

**2RP-3874
REMEDIATION PLAN
Nash Draw Tank Battery #19 & #34
Eddy County, New Mexico**

LAI Project No. 16-0108-07

November 2, 2016

Prepared for:

XTO Energy, Inc.
500 W. Illinois Ave., Suite 100
Midland, Texas 79707

Prepared by:

Larson & Associates, Inc.
507 North Marienfeld Street, Suite 205
Midland, Texas 79701



Mark J. Larson, P.G.

Certified Professional Geologist #10490



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1.0 INTRODUCTION

This document is prepared by Larson & Associates, Inc. (LAI) on behalf of XTO Energy, Inc. (XTO) for submittal to the New Mexico Oil Conservation Division (OCD) District 2 and U.S. Bureau of Land Management (BLM) to present the investigation results and remediation plan for contamination at the Nash Draw Unit tank battery #19 & #34 (Site). XTO consolidated production from several tank batteries into a three (3) tank batteries therefore the tank battery is no longer needed and is being remediated.

Equipment was removed from the Site in early 2016 to allow for the soil investigation and remediation. On September 7, 2016, XTO submitted the initial C-141 to OCD District 2 and the Site was assigned remediation permit number 2RP-3874. The Site is located in Unit J (NW/4, SE/4), Section 12, Township 23 South, Range 29 East in Eddy County, New Mexico. The geodetic position is North 32.316944° and West -103.936667°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

1.1 Setting

The setting is as follows:

- Elevation is approximately 3,000 feet above mean sea level (AMSL);
- Topography slopes north and south towards a playa lake (Salt Lake);
- The nearest surface water feature is a playa lake (Salt Lake) located immediately south of the Site;
- Surface geology is comprised of unconsolidated Holocene to mid- Pleistocene-age eolian and piedmont-slope deposits that are approximately 80 feet thick according to a log from a nearby well;
- The Triassic-age Chinle formation of the Dockum group underlies the unconsolidated deposits and is comprised of interbedded sand, clay, and mudstone;
- According to New Mexico Office of the State Engineer (NMOSE) records a well is located about 2.00 miles south in Unit J, Section 24, Township 23 South, Range 29 East, with groundwater reported at about 54 feet below ground surface (bgs).

1.2 Remediation Action Levels

Remediation action levels (RRAL) were calculated for benzene, BTEX and TPH based on the following criteria established by the New Mexico Oil Conservation Division (OCD) in "*Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993*":

Criteria	Result	Score
Depth-to-Groundwater	50 - 99 feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	<200 Horizontal Feet	20

The following RRAL apply to the release for ranking score: 30

- Benzene 10 mg/Kg

• BTEX	50 mg/Kg
• TPH	100 mg/Kg

1.3 Investigation Soil Samples

Investigation soil samples were collected on June 22, 2016. LAI personnel used a Terraprobe® direct-push rig to collect soil samples at eight (8) locations (DP-07-01 through DP-07-08) between ground surface and approximately four (4) feet bgs. No background sample was collected or chloride analysis performed due to close proximity of the playa lake. The samples were tested for headspace vapors with a calibrated photoionization detector (PID) and all were less than 100 parts per million (ppm). Permian Basin Environmental Lab (PBEL) located in Midland, Texas, analyzed the samples for total petroleum hydrocarbons (TPH) including gasoline (GRO), diesel (DRO) and oil (ORO) range organics by EPA SW-846 Method 8015. Table 1 presents the investigation sample laboratory analytical data summary. Figure 3 presents a Site drawing and sample locations. Appendix A presents the laboratory reports.

Referring to Table 1, the RRAL for TPH was exceeded in samples from locations DP-07-01 through DP-07-08.

2.0 REMEDIATION PLAN

XTO proposes to excavate soil from the area approximately 10 x 20 feet based on field observations, around DP-07-01 and DP-07-02 to approximately 2 feet bgs. Additional soil will be removed as necessary based on visual observations for hydrocarbon staining and odor. The excavations will be filled to surface with clean soil.

Soil will be excavated from the area approximately 10 x 10 feet based on field observations, around DP-07-03 to about 1 foot bgs. Additional soil will be removed as necessary based on visual observations for hydrocarbon staining and odor. The excavations will be filled to surface with clean soil.

Soil will be excavated from the area approximately 20 x 20 feet based on field observations, around DP-07-04 and DP-07-06 to approximately 1 foot bgs

. Additional soil will be removed as necessary based on visual observations for hydrocarbon staining and odor. The excavations will be filled to surface with clean soil.

Soil will be excavated from the area approximately 30 x 30 feet based on field observations, around DP-07-05 to about 4 feet bgs. Samples will be collected from the excavation sidewalls for laboratory analysis (BTEX and TPH) to determine if concentrations are below the RRAL. Additional soil will be removed as necessary to achieve the RRAL. A 20 mil thickness liner will be placed in the bottom of the excavation and filled to surface with clean soil.

Soil will be excavated from the area approximately 10 x 10 feet based on field observations, around DP-07-07 to approximately 2 feet bgs. Additional soil will be removed as necessary based on visual observations for hydrocarbon staining and odor. The excavations will be filled to surface with clean soil.

Soil will be excavated from the area approximately 15 x 15 feet based on field observations, around DP-07-08 to approximately 2 feet bgs. Additional soil will be removed as necessary based on visual observations for hydrocarbon staining and odor. The excavations will be filled to surface with clean soil.

Contaminated soil will be disposed at and clean soil acquired from Lea Land Landfill, LLC. The surface will be restored to BLM requirements following remediation. A final report will be submitted to OCD District 2 and BLM upon completion of remediation. Figure 4 presents the approximate locations for the remediation areas. Appendix B presents the initial C-141.

Tables

Table 1
2RP-3874

Investigation Soil Sample Analytical Data Summary
XTO Energy, Inc., Nash Draw Tank Battery 19 and 34
Unit J (NE/4, SW/4), Section 12, Township 23 South, Range 29 East
Eddy County, New Mexico
N32.316944° W-103.936667°

OCD RRAL:	Location	Depth (Feet)	Collection Date	Status	C6 - C12 (mg/Kg)	>C12 - C28 (mg/Kg)	>C28 - C35 (mg/Kg)	TPH (mg/Kg)	100	
									100	100
DP-07-07	1 - 2	6/22/2016	In-Situ	--	--	--	--	--	--	--
	2 - 3	6/22/2016	In-Situ	--	--	--	--	--	--	--
	3 - 4	6/22/2016	In-Situ	--	--	--	--	--	--	--
DP-07-07	0 - 1	6/22/2016	In-Situ	810	22,500	4,350	27,660	27,660	1,618.8	1,618.8
	1 - 2	6/22/2016	In-Situ	72.8	1,360	186	<28.1	<28.1	75.6	75.6
	2 - 3	6/22/2016	In-Situ	<28.1	75.6	<28.1	<30.1	<30.1	96.2	96.2
	3 - 4	6/22/2016	In-Situ	64.1	32.1	<30.1	<30.1	<30.1	<30.1	<30.1
DP-07-08	0 - 1	6/22/2016	In-Situ	994	15,400	3,470	19,864	19,864	516.8	516.8
	1 - 2	6/22/2016	In-Situ	36.2	408	72.6	<30.5	<30.5	47.7	47.7
	2 - 3	6/22/2016	In-Situ	<30.5	47.7	<30.5	<30.1	<30.1	<30.1	<30.1
	3 - 4	6/22/2016	In-Situ	<30.1	<30.1	<30.1	<30.1	<30.1	<30.1	<30.1

Notes: laboratory analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8015M (TPH)

Depth in feet below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

RRAL: Remediation action level calculated from OCD guidance document (August 13, 1993)

Bold and highlighted exceeds OCD recommended remediation action level (RRAL)

FIGURES

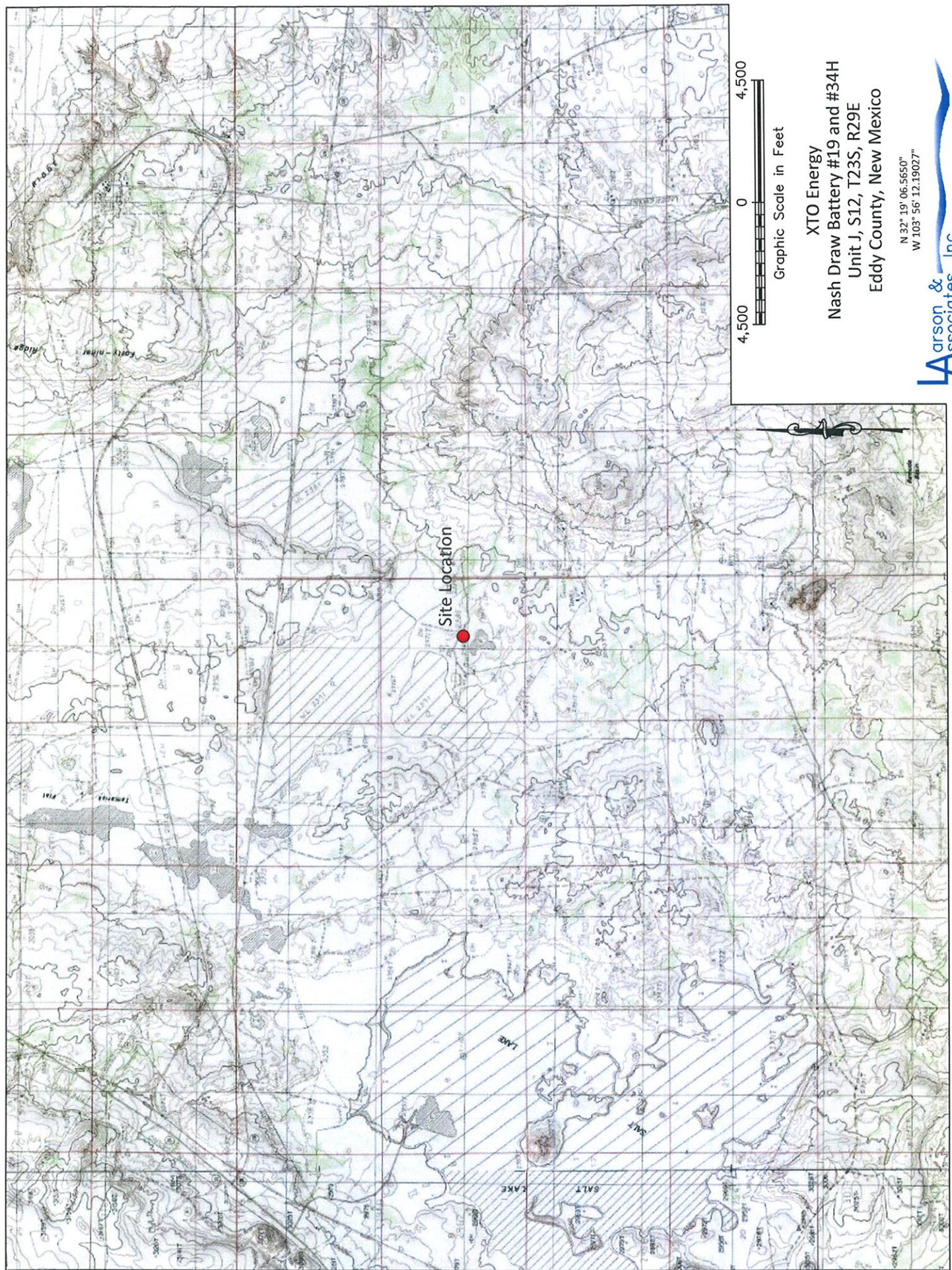


Figure 1 - Topographical Map

Aarson & Associates, Inc.
Environmental Consultants

N 32° 19' 06.5650"
W 103° 56' 12.1902"

XTO Energy
Nash Draw Battery #19 and #34H
Unit J, S12, T23S, R29E
Eddy County, New Mexico



Figure 2 - Aerial Map

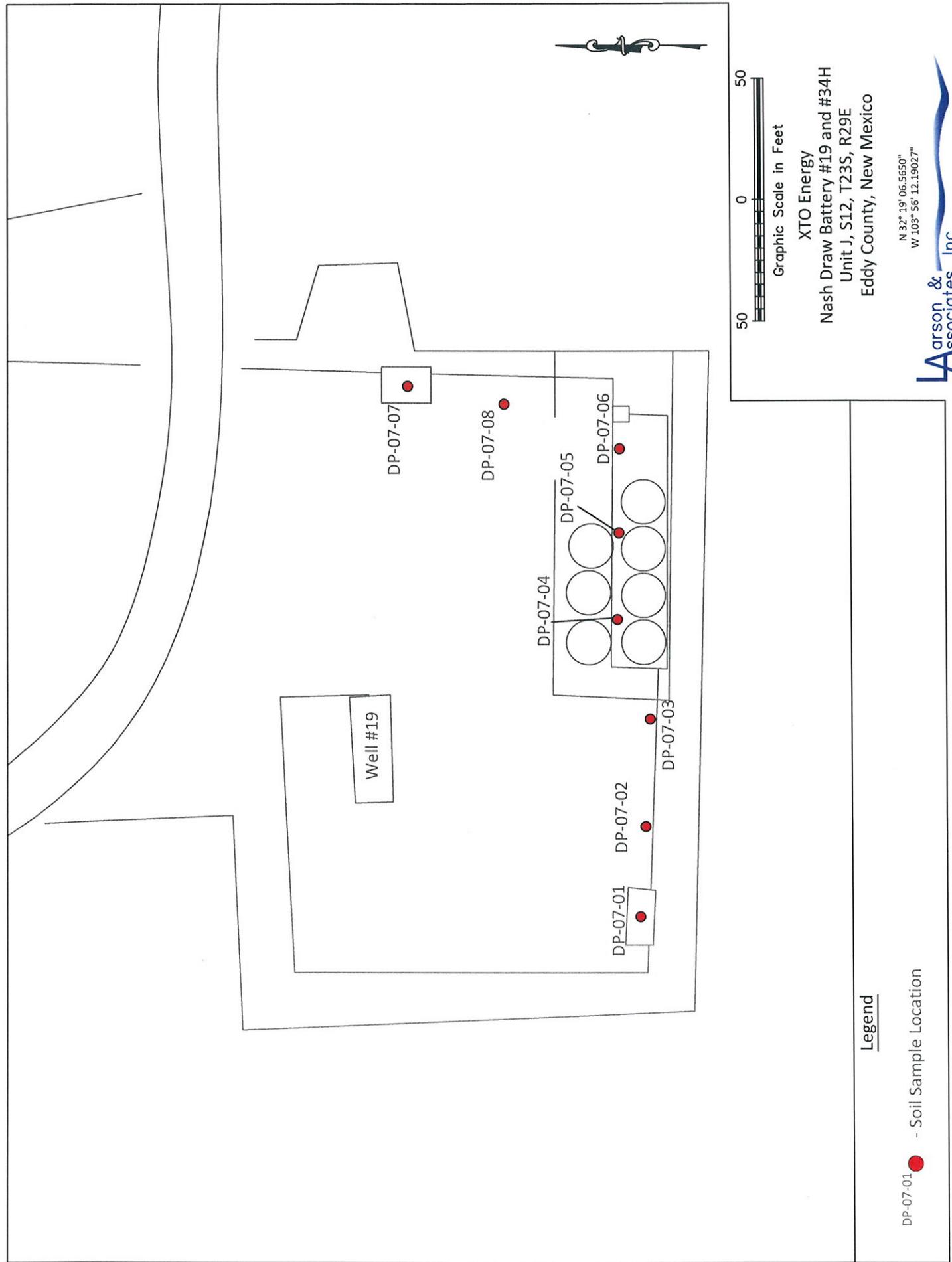
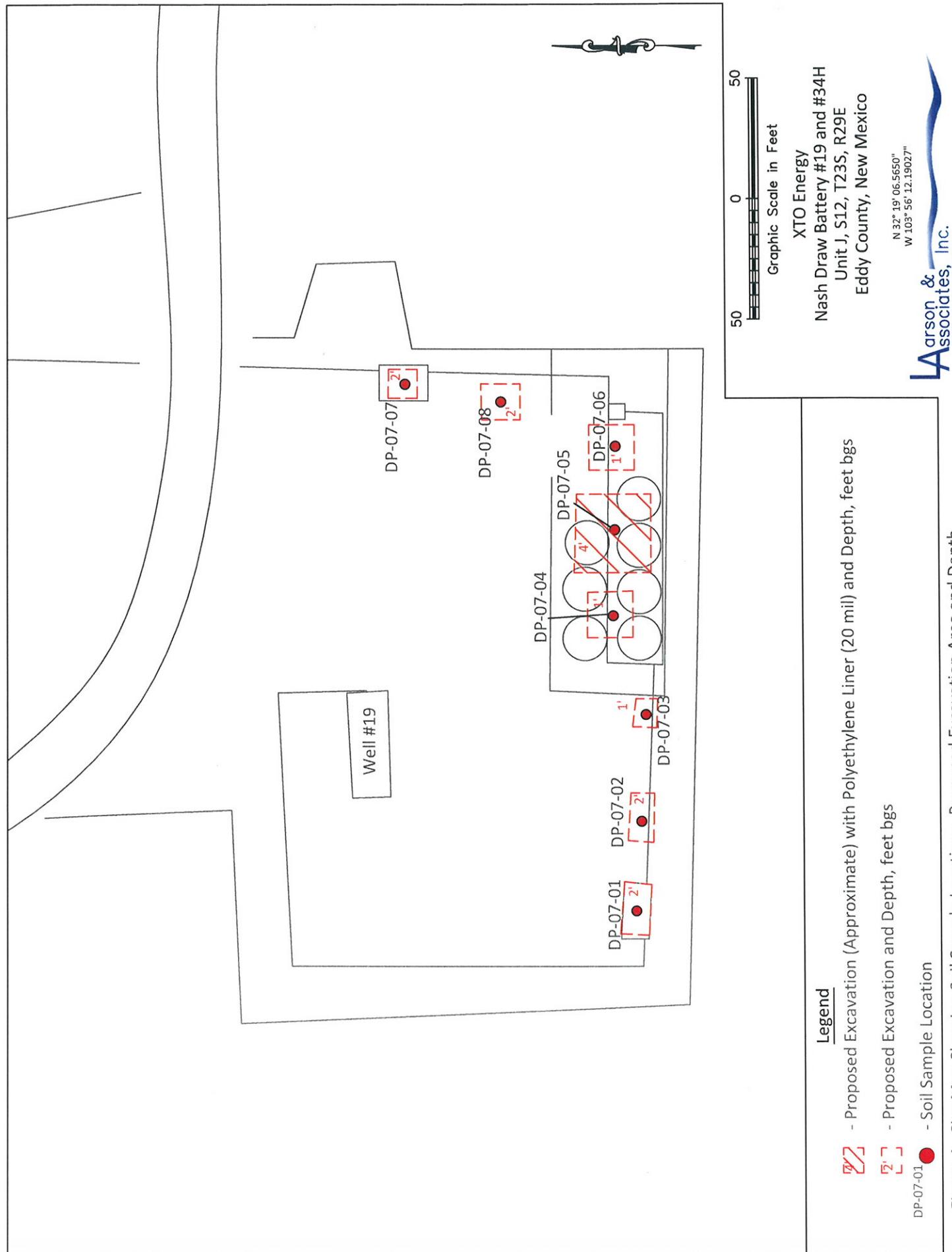


Figure 3 - Site Map Showing Soil Sample Locations



APPENDIX A

Laboratory Reports

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**

PBELAB

Analytical Report

Prepared for:

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Midland, TX 79710

Project: Nash Draw 19 & 34

Project Number: 16-0108-07

Location: New Mexico

Lab Order Number: 6F26009



NELAP/TCEQ # T104704156-13-3

Report Date: 07/09/16

Larson & Associates, Inc.
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Midland TX, 79710

Project: Nash Draw 19 & 34
Project Number: 16-0108-07
Project Manager: Mark Larson

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ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
DP-07-01 (0-1)	6F26009-01	Soil	06/24/16 12:40	06-24-2016 16:30
DP-07-01 (1-2)	6F26009-02	Soil	06/24/16 12:40	06-24-2016 16:30
DP-07-01 (2-3)	6F26009-03	Soil	06/24/16 12:40	06-24-2016 16:30
DP-07-02 (0-1)	6F26009-04	Soil	06/24/16 12:45	06-24-2016 16:30
DP-07-02 (1-2)	6F26009-05	Soil	06/24/16 12:45	06-24-2016 16:30
DP-07-02 (2-3)	6F26009-06	Soil	06/24/16 12:45	06-24-2016 16:30
DP-07-02 (3-4)	6F26009-07	Soil	06/24/16 12:45	06-24-2016 16:30
DP-07-03 (0-1)	6F26009-08	Soil	06/24/16 12:55	06-24-2016 16:30
DP-07-03 (1-2)	6F26009-09	Soil	06/24/16 12:55	06-24-2016 16:30
DP-07-03 (2-3)	6F26009-10	Soil	06/24/16 12:55	06-24-2016 16:30
DP-07-04 (0-1)	6F26009-12	Soil	06/24/16 13:00	06-24-2016 16:30
DP-07-05 (0-1)	6F26009-13	Soil	06/24/16 13:10	06-24-2016 16:30
DP-07-05 (1-2)	6F26009-14	Soil	06/24/16 13:10	06-24-2016 16:30
DP-07-05 (2-3)	6F26009-15	Soil	06/24/16 13:10	06-24-2016 16:30
DP-07-06 (0-1)	6F26009-16	Soil	06/24/16 13:15	06-24-2016 16:30
DP-07-07 (0-1)	6F26009-20	Soil	06/24/16 13:20	06-24-2016 16:30
DP-07-07 (1-2)	6F26009-21	Soil	06/24/16 13:20	06-24-2016 16:30
DP-07-07 (2-3)	6F26009-22	Soil	06/24/16 13:20	06-24-2016 16:30
DP-07-07 (3-4)	6F26009-23	Soil	06/24/16 13:20	06-24-2016 16:30
DP-07-08 (0-1)	6F26009-24	Soil	06/24/16 13:25	06-24-2016 16:30
DP-07-08 (1-2)	6F26009-25	Soil	06/24/16 13:25	06-24-2016 16:30
DP-07-08 (2-3)	6F26009-26	Soil	06/24/16 13:25	06-24-2016 16:30
DP-07-08 (3-4)	6F26009-27	Soil	06/24/16 13:25	06-24-2016 16:30
DP-07-BG (0-1)	6F26009-28	Soil	06/24/16 13:30	06-24-2016 16:30

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Project Number: 16-0108-07
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DP-07-01 (0-1)

6F26009-01 (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

Chloride	977	5.88	mg/kg dry	5	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	15.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	31.0	29.4	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C12-C28	547	29.4	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C28-C35	115	29.4	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: <i>1-Chlorooctane</i>	124 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: <i>o-Terphenyl</i>	142 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M
Total Petroleum Hydrocarbon	692	29.4	mg/kg dry	1	[CALC]	06/27/16	06/27/16	calc
C6-C35								S-GC

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DP-07-01 (1-2)

6F26009-02 (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

% Moisture	11.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	1970	140	mg/kg dry	5	P6G0704	07/01/16	07/03/16	TPH 8015M
>C12-C28	21400	140	mg/kg dry	5	P6G0704	07/01/16	07/03/16	TPH 8015M
>C28-C35	3060	140	mg/kg dry	5	P6G0704	07/01/16	07/03/16	TPH 8015M
Surrogate: <i>I</i> -Chlorooctane		121 %	70-130		P6G0704	07/01/16	07/03/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl		156 %	70-130		P6G0704	07/01/16	07/03/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	26500	140	mg/kg dry	5	[CALC]	07/01/16	07/03/16	calc

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DP-07-01 (2-3)

6F26009-03 (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

% Moisture	8.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	ND	27.2	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	27.2	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
<i>Surrogate: 1-Chlorooctane</i>		110 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
<i>Surrogate: o-Terphenyl</i>		121 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	27.2	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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Project Number: 16-0108-07
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DP-07-02 (0-1)

6F26009-04 (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

Chloride	1520	27.8	mg/kg dry	25	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	10.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	139	mg/kg dry	5	P6F2811	06/27/16	06/27/16	TPH 8015M
>C12-C28	20300	139	mg/kg dry	5	P6F2811	06/27/16	06/27/16	TPH 8015M
>C28-C35	5330	139	mg/kg dry	5	P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: <i>I-Chlorooctane</i>		100 %	70-130		P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: <i>o-Terphenyl</i>		112 %	70-130		P6F2811	06/27/16	06/27/16	TPH 8015M
Total Petroleum Hydrocarbon	25600	139	mg/kg dry	5	[CALC]	06/27/16	06/27/16	calc
C6-C35								

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DP-07-02 (1-2)
6F26009-05 (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

% Moisture	13.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	39.2	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	286	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	71.2	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>l</i> -Chlorooctane		111 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl		120 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	396	28.7	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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DP-07-02 (2-3)

6F26009-06 (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

% Moisture	13.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	72.5	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	31.7	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>l</i> -Chlorooctane		109 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl		120 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon	104	28.7	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc
C6-C35								

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Project Number: 16-0108-07
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DP-07-02 (3-4)

6F26009-07 (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

% Moisture	16.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	29.8	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	ND	29.8	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	29.8	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: 1-Chlorooctane		127 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: o-Terphenyl		141 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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Midland TX, 79710

Project: Nash Draw 19 & 34
Project Number: 16-0108-07
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Fax: (432) 687-0456

DP-07-03 (0-1)

6F26009-08 (Soil)

Analytic	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	2000	28.4	mg/kg dry	25	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	12.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.4	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C12-C28	750	28.4	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C28-C35	244	28.4	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: <i>1-Chlorooctane</i>	111 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: <i>o-Terphenyl</i>	124 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M
Total Petroleum Hydrocarbon	994	28.4	mg/kg dry	1	[CALC]	06/27/16	06/27/16	calc
C6-C35								

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DP-07-03 (1-2)

6F26009-09 (Soil)

Analytic	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

% Moisture	13.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	ND	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	28.7	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>1-Chlorooctane</i>		116 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>o-Terphenyl</i>		133 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	28.7	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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DP-07-03 (2-3)

6F26009-10 (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

% Moisture 16.0 0.1 % 1 P6G0501 07/05/16 07/05/16 % calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	29.8	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M	
>C12-C28	ND	29.8	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M	
>C28-C35	ND	29.8	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M	
Surrogate: <i>l</i> -Chlorooctane		130 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M	
Surrogate: <i>o</i> -Terphenyl		147 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	29.8	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc	

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DP-07-04 (0-1)

6F26009-12 (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	703	11.0	mg/kg dry	10	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	9.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.5	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C12-C28	359	27.5	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C28-C35	97.4	27.5	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: 1-Chlorooctane	109 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: o-Terphenyl	124 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M
Total Petroleum Hydrocarbon	456	27.5	mg/kg dry	1	[CALC]	06/27/16	06/27/16	calc
C6-C35								

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DP-07-05 (0-1)
6F26009-13 (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	36.2	10.8	mg/kg dry	10	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	7.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	216	26.9	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C12-C28	5530	26.9	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
>C28-C35	1560	26.9	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: 1-Chlorooctane		123 %	70-130		P6F2811	06/27/16	06/27/16	TPH 8015M
Surrogate: o-Terphenyl		137 %	70-130		P6F2811	06/27/16	06/27/16	TPH 8015M
Total Petroleum Hydrocarbon	7310	26.9	mg/kg dry	1	[CALC]	06/27/16	06/27/16	calc
C6-C35								S-GC

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DP-07-05 (1-2)

6F26009-14 (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

% Moisture	11.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	33.0	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	1400	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	254	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>I</i> -Chlorooctane		109 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl		121 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon	1680	28.1	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc
C6-C35								

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6F26009-15 (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

% Moisture	11.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	37.5	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	87.2	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>1-Chlorooctane</i>		128 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>o-Terphenyl</i>		137 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	125	28.1	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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DP-07-06 (0-1)

6F26009-16 (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	5090	55.6	mg/kg dry	50	P6F2914	06/29/16	06/29/16	EPA 300.0	
% Moisture	10.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.8	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M	
>C12-C28	102	27.8	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M	
>C28-C35	98.7	27.8	mg/kg dry	1	P6F2811	06/27/16	06/27/16	TPH 8015M	
Surrogate: 1-Chlorooctane	117 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M	
Surrogate: o-Terphenyl	134 %	70-130			P6F2811	06/27/16	06/27/16	TPH 8015M	S-GC
Total Petroleum Hydrocarbon	200	27.8	mg/kg dry	1	[CALC]	06/27/16	06/27/16	calc	
C6-C35									

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6F26009-20 (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	3250	27.5	mg/kg dry	25	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	9.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	810	275	mg/kg dry	10	P6F2811	06/27/16	06/28/16	TPH 8015M
>C12-C28	22500	275	mg/kg dry	10	P6F2811	06/27/16	06/28/16	TPH 8015M
>C28-C35	4350	275	mg/kg dry	10	P6F2811	06/27/16	06/28/16	TPH 8015M
Surrogate: <i>l</i> -Chlorooctane		114 %	70-130		P6F2811	06/27/16	06/28/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl		110 %	70-130		P6F2811	06/27/16	06/28/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	27700	275	mg/kg dry	10	[CALC]	06/27/16	06/28/16	calc

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6F26009-21 (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

% Moisture	11.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	72.8	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	1360	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	186	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>l</i> -Chlorooctane	119 %	70-130			P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl	129 %	70-130			P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	1620	28.1	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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6F26009-22 (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

% Moisture	11.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	75.6	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	28.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: 1-Chlorooctane		125 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Surrogate: o-Terphenyl		138 %	70-130		P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	75.6	28.1	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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6F26009-23 (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

% Moisture	17.0	0.1	%	1	P6G0501	07/05/16	07/05/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	64.1	30.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C12-C28	32.1	30.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
>C28-C35	ND	30.1	mg/kg dry	1	P6G0707	07/01/16	07/02/16	TPH 8015M
<i>Surrogate: 1-Chlorooctane</i>	<i>129 %</i>	<i>70-130</i>			P6G0707	07/01/16	07/02/16	TPH 8015M
<i>Surrogate: o-Terphenyl</i>	<i>149 %</i>	<i>70-130</i>			P6G0707	07/01/16	07/02/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	96.2	30.1	mg/kg dry	1	[CALC]	07/01/16	07/02/16	calc

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DP-07-08 (0-1)

6F26009-24 (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	531	1.10	mg/kg dry	1	P6F2914	06/29/16	06/29/16	EPA 300.0
% Moisture	9.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	994	275	mg/kg dry	10	P6F2811	06/27/16	06/28/16	TPH 8015M
>C12-C28	15400	275	mg/kg dry	10	P6F2811	06/27/16	06/28/16	TPH 8015M
>C28-C35	3470	275	mg/kg dry	10	P6F2811	06/27/16	06/28/16	TPH 8015M
Surrogate: <i>I</i> -Chlorooctane		120 %	70-130		P6F2811	06/27/16	06/28/16	TPH 8015M
Surrogate: <i>o</i> -Terphenyl		105 %	70-130		P6F2811	06/27/16	06/28/16	TPH 8015M
Total Petroleum Hydrocarbon	19800	275	mg/kg dry	10	[CALC]	06/27/16	06/28/16	calc
C6-C35								

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6F26009-25 (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

% Moisture	12.0	0.1	%	1	P6G0808	07/07/16	07/07/16	% calculation	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M									
C6-C12	36.2	28.4	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M	
>C12-C28	408	28.4	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M	
>C28-C35	72.6	28.4	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M	
Surrogate: <i>I</i> -Chlorooctane		120 %	70-130		P6G0704	07/01/16	07/05/16	TPH 8015M	
Surrogate: <i>o</i> -Terphenyl		144 %	70-130		P6G0704	07/01/16	07/05/16	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	517	28.4	mg/kg dry	1	[CALC]	07/01/16	07/05/16	calc	

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DP-07-08 (2-3)

6F26009-26 (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

% Moisture	18.0	0.1	%	1	P6G0808	07/07/16	07/07/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	30.5	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M
>C12-C28	47.7	30.5	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M
>C28-C35	ND	30.5	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M
<i>Surrogate: 1-Chlorooctane</i>		112 %	70-130		P6G0704	07/01/16	07/05/16	TPH 8015M
<i>Surrogate: o-Terphenyl</i>		137 %	70-130		P6G0704	07/01/16	07/05/16	TPH 8015M
Total Petroleum Hydrocarbon	47.7	30.5	mg/kg dry	1	[CALC]	07/01/16	07/05/16	calc
C6-C35								S-GC

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DP-07-08 (3-4)
6F26009-27 (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

% Moisture	17.0	0.1	%	1	P6G0808	07/07/16	07/07/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	30.1	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M
>C12-C28	ND	30.1	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M
>C28-C35	ND	30.1	mg/kg dry	1	P6G0704	07/01/16	07/05/16	TPH 8015M
Surrogate: <i>1-Chlorooctane</i>		123 %	70-130		P6G0704	07/01/16	07/05/16	TPH 8015M
Surrogate: <i>o-Terphenyl</i>		149 %	70-130		P6G0704	07/01/16	07/05/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	30.1	mg/kg dry	1	[CALC]	07/01/16	07/05/16	calc

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DP-07-BG (0-1)

6F26009-28 (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	237	1.04	mg/kg dry	1	P6F2914	06/29/16	06/29/16	EPA 300.0	
% Moisture	4.0	0.1	%	1	P6F2901	06/29/16	06/29/16	% calculation	

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P6F2805	06/27/16	06/28/16	TPH 8015M	
>C12-C28	89.8	26.0	mg/kg dry	1	P6F2805	06/27/16	06/28/16	TPH 8015M	
>C28-C35	54.6	26.0	mg/kg dry	1	P6F2805	06/27/16	06/28/16	TPH 8015M	
Surrogate: <i>l</i> -Chlorooctane		114 %	70-130		P6F2805	06/27/16	06/28/16	TPH 8015M	
Surrogate: <i>o</i> -Terphenyl		114 %	70-130		P6F2805	06/27/16	06/28/16	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	144	26.0	mg/kg dry	1	[CALC]	06/27/16	06/28/16	calc	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Nash Draw 19 & 34
Project Number: 16-0108-07
Project Manager: Mark Larson

Fax: (432) 687-0456

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	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	---------	-----------	-------

Batch P6F2901 - * DEFAULT PREP *****

Blank (P6F2901-BLK1)					Prepared & Analyzed: 06/29/16					
% Moisture	ND	0.1	%							
Duplicate (P6F2901-DUP1)		Source: 6F26010-37			Prepared & Analyzed: 06/29/16					
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P6F2901-DUP2)		Source: 6F26008-08			Prepared & Analyzed: 06/29/16					
% Moisture	11.0	0.1	%		12.0			8.70	20	
Duplicate (P6F2901-DUP3)		Source: 6F26008-12			Prepared & Analyzed: 06/29/16					
% Moisture	7.0	0.1	%		7.0			0.00	20	

Batch P6F2914 - * DEFAULT PREP *****

Blank (P6F2914-BLK1)					Prepared & Analyzed: 06/29/16					
Chloride	ND	1.00	mg/kg wet							
LCS (P6F2914-BS1)					Prepared & Analyzed: 06/29/16					
Chloride	175	1.00	mg/kg wet	200	87.3	80-120				
LCS Dup (P6F2914-BSD1)					Prepared & Analyzed: 06/29/16					
Chloride	176	1.00	mg/kg wet	200	88.2	80-120	1.08	20		
Duplicate (P6F2914-DUP1)		Source: 6F26008-08			Prepared & Analyzed: 06/29/16					
Chloride	1640	28.4	mg/kg dry	1600			2.31	20		
Duplicate (P6F2914-DUP2)		Source: 6F26009-28			Prepared & Analyzed: 06/29/16					
Chloride	242	1.04	mg/kg dry	237			2.23	20		

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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
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Batch P6F2914 - * DEFAULT PREP *****

Matrix Spike (P6F2914-MS1)		Source: 6F26008-08		Prepared & Analyzed: 06/29/16					
Chloride	13300	28.4	mg/kg dry	9090	1600	129	80-120		QM-07

Batch P6G0501 - * DEFAULT PREP *****

Blank (P6G0501-BLK1)				Prepared & Analyzed: 07/05/16					
% Moisture	ND	0.1	%						
Duplicate (P6G0501-DUP1)		Source: 6F26006-06		Prepared & Analyzed: 07/05/16					
% Moisture	13.0	0.1	%	13.0			0.00	20	
Duplicate (P6G0501-DUP2)		Source: 6F26009-23		Prepared & Analyzed: 07/05/16					
% Moisture	14.0	0.1	%	17.0			19.4	20	
Duplicate (P6G0501-DUP3)		Source: 6G01003-01		Prepared & Analyzed: 07/05/16					
% Moisture	6.0	0.1	%	5.0			18.2	20	
Duplicate (P6G0501-DUP4)		Source: 6G01008-02		Prepared & Analyzed: 07/05/16					
% Moisture	13.0	0.1	%	12.0			8.00	20	

Batch P6G0808 - * DEFAULT PREP *****

Blank (P6G0808-BLK1)				Prepared & Analyzed: 07/07/16					
% Moisture	ND	0.1	%						
Duplicate (P6G0808-DUP1)		Source: 6F26009-27		Prepared & Analyzed: 07/07/16					
% Moisture	15.0	0.1	%	17.0			12.5	20	

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Project: Nash Draw 19 & 34
Project Number: 16-0108-07
Project Manager: Mark Larson

Fax: (432) 687-0456

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	RPD Limit	Notes
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Batch P6F2811 - TX 1005

Blank (P6F2811-BLK1)										
Prepared & Analyzed: 06/27/16										
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: <i>I</i> -Chlorooctane	89.1	"	100		89.1	70-130				
Surrogate: <i>o</i> -Terphenyl	49.5	"	50.0		99.0	70-130				
LCS (P6F2811-BS1)										
Prepared & Analyzed: 06/27/16										
C6-C12	872	25.0	mg/kg wet	1000	87.2	75-125				
>C12-C28	1150	25.0	"	1000	115	75-125				
Surrogate: <i>I</i> -Chlorooctane	102	"	100		102	70-130				
Surrogate: <i>o</i> -Terphenyl	46.2	"	50.0		92.3	70-130				
LCS Dup (P6F2811-BSD1)										
Prepared & Analyzed: 06/27/16										
C6-C12	886	25.0	mg/kg wet	1000	88.6	75-125	1.55	20		
>C12-C28	1160	25.0	"	1000	116	75-125	0.768	20		
Surrogate: <i>I</i> -Chlorooctane	104	"	100		104	70-130				
Surrogate: <i>o</i> -Terphenyl	45.8	"	50.0		91.5	70-130				

Batch P6G0704 - TX 1005

Blank (P6G0704-BLK1)										
Prepared: 07/01/16 Analyzed: 07/02/16										
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: <i>I</i> -Chlorooctane	87.6	"	100		87.6	70-130				
Surrogate: <i>o</i> -Terphenyl	49.1	"	50.0		98.2	70-130				

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Project: Nash Draw 19 & 34
Project Number: 16-0108-07
Project Manager: Mark Larson

Fax: (432) 687-0456

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	RPD Limit	Notes
Batch P6G0704 - TX 1005										
LCS (P6G0704-BS1)										
Prepared: 07/01/16 Analyzed: 07/02/16										
C6-C12	957	25.0	mg/kg wet	1000	95.7	75-125				
>C12-C28	1150	25.0	"	1000	115	75-125				
Surrogate: <i>l</i> -Chlorooctane	118		"	100	118	70-130				
Surrogate: <i>o</i> -Terphenyl	53.4		"	50.0	107	70-130				
LCS Dup (P6G0704-BSD1)										
Prepared: 07/01/16 Analyzed: 07/02/16										
C6-C12	963	25.0	mg/kg wet	1000	96.3	75-125	0.642	20		
>C12-C28	1160	25.0	"	1000	116	75-125	0.479	20		
Surrogate: <i>l</i> -Chlorooctane	116		"	100	116	70-130				
Surrogate: <i>o</i> -Terphenyl	53.5		"	50.0	107	70-130				
Matrix Spike (P6G0704-MS1)										
Source: 6F26009-25 Prepared: 07/01/16 Analyzed: 07/05/16										
C6-C12	1080	28.4	mg/kg dry	1140	36.2	91.5	75-125			
>C12-C28	1780	28.4	"	1140	408	121	75-125			
Surrogate: <i>l</i> -Chlorooctane	157		"	136	115	70-130				
Surrogate: <i>o</i> -Terphenyl	80.9		"	68.2	119	70-130				
Matrix Spike Dup (P6G0704-MSD1)										
Source: 6F26009-25 Prepared: 07/01/16 Analyzed: 07/05/16										
C6-C12	1030	28.4	mg/kg dry	1140	36.2	87.8	75-125	4.14	20	
>C12-C28	1680	28.4	"	1140	408	112	75-125	7.73	20	
Surrogate: <i>l</i> -Chlorooctane	153		"	114	135	70-130				S-GC
Surrogate: <i>o</i> -Terphenyl	74.0		"	56.8	130	70-130				
Batch P6G0707 - TX 1005										
Blank (P6G0707-BLK1)										
Prepared: 07/01/16 Analyzed: 07/02/16										
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: <i>l</i> -Chlorooctane	99.2		"	100	99.2	70-130				
Surrogate: <i>o</i> -Terphenyl	51.6		"	50.0	103	70-130				

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Nash Draw 19 & 34
Project Number: 16-0108-07
Project Manager: Mark Larson

Fax: (432) 687-0456

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	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	---------	-----------	-------

Batch P6G0707 - TX 1005

LCS (P6G0707-BS1)							Prepared: 07/01/16 Analyzed: 07/02/16			
C6-C12	920	25.0	mg/kg wet	1000		92.0	75-125			
>C12-C28	1070	25.0	"	1000		107	75-125			
Surrogate: <i>l</i> -Chlorooctane	117		"	100		117	70-130			
Surrogate: <i>o</i> -Terphenyl	49.1		"	50.0		98.2	70-130			
LCS Dup (P6G0707-BSD1)							Prepared: 07/01/16 Analyzed: 07/02/16			
C6-C12	945	25.0	mg/kg wet	1000		94.5	75-125	2.61	20	
>C12-C28	1100	25.0	"	1000		110	75-125	3.25	20	
Surrogate: <i>l</i> -Chlorooctane	131		"	100		131	70-130			S-GC
Surrogate: <i>o</i> -Terphenyl	57.8		"	50.0		116	70-130			

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P.O. Box 50685
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Project: Nash Draw 19 & 34
Project Number: 16-0108-07
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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: 7/9/2016

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

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Page 32 of 34

Arson & **S**sociates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

Yes No

TIME ZONE:
Time zone/State:

NW

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

EF 26009

Field Sample I.D.	Lab #	Date	Time	Matrix	PRESERVATION	
					# of Containers	HCl
DR-07-01 (0-1)	-01	6-22-16	12:40	S	1	X
(1-2)	-02					X
(2-3)	-03					X
(1-2)	-04		12:45			X
(2-3)	-05					X
(1-2)	-06					X
(3-4)	-07					X
DR-07-03(0-1)	-08		12:55			X
(1-2)	-09					X
(2-3)	-10					X
(3-4)	-11					X
DR-07-04(0-1)	-12		1:00			X
DR-07-05 (0-1)	-13		1:10			X
(1-2)	-14					X
(2-3)	-15					X

ANALYSES
 BTEX MTBE TPH 1005 TPH 1006 HOLDPAH ORO 545
 TRPH 418.1 TPH 8015 **ORO 545**
 GASOLINE MOD 8015 DIESSEL - MOD 8015
 VOC 8260 PAH 8270 8151 HERBICIDES VOC 8270 PAH 8270 8151 HERBICIDES
 8081 PESTICIDES OTHER LSTD 8081 PESTICIDES OTHER LSTD
 8082 PCBs TCLP - METALS (RCRA) OTHER LSTD 8082 PCBs TCLP - METALS (RCRA)
 TOTAL METALS (RCRA) D.W. 200.8 TCLP - METALS (RCRA) D.W. 200.8
 TOX FLASHPOINT CYANIDE TOX FLASHPOINT CYANIDE
 % MOISTURE CHROMIUM % MOISTURE CHROMIUM
 PECHLORATE LEAD - TOTAL PECHLORATE LEAD - TOTAL
 ALKALINITY TOLP - PEST HERB OTHER LSTD TOLP - PEST HERB
 RCI TOX % MOISTURE CHROMIUM RCI TOX % MOISTURE
 TDS TSS EXPLOSIVES ANIONS ALKALINITY TDS TSS EXPLOSIVES
 PH HEXAVALENT CHROMIUM PECHLORATE PH HEXAVALENT CHROMIUM
 CHLORIDES ANIONS ALKALINITY CHLORIDES ANIONS
 FIELD NOTES FIELD NOTES
HOLD **HOLD**

TOTAL

RELINQUISHED BY: (Signature) *[Signature]* DATE/TIME: 4:30 6/24/16 RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME: *[Signature]* RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME: *[Signature]* RECEIVED BY: (Signature)

TURN AROUND TIME
Normal

LABORATORY USE ONLY:
RECEIVING TEMP: 14.0 THERM #:

1 DAY

2 DAY

OTHER 3 day

CUSTODY SEALS - BROKEN INTACT NOT USED
 CARRIER BILL # _____
 HAND DELIVERED

CHAIN-OF-CUSTODIAL

PAGE 1 OF 2

6FZ6009

CHAIN-OF-CUSTODY

Arson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 6-24-16
PO #: _____
PROJECT LOCATION: _____
LAI PROJECT #: 16 -

PAGE 2 OF 2
6F26001

Data Reported to:		TRRP report? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		S=SOIL W=WATER A=AIR OT=OTHER	P=PAINT SL=SLUDGE OT=OTHER	PRESERVATION	
TIME ZONE: NM		Time zone/State:		6/26/009		# of Containers	
Field Sample I.D.	Lab #	Date	Time	Matrix	HCl HNO ₃ H ₂ SO ₄ <input type="checkbox"/> ICE	UNPRESERVED	
DP-07-06 (5-1)	-16	6-26-00	1:15	S	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(1-2)	-17				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(2-3)	-18				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(3-4)	-19				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
DP-07-07 (6-1)	-20		1:20		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(1-2)	-21				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(2-3)	-22				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(3-4)	-23				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
DP-07-08 (5-1)	-24		1:25		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(1-2)	-25				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(2-3)	-26				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
(3-4)	-27				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
DP-07-09 (6-1)	-28		1:30		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
TOTAL							
RELINQUISHED BY: (Signature)		DATE/TIME RECEIVED BY: (Signature)		TURN AROUND TIME NORMAL		LABORATORY USE ONLY: RECEIVING TEMP: 40 THERM #:	
RELINQUISHED BY: (Signature)		DATE/TIME RECEIVED BY: (Signature)		1 DAY <input type="checkbox"/> 2 DAY <input type="checkbox"/> OTHER 3 day		CUSTODY SEALS - <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input type="checkbox"/> NOT USED <input type="checkbox"/> CARRIER BILL # _____ <input type="checkbox"/> HAND DELIVERED	
RELINQUISHED BY: (Signature)		DATE/TIME RECEIVED BY: (Signature)					
1:30 6/26/00							

Larson & Associates, Inc.

P.O. Box 50685

Midland TX, 79710

SAMPLED: 06/24/16**RECEIVED:** 06-24-201

Project: Nash Draw 19 & 34

Project Number: 16-0108-07

Project Manager: Mark Larson

REPORTED: 06/29/16 19:53

LAB #	Minimum	6F26009-01	6F26009-04	6F26009-08	6F26009-12	6F26009-13	6F26009-16
MATRIX	Soil	Soil	Soil	Soil	Soil	Soil	Soil
SAMPLE ID	Reporting Limit	DP-07-01 (0-1)	DP-07-02 (0-1)	DP-07-03 (0-1)	DP-07-04 (0-1)	DP-07-05 (0-1)	DP-07-06 (0-1)

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M (Soil)

>C12-C28	25.0 mg/kg dry	547	20300	750	359	5530	102
>C28-C35	25.0 mg/kg dry	115	5330	244	97.4	1560	98.7
1-Chlorooctane	130 [surr]	124%	100%	111%	109%	123%	117%
o-Terphenyl	130 [surr]	142% [2]	112%	124%	124%	137% [2]	134% [2]
Total Petroleum Hydrocarbon C6-C35	139 mg/kg dry	-	25600	-	-	-	-

General Chemistry Parameters by EPA / Standard Methods (Soil)

Chloride	1.00 mg/kg dry	977	1520	2000	703	36.2	5090
% Moisture	0.1 %	15.0	10.0	12.0	9.0	7.0	10.0

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M (Soil)

C6-C12	25.0 mg/kg dry	31.0	<139	<28.4	<27.5	216	<27.8
Total Petroleum Hydrocarbon C6-C35	26.9 mg/kg dry	-	-	-	-	7310	-
Total Petroleum Hydrocarbon C6-C35	27.5 mg/kg dry	-	-	-	456	-	-
Total Petroleum Hydrocarbon C6-C35	27.8 mg/kg dry	-	-	-	-	-	200
Total Petroleum Hydrocarbon C6-C35	28.4 mg/kg dry	-	-	994	-	-	-
Total Petroleum Hydrocarbon C6-C35	29.4 mg/kg dry	692	-	-	-	-	-

DRAFT REPORT
DRAFT REPORT

DATA SUBJECT TO CHANGE

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Midland TX, 79710

SAMPLED: 06/24/16**RECEIVED:** 06-24-201

Project: Nash Draw 19 & 34

Project Number: 16-0108-07

Project Manager: Mark Larson

REPORTED: 06/29/16 19:53

LAB #	6F26009-20	6F26009-24	6F26009-28	-	-	-
MATRIX	Minimum	Soil	Soil	-	-	-
SAMPLE ID	Reporting Limit	DP-07-07 (0-1)	DP-07-08 (0-1)	DP-07-BG (0-1)	-	-

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M (Soil)

>C12-C28	25.0 mg/kg dry	22500	15400	89.8	-	-	-
>C28-C35	25.0 mg/kg dry	4350	3470	54.6	-	-	-
1-Chlorooctane	130 [surr]	114%	120%	114%	-	-	-
o-Terphenyl	130 [surr]	110%	105%	114%	-	-	-

General Chemistry Parameters by EPA / Standard Methods (Soil)

Chloride	1.00 mg/kg dry	3250	531	237	-	-	-
% Moisture	0.1 %	9.0	9.0	4.0	-	-	-

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M (Soil)

C6-C12	25.0 mg/kg dry	810	994	<26.0	-	-	-
Total Petroleum Hydrocarbon C6-C35	26.0 mg/kg dry	-	-	144	-	-	-
Total Petroleum Hydrocarbon C6-C35	275 mg/kg dry	27700	19800	-	-	-	-

Special Notes

- 1 = The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- 2 = Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

DRAFT REPORT
DRAFT REPORT

DATA SUBJECT TO CHANGE

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Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

CHAIN-OF-CUSTODY

DATE: 6-24-16 PAGE 1 OF 2
PO #: 6F26009
PROJECT LOCATION OR NAME: Nash Draw 1A 3-31
LAJ PROJECT #: 16-0108-07 COLLECTOR: Tu

Data Reported to:

TRRP report? Yes No
S=SOIL W=WATER SL=SLUDGE
A=AIR OT=OTHER

TIME ZONE:
Time zone/State:
NW

6F26009

of Containers
HCl
HNO₃
H₂SO₄
ICE
UNPRESERVED

ANALYSES
STEX MTBE TPH 1005 TPH 1006 ORO 545
TPH 448-1 PAH 8270 HOLDPAH HODPAH
GASOLINE MOD 8015 DIESSEL - MOD 8015
VOC 8260 VOC 8270 PAH 8270 8151 HERBICIDES
8081 PESTICIDES 8082 PCB'S
TCPL - METALS (RCRA) OTHER JUSTD CYANIDE
TCPL - PEST HERB D.W. 200.8 TCPL
TOTAL METALS (RCRA) D.W. 200.8 MOISTURE CHROMIUM
LEAD - TOTAL FLASHPOINT PECHLORATED
RCI TOX % MOISTURE ANIONS ALKALINITY
TDS TSS EXPLOSIVES PHOSPHATES
PH HEXAVALENT CHROMIUM ANIONS CHLORIDE
FIELD NOTES HOLD

Field Sample I.D.	Lab #	Date	Time	Matrix	PRESERVATION	PREPARATION	ANALYSIS
DR-07-01(0-1)	-01	6-22-16	12:40	S	1	X	STEX <input type="checkbox"/>
(1-2)	-02						MTBE <input type="checkbox"/>
(2-3)	-03						TPH 1005 <input type="checkbox"/>
DR-07-02 (0-1)	-04		12:45				TPH 1006 <input type="checkbox"/>
(1-2)	-05						ORO 545 <input checked="" type="checkbox"/>
(2-3)	-06						HOLDPAH <input type="checkbox"/>
(3-4)	-07						HODPAH <input type="checkbox"/>
DR-07-03(0-1)	-08		12:55				
(1-2)	-09						
(2-3)	-10						
(3-4)	-11						
DR-07-04(0-1)	-12		1:00				
DR-07-05 (0-1)	-13		1:00				
(1-2)	-14						
(2-3)	-15						
TOTAL							
RELINQUISHED BY:(Signature)		DATETIME		RECEIVED BY: (Signature)		TURN AROUND TIME	LABORATORY USE ONLY:
RELINQUISHED BY:(Signature)		DATETIME		RECEIVED BY: (Signature)		RECEIVING TEMP: <u>12.0</u>	THERM #: _____
RELINQUISHED BY:(Signature)		DATETIME		RECEIVED BY: (Signature)		CUSTODY SEALS - <input type="checkbox"/> BROKEN <input type="checkbox"/> INTACT <input type="checkbox"/> NOT USED	OTHER <u>324</u>
						<input type="checkbox"/> CARRIER BILL # _____	<input type="checkbox"/> HAND DELIVERED

APPENDIX B

Initial C-141

NM OIL CONSERVATION

ARTESIA DISTRICT

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

State of New Mexico
Energy Minerals and Natural Resources SEP 07 2016

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.

RECEIVED

Release Notification and Corrective Action

NAB 1625 328642

OPERATOR

 Initial Report Final Report

Name of Company: XTO Energy, Inc. <i>5380</i>	Contact: Dudley McMinn
Address: 500 W. Illinois Ave., Suite 100, Midland, TX 70701	Telephone No.: (432) 682-8873
Facility Name: Nash Draw Unit Battery #19 & #34	Facility Type: Tank Battery (Equipment Removed)

Surface Owner: Federal	Mineral Owner: Federal	API No. 30-015-27590
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LOCATION OF RELEASE

Unit Letter J	Section 12	Township 23S	Range 29E	Feet from the 2202	North/South Line South	Feet from the 2201	East/West Line East	County: Eddy

Latitude 32.316944 Longitude -103.936667

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: Unknown	Volume Recovered: None
Source of Release: Spills	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 07-09-2016
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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.* Hydrocarbons in soil due to historic use of tank battery reported in soil samples by laboratory following removal of tanks and equipment. Will remediate to OCD and BLM requirements.

Describe Area Affected and Cleanup Action Taken.*

Affected soil to be excavated, treated onsite or disposed offsite at OCD approved facility. Refer to attached analytical data summary.

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>Luke Williams</i>	OIL CONSERVATION DIVISION	
Printed Name: Luke Williams	Approved by Environmental Specialist: <i>H. Dunn</i>	
Title: EH&S Coordinator	Approval Date: 9/8/16	Expiration Date: N/A
E-mail Address: Luke.Williams@xtoenergy.com	Conditions of Approval: Remediation per O.C.D. Rules & Guidelines	
Date: 09-07-2016	SUBMIT REMEDIATION PROPOSAL NO <input type="checkbox"/>	
Phone: (432) 683-8873	LATER THAN: <i>10/9/16</i>	

* Attach Additional Sheets If Necessary

2RP-3874