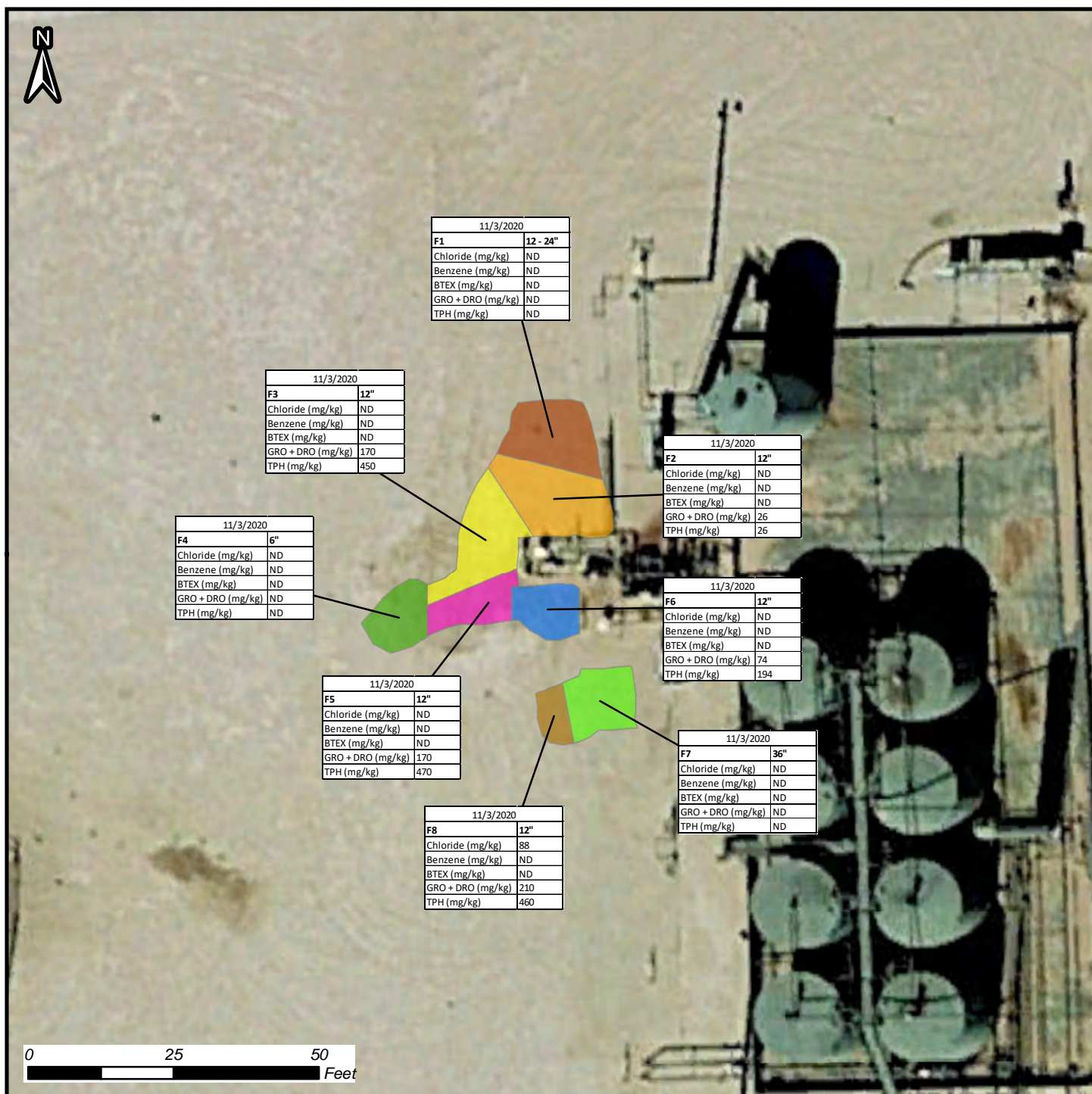
Author: A. Asay

Revision: 0

Date: 1/5/2021

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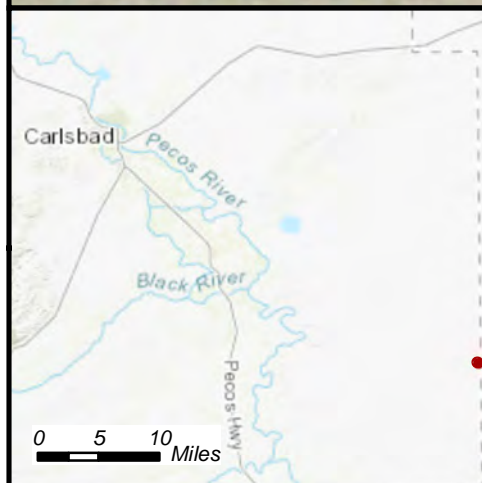
**Figure 4: Footprint Confirmation Sample Location and Results Map**

Cotton Draw Unit 172H

November 2015 Spill

32.152763300, -103.726875990

Section 1, Township 25 South, Range 31 East



**NOTES / COMMENTS:**

The total northern excavation area is approximately 849 square feet. The total southern excavation area is approximately 176 square feet.

Results in red exceed closure criteria.

**Mapped Features**

- Excavation F1 (1' - 2' Deep)
- Excavation F2 (1' Deep)
- Excavation F3 (1' Deep)
- Excavation F4 (6' Deep)
- Excavation F5 (1' Deep)
- Excavation F6 (1' Deep)
- Excavation F7 (3' Deep)
- Excavation F8 (1' Deep)

DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.



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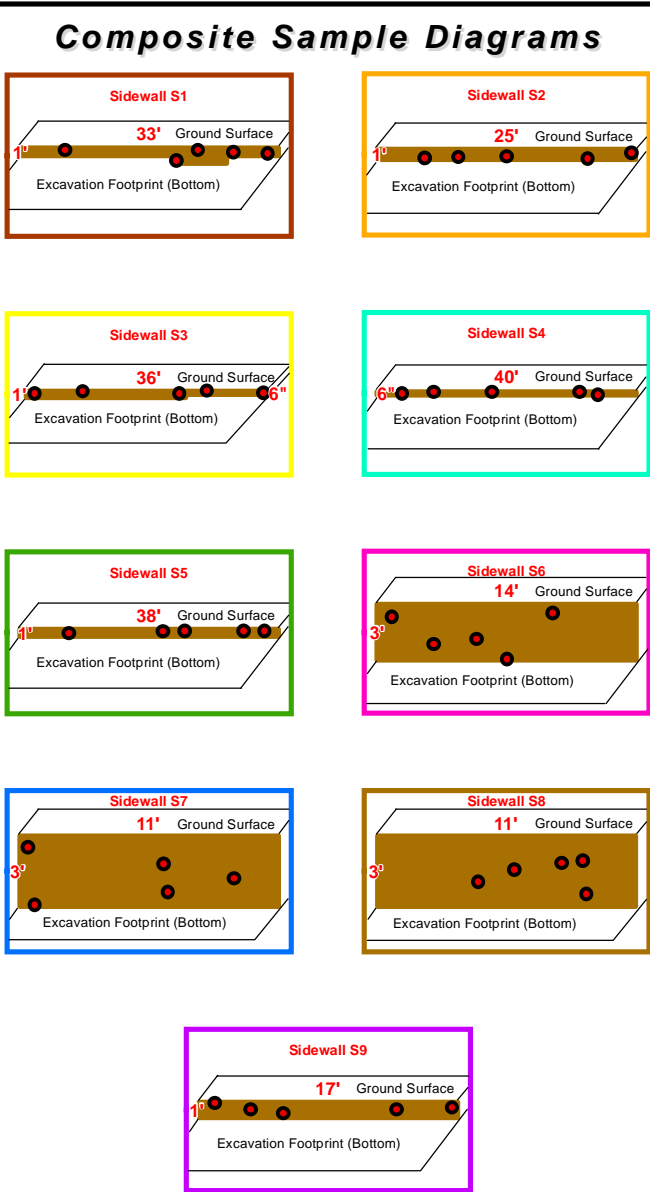
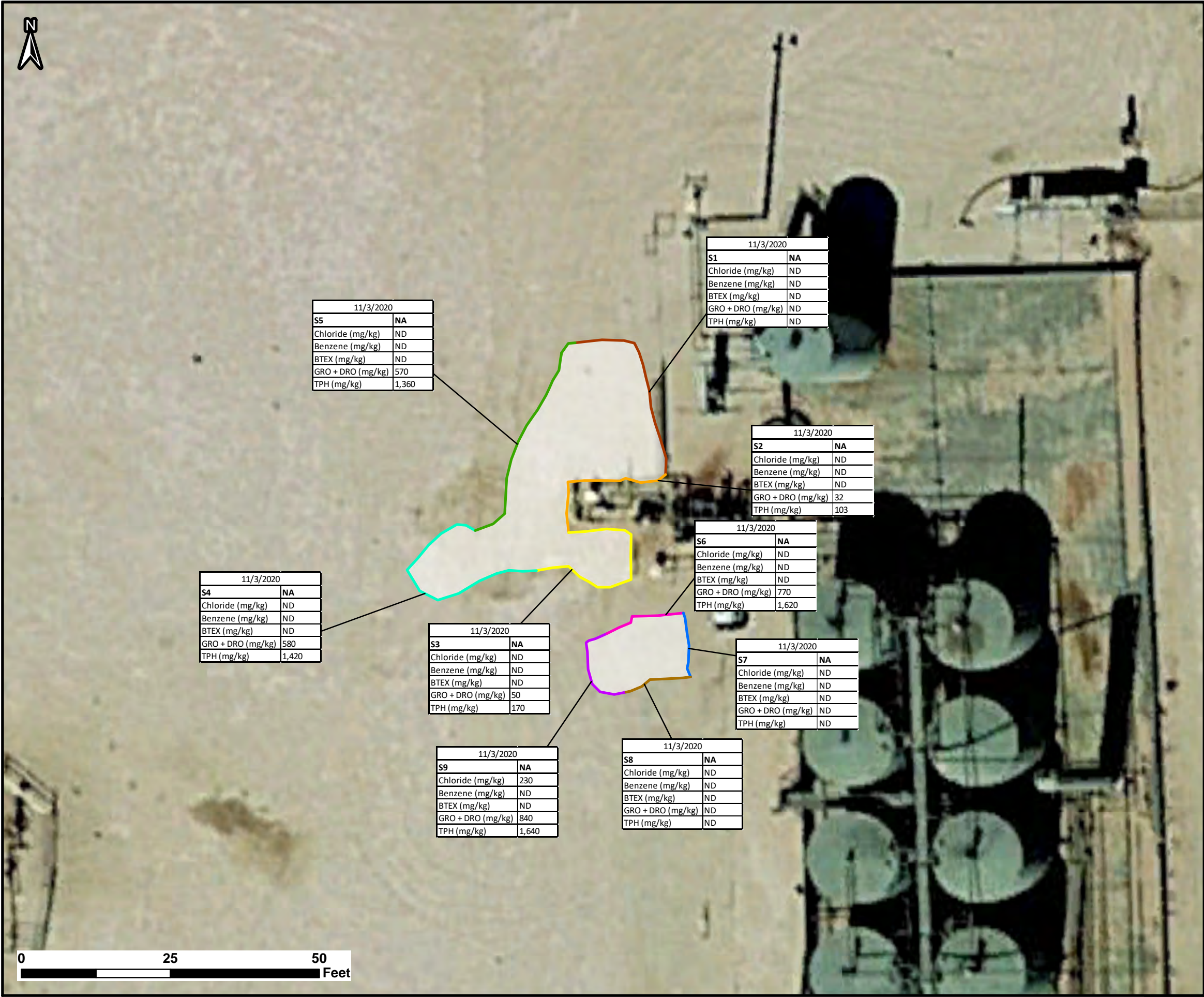
Author: A. Asay

Revision: 0

Date: 11/17/2020

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### Figure 5: Sidewall Confirmation Sample Location and Results Map

Cotton Draw Unit 172H  
November 2015 Spill  
32.152763300, -103.726875990  
Section 1, Township 25 South, Range 31 East

#### Mapped Features

- Sidewall Sample Location
- Sidewall S1
- Sidewall S2
- Sidewall S3
- Sidewall S4
- Sidewall S5
- Sidewall S6
- Sidewall S7
- Sidewall S8
- Sidewall S9
- Total Excavation Area

DISCLAIMER: This representation and the Geographic Information System (GIS) used to create it are designed as a source of reference and not intended to replace official records and/or legal surveys. HRL assumes no responsibility for any risks, dangers, or liabilities that may result from its use and makes no guarantees as to the quality or accuracy of the underlying data.

Author: A. Asay
Revision: 0
Date: 11/17/2020



## **Tables**





**Table 1**  
**Site Characterization Soil Sample Results**  
**Devon Energy**  
**Cotton Draw 172H (November 2015)**  
**Eddy County, New Mexico**

Sample ID	Depth (inches)	Sample Date	Chloride	Benzene	BTEX	GRO + DRO	TPH
			<i>Values are in milligrams per kilogram (mg/kg)</i>				
NMOCD Closure Criteria (Groundwater greater than 100 feet) *			600	10	50	1,000	2,500
SP1	12	4/3/2020	ND	ND	ND	<b>1,400</b>	1,900
SP1	44	4/3/2020	130	ND	ND	670	1,290
SP2	0	4/3/2020	ND	ND	ND	95	325
SP2	6	4/3/2020	ND	ND	ND	140	320
SP11	0	4/3/2020	63	ND	ND	<b>1,200</b>	<b>2,600</b>
SP12	0	4/3/2020	<b>3,000</b>	ND	ND	<b>1,900</b>	<b>3,700</b>
SP13	0	4/3/2020	600	ND	ND	<b>1,800</b>	<b>3,500</b>
SP1	0	4/25/2020	<b>1,000</b>	ND	ND	10	10
SP2	0	4/25/2020	<b>650</b>	ND	ND	ND	ND
SP3	0	4/25/2020	76	ND	ND	15	15
SB1-3	3	6/22/2020	ND	ND	ND	ND	ND
SB2-3	3	6/22/2020	ND	ND	ND	ND	ND
SB3-2	2	6/22/2020	520	ND	ND	ND	ND
SB4-4	4	6/22/2020	71	ND	ND	ND	ND
SB5-5	5	6/22/2020	ND	ND	ND	760	1,700
SB5-10	10	6/22/2020	ND	ND	ND	ND	ND
SB5-18	18	6/22/2020	ND	ND	ND	ND	ND

*Notes:*

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, toluene, ethylbenzene, total xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

TPH: Total Petroleum Hydrocarbons

**Bold** values exceed closure criteria

\* Closure Criteria specified in 19.15.29.12 NMAC


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**Table 2**  
**Post-Excavation Confirmation Soil Sample Results**  
**Devon Energy**  
**Cotton Draw 172H (November 2015)**  
**Eddy County, New Mexico**

Sample ID	Depth (inches)	Sample Date	Chloride	Benzene	BTEX	GRO + DRO	TPH
			<i>Values are in milligrams per kilogram (mg/kg)</i>				
NMOCD Closure Criteria (Groundwater greater than 100 feet) *			600	10	50	1,000	2,500
S1	NA	11/3/2020	ND	ND	ND	ND	ND
S2	NA	11/3/2020	ND	ND	ND	32	103
S3	NA	11/3/2020	ND	ND	ND	50	170
S4	NA	11/3/2020	ND	ND	ND	580	1,420
S5	NA	11/3/2020	ND	ND	ND	570	1,360
S6	NA	11/3/2020	ND	ND	ND	770	1,620
S7	NA	11/3/2020	ND	ND	ND	ND	ND
S8	NA	11/3/2020	ND	ND	ND	ND	ND
S9	NA	11/3/2020	230	ND	ND	840	1,640
F1	12 - 24	11/3/2020	ND	ND	ND	ND	ND
F2	12	11/3/2020	ND	ND	ND	26	26
F3	12	11/3/2020	ND	ND	ND	170	450
F4	6	11/3/2020	ND	ND	ND	ND	ND
F5	12	11/3/2020	ND	ND	ND	170	470
F6	12	11/3/2020	ND	ND	ND	74	194
F7	36	11/3/2020	ND	ND	ND	ND	ND
F8	12	11/3/2020	88	ND	ND	210	460

*Notes:*

NA: Not Applicable

NMOCD: New Mexico Oil Conservation Division

BTEX: Benzene, toluene, ethylbenzene, total xylenes

GRO: Gasoline Range Organics

DRO: Diesel Range Organics

TPH: Total Petroleum Hydrocarbons

**Bold** values exceed closure criteria

\* Closure Criteria specified in 19.15.29.12 NMAC



**Attachment A**  
**NMOCD Form C-141**

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

NOV 12 2015

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in  
conformance with 19.15.29 NMAC.

RECEIVED

## Release Notification and Corrective Action

NAB1531740296

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: LPC Crude Oil Marketing, LLC 4137	Contact: Benjamin Aucoin
Address: 2501 Cedar Springs Rd. #100, Dallas, TX 75201	Telephone No. 225-313-1338
Facility Name: (Devon) Cotton Draw 172H	Facility Type:

Surface Owner FED	Mineral Owner FED	API No. 30-015-42426
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## LOCATION OF RELEASE

Unit Letter	Section 01	Township T25S	Range R31E	Feet from the	North/South Line	Feet from the	East/West Line	County Eddy
-------------	------------	---------------	------------	---------------	------------------	---------------	----------------	-------------

Latitude N 32° 09' 9.41" Longitude W 103° 43' 38.37"

32-152614

NATURE OF RELEASE 103-727325

Type of Release: Crude Oil	Volume of Release: 67 bbl	Volume Recovered: 44 bbl
Source of Release: Transport Truck	Date and Hour of Occurrence 11/11/15 - 10:30 PM	Date and Hour of Discovery 11/11/15 - 10:30 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Randy Dade (via voicemail)	
By Whom? Benjamin Aucoin	Date and Hour: 11/12/15 11:00 AM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.\*

N/A

Describe Cause of Problem and Remedial Action Taken.\*

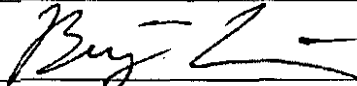
Crude oil overflowed from a tank truck while driver was loading the truck from the LACT unit. The LACT unit was turned off upon discovery of the spill preventing more oil from being spilled. The root cause is being investigated.


Describe Area Affected and Cleanup Action Taken.\*

67 barrels of crude oil were spilled onto the site, and all spilled material remained on the site. 44 barrels were recovered via vacuum truck. The impacted area has been barricaded to prevent traffic over the area. LPC is working with the pad owner to coordinate remediation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCID 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 NMOCID marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCID 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.

## OIL CONSERVATION DIVISION

Signature: 
Printed Name: Benjamin Aucoin
Title: Lead Environmental Field Specialist
E-mail Address: Benjamin.Aucoin@enlink.com
Date: 11/12/15 Phone: 225-313-1338

Signed By: 	
Approved by Environmental Specialist:	
Approval Date: 11/13/15	Expiration Date: N/A
Conditions of Approval:	Attached <input type="checkbox"/>

Remediation per O.C.D. Rules & Guidelines  
SUBMIT REMEDIATION PROPOSAL NO  
LATER THAN: 12/17/15

2RP-3390

\* Attach Additional Sheets If Necessary



Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

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

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

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

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

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

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

State of New Mexico  
Oil Conservation Division

Page 4

Incident ID	
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: Lupe Carrasco Title: Environmental ProfessionalSignature: Lupe Carrasco Date: 1/28/21email: lupe.carrasco@dvn.com Telephone: (575) 748-0765**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: Lupe Carrasco Title: Environmental ProfessionalSignature: Lupe Carrasco Date: 1/28/21email: lupe.carrasco@dv.com Telephone: (575) 748-0765**OCD Only**

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

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

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

Incident ID	
District RP	
Facility ID	
Application ID	

## Closure

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

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

- ☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☒ Description of remediation activities

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

Printed Name: Lupe Carrasco Title: Environmental Professional

Signature: Lupe Carrasco Date: 1/28/21

email: lupe.carrasco@dvn.com Telephone: (575) 748-0765

### OCD Only

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

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

Closure Approved by: Brittany Hall Date: 12/28/2022

Printed Name: Brittany Hall Title: Environmental Specialist





## **Attachment B**

### **Characterization Samples Analytical Laboratory Results**



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 13, 2020

Tom Bynum

Devon Energy

6488 Seven Rivers Highway

Artesia, NM 88210

TEL: (575) 748-0176

FAX:

RE: Cotton Draw 172H Nov 2015

OrderNo.: 2004249

Dear Tom Bynum:

Hall Environmental Analysis Laboratory received 7 sample(s) on 4/7/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP1A

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 7:57:00 AM

Lab ID: 2004249-001

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	1400	97		mg/Kg	10	4/9/2020 7:42:46 PM
Motor Oil Range Organics (MRO)	1500	490		mg/Kg	10	4/9/2020 7:42:46 PM
Surr: DNOP	0	55.1-146	S	%Rec	10	4/9/2020 7:42:46 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	24	D	mg/Kg	5	4/9/2020 12:00:09 PM
Surr: BFB	96.9	66.6-105	D	%Rec	5	4/9/2020 12:00:09 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.12	D	mg/Kg	5	4/9/2020 12:00:09 PM
Toluene	ND	0.24	D	mg/Kg	5	4/9/2020 12:00:09 PM
Ethylbenzene	ND	0.24	D	mg/Kg	5	4/9/2020 12:00:09 PM
Xylenes, Total	ND	0.48	D	mg/Kg	5	4/9/2020 12:00:09 PM
Surr: 4-Bromofluorobenzene	99.3	80-120	D	%Rec	5	4/9/2020 12:00:09 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: MRA
Chloride	ND	59		mg/Kg	20	4/9/2020 4:54:09 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP1B

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 7:52:00 AM

Lab ID: 2004249-002

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	670	49		mg/Kg	5	4/9/2020 8:06:21 PM
Motor Oil Range Organics (MRO)	620	240		mg/Kg	5	4/9/2020 8:06:21 PM
Surr: DNOP	114	55.1-146		%Rec	5	4/9/2020 8:06:21 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/9/2020 1:10:40 PM
Surr: BFB	94.0	66.6-105		%Rec	1	4/9/2020 1:10:40 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/9/2020 1:10:40 PM
Toluene	ND	0.048		mg/Kg	1	4/9/2020 1:10:40 PM
Ethylbenzene	ND	0.048		mg/Kg	1	4/9/2020 1:10:40 PM
Xylenes, Total	ND	0.096		mg/Kg	1	4/9/2020 1:10:40 PM
Surr: 4-Bromofluorobenzene	96.1	80-120		%Rec	1	4/9/2020 1:10:40 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: MRA
Chloride	130	60		mg/Kg	20	4/9/2020 5:06:30 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP2A

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 8:02:00 AM

Lab ID: 2004249-003

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	95	20		mg/Kg	2	4/9/2020 8:30:17 PM
Motor Oil Range Organics (MRO)	230	98		mg/Kg	2	4/9/2020 8:30:17 PM
Surr: DNOP	91.5	55.1-146		%Rec	2	4/9/2020 8:30:17 PM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: RAA
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/9/2020 1:34:01 PM
Surr: BFB	95.6	66.6-105		%Rec	1	4/9/2020 1:34:01 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: RAA
Benzene	ND	0.024		mg/Kg	1	4/9/2020 1:34:01 PM
Toluene	ND	0.049		mg/Kg	1	4/9/2020 1:34:01 PM
Ethylbenzene	ND	0.049		mg/Kg	1	4/9/2020 1:34:01 PM
Xylenes, Total	ND	0.098		mg/Kg	1	4/9/2020 1:34:01 PM
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	4/9/2020 1:34:01 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: MRA
Chloride	ND	60		mg/Kg	20	4/9/2020 5:18:52 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP2B

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 8:03:00 AM

Lab ID: 2004249-004

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	140	9.9		mg/Kg	1	4/9/2020 4:34:09 AM
Motor Oil Range Organics (MRO)	180	49		mg/Kg	1	4/9/2020 4:34:09 AM
Surr: DNOP	97.3	55.1-146		%Rec	1	4/9/2020 4:34:09 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	4/9/2020 1:57:26 PM
Surr: BFB	94.7	66.6-105		%Rec	1	4/9/2020 1:57:26 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.023		mg/Kg	1	4/9/2020 1:57:26 PM
Toluene	ND	0.046		mg/Kg	1	4/9/2020 1:57:26 PM
Ethylbenzene	ND	0.046		mg/Kg	1	4/9/2020 1:57:26 PM
Xylenes, Total	ND	0.092		mg/Kg	1	4/9/2020 1:57:26 PM
Surr: 4-Bromofluorobenzene	96.7	80-120		%Rec	1	4/9/2020 1:57:26 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>
Chloride	ND	59		mg/Kg	20	4/9/2020 5:31:12 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP11

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 10:12:00 AM

Lab ID: 2004249-005

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1200	99		mg/Kg	10	4/9/2020 5:46:43 AM
Motor Oil Range Organics (MRO)	1400	490		mg/Kg	10	4/9/2020 5:46:43 AM
Surr: DNOP	0	55.1-146	S	%Rec	10	4/9/2020 5:46:43 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	23	D	mg/Kg	5	4/9/2020 2:20:53 PM
Surr: BFB	95.9	66.6-105	D	%Rec	5	4/9/2020 2:20:53 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.11	D	mg/Kg	5	4/9/2020 2:20:53 PM
Toluene	ND	0.23	D	mg/Kg	5	4/9/2020 2:20:53 PM
Ethylbenzene	ND	0.23	D	mg/Kg	5	4/9/2020 2:20:53 PM
Xylenes, Total	ND	0.46	D	mg/Kg	5	4/9/2020 2:20:53 PM
Surr: 4-Bromofluorobenzene	98.9	80-120	D	%Rec	5	4/9/2020 2:20:53 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>
Chloride	63	60		mg/Kg	20	4/9/2020 5:43:33 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP12

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 10:18:00 AM

Lab ID: 2004249-006

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1900	99		mg/Kg	10	4/9/2020 6:10:41 AM
Motor Oil Range Organics (MRO)	1800	500		mg/Kg	10	4/9/2020 6:10:41 AM
Surr: DNOP	0	55.1-146	S	%Rec	10	4/9/2020 6:10:41 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	25	D	mg/Kg	5	4/9/2020 2:44:31 PM
Surr: BFB	92.8	66.6-105	D	%Rec	5	4/9/2020 2:44:31 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.12	D	mg/Kg	5	4/9/2020 2:44:31 PM
Toluene	ND	0.25	D	mg/Kg	5	4/9/2020 2:44:31 PM
Ethylbenzene	ND	0.25	D	mg/Kg	5	4/9/2020 2:44:31 PM
Xylenes, Total	ND	0.49	D	mg/Kg	5	4/9/2020 2:44:31 PM
Surr: 4-Bromofluorobenzene	94.9	80-120	D	%Rec	5	4/9/2020 2:44:31 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>
Chloride	3000	150		mg/Kg	50	4/10/2020 4:29:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

## Analytical Report

Lab Order 2004249

Date Reported: 4/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP13

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/3/2020 10:20:00 AM

Lab ID: 2004249-007

Matrix: SOIL

Received Date: 4/7/2020 8:25:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>BRM</b>
Diesel Range Organics (DRO)	1800	92		mg/Kg	10	4/9/2020 6:35:06 AM
Motor Oil Range Organics (MRO)	1700	460		mg/Kg	10	4/9/2020 6:35:06 AM
Surr: DNOP	0	55.1-146	S	%Rec	10	4/9/2020 6:35:06 AM
<b>EPA METHOD 8015D: GASOLINE RANGE</b>						Analyst: <b>RAA</b>
Gasoline Range Organics (GRO)	ND	24	D	mg/Kg	5	4/9/2020 3:07:54 PM
Surr: BFB	95.4	66.6-105	D	%Rec	5	4/9/2020 3:07:54 PM
<b>EPA METHOD 8021B: VOLATILES</b>						Analyst: <b>RAA</b>
Benzene	ND	0.12	D	mg/Kg	5	4/9/2020 3:07:54 PM
Toluene	ND	0.24	D	mg/Kg	5	4/9/2020 3:07:54 PM
Ethylbenzene	ND	0.24	D	mg/Kg	5	4/9/2020 3:07:54 PM
Xylenes, Total	ND	0.48	D	mg/Kg	5	4/9/2020 3:07:54 PM
Surr: 4-Bromofluorobenzene	97.5	80-120	D	%Rec	5	4/9/2020 3:07:54 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>
Chloride	600	61		mg/Kg	20	4/9/2020 6:32:57 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 2004249

13-Apr-20

Client: Devon Energy

Project: Cotton Draw 172H Nov 2015

Sample ID: <b>MB-51683</b>		SampType: <b>mblk</b>			TestCode: <b>EPA Method 300.0: Anions</b>					
Client ID: <b>PBS</b>		Batch ID: <b>51683</b>			RunNo: <b>68004</b>					
Prep Date: <b>4/9/2020</b>		Analysis Date: <b>4/9/2020</b>			SeqNo: <b>2350088</b>		Units: <b>mg/Kg</b>			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Qualifiers:

- \* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

H Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quantitative Limit

S % Recovery outside of range due to dilution or matrix
- B Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004249

13-Apr-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>LCS-51627</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>51627</b>	RunNo: <b>67934</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/8/2020</b>	SeqNo: <b>2347744</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.7	70	130			
Surr: DNOP	3.6		5.000		71.9	55.1	146			

Sample ID: <b>MB-51627</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>51627</b>	RunNo: <b>67934</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/8/2020</b>	SeqNo: <b>2347745</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.3		10.00		72.5	55.1	146			

Sample ID: <b>2004249-004AMS</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SP2B</b>	Batch ID: <b>51634</b>	RunNo: <b>67900</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348950</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	210	9.4	47.17	137.2	147	47.4	136			S
Surr: DNOP	4.6		4.717		96.9	55.1	146			

Sample ID: <b>2004249-004AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>SP2B</b>	Batch ID: <b>51634</b>	RunNo: <b>67900</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348951</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	190	9.1	45.50	137.2	109	47.4	136	9.99	43.4	
Surr: DNOP	4.4		4.550		97.0	55.1	146	0	0	

Sample ID: <b>LCS-51634</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>51634</b>	RunNo: <b>67900</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348958</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.4	70	130			
Surr: DNOP	3.7		5.000		74.0	55.1	146			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 9 of 12

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 2004249

13-Apr-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>MB-51634</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>51634</b>	RunNo: <b>67900</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348959</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.5		10.00		84.9	55.1	146			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 10 of 12

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004249

13-Apr-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>mb-51623</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>51623</b>	RunNo: <b>67938</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348375</b>		Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		96.8	66.6	105			

Sample ID: <b>lcs-51623</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>51623</b>	RunNo: <b>67938</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348376</b>		Units: <b>mg/Kg</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.8	80	120			
Surr: BFB	1100		1000		111	66.6	105			S

Sample ID: <b>lcs-51628</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>51628</b>	RunNo: <b>68006</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2350206</b>		Units: <b>%Rec</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		108	66.6	105			S

Sample ID: <b>mb-51628</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>51628</b>	RunNo: <b>68006</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2350208</b>		Units: <b>%Rec</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	970		1000		97.0	66.6	105			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004249

13-Apr-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>mb-51623</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>51623</b>	RunNo: <b>67938</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348410</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.99		1.000		99.4	80	120			

Sample ID: <b>LCS-51623</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>51623</b>	RunNo: <b>67938</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2348411</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	87.6	80	120			
Toluene	0.91	0.050	1.000	0	91.4	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.6	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Sample ID: <b>LCS-51628</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>51628</b>	RunNo: <b>68006</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2350255</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

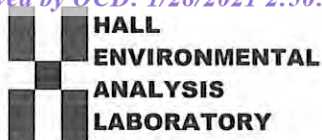
Sample ID: <b>mb-51628</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>51628</b>	RunNo: <b>68006</b>								
Prep Date: <b>4/7/2020</b>	Analysis Date: <b>4/9/2020</b>	SeqNo: <b>2350257</b> Units: <b>%Rec</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit





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

## Sample Log-In Check List

Client Name: DEVON ENERGY

Work Order Number: 2004249

RcptNo: 1

Received By: Juan Rojas

4/7/2020 8:25:00 AM

*Juan Rojas*

Completed By: Leah Baca

4/7/2020 9:40:21 AM

*Leah Baca*Reviewed By: *LB**4/7/20*Chain of Custody1. Is Chain of Custody sufficiently complete? Yes ☒ No ☐ Not Present ☐2. How was the sample delivered? ClientLog In3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐5. Sample(s) in proper container(s)? Yes ☒ No ☐6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒10. Were any sample containers received broken? Yes ☐ No ☒11. Does paperwork match bottle labels? Yes ☒ No ☐

(Note discrepancies on chain of custody)

12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐13. Is it clear what analyses were requested? Yes ☒ No ☐14. Were all holding times able to be met? Yes ☒ No ☐

(If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted? */*Checked by: *DAD 4/7/20*Special Handling (if applicable)15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.5	Good				
2	2.5	Good				







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 04, 2020

Tom Bynum

Devon Energy

6488 Seven Rivers Highway

Artesia, NM 88210

TEL: (505) 350-1336

FAX:

RE: Cotton Draw 172H Nov 2015

OrderNo.: 2004B27

Dear Tom Bynum:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/28/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman".

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2004B27

Date Reported: 5/4/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP 1

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/25/2020 11:33:00 AM

Lab ID: 2004B27-001

Matrix: SOIL

Received Date: 4/28/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	1000	60		mg/Kg	20	5/1/2020 1:42:20 AM	52167
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	10	9.9		mg/Kg	1	4/29/2020 3:37:05 PM	52153
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	4/29/2020 3:37:05 PM	52153
Surr: DNOP	77.0	55.1-146		%Rec	1	4/29/2020 3:37:05 PM	52153
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	4/29/2020 6:57:46 PM	52144
Surr: BFB	99.4	66.6-105		%Rec	1	4/29/2020 6:57:46 PM	52144
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	4/29/2020 6:57:46 PM	52144
Toluene	ND	0.048		mg/Kg	1	4/29/2020 6:57:46 PM	52144
Ethylbenzene	ND	0.048		mg/Kg	1	4/29/2020 6:57:46 PM	52144
Xylenes, Total	ND	0.096		mg/Kg	1	4/29/2020 6:57:46 PM	52144
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	4/29/2020 6:57:46 PM	52144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

Page 1 of 8

## Analytical Report

Lab Order 2004B27

Date Reported: 5/4/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP 2

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/25/2020 11:37:00 AM

Lab ID: 2004B27-002

Matrix: SOIL

Received Date: 4/28/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	650	60		mg/Kg	20	5/1/2020 1:54:41 AM	52167
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	4/29/2020 4:01:09 PM	52153
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/29/2020 4:01:09 PM	52153
Surr: DNOP	63.3	55.1-146		%Rec	1	4/29/2020 4:01:09 PM	52153
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/29/2020 8:08:17 PM	52144
Surr: BFB	102	66.6-105		%Rec	1	4/29/2020 8:08:17 PM	52144
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	4/29/2020 8:08:17 PM	52144
Toluene	ND	0.049		mg/Kg	1	4/29/2020 8:08:17 PM	52144
Ethylbenzene	ND	0.049		mg/Kg	1	4/29/2020 8:08:17 PM	52144
Xylenes, Total	ND	0.099		mg/Kg	1	4/29/2020 8:08:17 PM	52144
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	4/29/2020 8:08:17 PM	52144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2004B27

Date Reported: 5/4/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SP 3

Project: Cotton Draw 172H Nov 2015

Collection Date: 4/25/2020 11:59:00 AM

Lab ID: 2004B27-003

Matrix: SOIL

Received Date: 4/28/2020 9:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	76	60		mg/Kg	20	5/1/2020 2:07:01 AM	52167
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	15	9.5		mg/Kg	1	4/29/2020 4:25:14 PM	52153
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	4/29/2020 4:25:14 PM	52153
Surr: DNOP	57.8	55.1-146		%Rec	1	4/29/2020 4:25:14 PM	52153
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/29/2020 9:18:46 PM	52144
Surr: BFB	103	66.6-105		%Rec	1	4/29/2020 9:18:46 PM	52144
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	4/29/2020 9:18:46 PM	52144
Toluene	ND	0.050		mg/Kg	1	4/29/2020 9:18:46 PM	52144
Ethylbenzene	ND	0.050		mg/Kg	1	4/29/2020 9:18:46 PM	52144
Xylenes, Total	ND	0.099		mg/Kg	1	4/29/2020 9:18:46 PM	52144
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	4/29/2020 9:18:46 PM	52144

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

Page 3 of 8



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004B27

04-May-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>MB-52167</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>52167</b>	RunNo: <b>68573</b>								
Prep Date: <b>4/29/2020</b>	Analysis Date: <b>5/1/2020</b>	SeqNo: <b>2372675</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-52167</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>52167</b>	RunNo: <b>68573</b>								
Prep Date: <b>4/29/2020</b>	Analysis Date: <b>5/1/2020</b>	SeqNo: <b>2372676</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.5	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 4 of 8

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004B27

04-May-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>LCS-52153</b>	SampType: <b>LCS</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>LCSS</b>	Batch ID: <b>52153</b>		RunNo: <b>68504</b>							
Prep Date: <b>4/29/2020</b>	Analysis Date: <b>4/29/2020</b>		SeqNo: <b>2370383</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	99.4	70	130			
Surr: DNOP	4.4		5.000		88.3	55.1	146			

Sample ID: <b>MB-52153</b>	SampType: <b>MBLK</b>		TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>							
Client ID: <b>PBS</b>	Batch ID: <b>52153</b>		RunNo: <b>68504</b>							
Prep Date: <b>4/29/2020</b>	Analysis Date: <b>4/29/2020</b>		SeqNo: <b>2370384</b>		Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.8		10.00		97.7	55.1	146			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004B27

04-May-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>mb1</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>GS68500</b>				RunNo: <b>68500</b>					
Prep Date:	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370733</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		104	66.6	105			

Sample ID: <b>2.5UG GRO LCS</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>GS68500</b>				RunNo: <b>68500</b>					
Prep Date:	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370734</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		112	66.6	105			S

Sample ID: <b>mb-52144</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>PBS</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370753</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		101	66.6	105			

Sample ID: <b>lcs-52144</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370754</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.9	80	120			
Surr: BFB	1100		1000		111	66.6	105			S

Sample ID: <b>2004b27-002ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>SP 2</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370757</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.63	0	97.4	80	120			
Surr: BFB	1100		985.2		113	66.6	105			S

Sample ID: <b>2004b27-002amsd</b>	SampType: <b>MSD</b>				TestCode: <b>EPA Method 8015D: Gasoline Range</b>					
Client ID: <b>SP 2</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370758</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.41	0	98.0	80	120	0.228	20	
Surr: BFB	1100		976.6		110	66.6	105	0	0	S

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004B27

04-May-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>mb1</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>PBS</b>	Batch ID: <b>BS68500</b>				RunNo: <b>68500</b>					
Prep Date:	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370779</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID: <b>100NG BTEX LCS</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>BS68500</b>				RunNo: <b>68500</b>					
Prep Date:	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370780</b>	Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID: <b>mb-52144</b>	SampType: <b>MBLK</b>				TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>PBS</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370799</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID: <b>LCS-52144</b>	SampType: <b>LCS</b>				TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>LCSS</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370800</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	83.8	80	120			
Toluene	0.88	0.050	1.000	0	87.9	80	120			
Ethylbenzene	0.90	0.050	1.000	0	90.0	80	120			
Xylenes, Total	2.7	0.10	3.000	0	90.5	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID: <b>2004b27-001ams</b>	SampType: <b>MS</b>				TestCode: <b>EPA Method 8021B: Volatiles</b>					
Client ID: <b>SP 1</b>	Batch ID: <b>52144</b>				RunNo: <b>68500</b>					
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>				SeqNo: <b>2370802</b>	Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9690	0	91.7	78.5	119			
Toluene	0.94	0.048	0.9690	0	96.6	75.7	123			
Ethylbenzene	0.96	0.048	0.9690	0	99.2	74.3	126			
Xylenes, Total	2.9	0.097	2.907	0	99.7	72.9	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2004B27

04-May-20

**Client:** Devon Energy**Project:** Cotton Draw 172H Nov 2015

Sample ID: <b>2004b27-001ams</b>	SampType: <b>MS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SP 1</b>	Batch ID: <b>52144</b>	RunNo: <b>68500</b>								
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>	SeqNo: <b>2370802</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		0.9690		102	80	120			

Sample ID: <b>2004b27-001amsd</b>	SampType: <b>MSD</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>SP 1</b>	Batch ID: <b>52144</b>	RunNo: <b>68500</b>								
Prep Date: <b>4/28/2020</b>	Analysis Date: <b>4/29/2020</b>	SeqNo: <b>2370803</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.85	0.024	0.9794	0	87.0	78.5	119	4.16	20	
Toluene	0.90	0.049	0.9794	0	92.1	75.7	123	3.68	20	
Ethylbenzene	0.94	0.049	0.9794	0	96.1	74.3	126	2.14	20	
Xylenes, Total	2.8	0.098	2.938	0	96.0	72.9	130	2.67	20	
Surr: 4-Bromofluorobenzene	0.99		0.9794		101	80	120	0	0	

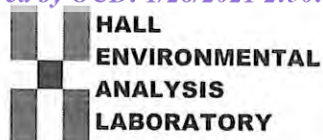
**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

## Sample Log-In Check List

Client Name: DEVON ENERGY

Work Order Number: 2004B27

RcptNo: 1

Received By: Juan Rojas

4/28/2020 9:15:00 AM

*Juan Rojas*

Completed By: Desiree Dominguez

4/28/2020 7:54:53 AM

*DD*

Reviewed By: DAD 4/28/20

Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by: JR 4/28/20

Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.9	Good	Not Present			

# Chain-of-Custody Record

Client: Devon Energy  
Tom Bynum  
Mailing Address: 6488 Seven Rivers  
Hwy, Artesia, NM 88211  
Phone #: 580-748-1613  
email or Fax#: tom.bynum@devon.com

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

Accreditation: ☐ Az Compliance  
☐ NELAC ☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Date	Time	Matrix	Sample Name
4/25/14	11:33	Soil	SP1
4/25/14	11:37	Soil	SP2
4/28/14	11:59	Soil	SP3

Date:	Time:	Relinquished by:
11/27/00	13:00	Taylor Elwood
Date:	Time:	Relinquished by:
11/27/00	1900	[Signature]

Turn-Around Time: 5 days

☒ Standard ☐ Rush

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

20837667


Project #:

Cotton Draw 172A - Nov 2015


Project Manager:	Tom Byrum
Sampler:	T. Elwell (HRL)
On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
# of Coolers:	1

Cooler Temp (including CF):	3.8 + 0.1 = 3.9 (°C)
Container Type and #	HEAL No. 2004 B27
Preservative Type	

102 Glass	Ice	-001
102 Glass	Ice	-002
402 Glass	Ice	-003

Received by:	Via:	Date	Time
		4/27/20	1302

Received by:	Via:	Date	Time
		4/28/20	9:15



4901 Hawkins NE - Albuquerque, NM 87109  
Tel. 505-345-3975 Fax 505-345-4107

## Analysis Request

[illegible]

Remarks: Please send report to

also  
jinn@hrlcomp.com  
telive11@hrlcomp.com



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

July 07, 2020

Tom Bynum

Devon Energy

6488 Seven Rivers Highway

Artesia, NM 88210

TEL: (575) 748-0176

FAX:

RE: Cotton Draw 172H (Nov 2015)

OrderNo.: 2006E61

Dear Tom Bynum:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/26/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109



## Analytical Report

Lab Order 2006E61

Date Reported: 7/7/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB5-18

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 1:30:00 PM

Lab ID: 2006E61-001

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/1/2020 10:46:14 AM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/1/2020 10:46:14 AM
Surr: DNOP	95.1	55.1-146		%Rec	1	7/1/2020 10:46:14 AM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: MRA
Chloride	ND	60		mg/Kg	20	7/2/2020 7:53:00 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	7/3/2020 9:11:13 PM
Toluene	ND	0.049		mg/Kg	1	7/3/2020 9:11:13 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/3/2020 9:11:13 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/3/2020 9:11:13 PM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/3/2020 9:11:13 PM
Surr: 4-Bromofluorobenzene	93.2	70-130		%Rec	1	7/3/2020 9:11:13 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/3/2020 9:11:13 PM
Surr: Toluene-d8	99.6	70-130		%Rec	1	7/3/2020 9:11:13 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/3/2020 9:11:13 PM
Surr: BFB	97.2	70-130		%Rec	1	7/3/2020 9:11:13 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

Page 1 of 5

QC SUMMARY REPORT  
Hall Environmental Analysis Laboratory, Inc.

WO#: 2006E61  
07-Jul-20

Client: Devon Energy  
Project: Cotton Draw 172H (Nov 2015)

Sample ID: <b>LCS-53487</b>		SampType: <b>lcs</b>		TestCode: <b>EPA Method 300.0: Anions</b>						
Client ID: <b>LCSS</b>		Batch ID: <b>53487</b>		RunNo: <b>70082</b>						
Prep Date: <b>7/2/2020</b>		Analysis Date: <b>7/2/2020</b>		SeqNo: <b>2436814</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.1	90	110			

Qualifiers:

- \*

Value exceeds Maximum Contaminant Level.
- D

Sample Diluted Due to Matrix
- H

Holding times for preparation or analysis exceeded
- ND

Not Detected at the Reporting Limit
- PQL

Practical Quantitative Limit
- S

% Recovery outside of range due to dilution or matrix
- B

Analyte detected in the associated Method Blank
- E

Value above quantitation range
- J

Analyte detected below quantitation limits
- P

Sample pH Not In Range
- RL

Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E61

07-Jul-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H (Nov 2015)

Sample ID: <b>MB-53402</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>53402</b>			RunNo: <b>70044</b>						
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>			SeqNo: <b>2433514</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.8		10.00		88.4	55.1	146			

Sample ID: <b>MB-53426</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>53426</b>			RunNo: <b>70044</b>						
Prep Date: <b>6/30/2020</b>	Analysis Date: <b>7/1/2020</b>			SeqNo: <b>2433515</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		95.0	55.1	146			

Sample ID: <b>MB-53438</b>	SampType: <b>MBLK</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>PBS</b>	Batch ID: <b>53438</b>			RunNo: <b>70044</b>						
Prep Date: <b>7/1/2020</b>	Analysis Date: <b>7/1/2020</b>			SeqNo: <b>2433516</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.4		10.00		94.0	55.1	146			

Sample ID: <b>LCS-53402</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>53402</b>			RunNo: <b>70044</b>						
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>			SeqNo: <b>2433517</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.5		5.000		89.4	55.1	146			

Sample ID: <b>LCS-53426</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>53426</b>			RunNo: <b>70044</b>						
Prep Date: <b>6/30/2020</b>	Analysis Date: <b>7/1/2020</b>			SeqNo: <b>2433518</b>		Units: <b>mg/Kg</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.5	70	130			
Surr: DNOP	4.2		5.000		83.0	55.1	146			

Sample ID: <b>LCS-53438</b>	SampType: <b>LCS</b>			TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>						
Client ID: <b>LCSS</b>	Batch ID: <b>53438</b>			RunNo: <b>70044</b>						
Prep Date: <b>7/1/2020</b>	Analysis Date: <b>7/1/2020</b>			SeqNo: <b>2433519</b>		Units: <b>%Rec</b>				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.2	55.1	146			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E61

07-Jul-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H (Nov 2015)

Sample ID: <b>mb-53404</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53404</b>	RunNo: <b>70085</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/3/2020</b>	SeqNo: <b>2435295</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		105	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.9	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		104	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Sample ID: <b>lcs-53404</b>	SampType: <b>LCS4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>53404</b>	RunNo: <b>70085</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/2/2020</b>	SeqNo: <b>2435296</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	109	80	120			
Toluene	0.98	0.050	1.000	0	98.0	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.6	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		103	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.8	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		109	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E61

07-Jul-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H (Nov 2015)

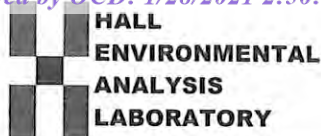
Sample ID: <b>mb-53404</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53404</b>	RunNo: <b>70085</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/3/2020</b>	SeqNo: <b>2435328</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	480		500.0		95.6	70	130			

Sample ID: <b>lcs-53404</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53404</b>	RunNo: <b>70085</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/2/2020</b>	SeqNo: <b>2435329</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	78.0	70	130			
Surr: BFB	500		500.0		101	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



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

## Sample Log-In Check List

Client Name: **Devon Energy**Work Order Number: **2006E61**

RcptNo: 1

Received By: **Juan Rojas**

6/26/2020 4:48:00 PM

*Juan Rojas*Completed By: **Emily Mocho**

6/29/2020 8:37:53 AM

Reviewed By: *LB**6/29/20*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

( $<2$  or  $>12$  unless noted)

Adjusted? ☐

Checked by: *SPA 6.29.20*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.7	Good	Not Present			



<b>Chain-of-Custody Record</b>		Turn-Around Time:
Client: Devon Energy	<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Rush	
ATTN: Tom Bynum	Project Name:	Cotton Draw 1724 (Nov 2015)
Mailing Address: 6488 Seven Rivers Hwy	Project #:	
Artesia, NM 88211		
Phone #: (580) 748-1613		

Client:	Devor Energy
ATTN:	Tom Bynum
Mailing Address:	6488 Seven Rivers Hwy Artesia, NM 88211
Phone #:	(580) 748-1613
email or Fax#:	tom.bynum@devor.com

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

Accreditation: ☐ Az Compliance  
☐ NELAC ☐ Other \_\_\_\_\_

☐ EDD (Type) \_\_\_\_\_

Date	Time	Matrix	Sample Name
9/24/10	1330	Soil	SB5-18



Date:		Time:		Relinquished by:	

2/24/20	1647		Relinquished by: <i>[Signature]</i>	
---------	------	--	-------------------------------------	--

If necessary, samples submitted to Hall Environmental may be submitted to:

Turn-Around Time:	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush
Project Name:	Cotton Draw 172H (Nov 2015)	
Project #:		


Project Manager:	Tom Blyum, Denver
Sampler:	J. Linn, HRL
On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
# of Coolers:	1

Container Type and #	Preservative Type	HEAL No.	Cooler Temp (including CF): 5.7-0-5.7 (°C)
4 oz. jar	None	2006E61 -001	



Received by:	Via:	Date	Time	Page

<p>Received by: <u>10/27/01</u> Via: <u>CSO</u> Date: <u>6/26/00</u> Time: <u>16:45</u></p>
---

 **HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

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

4901 Hawkins NE - Albuquerque, NM 87109

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

[illegible]

Remarks: Please also send copy of report to  
Tut'e Linn jlinn@hrlcomp.com





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

July 08, 2020

Tom Bynum

Devon Energy

6488 Seven Rivers Highway

Artesia, NM 88210

TEL: (575) 748-0176

FAX

RE: Cotton Draw 172H (Nov 2015)

OrderNo.: 2006E55

Dear Tom Bynum:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/26/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2006E55

Date Reported: 7/8/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB1-3

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 12:22:00 PM

Lab ID: 2006E55-001

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	7/1/2020 2:29:13 PM
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/1/2020 2:29:13 PM
Surr: DNOP	91.6	55.1-146		%Rec	1	7/1/2020 2:29:13 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	ND	60		mg/Kg	20	7/1/2020 10:31:50 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JMR</b>
Benzene	ND	0.025		mg/Kg	1	7/2/2020 4:51:34 PM
Toluene	ND	0.050		mg/Kg	1	7/2/2020 4:51:34 PM
Ethylbenzene	ND	0.050		mg/Kg	1	7/2/2020 4:51:34 PM
Xylenes, Total	ND	0.10		mg/Kg	1	7/2/2020 4:51:34 PM
Surr: 1,2-Dichloroethane-d4	109	70-130		%Rec	1	7/2/2020 4:51:34 PM
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	7/2/2020 4:51:34 PM
Surr: Dibromofluoromethane	112	70-130		%Rec	1	7/2/2020 4:51:34 PM
Surr: Toluene-d8	103	70-130		%Rec	1	7/2/2020 4:51:34 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JMR</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/2/2020 4:51:34 PM
Surr: BFB	99.9	70-130		%Rec	1	7/2/2020 4:51:34 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

Page 1 of 10

## Analytical Report

Lab Order 2006E55

Date Reported: 7/8/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB2-3

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 12:37:00 PM

Lab ID: 2006E55-002

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/1/2020 2:39:11 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/1/2020 2:39:11 PM
Surr: DNOP	88.5	55.1-146		%Rec	1	7/1/2020 2:39:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>CAS</b>
Chloride	77	60		mg/Kg	20	7/1/2020 11:33:34 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JMR</b>
Benzene	ND	0.024		mg/Kg	1	7/2/2020 5:20:26 PM
Toluene	ND	0.049		mg/Kg	1	7/2/2020 5:20:26 PM
Ethylbenzene	ND	0.049		mg/Kg	1	7/2/2020 5:20:26 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/2/2020 5:20:26 PM
Surr: 1,2-Dichloroethane-d4	107	70-130		%Rec	1	7/2/2020 5:20:26 PM
Surr: 4-Bromofluorobenzene	96.6	70-130		%Rec	1	7/2/2020 5:20:26 PM
Surr: Dibromofluoromethane	117	70-130		%Rec	1	7/2/2020 5:20:26 PM
Surr: Toluene-d8	100	70-130		%Rec	1	7/2/2020 5:20:26 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JMR</b>
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/2/2020 5:20:26 PM
Surr: BFB	102	70-130		%Rec	1	7/2/2020 5:20:26 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2006E55

Date Reported: 7/8/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB3-2

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 12:47:00 PM

Lab ID: 2006E55-003

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/1/2020 2:49:11 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/1/2020 2:49:11 PM
Surr: DNOP	81.8	55.1-146		%Rec	1	7/1/2020 2:49:11 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>
Chloride	520	60		mg/Kg	20	7/2/2020 2:30:24 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JMR</b>
Benzene	ND	0.024		mg/Kg	1	7/2/2020 5:49:19 PM
Toluene	ND	0.048		mg/Kg	1	7/2/2020 5:49:19 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/2/2020 5:49:19 PM
Xylenes, Total	ND	0.097		mg/Kg	1	7/2/2020 5:49:19 PM
Surr: 1,2-Dichloroethane-d4	104	70-130		%Rec	1	7/2/2020 5:49:19 PM
Surr: 4-Bromofluorobenzene	93.6	70-130		%Rec	1	7/2/2020 5:49:19 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/2/2020 5:49:19 PM
Surr: Toluene-d8	101	70-130		%Rec	1	7/2/2020 5:49:19 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JMR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/2/2020 5:49:19 PM
Surr: BFB	99.8	70-130		%Rec	1	7/2/2020 5:49:19 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

Page 3 of 10

## Analytical Report

Lab Order 2006E55

Date Reported: 7/8/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB4-4

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 12:58:00 PM

Lab ID: 2006E55-004

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: <b>CLP</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/1/2020 2:59:14 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/1/2020 2:59:14 PM
Surr: DNOP	89.0	55.1-146		%Rec	1	7/1/2020 2:59:14 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: <b>MRA</b>
Chloride	71	59		mg/Kg	20	7/2/2020 3:32:27 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: <b>JMR</b>
Benzene	ND	0.024		mg/Kg	1	7/2/2020 6:18:12 PM
Toluene	ND	0.048		mg/Kg	1	7/2/2020 6:18:12 PM
Ethylbenzene	ND	0.048		mg/Kg	1	7/2/2020 6:18:12 PM
Xylenes, Total	ND	0.096		mg/Kg	1	7/2/2020 6:18:12 PM
Surr: 1,2-Dichloroethane-d4	105	70-130		%Rec	1	7/2/2020 6:18:12 PM
Surr: 4-Bromofluorobenzene	95.2	70-130		%Rec	1	7/2/2020 6:18:12 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/2/2020 6:18:12 PM
Surr: Toluene-d8	97.3	70-130		%Rec	1	7/2/2020 6:18:12 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: <b>JMR</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/2/2020 6:18:12 PM
Surr: BFB	95.3	70-130		%Rec	1	7/2/2020 6:18:12 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2006E55

Date Reported: 7/8/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB5-10

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 1:23:00 PM

Lab ID: 2006E55-005

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: CLP
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/1/2020 3:09:18 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/1/2020 3:09:18 PM
Surr: DNOP	84.7	55.1-146		%Rec	1	7/1/2020 3:09:18 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: MRA
Chloride	ND	60		mg/Kg	20	7/2/2020 3:44:52 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: JMR
Benzene	ND	0.025		mg/Kg	1	7/2/2020 6:47:11 PM
Toluene	ND	0.050		mg/Kg	1	7/2/2020 6:47:11 PM
Ethylbenzene	ND	0.050		mg/Kg	1	7/2/2020 6:47:11 PM
Xylenes, Total	ND	0.10		mg/Kg	1	7/2/2020 6:47:11 PM
Surr: 1,2-Dichloroethane-d4	106	70-130		%Rec	1	7/2/2020 6:47:11 PM
Surr: 4-Bromofluorobenzene	96.4	70-130		%Rec	1	7/2/2020 6:47:11 PM
Surr: Dibromofluoromethane	112	70-130		%Rec	1	7/2/2020 6:47:11 PM
Surr: Toluene-d8	99.1	70-130		%Rec	1	7/2/2020 6:47:11 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: JMR
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/2/2020 6:47:11 PM
Surr: BFB	100	70-130		%Rec	1	7/2/2020 6:47:11 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2006E55

Date Reported: 7/8/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: SB5-5

Project: Cotton Draw 172H (Nov 2015)

Collection Date: 6/22/2020 1:17:00 PM

Lab ID: 2006E55-006

Matrix: SOIL

Received Date: 6/26/2020 4:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>						Analyst: JME
Diesel Range Organics (DRO)	760	99		mg/Kg	10	7/2/2020 1:20:45 PM
Motor Oil Range Organics (MRO)	940	490		mg/Kg	10	7/2/2020 1:20:45 PM
Surr: DNOP	0	55.1-146	S	%Rec	10	7/2/2020 1:20:45 PM
<b>EPA METHOD 300.0: ANIONS</b>						Analyst: MRA
Chloride	ND	60		mg/Kg	20	7/2/2020 3:57:16 PM
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>						Analyst: JMR
Benzene	ND	0.025		mg/Kg	1	7/2/2020 7:16:03 PM
Toluene	ND	0.050		mg/Kg	1	7/2/2020 7:16:03 PM
Ethylbenzene	ND	0.050		mg/Kg	1	7/2/2020 7:16:03 PM
Xylenes, Total	ND	0.099		mg/Kg	1	7/2/2020 7:16:03 PM
Surr: 1,2-Dichloroethane-d4	103	70-130		%Rec	1	7/2/2020 7:16:03 PM
Surr: 4-Bromofluorobenzene	92.7	70-130		%Rec	1	7/2/2020 7:16:03 PM
Surr: Dibromofluoromethane	114	70-130		%Rec	1	7/2/2020 7:16:03 PM
Surr: Toluene-d8	101	70-130		%Rec	1	7/2/2020 7:16:03 PM
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>						Analyst: JMR
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/2/2020 7:16:03 PM
Surr: BFB	102	70-130		%Rec	1	7/2/2020 7:16:03 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E55

08-Jul-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H (Nov 2015)

Sample ID: <b>MB-53456</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53456</b>	RunNo: <b>70052</b>								
Prep Date: <b>7/1/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2434259</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-53456</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53456</b>	RunNo: <b>70052</b>								
Prep Date: <b>7/1/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2434260</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	97.3	90	110			

Sample ID: <b>MB-53477</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53477</b>	RunNo: <b>70082</b>								
Prep Date: <b>7/2/2020</b>	Analysis Date: <b>7/2/2020</b>	SeqNo: <b>2436779</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-53477</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53477</b>	RunNo: <b>70082</b>								
Prep Date: <b>7/2/2020</b>	Analysis Date: <b>7/2/2020</b>	SeqNo: <b>2436780</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.8	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E55

08-Jul-20

**Client:** Devon Energy**Project:** Cotton Draw 172H (Nov 2015)

Sample ID: <b>MB-53402</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53402</b>	RunNo: <b>70044</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2433514</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.8		10.00		88.4	55.1	146			

Sample ID: <b>LCS-53402</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53402</b>	RunNo: <b>70044</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2433517</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	99.0	70	130			
Surr: DNOP	4.5		5.000		89.4	55.1	146			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E55

08-Jul-20

**Client:** Devon Energy**Project:** Cotton Draw 172H (Nov 2015)

Sample ID: <b>mb-53394</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53394</b>	RunNo: <b>70075</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2434446</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.3	70	130			
Surr: Dibromofluoromethane	0.54		0.5000		109	70	130			
Surr: Toluene-d8	0.49		0.5000		98.5	70	130			

Sample ID: <b>lcs-53394</b>	SampType: <b>LCS4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>53394</b>	RunNo: <b>70075</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2434447</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	80	120			
Toluene	0.94	0.050	1.000	0	94.3	80	120			
Ethylbenzene	0.98	0.050	1.000	0	98.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 1,2-Dichloroethane-d4	0.53		0.5000		106	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.7	70	130			
Surr: Dibromofluoromethane	0.52		0.5000		105	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2006E55

08-Jul-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H (Nov 2015)

Sample ID: <b>mb-53394</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>53394</b>	RunNo: <b>70075</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2434472</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		99.1	70	130			

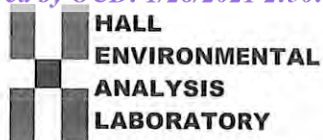
Sample ID: <b>lcs-53394</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>53394</b>	RunNo: <b>70075</b>								
Prep Date: <b>6/29/2020</b>	Analysis Date: <b>7/1/2020</b>	SeqNo: <b>2434473</b> Units: <b>mg/Kg</b>								
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	75.9	70	130			
Surr: BFB	490		500.0		97.9	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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

## Sample Log-In Check List

Client Name: **Devon Energy**Work Order Number: **2006E55**

RcptNo: 1

Received By: **Juan Rojas**

6/26/2020 4:48:00 PM

*Juan Rojas*Completed By: **Emily Mocho**

6/29/2020 8:16:49 AM

Reviewed By: *EM**6/29/20*

### Chain of Custody

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

### Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(<2 or >12 unless noted)

Adjusted? */*

Checked by: *SPAG 6.29.20*

### Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

### 17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.7	Good	Not Present			





## **Attachment C**

### **Photographs**





View of the Site prior to excavation; view to the northeast



View of the northern area of the excavation, looking to the north







View of the southern area of the excavation, looking to the east



View of the western portion of the northern excavation; looking to the west







View of the  
northern area  
of the  
excavation,  
looking to the  
east



View of the  
southern area  
of the  
excavation,  
looking to the  
west







The northern  
area of the  
excavation,  
view to the  
southeast



The northern  
area of the  
excavation,  
view to the  
south







The northern  
area of the  
excavation,  
view to the  
northwest



The northern  
area of the  
excavation,  
view to the  
northwest





The northern  
area of the  
excavation,  
view to the  
northwest







## **Attachment D**

### **Confirmation Samples Analytical Laboratory Report**



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [clients.hallenvironmental.com](http://clients.hallenvironmental.com)

November 13, 2020

Tom Bynum

Devon Energy

6488 Seven Rivers Highway

Artesia, NM 88210

TEL: (505) 350-1336

FAX:

RE: Cotton Draw 172H NOV 2015

OrderNo.: 2011317

Dear Tom Bynum:

Hall Environmental Analysis Laboratory received 17 sample(s) on 11/4/2020 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S1

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 1:51:00 PM

Lab ID: 2011317-001

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	ND	60		mg/Kg	20	11/11/2020 4:07:12 AM	56349
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/8/2020 4:43:07 AM	56243
Surr: BFB	102	70-130		%Rec	1	11/8/2020 4:43:07 AM	56243
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/9/2020 7:03:02 PM	56251
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2020 7:03:02 PM	56251
Surr: DNOP	94.4	30.4-154		%Rec	1	11/9/2020 7:03:02 PM	56251
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	11/8/2020 4:43:07 AM	56243
Toluene	ND	0.047		mg/Kg	1	11/8/2020 4:43:07 AM	56243
Ethylbenzene	ND	0.047		mg/Kg	1	11/8/2020 4:43:07 AM	56243
Xylenes, Total	ND	0.094		mg/Kg	1	11/8/2020 4:43:07 AM	56243
Surr: 1,2-Dichloroethane-d4	90.7	70-130		%Rec	1	11/8/2020 4:43:07 AM	56243
Surr: 4-Bromofluorobenzene	108	70-130		%Rec	1	11/8/2020 4:43:07 AM	56243
Surr: Dibromofluoromethane	97.8	70-130		%Rec	1	11/8/2020 4:43:07 AM	56243
Surr: Toluene-d8	92.5	70-130		%Rec	1	11/8/2020 4:43:07 AM	56243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F1

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 1:54:00 PM

Lab ID: 2011317-002

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	ND	60		mg/Kg	20	11/11/2020 4:19:37 AM	56349
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/8/2020 5:10:22 AM	56243
Surr: BFB	97.2	70-130		%Rec	1	11/8/2020 5:10:22 AM	56243
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.0		mg/Kg	1	11/7/2020 2:06:29 PM	56251
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	11/7/2020 2:06:29 PM	56251
Surr: DNOP	93.4	30.4-154		%Rec	1	11/7/2020 2:06:29 PM	56251
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: DJF
Benzene	ND	0.024		mg/Kg	1	11/8/2020 5:10:22 AM	56243
Toluene	ND	0.048		mg/Kg	1	11/8/2020 5:10:22 AM	56243
Ethylbenzene	ND	0.048		mg/Kg	1	11/8/2020 5:10:22 AM	56243
Xylenes, Total	ND	0.096		mg/Kg	1	11/8/2020 5:10:22 AM	56243
Surr: 1,2-Dichloroethane-d4	91.2	70-130		%Rec	1	11/8/2020 5:10:22 AM	56243
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	11/8/2020 5:10:22 AM	56243
Surr: Dibromofluoromethane	97.0	70-130		%Rec	1	11/8/2020 5:10:22 AM	56243
Surr: Toluene-d8	93.4	70-130		%Rec	1	11/8/2020 5:10:22 AM	56243

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F2

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:00:00 PM

Lab ID: 2011317-003

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: CAS
Chloride	ND	60		mg/Kg	20	11/11/2020 4:32:02 AM	56349
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	26	9.6		mg/Kg	1	11/9/2020 3:59:28 AM	56264
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 3:59:28 AM	56264
Surr: DNOP	121	30.4-154		%Rec	1	11/9/2020 3:59:28 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 1:07:03 AM	56263
Surr: BFB	91.3	75.3-105		%Rec	1	11/9/2020 1:07:03 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/9/2020 1:07:03 AM	56263
Toluene	ND	0.049		mg/Kg	1	11/9/2020 1:07:03 AM	56263
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 1:07:03 AM	56263
Xylenes, Total	ND	0.097		mg/Kg	1	11/9/2020 1:07:03 AM	56263
Surr: 4-Bromofluorobenzene	95.0	80-120		%Rec	1	11/9/2020 1:07:03 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S2

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:03:00 PM

Lab ID: 2011317-004

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/10/2020 10:40:10 PM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	32	9.7		mg/Kg	1	11/9/2020 4:23:15 AM	56264
Motor Oil Range Organics (MRO)	71	48		mg/Kg	1	11/9/2020 4:23:15 AM	56264
Surr: DNOP	93.1	30.4-154		%Rec	1	11/9/2020 4:23:15 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/9/2020 1:30:38 AM	56263
Surr: BFB	90.5	75.3-105		%Rec	1	11/9/2020 1:30:38 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/9/2020 1:30:38 AM	56263
Toluene	ND	0.046		mg/Kg	1	11/9/2020 1:30:38 AM	56263
Ethylbenzene	ND	0.046		mg/Kg	1	11/9/2020 1:30:38 AM	56263
Xylenes, Total	ND	0.093		mg/Kg	1	11/9/2020 1:30:38 AM	56263
Surr: 4-Bromofluorobenzene	94.5	80-120		%Rec	1	11/9/2020 1:30:38 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S3

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:07:00 PM

Lab ID: 2011317-005

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/10/2020 11:17:12 PM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	50	9.7		mg/Kg	1	11/9/2020 4:47:05 AM	56264
Motor Oil Range Organics (MRO)	120	48		mg/Kg	1	11/9/2020 4:47:05 AM	56264
Surr: DNOP	151	30.4-154		%Rec	1	11/9/2020 4:47:05 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/9/2020 1:54:09 AM	56263
Surr: BFB	88.9	75.3-105		%Rec	1	11/9/2020 1:54:09 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/9/2020 1:54:09 AM	56263
Toluene	ND	0.047		mg/Kg	1	11/9/2020 1:54:09 AM	56263
Ethylbenzene	ND	0.047		mg/Kg	1	11/9/2020 1:54:09 AM	56263
Xylenes, Total	ND	0.095		mg/Kg	1	11/9/2020 1:54:09 AM	56263
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	1	11/9/2020 1:54:09 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F6

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:11:00 PM

Lab ID: 2011317-006

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	59		mg/Kg	20	11/10/2020 11:54:13 PM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	74	9.5		mg/Kg	1	11/9/2020 5:10:48 AM	56264
Motor Oil Range Organics (MRO)	120	47		mg/Kg	1	11/9/2020 5:10:48 AM	56264
Surr: DNOP	0	30.4-154	S	%Rec	1	11/9/2020 5:10:48 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 2:17:42 AM	56263
Surr: BFB	89.8	75.3-105		%Rec	1	11/9/2020 2:17:42 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	11/9/2020 2:17:42 AM	56263
Toluene	ND	0.049		mg/Kg	1	11/9/2020 2:17:42 AM	56263
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 2:17:42 AM	56263
Xylenes, Total	ND	0.098		mg/Kg	1	11/9/2020 2:17:42 AM	56263
Surr: 4-Bromofluorobenzene	93.8	80-120		%Rec	1	11/9/2020 2:17:42 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F5

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:13:00 PM

Lab ID: 2011317-007

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 12:31:16 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	170	9.4		mg/Kg	1	11/9/2020 5:34:41 AM	56264
Motor Oil Range Organics (MRO)	300	47		mg/Kg	1	11/9/2020 5:34:41 AM	56264
Surr: DNOP	124	30.4-154		%Rec	1	11/9/2020 5:34:41 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 2:41:14 AM	56263
Surr: BFB	89.9	75.3-105		%Rec	1	11/9/2020 2:41:14 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	11/9/2020 2:41:14 AM	56263
Toluene	ND	0.049		mg/Kg	1	11/9/2020 2:41:14 AM	56263
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 2:41:14 AM	56263
Xylenes, Total	ND	0.099		mg/Kg	1	11/9/2020 2:41:14 AM	56263
Surr: 4-Bromofluorobenzene	95.4	80-120		%Rec	1	11/9/2020 2:41:14 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F4

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:17:00 PM

Lab ID: 2011317-008

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 12:43:37 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/9/2020 5:58:25 AM	56264
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2020 5:58:25 AM	56264
Surr: DNOP	120	30.4-154		%Rec	1	11/9/2020 5:58:25 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/9/2020 3:04:33 AM	56263
Surr: BFB	91.3	75.3-105		%Rec	1	11/9/2020 3:04:33 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/9/2020 3:04:33 AM	56263
Toluene	ND	0.048		mg/Kg	1	11/9/2020 3:04:33 AM	56263
Ethylbenzene	ND	0.048		mg/Kg	1	11/9/2020 3:04:33 AM	56263
Xylenes, Total	ND	0.095		mg/Kg	1	11/9/2020 3:04:33 AM	56263
Surr: 4-Bromofluorobenzene	96.1	80-120		%Rec	1	11/9/2020 3:04:33 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F3

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:20:00 PM

Lab ID: 2011317-009

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 12:55:57 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	170	9.8		mg/Kg	1	11/9/2020 6:22:18 AM	56264
Motor Oil Range Organics (MRO)	280	49		mg/Kg	1	11/9/2020 6:22:18 AM	56264
Surr: DNOP	108	30.4-154		%Rec	1	11/9/2020 6:22:18 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/9/2020 10:39:42 AM	56263
Surr: BFB	90.0	75.3-105		%Rec	1	11/9/2020 10:39:42 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/9/2020 10:39:42 AM	56263
Toluene	ND	0.046		mg/Kg	1	11/9/2020 10:39:42 AM	56263
Ethylbenzene	ND	0.046		mg/Kg	1	11/9/2020 10:39:42 AM	56263
Xylenes, Total	ND	0.093		mg/Kg	1	11/9/2020 10:39:42 AM	56263
Surr: 4-Bromofluorobenzene	95.9	80-120		%Rec	1	11/9/2020 10:39:42 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S4

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:23:00 PM

Lab ID: 2011317-010

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 1:08:17 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	580	95		mg/Kg	10	11/9/2020 7:19:50 AM	56264
Motor Oil Range Organics (MRO)	840	480		mg/Kg	10	11/9/2020 7:19:50 AM	56264
Surr: DNOP	0	30.4-154	S	%Rec	10	11/9/2020 7:19:50 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/9/2020 11:03:22 AM	56263
Surr: BFB	94.3	75.3-105		%Rec	1	11/9/2020 11:03:22 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/9/2020 11:03:22 AM	56263
Toluene	ND	0.047		mg/Kg	1	11/9/2020 11:03:22 AM	56263
Ethylbenzene	ND	0.047		mg/Kg	1	11/9/2020 11:03:22 AM	56263
Xylenes, Total	ND	0.094		mg/Kg	1	11/9/2020 11:03:22 AM	56263
Surr: 4-Bromofluorobenzene	99.8	80-120		%Rec	1	11/9/2020 11:03:22 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S5

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:26:00 PM

Lab ID: 2011317-011

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 1:20:37 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	570	91		mg/Kg	10	11/9/2020 7:43:38 AM	56264
Motor Oil Range Organics (MRO)	790	450		mg/Kg	10	11/9/2020 7:43:38 AM	56264
Surr: DNOP	0	30.4-154	S	%Rec	10	11/9/2020 7:43:38 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	11/9/2020 11:27:04 AM	56263
Surr: BFB	92.3	75.3-105		%Rec	1	11/9/2020 11:27:04 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	11/9/2020 11:27:04 AM	56263
Toluene	ND	0.050		mg/Kg	1	11/9/2020 11:27:04 AM	56263
Ethylbenzene	ND	0.050		mg/Kg	1	11/9/2020 11:27:04 AM	56263
Xylenes, Total	ND	0.10		mg/Kg	1	11/9/2020 11:27:04 AM	56263
Surr: 4-Bromofluorobenzene	96.4	80-120		%Rec	1	11/9/2020 11:27:04 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F7

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:34:00 PM

Lab ID: 2011317-012

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 1:32:59 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	11/9/2020 8:07:31 AM	56264
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/9/2020 8:07:31 AM	56264
Surr: DNOP	115	30.4-154		%Rec	1	11/9/2020 8:07:31 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 11:50:39 AM	56263
Surr: BFB	92.6	75.3-105		%Rec	1	11/9/2020 11:50:39 AM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	11/9/2020 11:50:39 AM	56263
Toluene	ND	0.049		mg/Kg	1	11/9/2020 11:50:39 AM	56263
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 11:50:39 AM	56263
Xylenes, Total	ND	0.099		mg/Kg	1	11/9/2020 11:50:39 AM	56263
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	11/9/2020 11:50:39 AM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: F8

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:36:00 PM

Lab ID: 2011317-013

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	88	60		mg/Kg	20	11/11/2020 1:45:19 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	210	9.7		mg/Kg	1	11/9/2020 8:31:19 AM	56264
Motor Oil Range Organics (MRO)	250	48		mg/Kg	1	11/9/2020 8:31:19 AM	56264
Surr: DNOP	118	30.4-154		%Rec	1	11/9/2020 8:31:19 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/9/2020 12:14:13 PM	56263
Surr: BFB	90.6	75.3-105		%Rec	1	11/9/2020 12:14:13 PM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/9/2020 12:14:13 PM	56263
Toluene	ND	0.046		mg/Kg	1	11/9/2020 12:14:13 PM	56263
Ethylbenzene	ND	0.046		mg/Kg	1	11/9/2020 12:14:13 PM	56263
Xylenes, Total	ND	0.092		mg/Kg	1	11/9/2020 12:14:13 PM	56263
Surr: 4-Bromofluorobenzene	96.5	80-120		%Rec	1	11/9/2020 12:14:13 PM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S6

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:41:00 PM

Lab ID: 2011317-014

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 2:22:20 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	770	94		mg/Kg	10	11/9/2020 8:55:20 AM	56264
Motor Oil Range Organics (MRO)	850	470		mg/Kg	10	11/9/2020 8:55:20 AM	56264
Surr: DNOP	0	30.4-154	S	%Rec	10	11/9/2020 8:55:20 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	11/9/2020 12:37:40 PM	56263
Surr: BFB	91.8	75.3-105		%Rec	1	11/9/2020 12:37:40 PM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.025		mg/Kg	1	11/9/2020 12:37:40 PM	56263
Toluene	ND	0.049		mg/Kg	1	11/9/2020 12:37:40 PM	56263
Ethylbenzene	ND	0.049		mg/Kg	1	11/9/2020 12:37:40 PM	56263
Xylenes, Total	ND	0.099		mg/Kg	1	11/9/2020 12:37:40 PM	56263
Surr: 4-Bromofluorobenzene	98.0	80-120		%Rec	1	11/9/2020 12:37:40 PM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S7

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:43:00 PM

Lab ID: 2011317-015

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 2:34:41 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	11/9/2020 9:19:18 AM	56264
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/9/2020 9:19:18 AM	56264
Surr: DNOP	119	30.4-154		%Rec	1	11/9/2020 9:19:18 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	11/9/2020 1:01:12 PM	56263
Surr: BFB	96.0	75.3-105		%Rec	1	11/9/2020 1:01:12 PM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.023		mg/Kg	1	11/9/2020 1:01:12 PM	56263
Toluene	ND	0.046		mg/Kg	1	11/9/2020 1:01:12 PM	56263
Ethylbenzene	ND	0.046		mg/Kg	1	11/9/2020 1:01:12 PM	56263
Xylenes, Total	ND	0.093		mg/Kg	1	11/9/2020 1:01:12 PM	56263
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/9/2020 1:01:12 PM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S8

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:46:00 PM

Lab ID: 2011317-016

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	ND	60		mg/Kg	20	11/11/2020 2:47:01 AM	56352
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	11/9/2020 9:43:18 AM	56264
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/9/2020 9:43:18 AM	56264
Surr: DNOP	113	30.4-154		%Rec	1	11/9/2020 9:43:18 AM	56264
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	11/9/2020 2:11:55 PM	56263
Surr: BFB	90.8	75.3-105		%Rec	1	11/9/2020 2:11:55 PM	56263
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: NSB
Benzene	ND	0.024		mg/Kg	1	11/9/2020 2:11:55 PM	56263
Toluene	ND	0.047		mg/Kg	1	11/9/2020 2:11:55 PM	56263
Ethylbenzene	ND	0.047		mg/Kg	1	11/9/2020 2:11:55 PM	56263
Xylenes, Total	ND	0.094		mg/Kg	1	11/9/2020 2:11:55 PM	56263
Surr: 4-Bromofluorobenzene	95.3	80-120		%Rec	1	11/9/2020 2:11:55 PM	56263

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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## Analytical Report

Lab Order 2011317

Date Reported: 11/13/2020

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy

Client Sample ID: S9

Project: Cotton Draw 172H NOV 2015

Collection Date: 11/3/2020 2:48:00 PM

Lab ID: 2011317-017

Matrix: SOIL

Received Date: 11/4/2020 4:20:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 300.0: ANIONS</b>							Analyst: JMT
Chloride	230	60		mg/Kg	20	11/11/2020 2:59:22 AM	56352
<b>EPA METHOD 8015D MOD: GASOLINE RANGE</b>							Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	11/10/2020 5:52:52 PM	56268
Surr: BFB	106	70-130		%Rec	1	11/10/2020 5:52:52 PM	56268
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: BRM
Diesel Range Organics (DRO)	840	91		mg/Kg	10	11/8/2020 6:30:34 PM	56273
Motor Oil Range Organics (MRO)	800	460		mg/Kg	10	11/8/2020 6:30:34 PM	56273
Surr: DNOP	0	30.4-154	S	%Rec	10	11/8/2020 6:30:34 PM	56273
<b>EPA METHOD 8260B: VOLATILES SHORT LIST</b>							Analyst: JMR
Benzene	ND	0.024		mg/Kg	1	11/10/2020 5:52:52 PM	56268
Toluene	ND	0.048		mg/Kg	1	11/10/2020 5:52:52 PM	56268
Ethylbenzene	ND	0.048		mg/Kg	1	11/10/2020 5:52:52 PM	56268
Xylenes, Total	ND	0.096		mg/Kg	1	11/10/2020 5:52:52 PM	56268
Surr: 1,2-Dichloroethane-d4	95.9	70-130		%Rec	1	11/10/2020 5:52:52 PM	56268
Surr: 4-Bromofluorobenzene	106	70-130		%Rec	1	11/10/2020 5:52:52 PM	56268
Surr: Dibromofluoromethane	105	70-130		%Rec	1	11/10/2020 5:52:52 PM	56268
Surr: Toluene-d8	96.0	70-130		%Rec	1	11/10/2020 5:52:52 PM	56268

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>MB-56349</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56349</b>	RunNo: <b>73261</b>								
Prep Date: <b>11/10/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2577813</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-56349</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56349</b>	RunNo: <b>73261</b>								
Prep Date: <b>11/10/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2577814</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.8	90	110			

Sample ID: <b>MB-56352</b>	SampType: <b>mblk</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56352</b>	RunNo: <b>73264</b>								
Prep Date: <b>11/10/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578015</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: <b>LCS-56352</b>	SampType: <b>lcs</b>	TestCode: <b>EPA Method 300.0: Anions</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56352</b>	RunNo: <b>73264</b>								
Prep Date: <b>11/10/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578016</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>MB-56273</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56273</b>	RunNo: <b>73202</b>								
Prep Date: <b>11/7/2020</b>	Analysis Date: <b>11/8/2020</b>	SeqNo: <b>2574762</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		109	30.4	154			

Sample ID: <b>LCS-56273</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56273</b>	RunNo: <b>73202</b>								
Prep Date: <b>11/7/2020</b>	Analysis Date: <b>11/8/2020</b>	SeqNo: <b>2574763</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.1	70	130			
Surr: DNOP	4.7		5.000		94.5	30.4	154			

Sample ID: <b>MB-56251</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56251</b>	RunNo: <b>73202</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/7/2020</b>	SeqNo: <b>2575597</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.4		10.00		83.6	30.4	154			

Sample ID: <b>LCS-56251</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56251</b>	RunNo: <b>73202</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/7/2020</b>	SeqNo: <b>2575598</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.3	70	130			
Surr: DNOP	3.8		5.000		76.0	30.4	154			

Sample ID: <b>LCS-56264</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56264</b>	RunNo: <b>73215</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/9/2020</b>	SeqNo: <b>2575880</b>			Units: <b>mg/Kg</b>					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	50.00	0	115	70	130			
Surr: DNOP	5.0		5.000		100	30.4	154			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>MB-56264</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56264</b>	RunNo: <b>73215</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/9/2020</b>	SeqNo: <b>2575883</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		107	30.4	154			

Sample ID: <b>LCS-56300</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56300</b>	RunNo: <b>73215</b>								
Prep Date: <b>11/9/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2577615</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	3.6		5.000		71.9	30.4	154			

Sample ID: <b>MB-56300</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015M/D: Diesel Range Organics</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56300</b>	RunNo: <b>73215</b>								
Prep Date: <b>11/9/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2577617</b>	Units: <b>%Rec</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	7.9		10.00		79.4	30.4	154			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>mb-56263</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56263</b>	RunNo: <b>73203</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/8/2020</b>	SeqNo: <b>2574831</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	920		1000		91.8	75.3	105			

Sample ID: <b>lcs-56263</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56263</b>	RunNo: <b>73203</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/8/2020</b>	SeqNo: <b>2574832</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	84.6	72.5	106			
Surr: BFB	1000		1000		104	75.3	105			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

Page 21 of 25

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy  
**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>mb-56263</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56263</b>	RunNo: <b>73203</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/8/2020</b>	SeqNo: <b>2575006</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.7	80	120			

Sample ID: <b>LCS-56263</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8021B: Volatiles</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56263</b>	RunNo: <b>73203</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/8/2020</b>	SeqNo: <b>2575007</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.3	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.0	0.050	1.000	0	99.5	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.3	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.2	80	120			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>mb-56243</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56243</b>	RunNo: <b>73196</b>								
Prep Date: <b>11/5/2020</b>	Analysis Date: <b>11/7/2020</b>	SeqNo: <b>2574658</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.46		0.5000		92.3	70	130			
Surr: 4-Bromofluorobenzene	0.52		0.5000		104	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		97.0	70	130			
Surr: Toluene-d8	0.48		0.5000		95.6	70	130			

Sample ID: <b>lcs-56243</b>	SampType: <b>LCS4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>56243</b>	RunNo: <b>73196</b>								
Prep Date: <b>11/5/2020</b>	Analysis Date: <b>11/7/2020</b>	SeqNo: <b>2574659</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 1,2-Dichloroethane-d4	0.48		0.5000		96.0	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		109	70	130			
Surr: Dibromofluoromethane	0.49		0.5000		98.8	70	130			
Surr: Toluene-d8	0.48		0.5000		96.2	70	130			

Sample ID: <b>lcs-56268</b>	SampType: <b>LCS4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>BatchQC</b>	Batch ID: <b>56268</b>	RunNo: <b>73273</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578399</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	114	80	120			
Toluene	0.97	0.050	1.000	0	97.4	80	120			
Ethylbenzene	0.96	0.050	1.000	0	95.8	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.2	80	120			
Surr: 1,2-Dichloroethane-d4	0.51		0.5000		102	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		110	70	130			
Surr: Dibromofluoromethane	0.55		0.5000		111	70	130			
Surr: Toluene-d8	0.47		0.5000		93.7	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

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**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>mb-56268</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56268</b>	RunNo: <b>73273</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578400</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzene	0.55		0.5000		110	70	130			
Surr: Dibromofluoromethane	0.53		0.5000		107	70	130			
Surr: Toluene-d8	0.47		0.5000		94.8	70	130			

Sample ID: <b>2011317-017ams</b>	SampType: <b>MS4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>S9</b>	Batch ID: <b>56268</b>	RunNo: <b>73273</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578402</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9804	0	110	71.1	115			
Toluene	1.0	0.049	0.9804	0	104	79.6	132			
Ethylbenzene	1.0	0.049	0.9804	0	103	83.8	134			
Xylenes, Total	3.0	0.098	2.941	0	101	82.4	132			
Surr: 1,2-Dichloroethane-d4	0.48		0.4902		97.5	70	130			
Surr: 4-Bromofluorobenzene	0.54		0.4902		110	70	130			
Surr: Dibromofluoromethane	0.52		0.4902		106	70	130			
Surr: Toluene-d8	0.48		0.4902		97.9	70	130			

Sample ID: <b>2011317-017amsd</b>	SampType: <b>MSD4</b>	TestCode: <b>EPA Method 8260B: Volatiles Short List</b>								
Client ID: <b>S9</b>	Batch ID: <b>56268</b>	RunNo: <b>73273</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578403</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9443	0	107	71.1	115	6.15	20	
Toluene	0.96	0.047	0.9443	0	102	79.6	132	5.81	20	
Ethylbenzene	0.97	0.047	0.9443	0	102	83.8	134	4.83	20	
Xylenes, Total	2.8	0.094	2.833	0	98.5	82.4	132	6.17	20	
Surr: 1,2-Dichloroethane-d4	0.45		0.4721		95.4	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.50		0.4721		105	70	130	0	0	
Surr: Dibromofluoromethane	0.49		0.4721		104	70	130	0	0	
Surr: Toluene-d8	0.45		0.4721		95.9	70	130	0	0	

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit

**QC SUMMARY REPORT****Hall Environmental Analysis Laboratory, Inc.**

WO#: 2011317

13-Nov-20

**Client:** Devon Energy**Project:** Cotton Draw 172H NOV 2015

Sample ID: <b>mb-56243</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56243</b>	RunNo: <b>73196</b>								
Prep Date: <b>11/5/2020</b>	Analysis Date: <b>11/7/2020</b>	SeqNo: <b>2574698</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		99.8	70	130			

Sample ID: <b>lcs-56243</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56243</b>	RunNo: <b>73196</b>								
Prep Date: <b>11/5/2020</b>	Analysis Date: <b>11/7/2020</b>	SeqNo: <b>2574699</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.0	70	130			
Surr: BFB	510		500.0		102	70	130			

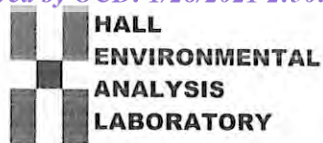
Sample ID: <b>lcs-56268</b>	SampType: <b>LCS</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>LCSS</b>	Batch ID: <b>56268</b>	RunNo: <b>73273</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578419</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	19	5.0	25.00	0	77.4	70	130			
Surr: BFB	510		500.0		102	70	130			

Sample ID: <b>mb-56268</b>	SampType: <b>MBLK</b>	TestCode: <b>EPA Method 8015D Mod: Gasoline Range</b>								
Client ID: <b>PBS</b>	Batch ID: <b>56268</b>	RunNo: <b>73273</b>								
Prep Date: <b>11/6/2020</b>	Analysis Date: <b>11/10/2020</b>	SeqNo: <b>2578420</b>	Units: <b>mg/Kg</b>							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	500		500.0		100	70	130			

**Qualifiers:**

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
PQL Practical Quantitative Limit  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Limit



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

## Sample Log-In Check List

Client Name: Devon Energy

Work Order Number: 2011317

RcptNo: 1

Received By: Erin Melendrez

11/4/2020 4:20:00 PM

Completed By: Isaiah Ortiz

11/5/2020 11:44:30 AM

Reviewed By: *IO**11/5/20**IO*Chain of Custody

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

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace  $<1/4"$  for AQ VOA? Yes ☐ No ☐ NA ☒
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH:

(&lt;2 or &gt;12 unless noted)

Adjusted?

Checked by: *ENM 11/5/20*Special Handling (if applicable)

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

Person Notified: \_\_\_\_\_

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

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	7.3	Good	Not Present			
2	5.9	Good	Not Present			







# Chain-of-Custody Record

Client: Devon Energy  
Attn: Tom Bynum  
Mailing Address: 6488 Seven Rivers Hwy  
Artesia, NM 88210  
Phone #: (505) 748-1613  
email or Fax#: tom.bynum@devon.com

QA/QC Package:	<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Level 4 (Full Validation)
Accreditation:	<input type="checkbox"/> Az Compliance	
<input type="checkbox"/> NELAC	<input type="checkbox"/> Other _____	
<input type="checkbox"/> EDD (Type)		

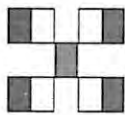
Date	Time	Matrix	Sample Name
11/3/20	1436	Soil	F8
	1441		S6
	1443		S7
	1446		S8
→	1448	✓	S9

[illegible]

Turn-Around Time:	5-day oil & Gas
<input checked="" type="checkbox"/> Standard	<input type="checkbox"/> Rush
Project Name:	Cotton Daw 172H (Nov 2015)
Project #:	wo# 20837867

Project Manager:	Tom Bynum
Sampler:	J. Linn, HRL
On Ice:	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
# of Coolers:	2
Cooler Temp (including CF):	1.3 FOC(F) = 1.3 (°C)

Container Type and #	Preservative Type	HEAL No.
1-4021AR	NONE	013
		014
		015
		016
		017

[illegible]

## HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

## Analysis Request

[illegible]

Remarks:

please also send report to:  
jlinn@hrlcomp.com



**Attachment E**  
**Soil Disposal Manifests**



Permian Basin

Customer: DEVON ENERGY PRODUCTION  
 Customer #: CRI2450  
 Ordered by: AMANDA DAVIS  
 AFE #: 20837067  
 PO #: 20837067  
 Manifest #: 208823  
 Manif. Date: 11/3/2020  
 Hauler: Halo Services  
 Driver: JESUS  
 Truck #: T-35  
 Card #  
 Job Ref #

Ticket #: 700-1173688  
 Bid #: O6UJ9A000GEV  
 Date: 11/3/2020  
 Generator: DEVON ENERGY PRODUCTION  
 Generator #: 42426  
 Well Ser. #: 42426  
 Well Name: COTTON DRAW UNIT  
 Well #: 172H  
 Field:  
 Field #:  
 Rig: NON-DRILLING  
 County: EDDY (NM)

Facility: CRI

Product/Service	Quantity Units									
Contaminated Soil (RCRA Exempt)	12.00 yards									
	Cell	pH	Cl	Cond.	%Solids	TDS	PCI/GM	MR/HR	H2S	% Oil Weight
Lab Analysis:	50/51	0.00	0.00	0.00	0					

**Generator Certification Statement of Waste Status**

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

- ☒ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste  
☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):  
☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/ Agent Signature

R360 Representative Signature

Customer Approval

**THIS IS NOT AN INVOICE!**

Approved By: \_\_\_\_\_

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



## TEXAS NON-HAZARDOUS OILFIELD WASTE MANIFEST

(PLEASE PRINT)

\*REQUIRED INFORMATION\*

Company Man Contact Information

Name AmendaPhone No. 915

## GENERATOR

NO. 208823

Operator No. \_\_\_\_\_

Operators Name Devon EnergyAddress 6488 Severn Rivers HwyArtesia N.M. 87211

City, State, Zip \_\_\_\_\_

Phone No. 575 748-2663

Permit/RRC No.

Lease/Well

Name &amp; No.

County

API No.

Rig Name &amp; No.

AFE/PO No.

Cotton Draw 17214Lea30-015-42426WOB 20837067

## EXEMPT E&amp;P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)

Oil Based Muds	NON-INJECTABLE WATERS	OTHER EXEMPT WASTES (type and generation process of the waste)
Oil Based Cuttings	Washout Water (Non-Injectable)	
Water Based Muds	Completion Fluid/Flow back (Non-Injectable)	
Water Based Cuttings	Produced Water (Non-Injectable)	
Produced Formation Solids	Gathering Line Water/Waste (Non-Injectable)	
Tank Bottoms	INTERNAL USE ONLY	
E&P Contaminated Soil	Truck Washout (exempt waste)	
Gas Plant Waste		

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

## NON-EXEMPT E&amp;P Waste/Service Identification and Amount

All non-exempt E&amp;P waste must be analysed and be below the threshold limits for toxicity (TCLP), ignitability, corrosivity and reactivity.

Non-Exempt Other

\*please select from Non-Exempt Waste List on back

QUANTITY 12 B - BARRELS Y - YARDS E - EACH

I hereby certify that the above listed material(s), is (are) not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulation.

☒ RCRA EXEMPT:

Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per load basis only)

☐ RCRA NON-EXEMPT:

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

☐ MSDS Information☐ RCRA Hazardous Waste Analysis☐ Other (Provide Description Below)

(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

Transporter's

Name

Address

Phone No.

Halo Services inc  
70CR4980  
Bloomfield N.M. 87413

Driver's Name

Print Name

Phone No.

Truck No.

Jesse M Ruiz  
Jesse M Ruiz  
805-775-0201  
T-35 BD01

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE 11-3-20

DRIVER'S SIGNATURE

DELIVERY DATE 11-3-20

DRIVER'S SIGNATURE

## TRUCK TIME STAMP

IN: \_\_\_\_\_ OUT: \_\_\_\_\_

## DISPOSAL FACILITY

## RECEIVING AREA

Name/No. 50151

Site Name/

Permit No.

Address

Red-Bluff Facility/ STF-0655053-US-Highway-285, Orla, TX 79770

NORM READINGS TAKEN? (Circle One)

YES

NO

Phone No.

432-448-4239

If YES, was reading &gt; 50 micro roentgens? (circle one)

YES

NO

Conductivity (mmhos/cm)

PH

Chemical Analysis (Mg/l)

## TANK BOTTOMS

Feet

Inches

1st Gauge  
2nd Gauge  
Received

BS&amp;W/BBLs Received

Free Water

Total Received

BS&amp;W (%)

I hereby certify that the above load material has been (circle one):

ACCEPTED

DENIED

If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE





Permian Basin

Customer:	DEVON ENERGY PRODUCTION	Ticket #:	700-1173636
Customer #:	CRI2450	Bid #:	O6UJ9A000GEV
Ordered by:	AMANDA DAVIS	Date:	11/3/2020
AFE #:		Generator:	DEVON ENERGY PRODUCTIO
PO #:	20837067	Generator #:	
Manifest #:	208822	Well Ser. #:	42426
Manif. Date:	11/3/2020	Well Name:	COTTON DRAW UNIT
Hauler:	Halo Services	Well #:	172H
Driver:	FELIX	Field:	
Truck #:	T34	Field #:	
Card #:		Rig:	NON-DRILLING
Job Ref #:		County:	EDDY (NM)

Facility: CRI

Product/Service						Quantity Units					
Contaminated Soil (RCRA Exempt)						20.00 yards					
	Cell	pH	Cl	Cond.	%Solids	TDS	PCI/GM	MR/HR	H2S	% Oil	Weight
Lab Analysis:	50/51	0.00	0.00	0.00	0						

**Generator Certification Statement of Waste Status**

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

- ☒ RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste
- ☐ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):
- ☐ MSDS Information ☐ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description above)

Driver/Agent Signature

R360 Representative Signature

Customer Approval

**THIS IS NOT AN INVOICE!**

Approved By: \_\_\_\_\_

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



## TEXAS NON-HAZARDOUS OILFIELD WASTE MANIFEST

(PLEASE PRINT)

\*REQUIRED INFORMATION\*

Company Man Contact Information

Name: ANANDA DAVIS

Phone No: 575 748 2663

## GENERATOR

NO. 208822

Operator No. 1

Operators Name: DEVON ENERGY

Address: 6488 SEVEN RIVERS HWY

ARTOSIA NM 88211

City, State, Zip: 575 748 2663

Phone No. 575 748 2663

Permit/RRC No.

Lease/Well

Name &amp; No. COTTON DRAW 172 H

County: LEA

API No. 36-015-42426

Rlg Name &amp; No. WOH 20837067

AFE/PO No.

## EXEMPT E&amp;P Waste/Service Identification and Amount (place volume next to waste type in barrels or cubic yards)

Oil Based Muds	NON-INJECTABLE WATERS	OTHER EXEMPT WASTES (type and generation process of the waste)
Oil Based Cuttings	Washout Water (Non-Injectable)	
Water Based Muds	Completion Fluid/Flow back (Non-Injectable)	
Water Based Cuttings	Produced Water (Non-Injectable)	
Produced Formation Solids	Gathering Line Water/Waste (Non-Injectable)	
Tank Bottoms	INTERNAL USE ONLY	
E&P Contaminated Soil	Truck Washout (exempt waste)	
Gas Plant Waste		

WASTE GENERATION PROCESS: ☐ DRILLING ☐ COMPLETION ☐ PRODUCTION ☐ GATHERING LINES

## NON-EXEMPT E&amp;P Waste/Service Identification and Amount

All non-exempt E&amp;P waste must be analysed and be below the threshold limits for toxicity (TCLP), ignitability, Corrosivity and Reactivity

Non-Exempt Other: \*please select from Non-Exempt Waste List on back

QUANTITY	B - BARRELS	20	Y - YARDS	E - EACH
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I hereby certify that the above listed material(s), is (are) not a hazardous waste as defined by 40 CFR Part 261 or any applicable state law. That each waste has been properly described, classified and packaged, and is in proper condition for transportation according to applicable regulation.

☒ RCRA EXEMPT: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste (R360 Accepts certifications on a per load basis only)☐ RCRA NON-EXEMPT: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined by 40 CFR, part 261, subpart D, as amended. The following documentation demonstrating the waste as non-hazardous is attached. (Check the appropriate items as provided)☐ MSDS Information☐ RCRA Hazardous Waste Analysis☐ Other (Provide Description Below)

(PRINT) AUTHORIZED AGENTS SIGNATURE

DATE

SIGNATURE

## TRANSPORTER

Transporter's Name: HALO SERVICES INC

Address: 70 CR 4980

BLOOM FIELD NM 87413

Phone No.

Driver's Name: FELIX AIMARAZ

Print Name

Phone No. 915 216 6932

Truck No. 134 B002

I hereby certify that the above named material(s) was/were picked up at the Generator's site listed above and delivered without incident to the disposal facility listed below.

SHIPMENT DATE

DRIVER'S SIGNATURE

DELIVERY DATE

DRIVER'S SIGNATURE

## TRUCK TIME STAMP

IN: OUT:

## DISPOSAL FACILITY

## RECEIVING AREA

Name/No. 50171

Site Name/

Permit No. Red Bluff Facility/ STF-065

Address: 5053 US Highway 285, ORLA, TX 79770

NORM READINGS TAKEN? (Circle One)

YES

NO

Phone No. 432-448-4239

If YES, was reading &gt; 50 micro roentgens? (circle one)

YES

NO

Chloride

Conductivity

pH

Chemical Analysis (Mg/I)

## TANK BOTTOMS

Feet

Inches

1st Gauge

2nd Gauge

Received

BS&amp;W/BBLs Received

Free Water

Total Received

BS&amp;W (%)

I hereby certify that the above load material has been (circle one):

ACCEPTED

DENIED

If denied, why?

NAME (PRINT)

DATE

TITLE

SIGNATURE

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

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

CONDITIONS  
  
Action 16093

CONDITIONS

Operator: DEVON ENERGY PRODUCTION COMPANY, LP 333 West Sheridan Ave. Oklahoma City, OK 73102	OGRID: 6137
	Action Number: 16093
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Closure approved. Site will need to meet the requirements of 19.15.29.13 NMAC when no longer being used for oil and gas operations.	12/28/2022