



August 24, 2015

Mr. Brett Fulks  
Devon Energy Corporation  
6488 Seven Rivers Highway  
Artesia, NM 88210

**RE: Soil Sampling  
Todd 36 D State #01 SWD  
Sec. 36-23S-31E  
Eddy County, NM**

Dear Mr. Fulks:

Devon Energy Corporation (Devon) retained Enviro Clean Services, LLC (ECS) to collect soil samples at the Todd 36 D State #01 SWD site located in Sec. 36-23S-31E, Eddy County, New Mexico (approximately 32.26272°N, 103.73338°W), following a produced water release. **Figure 1** is a site map depicting the area of release and soil sample locations.

The New Mexico Oil Conservation Division's (OCD) Form C-141 prepared for this site indicates that on the afternoon of January 21, 2015, a tank leak released 75 barrels (bbls) of produced water, with 50 bbls recovered by vacuum truck. The net loss is 25 bbls of produced water.

On January 26, 2015, ECS field personnel collected soil samples from five locations within the impacted area. Sample depths were from the surface and at one foot below ground surface (bgs). The samples were transported under chain-of-custody to Permian Basin Environmental Lab, LP in Midland, Texas using industry standards for care and preservation. All samples were analyzed for Chlorides (EPA method 300.0) and Total Petroleum Hydrocarbons (TPH, EPA method 8015M).

### **General Site Characteristics**

The affected property is leased from the Bureau of Land Management (BLM). The *Geologic Map of New Mexico* (NMBGMR, 2003) indicates the site's surface geology is comprised of Qep – Quaternary eolian and piedmont deposits (Holocene to middle Pleistocene). This unit is interlayered eolian sands and piedmont-slope deposits along the eastern flank of the Pecos River valley, primarily between Roswell and Carlsbad. The unit is typically capped by thin eolian deposits. The Natural Resource Conservation Service identifies the local soils as KM – Kermit-Berino fine sands, 0 to 3 percent slopes, which consist of mixed alluvium and/or eolian sands, typically with a profile of fine sand at the surface, with loamy fine sands at depth of five feet or more.

These descriptions are consistent with the surrounding native soils, but the impacted area is comprised of an engineered crushed limestone pad, with the imported materials being more than a foot thick to support storage tanks and vehicular traffic.

The OCD Recommended Remediation Action Levels (RRALs) are a ranking system used to evaluate regulatory requirements. RRALs are based on depth to water, wellhead protection area distance, and the distance to surface water bodies. The nearest water well is approximately a mile away, but depth to water is not reported. The closest well with a reported depth to water indicated groundwater is approximately 115 feet bgs. State Land Office Point of Diversion reports are attached for review. There is no surface water within several miles of the site.



## 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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">C 02405</a>	C	ED		4	1	02	24S	31E		617690	3568631*	275	160	115
<a href="#">C 02460</a>	C	ED				3	02	24S	31E	617496	3568022*	320		
<a href="#">C 02460 POD2</a>	C	ED				3	02	24S	31E	617496	3568022*	320		
<a href="#">C 02464</a>	C	ED		3	4	1	02	24S	31E	617589	3568530*	320	205	115

Average Depth to Water: 182 feet

Minimum Depth: 160 feet

Maximum Depth: 205 feet

**Record Count: 4**

**Basin/County Search:**

**County:** Eddy

**PLSS Search:**

**Section(s):** 1, 2

**Township:** 24S

**Range:** 31E

Using the site specific data, the RRALs for the site are 10 parts per million (ppm, or mg/Kg) benzene, 50 ppm BTEX, and 5,000 ppm TPH. All of the sample locations exhibited elevated levels of chlorides when compared to this standard. **Table 1** summarizes the analytical results, and the laboratory analytical report and chain of custody documentation are attached for your records.

**Table 1 – Analytical Results Summary**

Sample ID	Depth (feet)	Date Collected	TPH C6-C12	TPH >C12-C28	TPH >C28-C35	Total TPH	Chlorides
RRAL			---	---	---	5,000	1,000*
001	0	1/26/2015	<b>37.1</b>	<b>126</b>	<27.8	<b>163</b>	<b>4,540</b>
001A	1	1/26/2015	<28.4	<28.4	<28.4	<28.4	<b>3,130</b>
002	0	1/26/2015	<27.8	<27.8	<27.8	<27.8	<b>4,530</b>
002A	1	1/26/2015	<28.1	<28.1	<28.1	<28.1	<b>5,420</b>
003	0	1/26/2015	<28.7	<b>37.3</b>	<28.7	<b>37.3</b>	<b>5,670</b>
003A	1	1/26/2015	<26.9	<26.9	<26.9	<26.9	<b>6,100</b>
004	0	1/26/2015	<26.6	<26.6	<26.6	<26.6	<b>1,760</b>
004A	1	1/26/2015	<26.3	<26.3	<26.3	<26.3	<b>4,020</b>
005	0	1/26/2015	<28.4	<28.4	<28.4	<28.4	<b>10,300</b>
005A	1	1/26/2015	<26.3	<b>27.3</b>	<26.3	<b>27.3</b>	<b>2,360</b>

All values are in milligrams per kilogram (mg/Kg, ppm) Analyte detections are **bolded**.

Values that exceed the Recommended Remediation Action Levels (RRAL) are shaded.

\* Chloride values are site specific; 1,000 ppm is a common value where groundwater impact is unlikely.

### Oil Conservation Division Work Plan

Additional subsurface chloride vertical delineation is required for this site based on OCD guidance requirements.

For vertical delineation ECS recommends advancing soil borings until three samples at one foot intervals are field screened below 1,000 ppm chloride, or to approximately 30 feet bgs, whichever occurs first, in the area of sample point 002, between 003 and 004, and between 004 and 005. Soil samples will be field screened using an electrical conductivity meter and one-to-one soil-water solution, with laboratory samples to confirm the chloride content.

The release site is covered with an engineered carbonate surface, and the affected area does not support any vegetation. As a good stewardship measure, a one-foot bgs excavation of the caliche surface is proposed. A 30 mil polyethylene liner will be installed to prevent further percolation of chlorides, and the excavated area will be backfilled with material similar to that removed, matching the surface grade and esthetically restoring the site.

All excavated impacted soil will be transported to an approved NMOCD facility for disposal. With Devon's concurrence, ECS will prepare a cost estimate to return to the site and collect vertical delineation confirmation samples.

ECS appreciates the opportunity to be of service to Devon. If you have any questions about the information presented in this report, please contact me at [bgreen@envirocleanps.com](mailto:bgreen@envirocleanps.com) or at 432.301.0209.

Sincerely,

**Enviro Clean Services, LLC**



William D. Green, PG  
Geologist, Texas No. 136

Attachments: Figure 1: Area of Release and Soil Sample Locations  
Initial C-141  
State Land Office Point of Diversion Reports  
Laboratory Analytical Report and Chain of Custody Documentation  
Photographic Documentation



Sample Location GPS Points		
Sample Location	Latitude	Longitude
001	N32.262795	W103.733226
002	N32.262715	W103.733245
003	N32.262610	W103.733270
004	N32.262490	W103.733490
005	N32.262340	W103.733610

Area of Release and Soil Sample Locations  
 Devon Energy Corporation  
 Todd 36 D State #01 SWD  
 Sec. 36-23S-31E  
 Eddy County, NM

Scale:		Drawn By:
Not to Scale		ECS
Date:	3/4/2015	Project Mgr.:
		ECS
P O Box 721090, Oklahoma City, Oklahoma 73172		
Project No.:	DVNRNM0012	Figure:
		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

Form C-141  
Revised August 8, 2011

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

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

**Release Notification and Corrective Action**

**OPERATOR**  Initial Report  Final Report

Name of Company <b>Devon Energy</b>	Contact <b>Kevin Phillips</b>
Address <b>PO Box 250 Artesia, NM 88211</b>	Telephone No. <b>575- 748-3371</b>
Facility Name <b>Todd 36 1</b>	Facility Type <b>SWD</b>

Surface Owner State	Mineral Owner State	API No. <b>30-015-20341</b>
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**LOCATION OF RELEASE**

Unit Letter <b>K</b>	Section <b>36</b>	Township <b>23S</b>	Range <b>31E</b>	Feet from the <b>1980</b>	North/South Line <b>WEST</b>	Feet from the <b>1980</b>	East/West Line <b>NORTH</b>	County <b>EDDY</b>
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Latitude: 32.2626871870239 Longitude: 103.733599857938

**NATURE OF RELEASE**

Type of Release Produced Water	Volume of Release 75 BBL	Volume Recovered 50 BBL
Source of Release Water tank leak	Date and Hour of Occurrence 1/21/15 2:00PM	Date and Hour of Discovery 1/21/15 2:00 PM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? BLM- Jeff Robertson OCD- Mike Bratcher	
By Whom? Kevin Phillips	Date and Hour 1/22/15 10:15 PM BLM 1/22/15 1:00 PM OCD	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Hole in water tank.

Describe Area Affected and Cleanup Action Taken.\*  
Lease operator noticed a hole about 5' from the bottom of the tank. The containment was full and overflowing onto the location. 75 BBL total spill with 50 BBL recovered. Called SB Transportation for a vacuum truck to pick up water. Planning the cleanup with Enviro Clean.

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

Signature: <i>Jeanette Barron</i>	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Jeanette Barron</b>	Approved by Environmental Specialist:	
Title: <b>Field Admin Support</b>	Approval Date:	Expiration Date:
E-mail Address: <b>Jeanette.barron@dvn.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 1.23.15 Phone: <b>575-748-1813</b>		

\* Attach Additional Sheets If Necessary



# New Mexico Office of the State Engineer

## Active & Inactive Points of Diversion

(with Ownership Information)

(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)  
 C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code Grant	Source	q	q	q	Sec	Tws	Rng	X	Y	Distance	
<a href="#">C 02602</a>	C	SAN		0 POGO PRODUCING COMPANY	ED	<a href="#">C 02602</a>		6416	4			2	35	23S	31E	618471	3570650*	916

**Record Count:** 1

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

**Easting (X):** 619300.79

**Northing (Y):** 3570260.75

**Radius:** 1600

**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.



# 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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">C 02405</a>	C	ED		4	1	02	24S	31E		617690	3568631*	275	160	115
<a href="#">C 02460</a>	C	ED			3	02	24S	31E		617496	3568022*	320		
<a href="#">C 02460 POD2</a>	C	ED			3	02	24S	31E		617496	3568022*	320		
<a href="#">C 02464</a>	C	ED		3	4	1	02	24S	31E	617589	3568530*	320	205	115

Average Depth to Water: **182 feet**  
 Minimum Depth: **160 feet**  
 Maximum Depth: **205 feet**

**Record Count:** 4

**Basin/County Search:**

**County:** Eddy

**PLSS Search:**

**Section(s):** 1, 2

**Township:** 24S

**Range:** 31E

\*UTM location was derived from PLSS - see Help

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# New Mexico Office of the State Engineer

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(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-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">C 02258</a>	C	ED		3	2	26	23S	31E		618055	3571853*	662		
<a href="#">C 02348</a>	C	ED		1	4	3	26	23S	31E	617648	3571068	700	430	270

Average Depth to Water: **430 feet**

Minimum Depth: **430 feet**

Maximum Depth: **430 feet**

**Record Count:** 2

**PLSS Search:**

**Section(s):** 25, 26, 35, 36    **Township:** 23S    **Range:** 31E

\*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.

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
10014 SCR 1213  
Midland, TX 79706**



# Analytical Report

**Prepared for:**

Joel Ortiz  
EnviroClean PS  
2405 E CR 123  
Midland, TEXAS 79706

Project: Devon Todd 36 #1 SWD

Project Number: [none]

Location: New Mexico

Lab Order Number: 5A27002



NELAP/TCEQ # T104704156-13-3

Report Date: 02/03/15

EnviroClean PS  
2405 E CR 123  
Midland TEXAS, 79706

Project: Devon Todd 36 #1 SWD  
Project Number: [none]  
Project Manager: Joel Ortiz

Fax: (432) 301-0176

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
001	5A27002-01	Soil	01/26/15 17:00	01-27-2015 10:10
001 A	5A27002-02	Soil	01/26/15 17:10	01-27-2015 10:10
002	5A27002-03	Soil	01/26/15 17:15	01-27-2015 10:10
002 A	5A27002-04	Soil	01/26/15 17:20	01-27-2015 10:10
003	5A27002-05	Soil	01/26/15 17:25	01-27-2015 10:10
003 A	5A27002-06	Soil	01/26/15 17:30	01-27-2015 10:10
004	5A27002-07	Soil	01/26/15 17:35	01-27-2015 10:10
004 A	5A27002-08	Soil	01/26/15 17:40	01-27-2015 10:10
005	5A27002-09	Soil	01/26/15 17:45	01-27-2015 10:10
005 A	5A27002-10	Soil	01/26/15 17:50	01-27-2015 10:10

EnviroClean PS  
 2405 E CR 123  
 Midland TEXAS, 79706

Project: Devon Todd 36 #1 SWD  
 Project Number: [none]  
 Project Manager: Joel Ortiz

Fax: (432) 301-0176

**001**  
**5A27002-01 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>4540</b>	5.56	mg/kg dry	5	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>10.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

<b>C6-C12</b>	<b>37.1</b>	27.8	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
<b>&gt;C12-C28</b>	<b>126</b>	27.8	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
<b>&gt;C28-C35</b>	<b>ND</b>	27.8	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		112 %			P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		122 %			P5A2805	01/27/15	01/28/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>163</b>	27.8	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

EnviroClean PS  
 2405 E CR 123  
 Midland TEXAS, 79706

Project: Devon Todd 36 #1 SWD  
 Project Number: [none]  
 Project Manager: Joel Ortiz

Fax: (432) 301-0176

**001 A**  
**5A27002-02 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>3130</b>	5.68	mg/kg dry	5	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>12.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		97.6 %			<i>P5A2805</i>	<i>01/27/15</i>	<i>01/28/15</i>	<i>TPH 8015M</i>	
<i>Surrogate: o-Terphenyl</i>		105 %			<i>P5A2805</i>	<i>01/27/15</i>	<i>01/28/15</i>	<i>TPH 8015M</i>	
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

EnviroClean PS  
2405 E CR 123  
Midland TEXAS, 79706

Project: Devon Todd 36 #1 SWD  
Project Number: [none]  
Project Manager: Joel Ortiz

Fax: (432) 301-0176

**002**

**5A27002-03 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	4530	5.56	mg/kg dry	5	P5B0301	01/30/15	02/03/15	EPA 300.0	
% Moisture	10.0	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	27.8	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	27.8	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		88.8 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: o-Terphenyl		93.0 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	27.8	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

EnviroClean PS  
 2405 E CR 123  
 Midland TEXAS, 79706

Project: Devon Todd 36 #1 SWD  
 Project Number: [none]  
 Project Manager: Joel Ortiz

Fax: (432) 301-0176

**002 A**  
**5A27002-04 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>5420</b>	11.2	mg/kg dry	10	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>11.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.1	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	28.1	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	28.1	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		111 %		70-130	P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		127 %		70-130	P5A2805	01/27/15	01/28/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.1	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

EnviroClean PS  
 2405 E CR 123  
 Midland TEXAS, 79706

Project: Devon Todd 36 #1 SWD  
 Project Number: [none]  
 Project Manager: Joel Ortiz

Fax: (432) 301-0176

**003**  
**5A27002-05 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>5670</b>	11.5	mg/kg dry	10	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>13.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.7	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	<b>37.3</b>	28.7	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		118 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>37.3</b>	28.7	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

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 Project Number: [none]  
 Project Manager: Joel Ortiz

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**003 A**  
**5A27002-06 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>6100</b>	26.9	mg/kg dry	25	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>7.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.9	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	26.9	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	26.9	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		105 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: o-Terphenyl		112 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.9	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

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Project: Devon Todd 36 #1 SWD  
 Project Number: [none]  
 Project Manager: Joel Ortiz

Fax: (432) 301-0176

**004**  
**5A27002-07 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>1760</b>	10.6	mg/kg dry	10	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>6.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.6	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		116 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		127 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

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 Project Number: [none]  
 Project Manager: Joel Ortiz

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**004 A**  
**5A27002-08 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	4020	10.5	mg/kg dry	10	P5B0301	01/30/15	02/03/15	EPA 300.0	
% Moisture	5.0	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	26.3	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		114 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

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Project Number: [none]  
Project Manager: Joel Ortiz

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**005**  
**5A27002-09 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

Chloride	10300	28.4	mg/kg dry	25	P5B0301	01/30/15	02/03/15	EPA 300.0	
% Moisture	12.0	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	28.4	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C12-C28	ND	28.4	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
>C28-C35	ND	28.4	mg/kg dry	1	P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: 1-Chlorooctane		104 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P5A2805	01/27/15	01/28/15	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	28.4	mg/kg dry	1	[CALC]	01/27/15	01/28/15	calc	

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Project: Devon Todd 36 #1 SWD  
 Project Number: [none]  
 Project Manager: Joel Ortiz

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**005 A**  
**5A27002-10 (Soil)**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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**Permian Basin Environmental Lab, L.P.**

**General Chemistry Parameters by EPA / Standard Methods**

<b>Chloride</b>	<b>2360</b>	10.5	mg/kg dry	10	P5B0301	01/30/15	02/03/15	EPA 300.0	
<b>% Moisture</b>	<b>5.0</b>	0.1	%	1	P5A2902	01/29/15	01/29/15	% calculation	

**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M**

C6-C12	ND	26.3	mg/kg dry	1	P5A2906	01/28/15	01/29/15	TPH 8015M	
>C12-C28	<b>27.3</b>	26.3	mg/kg dry	1	P5A2906	01/28/15	01/29/15	TPH 8015M	
>C28-C35	ND	26.3	mg/kg dry	1	P5A2906	01/28/15	01/29/15	TPH 8015M	
<i>Surrogate: 1-Chlorooctane</i>		124 %		70-130	P5A2906	01/28/15	01/29/15	TPH 8015M	
<i>Surrogate: o-Terphenyl</i>		132 %		70-130	P5A2906	01/28/15	01/29/15	TPH 8015M	S-GC
<b>Total Petroleum Hydrocarbon C6-C35</b>	<b>27.3</b>	26.3	mg/kg dry	1	[CALC]	01/28/15	01/29/15	calc	

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 Project Number: [none]  
 Project Manager: Joel Ortiz

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch P5A2902 - *** DEFAULT PREP ***</b>										
<b>Blank (P5A2902-BLK1)</b> Prepared & Analyzed: 01/29/15										
% Moisture	ND	0.1	%							
<b>Duplicate (P5A2902-DUP1)</b> Source: 5A28002-01 Prepared & Analyzed: 01/29/15										
% Moisture	6.0	0.1	%		6.0			0.00	20	
<b>Duplicate (P5A2902-DUP2)</b> Source: 5A28002-03 Prepared & Analyzed: 01/29/15										
% Moisture	7.0	0.1	%		6.0			15.4	20	
<b>Batch P5B0301 - *** DEFAULT PREP ***</b>										
<b>Blank (P5B0301-BLK1)</b> Prepared & Analyzed: 02/03/15										
Chloride	ND	1.00	mg/kg wet							
<b>LCS (P5B0301-BS1)</b> Prepared & Analyzed: 02/03/15										
Chloride	102	1.00	mg/kg wet	100		102	80-120			
<b>LCS Dup (P5B0301-BSD1)</b> Prepared & Analyzed: 02/03/15										
Chloride	100	1.00	mg/kg wet	100		100	80-120	1.48	20	
<b>Duplicate (P5B0301-DUP1)</b> Source: 5A27002-01 Prepared & Analyzed: 02/03/15										
Chloride	4590	5.56	mg/kg dry		4540			1.11	20	
<b>Duplicate (P5B0301-DUP2)</b> Source: 5A28006-01 Prepared & Analyzed: 02/03/15										
Chloride	226	1.14	mg/kg dry		230			1.80	20	
<b>Matrix Spike (P5B0301-MS1)</b> Source: 5A27002-01 Prepared & Analyzed: 02/03/15										
Chloride	4970	5.56	mg/kg dry	444	4540	97.3	80-120			

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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P5A2805 - TX 1005**

**Blank (P5A2805-BLK1)**

Prepared: 01/27/15 Analyzed: 01/28/15

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	61.8		"	80.0		77.2	70-130			
Surrogate: o-Terphenyl	31.4		"	40.0		78.6	70-130			

**LCS (P5A2805-BS1)**

Prepared: 01/27/15 Analyzed: 01/28/15

C6-C12	807	25.0	mg/kg wet	1000		80.7	75-125			
>C12-C28	888	25.0	"	1000		88.8	75-125			
Surrogate: 1-Chlorooctane	103		"	100		103	70-130			
Surrogate: o-Terphenyl	42.5		"	50.0		85.1	70-130			

**LCS Dup (P5A2805-BSD1)**

Prepared: 01/27/15 Analyzed: 01/28/15

C6-C12	843	25.0	mg/kg wet	1000		84.3	75-125	4.36	20	
>C12-C28	821	25.0	"	1000		82.1	75-125	7.86	20	
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	45.5		"	50.0		90.9	70-130			

**Duplicate (P5A2805-DUP1)**

Source: 5A26007-02

Prepared: 01/27/15 Analyzed: 01/28/15

C6-C12	33.9	25.0	mg/kg dry		31.5			7.18	20	
>C12-C28	ND	25.0	"		ND				20	
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	63.6		"	50.0		127	70-130			

**Batch P5A2906 - TX 1005**

**Blank (P5A2906-BLK1)**

Prepared & Analyzed: 01/28/15

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	99.5		"	100		99.5	70-130			
Surrogate: o-Terphenyl	54.0		"	50.0		108	70-130			

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 Project Number: [none]  
 Project Manager: Joel Ortiz

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**Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control**  
**Permian Basin Environmental Lab, L.P.**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch P5A2906 - TX 1005**

**LCS (P5A2906-BS1)**

Prepared & Analyzed: 01/28/15

C6-C12	875	25.0	mg/kg wet	1000		87.5	75-125			
>C12-C28	986	25.0	"	1000		98.6	75-125			
Surrogate: 1-Chlorooctane	120		"	100		120	70-130			
Surrogate: o-Terphenyl	53.5		"	50.0		107	70-130			

**LCS Dup (P5A2906-BSD1)**

Prepared & Analyzed: 01/28/15

C6-C12	921	25.0	mg/kg wet	1000		92.1	75-125	5.07	20	
>C12-C28	1010	25.0	"	1000		101	75-125	1.98	20	
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	62.2		"	50.0		124	70-130			

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### Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

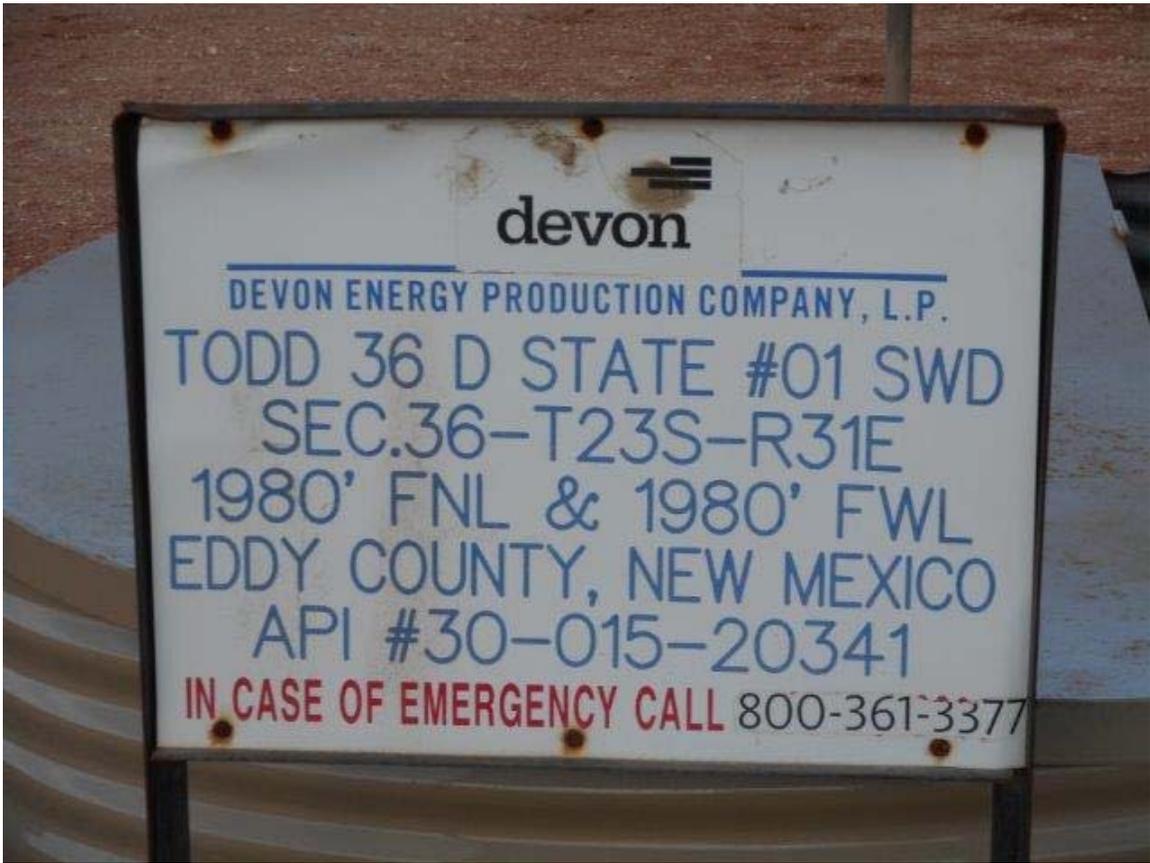
2/3/2015

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.





Lease sign for the project



Viewing East: Flow Path



Viewing West: Apparent source area of the release



Viewing West: Natural slope and the tank berm channeled the flow westward