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By JKeyes at 10:20 am, Jun 15, 2016

NOT APPROVED

Closure cannot be granted at this time. The area around the AT&T ROW needs to be addressed. After talking with Mr. Kellum it has been determined that work can be done in the area as long as a horizontal distance of 3' to 5' be maintained from the marked line. Please submit for OCD approval an updated map of the affected area of concern and an addendum detailing how this area will be remediated.

REMEDIATION REPORT
Perla Negra Fed Com Well #4H
Lea County, New Mexico
1RP-4049

LAI Project No. 15-0167-01

June 2, 2016

Prepared for:

XTO Energy, Inc.
500 W. Illinois Street, Suite 100
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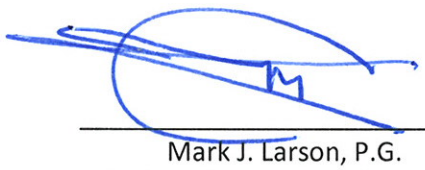

Mark J. Larson, P.G.
Certified Professional Geologist #10490

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Introduction

This report is prepared on behalf of XTO Energy, Inc. (XTO) for submittal to the New Mexico Oil Conservation Division (OCD) and U.S. Bureau of Land Management (BLM), for a crude oil release from the Perla Negra Fed Com Well #4H (Site) Lea County, New Mexico. The legal description is Unit A (NE/4, NE/4), Section 25, Township 19 South, and Range 34 East. The geodetic position is north 32.637653° and west -103.506267°. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

On December 1, 2015, an XTO contractor was servicing the well when the well kicked resulting in loss of well control. The release involved approximately 301.3 barrels (bbl) oil and 192.8 mcf gas. Approximately 158.63 bbl of fluid was recovered. XTO verbally reported the release to the BLM in Carlsbad, New Mexico and filed the initial C-141 with OCD on December 21, 2015. The OCD assigned the release remediation project number 1RP-4049.

Setting

The setting is as follows:

- The surface elevation is about 3,780 feet above mean sea level (MSL);
- The topography is undulating with the regional topographic slope to the southeast;
- The nearest surface water feature is a small playa located about 2 miles northeast of the Site with no surface connection to the Site;
- The dominant soil types are "Pyote soils and dune land" (29.2%), "Kermit-Palomas fine sands, 0 to 12 percent slopes" (20%) and "Simona fine sandy loam, 0 to 3 percent slopes" (18.3%). The soils are fine sandy and calcareous eolian deposits derived from sedimentary rock;
- The upper geologic unit is the Tertiary-age Ogallala formation consisting of unconsolidated to semi-consolidated fine to coarse grained quartz sand, silt, gravel and clay and underlain by the Triassic-age Chinle formation of the Dockum group;
- The nearest fresh water well (CP 8941) is located about 2,000 feet northeast in Unit M (SW/4, SW/4), Section 19, Township 19 South and Range 35 East. Depth to groundwater is reported at 285 feet below ground surface (bgs);
- Groundwater was encountered at 55 feet below ground surface (bgs) in a boring drilled near the northwest corner of the Site.

Initial Response

XTO immediately began cleanup operation once the well was stable and safety personnel cleared the area for entry. Contractors were mobilized to begin recovering free liquid from the location and from a utility right of way (ROW) located immediately south of the location. The ROW is owned by AT&T that includes 3 fiber optic communication cables. An XTO contractor scraped soil to about 8 inches bgs from the affected portion of the pad equaling about 88,031 square feet or about 2.0 acres. The soil was disposed at the R360 Halfway located at MM 66 about 16 miles west of the Site. Figure 3 presents a Site drawing where soil was scraped from the location.

On December 3, 2015, LAI personnel mapped the release using a Trimble® global position system (GPS) hand held receiver. Wind from the west and north dispersed fluid east about 2,850 feet and south about 2,100 feet from the location. LAI mapped an area of heavy hydrocarbons identified as the "Red Zone" about 750 feet east and 850 feet south of the location. The Red Zone encompasses about 831,032

Soil Samples

On January 28, 2016, LAI personnel used a stainless steel hand auger to collect soil samples from 0 to 1 and 1 to 2 feet bgs from the affected area. Twenty-two (22) discrete samples were collected from the location (4), AT&T right of way (3), red zone (11) and transition zone (4). Eleven (11) composite samples (Comp-1 through Comp-11) consisting of 5 discrete samples were collected from 0 to 1 foot bgs from the green zone. The samples were collected in laboratory containers. A duplicate sample was collected in an 8-ounce glass jar for headspace analysis with a calibrated photoionization detector (PID) according to the ambient temperature headspace method. All samples recorded PID readings below 100 parts per million (ppm) except S-3, 0 to 1 foot (589 ppm), S-4, 0 to 1 foot (414 ppm), S-6, 0 to 1 foot (272 ppm) and S-7, 0 to 1 foot (1,078 ppm) which were analyzed by EPA SW-846 method 8021B for benzene, toluene, ethylbenzene and xylene (BTEX). All samples were analyzed for total petroleum hydrocarbons (TPH) by EPA SW-846 method 8015 including gasoline (GRO) and diesel (DRO) range organic fraction and chloride by method 300. Figure 6 presents the sample locations. Appendix B presents the laboratory report.

Referring to Table 1, benzene was below the RRAL of 10 milligrams per kilogram (mg/Kg) in samples with headspace readings above 100 ppm. The RRAL for BTEX (50 mg/Kg) was exceeded in sample S-7, 0 to 1 foot (87.468 mg/Kg). The RRAL for TPH (1,000 mg/Kg) was exceeded in samples S-7, 0 to 1 foot (9,180 mg/Kg) and S-7, 1 to 2 feet (7,030 mg/Kg). Chloride was below 250 mg/Kg in all samples except S-3, 0 to 1 foot (1,800 mg/Kg) and was less than the RL (<25.0 mg/Kg) in sample S-3, 1 to 2 feet.

On February 18, 2016, LAI personnel used a Terraprobe® direct push rig to collect samples between about 2 and 8 feet bgs at S-7. The samples were analyzed for BTEX, TPH and chloride by EPA SW-846 methods 8021B, 8015 and 300, respectively. Benzene, BTEX and TPH were below the RRAL in all samples. Chloride was less than 250 mg/Kg.

On March 10, 2016, LAI personnel applied Micro-Blaze® (6%) to the area around S-7. Soil samples were collected on April 26, 2016 from 0 to 1 and 1 to 2 feet bgs and were analyzed for TPH by EPA SW-846 method 8015. The laboratory reported TPH at 9,018 mg/Kg (0 to 1 foot) and 5,120 mg/Kg (1 to 2 feet). The area of residual TPH above the RRAL is estimated to be about 30 x 50 feet. Table 1 presents the analytical data summary. Appendix B presents the laboratory report. Appendix C presents photographs.

An archeological survey was performed by Boone Archeological Services, LLC (Boone), Carlsbad, New Mexico, prior to drilling the well and was negative for cultural resources within the 600 x 600 foot area of investigation. Boone performed a follow up of the affected area following remediation and found no disturbance of cultural resources.

Conclusions

1. Groundwater was observed in boring SB-1 at 55 feet bgs;
2. The nearest fresh water well (CP 8941) is located about 2,000 feet northeast;
3. The nearest surface water feature is a small playa located about 2 miles northeast;
4. Benzene was below the RRAL of 10 milligrams per kilogram (mg/Kg) in samples with headspace readings above 100 ppm;
5. The RRAL for BTEX (50 mg/Kg) was exceeded in sample S-7, 0 to 1 foot (87.468 mg/Kg);

6. The RRAL for TPH (1,000 mg/Kg) was exceeded in samples S-7, 0 to 1 foot (9,018 mg/Kg) and S-7, 1 to 2 feet (5,120 mg/Kg);
7. The area of TPH exceeding the RRAL is situated within the AT&T ROW that includes 3 fiber optic cables that AT&T was sensitive about mechanical remediation;
8. Chloride was below 250 mg/Kg in all samples except S-3, 0 to 1 foot (1,800 mg/Kg) and decreased below the reporting limit of 25.0 mg/Kg in sample S-3, 1 to 2 feet,

Recommendation

Due to sensitivity of fiber optic communication, AT&T was not in favor of mechanical remediation methods that could damage the cables therefore XTO respectfully requests natural attenuation for the residual hydrocarbons in the vicinity of sample S-7. The area of residual THP above the RRAL is estimated to be about 30 x 50 feet. XTO respectfully requests no further action for the spill. Appendix D presents the initial and final C-141.

square feet or approximately 19.07 acres including the affected area of the location. Beyond the "Red Zone" for a distance of about 250 feet is an area of lighter hydrocarbons identified as the "transition zone". The Transition Zone encompasses about 677,292 square feet or about 15.55 acres. Beyond the transition zone is the area of lightest hydrocarbons or mist which is identified as the "Green Zone". The Green Zone extends about 1,000 feet south and 1,700 feet east of the transition zone and encompasses about 3,120,362 square feet or about 71.63 acres. The total affected area is about 4,628,686 square feet or about 106.26 acres. Figure 4 presents a map showing the approximate boundary for the affected area.

Between December 5, 2015 and January 8, 2016, LAI personnel applied a solution (6%) of Micro-Blaze® microbial amendment and potable water to the affected area of the location and Red Zone. The amendment was applied using a low impact all terrain vehicle and tank. The treated area was mapped each day with the Trimble GPS receiver. Figure 5 presents the Micro-Blaze® treatment areas by date.

On January 25, 2016, LAI, on behalf of XTO, submitted a document to OCD titled, *"Investigation Summary and Remediation Plan"* that summarized the initial response actions and proposed locations for collecting soil samples and determination of depth to groundwater.

Remediation Action Levels

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

Criteria	***Result***	***Score***
Depth-to-Groundwater	50 - 100 feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0

The following RRAL apply to the release for ranking score: 10

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 1,000 mg/Kg

Soil Boring

On February 19, 2016, Scarborough Drilling, Inc., Lamesa, Texas, drilled a boring (SB-1) to about 62 feet bgs near the northwest corner of the location. The boring was drilled with a truck-mounted air rotary rig and drill cuttings were logged according to the Unified Soil Classification System (USCS). Groundwater was observed 55 feet bgs and the boring was plugged with bentonite. Figure 3 presents the boring location. Appendix A presents the boring log.

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6. The RRAL for TPH (1,000 mg/Kg) was exceeded in samples S-7, 0 to 1 foot (9,018 mg/Kg) and S-7, 1 to 2 feet (5,120 mg/Kg);

TABLES

Table 1
Soil Sample Analytical Data Summary
XTO Energy, Inc., Perla Negra #4 Well Release
Unit A (NE/4, NE/4), Section 25, Township 19 South, Range 34 East
Lea County, New Mexico
1RP-4049

Sample	Depth (Feet)	Collection Date	Status	PID (mg/Kg)	Benzene (mg/Kg)	BTEX (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)
OCD RRAL:					**10**	**50**			**1,000**	****250**
Area: Well Pad										
S-1	0 - 1	1/28/2016	In-Situ	**3.8**	--	--	<50.0	<4.00	<54.0	**39.6**
	1 - 2	1/28/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0
S-2	0 - 1	1/28/2016	In-Situ	**6.6**	--	--	<50.0	<4.00	<54.0	**31.5**
	1 - 2	1/28/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0
S-3	0 - 1	1/28/2016	In-Situ	**589**	<0.0200	**3.022**	478	132	**610**	**1,800**
	1 - 2	1/28/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0
S-4	0 - 1	1/28/2016	In-Situ	**414**	<0.0200	**0.4204**	<50.0	92.1	**92.1**	**92.9**
	1 - 2	1/28/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	**30.5**
Area: Right of Way (AT&T)										
S-5	0 - 1	1/28/2016	In-Situ	**66**	--	--	530	<4.00	**530**	**37.2**
	1 - 2	1/28/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0
S-6	0 - 1	1/28/2016	In-Situ	**272**	<0.0200	**0.2609**	344	11.3	**355.3**	**148**
	1 - 2	1/28/2016	In-Situ	--	--	--	51.6	<4.00	**51.6**	**125**
S-7	0 - 1	1/28/2016	In-Situ	**1,078**	**0.568**	**87.468**	6,390	2,790	**9,180**	**73.2**
		4/26/2016	In-Situ	**--**	**--**	**--**	8,140	878	**9,018**	--
	1 - 2	1/28/2016	In-Situ	--	--	--	4,230	2,800	**7,030**	**50.9**
		4/26/2016	In-Situ	--	--	--	4,090	1,030	**5,120**	--
	2 - 3	2/18/2016	In-Situ	29	<0.0200	<0.0200	316	<50	**316**	**55.4**
	3 - 4	2/18/2016	In-Situ	20	<0.0200	<0.0200	<50.0	<4.00	<54.0	**27.7**
	4 - 5	2/18/2016	In-Situ	80	<0.0200	**0.1852**	<50.0	<4.00	<54.0	<25.0
	5 - 6	2/18/2016	In-Situ	9	--	--	<50.0	<4.00	<54.0	**36.6**
	6 - 7	2/18/2016	In-Situ	4	--	--	<50.0	<4.00	<54.0	**29.3**
	7 - 8	2/18/2016		2.6	--	--	--	--	--	
Area: Red Zone										
S-8	0 - 1	1/28/2016	In-Situ	**0.8**	--	--	<50.0	<4.00	<54.0	<25.0
	1 - 2	1/28/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0

Table 1
Soil Sample Analytical Data Summary
XTO Energy, Inc., Perla Negra #4 Well Release
Unit A (NE/4, NE/4), Section 25, Township 19 South, Range 34 East
Lea County, New Mexico
1RP-4049

S-9	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-10	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	**0.8** --	-- --	-- --	182 <50.0	<4.00 <4.00	**182** <54.0	<25.0 <25.0
S-11	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	252 <50.0	<4.00 <4.00	**252** <54.0	**28.7** <25.0
S-12	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	**0.8** --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-13	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-14	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-15	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-16	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	**0.8** --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-17	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-18	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
Area: Transition Zone										
S-19	0 - 1 1 - 2	1/28/2016 1/28/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0
S-20	0 - 1 1 - 2	1/29/2016 1/29/2016	In-Situ In-Situ	0.0 --	-- --	-- --	<50.0 <50.0	<4.00 <4.00	<54.0 <54.0	<25.0 <25.0

Table 1
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XTO Energy, Inc., Perla Negra #4 Well Release
Unit A (NE/4, NE/4), Section 25, Township 19 South, Range 34 East
Lea County, New Mexico
1RP-4049

S-21	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
	1 - 2	1/29/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0
S-22	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
	1 - 2	1/29/2016	In-Situ	--	--	--	<50.0	<4.00	<54.0	<25.0
Area: Green Zone										
Comp-1	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -2	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -3	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -4	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -5	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -6	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -7	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -8	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -9	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -10	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0
Comp -11	0 - 1	1/29/2016	In-Situ	0.0	--	--	<50.0	<4.00	<54.0	<25.0

Notes: Analysis performed by Trace Analysis, Inc., Midland and Lubbock by EPA SW-846 Method 8021B (BTEX), Method 8015M (TPH) and 300.0 (chloride)
Depth in feet below ground surface (bgs)
mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)
--: Sample not analyzed
RRAL: Recommended Remediation Action Level (RRAL) calculated from OCD guidance document (August 13, 1993)
*: Will be determined following boring for depth to groundwater
**: OCD delineation level

FIGURES

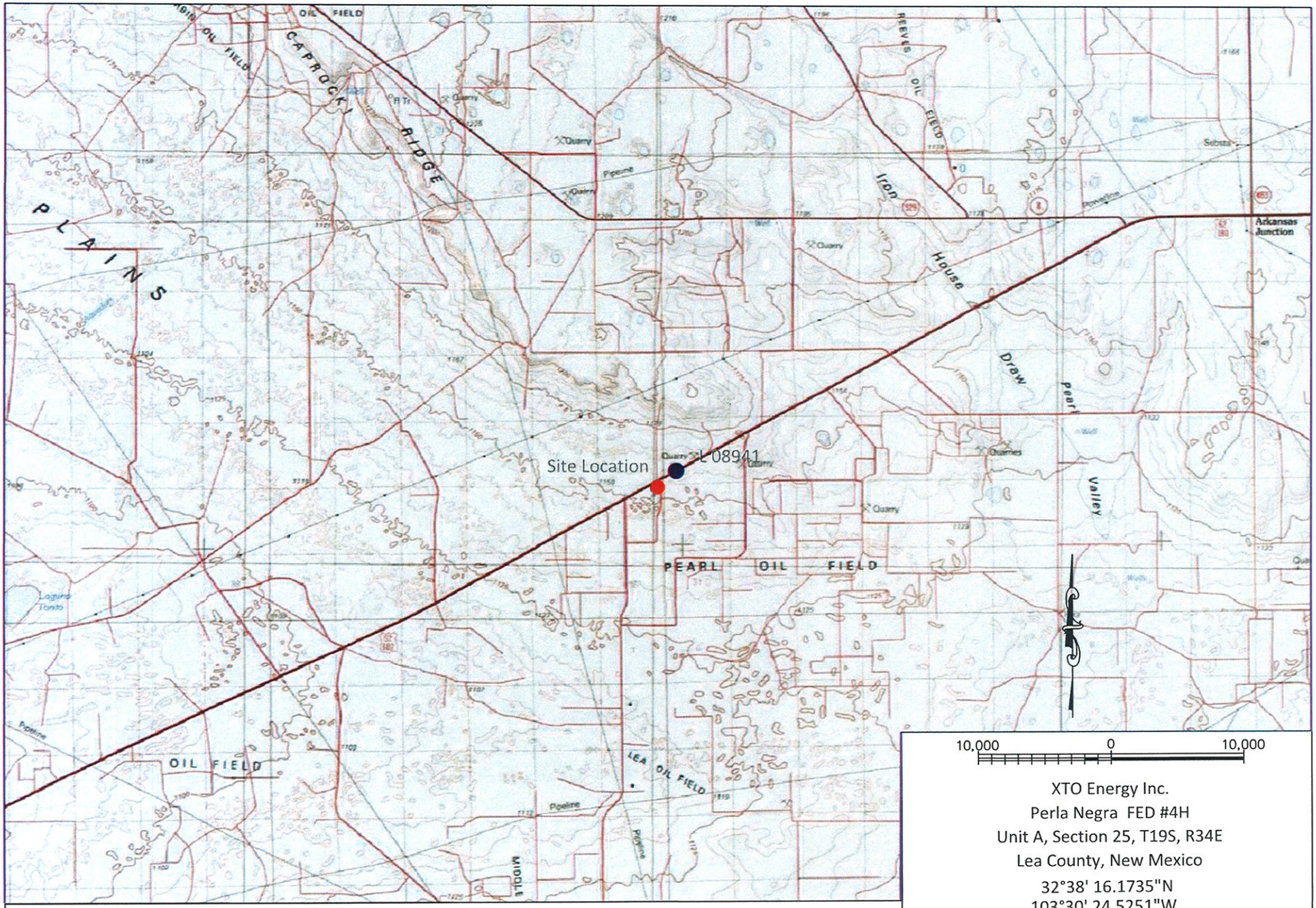

Figure 1 - Topographic Map

Figure 2 - Aerial Map

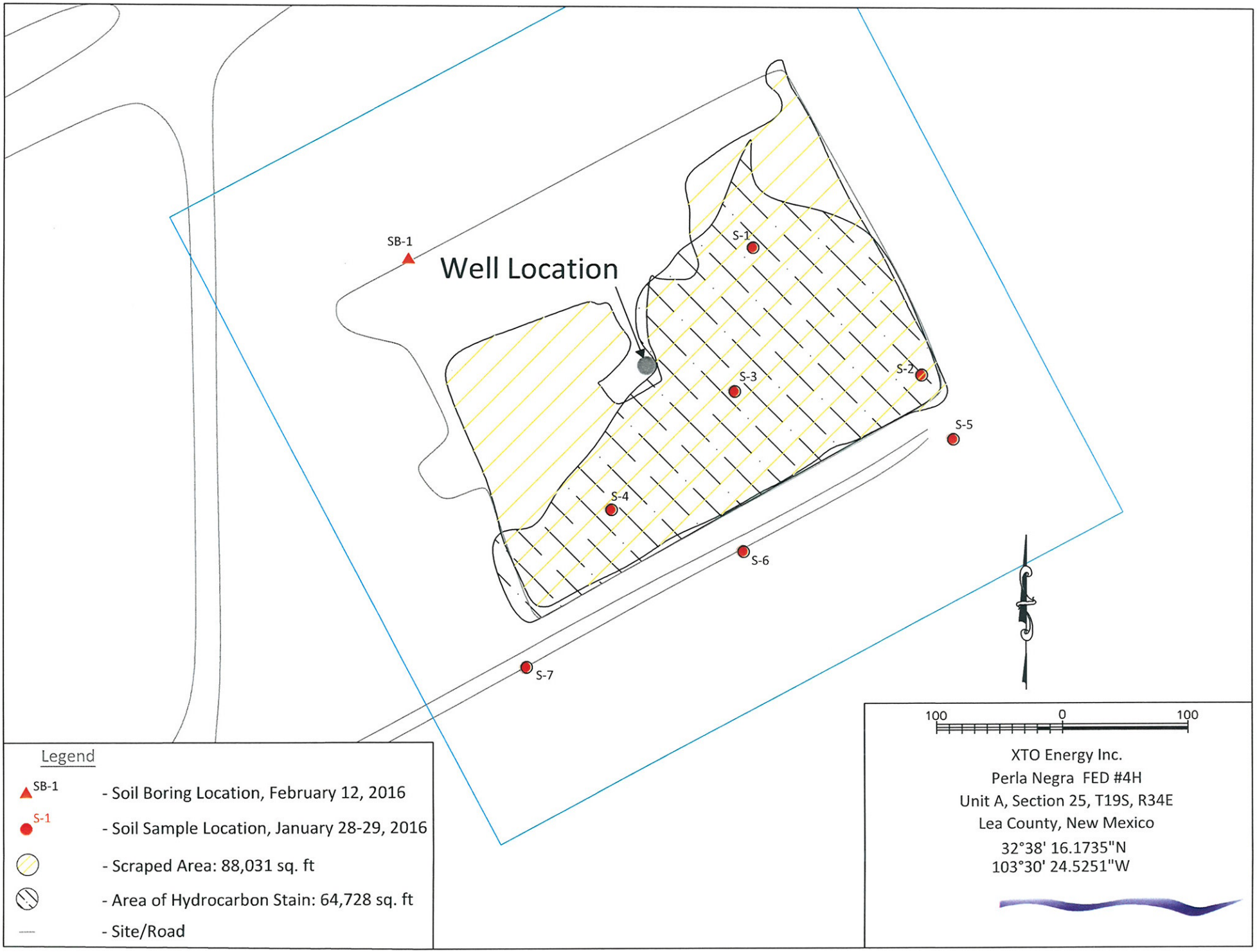

Figure 3 - Site Map

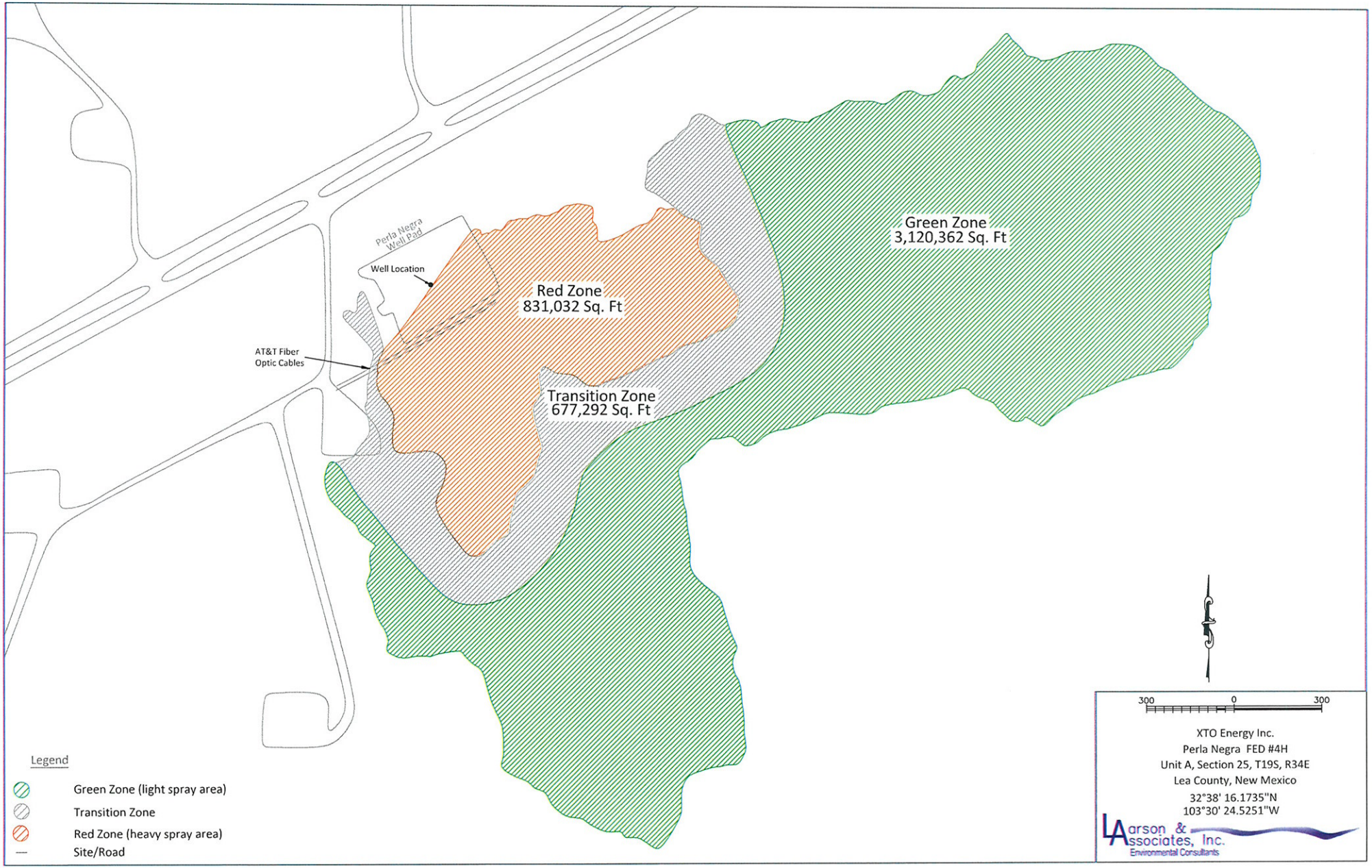

Figure 4 - Affected Area Map

Figure 5 - Treated Area Map

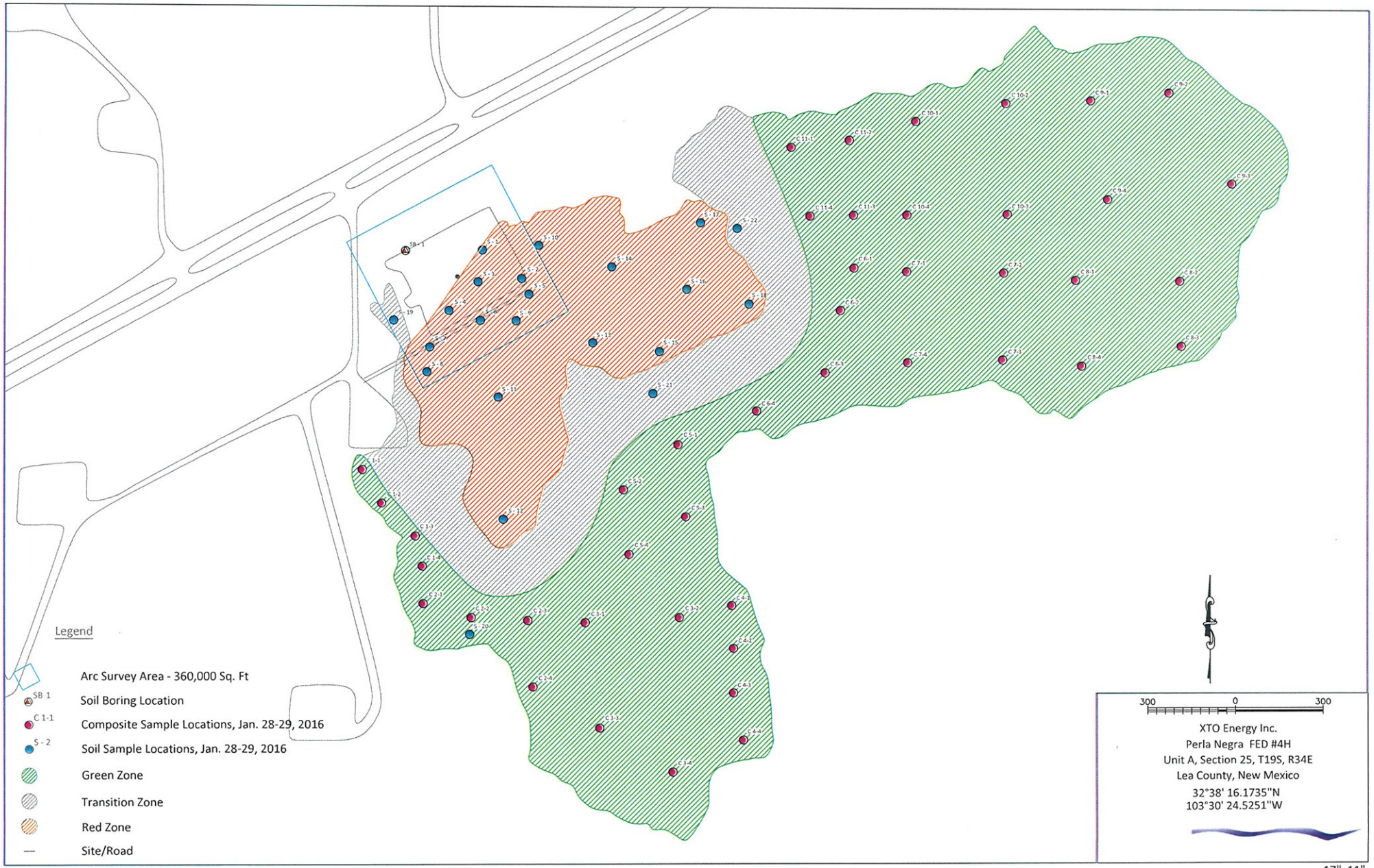

Figure 6 - Site Map Showing Soil Sample Locations and Proposed Soil Boring Location

17"x11"

APPENDIX A

Boring Log

BORING RECORD

GEOLOGIC UNIT	DEPTH	DESCRIPTION LITHOLOGIC	DESCRIPTION USCS	GRAPHIC LOG	PID READING (PPM X NA; 2 4 6 8 10 12 14 16 18)	SAMPLE NUMBER	SAMPLE PID READING	SAMPLE RECOVERY	SAMPLE DEPTH	REMARKS BACKGROUND PID READING (SOIL : ____ PPM; SOIL : ____ PPM)
	0	Sandy Topsoil, poorly sorted, 5 YR 5/6							0	10:38 MST
	5	Sand and Caliche Gravels, poorly sorted, 5 YR 8/3							4 5	
	10	very fine Sandy Caliche Gravel, poorly sorted, 5 YR 8/4	GM						9 10	
	15	very fine Sandy Caliche, poorly sorted, 5 YR 7/4							14 15	
	20	very fine Sand and Silt, some Sandstone Quartz, friable, 5 YR 6/6							19 20	
	25	very fine Sand and Silt, poorly sorted, some Sandstone Quartz, 5 YR 6/4							24 25	10:45
	30	Sandstone and Limestone Quartz, poorly sorted, pink, 5 YR 7/3	SM						29 30	11:16
	35	very fine Quartz Sandstone and Limestone, poorly sorted, reddish brown, 5 YR 6/4							34 35	
	40	very fine Quartz Sandstone and Limestone, poorly sorted, yellowish red, 5 YR 5/6							39 40	
	45	very fine Silty Sandy Clay, well sorted, reddish brown, 2.5 YR 5/6							44 45	
55.0' ▼	50	very fine Silty Sandy Clay, poorly sorted, red, 2.5 YR 5/6	CL						49 50	11:30
	55	Silty Clay, well sorted, plastic, 2.5 YR 4/4							54 55	
	60	Silty Clay with some Sand, well sorted, plastic 2.5 YR 4/6							59 60	
		Total Depth : 61.8								

ONE CONTINUOUS AUGER SAMPLER
STANDARD PENETRATION TEST
UNDISTURBED SAMPLE
WATER TABLE (24 HRS)
WATER TABLE (TIME OF BORING)
L LABORATORY TEST LOCATION
\+ PENETROMETER (TONS/ SQ. FT)
NR NO RECOVERY

JOB NUMBER : 15-0167-01 XTO Perla Negra #4
HOLE DIAMETER : 5"
LOCATION : Lea County, New Mexico
LA GEOLOGIST : MG
DRILLING CONTRACTOR : SDC
DRILLING METHOD : Air Rotary

Larson & Associates, Inc. Environmental Consultants

DRILL DATE: 02/19/2016

BORING NUMBER: SB - 1

Appendix B

Laboratory Reports

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Mark Larson
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: February 11, 2016

Work Order: 16020113

Project Name: XTO Perla Negra
Project Number: 15-0167-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
413223	S-1 (0-1)	soil	2016-01-28	11:15	2016-02-01
413224	S-1 (1-2)	soil	2016-01-28	11:15	2016-02-01
413226	S-2 (0-1)	soil	2016-01-28	10:50	2016-02-01
413227	S-2 (1-2)	soil	2016-01-28	10:50	2016-02-01
413229	S-3 (0-1)	soil	2016-01-28	11:25	2016-02-01
413230	S-3 (1-2)	soil	2016-01-28	11:25	2016-02-01
413232	S-4 (0-1)	soil	2016-01-28	11:30	2016-02-01
413233	S-4 (1-2)	soil	2016-01-28	11:30	2016-02-01
413235	S-5 (0-1)	soil	2016-01-28	11:25	2016-02-01
413236	S-5 (1-2)	soil	2016-01-28	11:30	2016-02-01
413238	S-6 (0-1)	soil	2016-01-28	12:00	2016-02-01
413239	S-6 (1-2)	soil	2016-01-28	12:05	2016-02-01
413241	S-7 (0-1)	soil	2016-01-28	12:30	2016-02-01
413242	S-7 (1-2)	soil	2016-01-28	12:45	2016-02-01
413244	S-8 (0-1)	soil	2016-01-28	14:05	2016-02-01
413245	S-8 (1-2)	soil	2016-01-28	14:10	2016-02-01
413247	S-9 (0-1)	soil	2016-01-28	14:25	2016-02-01
413248	S-9 (1-2)	soil	2016-01-28	14:30	2016-02-01

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
413250	S-10 (0-1)	soil	2016-01-28	15:30	2016-02-01
413251	S-10 (1-2)	soil	2016-01-28	15:35	2016-02-01
413253	S-11 (0-1)	soil	2016-01-28	14:45	2016-02-01
413254	S-11 (1-2)	soil	2016-01-28	14:50	2016-02-01
413256	S-12 (0-1)	soil	2016-01-28	15:05	2016-02-01
413257	S-12 (1-2)	soil	2016-01-28	15:10	2016-02-01
413259	S-13 (0-1)	soil	2016-01-28	17:00	2016-02-01
413260	S-13 (1-2)	soil	2016-01-28	17:05	2016-02-01
413262	S-14 (0-1)	soil	2016-01-28	15:55	2016-02-01
413263	S-14 (1-2)	soil	2016-01-28	16:00	2016-02-01
413265	S-15 (0-1)	soil	2016-01-28	16:50	2016-02-01
413266	S-15 (1-2)	soil	2016-01-28	16:53	2016-02-01
413268	S-16 (0-1)	soil	2016-01-28	16:40	2016-02-01
413269	S-16 (1-2)	soil	2016-01-28	16:42	2016-02-01
413271	S-17 (0-1)	soil	2016-01-28	16:10	2016-02-01
413272	S-17 (1-2)	soil	2016-01-28	16:15	2016-02-01
413274	S-18 (0-1)	soil	2016-01-28	16:25	2016-02-01
413275	S-18 (1-2)	soil	2016-01-28	16:30	2016-02-01
413277	S-19 (0-1)	soil	2016-01-28	13:20	2016-02-01
413278	S-19 (1-2)	soil	2016-01-28	13:22	2016-02-01
413280	S-20 (0-1)	soil	2016-01-29	09:15	2016-02-01
413281	S-20 (1-2)	soil	2016-01-29	09:17	2016-02-01
413283	S-21 (0-1)	soil	2016-01-29	10:45	2016-02-01
413284	S-21 (1-2)	soil	2016-01-29	10:47	2016-02-01
413286	S-22 (0-1)	soil	2016-01-29	11:30	2016-02-01
413287	S-22 (1-2)	soil	2016-01-29	11:32	2016-02-01
413289	Comp-1	soil	2016-01-29	13:40	2016-02-01
413290	Comp-2	soil	2016-01-29	09:45	2016-02-01
413291	Comp-3	soil	2016-01-29	10:05	2016-02-01
413292	Comp-4	soil	2016-01-29	10:20	2016-02-01
413293	Comp-5	soil	2016-01-29	10:35	2016-02-01
413294	Comp-6	soil	2016-01-29	13:00	2016-02-01
413295	Comp-7	soil	2016-01-29	12:50	2016-02-01
413296	Comp-8	soil	2016-01-29	12:40	2016-02-01
413297	Comp-9	soil	2016-01-29	12:25	2016-02-01
413298	Comp-10	soil	2016-01-29	12:05	2016-02-01
413299	Comp-11	soil	2016-01-29	11:50	2016-02-01

Notes

- **Work Order 16020113:** Run (0-1) and (1-2). Hold (2-3)

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.

This report consists of a total of 95 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

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Case Narrative

Samples for project XTO Perla Negra were received by TraceAnalysis, Inc. on 2016-02-01 and assigned to work order 16020113. Samples for work order 16020113 were received intact at a temperature of 4.9 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	108265	2016-02-01 at 13:17	127934	2016-02-02 at 18:00
Chloride (IC)	E 300.0	108347	2016-02-02 at 13:15	127956	2016-02-03 at 14:21
Chloride (IC)	E 300.0	108348	2016-02-02 at 13:15	127958	2016-02-03 at 14:21
Chloride (IC)	E 300.0	108349	2016-02-02 at 13:15	127960	2016-02-03 at 14:21
Chloride (IC)	E 300.0	108454	2016-02-02 at 13:15	128089	2016-02-09 at 16:56
Chloride (IC)	E 300.0	108456	2016-02-02 at 13:15	128090	2016-02-09 at 16:56
Chloride (IC)	E 300.0	108471	2016-02-03 at 11:45	128108	2016-02-10 at 09:35
TPH DRO	S 8015 D	108331	2016-02-03 at 16:17	127965	2016-02-04 at 10:49
TPH DRO	S 8015 D	108338	2016-02-04 at 08:38	127968	2016-02-04 at 11:17
TPH DRO	S 8015 D	108373	2016-02-05 at 08:49	127998	2016-02-05 at 10:37
TPH GRO	S 8015 D	108314	2016-02-02 at 15:00	127937	2016-02-03 at 13:28
TPH GRO	S 8015 D	108328	2016-02-03 at 14:44	127948	2016-02-04 at 08:06
TPH GRO	S 8015 D	108337	2016-02-04 at 08:25	127990	2016-02-05 at 08:08

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 16020113 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 413223 - S-1 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	**39.6**	mg/Kg	1	25.0

Sample: 413223 - S-1 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			45.7	mg/Kg	1	50.0	91	70 - 130

Sample: 413223 - S-1 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.63	mg/Kg	1	2.00	82	70 - 130

continued ...

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-Bromofluorobenzene (4-BFB)			1.58	mg/Kg	1	2.00	79	70 - 130

Sample: 413224 - S-1 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413224 - S-1 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			45.8	mg/Kg	1	50.0	92	70 - 130

Sample: 413224 - S-1 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	70 - 130

Sample: 413226 - S-2 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	**31.5**	mg/Kg	1	25.0

Sample: 413226 - S-2 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			45.6	mg/Kg	1	50.0	91	70 - 130

Sample: 413226 - S-2 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	70 - 130

Sample: 413227 - S-2 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413227 - S-2 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.4	mg/Kg	1	50.0	89	70 - 130

Sample: 413227 - S-2 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.97	mg/Kg	1	2.00	98	70 - 130

Sample: 413229 - S-3 (0-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	127934	Date Analyzed:	2016-02-02	Analyzed By:	AK
Prep Batch:	108265	Sample Preparation:	2016-02-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	3	<0.0200	mg/Kg	1	0.0200
Toluene		3	**0.337**	mg/Kg	1	0.0200
Ethylbenzene		3	**0.305**	mg/Kg	1	0.0200
Xylene	Je	3	**2.38**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	70 - 130
4-Bromofluorobenzene (4-BFB)			2.55	mg/Kg	1	2.00	128	70 - 130

Sample: 413229 - S-3 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	**1800**	mg/Kg	5	25.0

Sample: 413229 - S-3 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	**478**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		67.1	mg/Kg	1	50.0	134	70 - 130

Sample: 413229 - S-3 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		3	**132**	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.29	mg/Kg	2	4.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr Qsr		6.49	mg/Kg	2	4.00	162	70 - 130

Sample: 413230 - S-3 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413230 - S-3 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			49.1	mg/Kg	1	50.0	98	70 - 130

Sample: 413230 - S-3 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 413232 - S-4 (0-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	127934	Date Analyzed:	2016-02-02	Analyzed By:	AK
Prep Batch:	108265	Sample Preparation:	2016-02-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	3	<0.0200	mg/Kg	1	0.0200
Toluene		3	**0.0473**	mg/Kg	1	0.0200
Ethylbenzene		3	**0.0781**	mg/Kg	1	0.0200
Xylene		3	**0.295**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.55	mg/Kg	1	2.00	78	70 - 130
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	70 - 130

Sample: 413232 - S-4 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	**92.9**	mg/Kg	1	25.0

Sample: 413232 - S-4 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.3	mg/Kg	1	50.0	95	70 - 130

Sample: 413232 - S-4 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		3	**92.1**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3.62	mg/Kg	1	2.00	181	70 - 130

Sample: 413233 - S-4 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	**30.5**	mg/Kg	1	25.0

Sample: 413233 - S-4 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.3	mg/Kg	1	50.0	95	70 - 130

Sample: 413233 - S-4 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	70 - 130

Sample: 413235 - S-5 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	**37.2**	mg/Kg	1	25.0

Sample: 413235 - S-5 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	**530**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	68.9	mg/Kg	1	50.0	138	70 - 130

Sample: 413235 - S-5 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.69	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			2.38	mg/Kg	1	2.00	119	70 - 130

Sample: 413236 - S-5 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127956	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108347	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413236 - S-5 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.6	mg/Kg	1	50.0	95	70 - 130

Sample: 413236 - S-5 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.58	mg/Kg	1	2.00	79	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Sample: 413238 - S-6 (0-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	127934	Date Analyzed:	2016-02-02	Analyzed By:	AK
Prep Batch:	108265	Sample Preparation:	2016-02-01	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	3	<0.0200	mg/Kg	1	0.0200
Toluene		3	<0.0200	mg/Kg	1	0.0200
Ethylbenzene		3	**0.0229**	mg/Kg	1	0.0200
Xylene		3	**0.238**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.59	mg/Kg	1	2.00	80	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Sample: 413238 - S-6 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	**148**	mg/Kg	1	25.0

Sample: 413238 - S-6 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		3	**344**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			61.3	mg/Kg	1	50.0	123	70 - 130

Sample: 413238 - S-6 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO		3		**11.3**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			2.30	mg/Kg	1	2.00	115	70 - 130

Sample: 413239 - S-6 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Chloride		1,2,4		**125**	mg/Kg	1	25.0

Sample: 413239 - S-6 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
DRO		3		**51.6**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			49.9	mg/Kg	1	50.0	100	70 - 130

Sample: 413239 - S-6 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.45	mg/Kg	1	2.00	72	70 - 130
4-Bromofluorobenzene (4-BFB)			2.21	mg/Kg	1	2.00	110	70 - 130

Sample: 413241 - S-7 (0-1)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	127934	Date Analyzed:	2016-02-02	Analyzed By:	AK
Prep Batch:	108265	Sample Preparation:	2016-02-01	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		3	**0.568**	mg/Kg	2	0.0200
Toluene		3	**13.1**	mg/Kg	2	0.0200
Ethylbenzene	Jc	3	**19.4**	mg/Kg	2	0.0200
Xylene	Jc	3	**54.4**	mg/Kg	2	0.0200

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr		2.66	mg/Kg	2	4.00	66	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		17.2	mg/Kg	2	4.00	430	70 - 130

Sample: 413241 - S-7 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	**73.2**	mg/Kg	1	25.0

Sample: 413241 - S-7 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	**6390**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	262	mg/Kg	5	50.0	524	70 - 130

Sample: 413241 - S-7 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		3	**2790**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			75.4	mg/Kg	50	100	75	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	134	mg/Kg	50	100	134	70 - 130

Sample: 413242 - S-7 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	**50.9**	mg/Kg	1	25.0

Sample: 413242 - S-7 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	**4230**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	190	mg/Kg	5	50.0	380	70 - 130

Sample: 413242 - S-7 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		3	**2800**	mg/Kg	50	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			81.4	mg/Kg	50	100	81	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	132	mg/Kg	50	100	132	70 - 130

Sample: 413244 - S-8 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413244 - S-8 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			51.9	mg/Kg	1	50.0	104	70 - 130

Sample: 413244 - S-8 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.42	mg/Kg	1	2.00	71	70 - 130
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70 - 130

Sample: 413245 - S-8 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413245 - S-8 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.8	mg/Kg	1	50.0	90	70 - 130

Sample: 413245 - S-8 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.66	mg/Kg	1	2.00	83	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 413247 - S-9 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413247 - S-9 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			41.5	mg/Kg	1	50.0	83	70 - 130

Sample: 413247 - S-9 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 413248 - S-9 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413248 - S-9 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			41.5	mg/Kg	1	50.0	83	70 - 130

Sample: 413248 - S-9 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	70 - 130

Sample: 413250 - S-10 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413250 - S-10 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127965	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108331	Sample Preparation:	2016-02-03	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	**182**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			59.6	mg/Kg	1	50.0	119	70 - 130

Sample: 413250 - S-10 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.63	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.78	mg/Kg	1	2.00	89	70 - 130

Sample: 413251 - S-10 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127958	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108348	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413251 - S-10 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			51.4	mg/Kg	1	50.0	103	70 - 130

Sample: 413251 - S-10 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127937	Date Analyzed:	2016-02-03	Analyzed By:	AK
Prep Batch:	108314	Sample Preparation:	2016-02-02	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 413253 - S-11 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	**28.7**	mg/Kg	1	25.0

Sample: 413253 - S-11 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	**252**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		71.0	mg/Kg	1	50.0	142	70 - 130

Sample: 413253 - S-11 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.52	mg/Kg	1	2.00	76	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Sample: 413254 - S-11 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413254 - S-11 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			48.5	mg/Kg	1	50.0	97	70 - 130

Sample: 413254 - S-11 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70 - 130

Sample: 413256 - S-12 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413256 - S-12 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.9	mg/Kg	1	50.0	90	70 - 130

Sample: 413256 - S-12 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	1.34	mg/Kg	1	2.00	67	70 - 130
4-Bromofluorobenzene (4-BFB)			1.47	mg/Kg	1	2.00	74	70 - 130

Sample: 413257 - S-12 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413257 - S-12 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			53.6	mg/Kg	1	50.0	107	70 - 130

Sample: 413257 - S-12 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	70 - 130

Sample: 413259 - S-13 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413259 - S-13 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			52.6	mg/Kg	1	50.0	105	70 - 130

Sample: 413259 - S-13 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	70 - 130
4-Bromofluorobenzene (4-BFB)			1.76	mg/Kg	1	2.00	88	70 - 130

Sample: 413260 - S-13 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413260 - S-13 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.4	mg/Kg	1	50.0	95	70 - 130

Sample: 413260 - S-13 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.63	mg/Kg	1	2.00	82	70 - 130

Sample: 413262 - S-14 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413262 - S-14 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			51.8	mg/Kg	1	50.0	104	70 - 130

Sample: 413262 - S-14 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.69	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Sample: 413263 - S-14 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413263 - S-14 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.2	mg/Kg	1	50.0	94	70 - 130

Sample: 413263 - S-14 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.69	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.82	mg/Kg	1	2.00	91	70 - 130

Sample: 413265 - S-15 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413265 - S-15 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.4	mg/Kg	1	50.0	89	70 - 130

Sample: 413265 - S-15 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.57	mg/Kg	1	2.00	78	70 - 130
4-Bromofluorobenzene (4-BFB)			1.80	mg/Kg	1	2.00	90	70 - 130

Sample: 413266 - S-15 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	127960	Date Analyzed:	2016-02-03	Analyzed By:	RL
Prep Batch:	108349	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413266 - S-15 (1-2)

Laboratory: Midland
Analysis: TPH DRO
QC Batch: 127968
Prep Batch: 108338

Analytical Method: S 8015 D
Date Analyzed: 2016-02-04
Sample Preparation: 2016-02-04

Prep Method: N/A
Analyzed By: JL
Prepared By: JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			46.9	mg/Kg	1	50.0	94	70 - 130

Sample: 413266 - S-15 (1-2)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 127948
Prep Batch: 108328

Analytical Method: S 8015 D
Date Analyzed: 2016-02-04
Sample Preparation: 2016-02-03

Prep Method: S 5035
Analyzed By: AK
Prepared By: AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Sample: 413268 - S-16 (0-1)

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 128089
Prep Batch: 108454

Analytical Method: E 300.0
Date Analyzed: 2016-02-09
Sample Preparation:

Prep Method: N/A
Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413268 - S-16 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			50.2	mg/Kg	1	50.0	100	70 - 130

Sample: 413268 - S-16 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.89	mg/Kg	1	2.00	94	70 - 130

Sample: 413269 - S-16 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413269 - S-16 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			46.5	mg/Kg	1	50.0	93	70 - 130

Sample: 413269 - S-16 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Sample: 413271 - S-17 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413271 - S-17 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			53.5	mg/Kg	1	50.0	107	70 - 130

Sample: 413271 - S-17 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.71	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 413272 - S-17 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413272 - S-17 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			54.9	mg/Kg	1	50.0	110	70 - 130

Sample: 413272 - S-17 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	70 - 130

Sample: 413274 - S-18 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413274 - S-18 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			46.4	mg/Kg	1	50.0	93	70 - 130

Sample: 413274 - S-18 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Sample: 413275 - S-18 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413275 - S-18 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			49.4	mg/Kg	1	50.0	99	70 - 130

Sample: 413275 - S-18 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.88	mg/Kg	1	2.00	94	70 - 130

Sample: 413277 - S-19 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128089	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108454	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413277 - S-19 (0-1)

Laboratory: Midland
Analysis: TPH DRO
QC Batch: 127968
Prep Batch: 108338
Analytical Method: S 8015 D
Date Analyzed: 2016-02-04
Sample Preparation: 2016-02-04
Prep Method: N/A
Analyzed By: JL
Prepared By: JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			51.8	mg/Kg	1	50.0	104	70 - 130

Sample: 413277 - S-19 (0-1)

Laboratory: Midland
Analysis: TPH GRO
QC Batch: 127948
Prep Batch: 108328
Analytical Method: S 8015 D
Date Analyzed: 2016-02-04
Sample Preparation: 2016-02-03
Prep Method: S 5035
Analyzed By: AK
Prepared By: AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Sample: 413278 - S-19 (1-2)

Laboratory: Lubbock
Analysis: Chloride (IC)
QC Batch: 128089
Prep Batch: 108454
Analytical Method: E 300.0
Date Analyzed: 2016-02-09
Sample Preparation:
Prep Method: N/A
Analyzed By: RL
Prepared By: RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413278 - S-19 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127968	Date Analyzed:	2016-02-04	Analyzed By:	JL
Prep Batch:	108338	Sample Preparation:	2016-02-04	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			52.0	mg/Kg	1	50.0	104	70 - 130

Sample: 413278 - S-19 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Sample: 413280 - S-20 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413280 - S-20 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			40.1	mg/Kg	1	50.0	80	70 - 130

Sample: 413280 - S-20 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.74	mg/Kg	1	2.00	87	70 - 130
4-Bromofluorobenzene (4-BFB)			1.91	mg/Kg	1	2.00	96	70 - 130

Sample: 413281 - S-20 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413281 - S-20 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.9	mg/Kg	1	50.0	90	70 - 130

Sample: 413281 - S-20 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127948	Date Analyzed:	2016-02-04	Analyzed By:	AK
Prep Batch:	108328	Sample Preparation:	2016-02-03	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 413283 - S-21 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413283 - S-21 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			45.7	mg/Kg	1	50.0	91	70 - 130

Sample: 413283 - S-21 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.40	mg/Kg	1	2.00	70	70 - 130
4-Bromofluorobenzene (4-BFB)	[1] Qsr	Qsr	1.17	mg/Kg	1	2.00	58	70 - 130

Sample: 413284 - S-21 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413284 - S-21 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.2	mg/Kg	1	50.0	94	70 - 130

Sample: 413284 - S-21 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.50	mg/Kg	1	2.00	75	70 - 130
4-Bromofluorobenzene (4-BFB)	2 Qsr	Qsr	1.37	mg/Kg	1	2.00	68	70 - 130

Sample: 413286 - S-22 (0-1)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413286 - S-22 (0-1)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.5	mg/Kg	1	50.0	95	70 - 130

Sample: 413286 - S-22 (0-1)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.44	mg/Kg	1	2.00	72	70 - 130
4-Bromofluorobenzene (4-BFB)	3 Qsr	Qsr	1.37	mg/Kg	1	2.00	68	70 - 130

Sample: 413287 - S-22 (1-2)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413287 - S-22 (1-2)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			45.7	mg/Kg	1	50.0	91	70 - 130

Sample: 413287 - S-22 (1-2)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.50	mg/Kg	1	2.00	75	70 - 130
4-Bromofluorobenzene (4-BFB)			1.40	mg/Kg	1	2.00	70	70 - 130

Sample: 413289 - Comp-1

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413289 - Comp-1

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.8	mg/Kg	1	50.0	90	70 - 130

Sample: 413289 - Comp-1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.48	mg/Kg	1	2.00	74	70 - 130

Sample: 413290 - Comp-2

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413290 - Comp-2

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			50.9	mg/Kg	1	50.0	102	70 - 130

Sample: 413290 - Comp-2

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.47	mg/Kg	1	2.00	74	70 - 130
4-Bromofluorobenzene (4-BFB)	[4] Qsr	Qsr	1.17	mg/Kg	1	2.00	58	70 - 130

Sample: 413291 - Comp-3

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413291 - Comp-3

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			48.5	mg/Kg	1	50.0	97	70 - 130

Sample: 413291 - Comp-3

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.62	mg/Kg	1	2.00	81	70 - 130
4-Bromofluorobenzene (4-BFB)			1.39	mg/Kg	1	2.00	70	70 - 130

Sample: 413292 - Comp-4

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128090	Date Analyzed:	2016-02-09	Analyzed By:	RL
Prep Batch:	108456	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413292 - Comp-4

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.7	mg/Kg	1	50.0	95	70 - 130

Sample: 413292 - Comp-4

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.67	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)			1.40	mg/Kg	1	2.00	70	70 - 130

Sample: 413293 - Comp-5

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413293 - Comp-5

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.9	mg/Kg	1	50.0	90	70 - 130

Sample: 413293 - Comp-5

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.55	mg/Kg	1	2.00	78	70 - 130

Sample: 413294 - Comp-6

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413294 - Comp-6

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.9	mg/Kg	1	50.0	90	70 - 130

Sample: 413294 - Comp-6

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.56	mg/Kg	1	2.00	78	70 - 130

Sample: 413295 - Comp-7

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	U	1,2,3	<25.0	mg/Kg	1	25.0

Sample: 413295 - Comp-7

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			48.9	mg/Kg	1	50.0	98	70 - 130

Sample: 413295 - Comp-7

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.44	mg/Kg	1	2.00	72	70 - 130

Sample: 413296 - Comp-8

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413296 - Comp-8

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			41.1	mg/Kg	1	50.0	82	70 - 130

Sample: 413296 - Comp-8

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.48	mg/Kg	1	2.00	74	70 - 130

Sample: 413297 - Comp-9

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413297 - Comp-9

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			45.2	mg/Kg	1	50.0	90	70 - 130

Sample: 413297 - Comp-9

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.70	mg/Kg	1	2.00	85	70 - 130
4-Bromofluorobenzene (4-BFB)			1.47	mg/Kg	1	2.00	74	70 - 130

Sample: 413298 - Comp-10

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413298 - Comp-10

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			48.2	mg/Kg	1	50.0	96	70 - 130

Sample: 413298 - Comp-10

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.68	mg/Kg	1	2.00	84	70 - 130
4-Bromofluorobenzene (4-BFB)	5 Qsr	Qsr	1.30	mg/Kg	1	2.00	65	70 - 130

Sample: 413299 - Comp-11

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128108	Date Analyzed:	2016-02-10	Analyzed By:	RL
Prep Batch:	108471	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1,2,4	<25.0	mg/Kg	1	25.0

Sample: 413299 - Comp-11

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	127998	Date Analyzed:	2016-02-05	Analyzed By:	JL
Prep Batch:	108373	Sample Preparation:	2016-02-05	Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Qr,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			44.2	mg/Kg	1	50.0	88	70 - 130

Sample: 413299 - Comp-11

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	127990	Date Analyzed:	2016-02-05	Analyzed By:	AK
Prep Batch:	108337	Sample Preparation:	2016-02-04	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qr,Qs,U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.64	mg/Kg	1	2.00	82	70 - 130

Method Blanks

Method Blank (1) QC Batch: 127934

QC Batch: 127934 | Date Analyzed: 2016-02-02 | Analyzed By: AK
Prep Batch: 108265 | QC Preparation: 2016-02-01 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		3	<0.0100	mg/Kg	0.02
Toluene		3	<0.0156	mg/Kg	0.02
Ethylbenzene		3	<0.0151	mg/Kg	0.02
Xylene		3	<0.00430	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.74	mg/Kg	1	2.00	87	70 - 130

Method Blank (1) QC Batch: 127937

QC Batch: 127937 | Date Analyzed: 2016-02-03 | Analyzed By: AK
Prep Batch: 108314 | QC Preparation: 2016-02-02 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		3	<1.76	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 127948

QC Batch: 127948 | Date Analyzed: 2016-02-04 | Analyzed By: AK
Prep Batch: 108328 | QC Preparation: 2016-02-03 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		3	<1.76	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.65	mg/Kg	1	2.00	82	70 - 130
4-Bromofluorobenzene (4-BFB)			1.96	mg/Kg	1	2.00	98	70 - 130

Method Blank (1) QC Batch: 127956

QC Batch: 127956 | Date Analyzed: 2016-02-03 | Analyzed By: RL
Prep Batch: 108347 | QC Preparation: 2016-02-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 127958

QC Batch: 127958 | Date Analyzed: 2016-02-03 | Analyzed By: RL
Prep Batch: 108348 | QC Preparation: 2016-02-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 127960

QC Batch: 127960 | Date Analyzed: 2016-02-03 | Analyzed By: RL
Prep Batch: 108349 | QC Preparation: 2016-02-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 127965

QC Batch: 127965 Date Analyzed: 2016-02-04 Analyzed By: JL
Prep Batch: 108331 QC Preparation: 2016-02-03 Prepared By: JL

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		3	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			46.5	mg/Kg	1	50.0	93	70 - 130

Method Blank (1) QC Batch: 127968

QC Batch: 127968 Date Analyzed: 2016-02-04 Analyzed By: JL
Prep Batch: 108338 QC Preparation: 2016-02-04 Prepared By: JL

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		3	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.8	mg/Kg	1	50.0	96	70 - 130

Method Blank (1) QC Batch: 127990

QC Batch: 127990 Date Analyzed: 2016-02-05 Analyzed By: AK
Prep Batch: 108337 QC Preparation: 2016-02-04 Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		3	<1.76	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.72	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.63	mg/Kg	1	2.00	82	70 - 130

Method Blank (1) QC Batch: 127998

QC Batch: 127998 | Date Analyzed: 2016-02-05 | Analyzed By: JL
Prep Batch: 108373 | QC Preparation: 2016-02-05 | Prepared By: JL

Parameter	Flag	Cert	MDL Result	Units	RL
DRO	B	B	3	7.78	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			48.4	mg/Kg	1	50.0	97	70 - 130

Method Blank (1) QC Batch: 128089

QC Batch: 128089 | Date Analyzed: 2016-02-09 | Analyzed By: RL
Prep Batch: 108454 | QC Preparation: 2016-02-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 128090

QC Batch: 128090 | Date Analyzed: 2016-02-09 | Analyzed By: RL
Prep Batch: 108456 | QC Preparation: 2016-02-02 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 128108

QC Batch: 128108 | Date Analyzed: 2016-02-10 | Analyzed By: RL
Prep Batch: 108471 | QC Preparation: 2016-02-03 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 127934
Prep Batch: 108265

Date Analyzed: 2016-02-02
QC Preparation: 2016-02-01

Analyzed By: AK
Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		3	1.89	mg/Kg	1	2.00	<0.0100	94	70 - 130
Toluene		3	1.76	mg/Kg	1	2.00	<0.0156	88	70 - 130
Ethylbenzene		3	1.74	mg/Kg	1	2.00	<0.0151	87	70 - 130
Xylene		3	5.15	mg/Kg	1	6.00	<0.00430	86	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		3	1.91	mg/Kg	1	2.00	<0.0100	96	70 - 130	1	20
Toluene		3	1.78	mg/Kg	1	2.00	<0.0156	89	70 - 130	1	20
Ethylbenzene		3	1.73	mg/Kg	1	2.00	<0.0151	86	70 - 130	1	20
Xylene		3	5.24	mg/Kg	1	6.00	<0.00430	87	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.57	1.67	mg/Kg	1	2.00	78	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.70	1.79	mg/Kg	1	2.00	85	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 127937
Prep Batch: 108314

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: AK
Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		3	19.8	mg/Kg	1	20.0	<1.76	99	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		3	20.5	mg/Kg	1	20.0	<1.76	102	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.72	1.71	mg/Kg	1	2.00	86	86	70 - 130
4-Bromofluorobenzene (4-BFB)	1.82	1.80	mg/Kg	1	2.00	91	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 127948
Prep Batch: 108328

Date Analyzed: 2016-02-04
QC Preparation: 2016-02-03

Analyzed By: AK
Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		3	23.9	mg/Kg	1	20.0	<1.76	120	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		3	21.0	mg/Kg	1	20.0	<1.76	105	70 - 130	13	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.69	1.59	mg/Kg	1	2.00	84	80	70 - 130
4-Bromofluorobenzene (4-BFB)	1.89	1.64	mg/Kg	1	2.00	94	82	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 127956
Prep Batch: 108347

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: RL
Prepared By: RL

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	256	mg/Kg	1	250	<8.34	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	255	mg/Kg	1	250	<8.34	102	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 127958
Prep Batch: 108348

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	256	mg/Kg	1	250	<8.34	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	259	mg/Kg	1	250	<8.34	104	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 127960
Prep Batch: 108349

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	263	mg/Kg	1	250	<8.34	105	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	260	mg/Kg	1	250	<8.34	104	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 127965
Prep Batch: 108331

Date Analyzed: 2016-02-04
QC Preparation: 2016-02-03

Analyzed By: JL
Prepared By: JL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	263	mg/Kg	1	250	<7.41	105	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	250	mg/Kg	1	250	<7.41	100	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	52.1	51.0	mg/Kg	1	50.0	104	102	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 127968
Prep Batch: 108338

Date Analyzed: 2016-02-04
QC Preparation: 2016-02-04

Analyzed By: JL
Prepared By: JL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	245	mg/Kg	1	250	<7.41	98	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	268	mg/Kg	1	250	<7.41	107	70 - 130	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	50.1	54.2	mg/Kg	1	50.0	100	108	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 127990
Prep Batch: 108337

Date Analyzed: 2016-02-05
QC Preparation: 2016-02-04

Analyzed By: AK
Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		3	21.4	mg/Kg	1	20.0	<1.76	107	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		3	23.7	mg/Kg	1	20.0	<1.76	118	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.72	1.75	mg/Kg	1	2.00	86	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	1.91	mg/Kg	1	2.00	93	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 127998
Prep Batch: 108373

Date Analyzed: 2016-02-05
QC Preparation: 2016-02-05

Analyzed By: JL
Prepared By: JL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	264	mg/Kg	1	250	7.78	102	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	255	mg/Kg	1	250	7.78	99	70 - 130	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued . . .

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	52.6	50.6	mg/Kg	1	50.0	105	101	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 128089 | Date Analyzed: 2016-02-09 | Analyzed By: RL
Prep Batch: 108454 | QC Preparation: 2016-02-02 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	257	mg/Kg	1	250	<8.34	103	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	255	mg/Kg	1	250	<8.34	102	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 128090 | Date Analyzed: 2016-02-09 | Analyzed By: RL
Prep Batch: 108456 | QC Preparation: 2016-02-02 | Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	271	mg/Kg	1	250	<8.34	108	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	267	mg/Kg	1	250	<8.34	107	90 - 110	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 128108
Prep Batch: 108471

Date Analyzed: 2016-02-10
QC Preparation: 2016-02-03

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	254	mg/Kg	1	250	<8.34	102	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	254	mg/Kg	1	250	<8.34	102	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 413176

QC Batch: 127934
Prep Batch: 108265

Date Analyzed: 2016-02-02
QC Preparation: 2016-02-01

Analyzed By: AK
Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		3	1.51	mg/Kg	1	2.00	<0.0100	76	70 - 130
Toluene		3	1.52	mg/Kg	1	2.00	<0.0156	76	70 - 130
Ethylbenzene		3	1.55	mg/Kg	1	2.00	<0.0151	78	70 - 130
Xylene		3	4.64	mg/Kg	1	6.00	<0.00430	77	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		3	1.63	mg/Kg	1	2.00	<0.0100	82	70 - 130	8	20
Toluene		3	1.68	mg/Kg	1	2.00	<0.0156	84	70 - 130	10	20
Ethylbenzene		3	1.78	mg/Kg	1	2.00	<0.0151	89	70 - 130	14	20
Xylene		3	5.26	mg/Kg	1	6.00	<0.00430	88	70 - 130	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.60	1.83	mg/Kg	1	2	80	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.78	1.93	mg/Kg	1	2	89	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 413251

QC Batch: 127937
Prep Batch: 108314

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: AK
Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		3	18.7	mg/Kg	1	20.0	<1.76	94	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		3	9.56	mg/Kg	1	20.0	<1.76	48	70 - 130	65	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.75	1.34	mg/Kg	1	2	88	67	70 - 130
4-Bromofluorobenzene (4-BFB)	2.11	1.73	mg/Kg	1	2	106	86	70 - 130

Matrix Spike (MS-1) Spiked Sample: 413281

QC Batch: 127948
Prep Batch: 108328

Date Analyzed: 2016-02-04
QC Preparation: 2016-02-03

Analyzed By: AK
Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs 3	8.80	mg/Kg	1	20.0	<1.76	44	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs	Qs 3	10.6	mg/Kg	1	20.0	<1.76	53	70 - 130	19	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.69	1.68	mg/Kg	1	2	84	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.77	1.90	mg/Kg	1	2	88	95	70 - 130

Matrix Spike (MS-1) Spiked Sample: 413236

QC Batch: 127956
Prep Batch: 108347

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: RL
Prepared By: RL

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	268	mg/Kg	1	250	15.9	101	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	272	mg/Kg	1	250	15.9	102	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 413251

QC Batch: 127958
Prep Batch: 108348

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	271	mg/Kg	1	250	20	100	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	266	mg/Kg	1	250	20	98	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 413266

QC Batch: 127960
Prep Batch: 108349

Date Analyzed: 2016-02-03
QC Preparation: 2016-02-02

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	274	mg/Kg	1	250	9.24	106	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	259	mg/Kg	1	250	9.24	100	80 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (xMS-1) Spiked Sample: 413464

QC Batch: 127965
Prep Batch: 108331

Date Analyzed: 2016-02-04
QC Preparation: 2016-02-03

Analyzed By: JL
Prepared By: JL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	254	mg/Kg	1	250	<7.41	102	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	282	mg/Kg	1	250	<7.41	113	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	52.7	54.7	mg/Kg	1	50	105	109	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 413465

QC Batch: 127968
Prep Batch: 108338

Date Analyzed: 2016-02-04
QC Preparation: 2016-02-04

Analyzed By: JL
Prepared By: JL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	626	mg/Kg	1	250	451	70	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	644	mg/Kg	1	250	451	77	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	Qsr	Qsr	81.9	84.4	mg/Kg	1	50	164	169	70 - 130

Matrix Spike (MS-1) Spiked Sample: 413299

QC Batch: 127990
Prep Batch: 108337

Date Analyzed: 2016-02-05
QC Preparation: 2016-02-04

Analyzed By: AK
Prepared By: AK

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	3	11.6	mg/Kg	1	20.0	<1.76	58	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qr,Qs	Qr,Qs	3	8.23	mg/Kg	1	20.0	<1.76	41	70 - 130	34	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.66	1.69	mg/Kg	1	2	83	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.62	1.62	mg/Kg	1	2	81	81	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 413460

QC Batch: 127998
Prep Batch: 108373

Date Analyzed: 2016-02-05
QC Preparation: 2016-02-05

Analyzed By: JL
Prepared By: JL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	274	mg/Kg	1	250	12.5	105	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr	Qr	3	217	mg/Kg	1	250	12.5	82	70 - 130	23	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	52.4	46.2	mg/Kg	1	50	105	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 413278

QC Batch: 128089 | Date Analyzed: 2016-02-09 | Analyzed By: RL
Prep Batch: 108454 | QC Preparation: 2016-02-02 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	283	mg/Kg	1	250	13.2	108	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	274	mg/Kg	1	250	13.2	104	80 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 413292

QC Batch: 128090 | Date Analyzed: 2016-02-09 | Analyzed By: RL
Prep Batch: 108456 | QC Preparation: 2016-02-02 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	263	mg/Kg	1	250	19.6	97	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	255	mg/Kg	1	250	19.6	94	80 - 120	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 413299

QC Batch: 128108 | Date Analyzed: 2016-02-10 | Analyzed By: RL
Prep Batch: 108471 | QC Preparation: 2016-02-03 | Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	263	mg/Kg	1	250	16.1	99	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	266	mg/Kg	1	250	16.1	100	80 - 120	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-2)

QC Batch: 127934 Date Analyzed: 2016-02-02 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		3	mg/kg	0.100	0.0910	91	80 - 120	2016-02-02
Toluene		3	mg/kg	0.100	0.0854	85	80 - 120	2016-02-02
Ethylbenzene		3	mg/kg	0.100	0.0870	87	80 - 120	2016-02-02
Xylene		3	mg/kg	0.300	0.247	82	80 - 120	2016-02-02

Standard (CCV-3)

QC Batch: 127934 Date Analyzed: 2016-02-02 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		3	mg/kg	0.100	0.0991	99	80 - 120	2016-02-02
Toluene		3	mg/kg	0.100	0.0921	92	80 - 120	2016-02-02
Ethylbenzene		3	mg/kg	0.100	0.0892	89	80 - 120	2016-02-02
Xylene		3	mg/kg	0.300	0.257	86	80 - 120	2016-02-02

Standard (CCV-1)

QC Batch: 127937 Date Analyzed: 2016-02-03 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.921	92	80 - 120	2016-02-03

Standard (CCV-2)

QC Batch: 127937 Date Analyzed: 2016-02-03 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.802	80	80 - 120	2016-02-03

Standard (CCV-3)

QC Batch: 127937 Date Analyzed: 2016-02-03 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	1.17	117	80 - 120	2016-02-03

Standard (CCV-1)

QC Batch: 127948 Date Analyzed: 2016-02-04 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	1.17	117	80 - 120	2016-02-04

Standard (CCV-2)

QC Batch: 127948 Date Analyzed: 2016-02-04 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.859	86	80 - 120	2016-02-04

Standard (CCV-3)

QC Batch: 127948 Date Analyzed: 2016-02-04 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.984	98	80 - 120	2016-02-04

Standard (CCV-1)

QC Batch: 127956 Date Analyzed: 2016-02-03 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.4	102	90 - 110	2016-02-03

Standard (CCV-2)

QC Batch: 127956 Date Analyzed: 2016-02-03 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.9	104	90 - 110	2016-02-03

Standard (CCV-1)

QC Batch: 127958 Date Analyzed: 2016-02-03 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.9	104	90 - 110	2016-02-03

Standard (CCV-2)

QC Batch: 127958 Date Analyzed: 2016-02-03 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.8	103	90 - 110	2016-02-03

Standard (CCV-1)

QC Batch: 127960 Date Analyzed: 2016-02-03 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.8	103	90 - 110	2016-02-03

Standard (CCV-2)

QC Batch: 127960 Date Analyzed: 2016-02-03 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	27.0	108	90 - 110	2016-02-03

Standard (CCV-1)

QC Batch: 127965 Date Analyzed: 2016-02-04 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	257	103	80 - 120	2016-02-04

Standard (CCV-2)

QC Batch: 127965 Date Analyzed: 2016-02-04 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	234	94	80 - 120	2016-02-04

Standard (CCV-3)

QC Batch: 127965 Date Analyzed: 2016-02-04 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	224	90	80 - 120	2016-02-04

Standard (CCV-1)

QC Batch: 127968 Date Analyzed: 2016-02-04 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	224	90	80 - 120	2016-02-04

Standard (CCV-2)

QC Batch: 127968 Date Analyzed: 2016-02-04 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	264	106	80 - 120	2016-02-04

Standard (CCV-3)

QC Batch: 127968 Date Analyzed: 2016-02-04 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	264	106	80 - 120	2016-02-04

Standard (CCV-1)

QC Batch: 127990 Date Analyzed: 2016-02-05 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.900	90	80 - 120	2016-02-05

Standard (CCV-2)

QC Batch: 127990 Date Analyzed: 2016-02-05 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.878	88	80 - 120	2016-02-05

Standard (CCV-3)

QC Batch: 127990 Date Analyzed: 2016-02-05 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.928	93	80 - 120	2016-02-05

Standard (CCV-1)

QC Batch: 127998 Date Analyzed: 2016-02-05 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	263	105	80 - 120	2016-02-05

Standard (CCV-2)

QC Batch: 127998 Date Analyzed: 2016-02-05 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	252	101	80 - 120	2016-02-05

Standard (CCV-3)

QC Batch: 127998 Date Analyzed: 2016-02-05 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	281	112	80 - 120	2016-02-05

Standard (CCV-1)

QC Batch: 128089 Date Analyzed: 2016-02-09 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.6	102	90 - 110	2016-02-09

Standard (CCV-2)

QC Batch: 128089 Date Analyzed: 2016-02-09 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	26.3	105	90 - 110	2016-02-09

Standard (CCV-1)

QC Batch: 128090 Date Analyzed: 2016-02-09 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	26.3	105	90 - 110	2016-02-09

Standard (CCV-2)

QC Batch: 128090 Date Analyzed: 2016-02-09 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	26.1	104	90 - 110	2016-02-09

Standard (CCV-1)

QC Batch: 128108 Date Analyzed: 2016-02-10 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.5	102	90 - 110	2016-02-10

Standard (CCV-2)

QC Batch: 128108 Date Analyzed: 2016-02-10 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.1	100	90 - 110	2016-02-10

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	LELAP	LELAP-02003	Lubbock
2	NELAP	T104704219-15-11	Lubbock
3	NELAP	T104704392-14-8	Midland
4		2015-066	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 No sample left for re-analysis.
2 No sample left for re-analysis.
3 No sample left for re-analysis.
4 No sample left for re-analysis.
5 No sample left for re-analysis.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

WO #: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 2-01-2016 PAGE 1 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO Perla Negra,

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ D.W. 200.8 ☐ OTHER LIST ☐	LEAD - TOTAL ☐ TOX ☐ FLASHPOINT ☐ TCLP ☐	RCI ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐	Hold see Field Notes	FIELD NOTES
																												413223
S-1 (0-1)		1-28-16	11:15	S	1				X				X	X												X		X	Hold All samples
S-1 (1-2)			1																									413224
S-1 (2-3)																												225
S-2 (0-1)			10:50																									226
S-2 (1-2)			1																									227
S-2 (2-3)																												228
S-3 (0-1)			11:25								X																	229
S-3 (1-2)			1																									230
S-3 (2-3)																												231
S-4 (0-1)			11:30								X																	232
S-4 (1-2)			1																									233
S-4 (2-3)																												234
S-5 (0-1)			11:25																									235
S-5 (1-2)			11:30																									236
S-5 (2-3)			11:45																									237
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 2/1/16 10:00 RECEIVED BY: (Signature) Nancy 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

run (0-1) 11-21 Hold all 12-31 Per Client NH 2/1/16

WO #: 160 20113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 2-1-16 PAGE 2 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO Perla Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW / SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	see field notes	FIELD NOTES 413238
S-6 (0-1)		1-28-16	12:00	S	1				X		X		X	X													X	X	Hold All samples
S-6 (1-2)			12:05																										413239
S-6 (2-3)			12:15																										240
S-7 (0-1)			12:30								X																		241
S-7 (1-2)			12:45								X																		242
S-8 (2-3)			1:00																										243
S-8 (0-1)			2:05																										244
S-8 (1-2)			2:10																										245
S-8 (2-3)			2:15																										246
S-9 (0-1)			2:25																										247
S-9 (1-2)			2:30																										248
S-9 (2-3)			2:35																										249
S-10 (0-1)			3:30																										250
S-10 (1-2)			3:35																										251
S-10 (2-3)			3:40																										252
TOTAL																													

RELINQUISHED BY:(Signature) T Hellen DATE/TIME 2/01/16 10:00 RECEIVED BY: (Signature) Valley 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☒ 3 Day TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

WO#: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 2-01-16 PAGE 3 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO Perla Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐ | see F.C.D. note | FIELD NOTES

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	FIELD NOTES
S-11 (0-1)		1-28-16	2:45	S	1				X		Hold All Samples 413253
S-11 (1-2)			2:50								413254
S-11 (2-3)			2:55								255
S-12 (0-1)			3:05								256
S-12 (1-2)			3:10								257
S-12 (2-3)			3:15								258
S-~~11~~13 (0-1)			5:00								259
S-13 (1-2)			5:05								260
S-13 (2-3)			5:10								261
S-14 (0-1)			3:55								262
S-14 (1-2)			4:00								263
S-14 (2-3)			4:05								264
S-15 (0-1)			4:50								265
S-15 (1-2)			4:53								266
S-15 (2-3)			4:55								267
TOTAL											

RELINQUISHED BY:(Signature) TW DATE/TIME 2/01/16 10:00 RECEIVED BY: (Signature) Valley 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☒ TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

WO#: 1602013

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 2/01/2016 PAGE 4 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: WTG Pork Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST / NM

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

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ SemiVOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐ | See Field Notes

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	BTEX	TRPH	GASOLINE MOD 8015	DIESEL - MOD 8015	VOC 8260	SVOC 8270	8081 PESTICIDES	8082 PCBS	TCLP - METALS (RCRA)	TCLP - PEST	TOTAL METALS (RCRA)	LEAD - TOTAL	RCI	TDS	pH	EXPLOSIVES	CHLORIDE	See Field Notes	FIELD NOTES
S-16 (0-1)		1-28-16	4:40	S	1				X			X	X														X	X	413268 Hold All
S-16 (1-2)			4:42																										Samples 41326
S-16 (2-3)			4:45																										413270
S-17 (0-1)			4:10																										271
S-17 (1-2)			4:15																										272
S-17 (2-3)			4:20																										273
S-18 (0-1)			4:25																										274
S-18 (1-2)			4:30																										275
S-18 (2-3)			4:35																										276
S-19 (0-1)		1-29-16	1:20																										277
S-19 (1-2)			1:22																										278
S-19 (2-3)			1:25																										279
S-20 (0-1)			9:15																										280
S-20 (1-2)			9:17																										281
S-20 (2-3)			9:20																										282
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 2/01/16 10:00 RECEIVED BY: (Signature) Valley 2/1/16

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ TW 3-Day

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

WO#: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc. Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 2-01-16 PAGE 5 OF 6
PO #: LAB WORK ORDER #:
PROJECT LOCATION OR NAME: XTO Perla Negra
LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

Matrix: S=SOIL (circled), W=WATER, A=AIR, P=PAINT, SL=SLUDGE, OT=OTHER

PRESERVATION: HCl, HNO_3, H_2SO_4 ☐ NaOH ☐, ICE, UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐, TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐, GASOLINE MOD 8015 ☒, DIESEL - MOD 8015 ☒, VOC 8260 ☐, SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐, 8081 PESTICIDES ☐ 8151 HERBICIDES ☐, 8082 PCBS ☐, TCLP - METALS (RCRA) ☐ TCLP VOC ☐, TCLP - PEST ☐ HERB ☐ Semi-VOC ☐, TOTAL METALS (RCRA) ☐ OTHER LIST ☐, LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐, RCI ☐ TOX ☐ FLASHPOINT ☐, TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐, pH ☐ HEXAVALENT CHROMIUM ☐, EXPLOSIVES ☐ PECHLORATE ☐, CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐, see Field Notes

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	ICE	GASOLINE MOD 8015	DIESEL MOD 8015	CHLORIDE		FIELD NOTES
S-21 (0-1)		1-29-16	10:45	S	1	X	X	X	X	b	Hold All 413283
S-21 (1-2)			10:47								samples 413284
S-21 (2-3)			10:50								413285
S-22 (0-1)			11:30								286
S-22 (1-2)			11:32								287
S-22 (2-3)			11:35								288
Comp 1			1:40								289
Comp 2			9:45								290
Comp 3			10:05								291
Comp 4			10:20								292
Comp 5			10:35								293
Comp 6			1:00								294
Comp 7			12:50								295
Comp 8			12:40								296
Comp 9			12:25								297
TOTAL											

(Values in first row carried down all rows by drawn lines.)

RELINQUISHED BY:(Signature) [signature] DATE/TIME 2/01/16 10:00 RECEIVED BY:(Signature) [signature] 2/01/16
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒ (crossed out)
1 DAY ☐
2 DAY ☐
OTHER ☒ 3 day TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: JR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

WO#: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 2-01-2016 PAGE 6 OF 6

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: XTO Perla Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

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

TIME ZONE: Time zone/State: MST / NM

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE - MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐		See field notes	FIELD NOTES
Comp 10		1-29-16	12:05	S	1				X				X	X													X		X	Hold All 413299
Comp 11		|	11:50	|	|				|				|	|												|		|	samples 413299

TOTAL

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
[signature]	2/01/16 10:00	[signature] 2/1/16 10:00
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☒ [signature] TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.0 THERM #: JR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

WO #: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 2-01-2016 PAGE 1 OF 6

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: XTO Perla Negra,

LAI PROJECT #: 15-0167-01 COLLECTOR: Twiss

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	Hold see Field Notes	FIELD NOTES 413223
S-1 (0-1)		1-28-16	11:15	S	1				X			X	X												X		X	Hold All samples	413224
S-1 (1-2)			1																									225
S-1 (2-3)			1																									226
S-2 (0-1)			10:50																									227
S-2 (1-2)			1																									228
S-2 (2-3)																												229
S-3 (0-1)			11:25								X																	230
S-3 (1-2)			1																									231
S-3 (2-3)																												232
S-4 (0-1)			11:30								X																	233
S-4 (1-2)			1																									234
S-4 (2-3)																												235
S-5 (0-1)			11:25																									236
S-5 (1-2)			11:30																									237
S-5 (2-3)			11:45																									
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 2/1/16 10:00 RECEIVED BY: (Signature) Nalley 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/2/16 10.20 RECEIVED BY: (Signature) Brenda Ward 3.3/3.7

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ~~3 Day~~ TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # 2S2T380542
☐ HAND DELIVERED AJ

Run (S-1) 1-2' Hold all 12-31 Per Client NH 2/1/16

WO #: 160 2013

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

DATE: 2-1-16 PAGE 2 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO Pena Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW / SS

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ | TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐ | see Field notes

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	BTEX	TRPH	GASOLINE MOD 8015	DIESEL - MOD 8015	Cl	FIELD NOTES
																413238
S-6 (0-1)		1-28-16	12:00	S	1				X		X	X	X		X	Hold All samples
S-6 (1-2)			12:05													413239
S-6 (2-3)			12:15													240
S-7 (0-1)			12:30								X					241
S-7 (1-2)			12:45								~~X~~					242
S-7 (2-3)			1:00													243
S-8 (0-1)			2:05													244
S-8 (1-2)			2:10													245
S-8 (2-3)			2:15													246
S-9 (0-1)			2:25													247
S-9 (1-2)			2:30													248
S-9 (2-3)			2:35													249
S-10 (0-1)			3:30													250
S-10 (1-2)			3:35													251
S-10 (2-3)			3:40													252
TOTAL																

RELINQUISHED BY:(Signature) TW DATE/TIME 2/01/16 10:00 RECEIVED BY: (Signature) Nalley 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/2/16 10:20 RECEIVED BY: (Signature) Brenda Ward

3.3 | 3.7

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ~~3 day~~ TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # LS ZT380542
☐ HAND DELIVERED MT

WO #: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

DATE: 2-01-16 PAGE 3 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: XTO Perla Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW / SS

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	see Field notes	FIELD NOTES: 413253
S-11 (0-1)		1-28-16	2:45	S	1				X				X	X													X	X	Hold All Samples
S-11 (1-2)			2:50																										413254
S-11 (2-3)			2:55																										255
S-12 (0-1)			3:05																										256
S-12 (1-2)			3:10																										257
S-12 (2-3)			3:15																										258
S-13 (0-1)			5:00																										259
S-13 (1-2)			5:05																										260
S-13 (2-3)			5:10																										261
S-14 (0-1)			3:55																										262
S-14 (1-2)			4:00																										263
S-14 (2-3)			4:05																										264
S-15 (0-1)			4:50																										265
S-15 (1-2)			4:53																										266
S-15 (2-3)			4:55																										267
TOTAL																													

RELINQUISHED BY:(Signature) TW DATE/TIME 2/01/16 10:00 RECEIVED BY: (Signature) Valley 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/2/16 RECEIVED BY: (Signature) Brenda Ward

2T380542 3.3/3.7

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☒ TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED AJ

WO#: 1602013

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 2/01/2016 PAGE 4 OF 6

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: WG Park Nyger

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST / NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	See Bottle Labels	FIELD NOTES
S-16 (0-1)		1-28-16	4:40	S	1				X			X	X															X	X	413268 Hold All
S-16 (1-2)			4:42																										Samples 413268
S-16 (2-3)			4:45																										413270
S-17 (0-1)			4:10																										271
S-17 (1-2)			4:15																										272
S-17 (2-3)			4:20																										273
S-18 (0-1)			4:25																										274
S-18 (1-2)			4:30																										275
S-18 (2-3)			4:35																										276
S-19 (0-1)		1-29-16	1:20																										277
S-19 (1-2)			1:22																										278
S-19 (2-3)			1:25																										279
S-20 (0-1)			9:15																										280
S-20 (1-2)			9:17																										281
S-20 (2-3)			9:20																										282
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 2/01/16 10:00 RECEIVED BY:(Signature) Kelley 2/1/16

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/2/16 10:20 RECEIVED BY:(Signature) Brenda Ward 3.3/3.7

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ TW BD

LABORATORY USE ONLY:
RECEIVING TEMP: 4.9 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # LS 2T380542
☐ HAND DELIVERED AJ

WO#: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 2-01-16 PAGE 5 OF 6

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: XTO Perla Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: (MST) / NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	see Field Notes	FIELD NOTES
S-21 (0-1)		1-29-16	10:45	S	1				X				X	X													X		Hold All 413283
S-21 (1-2)			10:47																										samples 413284
S-21 (2-3)			10:50																										413285
S-22 (0-1)			11:30																										286
S-22 (1-2)			11:32																										287
S-22 (2-3)			11:35																										288
Comp 1			1:40																										289
Comp 2			9:45																										290
Comp 3			10:05																										291
Comp 4			10:20																										292
Comp 5			10:35																										293
Comp 6			1:00																										294
Comp 7			12:50																										295
Comp 8			12:40																										296
Comp 9			12:25																										297
TOTAL																													

RELINQUISHED BY:(Signature) DATE/TIME 2/01/16 10:00 RECEIVED BY:(Signature) 2/01/16

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/2/16 10:20 RECEIVED BY: (Signature) Brenda Ward 3.3/3.7

TURN AROUND TIME

NORMAL ☒

1 DAY ☐

2 DAY ☐

OTHER ☒ 3 Days TW

LABORATORY USE ONLY:

RECEIVING TEMP: 4.9 THERM #: JR

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

☐ CARRIER BILL # LS 2T380542

☐ HAND DELIVERED AT

WO#: 16020113

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

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

DATE: 2-01-2016 PAGE 6 OF 6

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: XTO Perla Negra

LAI PROJECT #: 15-0167-01 COLLECTOR: TW/SS

Data Reported to:

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MST / NM

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

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☐ | DIESEL - MOD 8015 ☐ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐ | See Sheet Notes

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 NaOH	ICE	UNPRESERVED	BTEX	MTBE	TRPH 418.1	TPH 1005	TPH 1006	GASOLINE MOD 8015	DIESEL - MOD 8015	VOC 8260	SVOC 8270	PAH 8270	HOLDPAH	8081 PESTICIDES	8151 HERBICIDES	8082 PCBS	TCLP - METALS (RCRA)	TCLP VOC	TCLP - PEST	HERB	Semi-VOC	TOTAL METALS (RCRA)	OTHER LIST	LEAD - TOTAL	D.W. 200.8	TCLP	RCI	TOX	TDS	TSS	FLASHPOINT	pH	% MOISTURE	HEXAVALENT CHROMIUM	CYANIDE	EXPLOSIVES	PECHLORATE	CHLORIDE	ANIONS	ALKALINITY	See Sheet Notes	FIELD NOTES
Comp 10		1-29-16	12:05	S	1				X				X	X																																				Hold All 413299 samples 413299
Comp 11		"	11:50	"	1				X				X	X																																				

TOTAL

RELINQUISHED BY:(Signature) DATE/TIME 2/01/16 10:00 RECEIVED BY: (Signature) 2/1/16 10:00

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/2/16 10:20 RECEIVED BY: (Signature) Brenda Ward

3.3 | 3.7

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☒ Day TW

LABORATORY USE ONLY:
RECEIVING TEMP: 4.0 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # FS 2T380542
☐ HAND DELIVERED AJ

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
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5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Sarah Shissler
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: February 24, 2016

Work Order: 16021901

Project Name: XTO Perla Negra
Project Number: 15-0167-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

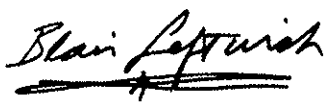
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
414630	DP-S-7 (2-3)	soil	2016-02-18	10:25	2016-02-19
414631	DP-S-7 (3-4)	soil	2016-02-18	10:25	2016-02-19
414632	DP-S-7 (4-5)	soil	2016-02-18	10:30	2016-02-19
414633	DP-S-7 (5-6)	soil	2016-02-18	10:30	2016-02-19
414634	DP-S-7 (6-7)	soil	2016-02-18	10:30	2016-02-19

Notes

- **Work Order 16021901:** Changed to 3-Day rush 02/22/2016 NH

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

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Case Narrative

Samples for project XTO Perla Negra were received by TraceAnalysis, Inc. on 2016-02-19 and assigned to work order 16021901. Samples for work order 16021901 were received intact at a temperature of 4.3 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	108704	2016-02-22 at 14:35	128396	2016-02-23 at 13:48
Chloride (IC)	E 300.0	108739	2016-02-23 at 10:00	128416	2016-02-23 at 10:08
Chloride (IC)	E 300.0	108741	2016-02-23 at 10:00	128417	2016-02-23 at 10:08
TPH DRO	S 8015 D	108737	2016-02-24 at 08:58	128423	2016-02-24 at 10:21
TPH GRO	S 8015 D	108704	2016-02-22 at 14:35	128397	2016-02-23 at 13:49

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 16021901 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 414630 - DP-S-7 (2-3)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	128396	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	Qr,Qs,U	3	<0.0200	mg/Kg	1	0.0200
Toluene	Qr,Qs,U	3	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qr,Qs,U	3	<0.0200	mg/Kg	1	0.0200
Xylene	Qr,Qs,U	3	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 414630 - DP-S-7 (2-3)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128416	Date Analyzed:	2016-02-23	Analyzed By:	RL
Prep Batch:	108739	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	Qr	1,2,4	**55.4**	mg/Kg	1	25.0

Sample: 414630 - DP-S-7 (2-3)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	128423	Date Analyzed:	2016-02-24	Analyzed By:	JL
Prep Batch:	108737	Sample Preparation:		Prepared By:	JL

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	B	3	**316**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			64.3	mg/Kg	1	50.0	129	70 - 130

Sample: 414630 - DP-S-7 (2-3)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	128397	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.04	mg/Kg	1	2.00	102	70 - 130
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70 - 130

Sample: 414631 - DP-S-7 (3-4)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	128396	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	Qr,U	3	<0.0200	mg/Kg	1	0.0200
Toluene	Qr,U	3	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	Qr,U	3	<0.0200	mg/Kg	1	0.0200
Xylene	Qr,U	3	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.79	mg/Kg	1	2.00	90	70 - 130
4-Bromofluorobenzene (4-BFB)			1.77	mg/Kg	1	2.00	88	70 - 130

Sample: 414631 - DP-S-7 (3-4)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128416	Date Analyzed:	2016-02-23	Analyzed By:	RL
Prep Batch:	108739	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qr	1,2,4	**27.7**	mg/Kg	1	25.0

Sample: 414631 - DP-S-7 (3-4)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	128423	Date Analyzed:	2016-02-24	Analyzed By:	JL
Prep Batch:	108737	Sample Preparation:		Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Jb	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			39.4	mg/Kg	1	50.0	79	70 - 130

Sample: 414631 - DP-S-7 (3-4)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	128397	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Sample: 414632 - DP-S-7 (4-5)

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	128396	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	Qr	3	<0.0200	mg/Kg	1	0.0200
Toluene	Qr	3	**0.0522**	mg/Kg	1	0.0200
Ethylbenzene	Qr	3	**0.0330**	mg/Kg	1	0.0200
Xylene	Qr	3	**0.100**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.00	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 414632 - DP-S-7 (4-5)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128416	Date Analyzed:	2016-02-23	Analyzed By:	RL
Prep Batch:	108739	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	Qr	1,2,4	<25.0	mg/Kg	1	25.0

Sample: 414632 - DP-S-7 (4-5)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	128423	Date Analyzed:	2016-02-24	Analyzed By:	JL
Prep Batch:	108737	Sample Preparation:		Prepared By:	JL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B,Jb	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			42.7	mg/Kg	1	50.0	85	70 - 130

Sample: 414632 - DP-S-7 (4-5)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	128397	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
GRO	U	3		<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			2.34	mg/Kg	1	2.00	117	70 - 130

Sample: 414633 - DP-S-7 (5-6)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128417	Date Analyzed:	2016-02-23	Analyzed By:	RL
Prep Batch:	108741	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Chloride		1,2,4		**36.6**	mg/Kg	1	25.0

Sample: 414633 - DP-S-7 (5-6)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	128423	Date Analyzed:	2016-02-24	Analyzed By:	JL
Prep Batch:	108737	Sample Preparation:		Prepared By:	JL

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
DRO	B,U	3		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.9	mg/Kg	1	50.0	96	70 - 130

Sample: 414633 - DP-S-7 (5-6)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	128397	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.02	mg/Kg	1	2.00	101	70 - 130
4-Bromofluorobenzene (4-BFB)			1.79	mg/Kg	1	2.00	90	70 - 130

Sample: 414634 - DP-S-7 (6-7)

Laboratory:	Lubbock				
Analysis:	Chloride (IC)	Analytical Method:	E 300.0	Prep Method:	N/A
QC Batch:	128417	Date Analyzed:	2016-02-23	Analyzed By:	RL
Prep Batch:	108741	Sample Preparation:		Prepared By:	RL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride		1,2,4	**29.3**	mg/Kg	1	25.0

Sample: 414634 - DP-S-7 (6-7)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	128423	Date Analyzed:	2016-02-24	Analyzed By:	JL
Prep Batch:	108737	Sample Preparation:		Prepared By:	JL

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	B,U	3	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			48.2	mg/Kg	1	50.0	96	70 - 130

Sample: 414634 - DP-S-7 (6-7)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	128397	Date Analyzed:	2016-02-23	Analyzed By:	AK
Prep Batch:	108704	Sample Preparation:	2016-02-22	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	3	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.87	mg/Kg	1	2.00	94	70 - 130

Method Blanks

Method Blank (1) QC Batch: 128396

QC Batch: 128396 Date Analyzed: 2016-02-23 Analyzed By: AK
Prep Batch: 108704 QC Preparation: 2016-02-22 Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		3	<0.0100	mg/Kg	0.02
Toluene		3	<0.0156	mg/Kg	0.02
Ethylbenzene		3	<0.0151	mg/Kg	0.02
Xylene		3	<0.00430	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			1.70	mg/Kg	1	2.00	85	70 - 130

Method Blank (1) QC Batch: 128397

QC Batch: 128397 Date Analyzed: 2016-02-23 Analyzed By: AK
Prep Batch: 108704 QC Preparation: 2016-02-22 Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		3	<1.76	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.71	mg/Kg	1	2.00	86	70 - 130

Method Blank (1) QC Batch: 128416

QC Batch: 128416 Date Analyzed: 2016-02-23 Analyzed By: RL
Prep Batch: 108739 QC Preparation: 2016-02-23 Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 128417

QC Batch: 128417 | Date Analyzed: 2016-02-23 | Analyzed By: RL
Prep Batch: 108741 | QC Preparation: 2016-02-23 | Prepared By: RL

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1,2,4	<8.34	mg/Kg	25

Method Blank (1) QC Batch: 128423

QC Batch: 128423 | Date Analyzed: 2016-02-24 | Analyzed By: JL
Prep Batch: 108737 | QC Preparation: 2016-02-24 | Prepared By: JL

Parameter		Flag	Cert	MDL Result	Units	RL
DRO	B	B	3	10.8	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			54.5	mg/Kg	1	50.0	109	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 128396
Prep Batch: 108704

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-22

Analyzed By: AK
Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		3	2.08	mg/Kg	1	2.00	<0.0100	104	70 - 130
Toluene		3	2.10	mg/Kg	1	2.00	<0.0156	105	70 - 130
Ethylbenzene		3	2.20	mg/Kg	1	2.00	<0.0151	110	70 - 130
Xylene		3	6.04	mg/Kg	1	6.00	<0.00430	101	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		3	1.99	mg/Kg	1	2.00	<0.0100	100	70 - 130	4	20
Toluene		3	2.06	mg/Kg	1	2.00	<0.0156	103	70 - 130	2	20
Ethylbenzene		3	2.09	mg/Kg	1	2.00	<0.0151	104	70 - 130	5	20
Xylene		3	5.97	mg/Kg	1	6.00	<0.00430	100	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.96	1.72	mg/Kg	1	2.00	98	86	70 - 130
4-Bromofluorobenzene (4-BFB)	1.68	1.68	mg/Kg	1	2.00	84	84	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 128397
Prep Batch: 108704

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-22

Analyzed By: AK
Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		3	17.7	mg/Kg	1	20.0	<1.76	88	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		3	20.4	mg/Kg	1	20.0	<1.76	102	70 - 130	14	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.97	2.07	mg/Kg	1	2.00	98	104	70 - 130
4-Bromofluorobenzene (4-BFB)	1.74	1.93	mg/Kg	1	2.00	87	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 128416
Prep Batch: 108739

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-23

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	252	mg/Kg	1	250	<8.34	101	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	255	mg/Kg	1	250	<8.34	102	90 - 110	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 128417
Prep Batch: 108741

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-23

Analyzed By: RL
Prepared By: RL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1,2,4	257	mg/Kg	1	250	<8.34	103	90 - 110

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1,2,4	257	mg/Kg	1	250	<8.34	103	90 - 110	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 128423
Prep Batch: 108737

Date Analyzed: 2016-02-24
QC Preparation: 2016-02-24

Analyzed By: JL
Prepared By: JL

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	235	mg/Kg	1	250	10.8	90	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	206	mg/Kg	1	250	10.8	78	70 - 130	13	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	63.8	57.6	mg/Kg	1	50.0	128	115	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 414630

QC Batch: 128396
Prep Batch: 108704

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-22

Analyzed By: AK
Prepared By: AK

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	Qs	Qs	3	0.698	mg/Kg	1	2.00	<0.0100	35	70 - 130
Toluene	Qs	Qs	3	0.819	mg/Kg	1	2.00	<0.0156	41	70 - 130
Ethylbenzene	Qs	Qs	3	0.864	mg/Kg	1	2.00	<0.0151	43	70 - 130
Xylene	Qs	Qs	3	2.40	mg/Kg	1	6.00	<0.00430	40	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	Qr,Qs	Qr,Qs	3	1.29	mg/Kg	1	2.00	<0.0100	64	70 - 130	60	20
Toluene	Qr	Qr	3	1.40	mg/Kg	1	2.00	<0.0156	70	70 - 130	52	20
Ethylbenzene	Qr	Qr	3	1.61	mg/Kg	1	2.00	<0.0151	80	70 - 130	60	20
Xylene	Qr	Qr	3	4.58	mg/Kg	1	6.00	<0.00430	76	70 - 130	63	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.82	mg/Kg	1	2	96	91	70 - 130
4-Bromofluorobenzene (4-BFB)	1.97	1.86	mg/Kg	1	2	98	93	70 - 130

Matrix Spike (MS-1) Spiked Sample: 414630

QC Batch: 128397
Prep Batch: 108704

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-22

Analyzed By: AK
Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		3	19.3	mg/Kg	1	20.0	<1.76	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		3	15.8	mg/Kg	1	20.0	<1.76	79	70 - 130	20	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.99	1.97	mg/Kg	1	2	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	1.67	mg/Kg	1	2	98	84	70 - 130

Matrix Spike (MS-1) Spiked Sample: 413932

QC Batch: 128416
Prep Batch: 108739

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-23

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride Qs	Qs	1,2,4	485	mg/Kg	1	250	64.1	168	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride Qr	Qr	1,2,4	301	mg/Kg	1	250	64.1	95	80 - 120	47	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 414767

QC Batch: 128417
Prep Batch: 108741

Date Analyzed: 2016-02-23
QC Preparation: 2016-02-23

Analyzed By: RL
Prepared By: RL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride Qs	Qs	1,2,4	8190	mg/Kg	50	250	7510	272	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	Qs	Qs	1,2,4 8670	mg/Kg	50	250	7510	464	80 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (xMS-1) Spiked Sample: 414653

QC Batch: 128423 | Date Analyzed: 2016-02-24 | Analyzed By: JL
Prep Batch: 108737 | QC Preparation: 2016-02-24 | Prepared By: JL

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		3	212	mg/Kg	1	250	8.56	81	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		3	200	mg/Kg	1	250	8.56	76	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	49.8	47.7	mg/Kg	1	50	100	95	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 128396 Date Analyzed: 2016-02-23 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		3	mg/kg	0.100	0.0984	98	80 - 120	2016-02-23
Toluene		3	mg/kg	0.100	0.101	101	80 - 120	2016-02-23
Ethylbenzene		3	mg/kg	0.100	0.104	104	80 - 120	2016-02-23
Xylene		3	mg/kg	0.300	0.288	96	80 - 120	2016-02-23

Standard (CCV-2)

QC Batch: 128396 Date Analyzed: 2016-02-23 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		3	mg/kg	0.100	0.100	100	80 - 120	2016-02-23
Toluene		3	mg/kg	0.100	0.0999	100	80 - 120	2016-02-23
Ethylbenzene		3	mg/kg	0.100	0.100	100	80 - 120	2016-02-23
Xylene		3	mg/kg	0.300	0.284	95	80 - 120	2016-02-23

Standard (CCV-1)

QC Batch: 128397 Date Analyzed: 2016-02-23 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	1.03	103	80 - 120	2016-02-23

Standard (CCV-2)

QC Batch: 128397 Date Analyzed: 2016-02-23 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		3	mg/Kg	1.00	0.803	80	80 - 120	2016-02-23

Standard (CCV-1)

QC Batch: 128416 Date Analyzed: 2016-02-23 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.5	102	90 - 110	2016-02-23

Standard (CCV-2)

QC Batch: 128416 Date Analyzed: 2016-02-23 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.4	102	90 - 110	2016-02-23

Standard (CCV-1)

QC Batch: 128417 Date Analyzed: 2016-02-23 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.4	102	90 - 110	2016-02-23

Standard (CCV-2)

QC Batch: 128417 Date Analyzed: 2016-02-23 Analyzed By: RL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1,2,4	mg/Kg	25.0	25.7	103	90 - 110	2016-02-23

Standard (CCV-1)

QC Batch: 128423 Date Analyzed: 2016-02-24 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	224	90	80 - 120	2016-02-24

Standard (CCV-2)

QC Batch: 128423 Date Analyzed: 2016-02-24 Analyzed By: JL

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		3	mg/Kg	250	208	83	80 - 120	2016-02-24

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	LELAP	LELAP-02003	Lubbock
2	NELAP	T104704219-15-11	Lubbock
3	NELAP	T104704392-14-8	Midland
4		2015-066	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

WO#: 16021901

CHAIN-OF-CUSTODY

LAI Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 2/18/2016 PAGE 1 OF 1

PO #: _____ LAB WORK ORDER #: _____

PROJECT LOCATION OR NAME: Perla Negra (XTO)

LAI PROJECT #: 15-01677-01 COLLECTOR: Sarah Stasey

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

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

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☒ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☒	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	FIELD NOTES
DP-S-7 (2-3)		2-18-16	10:25	S	1				X		X	X	X	X	414630
" " (3-4)			↓												631
" " (4-5)			10:30												632
" " (5-6)															633
" " (6-7)															634
" " (7-8)			↓	↓	↓				↓		↓	↓	↓	↓	635

TOTAL

RELINQUISHED BY:(Signature) Sarah Stasey DATE/TIME 2/19/16 8:26am RECEIVED BY:(Signature) [illegible] 2/19/16 8:26

RELINQUISHED BY:(Signature) [illegible] DATE/TIME 2/19/16 8:36 RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ AJ

LABORATORY USE ONLY:
RECEIVING TEMP: 4-7 THERM #: IR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☑ HAND DELIVERED

Run BTEX on 414630,31,32 Run PH on 414630-34 as well as chlorides. Hold analysis for 414635

WO#: 16021901

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 2/18/2016 PAGE 1 OF 1

PO #: LAB WORK ORDER #:

PROJECT LOCATION OR NAME: Perla Negra (XTO)

LAI PROJECT #: 15-0167-01 COLLECTOR: Sarah Shiffley

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
SP-S-7 (2-3)		2-18-16	10:25	S	1				X		X		X	X													X	414630
" " (3-4)			↓	↓	↓				↓		↓		↓	↓													↓	631
" " (4-5)			10:30																									632
" " (5-6)			↓																									633
" " (6-7)			↓																									634
" " (7-8)			↓																									635
TOTAL																												

RELINQUISHED BY:(Signature) DATE/TIME 2/19/16 8:26 RECEIVED BY:(Signature) 2/19/16 8:26

RELINQUISHED BY:(Signature) DATE/TIME 2/19/16 8:36 RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME 2/23/16 RECEIVED BY: (Signature) Brenda Ward 10:30

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐ AJ

LABORATORY USE ONLY:
RECEIVING TEMP: 4.7 THERM #: JR
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # 2T453083
☑ HAND DELIVERED LS 4.1/4.5

Run BTEX on 414630, 31, 32 Run TPH on 414630-34 as well as chlorides. Hold analysis for 414635

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Travis Williams
Larson and Associates, Inc.

P. O. Box 50685
Midland, TX, 79710

Report Date: April 29, 2016

Work Order: 16042626

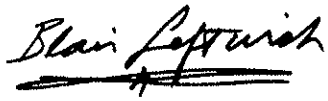
Project Name: XTO Perla Negra
Project Number: 15-0167-01

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
418124	S-7 (0-1)	soil	2016-04-26	00:00	2016-04-26
418125	S-7 (1-2)	soil	2016-04-26	00:00	2016-04-26

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Johnny Grindstaff, Operations Manager

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Case Narrative

Samples for project XTO Perla Negra were received by TraceAnalysis, Inc. on 2016-04-26 and assigned to work order 16042626. Samples for work order 16042626 were received intact at a temperature of 6.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
TPH DRO	S 8015 D	109942	2016-04-27 at 14:00	129780	2016-04-28 at 15:18
TPH GRO	S 8015 D	109951	2016-04-28 at 15:02	129787	2016-04-28 at 15:02

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 16042626 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 418124 - S-7 (0-1)

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	129780	Date Analyzed:	2016-04-28	Analyzed By:	HJ
Prep Batch:	109942	Sample Preparation:	2016-04-27	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3,4	**8140**	mg/Kg	5	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	3	325	mg/Kg	5	25.0	1300	58.2 - 150

Sample: 418124 - S-7 (0-1)

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	129787	Date Analyzed:	2016-04-28	Analyzed By:	ST
Prep Batch:	109951	Sample Preparation:	2016-04-28	Prepared By:	ST

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1,2,3,4	**878**	mg/Kg	10	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	3	1.28	mg/Kg	10	2.00	64	76.4 - 123
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3	35.7	mg/Kg	10	2.00	1785	69.4 - 120

Sample: 418125 - S-7 (1-2)

Laboratory:	Lubbock				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	129780	Date Analyzed:	2016-04-28	Analyzed By:	HJ
Prep Batch:	109942	Sample Preparation:	2016-04-27	Prepared By:	HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1,2,3,4	**4090**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	3	173	mg/Kg	1	25.0	692	58.2 - 150

Sample: 418125 - S-7 (1-2)

Laboratory:	Lubbock				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	129787	Date Analyzed:	2016-04-28	Analyzed By:	ST
Prep Batch:	109951	Sample Preparation:	2016-04-28	Prepared By:	ST

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Qs	1,2,3,4	**1030**	mg/Kg	10	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Qsr	Qsr	3	1.42	mg/Kg	10	2.00	71	76.4 - 123
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3	38.3	mg/Kg	10	2.00	1915	69.4 - 120

Method Blanks

Method Blank (1) QC Batch: 129780

QC Batch: 129780
Prep Batch: 109942

Date Analyzed: 2016-04-28
QC Preparation: 2016-04-27

Analyzed By: HJ
Prepared By: HJ

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1,2,3,4	<8.47	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		3	21.5	mg/Kg	1	25.0	86	58.2 - 150

Method Blank (1) QC Batch: 129787

QC Batch: 129787
Prep Batch: 109951

Date Analyzed: 2016-04-28
QC Preparation: 2016-04-28

Analyzed By: ST
Prepared By: ST

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1,2,3,4	<0.271	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		3	2.11	mg/Kg	1	2.00	106	76.4 - 123
4-Bromofluorobenzene (4-BFB)		3	2.15	mg/Kg	1	2.00	108	69.4 - 120

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 129780 | Date Analyzed: 2016-04-28 | Analyzed By: HJ
Prep Batch: 109942 | QC Preparation: 2016-04-27 | Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3,4	494	mg/Kg	1	500	<8.47	99	68.5 - 136

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3,4	500	mg/Kg	1	500	<8.47	100	68.5 - 136	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	3	25.8	25.9	mg/Kg	1	25.0	103	104	58.2 - 150

Laboratory Control Spike (LCS-1)

QC Batch: 129787 | Date Analyzed: 2016-04-28 | Analyzed By: ST
Prep Batch: 109951 | QC Preparation: 2016-04-28 | Prepared By: ST

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3,4	18.9	mg/Kg	1	20.0	<0.271	94	64.2 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3,4	19.3	mg/Kg	1	20.0	<0.271	96	64.2 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	3	1.96	1.96	mg/Kg	1	2.00	98	98	76.4 - 123
4-Bromofluorobenzene (4-BFB)	3	2.22	2.22	mg/Kg	1	2.00	111	111	69.4 - 120

Matrix Spikes

Matrix Spike (xMS-1) Spiked Sample: 418218

QC Batch: 129780
Prep Batch: 109942

Date Analyzed: 2016-04-28
QC Preparation: 2016-04-27

Analyzed By: HJ
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1,2,3,4	557	mg/Kg	1	500	47.6	102	49.3 - 138

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1,2,3,4	560	mg/Kg	1	500	47.6	102	49.3 - 138	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	3	28.0	28.3	mg/Kg	1	25	112	113	58.2 - 150

Matrix Spike (MS-1) Spiked Sample: 418125

QC Batch: 129787
Prep Batch: 109951

Date Analyzed: 2016-04-28
QC Preparation: 2016-04-28

Analyzed By: ST
Prepared By: ST

Param		F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	Qs	Qs	1,2,3,4	1120	mg/Kg	10	20.0	1030	450	35.3 - 129

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param		F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	Qs	Qs	1,2,3,4	976	mg/Kg	10	20.0	1030	-270	35.3 - 129	14	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)		3	1.85	1.65	mg/Kg	10	2	92	82	76.4 - 123
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	3	39.2	34.0	mg/Kg	10	2	1960	1700	69.4 - 120

Calibration Standards

Standard (CCV-1)

QC Batch: 129780 Date Analyzed: 2016-04-28 Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3,4	mg/Kg	500	501	100	80 - 120	2016-04-28

Standard (CCV-2)

QC Batch: 129780 Date Analyzed: 2016-04-28 Analyzed By: HJ

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1,2,3,4	mg/Kg	500	524	105	80 - 120	2016-04-28

Standard (CCV-1)

QC Batch: 129787 Date Analyzed: 2016-04-28 Analyzed By: ST

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3,4	mg/Kg	1.00	1.14	114	80 - 120	2016-04-28

Standard (CCV-2)

QC Batch: 129787 Date Analyzed: 2016-04-28 Analyzed By: ST

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3,4	mg/Kg	1.00	1.00	100	80 - 120	2016-04-28

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-16-12	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

WO#: 160426 26

CHAIN-OF-CUSTOD

Larson & Associates, Inc.
Environmental Consultants

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

Data Reported to:

DATE: 4-26-16 PAGE 1 OF 1

PO #: LAB WORK ORDER #: 160426 26

PROJECT LOCATION OR NAME: XTO Pecos Negro

LAI PROJECT #: 15-0167-01 COLLECTOR: Travis Willia

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: NM

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

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ D.W. 200.8 ☐ OTHER LIST ☐	LEAD - TOTAL ☐ TOX ☐ FLASHPOINT ☐ TCLP ☐	RCI ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	TDS ☐ HEXAVALENT CHROMIUM ☐	pH ☐ EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
S-7 (0-1)		4-26-16		S	1				X		X	X														418124
S-7 (1-2)		"		"	"				"		"	"														418125
S-7 (2-3)		"		"	"				"		"	"														Hold (2-3) 418126

TOTAL

RELINQUISHED BY:(Signature) Nailey H DATE/TIME 4-26-16 4:00 RECEIVED BY: (Signature) Nailey H 4-26-16 4:00

RELINQUISHED BY:(Signature) Nailey H DATE/TIME 4-26-16 4:00 RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☑
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
IR3 3.4/4.0
RECEIVING TEMP: 6.0 THERM #: IR-1
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # LS-ETC75750
☑ HAND DELIVERED

Appendix C

Photographs

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Well Sign

Viewing Northeast from Southwest Corner of Location December 5, 2015

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing East from Southwest Corner of Location December 5, 2015

Viewing West from Southeast Corner of Location December 5, 2015

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing North from Southeast Corner of Location December 5, 2015

Viewing Northeast from Southeast Corner of Location December 5, 2015

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing Southeast from South Center of Location December 5, 2015

Viewing Southwest from South Center of Location December 5, 2015

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing Northwest from Southeast of Location December 5, 2015

Viewing Northeast near Southeast Corner of Location January 29, 2016

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing East along ROW near Southeast Corner of Location January 29, 2016

Viewing West along ROW near Southeast Corner of Location January 29, 2016

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing Southeast near Southwest Corner of Location January 29, 2016

Viewing Northeast near Southeast Corner of Location June 2, 2016

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing Southeast near Southeast Corner of Location June 2, 2016

Viewing East on ROW near Southeast Corner of Location June 2, 2016

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing Southeast near Southeast Corner of Location June 2, 2016

Viewing South near Southeast Corner of Location June 2, 2016

1RP-4049
XTO Energy, Inc.
Perla Negra Fed COM # 4H
Lea County, New Mexico

Viewing West on ROW near Southeast Corner of Location June 2, 2016

Viewing East on ROW near Sample Location S-7 June 2, 2016

Appendix D

Initial and Final C-141

RECEIVED
By JKeyes at 12:45 pm, Dec 21, 2015

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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: XTO Energy, Inc	Contact: Stephanie Rabadue
Address: 500 W. Illinois St Ste 100 Midland, Texas 79701	Telephone No.: 432-620-6714
Facility Name: Perla Negra Federal Com #4H	Facility Type: Well Site

Surface Owner: Bureau of Land Management	Mineral Owner: Bureau of Land Management	API No.: 30-025-42577

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	25	19S	34E	298	North	485	East	Lea

Latitude: 32.637653 N Longitude: 103.506267 W

NATURE OF RELEASE

Type of Release: Blow Out	Volume of Release: 301.3bbls oil 192.8mcf gas	Volume Recovered: 158.63bbls (to date) Clean-Up in Progress
Source of Release: Well	Date and Hour of Occurrence 12/1/2015, 11AM CST	Date and Hour of Discovery 12/1/2015, 11AM CST
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jim Amos, Bureau of Land Management	
By Whom? Bo Jackson, XTO Energy	Date and Hour: 12/1/2015 2:30pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. Not Applicable	

If a Watercourse was Impacted, Describe Fully.*
Not Applicable. No watercourse in vicinity.

Describe Cause of Problem and Remedial Action Taken.*
Pulling unit was fishing parted swab line and cups, they pulled out tubing until got to the tail of the swab line. Installed a TIW valve and latched on with rod elevator and pulled out hole. Tied onto the tubing to pump down and it was plugged. Took off the TIW and started out of the hole when well kicked. Wild well control came to location and well was secured by placing TIW valve on the well head.

Describe Area Affected and Cleanup Action Taken.*
Estimated area affected to be 500'x500'.
XTO Energy, Inc has hired a third-party environmental company to evaluate and perform clean-up. Clean-up is in progress. .

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: Stephanie Rabadue

Printed Name: Stephanie Rabadue

Title: Regulatory Analyst

E-mail Address: stephanie_rabadue@xtoenergy.com

Date: 12/21/2015 Phone: 432-620-6714

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: Jamie Kleyer

Approval Date: 12/21/2015 Expiration Date: 02/21/2016

Conditions of Approval:
Discrete site samples required. Delineate and remediate per NMOCD guidelines.
Geotagged photos recommended. Ensure BLM concurrence/approval.

Attached ☐
1RP 4049
nJXK1535545760
pJXK1535545828

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: XTO Energy, Inc.	Contact: Dudley McMinn
Address: 500 W. Illinois St Ste 100, Midland, Texas 79701	Telephone No.: (432) 682-8873
Facility Name: Perla Negra Federal Com #4H	Facility Type: Well Site

Surface Owner: Bureau of Land Management	Mineral Owner Bureau of Land Management	Lease No.30-025-42577

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
A	25	19S	34E	298	North	485	East	Lea

Latitude: 32.637653N Longitude: -103.506267W

NATURE OF RELEASE

Type of Release: Blow Out	Volume of Release: 301.3 bbl oil 192.8 mcf gas	Volume Recovered: 158.63 bbl oil
Source of Release: Well	Date and Hour of Occurrence: 12/01/2015, 11AM CST	Date and Hour of Discovery: 12/01/2015, 11 AM CST
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Jim Amos, Bureau of Land Management	
By Whom? Bo Jackson, XTO Energy, Inc.	Date and Hour 12/01/2015, 2:30 pm	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. Not applicable	

If a Watercourse was Impacted, Describe Fully.*
Not applicable – no watercourse in vicinity

Describe Cause of Problem and Remedial Action Taken.*
Pulling unit was fishing parted swab line and cups. They pulled out tubing until got to tail of the swab line. Installed a TIW valve and latched on with rod elevator and pulled out of hole. Tied onto the tubing to pump down and it was plugged. Took off the TIW and started out of the hole when the well kicked. Wild Well Control came to location and well was secured by placing TIW valve on well head.

Describe Area Affected and Cleanup Action Taken.* Liquid picked up with vacuum truck. Soil to about 8 inch depth scraped from affected area on location. Affected area off location treated with 6% solution of microbial product and tested for BTEX, TPH and chloride. All samples except S-7 below RRAL for benzene, BTEX and TPH. Sample S-7 was collected in AT&T right of way and owner not comfortable with mechanical remediation due to sensitivity of fiber optic cables (3). Applied second application of microbial amendment to area around sample S-7 and recommend natural attenuation for residual TPH. Chloride delineated below 250 mg/Kg at all sampled locations.

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: Dudley McMinn	OIL CONSERVATION DIVISION Approved by District Supervisor:	
Printed Name: Dudley McMinn		
Title: Environmental Manager – Permian Division	Approval Date:	Expiration Date:
E-mail Address: Dudley_McMinn@xtoenergy.com	Conditions of Approval:	Attached ☐
Date: 06/02/2016 Phone: (432) 682-8873		

* Attach Additional Sheets If Necessary