July 22, 2019 Vertex Project #: 19E-00575-014

Spill Closure Report: SDE 31 Federal #001 (Section 31, Township 23 South, Range 32 East)
API: 30-025-32676
County: Lea
Incident Report: 1RP-5530

Prepared For: **Devon Energy Corporation**
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 Corporation retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for a release of produced water and crude oil caused by an equipment failure on the wellhead, onto the well pad at SDE 31 Federal #001, API 30-025-32676, Incident 1RP-5530 (hereafter referred to as "site"). This letter provides a description of the Spill Assessment and includes a request for Spill Closure. The spill area is located at N 32.26630, W -103.72080.

Background Information

The site is located approximately 40 miles southeast of Carlsbad, New Mexico. The legal location for the site is Section 31, Township 23 South and Range 32 East in Lea County, New Mexico. The spill area is located on Bureau of Land Management (BLM) property. An aerial photograph and site schematic are included in Attachment 1.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2014 – 2017) indicates the site's surface geology is comprised primarily of Qep ---- Eolian and piedmont deposits (Holocene to middle Pleistocene) with interlayed eolian sand and piedmont deposits. Predominant soil texture on the site is fine sand.

Incident Description

The spill occurred on May 10, 2019, due to flow line leak from the wellhead. The spill was reported May 11, 2019 and involved the release of approximately 7 barrels (bbl.) of produced water, and 0.25 bbls of produced oil on the pad site. Approximately 7.25 bbls of free fluid was removed during initial spill clean-up. The New Mexico Oil Conservation Division (NMOCD) C-141 Report: 1RP-5530 is included in Attachment 2. The Daily Field Reports (DFRs) and site photographs are included in Attachment 3.

Closure Criteria Determination

The depth to groundwater was determined using information from Oil and Gas Drilling records and the New Mexico Office of the State Engineer Water Column/Average Depth to Water report. A 3,000-meter search radius was used to determine groundwater depth. The closest recorded depth to groundwater was determined to be 380 feet below

ground surface (bgs) and 8,449 feet from the site. Documentation used in Closure Criteria Determination research is included in Attachment 4.

Table 1. Closure Criteria Determination			
Site Name: SDE 31 Federal 001			
Spill Coordinates:		**X: 32.2663**	**Y: -103.7208**
Site Specific Conditions		**Value**	**Unit**
1	Depth to Groundwater	**380**	feet
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	27014	feet
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	3559	feet
4	Within 300 feet from an occupied residence, school, hospital, institution or church	23243	feet
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	8704	feet
	ii) Within 1000 feet of any fresh water well or spring	47205	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	8949	feet
8	Within the area overlying a subsurface mine	No	(Y/N)
9	Within an unstable area (Karst Map)	Low	Critical High Medium Low
10	Within a 100-year Floodplain	> 500	year
NMAC 19.15.29.12 E (Table 1) Closure Criteria		>100'	<50' 51-100' >100'

The closure criteria determined for the site are associated with the following constituent concentration limits as presented in Table 2.

Table 2. Closure Criteria for Soils Impacted by a Release		
Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/l TDS	**Constituent**	**Limit**
> 100 feet	Chloride	20,000 mg/kg
	TPH (GRO+DRO+MRO)	2,500 mg/kg
	GRO+DRO	1,000 mg/kg
	BTEX	50 mg/kg
	Benzene	10 mg/kg

Remedial Actions Taken

An initial site inspection of the spill area was completed on May 26, 2019, which identified the area of the spill specified in the initial C-141 Report, estimated the approximate volume of the spill and white lined the area required for the 811 One Call request. The impacted area was determined to be approximately 147 feet long and 68 feet wide; the total affected area was determined to be 6,578 square feet. The DFR associated with the site inspection is included in Attachment 3.

Remediation efforts began on June 1, 2019 and was completed on June 1, 2019. Vertex personnel supervised the excavation of impacted soils. Field screening was completed on a total of 7 sample points and consisted of analysis using a Photo Ionization Detector (volatile hydrocarbons), a Dexsil Petroflag using EPA SW-846 Method 9074 (extractable hydrocarbons) and Quantabs (chlorides). Field screening results were used to identify areas requiring further remediation from those areas showing concentrations below determined closure criteria levels. Soils were removed to a depth of 0.5 feet bgs. Impacted soil was transported by a licensed waste hauler and disposed at an approved waste management facility. Waste Manifest is presented in Attachment 5. Field screening results are presented in Attachment 6, as well as in the DFRs in Attachment 3.

Notification that confirmatory samples were being collected was provided to the NMOCD on June 1, 2019 and is included in Attachment 7. Confirmatory composite samples were collected from the base of the excavation in 200 square foot increments. A total of seven (7) samples were collected for laboratory analysis following NMOCD soil sampling procedures. Samples were submitted to Hall Environmental Analysis Laboratory under chain-of-custody protocols and analyzed for BTEX (EPA Method 8021B), Total Petroleum Hydrocarbons (GRO, DRO, MRO – EPA Method 8015M/D) and Total Chlorides (EPA Method 300.0). Laboratory results are presented in Table 3, Attachment 6 and the laboratory data report can be found in Attachment 8. All confirmatory samples collected and analyzed were below closure criteria for the site.

Closure Request

The spill area was fully delineated, remediated and backfilled with local soils by June 1, 2019 (Attachment 7). Confirmatory samples were analyzed by the laboratory and found to be below allowable concentrations as per the New Mexico Administrative Code (NMAC) Closure Criteria for Soils Impacted by a Release locations "greater than 100 feet to groundwater". Based on these findings, Devon Energy Corporation requests that this spill be closed.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.645.3111 or dwilliams@vertex.ca.

Sincerely,

Dennis Williams
ENVIRONMENTAL EARTHWORKS ADVISOR

Attachments

Attachment 1. Site Schematic
Attachment 2. NMOCD C-141 Report
Attachment 3. Daily Field Report(s) with Pictures
Attachment 4. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 5. Waste Manifest(s)
Attachment 6. Table 3 - Laboratory Results Table
Attachment 7. Confirmatory Samples Notification to the NMOCD
Attachment 8. Laboratory Data Reports and COCs

References

Water Column/Average Depth to Water Report. New Mexico Water Rights Reporting System, (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html

Assessed and Impaired Waters of New Mexico. New Mexico Department of Surface Water Quality Bureau, (2019). Retrieved from https://gis.web.env.nm.gov/oem/?map=swqb

Interactive Geologic Map. New Mexico Bureau of Geology and Mineral Resources, (2019). Retrieved from http://geoinfo.nmt.edu

Measured Distance from the Subject Site to Residence. Google Earth Pro, (2019). Retrieved from https://earth.google.com

Point of Diversion Location Report. New Mexico Water Rights Reporting System, (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html

Measured Distance from the Subject Site to Municipal Boundaries. Google Earth Pro, (2019). Retrieved from https://earth.google.com

National Wetland Inventory Surface Waters and Wetland. United State Fish and Wildlife Service, (2019). Retrieved from https://www.fws.gov/wetlands/data/mapper.html

Coal Mine Resources in New Mexico. NM Mining and Minerals Division, (2019). Retrieved from http://www.emnrd.state.nm.us/MMD/gismapminedata.html

New Mexico Cave/Karsts. United States Department of the Interior, Bureau of Land Management, (2019) Retrieved from https://www.blm.gov/programs/recreation/recreation-programs/caves/new-mexico

Flood Map Number 35015C1875D. United States Department of Homeland Security, FEMA Flood Map Service Center, (2010). Retrieved from https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor

Well Log/Meter Information Report. NM Office of the State Engineer, New Mexico Water Rights Reporting System. (2019). Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html

Natural Resources and Wildlife Oil and Gas Releases. New Mexico Oil Conservation Division, (2019). Santa Fe, New Mexico.

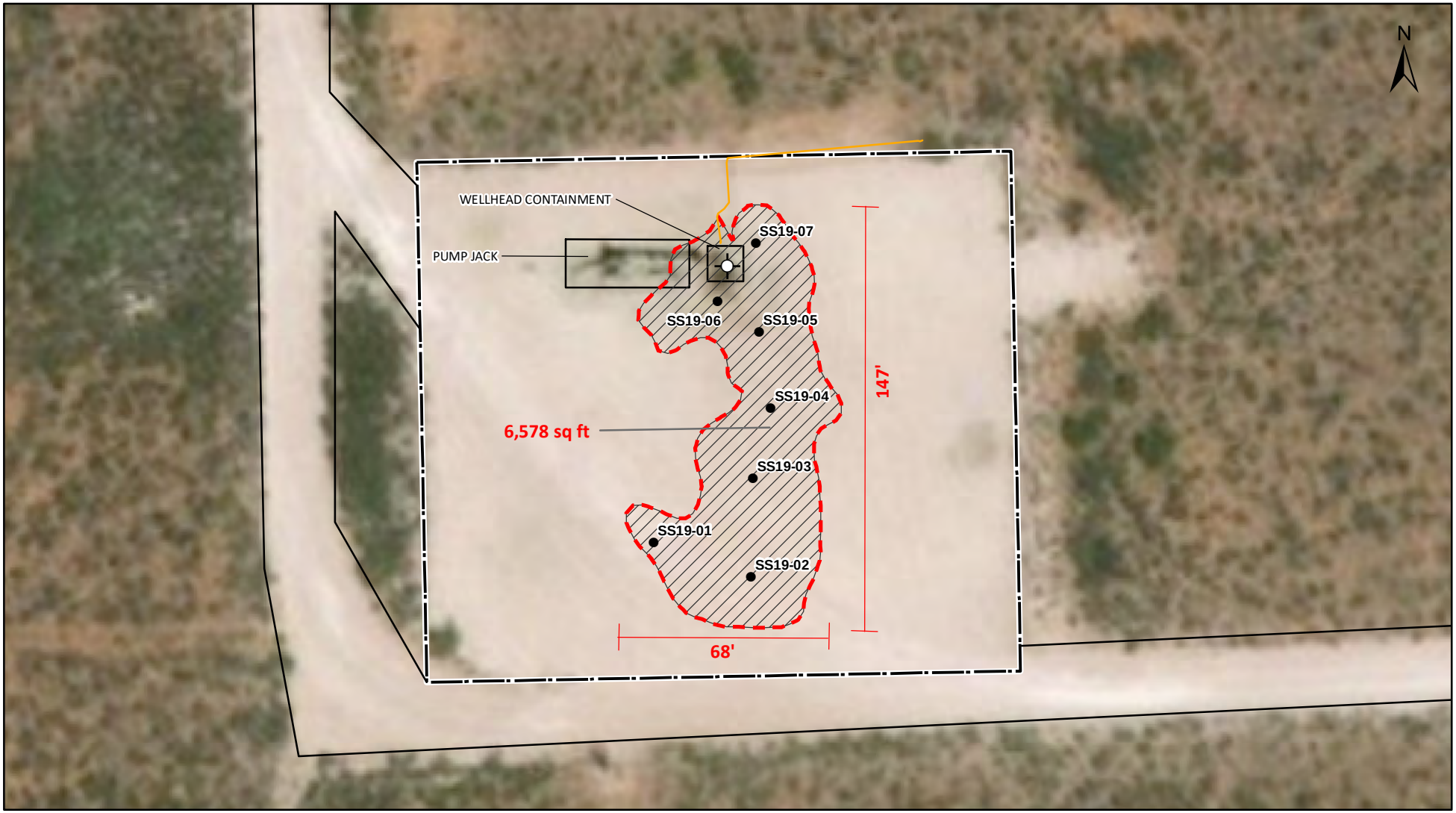
Soil Survey, New Mexico. United States Department of Agriculture, Soil Conservation Service in Cooperation with New Mexico Agricultural Experiment Station. (1971). Retrieved from http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf

Limitations

This report has been prepared for the sole benefit of Devon Energy Corporation. 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 Energy Corporation. 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.

ATTACHMENT 1



LEGEND

- CONFIRMATORY SAMPLE
- WELLHEAD
- ROAD
- FLOW LINE
- WELL PAD
- SPILL
- 0.5' EXCAVATED DEPTH AREA

0 25 50 100 ft

SCALE 1:600

Notes: Aerial Image from ESRI Digital Globe, 2016

devon

Site Schematic - Excavation
SDE 31 Federal 001

VERTEX

DRAWN:	NM
APPROVED:	JC
DATE:	JUL 12/2019

FIGURE: 1

VERSATILITY. EXPERTISE.

ATTACHMENT 2

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

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	
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 degrees 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		

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☐ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice 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: Kendra DeHoyos Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

ATTACHMENT 3

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	5/26/2019
Site Location Name:	SDE 31 Federal 001	Report Run Date:	5/26/2019 7:20 PM
Project Owner:	Amanda Davis	File (Project) #:	19E-00575
Project Manager:	Dennis Williams	API #:	30-025-32676
Client Contact Name:	Amanda Davis	Reference	Flowline Leak
Client Contact Phone #:	(575) 748-0176		

Summary of Times

Left Office	5/26/2019 9:30 AM
Arrived at Site	5/26/2019 10:25 AM
Departed Site	5/26/2019 11:35 AM
Returned to Office	5/26/2019 12:36 PM

Summary of Daily Operations

10:31 Initial site visit
Complete safety paperwork
Document spill by picture and GPS site/spill
Complete DFR
return to office

Next Steps & Recommendations

1. Complete DFR
2. Create work plan
3. Schedule remediation
4. Field screen
5. Confirm screen numbers

Daily Site Visit Report

6 Backfill

7 Closure report

8 Send report to client

Daily Site Visit Report

Site Photos

Viewing Direction: North

South toe of Spill area facing North

Viewing Direction: Northeast

Southwest toe of spill area facing Northeast

Viewing Direction: Southeast

South end of spill area

Viewing Direction: East

Middle of spill area

Daily Site Visit Report

Viewing Direction: Northeast	**Viewing Direction**: Northeast
	
Spill area	Spill area near wellhead
Viewing Direction: South	**Viewing Direction**: North
	
Spill area near wellhead	Spill area at “L” junction of flow line

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: Southwest
	
Spill area at “L” junction of flow line	Spill area near wellhead
Viewing Direction: West	**Viewing Direction**: Southwest
	
Spill area near wellhead	Spill area near wellhead flowing south

Daily Site Visit Report

Viewing Direction: South

Spill area

Viewing Direction: West

South toe of spill area

Viewing Direction: Northwest

Spill area

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 

Signature

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/1/2019
Site Location Name:	SDE 31 Federal 001	Report Run Date:	6/1/2019 11:53 PM
Project Owner:	Amanda Davis	File (Project) #:	19E-00575
Project Manager:	Dennis Williams	API #:	30-025-32676
Client Contact Name:	Amanda Davis	Reference	Flowline Leak
Client Contact Phone #:	(575) 748-0176		

Summary of Times	
Left Office	6/1/2019 7:06 AM
Arrived at Site	6/1/2019 8:03 AM
Departed Site	6/1/2019 3:26 PM
Returned to Office	6/1/2019 5:00 PM

Daily Site Visit Report

Site Sketch

Daily Site Visit Report

Summary of Daily Operations

8:34 Arrive on site and complete all safety paperwork and blind sweep.

9:40 Conduct safety meeting

9:53 Start excavation and field screen as we move along

15:18 Jar clean samples.

15:18 Fence off excavation area.

Next Steps & Recommendations

1 Send Samples to the Lab and wait for results.

2 Complete backfill.

3 Complete closure Report

4 Send closure Report to OCD and Client.

Sampling

SS19-01

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.	0 ppm	166 ppm	High (300-6000ppm)	2262 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26610788, -103.72091871	Yes

SS19-02

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.	0 ppm	105 ppm	High (300-6000ppm)	628 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26607405, -103.72080913	Yes

Daily Site Visit Report

SS19-03

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.	0 ppm	167 ppm	High (300-6000ppm)	11730 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26616909, -103.72080525	Yes

SS19-04

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.	0 ppm	86 ppm	High (300-6000ppm)	303 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26623609, -103.720778470	Yes

SS19-05

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.	0 ppm	116 ppm	High (300-6000ppm)	4433 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26631082, -103.72079954	Yes

SS19-06

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.	0 ppm	167 ppm	High (300-6000ppm)	8866 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26633861, -103.72084308	Yes

Daily Site Visit Report

SS19-07

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.	0 ppm	313 ppm	High (300-6000ppm)	10038 ppm	BTEX (EPA SW-846 Method 8021B/8260B), Chloride (EPA 300.0), TPH (EPA SW-846 Method 8015M)	✓	32.26639427, -103.72079932	Yes

Daily Site Visit Report

Site Photos

Viewing Direction: Northwest	**Viewing Direction**: North
	
Overview of site with locates	Overview of site with locates
Viewing Direction: West	**Viewing Direction**: North
	
Start of excavation	Overview of excavation area

Daily Site Visit Report

Viewing Direction: Northwest	**Viewing Direction**: Northeast
	
Overview of excavation area	Overview of excavation area
Viewing Direction: South	**Viewing Direction**: Southwest
	
Overview of excavation area	Overview of excavation area

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: East
	
Overview of excavation area	45 ft *15 ft*3 ft soil pile
Viewing Direction: Southeast	**Viewing Direction**: North
	
45 ft *15 ft*3 ft soil pile	Excavation area fenced off.

Daily Site Visit Report

Viewing Direction: Northeast	**Viewing Direction**: Northwest
	
Excavation area fenced off.	Excavation area fenced off.

Daily Site Visit Report

Depth Sample Photos

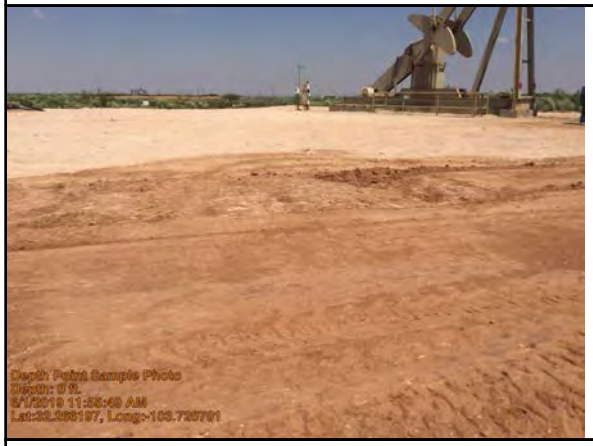
Sample Point ID: SS19-01

Depth: 0.5ft.

Sample Point ID: SS19-02

Depth: 0.5ft.

Sample Point ID: SS19-03



Depth: 0.5ft.

Sample Point ID: SS19-04

Depth: 0.5ft.

Daily Site Visit Report

Sample Point ID: SS19-05

Depth: 0.5ft.

Sample Point ID: SS19-06

Depth: 0.5ft.

Sample Point ID: SS19-07

Depth: 0.5ft.

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Robyn Fisher

Signature: 

Daily Site Visit Report

Client:	Devon Energy Corporation	Inspection Date:	6/13/2019
Site Location Name:	SDE 31 Federal 001	Report Run Date:	6/13/2019 11:11 PM
Project Owner:	Amanda Davis	File (Project) #:	19E-00575
Project Manager:	Dennis Williams	API #:	30-025-32676
Client Contact Name:	Amanda Davis	Reference	Flowline Leak
Client Contact Phone #:	(575) 748-0176		

Summary of Times

Left Office	6/13/2019 7:15 AM
Arrived at Site	6/13/2019 8:15 AM
Departed Site	6/13/2019 12:15 PM
Returned to Office	6/13/2019 12:30 PM

Summary of Daily Operations

8:29 Arrive on site.
Complete safety paperwork.
Backfill excavated area.
Complete DFR.
Return to office.

Next Steps & Recommendations

1 Closure report

2 Send report to client

Daily Site Visit Report

Site Photos

Viewing Direction: North

Excavated area before backfill

Viewing Direction: Southwest

Excavated area before backfill

Viewing Direction: Northwest

Excavated area before backfill

Viewing Direction: South

Excavated area before backfill

Daily Site Visit Report

Viewing Direction: East	**Viewing Direction**: East
	
Excavated area before backfill	Excavated area before backfill
Viewing Direction: North	**Viewing Direction**: Northeast
	
Backfilled excavation area	Backfilled excavation area

Daily Site Visit Report

Viewing Direction: Southeast	**Viewing Direction**: East
	
Backfilled excavation area	Backfilled excavation area
Viewing Direction: Northwest	**Viewing Direction**: Southwest
	
Backfilled excavation area	Backfilled excavation area near wellhead

Daily Site Visit Report

Daily Site Visit Signature

Inspector: Austin Harris

Signature: 
Signature

ATTACHMENT 4

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

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

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

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 03529 POD1	C	LE	2	4	3	29	23S	32E	622651	3571212	2236	550		
C 03555 POD1	C	LE	2	2	1	05	24S	32E	622709	3569231	2653	600	380	220
C 02258	C	ED		3	2	26	23S	31E	618055	3571853*	2698	662		
C 02348	C	ED	1	4	3	26	23S	31E	617648	3571068	2861	700	430	270

Average Depth to Water: **405 feet**

Minimum Depth: **380 feet**

Maximum Depth: **430 feet**

Record Count: 4

UTMNAD83 Radius Search (in meters):

Easting (X): 620481 **Northing (Y):** 3570672 **Radius:** 3000

***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.

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance
C 02602	C	SAN	0	POGO PRODUCING COMPANY	ED	C 02602					2 2	35	23S	31E	618471	3570650*	2010
C 03529	C	STK	0	MARK MCCLOY	LE	C 03529 POD1					2 4 3	29	23S	32E	622651	3571212	2236
C 03555	C	STK	3	NGL WATER SOLUTIONS PERMIAN	LE	C 03555 POD1				Shallow	2 2 1	05	24S	32E	622709	3569231	2653
C 02258	C	PRO	0	DEVON ENERGY CORP.(NEVADA)	ED	C 02258					3 2	26	23S	31E	618055	3571853*	2698
C 02348	C	STK	3	NGL WATER SOLUTIONS PERMIAN	ED	C 02348				Shallow	1 4 3	26	23S	31E	617647	3571068	2861

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 620481 **Northing (Y):** 3570672 **Radius:** 3000

Sorted by: Distance

***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.

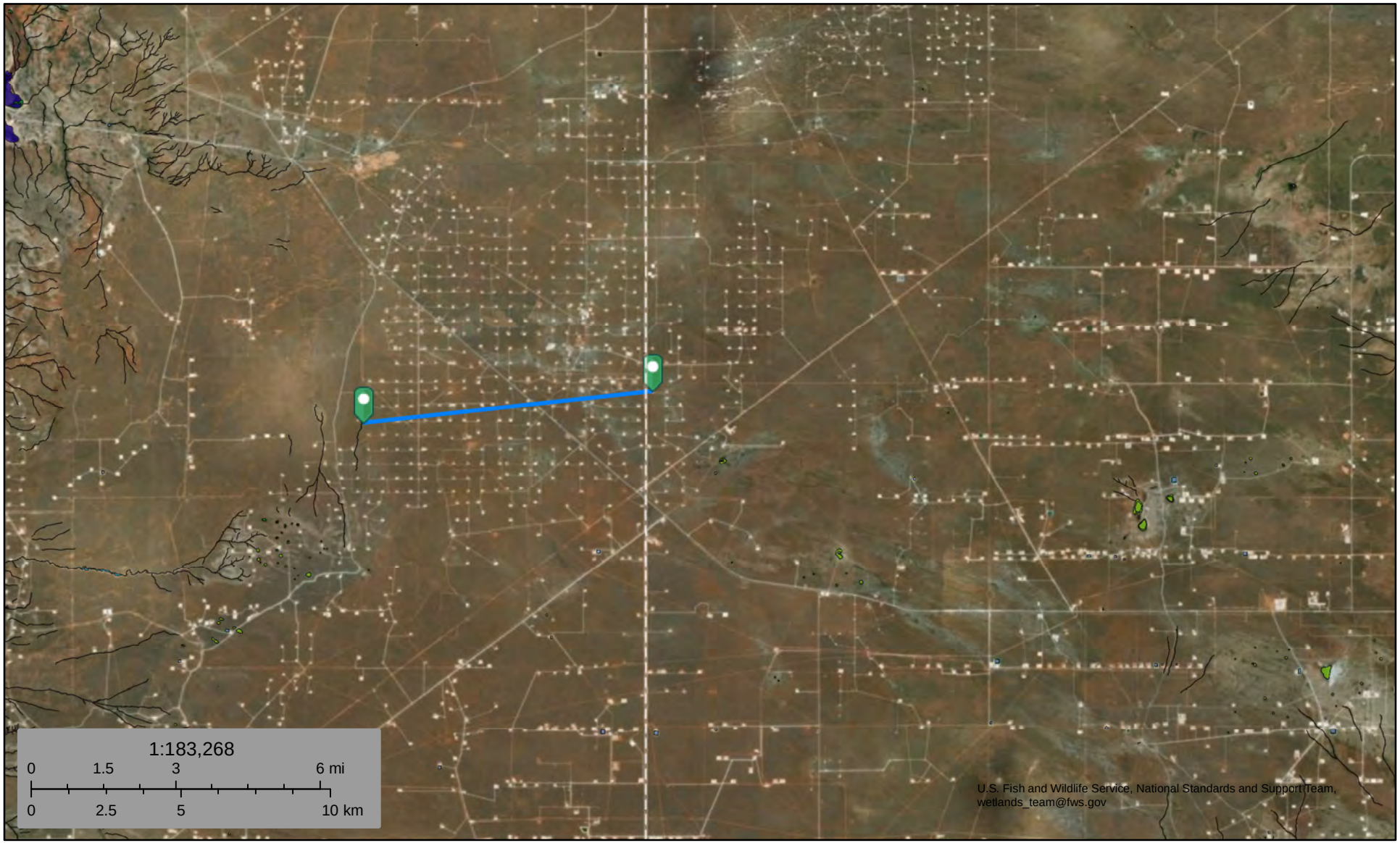
Help Using this Tool

1:10,000

Received by OCD: 5/6/2020 10:53:26 AM

U.S. Fish and Wildlife Service
National Wetlands Inventory

SDE 31 Federal 001 Riverine 27014ft



May 27, 2019

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

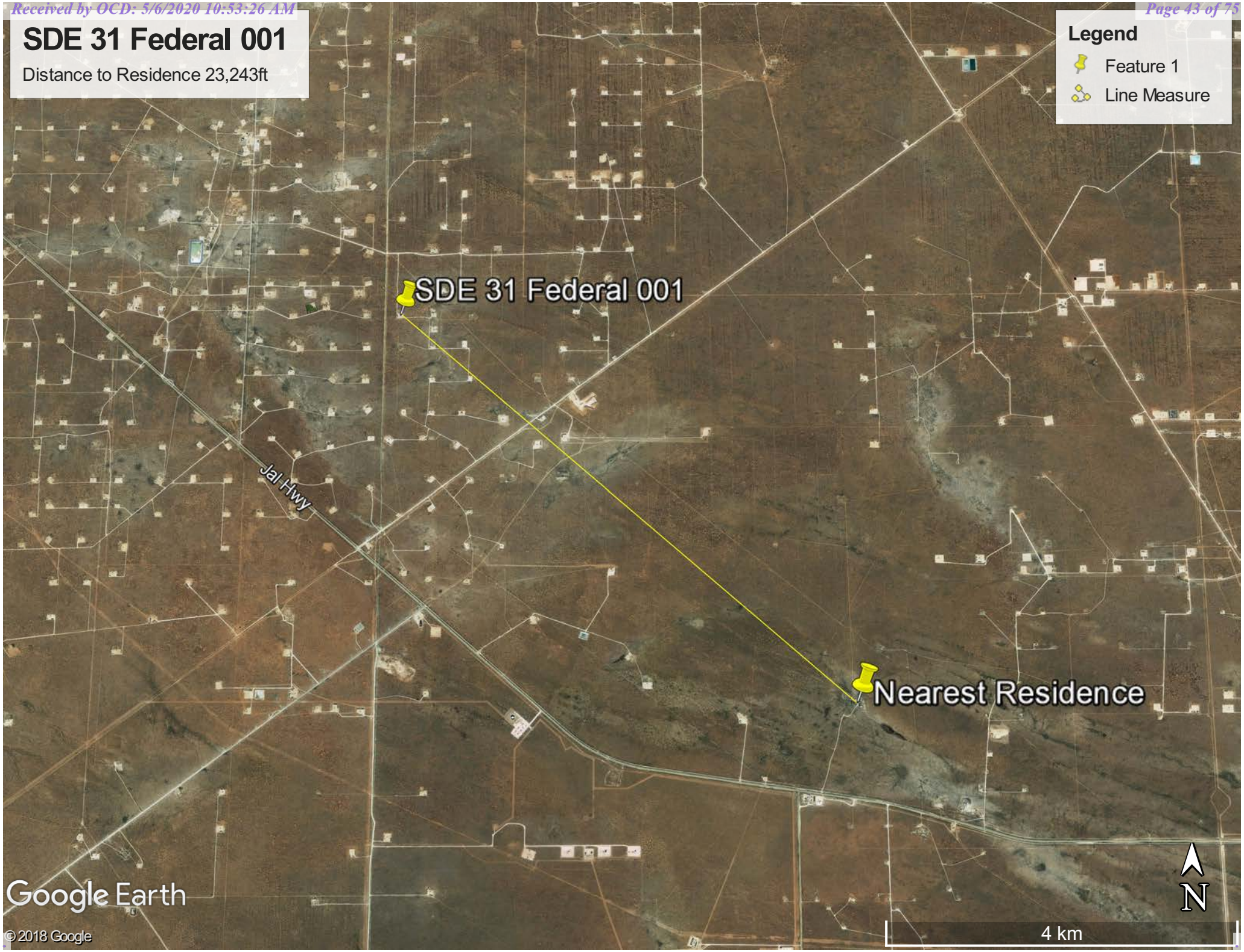
SDE 31 Federal 001 Lake/ Pond 3559ft

May 27, 2019

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.


SDE 31 Federal 001
Distance to Residence 23,243ft
Legend
Feature 1
Line Measure
SDE 31 Federal 001
Jal Hwy
Nearest Residence
Google Earth
© 2018 Google
N
4 km

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)

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

(in feet)

POD Number	POD Sub-basin Code	County	Source	q 6416	q 4	q	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
C 03555 POD1	C	LE	Shallow	2	2	1	05	24S	32E	622709	3569231	2653	10/20/2013	10/21/2013	11/07/2013	600	380	JOHN SIRMAN	1654
C 02258	C	ED			3	2	26	23S	31E	618055	3571853*	2698	09/18/1992	09/18/1992	09/25/1992	662		CORKY GLENN	421
C 02348	C	ED	Shallow	1	4	3	26	23S	31E	617648	3571068	2861	10/31/2013	11/01/2013	11/07/2013	700	430	JOHN SIRMAN	1654

Record Count: 3

UTMNAD83 Radius Search (in meters):

Easting (X): 620481 **Northing (Y):** 3570671.74 **Radius:** 3000

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

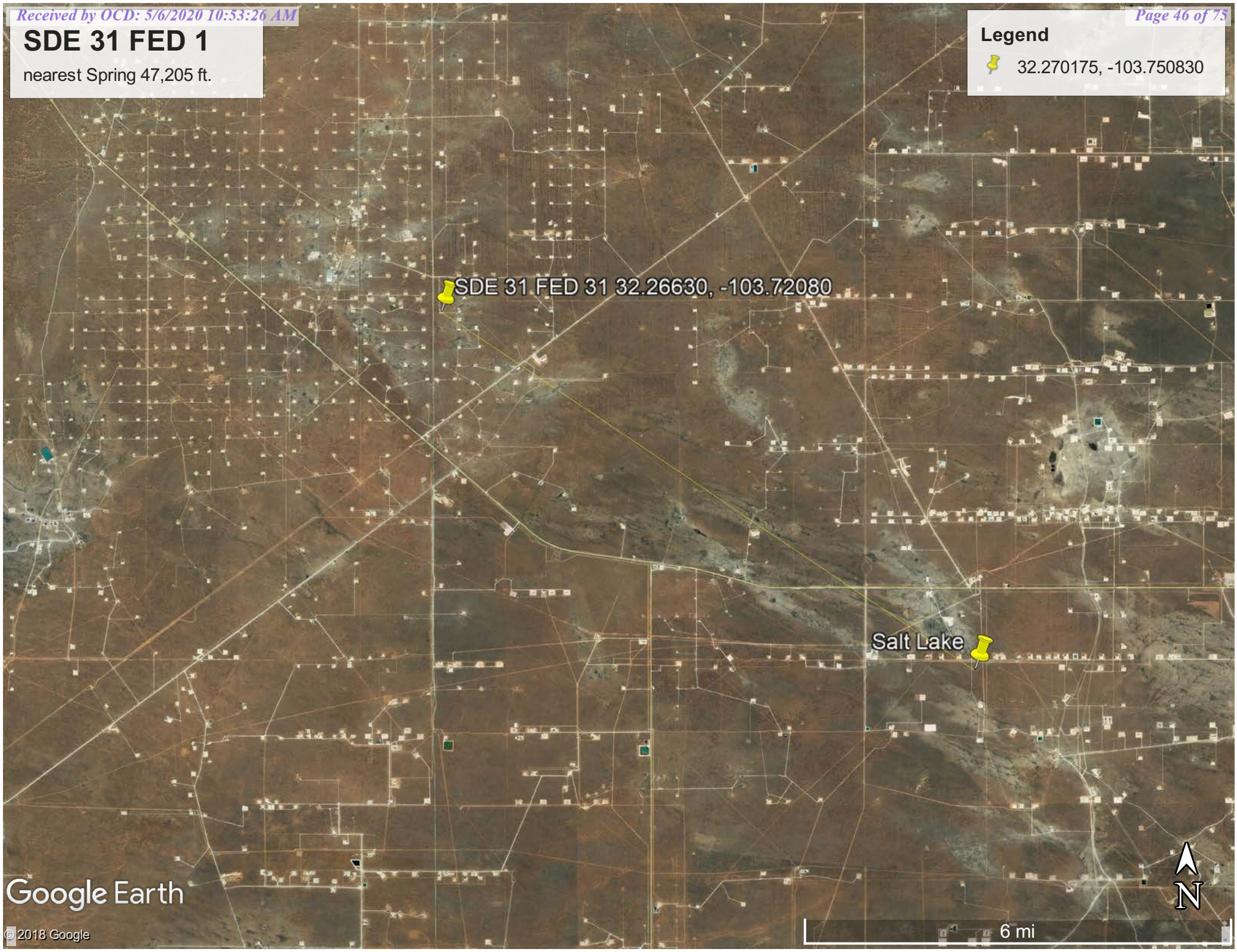
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

SDE 31 FED 1

nearest livestock well 9247 ft.

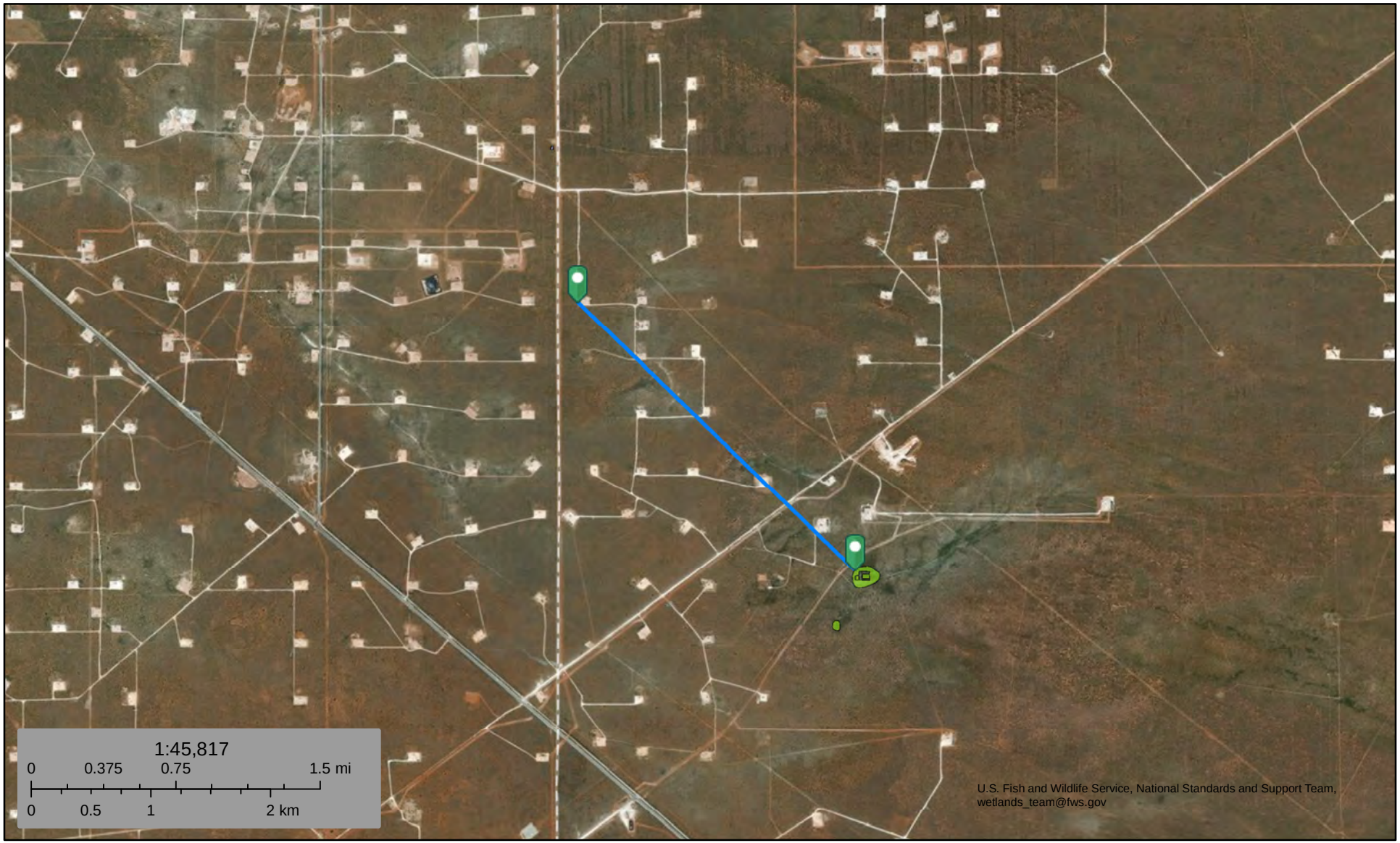
SDE 31 FED 1

nearest Spring 47,205 ft.



U.S. Fish and Wildlife Service
National Wetlands Inventory

SDE 31 Federal 001 Wetland 8949ft



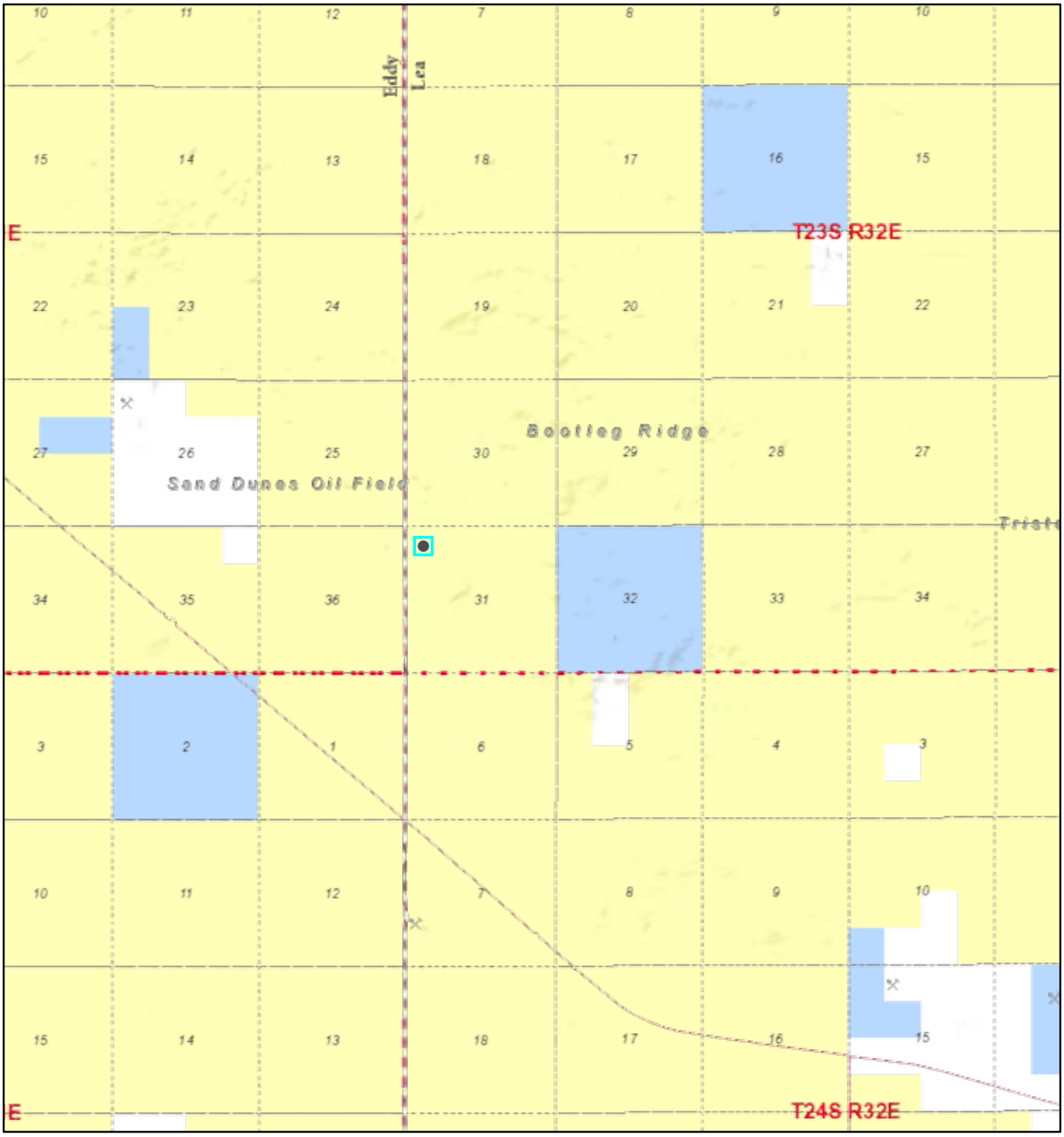
May 27, 2019

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.

Active Mines in New Mexico



5/27/2019, 8:29:48 AM

1:72,224

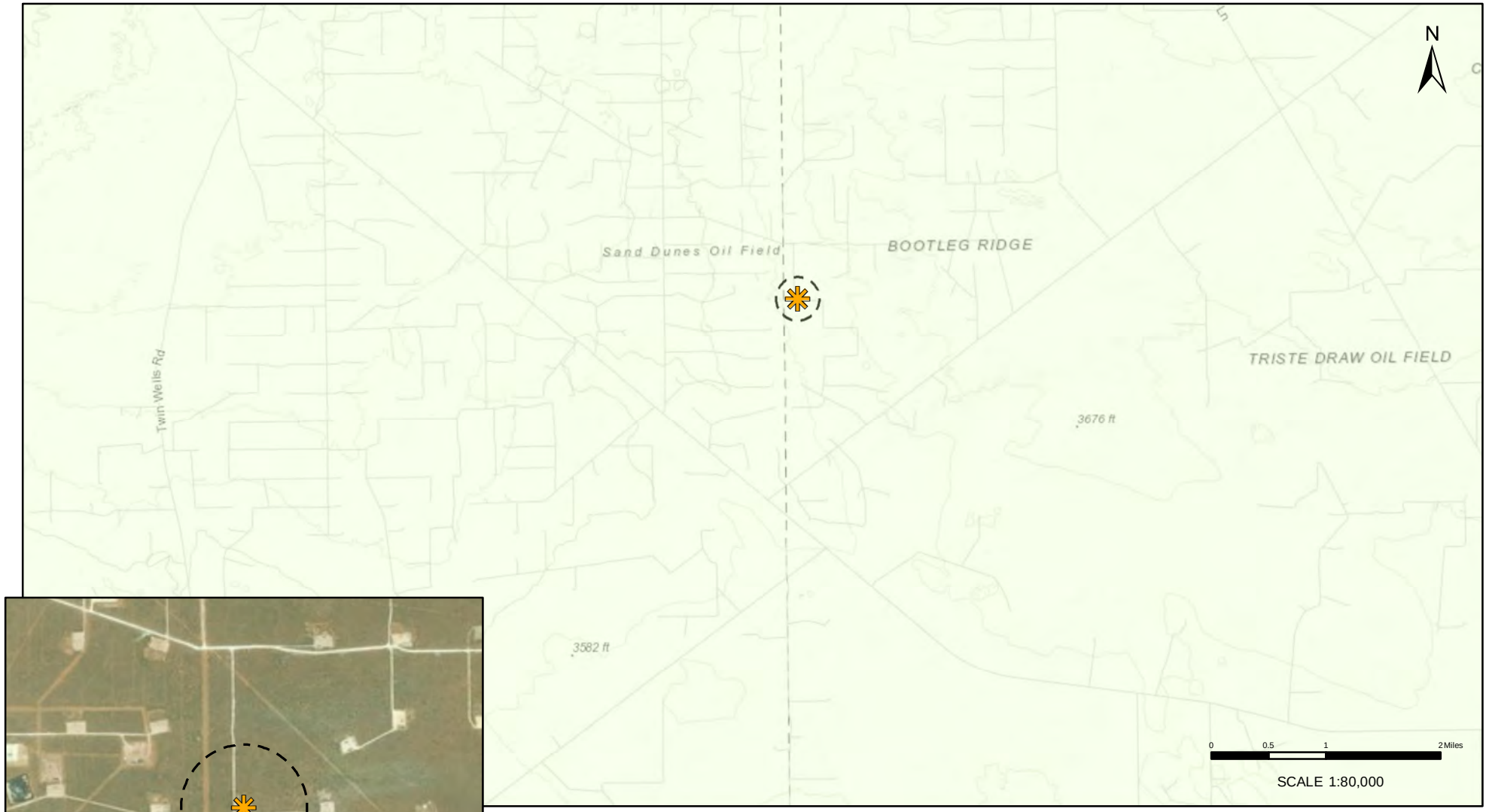
0 0.5 1 2 mi

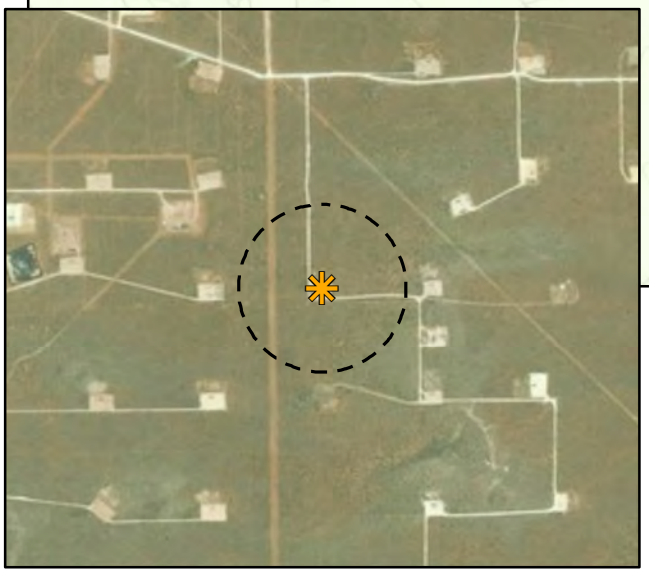
0 0.75 1.5 3 km

Registered Mines

- Aggregate, Stone etc.
- Aggregate, Stone etc.

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





LEGEND

SITE

1000FT BUFFER

KARST POTENTIAL

CRITICAL

HIGH

MEDIUM

LOW

Notes: Aerial Image from ESRI Digital Globe 2017

devon

Karst Potential
SDE 31 Federal 001

VERTEX

DRAWN:	NM
APPROVED:	RF
DATE:	MAY 28/19

FIGURE: 1

VERSATILITY. EXPERTISE.

National Flood Hazard Layer FIRMette

FEMA

32°16'13.89"N

103°43'33.61"W

103°42'56.15"W

32°15'43.47"N

Feet

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

1:6,000

Legend

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

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

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

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

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

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

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

N

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/27/2019 at 10:12:45 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

ATTACHMENT 5

ATTACHMENT 6

Received by OCD: 5/6/2020 10:53:26 AM

Table 3. Soil Characterization - Salinity and Petroleum Hydrocarbon Parameters
Client Name: Devon Energy
Site Name: SDE 31 Federal #001
Project #: 19E-00575-014
Lab Report: June 11, 2019

Table 3. Soil Analysis - June 1, 2019																			
Sample Description			Field Screening			Petroleum Hydrocarbons													Inorganic
						Volatile							Extractable						
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (PetroFla	Quantab Result (High/Low)	Benzene	Toluene	Ethylbenzene	Xylenes (o&m)	Xylenes (p)	Xylenes (Total)	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Oil Range Organics MRO	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SS19-01	0.5	6/1/2019	0	166	2,262	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	2,700
SS19-02	0.5	6/1/2019	0	105	628	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	1,300
SS19-03	0.5	6/1/2019	0	167	11,730	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	19,000
SS19-04	0.5	6/1/2019	0	86	303	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	450
SS19-05	0.5	6/1/2019	0	116	4,433	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	5,200
SS19-06	0.5	6/1/2019	0	167	8,866	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	13,000
SS19-07	0.5	6/1/2019	0	313	10,038	ND	ND	ND			ND	ND	DN	ND	ND	ND	ND	20,000

Bold and Shaded indicates exceedance outside of applied action level.

VERTEX

ATTACHMENT 7

From:	Dennis Williams
To:	dmckinne@blm.gov; jim.griswold@state.nm.us; James Amos; NMOCD Lea County Spill Reporting (emrd-ocd-district1spills@state.nm.us); Weaver, Crystal (caweaver@blm.gov)
Cc:	Davis, Amanda; Bynum, Tom (Contract); Almager, Steve; Dhugal Hanton
Subject:	Devon Energy - SDE 31 Federal 001 (no RP number assigned) Confirmatory Sample notification
Date:	May 30, 2019 3:22:40 PM

Afternoon All,

Please accept this email as 48hr notification that Vertex Resource Services Inc. has scheduled final confirmatory sampling at the above named location on June 1 2019 at 4 PM. Robyn Fisher from Vertex will be on site performing the sampling and can be reached at (575) 361-7290 If you need assistance with directions to site please do not hesitate to contact them.

If you have any other questions or concerns, please do not hesitate to contact me.

Dennis Williams

Dennis Williams
Environmental Earthworks Advisor

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

P 575.645.3111 Ext. 701
C 575.361.1137
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.

ATTACHMENT 8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

June 11, 2019

Dennis Williams

Devon Energy
6488 Seven Rivers Highway
Artesia, NM 888210
TEL: (575) 748-0176
FAX

RE: SDE 31 Federal 001 OrderNo.: 1906094

Dear Dennis Williams:

Hall Environmental Analysis Laboratory received 7 sample(s) on 6/4/2019 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 Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-001 **Matrix:** SOIL

Client Sample ID: SS19-01 (6")
Collection Date: 6/1/2019 10:30:00 AM
Received Date: 6/4/2019 11:15:00 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	6/6/2019 5:09:38 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/6/2019 5:09:38 PM
Surr: DNOP	135	70-130	S	%Rec	1	6/6/2019 5:09:38 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/6/2019 2:52:27 AM
Surr: BFB	105	73.8-119		%Rec	1	6/6/2019 2:52:27 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	6/6/2019 2:52:27 AM
Toluene	ND	0.049		mg/Kg	1	6/6/2019 2:52:27 AM
Ethylbenzene	ND	0.049		mg/Kg	1	6/6/2019 2:52:27 AM
Xylenes, Total	ND	0.097		mg/Kg	1	6/6/2019 2:52:27 AM
Surr: 4-Bromofluorobenzene	118	80-120		%Rec	1	6/6/2019 2:52:27 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	2700	150		mg/Kg	50	6/10/2019 6:07:34 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

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-002 **Matrix:** SOIL

Client Sample ID: SS19-02 (6")
Collection Date: 6/1/2019 11:15:00 AM
Received Date: 6/4/2019 11:15:00 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	6/6/2019 5:31:58 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/6/2019 5:31:58 PM
Surr: DNOP	157	70-130	S	%Rec	1	6/6/2019 5:31:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/6/2019 4:04:50 AM
Surr: BFB	113	73.8-119		%Rec	1	6/6/2019 4:04:50 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	6/6/2019 4:04:50 AM
Toluene	ND	0.049		mg/Kg	1	6/6/2019 4:04:50 AM
Ethylbenzene	ND	0.049		mg/Kg	1	6/6/2019 4:04:50 AM
Xylenes, Total	ND	0.098		mg/Kg	1	6/6/2019 4:04:50 AM
Surr: 4-Bromofluorobenzene	126	80-120	S	%Rec	1	6/6/2019 4:04:50 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	1300	61		mg/Kg	20	6/7/2019 1:27:34 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
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

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-003 **Matrix:** SOIL

Client Sample ID: SS19-03 (6")
Collection Date: 6/1/2019 11:30:00 AM
Received Date: 6/4/2019 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	6/6/2019 5:54:24 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/6/2019 5:54:24 PM
Surr: DNOP	108	70-130		%Rec	1	6/6/2019 5:54:24 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/6/2019 2:13:36 AM
Surr: BFB	98.9	73.8-119		%Rec	1	6/6/2019 2:13:36 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	6/6/2019 2:13:36 AM
Toluene	ND	0.049		mg/Kg	1	6/6/2019 2:13:36 AM
Ethylbenzene	ND	0.049		mg/Kg	1	6/6/2019 2:13:36 AM
Xylenes, Total	ND	0.098		mg/Kg	1	6/6/2019 2:13:36 AM
Surr: 4-Bromofluorobenzene	99.7	80-120		%Rec	1	6/6/2019 2:13:36 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	19000	1500		mg/Kg	500	6/10/2019 6:19:59 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

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-004 **Matrix:** SOIL

Client Sample ID: SS19-04 (6")
Collection Date: 6/1/2019 12:00:00 PM
Received Date: 6/4/2019 11:15:00 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	6/6/2019 6:16:48 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/6/2019 6:16:48 PM
Surr: DNOP	163	70-130	S	%Rec	1	6/6/2019 6:16:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/6/2019 2:59:52 AM
Surr: BFB	101	73.8-119		%Rec	1	6/6/2019 2:59:52 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	6/6/2019 2:59:52 AM
Toluene	ND	0.048		mg/Kg	1	6/6/2019 2:59:52 AM
Ethylbenzene	ND	0.048		mg/Kg	1	6/6/2019 2:59:52 AM
Xylenes, Total	ND	0.097		mg/Kg	1	6/6/2019 2:59:52 AM
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	6/6/2019 2:59:52 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	450	60		mg/Kg	20	6/7/2019 2:17:11 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
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

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-005 **Matrix:** SOIL

Client Sample ID: SS19-05 (6")
Collection Date: 6/1/2019 1:40:00 PM
Received Date: 6/4/2019 11:15:00 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	6/6/2019 6:39:00 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/6/2019 6:39:00 PM
Surr: DNOP	150	70-130	S	%Rec	1	6/6/2019 6:39:00 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/6/2019 3:23:03 AM
Surr: BFB	99.6	73.8-119		%Rec	1	6/6/2019 3:23:03 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	6/6/2019 3:23:03 AM
Toluene	ND	0.050		mg/Kg	1	6/6/2019 3:23:03 AM
Ethylbenzene	ND	0.050		mg/Kg	1	6/6/2019 3:23:03 AM
Xylenes, Total	ND	0.10		mg/Kg	1	6/6/2019 3:23:03 AM
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	6/6/2019 3:23:03 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	5200	150		mg/Kg	50	6/10/2019 6:32:23 PM

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

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-006 **Matrix:** SOIL

Client Sample ID: SS19-06 (6")
Collection Date: 6/1/2019 12:50:00 PM
Received Date: 6/4/2019 11:15:00 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	6/6/2019 7:01:15 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/6/2019 7:01:15 PM
Surr: DNOP	138	70-130	S	%Rec	1	6/6/2019 7:01:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/6/2019 3:46:12 AM
Surr: BFB	100	73.8-119		%Rec	1	6/6/2019 3:46:12 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.025		mg/Kg	1	6/6/2019 3:46:12 AM
Toluene	ND	0.049		mg/Kg	1	6/6/2019 3:46:12 AM
Ethylbenzene	ND	0.049		mg/Kg	1	6/6/2019 3:46:12 AM
Xylenes, Total	ND	0.098		mg/Kg	1	6/6/2019 3:46:12 AM
Surr: 4-Bromofluorobenzene	97.1	80-120		%Rec	1	6/6/2019 3:46:12 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	13000	600		mg/Kg	200	6/10/2019 6:44:47 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

Analytical Report
Lab Order **1906094**
Date Reported: **6/11/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Devon Energy
Project: SDE 31 Federal 001
Lab ID: 1906094-007 **Matrix:** SOIL

Client Sample ID: SS19-07 (6")
Collection Date: 6/1/2019 1:20:00 PM
Received Date: 6/4/2019 11:15:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/6/2019 7:23:31 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/6/2019 7:23:31 PM
Surr: DNOP	116	70-130		%Rec	1	6/6/2019 7:23:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/6/2019 11:19:33 AM
Surr: BFB	92.7	73.8-119		%Rec	1	6/6/2019 11:19:33 AM
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**
Benzene	ND	0.024		mg/Kg	1	6/6/2019 11:19:33 AM
Toluene	ND	0.049		mg/Kg	1	6/6/2019 11:19:33 AM
Ethylbenzene	ND	0.049		mg/Kg	1	6/6/2019 11:19:33 AM
Xylenes, Total	ND	0.098		mg/Kg	1	6/6/2019 11:19:33 AM
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	6/6/2019 11:19:33 AM
EPA METHOD 300.0: ANIONS						Analyst: **smb**
Chloride	20000	1500		mg/Kg	500	6/10/2019 6:57:12 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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906094**
11-Jun-19

Client: Devon Energy
Project: SDE 31 Federal 001

Sample ID: **MB-45427**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **PBS**	Batch ID: **45427**	RunNo: **60469**							
Prep Date: **6/6/2019**	Analysis Date: **6/6/2019**	SeqNo: **2045558**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45427**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSS**	Batch ID: **45427**	RunNo: **60469**							
Prep Date: **6/6/2019**	Analysis Date: **6/6/2019**	SeqNo: **2045559**	Units: **mg/Kg**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	98.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1906094**
11-Jun-19

Client: Devon Energy
Project: SDE 31 Federal 001

Sample ID: **MB-45383**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45383**	RunNo: **60435**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2044124** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	12		10.00		120	70	130			

Sample ID: **LCS-45383**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45383**	RunNo: **60435**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2044126** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	103	63.9	124			
Surr: DNOP	4.7		5.000		94.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906094**

11-Jun-19

Client: Devon Energy

Project: SDE 31 Federal 001

Sample ID: **MB-45359**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **45359**	RunNo: **60413**
Prep Date: **6/4/2019**	Analysis Date: **6/5/2019**	SeqNo: **2043546** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	930		1000		92.8	73.8	119			

Sample ID: **LCS-45359**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **45359**	RunNo: **60413**
Prep Date: **6/4/2019**	Analysis Date: **6/5/2019**	SeqNo: **2043547** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	98.9	80.1	123			
Surr: BFB	1000		1000		103	73.8	119			

Sample ID: **MB-45394**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **45394**	RunNo: **60460**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2044968** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	910		1000		90.6	73.8	119			

Sample ID: **LCS-45394**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **45394**	RunNo: **60460**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2044969** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	88.2	80.1	123			
Surr: BFB	1000		1000		103	73.8	119			

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906094**

11-Jun-19

Client: Devon Energy

Project: SDE 31 Federal 001

Sample ID: **MB-45359**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **45359**	RunNo: **60413**
Prep Date: **6/4/2019**	Analysis Date: **6/5/2019**	SeqNo: **2043588** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Sample ID: **LCS-45359**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **45359**	RunNo: **60413**
Prep Date: **6/4/2019**	Analysis Date: **6/5/2019**	SeqNo: **2043589** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.7	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	1.1	0.050	1.000	0	107	80	120			
Xylenes, Total	3.3	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		121	80	120			S

Sample ID: **1906094-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SS19-01 (6")**	Batch ID: **45359**	RunNo: **60413**
Prep Date: **6/4/2019**	Analysis Date: **6/6/2019**	SeqNo: **2043594** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.025	0.9980	0	91.3	63.9	127			
Toluene	0.99	0.050	0.9980	0.01128	98.5	69.9	131			
Ethylbenzene	1.0	0.050	0.9980	0	105	71	132			
Xylenes, Total	3.2	0.10	2.994	0	107	71.8	131			
Surr: 4-Bromofluorobenzene	1.2		0.9980		118	80	120			

Sample ID: **1906094-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SS19-01 (6")**	Batch ID: **45359**	RunNo: **60413**
Prep Date: **6/4/2019**	Analysis Date: **6/6/2019**	SeqNo: **2043597** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9747	0	93.5	63.9	127	0.00705	20	
Toluene	0.99	0.049	0.9747	0.01128	101	69.9	131	0.0270	20	
Ethylbenzene	1.0	0.049	0.9747	0	108	71	132	0.584	20	
Xylenes, Total	3.2	0.097	2.924	0	110	71.8	131	0.529	20	
Surr: 4-Bromofluorobenzene	1.2		0.9747		121	80	120	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical 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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906094**

11-Jun-19

Client: Devon Energy

Project: SDE 31 Federal 001

Sample ID: **MB-45394**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **45394**	RunNo: **60460**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2044997** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		94.3	80	120			

Sample ID: **LCS-45394**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **45394**	RunNo: **60460**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2044998** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	107	80	120			
Toluene	1.0	0.050	1.000	0	104	80	120			
Ethylbenzene	1.0	0.050	1.000	0	104	80	120			
Xylenes, Total	3.0	0.10	3.000	0	100	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID: **1906094-007AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SS19-07 (6")**	Batch ID: **45394**	RunNo: **60460**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2045000** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	0.9911	0	121	63.9	127			
Toluene	1.2	0.050	0.9911	0	121	69.9	131			
Ethylbenzene	1.2	0.050	0.9911	0.008462	121	71	132			
Xylenes, Total	3.5	0.099	2.973	0.01991	119	71.8	131			
Surr: 4-Bromofluorobenzene	1.0		0.9911		103	80	120			

Sample ID: **1906094-007AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SS19-07 (6")**	Batch ID: **45394**	RunNo: **60460**
Prep Date: **6/5/2019**	Analysis Date: **6/6/2019**	SeqNo: **2045001** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.025	0.9921	0	124	63.9	127	2.53	20	
Toluene	1.2	0.050	0.9921	0	121	69.9	131	0.725	20	
Ethylbenzene	1.2	0.050	0.9921	0.008462	123	71	132	2.32	20	
Xylenes, Total	3.6	0.099	2.976	0.01991	121	71.8	131	1.70	20	
Surr: 4-Bromofluorobenzene	1.0		0.9921		102	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
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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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: **DEVON ENERGY** Work Order Number: **1906094** RcptNo: **1**

Received By: **Jevon Campisi** **6/4/2019 11:15:00 AM** Jevon Campisi

Completed By: **Yazmine Garduno** **6/4/2019 12:16:32 PM** Yazmine Garduno

Reviewed By: TMM 6-4-19

Chain of Custody

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

Log In

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

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: JC 6-4-19

Special Handling (if applicable)

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

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			

Chain-of-Custody Record

Client: Devon Energy

Mailing Address: 6488 Seven Rivers Highway
Artesia, NM 88210

Phone #: 575-748-0176

email or Fax#: permian@vertex.ca

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

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time: 5 day Turn
☒ Standard ☐ Rush

Project Name: SDE 31 Federal 001

Project #: 19E-00575 Phase 014

Project Manager: Dennis Williams

Sampler: Robyn Fisher

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp (including CF): 1.9°C + 0.3CF = 2.2°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1906094	Analysis Request: BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	Chlorides (EPA 300)
01/06/2019	10:30	Soil	SS19-01 (6")	Glass 2	Ice	-001	X	X									X
01/06/2019	11:15	Soil	SS19-02 (6")	Glass 2	Ice	-002	X	X									X
01/06/2019	11:30	Soil	SS19-03 (6")	Glass 2	Ice	-003	X	X									X
01/06/19	12:00	Soil	SS19-04 (6")	Glass 2	Ice	-004	X	X									X
01/06/19	1:40	Soil	SS19-05 (6")	Glass 2	Ice	-005	X	X									X
01/06/19	12:50	Soil	SS19-06 (6")	Glass 2	Ice	-006	X	X									X
01/06/19	1:20	Soil	SS19-07 (6")	Glass 2	Ice	-007	X	X									X

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
01/06/19	5:37	Robyn Fisher	Dennis Williams		02/06/19	5:37
02/06/2019	11:18 AM	Dennis Williams			6/2/19	1118

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

6/3/19 1900

6-4-19 11:15

Received by OCD: 5/6/2020 10:53:26 AM

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	2RP-5530
Facility ID	
Application ID	pAB1915738459

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

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

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

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

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	2RP-5530
Facility ID	
Application ID	pAB1915738459

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: Wesley Mathews Title: Environmental Representative

Signature: Wesley Mathews Date: _____

email: wesley.mathews@dvn.com Telephone: 575-578-6195

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	2RP-5530
Facility ID	
Application ID	pAB1915738459

Remediation Plan

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

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

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

- [ ] Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- [ ] Extents of contamination must be fully delineated.
- [ ] Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Wesley Mathews Title: Environmental Representative

Signature: Wesley Mathews Date: _____

email: wesley.mathews@dvn.com Telephone: 575-578-6195

OCD Only

Received by: _____ Date: _____

- [ ] Approved
- [ ] Approved with Attached Conditions of Approval
- [ ] Denied
- [ ] Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	NAB1915738719
District RP	2RP-5530
Facility ID	
Application ID	pAB1915738459

Closure

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

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

[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: Wesley Mathews Title: Environmental Representative

Signature: Wesley Mathews Date: 1/27/2020

email: Wesley.mathews@dvn.com Telephone: 575-578-6195

OCD Only

Received by: _____ Date: _____

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

Closure Approved by: _____ Date: _____

Printed Name: _____ Title: _____