

August 12, 2020

Vertex Project #: 20E-00141-040

Spill Closure Report:	Fighting Okra 18 Fed Com 1H	
	Unit E, Section 18, Township 26 South, Range 34 East	
	County: Lea	
	API: 30-025-40382	
	Tracking Number: NRM2005653696	
Prepared For:	Devon Energy Production Company	

6488 Seven Rivers Highway Artesia, New Mexico 88210

### New Mexico Oil Conservation Division – District 1 – Hobbs

1625 North French Drive Hobbs, New Mexico 88240

Devon Energy Production Company (Devon) retained Vertex Resource Services Inc. (Vertex) to conduct a spill assessment and remediation for a produced water and oil release that occurred at Fighting Okra 18 Fed Com 1H, API 30-025-40382 (hereafter referred to as "Fighting Okra"). Devon provided immediate notification of the release to New Mexico Oil Conservation Division (NM OCD) District 1 and the Bureau of Land Management (BLM), who owns the property, on February 24, 2020, followed by the initial C-141 Release Notification on February 25, 2020 (Attachment 1). The NM OCD tracking number assigned to this incident is NRM2005653696.

This letter provides a description of the spill assessment and remediation activities, and demonstrates that closure criteria established in 19.15.29.12 *New Mexico Administrative Code* (NMAC; New Mexico Oil Conservation Division, 2018) have been met and all applicable regulations are being followed. This document is intended to serve as the final report to obtain approval from NM OCD and the BLM for closure of this release.

## **Incident Description**

On February 24, 2020, a release occurred at Devon's Fighting Okra site when a hole occurred in the flowline from the wellhead to the Fighting Okra 18 Central Tank Battery (CTB) 2. This incident resulted in the release of approximately 21 barrels (bbls) of produced water and 10 bbls of crude oil onto the surface of the wellpad. Upon discovery of the release, a hydrovac truck was dispatched to the site to recover free liquids. Approximately 8 bbls of produced water and 8 bbls of oil were recovered and removed for disposal off-site. No oil or produced water were released off-lease or into undisturbed areas or waterways.

## **Site Characterization**

The release at Fighting Okra occurred on federally-owned land, N 32.043629, W 103.516126, approximately 20 miles west-southwest of Jal, New Mexico. The legal description for the site is Unit E, Section 18, Township 26 South, Range 34 East, Lea County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are vertex.ca

Devon Energy Production Company Fighting Okra 18 Fed Com 1H

included in Attachment 2.

Fighting Okra is typical of oil and gas exploration and production sites in the western portion of the Permian Basin, and is currently used for oil and gas production, and storage. The following sections specifically describe the area around the western portion of the constructed wellpad where the storage tanks are located.

The surrounding landscape has historically been associated with upland plains, dunes and fan piedmonts. The climate is semi-arid, with average annual precipitation ranging between 8 and 13 inches. The plant community has historically been dominated by black grama, dropseed grass species and bluestems, with scattered shinnery oak and sand sage. Litter and, to a lesser extent, bare ground comprise a significant portion of the ground cover (United States Department of Agriculture, Natural Resources Conservation Service, 2020). Limited to no vegetation is allowed to grow on the compacted wellpad.

The Geological Map of New Mexico indicates the surface geology at Fighting Okra is comprised primarily of Qep – Eolian and piedmont deposits (Holocene to middle Pleistecene) characterized by interlaid eolian sand and piedmont deposits (New Mexico Bureau of Geology and Mineral Resources, 2020). The National Resources Conservation Service Web Soil Survey characterizes the soil at the site as Pyote and Maljamar fine sands, which are associated with sandy eolian deposits derived from sedimentary rock. This type of soil, typically found at elevations of 3,000 to 3,900 feet above sea level, tends to be well-drained with negligible runoff and low available moisture in the soil profile (United States Department of Agriculture, Natural Resources Conservation Service, 2020). There is low potential for karst geology to be present near Fighting Okra (United States Department of the Interior, Bureau of Land Management, 2020).

There is no surface water located at Fighting Okra. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is a draw located approximately 0.91 miles northeast of the site (New Mexico Office of the State Engineer, Interstate Stream Commission, 2020). At Fighting Okra, there are no continuously flowing watercourses or significant watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest groundwater well is a New Mexico Office of the State Engineer well from 1949, located 0.85 miles north of the site. Data for that well shows a depth to groundwater at 200 feet below ground surface (bgs; New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

### **Closure Criteria Determination**

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release is subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Based on data included in the closure criteria determination worksheet, the release at Fighting Okra is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC. As the nearest groundwater well is farther than a ½-mile from the release site, the depth to groundwater at Fighting Okra cannot be accurately determined and the closure criteria for the site are determined to be associated with the following constituent concentration limits.

### **Devon Energy Production Company**

Fighting Okra 18 Fed Com 1H

Table 1. Closure Criteria for Soils Impacted by a Release		
Depth to Groundwater	Constituent	Limit
	Chloride	600 mg/kg
	TPH <sup>1</sup>	100 mg/kg
< 50 feet	(GRO + DRO + MRO)	100 mg/ kg
	BTEX <sup>2</sup>	50 mg/kg
	Benzene	10 mg/kg

<sup>1</sup>Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO) <sup>2</sup>Benzene, toluene, ethylbenzene and xylenes (BTEX)

## **Remedial Actions**

An initial spill inspection, completed by Vertex on March 18, 2020, identified and mapped the boundaries of the release area using field screening methods, including a photoionization detector (PID) to determine the presence of volatile organics, the Petroflag system to estimate the level of hydrocarbons and an electroconductivity (EC) meter to approximate chloride levels in the soil. Using initial soil sampling laboratory data as presented in Table 2 (Attachment 4), the release area was delineated as presented on Figure 1 (Attachment 2). The impacted area was determined to be approximately 167 feet long and 72 feet wide; the total affected area was determined to be approximately 8,538 square feet. The Daily Field Report (DFR) associated with the initial spill inspection and site characterization is included in Attachment 5.

On June 8, 2020, Vertex provided 48-hour notification of confirmatory sampling to NM OCD and the BLM, as required by Subparagraph (a) of Paragraph (1) of Subsection D 19.15.29.12 NMAC (Attachment 6). Remediation occurred between June 9 and 10, 2020, with a Vertex representative on-site to guide excavation and determine the final horizontal and vertical extents of the excavation area as presented on Figure 2 (Attachment 2). Contaminated soils were removed to an average depth of approximately 0.5 feet bgs across the release footprint. On June 11, 2020, Vertex was on-site to conduct confirmatory sampling. A total of 29 five-point composite samples was collected from the base and side walls of the excavation area. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NM OCD approval. The confirmatory samples were placed into laboratory provided containers, preserved on ice and submitted to a National Environmental Laboratory Accreditation Program-approved laboratory for chemical analysis.

Laboratory analyses included Method 300.0 for chlorides, Method 8021B for volatile organics, including BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO. Confirmatory sampling analytical data are summarized in Table 3 (Attachment 4). Laboratory data reports and chain of custody forms are included in Attachment 7.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, was used to map the approximate center of each of the five-point composite samples. The confirmatory sample locations are presented on Figure 2 (Attachment 2). Relevant equipment and prominent features/reference points at the site are mapped as well.

## **Closure Request**

Vertex recommends no additional remediation action to address the release at Fighting Okra. Laboratory analyses of the confirmatory samples showed constituent of concern concentration levels below NM OCD Closure Criteria for areas vertex.ca

**Devon Energy Production Company** Fighting Okra 18 Fed Com 1H

where depth to groundwater is undetermined, or less than 50 feet bgs, as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

The excavation was backfilled with non-waste-containing, uncontaminated earthen material, sourced locally, and placed to meet the site's existing grade to prevent ponding of water and erosion.

Vertex requests that this incident (NRM2005653696) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. Devon certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the February 24, 2020, release at Fighting Okra.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 505.506.0040 or ngordon@vertex.ca.

Sincerely,

atalie fordon

Natalie Gordon PROJECT MANAGER

## Attachments

- Attachment 1. NM OCD C 141 Report
- Attachment 2. Figures
- Attachment 3. Closure Criteria for Soils Impacted by a Release Determination Documentation
- Attachment 4. Characterization and Confirmatory Sampling Laboratory Results Data Tables
- Attachment 5. Daily Field Report(s) with Photographs
- Attachment 6. Required 48-hr Notification of Confirmation Sampling to Regulatory Agencies
- Attachment 7. Laboratory Data Reports/Chain of Custody Forms

### References

- New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu.
- New Mexico Office of the State Engineer, Interstate Stream Commission. (2020). OSE POD Locations. Retrieved from https://gis.ose.state.nm.us/gisapps/ose\_pod\_locations/.
- New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System. (2020). *Water Column/Average* Depth to Water Report. Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html.
- New Mexico Oil Conservation Division. (2018). *New Mexico Administrative Code Natural Resources and Wildlife Oil and Gas Releases*. Santa Fe, New Mexico.
- United States Department of Agriculture, Natural Resources Conservation Service. (2020). *Web Soil Survey*. Retrieved from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.
- United States Department of the Interior, Bureau of Land Management. (2020). *New Mexico Cave/Karsts*. Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico.

2020 Spill Assessment and Closure August 2020

### Limitations

This report has been prepared for the sole benefit of Devon Energy Production Company (Devon). This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and Devon. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

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# **ATTACHMENT 1**

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

State of New Mexico Energy Minerals and Natural **Resources Department** 

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

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Revised August 24, 2018 Submit to appropriate OCD District office

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Incident ID	NRM2005653696
District RP	
Facility ID	
Application ID	

# **Release Notification**

## **Responsible Party**

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

## **Location of Release Source**

Latitude	Longitude	
(NAD 83 in decimal de	egrees to 5 decimal places)	
Site Name	Site Type	
Date Release Discovered	API# (if applicable)	

Unit Letter	Section	Township	Range	County

Surface Owner: State Federal Tribal Private (Name:

## **Nature and Volume of Release**

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

Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	Yes No
Condensate	Volume Released (bbls)	Volume Recovered (bbls)
Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release		

## Oil Conservation Division

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Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?	If YES, for what reason(s) does the responsible party consider this a major release?
Yes No	
If YES, was immediate no	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

## **Initial Response**

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

The source of the release has been stopped.

The impacted area has been secured to protect human health and the environment.

Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.

All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

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

Printed Name:	Title:
Signature: <u>Kendra DeHoyos</u>	Date:
email:	Telephone:
OCD Only	
Received by: <u>Ramona Marcus</u>	Date: 02/25/2020

Received by	OCD: 8/18/2020	7:56:45 A Page 10 of 126
Inputs in blue, Outputs in red		
Col	ntaminated Soil	measurement
Area (square feet)		Depth(inches)
480	00	0.250
Cubic Feet of Soil Impacted		100.000
Barrels of Soil Impacted		17.83
Soil Type		Clay
Barrels of Oil Assuming 100% Saturation		<u>1.78</u>
Saturation	Saturation Fluid present with shovel/backhoe	
Estimated Barrels of Oil Released		1.78
Free Standing Fluid Only		
Area (square feet)		Depth(inches)
4800		<u>0.420</u>
Standing fluid		<u>29.947</u>
. Total fluids spilled		<u>31.729</u> .

Received by OCD: 8/18/2020 7:56:45 AM Form C-141 State of New Mexico

Oil Conservation Division

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# Site Assessment/Characterization

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

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

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

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

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

Page 3

Received by OCD:	: 8/18/2020 7:56:45 AM			Page 12 of 12
Form C-141	State of New Mexic		Incident ID	NRM2005653696
Page 4	Oil Conservation Divi	sion	District RP	
			Facility ID	
			Application ID	
regulations all of public health or failed to adequat addition, OCD a and/or regulation Printed Name:	perators are required to report and/or file certain re the environment. The acceptance of a C-141 repor tely investigate and remediate contamination that p acceptance of a C-141 report does not relieve the op ns. 	lease notifications and perf t by the OCD does not reli- ose a threat to groundwater perator of responsibility for 	orm corrective actions for i eve the operator of liability r, surface water, human hea compliance with any other EHS Consultant	releases which may endanger should their operations have lth or the environment. In federal, state, or local laws
Signature:	Tom Bynum	Date:	8/14/2020	
email <u>:</u>	tom.bynum@dvn.com	Telephone:	575-748-3371	
OCD Only Received by:		Date:		

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Oil Conservation Division

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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.

<u>Closure Report Attachment Checklist</u>: Each of the following items must be included in the closure report.

X A scaled site and sampling diagram as described in 19.15.29.11 NMAC

X 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)

X Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

X 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:	Tom Bynum	Title:	EHS Consultant									
Signature:	Tom Bynum	Date:	8/14/2020									
email:	U tom.bynum@dvn.com	<u> </u>	575-748-3371									
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 Approv	red by:	Date:										
Printed Name		Title										

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# **ATTACHMENT 2**



Geospatial data presented in this figure may be derived from external sources and Vertex does not assume any liability for naccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes. Note: Imagery from Google, 2019.



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# **ATTACHMENT 3**

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Closure C	riteria Determination Worksheet		
Site Name	e: Fighting Okra 18 Fed Com 1H		
Spill Coor	dinates:	X: 640075.69	Y: 3546219.69
Site Speci	fic Conditions	Value	Unit
1	Depth to Groundwater	159	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	12,532	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	4,796	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	8,898	feet
5	<ul> <li>i) Within 500 feet of a spring or a private, domestic</li> <li>fresh water well used by less than five households for</li> <li>domestic or stock watering purposes, or</li> </ul>	12,877	feet
	ii) Within 1000 feet of any fresh water well or spring		feet
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)
7	Within 300 feet of a wetland	3,987	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)		Critical High Medium Low
10	Within a 100-year Floodplain	No	year
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	>100'	<50' 51-100' >100'

## Received by OCD: 8/18/2020 7:56:45 AM Fighting Okra 18 Fed 1

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USGS Well 320419103302201 Distance to Well: 2.39 miles DTGW 360 ft

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# 320419103302201

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# 320419103302202

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Land I

P.F.

Fighting Okra 18 Fed 1

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Google Earth



# New Mexico Office of the State Engineer Wells with Well Log Information

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD has been replaced O=orphaned, C=the file is closed)	J,	(quarters (q	are 1: uarter	=NV rs ar	V 2=N re sm	NE 3= nallest	=SW 4=SE t to largest	) ) (NA	ND83 UTM in me	eters)				(in fe	et)	
POD Number	POD Sub- Code basin C	County	v Source	q q 6416	q 6 4	Sec	Tws	Rng	x	Y	Distance \$	Start Date	Finish Date	Log File e Date	Depth Well	Depth Water Driller	License Number
C 03441 POD1	С	LE	Shallow	4 1	2	06	26S	34E	640971	3550039 🌍	3925 (	05/03/2010	05/03/2010	05/17/2010	250	EADES, ALAN	1044
C 03442 POD1	С	LE	Shallow	4 1	2	06	26S	34E	641056	3550028 🌍	3935 (	05/03/2010	05/03/2010	05/17/2010	251	EADES, ALAN	1044
<u>C 02270</u>	CUB	LE	Shallow	11	2	27	26S	33E	636063	3543722 🌍	4717 (	08/28/1992	12/31/1910	10/28/1992	150	125 UNKNOWN	208
C 03577 POD1	CUB	LE	Shallow	33	3	22	26S	33E	636010	3543771 🌍	4736	11/19/2012	11/20/2012	12/11/2012	750	110 SIRMAN, JOHN (LD)	1654
C 03596 POD1	С	LE	Shallow	33	4	22	26S	33E	636017	3543756 🌍	4738 (	07/21/2010	07/21/2010	11/08/2012	225	DUBOSE DRILLING INC	
Pocord Count: 5																	

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 640065.19

Northing (Y): 3546219.54

Radius: 5000

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

Receiped by OCD: 8/18/2020 7:56:45 AM

USGS 320419103302201 26S.34E.06.21414



**National Water Information System: Web Interface** 

**USGS** Water Resources

Data Category: V

Site Information

Geographic Area: ▼ GO United States

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- Full News

## USGS 320419103302201 26S.34E.06.21414

Available data for this site SUMMARY OF ALL AVAILABLE DATA V GO

#### Well Site

#### DESCRIPTION:

Latitude 32°04'37.9", Longitude 103°30'20.5" NAD83 Lea County, New Mexico , Hydrologic Unit 13070007 Well depth: 360 feet Land surface altitude: 3,319.00 feet above NGVD29. Well completed in "Chinle Formation" (231CHNL) local aquifer

#### AVAILABLE DATA:

Data Type	<b>Begin Date</b>	End Date	Count
Field groundwater-level measurements	1954-07-23	2013-01-16	6
Revisions	Unavailable (	site:0) (timese	eries:0)

#### **OPERATION:**

Record for this site is maintained by the USGS New Mexico Water Science Center Email questions about this site to New Mexico Water Science Center Water-Data Inquiries

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

Accessibility Plug-Ins FOIA Privacy Policies and Notices

#### U.S. Department of the Interior U.S. Geological Survey

Title: NWIS Site Information for USA: Site Inventory URL: https://waterdata.usgs.gov/nwis/inventory?agency\_code=USGS&site\_no=320419103302201

Page Contact Information: New Mexico Water Data Support Team Page Last Modified: 2020-05-26 14:59:50 EDT 0.43 0.4 caww02





# New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)	(R=POD has been replaced O=orphaned, C=the file is closed)	I, ( (	qua qua	rter	s a s a	re 1= re sr	=NW :	2=NE st to la	3=SW 4=S rgest) (N	E) NAD83 UTM i	n me	ters)	(	In feet)		
POD Number	POD Sub-	County	Q 64	Q 16	Q 4	Sec	Twe	Rna	×	v		Distance	Depth Well	Depth Water	Water	
<u>C 02295</u>	CUB	LE	2	2	4	12	26S	33E	639850	3547710*	•	1505	250	200	50	
<u>C 02293</u>	CUB	LE	2	2	1	14	26S	33E	637501	3546975	0	2673	200	135	65	
<u>C 02294</u>	CUB	LE	4	4	3	11	26S	33E	637465	3547003	0	2715	200	145	55	
C 02292 POD1	CUB	LE	4	1	2	06	26S	34E	640992	3549987	0	3879	200	140	60	
C 03441 POD1	С	LE	4	1	2	06	26S	34E	640971	3550039	0	3925	250			
C 03442 POD1	С	LE	4	1	2	06	26S	34E	641056	3550028	0	3935	251			
<u>C 02291</u>	CUB	LE	1	1	2	06	26S	34E	640825	3550140*	0	3993	220	160	60	
<u>C 02289</u>	CUB	LE	4	4	4	03	26S	33E	636612	3548675*	0	4237	200	160	40	
<u>C 02288</u>	CUB	LE	4	4	4	03	26S	33E	636646	3548758	0	4258	220	180	40	
C 02285 POD1	CUB	LE	1	4	4	03	26S	33E	636613	3548855	0	4343	220	220	0	
<u>C 02290</u>	CUB	LE	4	4	4	03	26S	33E	636538	3548770	0	4353	200	160	40	
<u>C 02286</u>	CUB	LE	3	4	4	03	26S	33E	636470	3548714	0	4376	220	175	45	
<u>C 02287</u>	С	LE	3	4	4	03	26S	33E	636427	3548708	9	4407	220			
<u>C 02270</u>	CUB	LE	1	1	2	27	26S	33E	636063	3543722	9	4717	150	125	25	
C 03577 POD1	CUB	LE	3	3	3	22	26S	33E	636010	3543771	9	4736	750	110	640	
C 03596 POD1	С	LE	3	3	4	22	26S	33E	636017	3543756	0	4738	225			
										A	verag	ge Depth to	Water:	159	9 feet	
												Minimum	Depth:	110	feet	
												Maximum	Depth:	220	feet	
Record Count: 16																

#### UTMNAD83 Radius Search (in meters):

Easting (X): 640065.19

Northing (Y): 3546219.54

**Radius: 5000** 

#### \*UTM location was derived from PLSS - see Help

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

		(quarters are 1=NW 2=NI (quarters are smallest to	E 3=SW 4=SE) largest)	(NAD83 UTM in mete	ers)
Well Tag	POD Number	Q64 Q16 Q4 Sec	Tws Rng	Χ	Y
	C 02295	2 2 4 12	26S 33E	639865 35476	24 🌍
Driller Lic	ense: 122	Driller Company:	UNKNOWN	I	
Driller Na	me: UNKNOWN				
Drill Start	Date:	Drill Finish Date:	12/31/1949	Plug Date:	
Log File D	ate:	PCW Rcv Date:		Source:	
Ритр Тур	e:	Pipe Discharge Size:		<b>Estimated</b>	Yield: 12 GPM
- ··· Casing Siz	<b>e:</b> 8.00	Depth Well:	250 feet	Depth Wate	er: 200 feet

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

6/15/20 9:05 AM

POINT OF DIVERSION SUMMARY



# New Mexico Office of the State Engineer Active & Inactive Points of Diversion

(with Ownership Information)

							(R=POD has been rep	laced	rtara ara					
		(ac	re ft per annum)				C=the file is closed)	nis file, (qua) (qua)	rters are	smallest	to largest)	4=5E) (NAD83	UTM in meters)	
	Sub	<b>(</b>				Well		(466	qqq	Jindiroot	ie iu geei)	<b>(</b>	,	
WR File Nbr	basin	Use	Diversion Owner	County	/ POD Number	Tag	Code Grant	Source	6416 4	Sec Tw	s Rng	Х	Y	Distance
C 02295	CUB	PLS	3 INTREPID POTASH NEW MEXICO LLC	LE	<u>C 02295</u>				224	12 26	33E	639850	3547710* 🌔	1505
<u>C 02293</u>	CUB	PLS	3 DINWIDDIE CATTLE CO.	LE	<u>C 02293</u>				221	14 268	33E	637500	3546975 🌍	2673
<u>C 03499</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02293</u>				221	14 268	33E	637500	3546975 🌍	2673
<u>C 02294</u>	CUB	PLS	3 DINWIDDIE CATTLE CO.	LE	<u>C 02294</u>				4 4 3	11 269	33E	637465	3547003 🌍	2715
<u>C 03500</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02294</u>				4 4 3	11 26	33E	637465	3547003 🌍	2715
<u>C 02292</u>	CUB	PLS	3 DINWIDDIE CATTLE CO.	LE	C 02292 POD1				412	06 269	34E	640991	3549987 🌍	3879
<u>C 03493</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02292 POD1</u>				412	06 268	34E	640991	3549987 🌍	3879
<u>C 03441</u>	С	STK	3 INTREPID POTASH NEW MEXICO LLC	LE	<u>C 03441 POD1</u>			Shallow	412	06 26	34E	640970	3550039 🌍	3925
<u>C 03491</u>	С	PRO	0 EOG RESOURCES, INC	LE	<u>C 03441 POD1</u>			Shallow	412	06 268	34E	640970	3550039 🌍	3925
<u>C 03442</u>	С	STK	3 INTREPID POTASH NEW MEXICO LLC	LE	C 03442 POD1			Shallow	412	06 268	34E	641055	3550028 🌍	3935
<u>C 03477</u>	С	PRO	0 EOG RESOURCES, INC.	LE	C 03442 POD1			Shallow	412	06 268	34E	641055	3550028 🌍	3935
<u>C 03492</u>	С	PRO	0 EOG RESOURCES, INC	LE	C 03442 POD1			Shallow	412	06 268	34E	641055	3550028 🌍	3935
<u>C 02291</u>	CUB	PLS	3 INTREPID POTASH NEW	LE	<u>C 02291</u>				112	06 268	34E	640825	3550140* 🌍	3993
<u>C 02287</u>	С	STK	3 DINWIDDLE CATTLE CO.	LE	C 02287 POD2				444	03 269	33E	636612	3548675* 🌍	4237
<u>C 02289</u>	CUB	PLS	3 DINWIDDIE CATTLE COMPANY LLC	LE	<u>C 02289</u>				444	03 269	33E	636612	3548675* 😑	4237
<u>C 02288</u>	CUB	PLS	3 DINWIDDLE CATTLE CO.	LE	<u>C 02288</u>				444	03 269	33E	636645	3548758 🌍	4258
<u>C 03497</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02288</u>				444	03 269	33E	636645	3548758 🌍	4258
C 02285	CUB	PLS	3 DINWIDDIE CATTLE CO.	LE	C 02285 POD1			Shallow	144	03 268	33E	636612	3548855 🌍	4343

\*UTM location was derived from PLSS - see Help

### Received by OCD: 8/18/2020 7:56:45 AM

		(			and no longer serves	this file, (quai	ters are	1=NW 2	=NE 3=SW	(14=SE)				
	Sub	(aci	re it per annum)			Woll	C=the file is closed)	(quai	ters are	smalles	t to largest)	(NAD83	UTIVI IN meters)	
WR File Nbr	basin	Use	Diversion Owner	County	POD Number	Tag	Code Grant	Source	ччч 6416 4	Sec Tw	vs Rng	х	Y	Distance
C 03494	С	PRO	0 EOG RESOURCES, INC.	LE	C 02285 POD1	•		Shallow	144	03 26	S 33E	636612	3548855 🌍	4343
<u>C 02290</u>	CUB	PLS	3 DINWIDDLE CATTLE CO.	LE	<u>C 02290</u>				444	03 26	S 33E	636538	3548770 🌍	4353
<u>C 03498</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02290</u>				444	03 26	S 33E	636538	3548770 🌍	4353
<u>C 02286</u>	CUB	PLS	3 DINWIDDLE CATTLE CO.	LE	<u>C 02286</u>				344	03 26	S 33E	636469	3548714 🌍	4376
<u>C 03495</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02286</u>				344	03 26	S 33E	636469	3548714 🌍	4376
<u>C 02287</u>	С	STK	3 DINWIDDLE CATTLE CO.	LE	<u>C 02287</u>				344	03 26	S 33E	636427	3548708 🌍	4407
<u>C 03496</u>	С	PRO	0 EOG RESOURCES, INC.	LE	<u>C 02287</u>				344	03 26	S 33E	636427	3548708 🌍	4407
<u>C 02270</u>	CUB	PLS	3 OLIVER KIEHNE	LE	<u>C 02270</u>			Shallow	112	27 26	S 33E	636062	3543722 🌍	4717
C 03539	С	PRO	0 CIMAREX ENERGY COMPANY	LE	<u>C 02270</u>			Shallow	112	27 26	S 33E	636062	3543722 🌍	4717
C 03540	С	PRO	0 CIMAREX ENERGY COMPANY	LE	<u>C 02270</u>			Shallow	112	27 26	S 33E	636062	3543722 🌍	4717
C 03541	С	PRO	0 CIMAREX ENERGY COMPANY	LE	<u>C 02270</u>			Shallow	112	27 26	S 33E	636062	3543722 🌍	4717
C 03577	CUB	EXP	0 OLIVER D KIEHNE	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
C 03592	С	PRO	0 CONCHO OIL & GAS	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
C 03593	С	PRO	0 CONCHO OIL & GAS	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
C 03594	С	PRO	0 CONCHO OIL & GAS	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
<u>C 03676</u>	С	PRO	0 CONCHO OIL & GAS	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
<u>C 03677</u>	С	PRO	0 CONCHO OIL & GAS	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
C 03678	С	PRO	0 CONCHO OIL & GAS	LE	C 03577 POD1			Shallow	333	22 26	S 33E	636010	3543771 🌍	4736
C 03596	С	STK	3 OLIVER D KIEHNE	LE	C 03596 POD1			Shallow	334	22 26	S 33E	636016	3543756 🌍	4738
<u>C 03597</u>	С	PRO	0 CONCHO OIL & GAS	LE	C 03596 POD1			Shallow	334	22 26	S 33E	636016	3543756 🌍	4738
C 03598	С	PRO	0 CONCHO OIL & GAS	LE	C 03596 POD1			Shallow	334	22 26	S 33E	636016	3543756 🌍	4738
C 03599	С	PRO	0 CONCHO OIL & GAS	LE	C 03596 POD1			Shallow	334	22 26	S 33E	636016	3543756 🦲	4738

(R=POD has been replaced

### Received by OCD: 8/18/2020 7:56:45 AM

					(R=POD has been	replaced	0.5		
					and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)				
		(acre ft per annum)			C=the file is closed	d) (quarters are smallest to largest)	(NAD83 U	TM in meters)	
	Sub			Well		999			
WR File Nbr	basin l	Use Diversion Owner	County POD Number	Tag	Code Grant	Source 6416 4 Sec Tws Rng	Х	Y	Distance

Record Count: 40

UTMNAD83 Radius Search (in meters):

Easting (X): 640065.19

Northing (Y): 3546219.54

Radius: 5000

Sorted by: Distance

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

## Received by OCD: 8/18/2020 7:56:45 AM Fighting Okra 18 Fed 1

18. . .

Nearest watercourse: Pecos River Distance: 27.99 miles (147,810 ft)



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Constant.

1222

Fighting Okra 18 Fed 1

Google Earth

© 2020 Google Image Landsat / Copernicus **U.S. Fish and Wildlife Service** 



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### Wetlands



Estuarine and Marine Deepwater

Estuarine and Marine Wetland

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Freshwater Pond

Lake Other Riverine This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## U.S. Fish and Wildlife Service

# National Wetlands Inventory

# Fighting Okra: Pond 4,796 ft



## March 8, 2020

### Wetlands

- Estuarine and Marine Wetland

Estuarine and Marine Deepwater

Freshwater Pond

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Lake Other Riverine This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## U.S. Fish and Wildlife Service

# National Wetlands Inventory

# Fighting Okra: Wetland 3,987 ft



## March 8, 2020

### Wetlands

- Estuarine and Marine Wetland

Estuarine and Marine Deepwater

Freshwater Pond

Freshwater Emergent Wetland

Freshwater Forested/Shrub Wetland

Lake Other Riverine This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## Received by OCD: 8/18/2020 7:56:45 AM National Flood Hazard Layer FIRMette



# Legend

## d

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Received by OCD: 8/18/2020 7:56:45 AM

Received by OCD: 8/18/2020 7:56:45 AM

Active Mines near Fighting Okra 18 Fed Com 1H





U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

## Received by OCD: 8/18/2020 7:56:45 AM Fighting Okra 18 Fed 1

Nearest Town: Jal, NM Distance: 19.47 miles (102,818 ft)



(18)

Jal

3

128

01

Fighting Okra 18 Fed 1

Google Earth

TP 1

© 2020 Google





USDA Natural Resources Conservation Service Web Soil Survey National Cooperative Soil Survey Page 36 of 126
MAP L	EGEND	MAP INFORMATION			
Area of Interest (AOI) Area of Interest (AOI)	Spoil Area	The soil surveys that comprise your AOI were mapped at 1:20,000.			
Area of Interest (AOI)SoilsSoil Map Unit Polygons✓Soil Map Unit Polygons✓Soil Map Unit PointsSpecial <b>&gt;ornow Pit</b> ✓Borrow Pit✓Clay Spot✓Closed Depression✓Gravel Pit✓Gravel Pit✓Marsh or swamp✓Miscellaneous Water✓Perennial Water✓Soil Map Unit Points✓Soil Map Unit Points✓Borrow Pit✓Closed Depression✓Gravel Pit✓Gravel Pit✓Point✓Nore or Quarry✓Miscellaneous Water✓Rock Outcrop↓Saline Spot✓Saline Spot✓Sandy Spot	Spoil AreaImage: Image:	<ul> <li>The soli surveys that comprise your AOI were mapped at 1:20,000.</li> <li>Warning: Soil Map may not be valid at this scale.</li> <li>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</li> <li>Please rely on the bar scale on each map sheet for map measurements.</li> <li>Source of Map: Natural Resources Conservation Service Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)</li> <li>Maps from the Web Soil Survey are based on the Web Mercato projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.</li> <li>This product is generated from the USDA-NRCS certified data a of the version date(s) listed below.</li> <li>Soil Survey Area: Lea County, New Mexico Survey Area Data: Version 16, Sep 15, 2019</li> <li>Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.</li> <li>Date(s) aerial images were photographed: Dec 31, 2009—Sel 17, 2017</li> <li>The orthophoto or other base map on which the soil lines were</li> </ul>			
<ul> <li>Sandy Spot</li> <li>Severely Eroded Spot</li> <li>Sinkhole</li> <li>Slide or Slip</li> </ul>		The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.			



.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
PU	Pyote and maljamar fine sands	4.4	100.0%
Totals for Area of Interest		4.4	100.0%



## Lea County, New Mexico

## PU—Pyote and maljamar fine sands

## Map Unit Setting

National map unit symbol: dmqq Elevation: 3,000 to 3,900 feet Mean annual precipitation: 10 to 12 inches Mean annual air temperature: 60 to 62 degrees F Frost-free period: 190 to 205 days Farmland classification: Not prime farmland

### **Map Unit Composition**

Maljamar and similar soils: 45 percent Pyote and similar soils: 45 percent Minor components: 10 percent Estimates are based on observations, descriptions, and transects of the mapunit.

## **Description of Maljamar**

### Setting

Landform: Plains Landform position (three-dimensional): Rise Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy eolian deposits derived from sedimentary rock

## **Typical profile**

A - 0 to 24 inches: fine sand Bt - 24 to 50 inches: sandy clay loam Bkm - 50 to 60 inches: cemented material

### **Properties and qualities**

Slope: 0 to 3 percent
Depth to restrictive feature: 40 to 60 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.6 inches)

USDA

## Interpretive groups

Land capability classification (irrigated): 6e Land capability classification (nonirrigated): 7e Hydrologic Soil Group: B Ecological site: Loamy Sand (R042XC003NM) Hydric soil rating: No

## **Description of Pyote**

### Setting

Landform: Plains Landform position (three-dimensional): Rise Down-slope shape: Linear Across-slope shape: Linear Parent material: Sandy eolian deposits derived from sedimentary rock

### **Typical profile**

A - 0 to 30 inches: fine sand Bt - 30 to 60 inches: fine sandy loam

## Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 2.0
Available water storage in profile: Low (about 5.1 inches)

### Interpretive groups

Land capability classification (irrigated): 6e Land capability classification (nonirrigated): 7s Hydrologic Soil Group: A Ecological site: Loamy Sand (R042XC003NM) Hydric soil rating: No

### **Minor Components**

### Kermit

*Percent of map unit:* 10 percent *Ecological site:* Sandhills (R042XC022NM)

JSDA

Hydric soil rating: No

## **Data Source Information**

Soil Survey Area: Lea County, New Mexico Survey Area Data: Version 16, Sep 15, 2019





#1 RATED BIOREMEDIATION FORMULA IN RECENT BP - LOUISIANA STATE UNIVERSITY TESTING

## Naturally occuring microbes help bioremediate oil spills and other contaminated areas

### Where do they come from?

Ultra-Archaea are a collection of over 100 different species of archaea that are cultivated from rugged environments such as undersea vents or sites where there is volcanic activity. They are then bred and naturally enhanced in sea water and ammonia using sweet Texas crude oil as their only food source.

### 100% Natural.

The result is 100% natural, hardy and fast-acting microbes that have an affinity for oil and other hydrocarbons, as well as organic waste. This specific collection of microbes (Ultra-Archaea) has not been genetically altered or engineered. These naturally occurring microbes have been on the EPA National Contingency List since its inception. Unlike bacteria, archaea will not become pathogenic.

### How do they work?

Ultra-Archaea will digest hydrocarbon molecules and break them down into harmless byproducts of carbon, carbon dioxide and lipids (a natural, soluble fatty material that is food for fish and plants). The more complex the hydrocarbon, the longer this process may take (for example, kerosene and diesel will be consumed more quickly than motor oil). This naturally occurring process is supercharged by adding these specific archaea to any oil spill or contaminated area (see below). It infuses 5 to 90 billion archaea per gram into an oil spill, greasy catch basin, oil/water separator, etc. and within hours these archaea have reproduced from billions per gram to trillions. With water, oxygen and an organic food source (such as oil) these microbes will form vast colonies and digest and remediate oil on land and on water, as well as grease traps, septic tanks, storm drains and almost any other area where contaminants are present.

### What happens to them when they are "done"?

After approximately ninety days or when the microbes have been deprived of water, oxygen, or a food source, the microbe colony will begin to naturally die off, allowing the indigenous microbes to return to pre-contamination levels.



### How are they shipped?

The Ultra-Archaea are shipped dormant in a bentonite clay or sugar based carrier. When the carrier dissolves in water, the archaea become activated and water may become temporarily murky due to the infusion of the clay.

### What else do I need to know?

Ultra-Archaea products should be stored and applied between 32°F and 120°F (Ideal temp is 40°F - 110°F). Temperatures outside that range may cause the microbes to become ineffective. Ultra-Archaea should not be exposed to radiation. Ultra-Archaea should only be used in applications where the pH is between 5.0 and 8.5. Visit our website, www.Ultra-Archaea.com to view our FAQs and test data.



Test samples: Container on left shows untreated oil and water. Container on right was treated with Ultra-Archaea and shows that only lipids were left after the bio-remediation took place. The dark material in the bottom of the container is the clay carrier.





UltraTech International, Inc. 11542 Davis Creek Court, Jacksonville, Florida 32256 USA (800) 353-1611 · 1-904-292-1611 · www.ultra-archaea.com

# Ultra-Archaea® Shakers

- + Ultra-Archaea are housed in a bentonite clay powder that provides the slightly moist environment needed for them to live.
- + Two sizes of shakers available for application on smaller spills or contained areas.
- + Resealable/water-proof containers keep archaea dry/dormant until they are needed.

# Ultra-Archaea® Water Soluble Packets

- + 4 oz. water soluble packets can be thrown into oil/water separators, catch basins, grease traps and other areas to facilitate oil and grease removal.
- + Small size, big results no measuring, scooping or spreading. Simply place the entire packet into the area that needs to be cleaned. The water soluble packet will dissolve and allow the Ultra-Archaea to spread throughout the area.

# Ultra-Archaea® Bulk Bags

- + Bulk bags (25 lbs.) are available for large spills, open water applications or frequent use areas.
- + Keep on hand for refilling Shakers or other smaller containers or for large, unexpected spills.

		Patents: See www.ultratechpatents.com
Part#	Description	Weight Lbs. (kg)
5238	6 Ounce Shaker	6 oz (171 g)
5239	28 Ounce Shaker	28 oz (794 g)
5232	Water Soluble Packets 6-Pack	4 oz (113 g)
5233	Bulk Bag	25 lbs (11kg)

# Ultra-Archaea Booms®



- + Specially-treated polyethylene foam used in Ultra-Archaea Booms allows it to float on the water's surface while also absorbing oil.
- + Six Ultra-Archaea tablets are inserted into slits in the foam sleeves extended water contact causes the tablets to slowly dissolve, releasing the archaea into the water.
- + Booms can be dropped in, or tied off in catch basins (lanyards included), oil/ water separators or other areas where oily water can collect.



Part#	Qty.	Dimensions in. (mm)	Weight lbs. (kg)
5234	6-pack	6 x 4 x 1 (152 x 102 x 25)	2.0 (1.0)

It is important to be aware that Ultra-Archaea may not be the answer or 100% effective in every application. Consult with UltraTech's technical team to determine if your needs can be met with Ultra-Archaea.

5238

5239

MADE IN USA

5232









NOTE: All Ultra-Archaea products are stamped with an expiration date and have a typical shelf life of approximately 5 years.





5233

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## **ATTACHMENT 4**

Client Name: Devon Energy Production Company Site Name: Fighting Okra 18 Fed Com 1H NM OCD Incident Tracking Number: NRM2005653696 Project #: 20E-00141-040 Lab Report: 2003960

Table 2. Characterization Sampling Field Screening and Laboratory Results - Depth to Groundwater < 50 feet													
	Sample Description	า	F	ield Screenir	ng			Petroleum Hydrocarbons				Inorganic	
						Vola	atile			Extractable			morganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Electroconductivity)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH20-01	0	March 18, 2020	-	-	269	<0.024	<0.213	<4.7	630	14,000	630	14,630	290
BH20-01	0.5	March 18, 2020	108.0	-	1,145	<0.023	<0.211	<4.7	<9.4	<47	<14.1	<61.1	770
BH20-01	1	March 18, 2020	18.0	-	484	-	-	-	-	-	-	-	-
BH20-01	2	March 18, 2020	-	-	444	-	-	-	-	-	-	-	-
BH 20-02	0	March 18, 2020	-	-	2,952	-	-	-	-	-	-	-	-
BH 20-02	0.5	March 18, 2020	13	-	659	-	-	-	-	-	-	-	-
BH 20-02	1	March 18, 2020	10	-	298	-	-	-	-	-	-	-	-
BH 20-03	0	March 18, 2020	-	-	278	<0.024	<0.215	<4.8	4,900	2,600	7,500	7,500	200
BH 20-03	0.5	March 18, 2020	95	-	614	<0.024	<0.216	<4.8	38	<49	38	38	590
BH 20-03	1	March 18, 2020	16	-	1,585	-	-	-	-	-	-	-	-
BH 20-04	0	March 18, 2020	-	-	6,132	-	-	-	-	-	-	-	-
BH 20-04	0.5	March 18, 2020	33	-	3,164	-	-	-	-	-	-	-	-
BH20-04	1	March 18, 2020	20	-	455	-	-	-	-	-	-	-	-
BH20-05	0	March 18, 2020	-	-	1,409	<0.023	<0.202	<4.6	7,500	3,800	7,500	11,300	1,400
BH20-05	0.5	March 18, 2020	59	-	5,795	<0.025	<0.211	<4.9	<9.9	<49	<14.8	<63.8	4,200
BH20-05	1	March 18, 2020	35	-	122	-	-	-	-	-	-	-	-
SS20-01	0	March 18, 2020	0	-	1,311	-	-	-	-	-	-	-	-
SS20-01	0.5	March 18, 2020	1	-	4,563	-	-	-	-	-	-	-	-
SS20-02	0	March 18, 2020	0	-	550	<0.024	<0.217	<4.8	13	55	13	68	300
SS20-02	0.5	March 18, 2020	1	-	604	-	-	-	-	-	-	-	-
SS20-03	0	March 18, 2020	1	-	511	-	-	-	-	-	-	-	-
SS20-03	0.5	March 18, 2020	1	-	396	-	-	-	-	-	-	-	-
SS20-04	0	March 18, 2020	20	-	314	<0.024	<0.22	<4.9	120	190	120	310	140
SS20-04	0.5	March 18, 2020	297	-	2,041	-	-	-	-	-	-	-	-
SS20-05	0	March 18, 2020	1	-	357	-	-	-	-	-	-	-	-
SS20-05	0.5	March 18, 2020	1	-	1,102	-	-	-	-	-	-	-	-
SS20-06	0	March 18, 2020	1	-	715	<0.024	<0.219	<4.9	1,600	2,900	1,600	4,500	480
SS20-06	0.5	March 18, 2020	1		705	-	-	-	-	-	-	-	-
SS20-07	0	March 18, 2020	1	-	2,718	-	-	-	-	-	-	-	-
SS20-07	0.5	March 18, 2020	1	-	7,113	-	-	-	-	-	-	-	-

"-" - Not applicable/assessed

Bold and shaded indicates exceedance outside of NM OCD Closure Criteria



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Client Name: Devon Energy Production Company Site Name: Fighting Okra 18 Fed Com 1H NM OCD Incident Tracking Number: NRM2005653696 Project #: 20E-00141-040 Lab Report: 2006700

Table 3. Confirmatory Sampling Laboratory Results - Depth to Groundwater < 50 feet										
	Sample Description			Petroleum Hydrocarbons						Inorganic
			Vol	atile			Extractable			morganic
Sample ID	Depth (ft)	Sample Date	Benzene (mg/kg)	(add) BTEX (Total)	a) Ba Gasoline Range Sa Organics (GRO)	a) Diesel Range Organics (DRO)	a) Motor Oil Range Say Organics (MRO)	(Ctronomic	표 Total Petroleum 영제 Hydrocarbons (TPH)	(mg/ygm)
BS20-01	0.5	June 11. 2020	<0.025	<0.225	<5.0	<9.8	<49	<14.8	<63.8	140
BS20-02	0.5	June 11, 2020	<0.025	<0.221	<4.9	<9.2	<46	<14.1	<60.1	190
BS20-03	0.5	June 11, 2020	<0.025	<0.222	<4.9	<9.9	<49	<14.8	<63.8	170
BS20-04	0.5	June 11, 2020	<0.025	<0.225	<5.0	<9.7	<48	<14.7	<62.7	150
BS20-05	0.5	June 11, 2020	<0.025	<0.222	<4.9	<9.9	<49	<14.8	<63.8	200
BS20-06	0.5	June 11, 2020	<0.024	<0.220	<4.9	<9.9	<50	<14.8	<64.8	170
BS20-07	0.5	June 11, 2020	<0.024	<0.216	<4.8	<9.2	<46	<14.0	<60.0	180
BS20-08	0.5	June 11, 2020	< 0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	190
BS20-09	0.5	June 11, 2020	<0.025	<0.221	<4.9	<9.5	<47	<14.4	<61.4	170
BS20-10	0.5	June 11, 2020	<0.024	<0.220	<4.9	<9.8	<49	<14.7	<63.5	150
BS20-11	0.5	June 11, 2020	<0.025	<0.222	<4.9	<9.4	<47	<14.3	<61.3	220
BS20-12	0.5	June 11, 2020	<0.024	<0.212	<4.7	<9.8	<49	<14.5	<63.5	180
BS20-13	0.5	June 11, 2020	< 0.024	<0.216	<4.8	<9.6	<48	<14.4	<62.4	180
BS20-14	0.5	June 11, 2020	<0.025	<0.225	<5.0	<9.3	<46	<14.3	<60.3	140
BS20-15	0.5	June 11, 2020	<0.024	<0.213	<4.7	<9.8	<49	<14.5	<63.5	190
BS20-16	0.5	June 11, 2020	< 0.024	<0.216	<4.8	<9.5	<47	<14.3	<61.3	210
BS20-17	0.5	June 11, 2020	< 0.024	<0.212	<4.7	<9.8	<49	<14.5	<63.5	180
BS20-18	0.5	June 11, 2020	<0.024	<0.217	<4.8	<9.6	<48	<14.4	<62.4	270
BS20-19	0.5	June 11, 2020	<0.024	<0.216	<4.8	<9.4	<47	<14.2	<61.2	170
BS20-20	0.5	June 11, 2020	<0.024	<0.216	<4.8	<9.5	<48	<14.3	<62.3	160
BS20-21	0.5	June 11, 2020	<0.025	<0.224	<5.0	<10.0	<50	<15.0	<65.0	190
BS20-22	0.5	June 11, 2020	<0.024	<0.212	<4.7	<9.5	<47	<14.2	<61.2	220
BS20-23	0.5	June 11, 2020	<0.023	<0.210	<4.7	<9.5	<48	<14.2	<62.2	200
BS20-24	0.5	June 11, 2020	<0.023	<0.207	<4.6	<9.5	<47	<14.1	<61.1	220
BS20-25	0.5	June 11, 2020	<0.024	<0.212	<4.7	<9.6	<48	<14.3	<62.3	130
WS20-01	0	June 11, 2020	<0.025	<0.225	<5.0	<9.8	<49	<14.8	<63.8	170
WS20-02	0	June 11, 2020	<0.024	<0.219	<4.9	<9.6	<48	<14.5	<62.5	140
WS20-03	0	June 11, 2020	<0.025	<0.222	<4.9	<9.4	<47	<14.3	<61.3	210
WS20-04	0	June 11, 2020	<0.024	<0.220	<4.9	<9.3	<47	<14.2	<61.2	180

"-" - Not applicable/assessed

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Bold and shaded indicates exceedance outside of NM OCD Closure Criteria



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## **ATTACHMENT 5**



Client:	Devon Energy Corporation	Inspection Date:	3/18/2020
Site Location Name:	Fighting Okra 18 Fed Com 001H	Report Run Date:	3/18/2020 11:21 PM
Project Owner:	Amanda Davis	File (Project) #:	20E-00141
Project Manager:	Natalie Gordon	API #:	30-025-40382
Client Contact Name:	Amanda Davis	Reference	Flowline release
Client Contact Phone #:	(575) 748-0176		
		Summary of	Times
Left Office	3/18/2020 8:20 AM		
Arrived at Site	3/18/2020 10:06 AM		
Departed Site	3/18/2020 3:00 PM		
Returned to Office			

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#### Devon itial Spill Information - Record on First Visit 3/18/20 olli Dateo Fighting Okra 18-1 te Nan plect Owne oject Manago owned Soll Volum lect it overy Meth Held Scroonlog Data Coffee Trimble Marked o coordinates Site Skete Quantrab VOC (PID) Lob Analysic Picture Depth (ft) Sample ID (11111) (Aligh/Low)+c /TP/BIL Year Ex. Hydrocarbon Chloride Ex. High+ Numben Ex. BH18-01 EL 2.1 Ex. 400 ppm 200 ppm 0.30/ 12:30 BH1 1.7 0.88/22.5 0 12:35 0.5 108 0.44 0.41 hild 18 12:40 1 0.37 12:45 2 20 calible 1:00BH2 2.09 0.48/20.2 0 Sand 1:05 0.5 13 stopped hure dun to BHI cleaning 4 0.23/19.5 10 sand 1:10 0.21 1:20 BH3 0 calible 19.3 0.44/19.2 sad 95 0.5 1:25 1.11/19.1 1585 4.59 20.1 2.31/19.3 sand 16 hold 1:30 1:40 BH4 0 33 10.5 1:45 0.36/20.0 20 1:50 358 4.03 1:55 BH5 \*0 59 10.5 719.2 2:00 0.09/18.9 35 hold 2:05 DOATH ITY EVE THIMK Master

**Site Sketch** 



Spill Respo	nse and S	ampling						V
Client:	5	Devon			Initial that to for	the second second		AHTI
Date:	2	511817	anero chur muaneron - record ou frize Alek					
Site Name:	F	ichtio	a Okra	18-1	ppin Date;			
Site Location:		9	9		opin vorane:			
Project Owner:				B. A. D. M. C. Branch	South Contiser;			
Project Manager:					Reenwaryd Spill Volumes			
(Pro)ect #:					Recovery Method:			
			Field Screenilog	Sampling	Data Collection	Check for Ye		
Sample ID	Depth (ft)	VOC (PID)	PotroHag TPH (ppm)	Quantab Other/tow) + or -	Lab Analysis	Picture	Trimble	Marked o
SS/TP/BIT- Year- Number Ex. 0H10-01	Er. 2ft	Ex. 400 ppm	200 ppm	Ð, Tigh≠	Ex. Hydrocarbon Chloride		Continuetta	SICO SICOL
:15 551	0	0.4	for the boost of the state grant and	0.89/18.1	Caliche			
1:20	0.5	0.5		3.14/18.0	4563 calide			
:25\$ 552	0	0.4		0.36/18.0	Celiche			
1:30	0.5	0.5		0.40/18.1	sond			
1:35 \$ 55 3	0	0.6	and the second s	0.33/17.9	Caliche	1		
9:40	0.5	0.7	T	0.25/17.0	Sand	n ix		
9:45 554	0	79.8		0.18/17.8	Sand	·		
9:50	0.5	723.2	2	1.30/17.9	sand			
9:55 55 5	0	10.	9	0.19/17.8	3.23/2 Caliety	4680		
10:00	0.5	1.1		MAN PER-	1.56/18 2 calido			
10:05 551	×O	7.0		0.48/18 2	TIS Calich	<		
10:10	0.5	10.7	and arrest (many or a	0.47/01	705 CAlich	2		
10:15 557	0	0.7		2.09/00	3147 Caliche			
10:20	0.	10.6		5.41/10/	7813 Celich			
10:40 554	IX O	19.5	-	0.12/17.2	Serd Serd			
10:45	0.5	- 297.	1	1.39/17 0	Sand			
10:50 551	.10			0.73/19.0	conte			
10:55	0.	5		1.73/18.0	s seul			
11:00 355	5.1 0		100	0.25	3			1
11:05	0.	5		0.76/18.0	0			
11:10 <5	70			1.88/18.1				
11:15	0.5	>		4.94/19.1	next to Welling	d		-
UHUM				Service and Services	Vicio	ATH ITY EN	DEDTICE	-

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## **Summary of Daily Operations**

**9:23** White line area for 811 call with flags and marker paint

- **10:08** Initial site characterization and assessment. Spill footprint is very apparent on the pad area not a very large area covered. Delineation vertically and horizontally to determine length width and depth of spill
- **10:39** On surface sample 4 pid is coming back high at 6 inches Looks like a fresh right of way was done for a pipeline and possibly have mixed in part of spill into turned up dirt pushed around in right of way. All other surface samples to delineate horizontally are clean on pid but chlorides seem to be high
- **13:15** Five boreholes to delineate vertically across spill area. Digging to two foot field screening for chlorides first then making decision on which to run petroflag. All field screens show clean up at 0.5 inches but sending 1 ft samples to lab on hold.

## **Next Steps & Recommendations**

- 1 Wait for lab analysis to come back
- 2 Await for plan on remediation
- **3** 0.5 inch scrape suggested for clean up











**Daily Site Visit Signature** 

Inspector: Monica Peppin

Signature:

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Client:	Devon Energy Corporation	Inspection Date:	6/10/2020
Site Location Name:	Fighting Okra 18 Fed Com 001H	Report Run Date:	6/11/2020 6:13 PM
Project Owner:		File (Project) #:	
Project Manager:		API #:	30-025-40382
Client Contact Name:	Amanda Davis	Reference	
Client Contact Phone #:	(575) 748-0176		
		Summary of 1	Гimes
Left Office	6/10/2020 7:25 AM		
Arrived at Site	6/10/2020 8:44 AM		
Departed Site	6/10/2020 5:21 PM		
Returned to Office	6/10/2020 6:38 PM		

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## Site Sketch





## **Summary of Daily Operations**

11:26 Guide remediation activity (Wildwest) by collecting field screens throughout exaction of soil to ensure below NMOCD standards.

## **Next Steps & Recommendations**

1 Continue excavation tomorrow approximately 6" below ground surface.

**2** Collect confirmatory samples when excavation is final.

**3** Submit samples for lab analysis.

					Sam	pling			
ES-E	ase20-01								
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.	14 ppm	36 ppm	Low (30-600 ppm)	180 ppm		<	,	Yes
ES-E	ES-Base20-02								
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.	27 ppm	26 ppm	Low (30-600 ppm)	120 ppm		<	,	Yes
ES-E	ase20-03								
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.	8 ppm		Low (30-600 ppm)	80 ppm		$\checkmark$	3	Yes

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VERTEX

## **Daily Site Visit Report**

ES-E	Base20-04								
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.			Low (30-600 ppm)	90 ppm		$\checkmark$	,	Yes
	0.5 ft.	19 ppm	20 ppm	Low (30-600 ppm)	200 ppm		$\checkmark$	,	Yes
ES-E	Base20-06								
	Depth ft	VOC PID	Petro Flag TPH ppm	Quantab Range ppm	Quantab Reading ppm	Lab Analysis	Picture	Trimble Location	Marked On Site Sketch?
	0.5 ft.	12 ppm		Low (30-600 ppm)	100 ppm		$\checkmark$	,	Yes

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### **Site Photos**









**Daily Site Visit Signature** 

Inspector: Kevin Smith

Signature:

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## **ATTACHMENT 6**

## Natalie Gordon

From:	Dhugal Hanton <vertexresourcegroupusa@gmail.com></vertexresourcegroupusa@gmail.com>
Sent:	Monday, June 8, 2020 9:10 AM
То:	Natalie Gordon
Subject:	Fwd: NRM2005653696: Fighting Okra 18 Fed Com 1H 48-hr Notification of
-	Confirmatory Sampling

----- Forwarded message ------

From: Dhugal Hanton <<u>vertexresourcegroupusa@gmail.com</u>> Date: Mon, Jun 8, 2020 at 9:09 AM Subject: NRM2005653696: Fighting Okra 18 Fed Com 1H 48-hr Notification of Confirmatory Sampling To: Bratcher, Mike, EMNRD <<u>Mike.Bratcher@state.nm.us</u>>, EMNRD-OCD-District1spills <<u>emnrd-ocddistrict1spills@state.nm.us</u>>, CFO\_Spill, BLM\_NM <<u>blm\_nm\_cfo\_spill@blm.gov</u>>, Amos, James A <<u>Jamos@blm.gov</u>>, Kelsey <<u>KWade@blm.gov</u>>, Venegas, Victoria, EMNRD <<u>Victoria.Venegas@state.nm.us</u>>, Hamlet, Robert, EMNRD <<u>Robert.Hamlet@state.nm.us</u>> Cc: <Lupe.Carrasco@dvn.com>, <<u>wesley.mathews@dvn.com</u>>, <<u>tom.bynum@dvn.com</u>>, <<u>amanda.davis@dvn.com</u>>

All,

Please accept this email as 48-hr notification that Vertex Resource Services has scheduled remediation fieldwork and confirmatory sampling to be conducted at Fighting Okra 18 Fed Com 1H for the release that occurred on February 24, 2020, incident tracking #: NRM2005653696.

This work will be completed on behalf of Devon Energy Production Company.

On Tuesday, June 9, 2020 at approximately 9:00 a.m., remediation will begin at the Fighting Okra 18 Fed Com 1H site and is expected to last approximately 2-3 days. Monica Peppin of Vertex will be onsite to guide remediation efforts. Following sufficient progress of the remediation fieldwork, Monica will begin confirmatory sampling.

Confirmatory sampling is expected to begin at approximately 9:00 am on Wednesday, June 10, 2020 and may continue in conjunction with remediation fieldwork through Thursday, June 11, 2020. Monica can be reached at 575-361-9880. If you need directions to the site, please do not hesitate to contact her. If you have any questions or concerns regarding this notification or the attached sample plan, please give me a call at 505-506-0040.

Thank you, Natalie

Natalie Gordon Project Manager

Vertex Resource Group Ltd. 213 S. Mesa Street Carlsbad, NM 88220

P 575.725.5001 ext 709

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C 505.506.0040 F

### www.vertex.ca

Confidentiality Notice: This message and any attachments are solely for the intended recipient and may contain confidential or privileged information. If you are not the intended recipient, any disclosure, copying, use, or distribution of the information included in this message and any attachment is prohibited. If you have received this communication in error, please notify us by reply email and immediately and permanently delete this message and any attachments. Thank you.

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## **ATTACHMENT 7**



March 27, 2020

Amanda Davis Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (575) 748-0176 FAX:

RE: Fighting Okra 18 Fed Com 1h

OrderNo.: 2003960

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Amanda Davis:

Hall Environmental Analysis Laboratory received 12 sample(s) on 3/20/2020 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 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,

Ander

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

2003960-001

Project: Lab ID: Analytical Report Lab Order 2003960

## Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Date Reported: 3/27/2020 Client Sample ID: BH20-01 0' Collection Date: 3/18/2020 12:30:00 PM

Received Date: 3/20/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGAI	NICS					Analyst: BRM
Diesel Range Organics (DRO)	630	480		mg/Kg	50	3/26/2020 10:46:13 AM
Motor Oil Range Organics (MRO)	14000	2400		mg/Kg	50	3/26/2020 10:46:13 AM
Surr: DNOP	0	55.1-146	S	%Rec	50	3/26/2020 10:46:13 AM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	290	60		mg/Kg	20	3/25/2020 7:57:13 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: JMR
Benzene	ND	0.024		mg/Kg	1	3/24/2020 4:11:26 PM
Toluene	ND	0.047		mg/Kg	1	3/24/2020 4:11:26 PM
Ethylbenzene	ND	0.047		mg/Kg	1	3/24/2020 4:11:26 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/24/2020 4:11:26 PM
Surr: 1,2-Dichloroethane-d4	83.7	70-130		%Rec	1	3/24/2020 4:11:26 PM
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	3/24/2020 4:11:26 PM
Surr: Dibromofluoromethane	96.4	70-130		%Rec	1	3/24/2020 4:11:26 PM
Surr: Toluene-d8	99.8	70-130		%Rec	1	3/24/2020 4:11:26 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/24/2020 4:11:26 PM
Surr: BFB	99.7	70-130		%Rec	1	3/24/2020 4:11:26 PM

Matrix: SOIL

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

**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 Quanitative 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 1 of 14

**Project:** 

Analytical Report Lab Order 2003960

## Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Date Reported: 3/27/2020 Client Sample ID: BH20-01 0.5' Collection Date: 3/18/2020 12:35:00 PM Received Date: 3/20/2020 8:10:00 AM

Lab ID: 2003960-002	Matrix: SOIL	Receiv	Received Date: 3/20/2020 8:10:00 AM			
Analyses	Result	RL Qual	Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS				Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	3/25/2020 12:51:35 PM	
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	3/25/2020 12:51:35 PM	
Surr: DNOP	105	55.1-146	%Rec	1	3/25/2020 12:51:35 PM	
EPA METHOD 300.0: ANIONS					Analyst: JMT	
Chloride	770	60	mg/Kg	20	3/25/2020 8:09:33 PM	
EPA METHOD 8260B: VOLATILES SHO	ORT LIST				Analyst: JMR	
Benzene	ND	0.023	mg/Kg	1	3/24/2020 5:37:15 PM	
Toluene	ND	0.047	mg/Kg	1	3/24/2020 5:37:15 PM	
Ethylbenzene	ND	0.047	mg/Kg	1	3/24/2020 5:37:15 PM	
Xylenes, Total	ND	0.094	mg/Kg	1	3/24/2020 5:37:15 PM	
Surr: 1,2-Dichloroethane-d4	87.7	70-130	%Rec	1	3/24/2020 5:37:15 PM	
Surr: 4-Bromofluorobenzene	101	70-130	%Rec	1	3/24/2020 5:37:15 PM	
Surr: Dibromofluoromethane	99.8	70-130	%Rec	1	3/24/2020 5:37:15 PM	
Surr: Toluene-d8	96.0	70-130	%Rec	1	3/24/2020 5:37:15 PM	
EPA METHOD 8015D MOD: GASOLINE	ERANGE				Analyst: JMR	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/24/2020 5:37:15 PM	
Surr: BFB	102	70-130	%Rec	1	3/24/2020 5:37:15 PM	

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

**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 Quanitative 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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2003960-004

Project: Lab ID: Analytical Report Lab Order 2003960

## Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Date Reported: 3/27/2020 Client Sample ID: BH20-03 0' Collection Date: 3/18/2020 1:20:00 PM

Received Date: 3/20/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGAN	NICS					Analyst: BRM
Diesel Range Organics (DRO)	4900	96		mg/Kg	10	3/24/2020 3:35:10 PM
Motor Oil Range Organics (MRO)	2600	480		mg/Kg	10	3/24/2020 3:35:10 PM
Surr: DNOP	0	55.1-146	S	%Rec	10	3/24/2020 3:35:10 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	200	60		mg/Kg	20	3/25/2020 8:21:54 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: JMR
Benzene	ND	0.024		mg/Kg	1	3/24/2020 7:02:37 PM
Toluene	ND	0.048		mg/Kg	1	3/24/2020 7:02:37 PM
Ethylbenzene	ND	0.048		mg/Kg	1	3/24/2020 7:02:37 PM
Xylenes, Total	ND	0.095		mg/Kg	1	3/24/2020 7:02:37 PM
Surr: 1,2-Dichloroethane-d4	90.5	70-130		%Rec	1	3/24/2020 7:02:37 PM
Surr: 4-Bromofluorobenzene	79.0	70-130		%Rec	1	3/24/2020 7:02:37 PM
Surr: Dibromofluoromethane	99.8	70-130		%Rec	1	3/24/2020 7:02:37 PM
Surr: Toluene-d8	95.7	70-130		%Rec	1	3/24/2020 7:02:37 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/24/2020 7:02:37 PM
Surr: BFB	105	70-130		%Rec	1	3/24/2020 7:02:37 PM

Matrix: SOIL

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

**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 Quanitative 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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2003960-005

Project: Lab ID: Analytical Report Lab Order 2003960

Date Reported: 3/27/2020

## Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Client Sample ID: BH20-03 0.5' Collection Date: 3/18/2020 1:25:00 PM Received Date: 3/20/2020 8:10:00 AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: BRM
Diesel Range Organics (DRO)	38	9.8	mg/Kg	1	3/24/2020 3:59:37 PM
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	3/24/2020 3:59:37 PM
Surr: DNOP	102	55.1-146	%Rec	1	3/24/2020 3:59:37 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	590	60	mg/Kg	20	3/25/2020 8:34:14 PM
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: JMR
Benzene	ND	0.024	mg/Kg	1	3/24/2020 7:31:13 PM
Toluene	ND	0.048	mg/Kg	1	3/24/2020 7:31:13 PM
Ethylbenzene	ND	0.048	mg/Kg	1	3/24/2020 7:31:13 PM
Xylenes, Total	ND	0.096	mg/Kg	1	3/24/2020 7:31:13 PM
Surr: 1,2-Dichloroethane-d4	89.9	70-130	%Rec	1	3/24/2020 7:31:13 PM
Surr: 4-Bromofluorobenzene	93.6	70-130	%Rec	1	3/24/2020 7:31:13 PM
Surr: Dibromofluoromethane	96.6	70-130	%Rec	1	3/24/2020 7:31:13 PM
Surr: Toluene-d8	101	70-130	%Rec	1	3/24/2020 7:31:13 PM
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/24/2020 7:31:13 PM
Surr: BFB	107	70-130	%Rec	1	3/24/2020 7:31:13 PM

Matrix: SOIL

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

**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 Quanitative 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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2003960-007

Project: Lab ID: Analytical Report Lab Order 2003960

## Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Date Reported: 3/27/2020 Client Sample ID: BH20-05 0' Collection Date: 3/18/2020 1:55:00 PM

Received Date: 3/20/2020 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGAN	NICS					Analyst: BRM
Diesel Range Organics (DRO)	7500	99		mg/Kg	10	3/24/2020 4:24:03 PM
Motor Oil Range Organics (MRO)	3800	490		mg/Kg	10	3/24/2020 4:24:03 PM
Surr: DNOP	0	55.1-146	S	%Rec	10	3/24/2020 4:24:03 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	1400	60		mg/Kg	20	3/25/2020 9:36:00 PM
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: JMR
Benzene	ND	0.023		mg/Kg	1	3/24/2020 7:59:44 PM
Toluene	ND	0.046		mg/Kg	1	3/24/2020 7:59:44 PM
Ethylbenzene	ND	0.046		mg/Kg	1	3/24/2020 7:59:44 PM
Xylenes, Total	ND	0.093		mg/Kg	1	3/24/2020 7:59:44 PM
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%Rec	1	3/24/2020 7:59:44 PM
Surr: 4-Bromofluorobenzene	84.1	70-130		%Rec	1	3/24/2020 7:59:44 PM
Surr: Dibromofluoromethane	94.7	70-130		%Rec	1	3/24/2020 7:59:44 PM
Surr: Toluene-d8	97.4	70-130		%Rec	1	3/24/2020 7:59:44 PM
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/24/2020 7:59:44 PM
Surr: BFB	99.6	70-130		%Rec	1	3/24/2020 7:59:44 PM

Matrix: SOIL

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

**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 Quanitative 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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Project:

Analytical Report Lab Order 2003960

#### Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Date Reported: 3/27/2020 Client Sample ID: BH20-05 0.5' Collection Date: 3/18/2020 2:00:00 PM Received Date: 3/20/2020 8:10:00 AM

Lab ID: 2003960-008	Matrix: SOIL	<b>Received Date:</b> 3/20/2020 8:10:00 AM				
Analyses	Result	RL Qu	al Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	3/24/2020 4:48:38 PM	
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	3/24/2020 4:48:38 PM	
Surr: DNOP	103	55.1-146	%Rec	1	3/24/2020 4:48:38 PM	
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>	
Chloride	4200	150	mg/Kg	50	3/26/2020 12:18:33 PM	
EPA METHOD 8260B: VOLATILES SH	IORT LIST				Analyst: <b>JMR</b>	
Benzene	ND	0.025	mg/Kg	1	3/24/2020 8:28:12 PM	
Toluene	ND	0.049	mg/Kg	1	3/24/2020 8:28:12 PM	
Ethylbenzene	ND	0.049	mg/Kg	1	3/24/2020 8:28:12 PM	
Xylenes, Total	ND	0.098	mg/Kg	1	3/24/2020 8:28:12 PM	
Surr: 1,2-Dichloroethane-d4	80.6	70-130	%Rec	1	3/24/2020 8:28:12 PM	
Surr: 4-Bromofluorobenzene	94.4	70-130	%Rec	1	3/24/2020 8:28:12 PM	
Surr: Dibromofluoromethane	95.4	70-130	%Rec	1	3/24/2020 8:28:12 PM	
Surr: Toluene-d8	102	70-130	%Rec	1	3/24/2020 8:28:12 PM	
EPA METHOD 8015D MOD: GASOLIN	E RANGE				Analyst: RAA	
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	3/25/2020 1:36:01 PM	
Surr: BFB	101	70-130	%Rec	1	3/25/2020 1:36:01 PM	

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

**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 Quanitative 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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Project:

Analytical Report Lab Order 2003960

Date Reported: 3/27/2020

#### Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Client Sample ID: SS20-02 0' Collection Date: 3/18/2020 9:25:00 AM Received Date: 3/20/2020 8:10:00 AM

Lab ID: 2003960-010	Matrix: SOIL	<b>Received Date:</b> 3/20/2020 8:10:00 AM				
Analyses	Result	RL Qua	l Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RAM	NGE ORGANICS				Analyst: BRM	
Diesel Range Organics (DRO)	13	10	mg/Kg	1	3/24/2020 5:13:07 PM	
Motor Oil Range Organics (MRO)	55	50	mg/Kg	1	3/24/2020 5:13:07 PM	
Surr: DNOP	104	55.1-146	%Rec	1	3/24/2020 5:13:07 PM	
EPA METHOD 300.0: ANIONS					Analyst: JMT	
Chloride	300	60	mg/Kg	20	3/25/2020 10:00:42 PM	
EPA METHOD 8260B: VOLATILES SI	HORT LIST				Analyst: JMR	
Benzene	ND	0.024	mg/Kg	1	3/24/2020 8:56:46 PM	
Toluene	ND	0.048	mg/Kg	1	3/24/2020 8:56:46 PM	
Ethylbenzene	ND	0.048	mg/Kg	1	3/24/2020 8:56:46 PM	
Xylenes, Total	ND	0.097	mg/Kg	1	3/24/2020 8:56:46 PM	
Surr: 1,2-Dichloroethane-d4	81.5	70-130	%Rec	1	3/24/2020 8:56:46 PM	
Surr: 4-Bromofluorobenzene	95.5	70-130	%Rec	1	3/24/2020 8:56:46 PM	
Surr: Dibromofluoromethane	96.3	70-130	%Rec	1	3/24/2020 8:56:46 PM	
Surr: Toluene-d8	97.2	70-130	%Rec	1	3/24/2020 8:56:46 PM	
EPA METHOD 8015D MOD: GASOLIN	NE RANGE				Analyst: JMR	
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/24/2020 8:56:46 PM	
Surr: BFB	102	70-130	%Rec	1	3/24/2020 8:56:46 PM	

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

**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 Quanitative 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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**Project:** 

**Analytical Report** Lab Order 2003960

#### Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com 1h

Date Reported: 3/27/2020 Client Sample ID: SS20-04 0' Collection Date: 3/18/2020 10:40:00 AM Received Date: 3/20/2020 8:10:00 AM

Lab ID: 2003960-011	Matrix: SOIL	rix: SOIL Received Date: 3/20/2020 8:10:00 AM					
Analyses	Result	RL Qua	l Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	120	9.8	mg/Kg	1	3/24/2020 5:37:34 PM		
Motor Oil Range Organics (MRO)	190	49	mg/Kg	1	3/24/2020 5:37:34 PM		
Surr: DNOP	99.8	55.1-146	%Rec	1	3/24/2020 5:37:34 PM		
EPA METHOD 300.0: ANIONS					Analyst: JMT		
Chloride	140	60	mg/Kg	20	3/25/2020 10:13:02 PM		
EPA METHOD 8260B: VOLATILES SH	IORT LIST				Analyst: JMR		
Benzene	ND	0.024	mg/Kg	1	3/24/2020 9:25:23 PM		
Toluene	ND	0.049	mg/Kg	1	3/24/2020 9:25:23 PM		
Ethylbenzene	ND	0.049	mg/Kg	1	3/24/2020 9:25:23 PM		
Xylenes, Total	ND	0.098	mg/Kg	1	3/24/2020 9:25:23 PM		
Surr: 1,2-Dichloroethane-d4	84.3	70-130	%Rec	1	3/24/2020 9:25:23 PM		
Surr: 4-Bromofluorobenzene	94.2	70-130	%Rec	1	3/24/2020 9:25:23 PM		
Surr: Dibromofluoromethane	97.9	70-130	%Rec	1	3/24/2020 9:25:23 PM		
Surr: Toluene-d8	95.2	70-130	%Rec	1	3/24/2020 9:25:23 PM		
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analyst: JMR		
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	3/24/2020 9:25:23 PM		
Surr: BFB	99.9	70-130	%Rec	1	3/24/2020 9:25:23 PM		

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

**Qualifiers:** 

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

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Project:** Fighting Okra 18 Fed Com 1h

Analytical Report Lab Order 2003960

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 3/27/2020 Client Sample ID: SS20-06 0' Collection Date: 3/18/2020 10:05:00 AM Perceived Date: 3/20/2020 8:10:00 AM

Lab ID: 2003960-012	Matrix: SOIL	Re	eceive	ed Date:	3/20/2	020 8:10:00 AM
Analyses	Result	RL (	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE C	RGANICS					Analyst: BRM
Diesel Range Organics (DRO)	1600	200		mg/Kg	20	3/25/2020 1:15:40 PM
Motor Oil Range Organics (MRO)	2900	980		mg/Kg	20	3/25/2020 1:15:40 PM
Surr: DNOP	0	55.1-146	S	%Rec	20	3/25/2020 1:15:40 PM
EPA METHOD 300.0: ANIONS						Analyst: JMT
Chloride	480	60		mg/Kg	20	3/25/2020 10:25:23 PM
EPA METHOD 8260B: VOLATILES SHORT	LIST					Analyst: JMR
Benzene	ND	0.024		mg/Kg	1	3/25/2020 12:17:29 AM
Toluene	ND	0.049		mg/Kg	1	3/25/2020 12:17:29 AM
Ethylbenzene	ND	0.049		mg/Kg	1	3/25/2020 12:17:29 AM
Xylenes, Total	ND	0.097		mg/Kg	1	3/25/2020 12:17:29 AM
Surr: 1,2-Dichloroethane-d4	83.2	70-130		%Rec	1	3/25/2020 12:17:29 AM
Surr: 4-Bromofluorobenzene	97.7	70-130		%Rec	1	3/25/2020 12:17:29 AM
Surr: Dibromofluoromethane	100	70-130		%Rec	1	3/25/2020 12:17:29 AM
Surr: Toluene-d8	101	70-130		%Rec	1	3/25/2020 12:17:29 AM
EPA METHOD 8015D MOD: GASOLINE RA	NGE					Analyst: JMR
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	3/25/2020 12:17:29 AM
Surr: BFB	102	70-130		%Rec	1	3/25/2020 12:17:29 AM

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

**Qualifiers:** 

- \* Value exceeds Maximum Contaminant Level.D Sample Diluted Due to Matrix
- D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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 Env	WO#: 2003960 27-Mar-20	
Client:	Devon Energy	
Project:	Fighting Okra 18 Fed Com 1h	

Sample ID: MB-51329	SampT	ype: <b>m</b> t	olk	Tes	tCode: EF	PA Method	300.0: Anion	s		
Client ID: PBS	Batch	n ID: 51	329	F	RunNo: 67	7561				
Prep Date: 3/25/2020	Analysis D	ate: 3/	25/2020	S	SeqNo: 2	333079	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
onionac										
Sample ID: LCS-51329	SampT	ype: Ics	6	Tes	tCode: EF	PA Method	300.0: Anion	s		
Sample ID: LCS-51329 Client ID: LCSS	SampT	ype: <b>Ics</b> 1D: <b>51</b>	329	Tes	tCode: EF	PA Method 7561	300.0: Anion	S		
Sample ID: LCS-51329 Client ID: LCSS Prep Date: 3/25/2020	SampT Batch Analysis D	ype: Ics 1D: 51 pate: 3/	329 25/2020	Tes F S	tCode: EF RunNo: 67 SeqNo: 23	PA Method 7561 333080	<b>300.0: Anion</b> Units: <b>mg/K</b>	s		
Sample ID: LCS-51329 Client ID: LCSS Prep Date: 3/25/2020 Analyte	SampT Batch Analysis D Result	ype: Ics n ID: 51 Pate: 3/ PQL	329 25/2020 SPK value	Tes F S SPK Ref Val	tCode: EF RunNo: 67 SeqNo: 23 %REC	PA Method 7561 333080 LowLimit	<b>300.0: Anion</b> Units: <b>mg/K</b> HighLimit	s g %RPD	RPDLimit	Qual

#### **Qualifiers:**

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

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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# QC SUMMARY REPORT Hall

	WO#:	2003960
Environmental Analysis Laboratory, Inc.		27-Mar-20

Client: Project:	Devon E Fighting	nergy Okra 18 Fe	ed Com	1h							
Sample ID:	LCS-51268	SampT	vpe: LC	s	Tes	tCode: E	PA Method	8015M/D: Die	esel Rango	e Organics	
Client ID:	LCSS	Batch	h ID: 51	268	F	RunNo: 6	7509			· ga	
Prep Date:	3/23/2020	Analysis D	Date: 3		ç	SeaNo: 2	331474	Units: ma/K	a		
A salata	0/20/2020	Deset		0.001/					<b>9</b>		0
Analyte		Result 48	PQL 10	50 00	SPK Ref Val	%REC	LOWLIMIt	HighLimit	%RPD	RPDLIMIt	Quai
Surr: DNOP	Sigurius (BI(O)	4.2	10	5.000	Ū	85.0	55.1	146			
Sample ID:	MB-51268	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batch	h ID: 51	268	F	RunNo: 6	7509				
Prep Date:	3/23/2020	Analysis D	Date: 3	/24/2020	5	SeqNo: 2	331475	Units: mg/K	g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C	Drganics (DRO)	ND	10								
Motor Oil Rang	e Organics (MRO)	ND 9.5	50	10.00		95.2	55 1	146			
		5.5		10:00		55.2	55.1	140			
Sample ID:	LCS-51299	SampT	ype: LC	S	Tes	tCode: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	LCSS	Batch	h ID: 51	299	F	RunNo: 6	7548				
Prep Date:	3/24/2020	Analysis D	Date: 3	/25/2020	5	SeqNo: 2	332705	Units: %Red	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		5.3		5.000		105	55.1	146			
Sample ID:	MB-51299	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batch	n ID: <b>51</b>	299	F	RunNo: 6	7548				
Prep Date:	3/24/2020	Analysis D	Date: 3	/25/2020	S	SeqNo: 2	332706	Units: %Red	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		11		10.00		113	55.1	146			
Sample ID:	LCS-51325	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	LCSS	Batch	h ID: 51	325	F	RunNo: 6	7586				
Prep Date:	3/25/2020	Analysis D	Date: 3	/26/2020	S	SeqNo: 2	333835	Units: %Red	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		4.3		5.000		85.4	55.1	146			
Sample ID:	MB-51325	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8015M/D: Die	esel Range	e Organics	
Client ID:	PBS	Batch	h ID: 51	325	F	RunNo: 6	7586				
Prep Date:	3/25/2020	Analysis D	Date: 3	/26/2020	S	SeqNo: 2	333836	Units: %Red	;		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP		9.1		10.00		91.3	55.1	146			

#### **Qualifiers:**

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

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Sample pH Not In Range Reporting Limit Р
- RL

Page 11 of 14

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

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit 2003960

WO#:

Page 79 of 126

Client: Devon E	nergy									
<b>Project:</b> Fighting	Okra 18 F	ed Com	1h							
Sample ID: Ice-51265	Samo		9	Tee	tCode: E	PA Method	8260B: Vola	tilos Short	list	
	Datio		Эсг	103			0200B. VOIA	liles Short	LISI	
	Baic	11D: 51	200	Г		/530		-		
Prep Date: 3/23/2020	Analysis L	Date: 3/	24/2020	5	SeqNo: 2	331070	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.9	70	130			
Toluene	1.1	0.050	1.000	0	106	70	130			
Ethylbenzene	1.1	0.050	1.000	0	112	70	130			
Xylenes, Total	3.3	0.10	3.000	0	110	70	130			
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		85.6	70	130			
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.5	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		99.1	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			
Sample ID: mb-51265	Samp	Гуре: <b>МЕ</b>	BLK	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: PBS	Batc	h ID: 512	265	F	RunNo: 6	7530				
Prep Date: 3/23/2020	Analysis [	Date: 3/	24/2020	S	SeqNo: 2	331071	Units: mg/K	٤g		
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	0.44		0.5000		88.8	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.6	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.8	70	130			
Surr: Toluene-d8	0.49		0.5000		98.0	70	130			
Sample ID: 2003960-001ams	Samp	Туре: <b>МS</b>	6	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: BH20-01 0'	Batc	h ID: 512	265	F	RunNo: 6	7530				
Prep Date: 3/23/2020	Analysis [	Date: 3/	24/2020	S	SeqNo: 2	331962	Units: mg/K	٢g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.023	0.9346	0	95.2	70	130			
Toluene	1.0	0.047	0.9346	0	109	70	130			
Ethylbenzene	1.1	0.047	0.9346	0	114	70	130			
Xylenes, Total	3.2	0.093	2.804	0	114	70	130			
Surr: 1,2-Dichloroethane-d4	0.39		0.4673		83.2	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.4673		101	70	130			
Surr: Dibromofluoromethane	0.43		0.4673		92.8	70	130			
Surr: Toluene-d8	0.45		0.4673		97.3	70	130			

Devon Energy

**Client:** 

**Project:** 

Sample ID: 2003960-001amsd

Client ID: BH20-01 0'

Prep Date: 3/23/2020

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

Fighting Okra 18 Fed Com 1h

SampType: MSD

Batch ID: 51265

Analysis Date: 3/24/2020

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.024	0.9452	0	95.3	70	130	1.26	20	
Toluene	1.0	0.047	0.9452	0	106	70	130	1.68	20	
Ethylbenzene	1.1	0.047	0.9452	0	111	70	130	1.12	0	
Xylenes, Total	3.1	0.095	2.836	0	108	70	130	4.25	0	
Surr: 1,2-Dichloroethane-d4	0.39		0.4726		82.7	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.47		0.4726		99.9	70	130	0	0	
Surr: Dibromofluoromethane	0.45		0.4726		96.2	70	130	0	0	
Surr: Toluene-d8	0.45		0.4726		95.7	70	130	0	0	
Sample ID: Ics-51277	Samp	Гуре: <b>LC</b>	S4	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: BatchQC	Batc	h ID: 512	277	F	RunNo: 6	7556				
Prep Date: 3/23/2020	Analysis [	Date: 3/	25/2020	5	SeqNo: 2	332308	Units: %Re	c		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.49		0.5000		97.5	70	130			
Surr: Toluene-d8	0.47		0.5000		94.2	70	130			
Sample ID: mb-51277	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: PBS	Batc	h ID: 512	277	F	RunNo: 6	7556				
Prep Date: 3/23/2020	Analysis [	Date: 3/	25/2020	S	SeqNo: 2	332310	Units: %Ree	C		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		89.1	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.9	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.5	70	130			
Surr: Toluene-d8	0.49		0.5000		97.3	70	130			

#### **Qualifiers:**

Value exceeds Maximum Contaminant Level. \*

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- В Anal
- Е Valu

J Analy

Р Sample pH Not In Range

RL

Page 13 of 14

WO#:	2003960

27-Mar-20

yte detected in the associated Method Blank
e above quantitation range
yte detected below quantitation limits

TestCode: EPA Method 8260B: Volatiles Short List

Units: mg/Kg

RunNo: 67530

SeqNo: 2331963

# **QC SUMMARY REPORT**

Hell Environmen	i MDi ( tal Anali	yric I	aharat	ory Inc					WO#:	2003960
	tal Allaly	<b>515</b> I		or y, me.						27-Mar-20
Client: Devon	Energy									
Project: Fightin	g Okra 18 Fe	ed Com	1h							
Sample ID: Ics-51265	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Batch	n ID: 51	265	F	lunNo: 6	7530				
Prep Date: 3/23/2020	Analysis D	ate: 3/	24/2020	S	eqNo: 2	331076	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	5.0	25.00	0	80.3	70	130			
Surr: BFB	510		500.0		102	70	130			
Sample ID: mb-51265	SampT	ype: M	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	Batch	n ID: <b>51</b>	265	F	lunNo: 6	7530				
Prep Date: 3/23/2020	Analysis D	ate: 3/	24/2020	5	eqNo: 2	331077	Units: <b>mg/K</b>	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		98.5	70	130			
Sample ID: 2003960-002am	<b>s</b> SampT	ype: MS	5	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: BH20-01 0.5'	Batch	n ID: <b>51</b>	265	F	lunNo: 6	7530				
Prep Date: 3/23/2020	Analysis D	ate: 3/	24/2020	5	eqNo: 2	331984	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	4.8	24.15	0	92.6	70	130			
Surr: BFB	500		483.1		103	70	130			
Sample ID: 2003960-002am	<b>sd</b> SampT	ype: MS	SD	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: BH20-01 0.5'	Batch	n ID: <b>51</b>	265	F	lunNo: 6	7530				
Prep Date: 3/23/2020	Analysis D	ate: 3/	24/2020	S	eqNo: 2	331985	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	20	4.6	23.08	0	88.3	70	130	9.22	20	
Surr: BFB	470		461.7		101	70	130	0	0	
Sample ID: Ics-51277	SampT	ype: LC	s	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: LCSS	Batch	n ID: <b>51</b>	277	F	lunNo: 6	7556				
Prep Date: 3/23/2020	Analysis D	ate: 3/	25/2020	S	eqNo: 2	332351	Units: %Re	6		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		99.8	70	130			
Sample ID: mb-51277	SampT	ype: M	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID: PBS	Batch	n ID: 51	277	F	unNo: 6	7556				
Prep Date: 3/23/2020	Analysis D	ate: 3/	25/2020	S	eqNo: 2	332359	Units: %Re	•		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	500		500.0		101	70	130			

**Qualifiers:** 

\* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

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

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 14 of 14

	(1)/18/2020 IVIRONME JALYSIS BORATOR	77:56:45 AM NTAL	Ha TE	ll Environme L: 505-345-, Website: ww	ental Anal 49 Albuquer 3975 FAX w.hallenv	ysis Labo 01 Hawki que, NM : 505-345 ironmenta	oratory ins NE 87109 5-4107 al.com	Sar	mple Log-In Ch	Page 82 d
Client Nar	ne: DEVON	N ENERGY	Work	Order Num	nber: 200	3960			RcptNo:	
Received	3y: Yazmi	ine Garduno	3/20/20	20 8:10:00	АМ		Nazio	in lighdui	u	
Completed Reviewed I	By: Desire By: VG	ee Dominguez 3/20/20	3/20/20	20 2:07:24	PM		T	N		
Chain of	Custody									
1. Is Chain	of Custody su	ufficiently complete	?		Yes		No		Not Present	
2. How wa	the sample c	delivered?			Cou	irier				
I am In										
3. Was an	attempt made	to cool the sample	s?		Yes		No			
4. Were all	samples recei	ived at a temperatu	ire of >0° C	to 6.0°C	Yes		No			
5. Sample(	s) in proper co	ontainer(s)?			Yes		No			
6. Sufficient	sample volun	ne for indicated tes	t(s)?		Yes	~	No			
7. Are samp	les (except Vo	OA and ONG) prop	erly preserve	ed?	Yes	~	No			
8. Was pres	ervative adde	d to bottles?			Yes		No	~		
9. Received	at least 1 vial	with headspace <	1/4" for AQ V	'OA?	Yes		No		NA 🔽	
10. Were an	sample conta	ainers received bro	ken?		Yes		No	~	# of preserved	/
11. Does pap	erwork match	bottle labels?			Yes		No		bottles checked for pH:	
12 Are matri	ces correctly in	dentified on Chain	of Custodu?		Mar		Ne		Adjusted?	2 unless noted)
13 Is it clear	what analyses	s were requested?	of Custouy?		res		NO			
14. Were all I	olding times :	able to be met?			Yes		NO		Checked by 10	3/20/20
(If no, not	fy customer fo	or authorization.)			Yes		NO	ц ,	Checked by. JP	3100110
Special Ha	ndling (if a	applicable)								
15. Was clie	nt notified of a	II discrepancies wit	th this order?	6	Yes		No		NA 🔽	
Pe	son Notified:	<b></b>		Date	1	and the second diversion of the				
Bv	Whom:	,	en anter anter anter a	Via:			Dhana -	1.5		
Re	ardina:	1	All and the second streets of	via.				Jirax		
Clie	ent Instruction	s:			nile meneta ( ma					
16. Addition	al remarks									
17. Cooler I	nformation									
Coole	r No Temp	°C Condition	Seal Intact	Seal No	Seal D	ate	Signed	Bv		
1	2.8	Good	12 C 9 3 01 41 5 1		- Sui D	1000	orgried	-,		
2	4.1	Good								
3	3.4	Good								
4	2.8	Good					140-			

Page 1 of 2

	50:45 AM							Gorden 1	50 0339 750 750 750
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ENV YSIS lenvironn Albuque Fax nalysis	8260 (VOA) 61) F, Br, NO <sub>3</sub> , NO <sub>2</sub> , PO4, SO4	1	0 \ I	77	0	0 \ I	7 7 7	CC .	10-2-0-1-
ALL NAL www.hal ns NE - 5-3975 A	PAHs by 8310 or 8270SIMS RCRA 8 Metals		10		LU N	4			U Solo
A Hawkir 505-344	EDB (Method 504.1)		A		A	A		ē.	0 O
4901 Tel.		7	U F F	17	41	L L	7 7 3	Sired	0°C
41		1		5 - 2	914	a a	27.	Fab Der	of this point
Day	UN Marks QCO396	-001	- 003	100-	100	-006	110-	J/19/20 1	Date Time Date Time DS/O
Time: 5 Rush 	ger: L Chord T Yes Including CF): Lev Including CF): Lev Inservative Type	166						Via:	Via: Nr. 81 3/2
Turn-Around <u>B</u> Standard Project Name Fighting Project #:	Project Mana N cAchi Sampler: N On Ice: # of Coolers: Cooler Temp Container Type and #	20 4						Received by	Received by
C Hun	dation)	0	5-1	0,00	10	1.5.	000	5 (	othe of year
ody Reco	evel 4 (Full Vali ance	10-00	120-01 0	120-03 6	120-03	120-05 9	10-00 10-00	aurou a	to Hall Environmental
of-Cust	□ Az Compli □ Other □ Matrix Sa	Soil BI	81	181	BIB	181	55	Relinguished by	Relinquighed by
hain-	Fax#:       *ackage:       aard       ation:       AC       (Type)       Imme	2:01	01:0	1:20	1:30	0:00	01:01	Time: 1400	Time:
Client: Client: Ach	email or QA/QC F Can Accredit DEL/ Date	318					$\rightarrow$	2/19/2	Date: 3/19/20



June 22, 2020

Amanda Davis Devon Energy 6488 Seven Rivers Highway Artesia, NM 88210 TEL: (575) 748-0176 FAX:

RE: Fighting Okra 18 Fed Com #001

OrderNo.: 2006700

Hall Environmental Analysis Laboratory

TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com

4901 Hawkins NE

Albuquerque, NM 87109

Dear Amanda Davis:

Hall Environmental Analysis Laboratory received 29 sample(s) on 6/12/2020 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 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,

andy

Andy Freeman Laboratory Manager 4901 Hawkins NE Albuquerque, NM 87109

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-01 6"

CLIENT: Devon Energy		Client Sample ID: BS20-01 6"						
<b>Project:</b> Fighting Okra 18 Fed Com	#001	Colle	ction Date:	6/11/2	020			
Lab ID: 2006700-001	Matrix: SOIL	Rece	eived Date:	6/12/2	020 9:35:00 AM			
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/14/2020 12:36:47 PM			
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/14/2020 12:36:47 PM			
Surr: DNOP	133	55.1-146	%Rec	1	6/14/2020 12:36:47 PM			
EPA METHOD 300.0: ANIONS					Analyst: CAS			
Chloride	140	60	mg/Kg	20	6/18/2020 1:28:24 AM			
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF			
Benzene	ND	0.025	mg/Kg	1	6/13/2020 10:25:21 PM			
Toluene	ND	0.050	mg/Kg	1	6/13/2020 10:25:21 PM			
Ethylbenzene	ND	0.050	mg/Kg	1	6/13/2020 10:25:21 PM			
Xylenes, Total	ND	0.10	mg/Kg	1	6/13/2020 10:25:21 PM			
Surr: 1,2-Dichloroethane-d4	96.3	70-130	%Rec	1	6/13/2020 10:25:21 PM			
Surr: 4-Bromofluorobenzene	96.8	70-130	%Rec	1	6/13/2020 10:25:21 PM			
Surr: Dibromofluoromethane	101	70-130	%Rec	1	6/13/2020 10:25:21 PM			
Surr: Toluene-d8	102	70-130	%Rec	1	6/13/2020 10:25:21 PM			
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analyst: DJF			
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/13/2020 10:25:21 PM			
Surr: BFB	106	70-130	%Rec	1	6/13/2020 10:25:21 PM			

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 1 of 38

Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS20-02 6" **Project:** Fighting Okra 18 Fed Com #001 Collection Date: 6/11/2020 Lab ID: 2006700-002 Matrix: SOIL Received Date: 6/12/2020 9:35:00 AM Result **RL** Qual Units DF **Date Analyzed** Analyses **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM Diesel Range Organics (DRO) ND 9.2 mg/Kg 1 6/14/2020 12:47:20 PM Motor Oil Range Organics (MRO) ND 46 mg/Kg 1 6/14/2020 12:47:20 PM Surr: DNOP 137 55.1-146 %Rec 1 6/14/2020 12:47:20 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride 6/18/2020 7:02:20 PM 190 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF Benzene ND 0.025 mg/Kg 6/14/2020 12:48:06 AM 1 Toluene ND 0.049 mg/Kg 6/14/2020 12:48:06 AM 1 Ethvlbenzene ND 0.049 mg/Kg 1 6/14/2020 12:48:06 AM Xylenes, Total ND 0.098 mg/Kg 1 6/14/2020 12:48:06 AM Surr: 1.2-Dichloroethane-d4 92.8 70-130 %Rec 1 6/14/2020 12:48:06 AM Surr: 4-Bromofluorobenzene 93.8 70-130 %Rec 1 6/14/2020 12:48:06 AM Surr: Dibromofluoromethane 106 70-130 %Rec 1 6/14/2020 12:48:06 AM Surr: Toluene-d8 96.7 70-130 %Rec 1 6/14/2020 12:48:06 AM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: DJF Gasoline Range Organics (GRO) ND mg/Kg 6/14/2020 12:48:06 AM 4.9 1 Surr: BFB 103 70-130 %Rec 1 6/14/2020 12:48:06 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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**Project:** Fighting Okra 18 Fed Com #001

Analytical Report Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020

Client Sample ID: BS20-03 6" Collection Date: 6/11/2020 Received Date: 6/12/2020 9:35:00 AM

Lab ID: 2006700-003	Matrix: SOIL	Received Date: 6/12/2020 9:35:00 AM					
Analyses	Result	RL Qual	Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/14/2020 12:57:52 PM		
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/14/2020 12:57:52 PM		
Surr: DNOP	131	55.1-146	%Rec	1	6/14/2020 12:57:52 PM		
EPA METHOD 300.0: ANIONS					Analyst: JMT		
Chloride	170	60	mg/Kg	20	6/18/2020 7:39:35 PM		
EPA METHOD 8260B: VOLATILES SHOR	T LIST				Analyst: DJF		
Benzene	ND	0.025	mg/Kg	1	6/14/2020 1:16:36 AM		
Toluene	ND	0.049	mg/Kg	1	6/14/2020 1:16:36 AM		
Ethylbenzene	ND	0.049	mg/Kg	1	6/14/2020 1:16:36 AM		
Xylenes, Total	ND	0.099	mg/Kg	1	6/14/2020 1:16:36 AM		
Surr: 1,2-Dichloroethane-d4	89.9	70-130	%Rec	1	6/14/2020 1:16:36 AM		
Surr: 4-Bromofluorobenzene	89.9	70-130	%Rec	1	6/14/2020 1:16:36 AM		
Surr: Dibromofluoromethane	106	70-130	%Rec	1	6/14/2020 1:16:36 AM		
Surr: Toluene-d8	99.9	70-130	%Rec	1	6/14/2020 1:16:36 AM		
EPA METHOD 8015D MOD: GASOLINE R.	ANGE				Analyst: DJF		
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 1:16:36 AM		
Surr: BFB	95.9	70-130	%Rec	1	6/14/2020 1:16:36 AM		

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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**Analytical Report** Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-04 6"

Project:	Fighting Okra 18 Fed Com #	001	<b>Collection Date:</b> 6/11/2020							
Lab ID:	2006700-004	Matrix: SOIL	Received Date: 6/12/2020 9:35:00 AM							
Analyses		Result	RL Qu	al Units	DF	Date Analyzed				
EPA ME	THOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst: BRM				
Diesel R	ange Organics (DRO)	ND	9.7	mg/Kg	1	6/14/2020 1:08:27 PM				
Motor O	il Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 1:08:27 PM				
Surr:	DNOP	111	55.1-146	%Rec	1	6/14/2020 1:08:27 PM				
EPA ME	THOD 300.0: ANIONS					Analyst: JMT				
Chloride	)	150	60	mg/Kg	20	6/18/2020 4:08:36 PM				
EPA ME	THOD 8260B: VOLATILES SH	ORT LIST				Analyst: DJF				
Benzene	e	ND	0.025	mg/Kg	1	6/14/2020 1:45:15 AM				
Toluene		ND	0.050	mg/Kg	1	6/14/2020 1:45:15 AM				
Ethylber	nzene	ND	0.050	mg/Kg	1	6/14/2020 1:45:15 AM				
Xylenes	, Total	ND	0.10	mg/Kg	1	6/14/2020 1:45:15 AM				
Surr:	1,2-Dichloroethane-d4	99.4	70-130	%Rec	1	6/14/2020 1:45:15 AM				
Surr:	4-Bromofluorobenzene	92.5	70-130	%Rec	1	6/14/2020 1:45:15 AM				
Surr:	Dibromofluoromethane	102	70-130	%Rec	1	6/14/2020 1:45:15 AM				
Surr:	Toluene-d8	103	70-130	%Rec	1	6/14/2020 1:45:15 AM				
EPA ME	THOD 8015D MOD: GASOLIN	E RANGE				Analyst: DJF				
Gasoline	e Range Organics (GRO)	ND	5.0	mg/Kg	1	6/14/2020 1:45:15 AM				
Surr:	BFB	104	70-130	%Rec	1	6/14/2020 1:45:15 AM				

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

**Qualifiers:** 

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\*

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix Н

Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Project:** Fighting Okra 18 Fed Com #001

**Analytical Report** Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-05 6" Collection Date: 6/11/2020

Lab ID: 2006700-005	Matrix: SOIL	Received Date: 6/12/2020 9:35:00 AM						
Analyses	Result	RL Qua	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/14/2020 1:18:56 PM			
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/14/2020 1:18:56 PM			
Surr: DNOP	123	55.1-146	%Rec	1	6/14/2020 1:18:56 PM			
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>			
Chloride	200	60	mg/Kg	20	6/18/2020 4:21:00 PM			
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF			
Benzene	ND	0.025	mg/Kg	1	6/14/2020 2:13:51 AM			
Toluene	ND	0.049	mg/Kg	1	6/14/2020 2:13:51 AM			
Ethylbenzene	ND	0.049	mg/Kg	1	6/14/2020 2:13:51 AM			
Xylenes, Total	ND	0.099	mg/Kg	1	6/14/2020 2:13:51 AM			
Surr: 1,2-Dichloroethane-d4	96.8	70-130	%Rec	1	6/14/2020 2:13:51 AM			
Surr: 4-Bromofluorobenzene	88.4	70-130	%Rec	1	6/14/2020 2:13:51 AM			
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/14/2020 2:13:51 AM			
Surr: Toluene-d8	95.6	70-130	%Rec	1	6/14/2020 2:13:51 AM			
EPA METHOD 8015D MOD: GASOLIN	NE RANGE				Analyst: DJF			
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 2:13:51 AM			
Surr: BFB	96.3	70-130	%Rec	1	6/14/2020 2:13:51 AM			

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

**Qualifiers:** 

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Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 5 of 38

**Project:** Fighting Okra 18 Fed Com #001

**Analytical Report** Lab Order 2006700

Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS20-06 6" Collection Date: 6/11/2020 noiwad Data: 6/12/2020 0.25.00 AM ъ

Lab ID: 2006700-006	Matrix: SOIL	Received Date: 6/12/2020 9:35:00 AM						
Analyses	Result	RL Qua	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RAM	NGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/14/2020 2:39:29 PM			
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/14/2020 2:39:29 PM			
Surr: DNOP	127	55.1-146	%Rec	1	6/14/2020 2:39:29 PM			
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>			
Chloride	170	60	mg/Kg	20	6/18/2020 4:33:24 PM			
EPA METHOD 8260B: VOLATILES SI	HORT LIST				Analyst: DJF			
Benzene	ND	0.024	mg/Kg	1	6/13/2020 7:55:41 PM			
Toluene	ND	0.049	mg/Kg	1	6/13/2020 7:55:41 PM			
Ethylbenzene	ND	0.049	mg/Kg	1	6/13/2020 7:55:41 PM			
Xylenes, Total	ND	0.098	mg/Kg	1	6/13/2020 7:55:41 PM			
Surr: 1,2-Dichloroethane-d4	95.4	70-130	%Rec	1	6/13/2020 7:55:41 PM			
Surr: 4-Bromofluorobenzene	96.2	70-130	%Rec	1	6/13/2020 7:55:41 PM			
Surr: Dibromofluoromethane	97.6	70-130	%Rec	1	6/13/2020 7:55:41 PM			
Surr: Toluene-d8	99.4	70-130	%Rec	1	6/13/2020 7:55:41 PM			
EPA METHOD 8015D MOD: GASOLIN	NE RANGE				Analyst: DJF			
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/13/2020 7:55:41 PM			
Surr: BFB	104	70-130	%Rec	1	6/13/2020 7:55:41 PM			

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

**Qualifiers:** 

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Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 6 of 38

**Project:** Fighting Okra 18 Fed Com #001

**Analytical Report** Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020

Client Sample ID: BS20-07 6" Collection Date: 6/11/2020 **Descrived Deter** 6/12/2020 0.25.00 AM

Lab ID: 2006700-007	Matrix: SOIL	Received Date: 6/12/2020 9:35:00 AM						
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RAN	IGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	6/14/2020 3:09:42 PM			
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/14/2020 3:09:42 PM			
Surr: DNOP	133	55.1-146	%Rec	1	6/14/2020 3:09:42 PM			
EPA METHOD 300.0: ANIONS					Analyst: <b>JMT</b>			
Chloride	180	61	mg/Kg	20	6/18/2020 4:45:49 PM			
EPA METHOD 8260B: VOLATILES SH	IORT LIST				Analyst: DJF			
Benzene	ND	0.024	mg/Kg	1	6/13/2020 11:21:16 PM			
Toluene	ND	0.048	mg/Kg	1	6/13/2020 11:21:16 PM			
Ethylbenzene	ND	0.048	mg/Kg	1	6/13/2020 11:21:16 PM			
Xylenes, Total	ND	0.096	mg/Kg	1	6/13/2020 11:21:16 PM			
Surr: 1,2-Dichloroethane-d4	104	70-130	%Rec	1	6/13/2020 11:21:16 PM			
Surr: 4-Bromofluorobenzene	97.1	70-130	%Rec	1	6/13/2020 11:21:16 PM			
Surr: Dibromofluoromethane	104	70-130	%Rec	1	6/13/2020 11:21:16 PM			
Surr: Toluene-d8	105	70-130	%Rec	1	6/13/2020 11:21:16 PM			
EPA METHOD 8015D MOD: GASOLIN	IE RANGE				Analyst: DJF			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/13/2020 11:21:16 PM			
Surr: BFB	105	70-130	%Rec	1	6/13/2020 11:21:16 PM			

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 7 of 38

**Project:** Fighting Okra 18 Fed Com #001

Analytical Report Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020

Client Sample ID: BS20-08 6" Collection Date: 6/11/2020 Received Date: 6/12/2020 9:35:00 AM

Lab ID: 2006700-008	Matrix: SOIL	Rece	Received Date: 6/12/2020 9:35:00 AM					
Analyses	Result	RL Qua	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RAM	NGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/14/2020 3:19:52 PM			
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 3:19:52 PM			
Surr: DNOP	101	55.1-146	%Rec	1	6/14/2020 3:19:52 PM			
EPA METHOD 300.0: ANIONS					Analyst: JMT			
Chloride	190	60	mg/Kg	20	6/18/2020 4:58:14 PM			
EPA METHOD 8260B: VOLATILES SH	HORT LIST				Analyst: DJF			
Benzene	ND	0.024	mg/Kg	1	6/14/2020 12:49:23 AM			
Toluene	ND	0.048	mg/Kg	1	6/14/2020 12:49:23 AM			
Ethylbenzene	ND	0.048	mg/Kg	1	6/14/2020 12:49:23 AM			
Xylenes, Total	ND	0.096	mg/Kg	1	6/14/2020 12:49:23 AM			
Surr: 1,2-Dichloroethane-d4	99.9	70-130	%Rec	1	6/14/2020 12:49:23 AM			
Surr: 4-Bromofluorobenzene	102	70-130	%Rec	1	6/14/2020 12:49:23 AM			
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/14/2020 12:49:23 AM			
Surr: Toluene-d8	107	70-130	%Rec	1	6/14/2020 12:49:23 AM			
EPA METHOD 8015D MOD: GASOLIN	NE RANGE				Analyst: DJF			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/14/2020 12:49:23 AM			
Surr: BFB	106	70-130	%Rec	1	6/14/2020 12:49:23 AM			

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-09 6"

<b>CLIENT:</b>	Devon Energy		Clier	nt Sam	ple ID:	BS20-	09 6"		
Project:	Fighting Okra 18 Fed Com	#001	Col	llectio	n Date:	6/11/2	020		
Lab ID:	2006700-009	Matrix: SOIL	Received Date: 6/12/2020 9:35:00 AM						
Analyses		Result	RL (	Qual	Units	DF	Date Analyzed		
EPA MET	THOD 8015M/D: DIESEL RA	NGE ORGANICS					Analyst: BRM		
Diesel R	ange Organics (DRO)	ND	9.5		mg/Kg	1	6/14/2020 3:30:01 PM		
Motor Oi	I Range Organics (MRO)	ND	47		mg/Kg	1	6/14/2020 3:30:01 PM		
Surr: I	DNOP	156	55.1-146	S	%Rec	1	6/14/2020 3:30:01 PM		
EPA MET	THOD 300.0: ANIONS						Analyst: JMT		
Chloride		170	60		mg/Kg	20	6/18/2020 5:10:38 PM		
EPA MET	THOD 8260B: VOLATILES S	HORT LIST					Analyst: DJF		
Benzene	9	ND	0.025		mg/Kg	1	6/14/2020 1:18:40 AM		
Toluene		ND	0.049		mg/Kg	1	6/14/2020 1:18:40 AM		
Ethylben	izene	ND	0.049		mg/Kg	1	6/14/2020 1:18:40 AM		
Xylenes,	Total	ND	0.098		mg/Kg	1	6/14/2020 1:18:40 AM		
Surr: 7	1,2-Dichloroethane-d4	99.9	70-130		%Rec	1	6/14/2020 1:18:40 AM		
Surr: 4	4-Bromofluorobenzene	93.9	70-130		%Rec	1	6/14/2020 1:18:40 AM		
Surr: I	Dibromofluoromethane	100	70-130		%Rec	1	6/14/2020 1:18:40 AM		
Surr:	Toluene-d8	100	70-130		%Rec	1	6/14/2020 1:18:40 AM		
EPA MET	THOD 8015D MOD: GASOLI	NE RANGE					Analyst: DJF		
Gasoline	e Range Organics (GRO)	ND	4.9		mg/Kg	1	6/14/2020 1:18:40 AM		
Surr: I	BFB	99.5	70-130		%Rec	1	6/14/2020 1:18:40 AM		

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 9 of 38

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020

CLIENT	: Devon Energy		Client Sample ID: BS20-10 6"						
<b>Project:</b>	Fighting Okra 18 Fed Com	#001	Col	lection Date:	6/11/2	020			
Lab ID:	2006700-010	Matrix: SOIL	Re	020 9:35:00 AM					
Analyses		Result	RL (	Qual Units	DF	Date Analyzed			
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: BRM			
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	6/14/2020 3:40:10 PM			
Motor O	il Range Organics (MRO)	ND	49	mg/Kg	1	6/14/2020 3:40:10 PM			
Surr:	DNOP	101	55.1-146	%Rec	1	6/14/2020 3:40:10 PM			
EPA ME	THOD 300.0: ANIONS					Analyst: JMT			
Chloride	•	150	60	mg/Kg	20	6/18/2020 5:23:03 PM			
EPA ME	THOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF			
Benzene	e	ND	0.024	mg/Kg	1	6/14/2020 1:48:14 AM			
Toluene		ND	0.049	mg/Kg	1	6/14/2020 1:48:14 AM			
Ethylber	nzene	ND	0.049	mg/Kg	1	6/14/2020 1:48:14 AM			
Xylenes	, Total	ND	0.098	mg/Kg	1	6/14/2020 1:48:14 AM			
Surr:	1,2-Dichloroethane-d4	96.1	70-130	%Rec	1	6/14/2020 1:48:14 AM			
Surr:	4-Bromofluorobenzene	93.2	70-130	%Rec	1	6/14/2020 1:48:14 AM			
Surr:	Dibromofluoromethane	99.4	70-130	%Rec	1	6/14/2020 1:48:14 AM			
Surr:	Toluene-d8	98.8	70-130	%Rec	1	6/14/2020 1:48:14 AM			
EPA ME	THOD 8015D MOD: GASOLI	NE RANGE				Analyst: DJF			
Gasoline	e Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 1:48:14 AM			

99.2

70-130

%Rec

1

6/14/2020 1:48:14 AM

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

**Qualifiers:** 

\*

Surr: BFB

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range

RL Reporting Limit Page 10 of 38

**Project:** Fighting Okra 18 Fed Com #001

**Analytical Report** Lab Order 2006700

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-11 6" Collection Date: 6/11/2020

Lab ID: 2006700-011	Matrix: SOIL	Matrix: SOIL Received Date: 6/2			//12/2020 9:35:00 AM		
Analyses	Result	RL Qua	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL I	RANGE ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	6/14/2020 3:50:22 PM		
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 3:50:22 PM		
Surr: DNOP	124	55.1-146	%Rec	1	6/14/2020 3:50:22 PM		
EPA METHOD 300.0: ANIONS					Analyst: JMT		
Chloride	220	60	mg/Kg	20	6/18/2020 6:00:18 PM		
EPA METHOD 8260B: VOLATILES	S SHORT LIST				Analyst: DJF		
Benzene	ND	0.025	mg/Kg	1	6/14/2020 2:17:47 AM		
Toluene	ND	0.049	mg/Kg	1	6/14/2020 2:17:47 AM		
Ethylbenzene	ND	0.049	mg/Kg	1	6/14/2020 2:17:47 AM		
Xylenes, Total	ND	0.099	mg/Kg	1	6/14/2020 2:17:47 AM		
Surr: 1,2-Dichloroethane-d4	100	70-130	%Rec	1	6/14/2020 2:17:47 AM		
Surr: 4-Bromofluorobenzene	95.1	70-130	%Rec	1	6/14/2020 2:17:47 AM		
Surr: Dibromofluoromethane	98.9	70-130	%Rec	1	6/14/2020 2:17:47 AM		
Surr: Toluene-d8	101	70-130	%Rec	1	6/14/2020 2:17:47 AM		
EPA METHOD 8015D MOD: GASC	LINE RANGE				Analyst: DJF		
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 2:17:47 AM		
Surr: BFB	101	70-130	%Rec	1	6/14/2020 2:17:47 AM		

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Analyte detected in the associated Method Blank в

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 11 of 38

**Analytical Report** Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-12 6"

Project:	Fighting Okra 18 Fed Com	#001	Colle	ection Date:	6/11/2	020
Lab ID:	2006700-012	Matrix: SOIL	Rec	eived Date:	6/12/2	020 9:35:00 AM
Analyses		Result	RL Q	ual Units	DF	Date Analyzed
EPA ME	THOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: BRM
Diesel R	ange Organics (DRO)	ND	9.8	mg/Kg	1	6/14/2020 4:00:33 PM
Motor O	il Range Organics (MRO)	ND	49	mg/Kg	1	6/14/2020 4:00:33 PM
Surr:	DNOP	117	55.1-146	%Rec	1	6/14/2020 4:00:33 PM
EPA ME	THOD 300.0: ANIONS					Analyst: JMT
Chloride		180	60	mg/Kg	20	6/18/2020 6:12:43 PM
EPA ME	THOD 8260B: VOLATILES S	SHORT LIST				Analyst: DJF
Benzene	e	ND	0.024	mg/Kg	1	6/14/2020 2:47:03 AM
Toluene		ND	0.047	mg/Kg	1	6/14/2020 2:47:03 AM
Ethylber	izene	ND	0.047	mg/Kg	1	6/14/2020 2:47:03 AM
<b>Xylenes</b>	, Total	ND	0.094	mg/Kg	1	6/14/2020 2:47:03 AM
Surr:	1,2-Dichloroethane-d4	101	70-130	%Rec	1	6/14/2020 2:47:03 AM
Surr:	4-Bromofluorobenzene	95.5	70-130	%Rec	1	6/14/2020 2:47:03 AM
Surr:	Dibromofluoromethane	104	70-130	%Rec	1	6/14/2020 2:47:03 AM
Surr:	Toluene-d8	99.5	70-130	%Rec	1	6/14/2020 2:47:03 AM
EPA ME	THOD 8015D MOD: GASOL	INE RANGE				Analyst: DJF
Gasoline	e Range Organics (GRO)	ND	4.7	mg/Kg	1	6/14/2020 2:47:03 AM
Surr:	BFB	104	70-130	%Rec	1	6/14/2020 2:47:03 AM

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-13 6"

Project:	Fighting Okra 18 Fed Com #	ŧ001	Collec	ction Date:	6/11/2	020
Lab ID:	2006700-013	Matrix: SOIL	Rece	eived Date:	6/12/2	020 9:35:00 AM
Analyses		Result	RL Qu	al Units	DF	Date Analyzed
EPA ME	THOD 8015M/D: DIESEL RAI	NGE ORGANICS				Analyst: BRM
Diesel F	Range Organics (DRO)	ND	9.6	mg/Kg	1	6/14/2020 4:10:42 PM
Motor C	il Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 4:10:42 PM
Surr:	DNOP	115	55.1-146	%Rec	1	6/14/2020 4:10:42 PM
EPA ME	THOD 300.0: ANIONS					Analyst: JMT
Chloride	9	180	60	mg/Kg	20	6/18/2020 6:25:07 PM
EPA ME	THOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF
Benzen	е	ND	0.024	mg/Kg	1	6/14/2020 3:16:28 AM
Toluene		ND	0.048	mg/Kg	1	6/14/2020 3:16:28 AM
Ethylbe	nzene	ND	0.048	mg/Kg	1	6/14/2020 3:16:28 AM
Xylenes	, Total	ND	0.096	mg/Kg	1	6/14/2020 3:16:28 AM
Surr:	1,2-Dichloroethane-d4	97.9	70-130	%Rec	1	6/14/2020 3:16:28 AM
Surr:	4-Bromofluorobenzene	96.2	70-130	%Rec	1	6/14/2020 3:16:28 AM
Surr:	Dibromofluoromethane	99.6	70-130	%Rec	1	6/14/2020 3:16:28 AM
Surr:	Toluene-d8	100	70-130	%Rec	1	6/14/2020 3:16:28 AM
EPA ME	THOD 8015D MOD: GASOLII	NE RANGE				Analyst: DJF
Gasolin	e Range Organics (GRO)	ND	4.8	mg/Kg	1	6/14/2020 3:16:28 AM
Surr:	BFB	104	70-130	%Rec	1	6/14/2020 3:16:28 AM

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix н Holding times for preparation or analysis exceeded

ND

Not Detected at the Reporting Limit PQL

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Analyte detected in the associated Method Blank в

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 13 of 38

**Project:** Fighting Okra 18 Fed Com #001

Analytical Report Lab Order 2006700

## Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-14 6" Collection Date: 6/11/2020

Lab ID: 2006700-014	Matrix: SOIL         Received Date: 6/12/2020 9:35:0			020 9:35:00 AM	
Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	6/14/2020 4:20:55 PM
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/14/2020 4:20:55 PM
Surr: DNOP	113	55.1-146	%Rec	1	6/14/2020 4:20:55 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	140	60	mg/Kg	20	6/18/2020 6:37:31 PM
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF
Benzene	ND	0.025	mg/Kg	1	6/14/2020 3:45:56 AM
Toluene	ND	0.050	mg/Kg	1	6/14/2020 3:45:56 AM
Ethylbenzene	ND	0.050	mg/Kg	1	6/14/2020 3:45:56 AM
Xylenes, Total	ND	0.10	mg/Kg	1	6/14/2020 3:45:56 AM
Surr: 1,2-Dichloroethane-d4	99.5	70-130	%Rec	1	6/14/2020 3:45:56 AM
Surr: 4-Bromofluorobenzene	93.0	70-130	%Rec	1	6/14/2020 3:45:56 AM
Surr: Dibromofluoromethane	99.2	70-130	%Rec	1	6/14/2020 3:45:56 AM
Surr: Toluene-d8	98.2	70-130	%Rec	1	6/14/2020 3:45:56 AM
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/14/2020 3:45:56 AM
Surr: BFB	99.4	70-130	%Rec	1	6/14/2020 3:45:56 AM

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix
 H Holding times for preparation or analysis exceeded

- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative 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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Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS20-15 6" **Project:** Fighting Okra 18 Fed Com #001 Collection Date: 6/11/2020 Lab ID: 2006700-015 Matrix: SOIL Received Date: 6/12/2020 9:35:00 AM Analyses Result **RL** Qual Units DF **Date Analyzed EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM **Diesel Range Organics (DRO)** ND 9.8 mg/Kg 1 6/14/2020 4:31:08 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 6/14/2020 4:31:08 PM Surr: DNOP 104 55.1-146 %Rec 1 6/14/2020 4:31:08 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride 6/18/2020 6:49:56 PM 190 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF Benzene ND 0.024 mg/Kg 6/14/2020 4:15:27 AM 1 Toluene ND 0.047 mg/Kg 6/14/2020 4:15:27 AM 1 Ethvlbenzene ND 0.047 mg/Kg 1 6/14/2020 4:15:27 AM Xylenes, Total ND 0.095 mg/Kg 1 6/14/2020 4:15:27 AM Surr: 1.2-Dichloroethane-d4 102 70-130 %Rec 1 6/14/2020 4:15:27 AM Surr: 4-Bromofluorobenzene 94.6 70-130 %Rec 1 6/14/2020 4:15:27 AM Surr: Dibromofluoromethane 108 70-130 %Rec 1 6/14/2020 4:15:27 AM Surr: Toluene-d8 99.1 70-130 %Rec 1 6/14/2020 4:15:27 AM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: DJF Gasoline Range Organics (GRO) ND mg/Kg 6/14/2020 4:15:27 AM 47 1 Surr: BFB 101 70-130 %Rec 1 6/14/2020 4:15:27 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy Client Sample ID: B						16 6"	
Project:	Fighting Okra 18 Fed Com #001	Collection Date: 6/11/2020					
Lab ID:	2006700-016	Matrix: SOIL	Rece	eived Date:	6/12/2	020 9:35:00 AM	
Analyses		Result	RL Qu	al Units	DF	Date Analyzed	
EPA MET	THOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM	
Diesel R	ange Organics (DRO)	ND	9.5	mg/Kg	1	6/14/2020 4:41:21 PM	
Motor Oi	il Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 4:41:21 PM	
Surr: I	DNOP	104	55.1-146	%Rec	1	6/14/2020 4:41:21 PM	
EPA MET	THOD 300.0: ANIONS					Analyst: <b>JMT</b>	
Chloride		210	60	mg/Kg	20	6/18/2020 8:41:36 PM	
EPA MET	THOD 8260B: VOLATILES SHOR	T LIST				Analyst: DJF	
Benzene	9	ND	0.024	mg/Kg	1	6/14/2020 4:45:09 AM	
Toluene		ND	0.048	mg/Kg	1	6/14/2020 4:45:09 AM	
Ethylben	izene	ND	0.048	mg/Kg	1	6/14/2020 4:45:09 AM	
Xylenes,	, Total	ND	0.096	mg/Kg	1	6/14/2020 4:45:09 AM	
Surr:	1,2-Dichloroethane-d4	96.5	70-130	%Rec	1	6/14/2020 4:45:09 AM	
Surr: 4	4-Bromofluorobenzene	94.4	70-130	%Rec	1	6/14/2020 4:45:09 AM	
Surr: I	Dibromofluoromethane	102	70-130	%Rec	1	6/14/2020 4:45:09 AM	
Surr:	Toluene-d8	101	70-130	%Rec	1	6/14/2020 4:45:09 AM	
EPA MET	THOD 8015D MOD: GASOLINE R	ANGE				Analyst: DJF	
Gasoline	e Range Organics (GRO)	ND	4.8	mg/Kg	1	6/14/2020 4:45:09 AM	
Surr: I	BFB	101	70-130	%Rec	1	6/14/2020 4:45:09 AM	

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

**Qualifiers:** 

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\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 16 of 38

Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Devon Energy Client Sample ID: BS20-17 6" **Project:** Fighting Okra 18 Fed Com #001 Collection Date: 6/11/2020 Lab ID: 2006700-017 Matrix: SOIL Received Date: 6/12/2020 9:35:00 AM Analyses Result **RL** Qual Units DF **Date Analyzed EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** Analyst: BRM **Diesel Range Organics (DRO)** ND 9.8 mg/Kg 1 6/14/2020 4:51:32 PM Motor Oil Range Organics (MRO) ND 49 mg/Kg 1 6/14/2020 4:51:32 PM Surr: DNOP 123 55.1-146 %Rec 1 6/14/2020 4:51:32 PM **EPA METHOD 300.0: ANIONS** Analyst: JMT Chloride 6/18/2020 8:54:01 PM 180 60 mg/Kg 20 **EPA METHOD 8260B: VOLATILES SHORT LIST** Analyst: DJF Benzene ND 0.024 mg/Kg 6/14/2020 5:14:38 AM 1 Toluene ND 0.047 mg/Kg 6/14/2020 5:14:38 AM 1 Ethvlbenzene ND 0.047 mg/Kg 1 6/14/2020 5:14:38 AM Xylenes, Total ND 0.094 mg/Kg 1 6/14/2020 5:14:38 AM Surr: 1.2-Dichloroethane-d4 100 70-130 %Rec 1 6/14/2020 5:14:38 AM Surr: 4-Bromofluorobenzene 95.5 70-130 %Rec 1 6/14/2020 5:14:38 AM Surr: Dibromofluoromethane 101 70-130 %Rec 1 6/14/2020 5:14:38 AM Surr: Toluene-d8 97.0 70-130 %Rec 1 6/14/2020 5:14:38 AM **EPA METHOD 8015D MOD: GASOLINE RANGE** Analyst: DJF Gasoline Range Organics (GRO) ND mg/Kg 6/14/2020 5:14:38 AM 47 1 Surr: BFB 99.5 70-130 %Rec 1 6/14/2020 5:14:38 AM

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

**Qualifiers:** 

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL

Practical Quanitative Limit

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

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 17 of 38

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-18 6"

<b>CLIENT:</b> Devon Energy		Client Sample ID: BS20-18 6"						
Project: Fighting Okra 18 Fed Com	#001	Collection Date: 6/11/2020						
Lab ID: 2006700-018	Matrix: SOIL	Rece	eived Date:	6/12/2	020 9:35:00 AM			
Analyses	Result	RL Qu	al Units	DF	Date Analyzed			
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: BRM			
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/14/2020 5:01:48 PM			
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 5:01:48 PM			
Surr: DNOP	104	55.1-146	%Rec	1	6/14/2020 5:01:48 PM			
EPA METHOD 300.0: ANIONS					Analyst: JMT			
Chloride	270	60	mg/Kg	20	6/18/2020 9:06:25 PM			
EPA METHOD 8260B: VOLATILES S	SHORT LIST				Analyst: DJF			
Benzene	ND	0.024	mg/Kg	1	6/14/2020 5:44:07 AM			
Toluene	ND	0.048	mg/Kg	1	6/14/2020 5:44:07 AM			
Ethylbenzene	ND	0.048	mg/Kg	1	6/14/2020 5:44:07 AM			
Xylenes, Total	ND	0.097	mg/Kg	1	6/14/2020 5:44:07 AM			
Surr: 1,2-Dichloroethane-d4	97.3	70-130	%Rec	1	6/14/2020 5:44:07 AM			
Surr: 4-Bromofluorobenzene	94.9	70-130	%Rec	1	6/14/2020 5:44:07 AM			
Surr: Dibromofluoromethane	99.1	70-130	%Rec	1	6/14/2020 5:44:07 AM			
Surr: Toluene-d8	102	70-130	%Rec	1	6/14/2020 5:44:07 AM			
EPA METHOD 8015D MOD: GASOL	INE RANGE				Analyst: DJF			
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/14/2020 5:44:07 AM			
Surr: BFB	103	70-130	%Rec	1	6/14/2020 5:44:07 AM			

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

- D Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2006700

Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT.	Devon Energy		Client Sa	mnle ID:	BS20	-19.6"
Project.	Fighting Okra 18 Fed Com #001	#001 <b>Collection Date:</b> 6/11/2020				
Lab ID:	2006700-019	Matrix: SOIL	Receiv	ed Date:	6/12/2	2020 9:35:00 AM
Analyses		Result	RL Qual	Units	DF	Date Analyzed
EPA METH	HOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: <b>BRM</b>
Diesel Ra	nge Organics (DRO)	ND	9.4	mg/Kg	1	6/14/2020 5:12:06 PM
Motor Oil	Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 5:12:06 PM
Surr: D	NOP	118	55.1-146	%Rec	1	6/14/2020 5:12:06 PM
EPA METH	HOD 300.0: ANIONS					Analyst: <b>JMT</b>
Chloride		170	60	mg/Kg	20	6/18/2020 9:18:50 PM
EPA METH	HOD 8260B: VOLATILES SHOR	T LIST				Analyst: DJF
Benzene		ND	0.024	mg/Kg	1	6/14/2020 6:13:51 AM
Toluene		ND	0.048	mg/Kg	1	6/14/2020 6:13:51 AM
Ethylbenz	ene	ND	0.048	mg/Kg	1	6/14/2020 6:13:51 AM
Xylenes, 7	Total	ND	0.096	mg/Kg	1	6/14/2020 6:13:51 AM
Surr: 1,	2-Dichloroethane-d4	98.7	70-130	%Rec	1	6/14/2020 6:13:51 AM
Surr: 4-	Bromofluorobenzene	94.8	70-130	%Rec	1	6/14/2020 6:13:51 AM
Surr: Di	ibromofluoromethane	101	70-130	%Rec	1	6/14/2020 6:13:51 AM
Surr: To	oluene-d8	98.8	70-130	%Rec	1	6/14/2020 6:13:51 AM
EPA METH	HOD 8015D MOD: GASOLINE R	ANGE				Analyst: DJF
Gasoline I	Range Organics (GRO)	ND	4.8	mg/Kg	1	6/14/2020 6:13:51 AM
Surr: B	FB	97.9	70-130	%Rec	1	6/14/2020 6:13:51 AM

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 19 of 38

Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT:	Devon Energy		Client	Sample ID:	BS20-	20 6"	
Project:	Fighting Okra 18 Fed Com #001	Collection Date: 6/11/2020					
Lab ID:	2006700-020	Matrix: SOIL         Received Date: 6/12/2020 9:35:00 AM					
Analyses		Result	RL Q	ual Units	DF	Date Analyzed	
EPA MET	HOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM	
Diesel R	ange Organics (DRO)	ND	9.5	mg/Kg	1	6/14/2020 5:22:21 PM	
Motor Oi	I Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 5:22:21 PM	
Surr: [	DNOP	89.1	55.1-146	%Rec	1	6/14/2020 5:22:21 PM	
EPA MET	HOD 300.0: ANIONS					Analyst: <b>JMT</b>	
Chloride		160	61	mg/Kg	20	6/18/2020 9:31:15 PM	
EPA MET	HOD 8260B: VOLATILES SHORT	T LIST				Analyst: DJF	
Benzene		ND	0.024	mg/Kg	1	6/14/2020 11:46:01 AM	
Toluene		ND	0.048	mg/Kg	1	6/14/2020 11:46:01 AM	
Ethylben	zene	ND	0.048	mg/Kg	1	6/14/2020 11:46:01 AM	
Xylenes,	Total	ND	0.096	mg/Kg	1	6/14/2020 11:46:01 AM	
Surr: 1	I,2-Dichloroethane-d4	108	70-130	%Rec	1	6/14/2020 11:46:01 AM	
Surr: 4	1-Bromofluorobenzene	90.3	70-130	%Rec	1	6/14/2020 11:46:01 AM	
Surr: [	Dibromofluoromethane	103	70-130	%Rec	1	6/14/2020 11:46:01 AM	
Surr: 7	Foluene-d8	98.2	70-130	%Rec	1	6/14/2020 11:46:01 AM	
EPA MET	HOD 8015D MOD: GASOLINE R	ANGE				Analyst: <b>DJF</b>	
Gasoline	Range Organics (GRO)	ND	4.8	mg/Kg	1	6/14/2020 11:46:01 AM	
Surr: E	BFB	99.2	70-130	%Rec	1	6/14/2020 11:46:01 AM	

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

**Qualifiers:** 

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\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 20 of 38

**Project:** Fighting Okra 18 Fed Com #001

Analytical Report Lab Order 2006700

Date Reported: 6/22/2020

## Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: BS20-21 6" Collection Date: 6/11/2020

Lab ID: 2006700-021	Matrix: SOIL         Received Date: 6/12/2020 9:35:00 AM				020 9:35:00 AM
Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/14/2020 5:32:40 PM
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/14/2020 5:32:40 PM
Surr: DNOP	120	55.1-146	%Rec	1	6/14/2020 5:32:40 PM
EPA METHOD 300.0: ANIONS					Analyst: JMT
Chloride	190	60	mg/Kg	20	6/18/2020 9:43:40 PM
EPA METHOD 8260B: VOLATILES SH	ORT LIST				Analyst: DJF
Benzene	ND	0.025	mg/Kg	1	6/14/2020 12:45:10 PM
Toluene	ND	0.050	mg/Kg	1	6/14/2020 12:45:10 PM
Ethylbenzene	ND	0.050	mg/Kg	1	6/14/2020 12:45:10 PM
Xylenes, Total	ND	0.099	mg/Kg	1	6/14/2020 12:45:10 PM
Surr: 1,2-Dichloroethane-d4	103	70-130	%Rec	1	6/14/2020 12:45:10 PM
Surr: 4-Bromofluorobenzene	91.3	70-130	%Rec	1	6/14/2020 12:45:10 PM
Surr: Dibromofluoromethane	108	70-130	%Rec	1	6/14/2020 12:45:10 PM
Surr: Toluene-d8	96.0	70-130	%Rec	1	6/14/2020 12:45:10 PM
EPA METHOD 8015D MOD: GASOLIN	E RANGE				Analyst: DJF
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/14/2020 12:45:10 PM

101

70-130

%Rec

1

6/14/2020 12:45:10 PM

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

**Qualifiers:** 

\*

Surr: BFB

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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Date Reported: 6/22/2020

#### Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy		Client S	ample ID:	BS20-	22 6"	
<b>Project:</b> Fighting Okra 18 Fed Com #001	Collection Date: 6/11/2020					
Lab ID: 2006700-022	Matrix: SOIL	020 9:35:00 AM				
Analyses	Result	RL Qua	l Units	DF	Date Analyzed	
EPA METHOD 8015M/D: DIESEL RANGE	ORGANICS				Analyst: BRM	
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	6/14/2020 5:43:09 PM	
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 5:43:09 PM	
Surr: DNOP	103	55.1-146	%Rec	1	6/14/2020 5:43:09 PM	
EPA METHOD 300.0: ANIONS					Analyst: CJS	
Chloride	220	60	mg/Kg	20	6/18/2020 9:49:48 PM	
EPA METHOD 8260B: VOLATILES SHOP	RT LIST				Analyst: DJF	
Benzene	ND	0.024	mg/Kg	1	6/14/2020 1:14:43 PM	
Toluene	ND	0.047	mg/Kg	1	6/14/2020 1:14:43 PM	
Ethylbenzene	ND	0.047	mg/Kg	1	6/14/2020 1:14:43 PM	
Xylenes, Total	ND	0.094	mg/Kg	1	6/14/2020 1:14:43 PM	
Surr: 1,2-Dichloroethane-d4	97.7	70-130	%Rec	1	6/14/2020 1:14:43 PM	
Surr: 4-Bromofluorobenzene	92.6	70-130	%Rec	1	6/14/2020 1:14:43 PM	
Surr: Dibromofluoromethane	97.6	70-130	%Rec	1	6/14/2020 1:14:43 PM	
Surr: Toluene-d8	98.6	70-130	%Rec	1	6/14/2020 1:14:43 PM	
EPA METHOD 8015D MOD: GASOLINE F	RANGE				Analyst: DJF	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/14/2020 1:14:43 PM	
Surr: BFB	101	70-130	%Rec	1	6/14/2020 1:14:43 PM	

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

**Qualifiers:** 

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\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 22 of 38

#### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID BS20-23 6"

<b>CLIENT:</b> Devon Energy		Client Sample ID: BS20-23 6"					
<b>Project:</b> Fighting Okra 18 Fed C	Com #001	<b>Collection Date:</b> 6/11/2020					
Lab ID: 2006700-023	Matrix: SOIL	Matrix: SOIL         Received Date: 6/12/2020 9:35:00 A					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed		
EPA METHOD 8015M/D: DIESEL	RANGE ORGANICS				Analyst: BRM		
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	6/14/2020 5:53:36 PM		
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 5:53:36 PM		
Surr: DNOP	114	55.1-146	%Rec	1	6/14/2020 5:53:36 PM		
EPA METHOD 300.0: ANIONS					Analyst: CJS		
Chloride	200	60	mg/Kg	20	6/18/2020 10:26:49 PM		
EPA METHOD 8260B: VOLATILE	ES SHORT LIST				Analyst: DJF		
Benzene	ND	0.023	mg/Kg	1	6/14/2020 1:44:19 PM		
Toluene	ND	0.047	mg/Kg	1	6/14/2020 1:44:19 PM		
Ethylbenzene	ND	0.047	mg/Kg	1	6/14/2020 1:44:19 PM		
Xylenes, Total	ND	0.093	mg/Kg	1	6/14/2020 1:44:19 PM		
Surr: 1,2-Dichloroethane-d4	100	70-130	%Rec	1	6/14/2020 1:44:19 PM		
Surr: 4-Bromofluorobenzene	95.1	70-130	%Rec	1	6/14/2020 1:44:19 PM		
Surr: Dibromofluoromethane	101	70-130	%Rec	1	6/14/2020 1:44:19 PM		
Surr: Toluene-d8	98.8	70-130	%Rec	1	6/14/2020 1:44:19 PM		
EPA METHOD 8015D MOD: GAS	OLINE RANGE				Analyst: DJF		
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/14/2020 1:44:19 PM		
Surr: BFB	101	70-130	%Rec	1	6/14/2020 1:44:19 PM		

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

**Qualifiers:** 

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Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 23 of 38

2006700-024

Project:

Lab ID:

Analytical Report
Lab Order 2006700

#### Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com #001

Date Reported: 6/22/2020 Client Sample ID: BS20-24 6" Collection Date: 6/11/2020

Received Date: 6/12/2020 9:35:00 AM

Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	6/14/2020 6:04:08 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 6:04:08 PM
Surr: DNOP	81.8	55.1-146	%Rec	1	6/14/2020 6:04:08 PM
EPA METHOD 300.0: ANIONS					Analyst: CJS
Chloride	220	60	mg/Kg	20	6/18/2020 10:39:09 PM
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: DJF
Benzene	ND	0.023	mg/Kg	1	6/14/2020 2:13:59 PM
Toluene	ND	0.046	mg/Kg	1	6/14/2020 2:13:59 PM
Ethylbenzene	ND	0.046	mg/Kg	1	6/14/2020 2:13:59 PM
Xylenes, Total	ND	0.092	mg/Kg	1	6/14/2020 2:13:59 PM
Surr: 1,2-Dichloroethane-d4	97.5	70-130	%Rec	1	6/14/2020 2:13:59 PM
Surr: 4-Bromofluorobenzene	95.5	70-130	%Rec	1	6/14/2020 2:13:59 PM
Surr: Dibromofluoromethane	95.8	70-130	%Rec	1	6/14/2020 2:13:59 PM
Surr: Toluene-d8	101	70-130	%Rec	1	6/14/2020 2:13:59 PM
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/14/2020 2:13:59 PM
Surr: BFB	102	70-130	%Rec	1	6/14/2020 2:13:59 PM

Matrix: SOIL

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Sample Diluted Due to MatrixH Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative 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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**CLIENT:** Devon Energy

**Analytical Report** Lab Order 2006700

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 Client Sample ID: BS20-25 6"

Project:	Fighting Okra 18 Fed Com #00	)1	Collection Date: 6/11/2020								
Lab ID:	2006700-025	Matrix: SOIL	R	<b>Received Date:</b> 6/12/2020 9:35:00 AM							
Analyses		Result	RL	Qual Units	DF	Date Analyzed					
EPA ME	THOD 8015M/D: DIESEL RANG	E ORGANICS				Analyst: BRM					
Diesel F	Range Organics (DRO)	ND	9.6	mg/Kg	1	6/14/2020 6:14:34 PM					
Motor C	il Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 6:14:34 PM					
Surr:	DNOP	129	55.1-146	%Rec	1	6/14/2020 6:14:34 PM					
EPA ME	THOD 300.0: ANIONS					Analyst: CJS					
Chloride	9	130	60	mg/Kg	20	6/18/2020 10:51:30 PM					
EPA ME	THOD 8260B: VOLATILES SHO	RT LIST				Analyst: DJF					
Benzen	e	ND	0.024	mg/Kg	1	6/14/2020 2:43:42 PM					
Toluene	)	ND	0.047	mg/Kg	1	6/14/2020 2:43:42 PM					
Ethylbe	nzene	ND	0.047	mg/Kg	1	6/14/2020 2:43:42 PM					
Xylenes	s, Total	ND	0.094	mg/Kg	1	6/14/2020 2:43:42 PM					
Surr:	1,2-Dichloroethane-d4	101	70-130	%Rec	1	6/14/2020 2:43:42 PM					
Surr:	4-Bromofluorobenzene	92.2	70-130	%Rec	1	6/14/2020 2:43:42 PM					
Surr:	Dibromofluoromethane	102	70-130	%Rec	1	6/14/2020 2:43:42 PM					
Surr:	Toluene-d8	100	70-130	%Rec	1	6/14/2020 2:43:42 PM					
EPA ME	THOD 8015D MOD: GASOLINE	RANGE				Analyst: DJF					
Gasolin	e Range Organics (GRO)	ND	4.7	mg/Kg	1	6/14/2020 2:43:42 PM					
Surr:	BFB	102	70-130	%Rec	1	6/14/2020 2:43:42 PM					

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**Analytical Report** Lab Order 2006700

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020

<b>CLIENT:</b> Devon Energy		Client	Sample ID:	WS20	-01					
<b>Project:</b> Fighting Okra 18 Fed Com #	001	Collection Date: 6/11/2020								
Lab ID: 2006700-026	Matrix: SOIL	Rec	eived Date:	6/12/2	020 9:35:00 AM					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed					
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS				Analyst: BRM					
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/14/2020 10:11:14 PM					
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/14/2020 10:11:14 PM					
Surr: DNOP	119	55.1-146	%Rec	1	6/14/2020 10:11:14 PM					
EPA METHOD 300.0: ANIONS					Analyst: CJS					
Chloride	170	60	mg/Kg	20	6/18/2020 11:03:51 PM					
EPA METHOD 8260B: VOLATILES SH	IORT LIST				Analyst: DJF					
Benzene	ND	0.025	mg/Kg	1	6/14/2020 5:41:45 PM					
Toluene	ND	0.050	mg/Kg	1	6/14/2020 5:41:45 PM					
Ethylbenzene	ND	0.050	mg/Kg	1	6/14/2020 5:41:45 PM					
Xylenes, Total	ND	0.10	mg/Kg	1	6/14/2020 5:41:45 PM					
Surr: 1,2-Dichloroethane-d4	94.2	70-130	%Rec	1	6/14/2020 5:41:45 PM					
Surr: 4-Bromofluorobenzene	93.9	70-130	%Rec	1	6/14/2020 5:41:45 PM					
Surr: Dibromofluoromethane	93.3	70-130	%Rec	1	6/14/2020 5:41:45 PM					
Surr: Toluene-d8	101	70-130	%Rec	1	6/14/2020 5:41:45 PM					
EPA METHOD 8015D MOD: GASOLIN	E RANGE				Analyst: DJF					
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	6/14/2020 5:41:45 PM					
Surr: BFB	101	70-130	%Rec	1	6/14/2020 5:41:45 PM					

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 26 of 38

**CLIENT:** Devon Energy

2006700-027

**Project:** 

Lab ID:

**Analytical Report** Lab Order 2006700

### Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com #001

Date Reported: 6/22/2020

Client Sample ID: WS20-02 Collection Date: 6/11/2020 ived D 6/12/2020 0.25.00 AM

Received	Date:	6/12/2	.020 9	2:35:00	AM

Analyses	Result	RL Qua	l Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/14/2020 10:21:26 PM
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/14/2020 10:21:26 PM
Surr: DNOP	111	55.1-146	%Rec	1	6/14/2020 10:21:26 PM
EPA METHOD 300.0: ANIONS					Analyst: CJS
Chloride	140	60	mg/Kg	20	6/18/2020 11:16:11 PM
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: DJF
Benzene	ND	0.024	mg/Kg	1	6/14/2020 7:10:27 PM
Toluene	ND	0.049	mg/Kg	1	6/14/2020 7:10:27 PM
Ethylbenzene	ND	0.049	mg/Kg	1	6/14/2020 7:10:27 PM
Xylenes, Total	ND	0.097	mg/Kg	1	6/14/2020 7:10:27 PM
Surr: 1,2-Dichloroethane-d4	100	70-130	%Rec	1	6/14/2020 7:10:27 PM
Surr: 4-Bromofluorobenzene	94.6	70-130	%Rec	1	6/14/2020 7:10:27 PM
Surr: Dibromofluoromethane	103	70-130	%Rec	1	6/14/2020 7:10:27 PM
Surr: Toluene-d8	102	70-130	%Rec	1	6/14/2020 7:10:27 PM
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 7:10:27 PM
Surr: BFB	102	70-130	%Rec	1	6/14/2020 7:10:27 PM

Matrix: SOIL

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 27 of 38

**Analytical Report** Lab Order 2006700

### Hall Environmental Analysis Laboratory, Inc.

Date Reported: 6/22/2020 **Client Sample ID:** WS20-03

<b>CLIENT:</b> Devon Energy		Client S	Sample ID:	WS20	-03					
<b>Project:</b> Fighting Okra 18 Fed Com	#001	Collection Date: 6/11/2020								
Lab ID: 2006700-028	Matrix: SOIL	Rece	eived Date:	6/12/2	020 9:35:00 AM					
Analyses	Result	RL Qu	al Units	DF	Date Analyzed					
EPA METHOD 8015M/D: DIESEL RA	NGE ORGANICS				Analyst: BRM					
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	6/14/2020 10:31:39 PM					
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 10:31:39 PM					
Surr: DNOP	105	55.1-146	%Rec	1	6/14/2020 10:31:39 PM					
EPA METHOD 300.0: ANIONS					Analyst: CJS					
Chloride	210	59	mg/Kg	20	6/18/2020 11:28:32 PM					
EPA METHOD 8260B: VOLATILES S	HORT LIST				Analyst: DJF					
Benzene	ND	0.025	mg/Kg	1	6/14/2020 8:39:17 PM					
Toluene	ND	0.049	mg/Kg	1	6/14/2020 8:39:17 PM					
Ethylbenzene	ND	0.049	mg/Kg	1	6/14/2020 8:39:17 PM					
Xylenes, Total	ND	0.099	mg/Kg	1	6/14/2020 8:39:17 PM					
Surr: 1,2-Dichloroethane-d4	99.9	70-130	%Rec	1	6/14/2020 8:39:17 PM					
Surr: 4-Bromofluorobenzene	94.5	70-130	%Rec	1	6/14/2020 8:39:17 PM					
Surr: Dibromofluoromethane	101	70-130	%Rec	1	6/14/2020 8:39:17 PM					
Surr: Toluene-d8	98.6	70-130	%Rec	1	6/14/2020 8:39:17 PM					
EPA METHOD 8015D MOD: GASOLI	NE RANGE				Analyst: DJF					
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 8:39:17 PM					
Surr: BFB	103	70-130	%Rec	1	6/14/2020 8:39:17 PM					

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit PQL

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

- в Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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**CLIENT:** Devon Energy

2006700-029

**Project:** 

Lab ID:

**Analytical Report** Lab Order 2006700

### Hall Environmental Analysis Laboratory, Inc.

Fighting Okra 18 Fed Com #001

Date Reported: 6/22/2020 

Result	RL Qual Units DF	Date Analyzed
Matrix: SOIL	Received Date: 6/12/2	2020 9:35:00 AM
	Collection Date: 6/11/2	2020
	Client Sample ID: WS20	-04

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Analyses	Result	RL Qu	al Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	6/14/2020 10:41:56 PM
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	6/14/2020 10:41:56 PM
Surr: DNOP	102	55.1-146	%Rec	1	6/14/2020 10:41:56 PM
EPA METHOD 300.0: ANIONS					Analyst: CJS
Chloride	180	60	mg/Kg	20	6/18/2020 11:40:52 PM
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: DJF
Benzene	ND	0.024	mg/Kg	1	6/14/2020 9:09:00 PM
Toluene	ND	0.049	mg/Kg	1	6/14/2020 9:09:00 PM
Ethylbenzene	ND	0.049	mg/Kg	1	6/14/2020 9:09:00 PM
Xylenes, Total	ND	0.098	mg/Kg	1	6/14/2020 9:09:00 PM
Surr: 1,2-Dichloroethane-d4	93.6	70-130	%Rec	1	6/14/2020 9:09:00 PM
Surr: 4-Bromofluorobenzene	93.3	70-130	%Rec	1	6/14/2020 9:09:00 PM
Surr: Dibromofluoromethane	96.7	70-130	%Rec	1	6/14/2020 9:09:00 PM
Surr: Toluene-d8	95.9	70-130	%Rec	1	6/14/2020 9:09:00 PM
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: DJF
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/14/2020 9:09:00 PM
Surr: BFB	99.4	70-130	%Rec	1	6/14/2020 9:09:00 PM

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

**Qualifiers:** 

\*

Value exceeds Maximum Contaminant Level. Sample Diluted Due to Matrix

D Н Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Analyte detected in the associated Method Blank в

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit Page 29 of 38

## **QC SUMMARY REPORT** Hall Envir

ronmental Analysis Laboratory, Inc. 22-Jun-20		WO#:	2006700
	conmental Analysis Laboratory, Inc.		22-Jun-20

Client:	Devon Er	nergy Okro 18 Ead Cor	m #001							
	Fighting	Okia 18 Feu Col	11#001							
Sample ID:	MB-53133	SampType: <b>n</b>	nblk	Tes	tCode: EF	PA Method	300.0: Anion:	5		
Client ID:	PBS	Batch ID: 5	3133	F	RunNo: <b>6</b> 9	9715				
Prep Date:	6/17/2020	Analysis Date:	6/17/2020	S	SeqNo: 24	420563	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND 1.5	5							
Sample ID:	LCS-53133	SampType: Id	s	Tes	tCode: EF	PA Method	300.0: Anion:	5		
Client ID:	LCSS	Batch ID: 5	3133	F	RunNo: <b>6</b> 9	9715				
Prep Date:	6/17/2020	Analysis Date:	6/17/2020	S	SeqNo: 24	420564	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	5 15.00	0	96.4	90	110			
Sample ID:	MB-53156	SampType: <b>n</b>	nblk	Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	PBS	Batch ID: 5	3156	F	RunNo: 69	9741				
Prep Date:	6/18/2020	Analysis Date:	6/18/2020	5	SeqNo: 24	421284	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND 1.5	5							
Sample ID:	LCS-53156	SampType: Io	s	Tes	tCode: EF	PA Method	300.0: Anion:	6		
Client ID:	LCSS	Batch ID: 5	3156	F	RunNo: <b>6</b> 9	9741				
Prep Date:	6/18/2020	Analysis Date:	6/18/2020	ç	SeqNo: 24	421285	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	5 15.00	0	94.0	90	110			
Sample ID:	MB-53160	SampType: <b>n</b>	ıblk	Tes	tCode: EF	PA Method	300.0: Anion:	6		
Client ID:	PBS	Batch ID: 5	3160	F	RunNo: <b>6</b> 9	9742				
Prep Date:	6/18/2020	Analysis Date:	6/18/2020	S	SeqNo: 24	421410	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		ND 1.5	5							
Sample ID:	LCS-53160	SampType: Io	s	Tes	tCode: EF	PA Method	300.0: Anions	5		
Client ID:	LCSS	Batch ID: 5	3160	F	RunNo: <b>6</b> 9	9742				
Prep Date:	6/18/2020	Analysis Date:	6/18/2020	S	SeqNo: 24	421411	Units: mg/K	g		
Analyte		Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride		14 1.5	5 15.00	0	93.6	90	110			

#### Qualifiers:

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT Hall I

	WO#:	2006700
Environmental Analysis Laboratory, Inc.		22-Jun-20

Client:	Devon Er	nergy											
Project:	Fighting (	Okra 18 F	ed Com	#001									
Sample ID:	MB-53059	Samp	Type: ME	BLK	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics			
Client ID:	PBS	Batc	h ID: 53	059	F	unNo: 69	9626						
Prep Date:	6/13/2020	Analysis [	Date: 6/	14/2020	5	eqNo: 24	416601	Units: <b>mg/K</b>	(g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range (	Organics (DRO)	ND	10										
Motor Oil Rang	e Organics (MRO)	ND	50										
Surr: DNOP		12		10.00		121	55.1	146					
Sample ID:	LCS-53059	Samp	Type: LC	s	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics			
Client ID:	LCSS	Batc	h ID: 53	059	F	unNo: 69	9623						
Prep Date:	6/13/2020	Analysis [	Date: 6/	14/2020	5	eqNo: 24	416881	Units: <b>mg/K</b>	g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range (	Organics (DRO)	60	10	50.00	0	120	70	130					
Surr: DNOP		5.9		5.000		119	55.1	146					
Sample ID:	2006700-006AMS	Samp	SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics										
Client ID:	BS20-06 6"	Batc	h ID: 53	062	F	unNo: 69	9626						
Prep Date:	6/13/2020	Analysis [	Date: 6/	14/2020	S	eqNo: 24	417110	Units: <b>mg/K</b>	g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range (	Organics (DRO)	62	9.9	49.31	0	127	47.4	136					
Surr: DNOP		5.6		4.931		114	55.1	146					
Sample ID:	2006700-006AMS	) Samp	Туре: М	SD	TestCode: EPA Method 8015M/D: Diesel Range Organics								
Client ID:	BS20-06 6"	Batc	h ID: 53	062	F	unNo: 69	9626						
Prep Date:	6/13/2020	Analysis [	Date: 6/	14/2020	S	eqNo: 24	417111	Units: <b>mg/K</b>	(g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range (	Organics (DRO)	71	9.1	45.70	0	156	47.4	136	13.2	43.4	S		
Surr: DNOP		6.7		4.570		147	55.1	146	0	0	S		
Sample ID:	LCS-53062	Samp	Type: LC	s	Tes	tCode: EF	PA Method	8015M/D: Die	esel Rang	e Organics			
Client ID:	LCSS	Batc	h ID: 53	062	F	unNo: 69	9626						
Prep Date:	6/13/2020	Analysis [	Date: 6/	14/2020	S	eqNo: 24	417145	Units: <b>mg/K</b>	(g				
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Diesel Range (	Organics (DRO)	61	10	50.00	0	123	70	130					
Surr: DNOP		5.4		5.000		108	55.1	146					

#### **Qualifiers:**

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

# QC SUMMARY REPORT Hall

	WO#:	2006700
Environmental Analysis Laboratory, Inc.		22-Jun-20

Client: D	ovon Energy
Project: Fi	ghting Okra 18 Fed Com #001
Sample ID: LCS-5306	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 53067 RunNo: 69626
Prep Date: 6/13/202	Analysis Date: 6/14/2020 SeqNo: 2417146 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DR	) 61 10 50.00 0 122 70 130
Surr: DNOP	6.0 5.000 120 55.1 146
Sample ID: LCS-5306	SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 53068 RunNo: 69626
Prep Date: 6/13/202	Analysis Date: 6/14/2020 SeqNo: 2417148 Units: %Rec
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: DNOP	5.0 5.000 100 55.1 146
Sample ID: MB-53062	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 53062 RunNo: 69626
Prep Date: 6/13/202	Analysis Date: 6/14/2020 SeqNo: 2417149 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DR	) ND 10
Motor Oil Range Organics (N	RO) ND 50
Surr: DNOP	14 10.00 144 55.1 146
Sample ID: MB-53067	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 53067 RunNo: 69626
Prep Date: 6/13/202	Analysis Date: 6/14/2020 SeqNo: 2417151 Units: mg/Kg
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DR	) ND 10
Motor Oil Range Organics (N	RO) ND 50
Surr: DNOP	13 10.00 134 55.1 146
Sample ID: MB-53068	SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 53068 RunNo: 69626
Prep Date: 6/13/202	Analysis Date:         6/14/2020         SeqNo:         2417152         Units:         %Rec
Analyte	Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: DNOP	11 10.00 114 55.1 146

**Qualifiers:** 

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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

WO#:	2006700
	22-Jun-20

Client: De	von Energy									
Project: Fig	hting Okra 18 Fe	ed Com	#001							
Sample ID: mb-53057	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: PBS	Batch	h ID: 530	)57	F	RunNo: 6	9620				
Prep Date: 6/12/2020	Analysis D	Date: 6/	13/2020	S	SeqNo: 24	416339	Units: mg/K	٤g		
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	0.48		0.5000		97.0	70	130			
Surr: 4-Bromofluorobenzen	e 0.49		0.5000		98.9	70	130			
Surr: Dibromofluoromethan	e 0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			
Sample ID: Ics-53057	SampT	ype: LC	S4	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: BatchQC	Batch	h ID: 530	)57	F	RunNo: 6	9620				
Prep Date: 6/12/2020	Analysis D	Date: 6/	13/2020	S	SeqNo: 24	416340	Units: mg/K	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	105	80	120			
Xylenes, Total	3.3	0.10	3.000	0	110	80	120			
Surr: 1,2-Dichloroethane-d4	0.47		0.5000		93.7	70	130			
Surr: 4-Bromofluorobenzen	e 0.48		0.5000		96.0	70	130			
Surr: Dibromofluoromethan	e 0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			
Sample ID: mb-53058	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: PBS	Batch	h ID: 53	058	F	RunNo: 6	9621				
Prep Date: 6/12/2020	Analysis D	Date: 6/	13/2020	S	SeqNo: 24	416426	Units: <b>mg/K</b>	(g		
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		97.3	70	130			
Surr: 4-Bromofluorobenzen	e 0.46		0.5000		91.0	70	130			
Surr: Dibromofluoromethan	e 0.50		0.5000		99.3	70	130			
Surr: Toluene-d8	0.50		0.5000		99.4	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 Quanitative 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

Devon Energy

**Client:** 

**Project:** 

Sample ID: Ics-53058

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

Fighting Okra 18 Fed Com #001

SampType: LCS4

**Qualifiers:** 

\* D

Н

ND

PQL

Value exceeds Maximum Contaminant Level.

Holding times for preparation or analysis exceeded

Sample Diluted Due to Matrix

Practical Quanitative Limit

Not Detected at the Reporting Limit

Client ID: BatchQC	Batc	h ID: 530	058	F	RunNo: 6	9621				
Prep Date: 6/12/2020	Analysis [	Date: 6/	13/2020	S	SeqNo: 2	416428	Units: mg/K	g		
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	1.1	0.050	1.000	0	105	80	120			
Ethylbenzene	1.1	0.050	1.000	0	108	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 1,2-Dichloroethane-d4	0.49		0.5000		98.2	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.5000		96.0	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		94.3	70	130			
Surr: Toluene-d8	0.52		0.5000		104	70	130			
Sample ID: 2006700-006ams	Samp <sup>-</sup>	Гуре: МS	54	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: BS20-06 6"	Batc	h ID: 530	058	F	RunNo: 6	9621				
Prep Date: 6/12/2020	Analysis [	Date: 6/	13/2020	5	SeqNo: 2	416430	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.023	0.9355	0	104	71.1	115			
Toluene	1.0	0.047	0.9355	0	110	79.6	132			
Ethylbenzene	1.1	0.047	0.9355	0	113	83.8	134			
Xylenes, Total	3.1	0.094	2.806	0	111	82.4	132			
Surr: 1,2-Dichloroethane-d4	0.48		0.4677		103	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.4677		99.3	70	130			
Surr: Dibromofluoromethane	0.49		0.4677		104	70	130			
Surr: Toluene-d8	0.47		0.4677		100	70	130			
Sample ID: 2006700-006amsd	I Samp <sup>-</sup>	Гуре: МS	SD4	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: BS20-06 6"	Batc	h ID: 530	058	F	RunNo: 6	9639				
Prep Date: 6/12/2020	Analysis [	Date: 6/	14/2020	S	SeqNo: 2	417244	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9560	0	90.8	71.1	115	11.3	20	
Toluene	0.93	0.048	0.9560	0	97.7	79.6	132	9.74	20	
Ethylbenzene	0.99	0.048	0.9560	0	103	83.8	134	6.66	20	
Xylenes, Total	2.9	0.096	2.868	0	99.8	82.4	132	8.55	20	
Surr: 1,2-Dichloroethane-d4	0.45		0.4780		94.9	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.44		0.4780		92.5	70	130	0	0	
Surr: Dibromofluoromethane	0.46		0.4780		96.2	70	130	0	0	
Surr: Toluene-d8	0.47		0.4780		97.6	70	130	0	0	

TestCode: EPA Method 8260B: Volatiles Short List

#### в Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits Р Sample pH Not In Range

RL Reporting Limit

#### WO#: 2006700

22-Jun-20

Devon

Fightin

**Client:** 

**Project:** 

Analyte Benzene Toluene Ethylbenzene Xylenes, Total

Sample ID: mb-53061 Client ID: PBS Prep Date: 6/13/2020

Surr: 1,2-Dichloroethane-d4 Surr: 4-Bromofluorobenzene Surr: Dibromofluoromethane

Surr: Toluene-d8

Client ID:

Analyte Benzene Toluene Ethylbenzene Xylenes, Total

Sample ID: Ics-53061

Prep Date: 6/13/2020

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

BatchQC

## QC SUMMARY Hall Environmen

0.45

0.48

0.51

0.5000

0.5000

0.5000

Y REP tal Anal	ORT vsis L	aborat	orv. Inc.					WO#:	2006700 22- Jun-20
									22 Jun 20
Energy									
g Okra 18 F	ed Com	#001							
Samp	Туре: <b>МЕ</b>	BLK	Tes	Code: EF	PA Method	8260B: Volat	iles Short	List	
Batc	h ID: 53	061	F	unNo: 69	9639				
Analysis [	Date: 6/	14/2020	S	eqNo: 24	417251	Units: mg/K	g		
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
ND	0.025								
ND	0.050								
ND	0.050								
ND	0.10								
0.48		0.5000		95.1	70	130			
0.47		0.5000		94.1	70	130			
0.47		0.5000		94.3	70	130			
0.51		0.5000		102	70	130			
Samp	Type: <b>LC</b>	S4	Tes	tCode: EF	PA Method	8260B: Volat	iles Short	List	
Batc	h ID: 53	061	F	unNo: 69	9639				
Analysis [	Date: 6/	14/2020	S	eqNo: 24	417255	Units: mg/K	g		
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
0.96	0.025	1.000	0	95.6	80	120			
1.0	0.050	1.000	0	104	80	120			
1.1	0.050	1.000	0	108	80	120			
3.1	0.10	3.000	0	104	80	120			
0.48		0.5000		95.8	70	130			

Sample ID: 2006700-026ams	SampT	ype: <b>MS</b>	64	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: WS20-01	Batch	h ID: 530	061	F	RunNo: <b>6</b>	9639				
Prep Date: 6/13/2020	Analysis D	Date: 6/	14/2020	S	SeqNo: 24	417257	Units: <b>mg/K</b>	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.82	0.025	0.9804	0	83.3	71.1	115			
Toluene	0.88	0.049	0.9804	0	90.2	79.6	132			
Ethylbenzene	0.91	0.049	0.9804	0	93.3	83.8	134			
Xylenes, Total	2.7	0.098	2.941	0	90.5	82.4	132			
Surr: 1,2-Dichloroethane-d4	0.47		0.4902		96.1	70	130			
Surr: 4-Bromofluorobenzene	0.44		0.4902		90.4	70	130			
Surr: Dibromofluoromethane	0.48		0.4902		97.3	70	130			
Surr: Toluene-d8	0.50		0.4902		103	70	130			

#### **Qualifiers:**

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

Analyte detected in the associated Method Blank в

90.2

95.3

103

70

70

70

130

130

130

- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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

Client: Devon Energy

Project:Fighting Okra 18 Fed Com #001

Sample ID: 2006700-026amsd	SampT	уре: <b>МS</b>	SD4	Tes	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: WS20-01	Batc	h ID: 530	061	F	RunNo: 6	9639				
Prep Date: 6/13/2020	Analysis E	Date: 6/	14/2020	S	SeqNo: 2	417258	Units: <b>mg/#</b>	ξg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	0.9833	0	99.1	71.1	115	17.6	20	
Toluene	1.1	0.049	0.9833	0	109	79.6	132	19.0	20	
Ethylbenzene	1.1	0.049	0.9833	0	112	83.8	134	18.9	20	
Xylenes, Total	3.2	0.098	2.950	0	109	82.4	132	19.3	20	
Surr: 1,2-Dichloroethane-d4	0.47		0.4916		96.2	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.45		0.4916		92.2	70	130	0	0	
Surr: Dibromofluoromethane	0.50		0.4916		101	70	130	0	0	
Surr: Toluene-d8	0.51		0.4916		103	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 Quanitative 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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WO#: **2006700** 

## **QC SUMMARY REPORT** Hall Envir

	WO#:	2006700
conmental Analysis Laboratory, Inc.		22-Jun-20

Client: Project:	Devon Er Fighting	nergy Okra 18 Fe	d Com	#001							
Sample ID:	mb-53057	SamnT			Tes	tCode: E	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	DBS	Batch	אין אין אין אין איז	057	103 F		30620	ourse mou.	Gasonne i	Nange	
Prop Date:	6/12/2020	Analysis D	ato: 6	12/2020	c		0416265	Linite: ma/k	(0		
Tiep Date.	0/12/2020		ale. 0/	13/2020			410303	01113. <b>119/1</b>	vy		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB		520	5.0	500.0		103	70	130			
Sample ID:	lcs-53057	SampT	ype: LC	s	Tes	tCode: E	PA Method	8015D Mod:	Gasoline I	Range	
Client ID:	LCSS	Batch	n ID: 53	057	F	RunNo: 6	<b>69620</b>				
Prep Date:	6/12/2020	Analysis D	ate: 6	/13/2020	S	SeqNo: 2	2416366	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	19	5.0	25.00	0	76.1	70	130			
Surr: BFB		500		500.0		99.4	70	130			
Sample ID:	mb-53058	SampT	ype: M	BLK	Tes	tCode: E	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	PBS	Batch	n ID: 53	058	F	RunNo: 6	69621				
Prep Date:	6/12/2020	Analysis D	ate: 6	/13/2020	S	SeqNo: 2	2416456	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	ND	5.0								
Surr: BFB		500		500.0		99.2	70	130			
Sample ID:	lcs-53058	SampT	ype: LC	S	Tes	tCode: E	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	LCSS	Batch	n ID: 53	058	F	RunNo: 6	59621				
Prep Date:	6/12/2020	Analysis D	ate: 6	13/2020	S	SeqNo: 2	2416457	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	23	5.0	25.00	0	90.8	70	130			
Surr: BFB		500		500.0		100	70	130			
Sample ID:	2006700-007ams	SampT	ype: M	S	Tes	tCode: E	PA Method	8015D Mod:	Gasoline I	Range	
Client ID:	BS20-07 6"	Batch	n ID: 53	058	F	RunNo: 6	69621				
Prep Date:	6/12/2020	Analysis D	ate: 6	13/2020	S	SeqNo: 2	2416460	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	ge Organics (GRO)	18	4.8	24.25	0	76.0	70	130			
Surr: BFB		500		485.0		102	70	130			
Sample ID:	2006700-007amsd	SampT	ype: M	SD	Tes	tCode: E	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	BS20-07 6"	Batch	n ID: 53	058	F	RunNo: 6	9621				
Prep Date:	6/12/2020	Analysis D	ate: 6	/14/2020	S	SeqNo: 2	2416461	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

#### Qualifiers:

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

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- Р Sample pH Not In Range
- RL Reporting Limit

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

Client:	Devon En	nergy									
Project:	Fighting (	Okra 18 F	ed Com	#001							
Sample ID:	2006700-007amsd	Samp	Гуре: М	SD	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	BS20-07 6"	Batc	h ID: 53	058	F	RunNo: <b>6</b>	9621				
Prep Date:	6/12/2020	Analysis [	Date: 6/	14/2020	S	SeqNo: 24	416461	Units: mg/#	ζg		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	18	4.9	24.61	0	72.9	70	130	2.72	20	
Surr: BFB		500		492.1		102	70	130	0	0	
Sample ID:	mb-53061	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	PBS	Batc	h ID: <b>53</b>	061	F	RunNo: <b>6</b> 9	9639				
Prep Date:	6/13/2020	Analysis [	Date: 6/	14/2020	S	SeqNo: 24	417291	Units: mg/k	٢g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Rang	e Organics (GRO)	ND	5.0								
Surr: BFB		510		500.0		102	70	130			
Sample ID:	lcs-53061	Samp	Гуре: <b>LC</b>	s	Tes	tCode: El	PA Method	8015D Mod:	Gasoline	Range	
Client ID:	LCSS	Batc	h ID: 53	061	F	RunNo: 6	9639				
Prep Date:	6/13/2020	Analysis F	Data: 61	4 4 12020	~						
-			Jaie. 0/	14/2020	3	sequo: 2	417292	Units: mg/k	(g		
Analyte	0.02020	Result	PQL	SPK value	SPK Ref Val	%REC	417292 LowLimit	Units: <b>mg/k</b> HighLimit	<b>(g</b> %RPD	RPDLimit	Qual
Analyte Gasoline Rang	je Organics (GRO)	Result 22	PQL 5.0	SPK value 25.00	SPK Ref Val	88.5	417292 LowLimit 70	Units: <b>mg/k</b> HighLimit 130	<b>(g</b> %RPD	RPDLimit	Qual
Analyte Gasoline Rang Surr: BFB	e Organics (GRO)	Result 22 500	PQL 5.0	SPK value 25.00 500.0	SPK Ref Val 0	%REC 88.5 99.1	417292 LowLimit 70 70	Units: <b>mg/k</b> HighLimit 130 130	<b>′g</b> %RPD	RPDLimit	Qual
Analyte Gasoline Rang Surr: BFB Sample ID:	ge Organics (GRO) 2006700-027ams	Result 22 500 Samp	PQL 5.0	SPK value 25.00 500.0	SPK Ref Val 0 Tes	%REC 88.5 99.1	LowLimit 70 70 PA Method	Units: <b>mg/K</b> HighLimit 130 130 <b>8015D Mod:</b>	Kg %RPD Gasoline	RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	e Organics (GRO) 2006700-027ams WS20-02	Result 22 500 Samp <sup>1</sup> Batc	PQL 5.0 Fype: <b>M</b> ( h ID: <b>53</b>	SPK value 25.00 500.0	SPK Ref Val 0 Tes	%REC 88.5 99.1 tCode: EI	LowLimit 70 70 PA Method 9639	Units: <b>mg/K</b> HighLimit 130 130 <b>8015D Mod:</b>	(g %RPD Gasoline	RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date:	e Organics (GRO) 2006700-027ams WS20-02 6/13/2020	Result 22 500 Samp Batc Analysis I	PQL 5.0 Fype: MS h ID: 53 Date: 6/	SPK value 25.00 500.0 S 061 114/2020	SPK Ref Val 0 Tes F	%REC 88.5 99.1 tCode: El RunNo: 69	LowLimit 70 70 PA Method 9639 417295	Units: mg/k HighLimit 130 130 8015D Mod: Units: mg/k	Gasoline	RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte	e Organics (GRO) 2006700-027ams WS20-02 6/13/2020	Result 22 500 Samp Batc Analysis I Result	PQL 5.0 Type: MS h ID: 53 Date: 6/ PQL	SPK value 25.00 500.0 6 061 14/2020 SPK value	SPK Ref Val 0 Tes F SPK Ref Val	%REC 88.5 99.1 tCode: El RunNo: 69 SeqNo: 24 %REC	LowLimit 70 70 PA Method 9639 417295 LowLimit	Units: mg/K HighLimit 130 130 8015D Mod: Units: mg/K HighLimit	(g %RPD Gasoline (g %RPD	RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang	ye Organics (GRO) 2006700-027ams WS20-02 6/13/2020 ye Organics (GRO)	Result 22 500 Samp Batc Analysis I Result 18	PQL 5.0 Type: MS h ID: 53 Date: 6/ PQL 5.0	SPK value 25.00 500.0 S061 14/2020 SPK value 24.88	SPK Ref Val 0 Tes F SPK Ref Val 0	%REC 88.5 99.1 tCode: El RunNo: 69 SeqNo: 20 %REC 72.4	LowLimit 70 70 PA Method 9639 417295 LowLimit 70	Units: mg/k HighLimit 130 130 8015D Mod: Units: mg/k HighLimit 130	Gasoline	RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB	e Organics (GRO) 2006700-027ams WS20-02 6/13/2020 e Organics (GRO)	Result 22 500 Samp Batc Analysis I Result 18 500	PQL 5.0 Fype: M <b>!</b> h ID: <b>53</b> Date: <b>6/</b> PQL 5.0	SPK value 25.00 500.0 500.0 5 061 14/2020 SPK value 24.88 497.5	SPK Ref Val 0 Tes F SPK Ref Val 0	%REC 88.5 99.1 tCode: El RunNo: 69 SeqNo: 24 %REC 72.4 100	417292 LowLimit 70 70 PA Method 9639 417295 LowLimit 70 70	Units: <b>mg/k</b> HighLimit 130 130 <b>8015D Mod:</b> Units: <b>mg/k</b> HighLimit 130 130	(g %RPD Gasoline (g %RPD	RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID:	2006700-027ams WS20-02 6/13/2020 Je Organics (GRO)	Result 22 500 Samp Batc Analysis I Result 18 500 Samp	PQL 5.0 Fype: MS h ID: 53 Date: 6/ PQL 5.0	SPK value 25.00 500.0 S061 14/2020 SPK value 24.88 497.5	SPK Ref Val 0 Tes F SPK Ref Val 0 Tes	%REC 88.5 99.1 tCode: EI &unNo: 69 SeqNo: 24 %REC 72.4 100	417292 LowLimit 70 70 PA Method 9639 417295 LowLimit 70 70 70 PA Method	Units: mg/k HighLimit 130 8015D Mod: Units: mg/k HighLimit 130 130 8015D Mod:	Gasoline   %RPD Gasoline   %RPD Gasoline	RPDLimit Range RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID:	2006700-027ams WS20-02 6/13/2020 ge Organics (GRO) 2006700-027amsd WS20-02	Result 22 500 Samp Batc Analysis I Result 18 500 Samp Batc	PQL 5.0 Fype: MS h ID: 53 Date: 6/ PQL 5.0 Fype: MS h ID: 53	SPK value 25.00 500.0 500.0 500.0 500.0 500 50 50 50 661	SPK Ref Val 0 Tes 5 SPK Ref Val 0 Tes F	%REC 88.5 99.1 tCode: EI RunNo: 69 SeqNo: 24 %REC 72.4 100 tCode: EI	LowLimit           70           70           70           70           70           PA Method           9639           417295           LowLimit           70           70           70	Units: mg/k HighLimit 130 130 8015D Mod: Units: mg/k HighLimit 130 130 8015D Mod:	(g %RPD Gasoline %RPD Gasoline	RPDLimit Range RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date:	2006700-027ams WS20-02 6/13/2020 ge Organics (GRO) 2006700-027amsd WS20-02 6/13/2020	Result 22 500 Samp Batc Analysis I Result 18 500 Samp Batc Analysis I	PQL           5.0           Type:         MS           h ID:         53           Date:         6/           Fype:         MS           fype:         MS           Date:         6/           State:         6/           Date:         6/           State:         6/           Date:         6/	SPK value 25.00 500.0 S061 14/2020 SPK value 24.88 497.5 SD 061 14/2020	SPK Ref Val 0 Tes SPK Ref Val 0 Tes F	%REC 88.5 99.1 tCode: El RunNo: 69 %REC 72.4 100 tCode: El RunNo: 69 SeqNo: 24	LowLimit 70 70 74 Method 9639 417295 LowLimit 70 70 74 Method 9639 417296	Units: mg/k HighLimit 130 130 8015D Mod: Units: mg/k HighLimit 130 130 8015D Mod: Units: mg/k	Gasoline   %RPD Gasoline   %RPD Gasoline	RPDLimit Range RPDLimit Range	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte	2006700-027ams WS20-02 6/13/2020 e Organics (GRO) 2006700-027amsd WS20-02 6/13/2020	Result 22 500 Samp Batc Analysis I Result 18 500 Samp Batc Analysis I Result	PQL 5.0 Type: MS h ID: 53 Date: 6/ Fype: MS h ID: 53 Date: 6/ PQL	SPK value 25.00 500.0 S061 14/2020 SPK value 24.88 497.5 SD 061 14/2020 SPK value	SPK Ref Val 0 Tes 5 SPK Ref Val 0 Tes F SPK Ref Val	%REC 88.5 99.1 tCode: El RunNo: 69 SeqNo: 24 72.4 100 tCode: El RunNo: 69 SeqNo: 24 SeqNo: 24 %REC	417292 LowLimit 70 70 PA Method 9639 417295 LowLimit 70 70 PA Method 9639 417296 LowLimit	Units: mg/k HighLimit 130 130 8015D Mod: Units: mg/k HighLimit Units: mg/k HighLimit	(g %RPD Gasoline %RPD Gasoline	RPDLimit Range RPDLimit Range RPDLimit	Qual
Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang Surr: BFB Sample ID: Client ID: Prep Date: Analyte Gasoline Rang	2006700-027ams WS20-02 6/13/2020 ge Organics (GRO) 2006700-027amsd WS20-02 6/13/2020 ge Organics (GRO)	Result 22 500 Samp Batc Analysis I Result 18 500 Samp Batc Analysis I Result 19	PQL           5.0           Fype:         MS           h ID:         53           Date:         6/           PQL         5.0           Type:         MS           b ID:         53           Date:         6/           PQL         5.0           Type:         MS           Date:         6/           PQL         4.9	SPK value 25.00 500.0 S061 14/2020 SPK value 24.88 497.5 SD 061 14/2020 SPK value 24.58	SPK Ref Val 0 Tes 5 SPK Ref Val 0 Tes 5 SPK Ref Val 5 SPK Ref Val 0	%REC 88.5 99.1 tCode: EI &unNo: 69 %REC 72.4 100 tCode: EI &unNo: 69 %REC %REC %REC %REC 76.1	417292 LowLimit 70 70 PA Method 9639 417295 LowLimit 70 70 PA Method 9639 417296 LowLimit 70 70	Units: mg/k HighLimit 130 300 8015D Mod: Units: mg/k HighLimit 130 8015D Mod: Units: mg/k HighLimit 130	Gasoline   Gasoline   Gasoline   Gasoline   Gasoline   Sg %RPD 3.72	RPDLimit Range RPDLimit Range RPDLimit 20	Qual

Value exceeds Maximum Contaminant Level. \* D Sample Diluted Due to Matrix

**Qualifiers:** 

Н

Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix S

Analyte detected in the associated Method Blank в

Е Value above quantitation range

J Analyte detected below quantitation limits

Р Sample pH Not In Range

RL Reporting Limit WO#: 2006700 22-Jun-20

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HALL ENVIRONMENTAL ANALYSIS LABORATORY	Hall Environme TEL: 505-345-3 Website: www	ntal Analysis A 4901 H Albuquerque, 3975 FAX: 503 w.hallenvironi	Laboratory lawkins NE NM 87109 5-345-4107 nental.com	Sar	nple Log-In Check List
Client Name: DEVON ENERGY	Work Order Num	iber: 200670	0		RcptNo: 1
Received By: Michelle Garcia 6	6/12/2020 9:35:00	AM	m	intel (	prin
Completed By: Juan Rojas	/12/2020 11:10:59	9 AM	Hu	nag	
Reviewed By: DAD 6/12/20					
Chain of Custody					
1. Is Chain of Custody complete?		Yes 🔽	] N	o 🗌	Not Present
2. How was the sample delivered?		Courier			
Log In					
3. Was an attempt made to cool the samples?		Yes 🔽	] <b>N</b>	•	
4. Were all samples received at a temperature of	>0° C to 6.0°C	Yes 🔽	N	o 🗌	
5. Sample(s) in proper container(s)?		Yes 🔽	N	•	
6. Sufficient sample volume for indicated test(s)?		Yes 🗸	No		
7. Are samples (except VOA and ONG) properly p	reserved?	Yes 🔽	No		
8. Was preservative added to bottles?		Yes 🗌	No		NA 🗌
9. Received at least 1 vial with headspace <1/4" fo	r AQ VOA?	Yes 🗌	No		NA 🗹
0. Were any sample containers received broken?		Yes	N	•	# of preserved
1. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗹	No	<b>y</b>	for pH: (<2 or >12 unless noted)
2. Are matrices correctly identified on Chain of Cus	stody?	Yes 🔽	No		Adjusted?
3. Is it clear what analyses were requested?		Yes 🔽	No		
<ol> <li>Were all holding times able to be met? (If no, notify customer for authorization.)</li> </ol>		Yes 🔽	No		Checked by:
special Handling (if applicable)					/ my policie
15. Was client notified of all discrepancies with this	order?	Yes	N	o □	NA 🗹
Person Notified: By Whom:	Date Via:	eMail	Phone [	] Fax	In Person
Client Instructions:					
16. Additional remarks:					
17. <u>Cooler Information</u>					
Cooler No Temp °C Condition Seal	ntact Seal No	Seal Date	Signed	Ву	

Chain	-of-CI	ustody Record	Turn-Around	I Time: 5	DAY TURN			3	1 1		ALT R	ORINATION	TAL
Client: De	10-	Everal	X Standard	d 🗆 Rush			ļ		ALL AL	YS1		ABORAT	ORY
			Project Nam	:e					led wy	enviro	nmen	tal.com	
Mailing Addres	S: ON	FILE	Fight	ing Olvia	18 Fed Can #001	4	901 H	awkins	- NE	Albuq	nerqu	e, NM 87109	
			Project #:		, (		[el. 50	5-345-	3975	(Ea)	< 505	-345-4107	
Phone #:				12 807	559				Ā	nalysi	s Req	uest	
email or Fax#:			Project Mana	ager:		()	(0)			*Os	-	(tue	
QA/QC Package		Level 4 (Full Validation)	Nat	alie Con	rdon	208) 2'8 8M1 OS	PCB's	511150	0,000	S (, PO4, S		əsdA\tn	
Accreditation:	D Az C	ompliance	Sampler: 1	levir Sm	いい	amt ag v	2808	(1.4	170	<sup>z</sup> ON	(*	esei	
	□ Othe		On Ice:	A Yes	ON 🗆	E /	/sə	09	SIE	<sup>*8</sup>	401	d) r	
EDD (Type)			# of Coolers	1	100/ 0	IBT IBT	bioi	por	atel		∧-iu	orn	
			Cooler Temp	D(including CF): / / /	+D.1 (F=1,2 (C)	M \3	fest	ltəM)	N 8 K	Br,	neS)	Colif	
Date Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.		1808	EDB (	/YSSR	GP E'	8510	IstoT	
6/11/20	Soil	BS020-01 6'1	4 02 20 M	ice	100-	×				$\times$			
	_	BS20-02 6"	>		-002	1 1				-	10		
		" 9 E0-0TS8			200-								
		"9 40-0758			haa-				4				
		"9 SO-028			~00V								
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		"1 80-0TSS			2002						-		
		BS20-09 6"			600-								
		BSZD-10 6"			-010				1	_			
	_	19 11-0258			110-					1			
	-	18520-12 6"		100	210-					1			
Lilling Line:	Relinquist	ned by:	Received by:	Via:	Date Time	Remar	ks:	CC	2	5 4	1:0	Cordo~	
Date: Time: blir/20 19.0	Relinquist	red by:	Received by	Via: Cri	ur. Date Time			2A	1 11	300	2	Eners' I	
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ā			Turn-Around	Time.					(m)	c fot >	
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Client:	Dever	Enerev	以 Standard	C Rush			A	VALY	SIS	LABORA	ATORY
		.(.	Project Name				2	ww.halle	nvironm	nental.com	
Mailing Addi	ress: 61	W FILE	Fighting	Okra 18	Fed Can #001	4901	Hawkin	s NE - /	Albuque	erque, NM 87109	
			Project #:			Tel.	505-345	-3975	Fax 5	505-345-4107	
Phone #:				5 th 20 +	\$59			An	alysis F	Request	
email or Fax	¢#:		Project Mana	ger:		(0)			*OC	(tue	
QA/QC Pack:	age:	J	Nat	whic bord	العب المعالم ا	208) AM \	sao	SIAIR	170	əsdA	
Standard		Level 4 (Full Validation)				8'8 2 2	(	307	-1 'Z	лuə	
Accreditatio	n: 🗆 Az C	tompliance	Sampler: (C	cuit Smi	The second	a / c	000/	78 10	ON	Presi	
			# of Coolers.	4 100		999 980 / 38	g p	slais	<sup>3'</sup>	) ш ОЛ	
			Cooler Temp	(including CF): / /	+0.1 LF=1.2 (°C)	) D D D D D	otte	Net Met		-ime Iotile	
Date	e Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No.	108:H9T	EDB (We	КСКА в 8 АЯЭЯ	8260 (V	62) 0728 Total Co	
6/11/20	So:1	BS20-13 6"	402. ar	iec	-013	XX					
-	-	BS20-14 &"	r	A.	-014	11					
		BS20-15 6"			-[215-						
		BS20-16 6"			-016						
		8520-n 6"			F10-						
		BS20-18 6"			38						
		BS20-19 6"			610-						
		8520-20 6"			-020						
		850-21 6"			-021						
		RS20-22 6"			-022	-					
		BS20-23 6"			-023						
		8520-24 L"	_		-024						
Date: Time	e: Relinquis	shed by:	Received by:	Via: Cor.	Date Time	Remarks:	C	× : :	latal.	ic beile	1
6/11/20 6.1	S	en Devis	1 All	Vis. In. L.	6/11/20 18/5		~	2.11		ļ	
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11 ~ 11/2	11/10	in od yom lotocomosi 7 II-11 11-11	antracted to other a	AND IN	VUID OF OF	A Constraints And	and and the second	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	and should be	alternation of the second s	

Listody Record     Turn. Yound Time:       Clistody Record     Turn. Yound Time:       Kashington     Kashington       Kashington     Rank Turk       Kashington     Rank Turk       Project Name:     Rank Turk       Mall SIS Laboration       Rank Turk       Rank Turk	
Chain-or-Custody       ent:     Devoc       iling Address:     Bw       f.Lec       inior Fax#:       Address:       Address:       Bu       FLE       Address:       Address:       Bu       FLE       Address:	