SITE INFORMATION

Report Type: Work Plan 1RP-4738 & 1RP-4732

General Site Information:						
Site:	**Warren State #1**					
Company:	**Marathon Oil Company**					
Section, Township and Range	**Unit P**	**Sec. 35**	**T 15S**	**R 37E**		
Lease Number:	**API No. 30-025-34034**					
County:	**Lea County**					
GPS:	**32.9701576° N**			**103.165047° W**		
Surface Owner:	Angell #2 Family LTD Partnership					
Mineral Owner:	State Of NM					
Directions:	FRM INTERSECTION OF US-82 AND CR-89, GO S ON CR-89 4.5MI, TRN E ON MIDWAY RD 1.86MI, TRN N 0.25MI, TRN W 0.5MI TO LOCATION.					

Release Data:		
Date Released:	6/6/2017	6/8/2017
Type Release:	Produced Water	Produced Water
Source of Contamination:	Produce Water Tank	Produce Water Tank
Fluid Released:	200 bbls	1200 bbls
Fluids Recovered:	200 bbls	200 bbls

Official Communication:			
Name:	Callie Karrigan		Ike Tavarez
Company:	Martathon Oil Company		Tetra Tech
Address:	2423 Bonita Street		4000 N. Big Spring
			Ste 401
City:	Carlsbad, New Mexico		Midland, Texas
Phone number:	405-202-1028		(432) 687-8110
Fax:			
Email:	cnkarrigan@marathonoil.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	***10***	*57'*
>100 ft.	0	
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	*0*
Total Ranking Score:	***10***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	1,000

TETRA TECH

APPROVED
By Olivia Yu at 10:13 am, Jun 04, 2018

May 4, 2018

NMOCD approves of the delineation completed and proposed remediation for 1RP-4732 & 1RP-4738 with these stipulations: 1) Confirmation sidewall and bottom samples are required; 2) Mark dimensions of lined areas with GPS coordinates; and 3) Photo documentation of release area and associated activities.

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Work Plan for the Marathon Oil Company, Warren State #1, Unit P, Section 35, Township 15 South, Range 37 East, Lea County, New Mexico.
1RP-4732 and 1RP-4738.

Ms. Yu:

Tetra Tech, Inc. (Tetra Tech) was contacted by Marathon Oil Company, to evaluate and assess a release that occurred at the Warren State #1, Unit P, Section 35, Township 15 South, Range 37 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.9701576º, W 103.165047º. The site location is shown on Figures 1 and 2.

Background

Two releases occurred at the site impacting the tank battery facility and migrated into the pasture, measuring approximately 185' x 40' inside the facility and 270' x 75 in the pasture'. The initial C-141 Forms are included in Appendix A. The releases are summarized below:

- On June 6, 2017, the high-level switch on the produced water tank was manually bypassed, causing the tanks to overflow, resulting in the release of two hundred (200) barrels of produced water inside the lined containment. A vacuum truck was used to remove all freestanding fluids, recovering approximately two hundred (200) barrels of produced water.

- On June 8, 2017, a thunderstorm interfered with the SCADA system causing the tanks to overflow, resulting in a release of twelve hundred (1,200) barrels of produced water. A vacuum truck was used to remove the standing fluids, recovering two hundred (200) barrels of produced water. The release occurred inside the bermed facility and migrated into the adjacent pasture. The area that migrated into pasture was removed down to a liner, which was previously placed around the well pad at the request of the landowner.

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Groundwater

One well is listed in Section 35 on the New Mexico Office of the State Engineers database with a reported depth to groundwater of 45 feet below surface. Additionally, one well is listed in Section 35 on the USGS National Water Information System with a reported depth to groundwater of 57 feet below surface. During the soil investigation, one of the borehole was installed to a total depth of 55 feet below surface and no groundwater was encountered. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is around 50' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Soil Assessment and Analytical Results

Prior to performing the assessment, the tank battery and the equipment were removed from the area. On November 7, 2017, Tetra Tech personnel were onsite to evaluate and sample the impacted areas. A total of nine (9) boreholes (BH-1 through BH-9) were installed in the release area to total depths ranging between 20.0' to 55.0' below surface to vertically define extents. Boreholes (BH-1 through BH-5) were installed in the pasture and BH-6 through BH-9 were installed the tank battery area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The borehole locations are shown on Figure 3.

Pasture Area

Referring to Table 1, none of the samples analyzed showed benzene, total BTEX, or TPH concentrations above the RRALs. However, chlorides were detected in all of the boreholes, with the exception of borehole (BH-5). Borehole (BH-5) did not show a significant chloride impact to the soils with a chloride high of 739 mg/kg at 6-7' below surface. Boreholes (BH-2, BH-3 and BH-4) showed a shallow impact to the soils with moderate chloride concentrations in the subsurface soils, which declined with depth at 9-10' (BH-2), 6-7' (BH-3) and 4-5' (BH-4). The area of borehole (BH-1) showed the deepest chloride impact to the soils and declined below the 600 mg/kg delineation threshold at 34-35' below surface. The area detected a chloride ranging from 979 mg/kg at 29-30' to 2,980 mg/kg at 4-5' below surface.

Tank Battery

Referring to Table 1, none of the samples analyzed showed benzene or total BTEX concentrations above RRALs. However, elevated TPH concentrations were detected at the at the tank battery. The areas of boreholes (BH-6, BH-7, BH-8 and BH-9) showed TPH highs of 4,810, mg/kg, 8,820 mg/kg, 5,340 mg/kg, and 7,650 mg/kg at 0-1' below surface, respectively. The TPH concentrations declined with depth and showed bottom hole concentrations ranging from <15.0 mg/kg to 90.3 mg/kg.

In addition, the areas of boreholes (BH-6, BH-7 and BH-9) showed elevated chloride concentrations to the deeper soils, with chloride highs of 3,590 mg/kg at 24-25', 3,640 mg/kg at 4-5', and 4,190 mg/kg at 0-1' below surface, respectively. The chloride concentrations in these areas declined with depth to below the 600 mg/kg threshold at 55' (BH-6), 24-25' (BH-7) and 19-20' (BH-9). Additionally, the area of borehole (BH-8) showed chloride impact to the shallow soils, which declined with depth to below the 600 mg/kg threshold at 9-10' below surface.

Work Plan

Based on the laboratory results, Marathon Oil Company proposes to remove the impacted material as highlighted (green) on Table 1 and shown on Figure 4.

Pasture

To remove the elevated chlorides and soil above the RRALs, the impacted areas in the pasture will be excavated to depths ranging from 4.0' to 6.0' below surface. Once excavated to the appropriate depths, confirmation samples will be collected from the area of boreholes (BH-2, BH-3 and BH-4) for chlorides. If a deeper impact is encountered, the area will be capped with a 20-mil liner for proper closure of the site. The assessment data from borehole (BH-1) showed a deeper chloride impact to the subsurface soils and this area will be excavated to 4-5' and capped with a 20-mil liner.

Tank Battery

The area of borehole (BH-6) showed the deepest TPH and chloride impact to the area. This area will be excavated to a maximum depth of 20.0' below surface to attempt to remove of the TPH impacted soil above the RRAL. Once excavated, confirmation samples will be collected from the bottom of the excavation and analyzed for TPH. The area will be backfilled with clean soil to a depth of approximately 4.0' below surface and capped with a 20-mil liner to prevent vertical migration of the deeper chloride impact. However, if a dense formation is encountered that hinders the excavation, the NMOCD will be notified and the area will be capped at 4.0' below surface. The remaining areas boreholes (BH-7, BH-8 and BH-9) will be excavated to a depth of 4-5' below surface. Additionally, the areas of boreholes (BH-7 and BH-9) will be capped with 20-mil liner to prevent vertical migration of the deeper chloride impact.

Once excavated to the appropriate depth, the excavation will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, Marathon Oil Company will excavate the impacted soils to the maximum extent practicable.

Conclusion

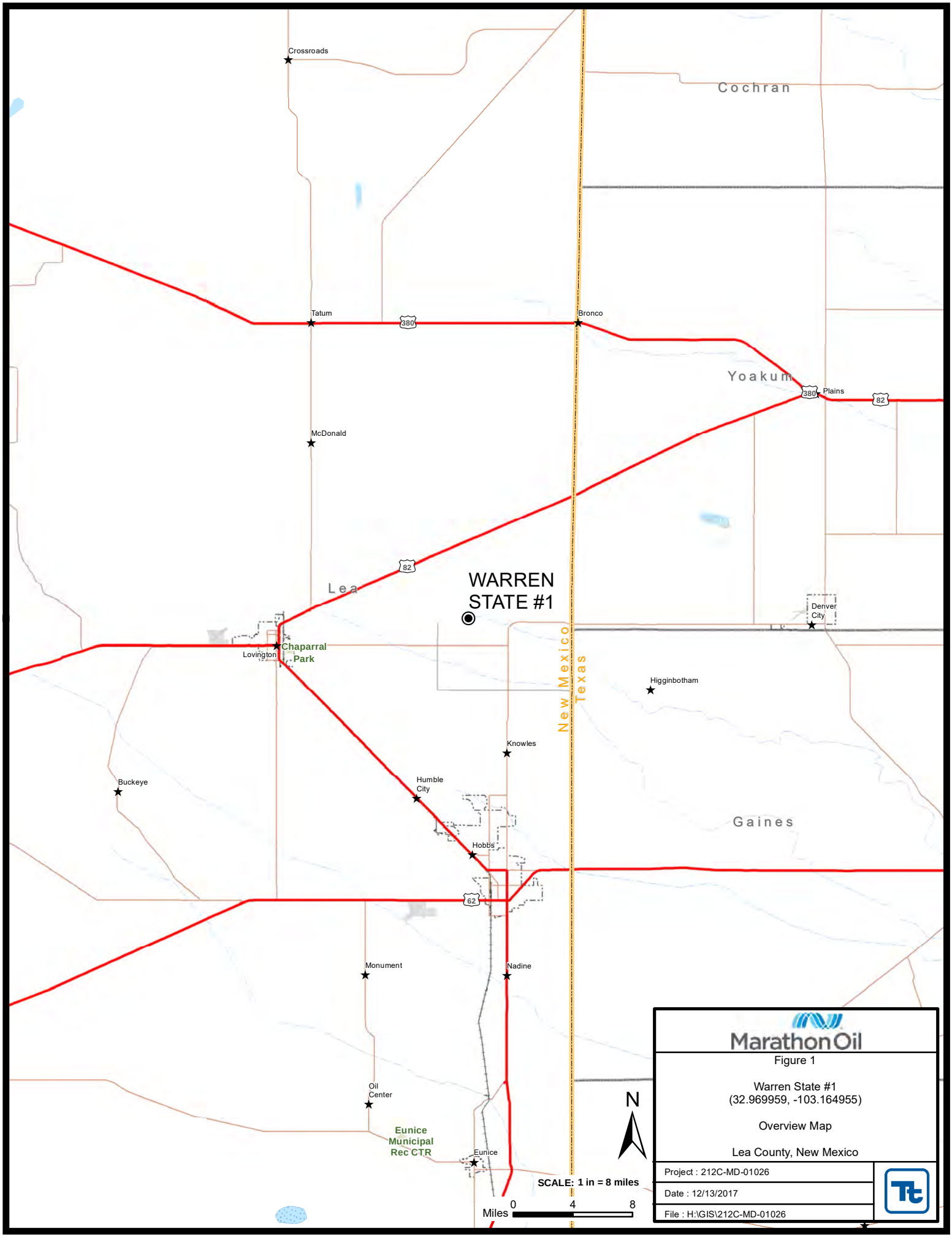
Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

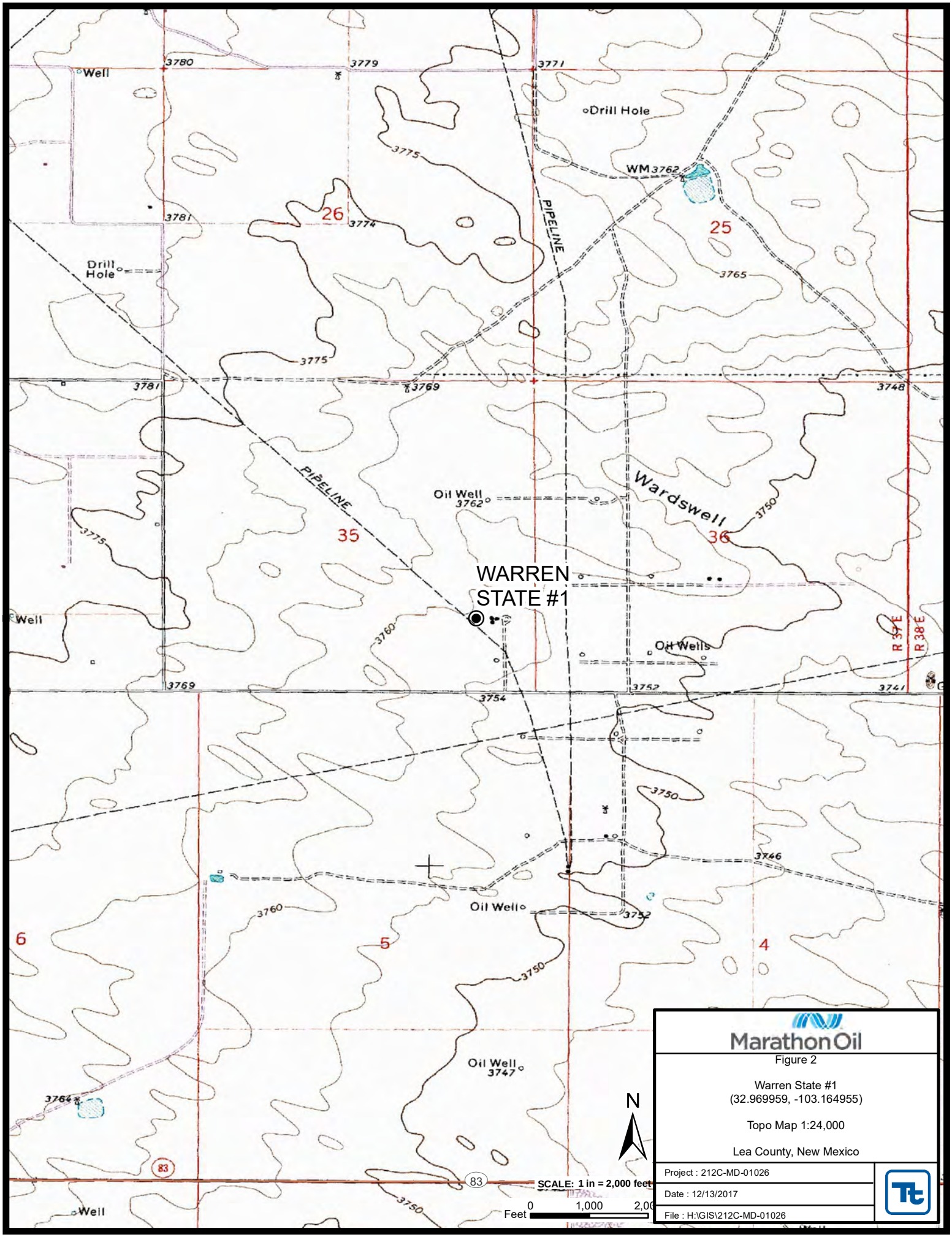
Clair Gonzales,
Project Manager

Ike Tavarez,
Senior Project Manager, P.G.

Figures



Mapped By: Isabel Marmolejo



Marathon Oil

Figure 2

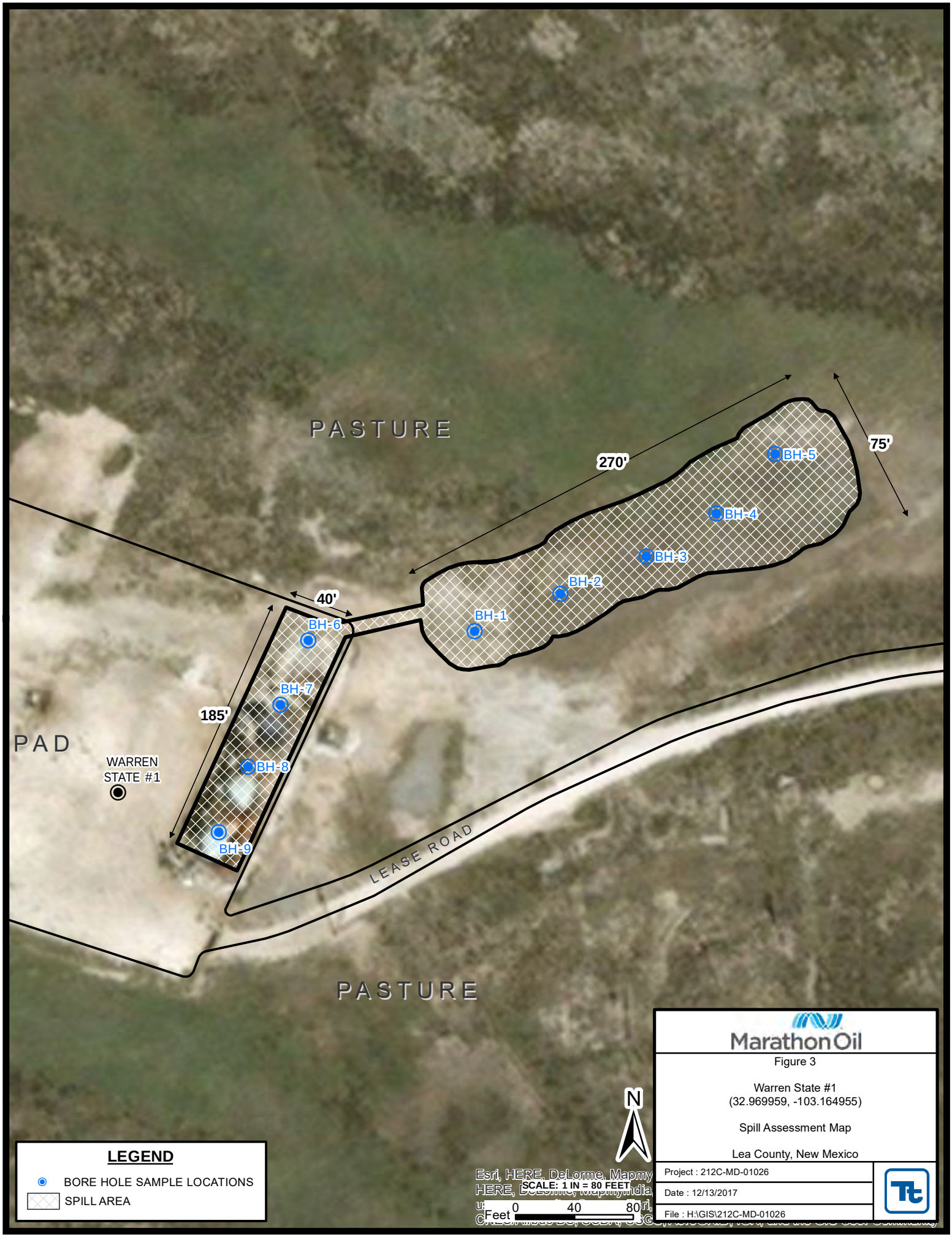
Warren State #1
(32.969959, -103.164955)

Topo Map 1:24,000

Lea County, New Mexico

Project : 212C-MD-01026	
Date : 12/13/2017	
File : H:\GIS\212C-MD-01026	

Mapped By: Isabel Marmolejo



Marathon Oil

Figure 3

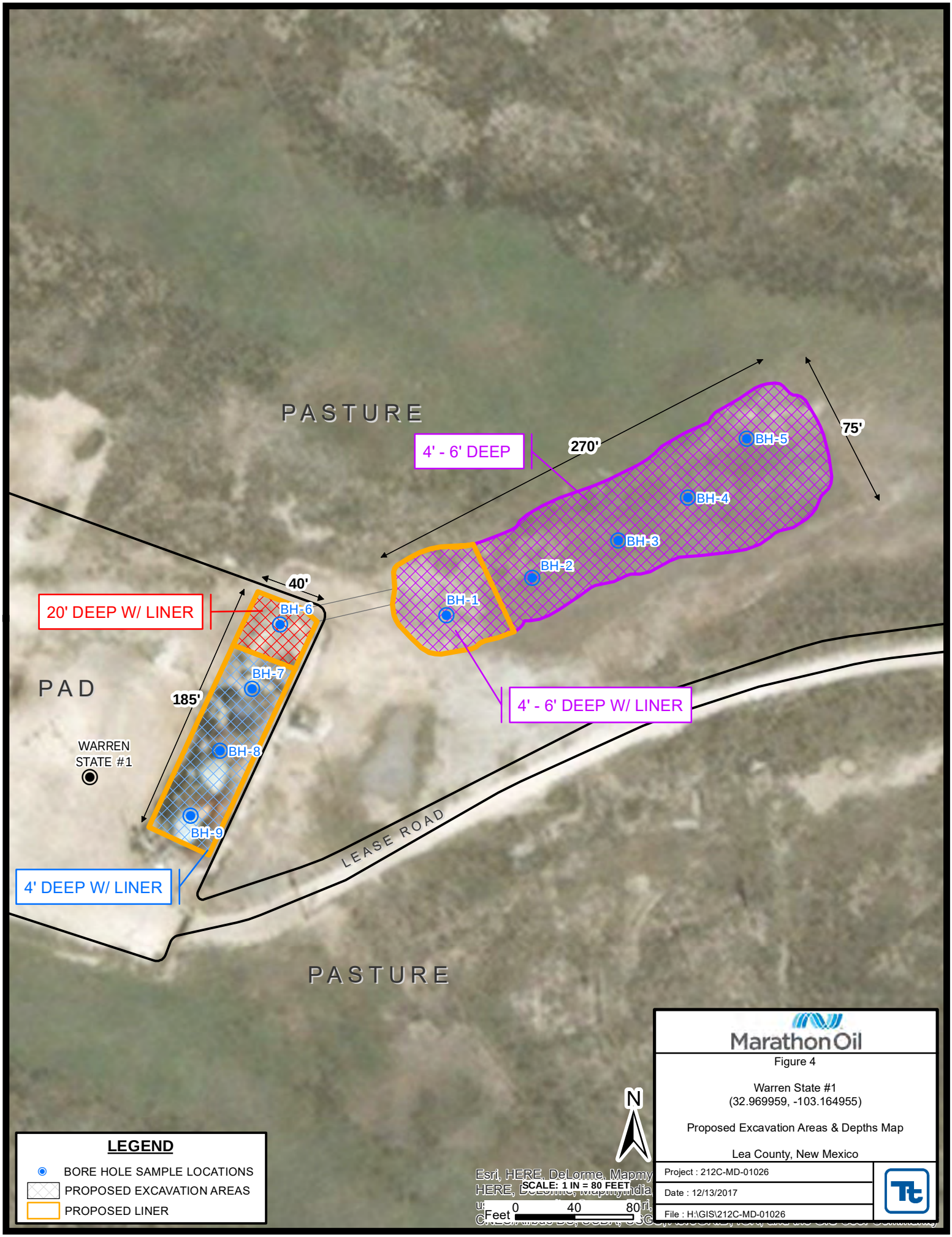
Warren State #1
(32.969959, -103.164955)

Spill Assessment Map

Lea County, New Mexico

Project : 212C-MD-01026	
Date : 12/13/2017	
File : H:\GIS\212C-MD-01026	

Mapped By: Isabel Marmolejo



Mapped By: Isabel Marmolejo

Tables

Table 1
Marathon
Warren State #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
Pasture Area														
BH-1	11/7/2017	0-1	X		<15.0	384	88.8	473	<0.00201	<0.00201	<0.00201	0.00463	0.00463	**2,750**
	"	2-3	X		<15.0	89.9	<15.0	89.8	-	-	-	-	-	**2,740**
	"	4-5	X		-	-	-	-	-	-	-	-	-	**2,980**
	"	6-7	X		-	-	-	-	-	-	-	-	-	**2,570**
	"	9-10	X		-	-	-	-	-	-	-	-	-	**1,980**
	"	14-15	X		-	-	-	-	-	-	-	-	-	**1,070**
	"	19-20	X		-	-	-	-	-	-	-	-	-	**2,500**
	"	24-25	X		-	-	-	-	-	-	-	-	-	**2,920**
	"	29-30	X		-	-	-	-	-	-	-	-	-	**979**
	"	34-35	X		-	-	-	-	-	-	-	-	-	144
	"	39-40	X		-	-	-	-	-	-	-	-	-	115
	"	44-45	X		-	-	-	-	-	-	-	-	-	58.1
	"	50	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	41.0
BH-2	11/7/2017	0-1	X		<15.0	85.7	17.3	103	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	63.1
	"	2-3	X		<15.0	58.0	<15.0	58.0	-	-	-	-	-	89.7
	"	4-5	X		-	-	-	-	-	-	-	-	-	**1,170**
	"	6-7	X		-	-	-	-	-	-	-	-	-	**1,400**
	"	9-10	X		-	-	-	-	-	-	-	-	-	544
	"	14-15	X		-	-	-	-	-	-	-	-	-	495
	"	19-20	X		-	-	-	-	-	-	-	-	-	709
	"	24-25	X		-	-	-	-	-	-	-	-	-	266
	"	30	X		-	-	-	-	-	-	-	-	-	199
	"	40	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	42.6
BH-3	11/7/2017	0-1	X		<15.0	72.9	<15.0	72.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	554
	"	2-3	X		-	-	-	-	-	-	-	-	-	**855**
	"	4-5	X		-	-	-	-	-	-	-	-	-	**1,750**
	"	6-7	X		-	-	-	-	-	-	-	-	-	168
	"	9-10	X		-	-	-	-	-	-	-	-	-	211
	"	14-15	X		-	-	-	-	-	-	-	-	-	653
	"	19-20	X		-	-	-	-	-	-	-	-	-	239
	"	24-25	X		-	-	-	-	-	-	-	-	-	135
	"	29-30	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	280

Table 1
Marathon
Warren State #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
BH-4	11/7/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**1,190**
	"	2-3	X		-	-	-	-	-	-	-	-	-	**1,320**
	"	4-5	X		-	-	-	-	-	-	-	-	-	330
	"	6-7	X		-	-	-	-	-	-	-	-	-	198
	"	9-10	X		-	-	-	-	-	-	-	-	-	69.7
	"	14-15	X		-	-	-	-	-	-	-	-	-	59.8
	"	19-20	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	66.6
BH-5	11/7/2017	0-1	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	32.8
	"	2-3	X		-	-	-	-	-	-	-	-	-	34.9
	"	4-5	X		-	-	-	-	-	-	-	-	-	587
	"	6-7	X		-	-	-	-	-	-	-	-	-	739
	"	9-10	X		-	-	-	-	-	-	-	-	-	228
	"	14-15	X		-	-	-	-	-	-	-	-	-	124
	"	19-20	X		-	-	-	-	-	-	-	-	-	107
	"	24-25	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	30.6
Tank Battery														
BH-6	11/7/2017	0-1	X		258	3,960	587	**4,810**	0.00740	0.00699	0.0101	0.0925	0.117	**1,790**
	"	2-3	X		86.0	790	103	979	-	-	-	-	-	**1,490**
	"	4-5	X		223	1,090	99.3	**1,410**	-	-	-	-	-	**1,000**
	"	6-7	X		326	1,180	72.7	**1,580**	-	-	-	-	-	**1,100**
	"	9-10	X		528	3,460	377	**4,370**	-	-	-	-	-	**975**
	"	14-15	X		798	3,450	362	**4,610**	-	-	-	-	-	**1,110**
	"	19-20	X		235	1,440	147	**1,820**	-	-	-	-	-	**2,590**
	"	24-25	X		<14.9	90.3	<14.9	90.3	-	-	-	-	-	**3,590**
	"	29-30	X		-	-	-	-	-	-	-	-	-	**2,200**
	"	40	X		-	-	-	-	-	-	-	-	-	**1,120**
	"	50	X		-	-	-	-	-	-	-	-	-	860
	"	55	X		<15.0	<15.0	<15.0	<15.0	<0.00332	<0.00332	<0.00332	<0.00332	<0.00332	553

Table 1
Marathon
Warren State #1
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	ORO	Total						
BH-7	11/7/2017	0-1	X		418	7,280	1,120	**8,820**	<0.00201	0.00654	0.0100	0.109	0.125	**3,030**
	"	2-3	X		54.9	548	76.6	680	-	-	-	-	-	**2,980**
	"	4-5	X		<15.0	<15.0	<15.0	<15.0	-	-	-	-	-	**3,640**
	"	6-7	X		-	-	-	-	-	-	-	-	-	**1,850**
	"	9-10	X		-	-	-	-	-	-	-	-	-	**1,080**
	"	14-15	X		-	-	-	-	-	-	-	-	-	**1,250**
	"	19-20	X		-	-	-	-	-	-	-	-	-	**1,140**
	"	24-25	X		-	-	-	-	-	-	-	-	-	335
	"	29-30	X		-	-	-	-	-	-	-	-	-	147
	"	40	X		<14.9	<14.9	<14.9	<14.9	<0.00330	<0.00330	<0.00330	<0.00330	<0.00330	17.1
BH-8	11/7/2017	0-1	X		133	4,480	724	**5,340**	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**2,630**
	"	2-3	X		38.5	595	102	736	-	-	-	-	-	**2,400**
	"	4-5	X		<15.0	<15.0	<15.0	<15.0	-	-	-	-	-	**2,120**
	"	6-7	X		-	-	-	-	-	-	-	-	-	824
	"	9-10	X		-	-	-	-	-	-	-	-	-	519
	"	14-15	X		-	-	-	-	-	-	-	-	-	227
	"	19-20	X		-	-	-	-	-	-	-	-	-	141
	"	24-25	X		-	-	-	-	-	-	-	-	-	87.0
	"	29-30	X		<15.0	<15.0	<15.0	<15.0	<0.00334	<0.00334	<0.00334	<0.00334	<0.00334	38.4
BH-9	11/7/2017	0-1	X		500	6,390	759	**7,650**	0.00336	0.0454	0.0307	0.210	0.289	**4,190**
	"	2-3	X		151	586	62.9	800	-	-	-	-	-	**2,590**
	"	4-5	X		86.8	386	37.4	510	-	-	-	-	-	**994**
	"	6-7	X		<15.0	<15.0	<15.0	<15.0	-	-	-	-	-	**1,110**
	"	9-10	X		-	-	-	-	-	-	-	-	-	**1,220**
	"	14-15	X		-	-	-	-	-	-	-	-	-	**843**
	"	19-20	X		-	-	-	-	-	-	-	-	-	393
	"	24-25	X		-	-	-	-	-	-	-	-	-	289
	"	29-30	X		-	-	-	-	-	-	-	-	-	257
	"	40	X		<15.0	<15.0	<15.0	<15.0	<0.00322	<0.00322	<0.00322	<0.00322	<0.00322	72.1

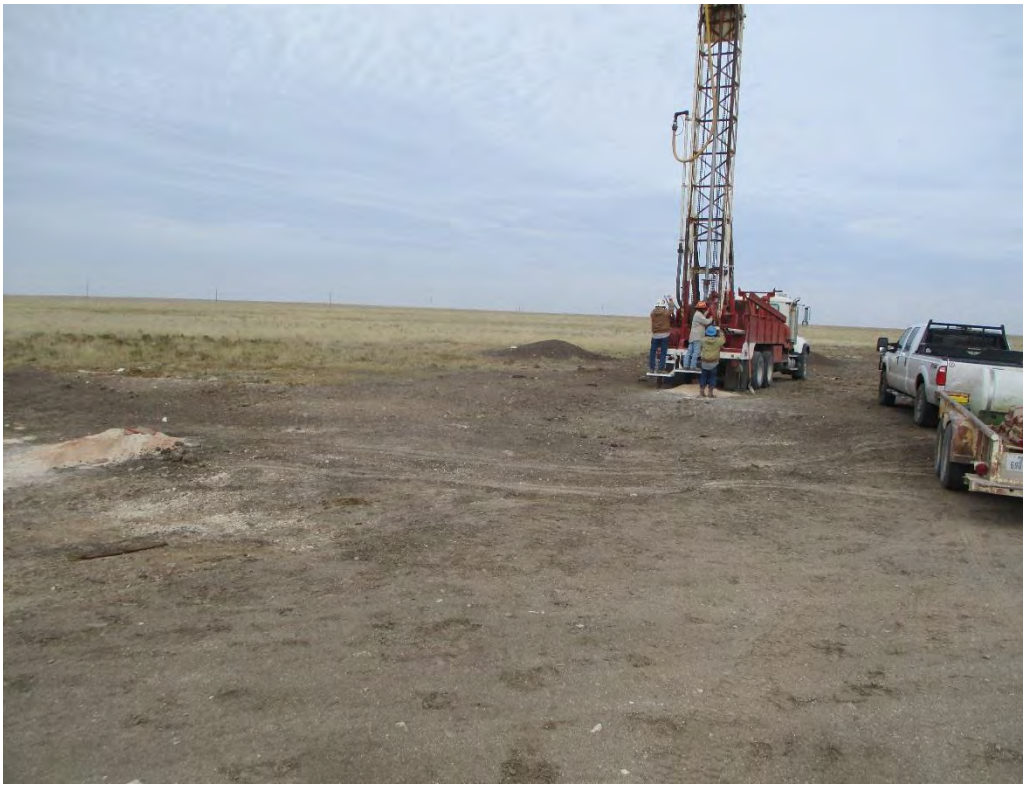
(-) Not Analyzed

Proposed Excavation Depths

Proposed Liner Depths

Photos

Marathon Oil Company
Warren State #1
Lea County, New Mexico

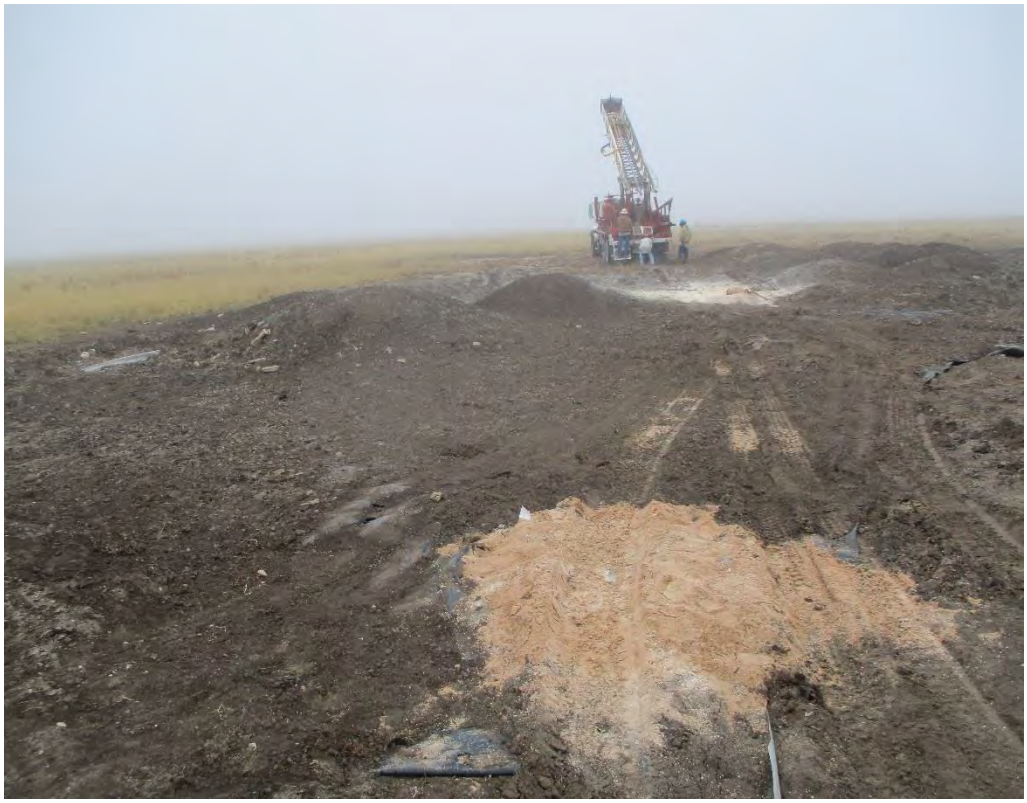


View North East– Area of BH-1 and BH-2

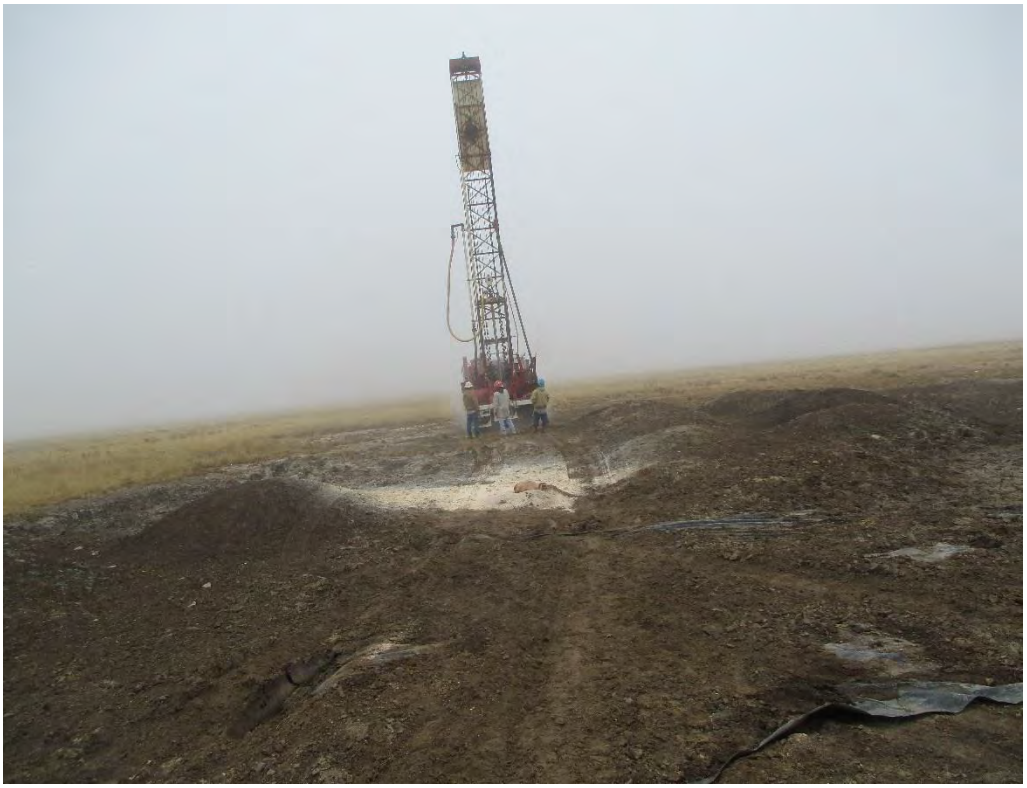
View West– Area of BH-3

Marathon Oil Company
Warren State #1
Lea County, New Mexico

TETRA TECH



View north East– Area of BH-3 and BH-4



View North East– Area of BH-4 and BH-5

Marathon Oil Company
Warren State #1
Lea County, New Mexico

View Southwest– Area of BH-6 and BH-7

View North – Area of BH-8 and BH-9

Appendix A

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 April 3, 2017

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 Marathon Oil Company	Contact Wendy Gram
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 701-690-6519 (cell) 713-296-2862 (office)
Facility Name Warren State #1	Facility Type Producing well

Surface Owner Angell #2 Family LTD Partnership	Mineral Owner The State of New Mexico	API No.30-025-34034

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Lin	Feet from the	East/West Line	County
P	35	15S	37E	1,295	South	880	East	Lea

Latitude 32.9701576 **Longitude** -103.165047 NAD83

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 1200 barrels	Volume Recovered 200 barrels
Source of Release Produced water tank	Date and Hour of Occurrence 6/8/2017	Date and Hour of Discovery 6/9/2017
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Olivia Yu	
By Whom? Wendy Gram	Date and Hour 6/9/2017 Approximately 5 p.m..	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

RECEIVED
By Olivia Yu at 4:48 pm, Jun 26, 2017

Describe Cause of Problem and Remedial Action Taken.*
A thunderstorm during the evening of June 8, 2017 interfered with the SCADA system. The system showed that the pump which pumped the produced water from the Warren State #1 well to the nearby South Denton 6 State #2 injection well was running when in fact it was not. Both 500-barrel produced water tanks on location were overfilled. The release was to lined secondary containment on location which then overflowed off the pad area into a pasture.

Describe Area Affected and Cleanup Action Taken.*
Produced water in the containment area was removed with a vacuum truck and trucked for offsite disposal. The recovered volume of release was based on the amount recovered by the vacuum truck. Outside the containment area, soil was removed down to a liner that had been placed around the well pad at the request of the land owner after a previous spill. The Warren State #1 well was shut in.

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.

Wendy Gram
Signature:

Printed Name: Wendy Gram

Title: Sr. HES Professional

E-mail Address: wwgram@marathonoil.com

Date: June 19, 2017
Phone: 701-690-6519 (cell) 713-296-2862 (office)

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 6/26/2017

Expiration Date:

Conditions of Approval:
see attached directive

Attached ☑

1RP-4738 nOY1717830382 pOY1717832324

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 April 3, 2017

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 Marathon Oil Company	Contact Wendy Gram
Address 5555 San Felipe Street, Houston, Texas 77056	Telephone No. 701-690-6519 (cell) 713-296-2862 (office)
Facility Name Warren State #1	Facility Type Producing well

Surface Owner Angell #2 Family LTD Partnership	Mineral Owner The State of New Mexico	API No.30-025-34034

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	35	15S	37E	1,295	South	880	East	Lea

Latitude 32.9701576 **Longitude** -103.165047 NAD83

NATURE OF RELEASE

Type of Release Produced water	Volume of Release 200 barrels	Volume Recovered 200 barrels
Source of Release Produced water tank	Date and Hour of Occurrence 6/6/2017	Date and Hour of Discovery 6/6/2017 11 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Maxey Brown	
By Whom? Wendy Gram	Date and Hour 6/6/2017 1:44 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
Not applicable.

RECEIVED
By Olivia Yu at 3:54 pm, Jun 19, 2017

Describe Cause of Problem and Remedial Action Taken.*
The high-level switch on the produced water tank at the Warren State #1 well was manually bypassed which did not allow the produced water from the well to be pumped from the tanks to the nearby South Denton 6 State #2 injection well. Both 500-barrel produced water tanks on location were overfilled. The release was to lined secondary containment on location.

Describe Area Affected and Cleanup Action Taken.*
Produced water in the containment area was removed with a vacuum truck and trucked for offsite disposal. The volume of release was based on the amount recovered by the vacuum truck.

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: Wendy W Gram

Printed Name: Wendy Gram

Title: Sr. HES Professional

E-mail Address: wwgram@marathonoil.com

Date: June 19, 2017
Phone: 701-690-6519 (cell) 713-296-2862 (office)

OIL CONSERVATION DIVISION

Approved by Environmental Specialist: DMJ

Approval Date: 6/19/2017

Expiration Date:

Conditions of Approval:
Please inspect liner in question. Provide NMOCD with a concise report of the inspection with affirmation the liner has and will continue to contain liquids.

Attached ☐

1RP-4732

* Attach Additional Sheets If Necessary

pOY1717060702

nOY1717057887

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Marathon-Warren State #1
Lea County, New Mexico

14 South 36 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

14 South 37 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 90	22	23	24
30 75	29 75 77	28 81	27 74 62	26 44	25 85 55 65
31 80	32 74 73	33	34 58 83 79	35 68	36 55 63 71

14 South 38 East

6	5	4	3	2	1
7	8	9	10	11	12
18 91	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

15 South 36 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

15 South 37 East

6	5	4 74	3 58	2 42 40	1 49
7 96	8	9	10 49	11 57	12
18	17 79	16	15	14	13
19	20	21	22	23	24
30	29	28	27 50	26	25
31	32	33	34	35 45'	36

15 South 38 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 37 East

6	5	4	3	2	1
7 66	8	9	10	11 80	12
18	17	16	15	14	13
19 55 82	20 44	21 50	22	23	24
30 52	29 44	28 34	27 73	26	25 70
31 Site 53	32 38	33 60	34 60	35	36

16 South 38 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 39 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
L 03240		L	LE	2	4		35	15S	37E	671534	3649681*	120	45	75

Average Depth to Water: **45 feet**

Minimum Depth: **45 feet**

Maximum Depth: **45 feet**

Record Count: 1

PLSS Search:

Section(s): 35 **Township:** 15S **Range:** 37E

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

Appendix C

Analytical Report 568179

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

Marathon

Warren State #1

03-DEC-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

03-DEC-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **568179**
Marathon
Project Address: Lea Co, NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 568179. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 568179 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Mike Kimmel
Client Services Manager

Sample Cross Reference 568179

Tetra Tech- Midland, Midland, TX

Marathon

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH #1 (0-1') 2'BEB	S	11-07-17 00:00		568179-001
BH #1 (2-3') 2'BEB	S	11-07-17 00:00		568179-002
BH #1 (4-5') 2'BEB	S	11-07-17 00:00		568179-003
BH #1 (6-7') 2'BEB	S	11-07-17 00:00		568179-004
BH #1 (9-10') 2'BEB	S	11-07-17 00:00		568179-005
BH #1 (14-15') 2'BEB	S	11-07-17 00:00		568179-006
BH #1 (19-20') 2'BEB	S	11-07-17 00:00		568179-007
BH #1 (24-25') 2'BEB	S	11-07-17 00:00		568179-008
BH #1 (29-30') 2'BEB	S	11-07-17 00:00		568179-009
BH #1 (34-35') 2'BEB	S	11-07-17 00:00		568179-010
BH #1 (39-40') 2'BEB	S	11-07-17 00:00		568179-011
BH #1 (44-45') 2'BEB	S	11-07-17 00:00		568179-012
BH #1 (50') 2'BEB	S	11-07-17 00:00		568179-013
BH #2 (0-1')	S	11-07-17 00:00		568179-014
BH #2 (2-3')	S	11-07-17 00:00		568179-015
BH #2 (4-5')	S	11-07-17 00:00		568179-016
BH#2 (6-7')	S	11-07-17 00:00		568179-017
BH #2 (9-10')	S	11-07-17 00:00		568179-018
BH #2 (14-15')	S	11-07-17 00:00		568179-019
BH #2 (19-20')	S	11-07-17 00:00		568179-020
BH #2 (24-25')	S	11-07-17 00:00		568179-021
BH #2 (30')	S	11-07-17 00:00		568179-022
BH #2 (40')	S	11-07-17 00:00		568179-023
BH #3 (0-1') 1.5'BEB	S	11-07-17 00:00		568179-025
BH #3 (2-3') 1.5'BEB	S	11-07-17 00:00		568179-026
BH #3 (4-5') 1.5'BEB	S	11-07-17 00:00		568179-027
BH #3 (6-7') 1.5'BEB	S	11-07-17 00:00		568179-028
BH #3 (9-10') 1.5'BEB	S	11-07-17 00:00		568179-029
BH #3 (14-15') 1.5'BEB	S	11-07-17 00:00		568179-030
BH #3 (19-20') 1.5'BEB	S	11-07-17 00:00		568179-031
BH #3 (24-25') 1.5'BEB	S	11-07-17 00:00		568179-032
BH #3 (29-30') 1.5'BEB	S	11-07-17 00:00		568179-033
BH #4 (0-1') 1.5'BEB	S	11-09-17 00:00		568179-036
BH #4 (2-3') 1.5'BEB	S	11-09-17 00:00		568179-037
BH #4 (4-5') 1.5'BEB	S	11-09-17 00:00		568179-038
BH #4 (6-7') 1.5'BEB	S	11-09-17 00:00		568179-039
BH #4 (9-10') 1.5'BEB	S	11-09-17 00:00		568179-040
BH #4 (14-15') 1.5'BEB	S	11-09-17 00:00		568179-041
BH #4 (19-20') 1.5'BEB	S	11-09-17 00:00		568179-042
BH #5 (0-1')	S	11-09-17 00:00		568179-043
BH #5 (2-3')	S	11-09-17 00:00		568179-044
BH #5 (4-5')	S	11-09-17 00:00		568179-045
BH #5 (6-7')	S	11-09-17 00:00		568179-046

Version: 1.%

BH #5 (9-10')	S	11-09-17 00:00	568179-047
BH #5 (14-15')	S	11-09-17 00:00	568179-048
BH #5 (19-20')	S	11-09-17 00:00	568179-049
BH #5 (24-25')	S	11-09-17 00:00	568179-050
BH #6 (0-1')	S	11-09-17 00:00	568179-051
BH #6 (2-3')	S	11-09-17 00:00	568179-052
BH #6 (4-5')	S	11-09-17 00:00	568179-053
BH #6 (6-7')	S	11-09-17 00:00	568179-054
BH #6 (9-10')	S	11-09-17 00:00	568179-055
BH #6 (14-15')	S	11-09-17 00:00	568179-056
BH #6 (19-20')	S	11-09-17 00:00	568179-057
BH #6 (24-25')	S	11-09-17 00:00	568179-058
BH #6 (29-30')	S	11-09-17 00:00	568179-059
BH #6 (40')	S	11-09-17 00:00	568179-060
BH #6 (50')	S	11-09-17 00:00	568179-061
BH #6 (55')	S	11-09-17 00:00	568179-062
BH #7 (0-1')	S	11-09-17 00:00	568179-063
BH #7 (2-3')	S	11-09-17 00:00	568179-064
BH #7 (4-5')	S	11-09-17 00:00	568179-065
BH #7 (6-7')	S	11-09-17 00:00	568179-066
BH #7 (9-10')	S	11-09-17 00:00	568179-067
BH #7 (14-15')	S	11-09-17 00:00	568179-068
BH #7 (19-20')	S	11-09-17 00:00	568179-069
BH #7 (24-25')	S	11-09-17 00:00	568179-070
BH #7 (29-30')	S	11-09-17 00:00	568179-071
BH #7 (40')	S	11-09-17 00:00	568179-072
BH #8 (0-1')	S	11-09-17 00:00	568179-073
BH #8 (2-3')	S	11-09-17 00:00	568179-074
BH #8 (4-5')	S	11-09-17 00:00	568179-075
BH #8 (6-7')	S	11-09-17 00:00	568179-076
BH #8 (9-10')	S	11-09-17 00:00	568179-077
BH #8 (14-15')	S	11-09-17 00:00	568179-078
BH #8 (19-20')	S	11-09-17 00:00	568179-079
BH #8 (24-25')	S	11-09-17 00:00	568179-080
BH #8 (29-30')	S	11-09-17 00:00	568179-081
BH #9 (0-1')	S	11-09-17 00:00	568179-082
BH #9 (2-3')	S	11-09-17 00:00	568179-083
BH #9 (4-5')	S	11-09-17 00:00	568179-084
BH #9 (6-7')	S	11-09-17 00:00	568179-085
BH #9 (9-10')	S	11-09-17 00:00	568179-086
BH #9 (14-15')	S	11-09-17 00:00	568179-087
BH #9 (19-20')	S	11-09-17 00:00	568179-088
BH #9 (24-25')	S	11-09-17 00:00	568179-089
BH #9 (29-30')	S	11-09-17 00:00	568179-090

Sample Cross Reference 568179

Tetra Tech- Midland, Midland, TX

Marathon

BH #9 (40')	S	11-09-17 00:00	568179-091
BH #2 (50')	S	11-07-17 00:00	Not Analyzed
BH #3 (40') 1.5'BEB	S	11-07-17 00:00	Not Analyzed
BH #3 (50') 1.5'BEB	S	11-07-17 00:00	Not Analyzed
BH #9 (50')	S	11-09-17 00:00	Not Analyzed

Sample receipt non conformances and comments:

11/21/2017: Revised report to add 2'-3' depths of BH-1,BH-2,BH-6,BH-7,BH-8, and BH-9
11/22/17: Depths 4-5/6-7/9-10 taken off of hold for sampels BH-6,BH-7,BH-8,BH-9.

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3033393 Inorganic Anions by EPA 300/300.1
Lab Sample ID 568179-009 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 568179-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3033394 Inorganic Anions by EPA 300/300.1
Lab Sample ID 568179-026 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 568179-021, -022, -023, -025, -026, -027, -028, -029, -030, -031, -032, -033.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3033435 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3033476 Inorganic Anions by EPA 300/300.1
Lab Sample ID 568179-060 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 568179-060, -062, -063, -064, -065, -066, -067, -068, -069, -070, -071, -072, -073, -074, -075, -076, -077, -078, -079.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3033483 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3033607 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3034077 TPH By SW8015 Mod
Lab Sample ID 568179-057 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Diesel Range Organics (DRO) recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 568179-056, -057, -058, -085.
The Laboratory Control Sample for Diesel Range Organics (DRO) is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-001		568179-002		568179-003		568179-004		568179-005		568179-006	
	Field Id:	BH #1 (0-1') 2'BEB		BH #1 (2-3') 2'BEB		BH #1 (4-5') 2'BEB		BH #1 (6-7') 2'BEB		BH #1 (9-10') 2'BEB		BH #1 (14-15') 2'BEB	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-15-17 11:30											
	Analyzed:	Nov-16-17 01:11											
	Units/RL:	mg/kg	RL										
Benzene		<0.00201	0.00201										
Toluene		<0.00201	0.00201										
Ethylbenzene		<0.00201	0.00201										
m,p-Xylenes		0.00463	0.00402										
o-Xylene		<0.00201	0.00201										
Total Xylenes		0.00463	0.00201										
Total BTEX		0.00463	0.00201										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00	
	Analyzed:	Nov-14-17 15:11		Nov-14-17 15:18		Nov-14-17 15:24		Nov-14-17 15:30		Nov-14-17 15:49		Nov-14-17 15:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2750	24.9	2740	24.9	2980	24.7	2570	24.7	1980	25.0	1070	25.0
TPH By SW8015 Mod	***Extracted:***	Nov-16-17 09:00		Nov-20-17 15:00									
	Analyzed:	Nov-16-17 12:32		Nov-21-17 09:43									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		384	15.0	89.8	15.0								
Oil Range Hydrocarbons (ORO)		88.8	15.0	<15.0	15.0								
Total TPH		473	15.0	89.8	15.0								

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-007		568179-008		568179-009		568179-010		568179-011		568179-012	
	Field Id:	BH #1 (19-20') 2'BEB		BH #1 (24-25') 2'BEB		BH #1 (29-30') 2'BEB		BH #1 (34-35') 2'BEB		BH #1 (39-40') 2'BEB		BH #1 (44-45') 2'BEB	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00	
	Analyzed:	Nov-14-17 16:02		Nov-14-17 16:09		Nov-14-17 14:52		Nov-14-17 16:15		Nov-14-17 16:21		Nov-14-17 16:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2500	25.0	2920	24.8	979	4.93	144	4.95	115	4.92	58.1	4.93

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-013		568179-014		568179-015		568179-016		568179-017		568179-018	
	Field Id:	BH #1 (50') 2'BEB		BH #2 (0-1')		BH #2 (2-3')		BH #2 (4-5')		BH#2 (6-7')		BH #2 (9-10')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-14-17 16:50		Nov-15-17 11:30									
	Analyzed:	Nov-15-17 10:15		Nov-16-17 00:52									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.00200	0.00200	<0.00202	0.00202								
Toluene		<0.00200	0.00200	<0.00202	0.00202								
Ethylbenzene		<0.00200	0.00200	<0.00202	0.00202								
m,p-Xylenes		<0.00401	0.00401	<0.00404	0.00404								
o-Xylene		<0.00200	0.00200	<0.00202	0.00202								
Total Xylenes		<0.00200	0.00200	<0.00202	0.00202								
Total BTEX		<0.00200	0.00200	<0.00202	0.00202								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 11:00	
	Analyzed:	Nov-14-17 16:47		Nov-14-17 17:06		Nov-14-17 17:12		Nov-14-17 17:19		Nov-14-17 17:25		Nov-14-17 17:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		41.0	4.91	63.1	4.99	89.7	4.93	1170	4.98	1400	25.0	544	4.99
TPH By SW8015 Mod	***Extracted:***	Nov-16-17 09:00		Nov-16-17 09:00		Nov-20-17 15:00							
	Analyzed:	Nov-16-17 12:52		Nov-16-17 13:52		Nov-21-17 14:53							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)		<15.0	15.0	85.7	15.0	58.0	15.0						
Oil Range Hydrocarbons (ORO)		<15.0	15.0	17.3	15.0	<15.0	15.0						
Total TPH		<15.0	15.0	103	15.0	58.0	15.0						

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-019		568179-020		568179-021		568179-022		568179-023		568179-025	
	Field Id:	BH #2 (14-15')		BH #2 (19-20')		BH #2 (24-25')		BH #2 (30')		BH #2 (40')		BH #3 (0-1') 1.5'BEB	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00	
BTEX by EPA 8021B	***Extracted:***									Nov-15-17 11:00		Nov-15-17 11:00	
	Analyzed:									Nov-16-17 21:10		Nov-16-17 15:18	
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										<0.00200	0.00200	<0.00199	0.00199
Toluene										<0.00200	0.00200	<0.00199	0.00199
Ethylbenzene										<0.00200	0.00200	<0.00199	0.00199
m,p-Xylenes										<0.00401	0.00401	<0.00398	0.00398
o-Xylene										<0.00200	0.00200	<0.00199	0.00199
Total Xylenes										<0.00200	0.00200	<0.00199	0.00199
Total BTEX										<0.00200	0.00200	<0.00199	0.00199
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 11:00		Nov-14-17 11:00		Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 14:00	
	Analyzed:	Nov-14-17 17:38		Nov-14-17 17:44		Nov-15-17 00:32		Nov-15-17 00:39		Nov-15-17 00:45		Nov-15-17 00:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		495	4.96	709	4.99	266	4.93	199	4.96	42.6	4.93	554	4.91
TPH By SW8015 Mod	***Extracted:***									Nov-16-17 09:00		Nov-16-17 09:00	
	Analyzed:									Nov-16-17 14:12		Nov-16-17 14:31	
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)										<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)										<15.0	15.0	72.9	15.0
Oil Range Hydrocarbons (ORO)										<15.0	15.0	<15.0	15.0
Total TPH										<15.0	15.0	72.9	15.0

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-026		568179-027		568179-028		568179-029		568179-030		568179-031	
	Field Id:	BH #3 (2-3') 1.5'BEB		BH #3 (4-5') 1.5'BEB		BH #3 (6-7') 1.5'BEB		BH #3 (9-10') 1.5'BEB		BH #3 (14-15') 1.5'BEB		BH #3 (19-20') 1.5'BEB	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00		Nov-07-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 14:00	
	Analyzed:	Nov-15-17 01:04		Nov-15-17 01:23		Nov-15-17 01:30		Nov-15-17 01:49		Nov-15-17 01:55		Nov-15-17 02:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		855	5.00	1750	25.0	168	4.99	211	4.98	653	4.93	239	4.98

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-032		568179-033		568179-036		568179-037		568179-038		568179-039	
	Field Id:	BH #3 (24-25') 1.5'BEB		BH #3 (29-30') 1.5'BEB		BH #4 (0-1') 1.5'BEB		BH #4 (2-3') 1.5'BEB		BH #4 (4-5') 1.5'BEB		BH #4 (6-7') 1.5'BEB	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-07-17 00:00		Nov-07-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***			Nov-15-17 11:00		Nov-15-17 11:00							
	Analyzed:			Nov-16-17 15:37		Nov-16-17 15:56							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Benzene				<0.00200	0.00200	<0.00202	0.00202						
Toluene				<0.00200	0.00200	<0.00202	0.00202						
Ethylbenzene				<0.00200	0.00200	<0.00202	0.00202						
m,p-Xylenes				<0.00399	0.00399	<0.00404	0.00404						
o-Xylene				<0.00200	0.00200	<0.00202	0.00202						
Total Xylenes				<0.00200	0.00200	<0.00202	0.00202						
Total BTEX				<0.00200	0.00200	<0.00202	0.00202						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 14:00		Nov-14-17 14:00		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30	
	Analyzed:	Nov-15-17 02:08		Nov-15-17 02:15		Nov-14-17 17:22		Nov-14-17 17:49		Nov-14-17 17:58		Nov-14-17 18:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		135	4.92	280	4.99	1190	4.99	1320	4.93	330	4.93	198	4.93
TPH By SW8015 Mod	***Extracted:***			Nov-16-17 09:00		Nov-16-17 09:00							
	Analyzed:			Nov-16-17 14:51		Nov-16-17 15:11							
	Units/RL:			mg/kg	RL	mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0	<15.0	15.0						
Diesel Range Organics (DRO)				<15.0	15.0	<15.0	15.0						
Oil Range Hydrocarbons (ORO)				<15.0	15.0	<15.0	15.0						
Total TPH				<15.0	15.0	<15.0	15.0						

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-040		568179-041		568179-042		568179-043		568179-044		568179-045	
	Field Id:	BH #4 (9-10') 1.5'BEB		BH #4 (14-15') 1.5'BEB		BH #4 (19-20') 1.5'BEB		BH #5 (0-1')		BH #5 (2-3')		BH #5 (4-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Nov-15-17 11:00		Nov-15-17 11:00					
	Analyzed:					Nov-16-17 14:40		Nov-16-17 16:45					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00202	0.00202	<0.00199	0.00199				
Toluene						<0.00202	0.00202	<0.00199	0.00199				
Ethylbenzene						<0.00202	0.00202	<0.00199	0.00199				
m,p-Xylenes						<0.00403	0.00403	<0.00398	0.00398				
o-Xylene						<0.00202	0.00202	<0.00199	0.00199				
Total Xylenes						<0.00202	0.00202	<0.00199	0.00199				
Total BTEX						<0.00202	0.00202	<0.00199	0.00199				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30	
	Analyzed:	Nov-14-17 18:15		Nov-14-17 18:42		Nov-14-17 18:51		Nov-14-17 18:59		Nov-14-17 19:08		Nov-14-17 19:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		69.7	4.98	59.8	4.99	66.6	4.92	32.8	4.90	34.9	4.99	587	4.98
TPH By SW8015 Mod	***Extracted:***					Nov-16-17 09:00		Nov-16-17 09:00					
	Analyzed:					Nov-16-17 15:31		Nov-16-17 15:51					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)						<14.9	14.9	<15.0	15.0				
Diesel Range Organics (DRO)						<14.9	14.9	<15.0	15.0				
Oil Range Hydrocarbons (ORO)						<14.9	14.9	<15.0	15.0				
Total TPH						<14.9	14.9	<15.0	15.0				

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-046		568179-047		568179-048		568179-049		568179-050		568179-051	
	Field Id:	BH #5 (6-7')		BH #5 (9-10')		BH #5 (14-15')		BH #5 (19-20')		BH #5 (24-25')		BH #6 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***									Nov-15-17 11:00		Nov-15-17 11:00	
	Analyzed:									Nov-16-17 17:04		Nov-16-17 17:24	
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										<0.00200	0.00200	0.00740	0.00201
Toluene										<0.00200	0.00200	0.00699	0.00201
Ethylbenzene										<0.00200	0.00200	0.0101	0.00201
m,p-Xylenes										<0.00399	0.00399	0.0544	0.00402
o-Xylene										<0.00200	0.00200	0.0381	0.00201
Total Xylenes										<0.00200	0.00200	0.0925	0.00201
Total BTEX										<0.00200	0.00200	0.117	0.00201
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30	
	Analyzed:	Nov-14-17 19:26		Nov-14-17 19:52		Nov-14-17 20:01		Nov-14-17 20:28		Nov-14-17 20:37		Nov-14-17 20:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		739	4.98	228	4.95	124	4.96	107	4.91	30.6	4.93	1790	24.7
TPH By SW8015 Mod	***Extracted:***									Nov-16-17 09:00		Nov-16-17 09:00	
	Analyzed:									Nov-16-17 16:11		Nov-16-17 17:11	
	Units/RL:									mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)										<15.0	15.0	258	74.9
Diesel Range Organics (DRO)										<15.0	15.0	3960	74.9
Oil Range Hydrocarbons (ORO)										<15.0	15.0	587	74.9
Total TPH										<15.0	15.0	4810	74.9

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-052		568179-053		568179-054		568179-055		568179-056		568179-057	
	Field Id:	BH #6 (2-3')		BH #6 (4-5')		BH #6 (6-7')		BH #6 (9-10')		BH #6 (14-15')		BH #6 (19-20')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-14-17 16:30		Nov-15-17 09:00		Nov-15-17 09:00	
	Analyzed:	Nov-14-17 20:54		Nov-14-17 21:03		Nov-14-17 21:12		Nov-14-17 21:21		Nov-15-17 12:32		Nov-15-17 12:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1490	24.7	1000	4.96	1100	4.90	975	4.95	1110	24.7	2590	24.9
TPH By SW8015 Mod	***Extracted:***	Nov-20-17 15:00		Nov-20-17 15:00		Nov-20-17 15:00		Nov-20-17 15:00		Nov-22-17 08:00		Nov-22-17 08:00	
	Analyzed:	Nov-21-17 10:45		Nov-21-17 13:36		Nov-21-17 16:18		Nov-21-17 16:59		Nov-22-17 12:09		Nov-22-17 12:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		86.0	15.0	223	15.0	326	15.0	528	15.0	798	15.0	235	15.0
Diesel Range Organics (DRO)		790	15.0	1090	15.0	1180	15.0	3460	15.0	3450	15.0	1440	15.0
Oil Range Hydrocarbons (ORO)		103	15.0	99.3	15.0	72.7	15.0	377	15.0	362	15.0	147	15.0
Total TPH		979	15.0	1410	15.0	1580	15.0	4370	15.0	4610	15.0	1820	15.0

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-058		568179-059		568179-060		568179-061		568179-062		568179-063	
	Field Id:	BH #6 (24-25')		BH #6 (29-30')		BH #6 (40')		BH #6 (50')		BH #6 (55')		BH #7 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***									Nov-15-17 11:00		Nov-15-17 11:00	
	Analyzed:									Nov-16-17 18:57		Nov-16-17 19:16	
	Units/RL:									mg/kg	RL	mg/kg	RL
Benzene										<0.00332	0.00332	<0.00201	0.00201
Toluene										<0.00332	0.00332	0.00654	0.00201
Ethylbenzene										<0.00332	0.00332	0.0100	0.00201
m,p-Xylenes										<0.00664	0.00664	0.0590	0.00402
o-Xylene										<0.00332	0.00332	0.0498	0.00201
Total Xylenes										<0.00332	0.00332	0.109	0.00201
Total BTEX										<0.00332	0.00332	0.125	0.00201
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-17 09:00		Nov-15-17 09:00		Nov-15-17 11:00		Nov-15-17 14:00		Nov-15-17 11:00		Nov-15-17 11:00	
	Analyzed:	Nov-15-17 12:44		Nov-15-17 12:51		Nov-15-17 16:21		Nov-15-17 20:11		Nov-15-17 16:47		Nov-15-17 16:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3590	24.6	2200	24.6	1120	5.00	860	4.93	553	4.97	3030	24.8
TPH By SW8015 Mod	***Extracted:***	Nov-22-17 08:00								Nov-16-17 09:00		Nov-16-17 09:00	
	Analyzed:	Nov-22-17 13:32								Nov-16-17 17:31		Nov-16-17 17:52	
	Units/RL:	mg/kg	RL							mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9							<15.0	15.0	418	74.8
Diesel Range Organics (DRO)		90.3	14.9							<15.0	15.0	7280	74.8
Oil Range Hydrocarbons (ORO)		<14.9	14.9							<15.0	15.0	1120	74.8
Total TPH		90.3	14.9							<15.0	15.0	8820	74.8

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-064		568179-065		568179-066		568179-067		568179-068		568179-069	
	Field Id:	BH #7 (2-3')		BH #7 (4-5')		BH #7 (6-7')		BH #7 (9-10')		BH #7 (14-15')		BH #7 (19-20')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00	
	Analyzed:	Nov-15-17 17:00		Nov-15-17 17:19		Nov-15-17 17:25		Nov-15-17 17:31		Nov-15-17 17:38		Nov-15-17 17:44	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2980	25.0	3640	25.0	1850	25.0	1080	4.98	1250	24.8	1140	5.00
TPH By SW8015 Mod	***Extracted:***	Nov-20-17 15:00		Nov-20-17 15:00									
	Analyzed:	Nov-21-17 11:06		Nov-21-17 13:56									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		54.9	15.0	<15.0	15.0								
Diesel Range Organics (DRO)		548	15.0	<15.0	15.0								
Oil Range Hydrocarbons (ORO)		76.6	15.0	<15.0	15.0								
Total TPH		680	15.0	<15.0	15.0								

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Version: 1.%

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-070		568179-071		568179-072		568179-073		568179-074		568179-075	
	Field Id:	BH #7 (24-25')		BH #7 (29-30')		BH #7 (40')		BH #8 (0-1')		BH #8 (2-3')		BH #8 (4-5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***					Nov-15-17 11:00		Nov-15-17 11:00					
	Analyzed:					Nov-16-17 19:35		Nov-16-17 19:54					
	Units/RL:					mg/kg	RL	mg/kg	RL				
Benzene						<0.00330	0.00330	<0.00202	0.00202				
Toluene						<0.00330	0.00330	<0.00202	0.00202				
Ethylbenzene						<0.00330	0.00330	<0.00202	0.00202				
m,p-Xylenes						<0.00660	0.00660	0.0232	0.00403				
o-Xylene						<0.00330	0.00330	0.0224	0.00202				
Total Xylenes						<0.00330	0.00330	0.0456	0.00202				
Total BTEX						<0.00330	0.00330	0.0456	0.00202				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00	
	Analyzed:	Nov-15-17 17:51		Nov-15-17 18:10		Nov-15-17 18:16		Nov-15-17 18:35		Nov-15-17 18:42		Nov-15-17 18:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		335	4.92	147	4.99	17.1	4.98	2630	24.9	2400	24.9	2120	24.9
TPH By SW8015 Mod	***Extracted:***					Nov-16-17 09:00		Nov-16-17 09:00		Nov-20-17 15:00		Nov-20-17 15:00	
	Analyzed:					Nov-16-17 18:13		Nov-16-17 18:32		Nov-21-17 11:26		Nov-21-17 14:16	
	Units/RL:					mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)						<14.9	14.9	133	74.7	38.5	15.0	<15.0	15.0
Diesel Range Organics (DRO)						<14.9	14.9	4480	74.7	595	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)						<14.9	14.9	724	74.7	102	15.0	<15.0	15.0
Total TPH						<14.9	14.9	5340	74.7	736	15.0	<15.0	15.0

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-076		568179-077		568179-078		568179-079		568179-080		568179-081	
	Field Id:	BH #8 (6-7')		BH #8 (9-10')		BH #8 (14-15')		BH #8 (19-20')		BH #8 (24-25')		BH #8 (29-30')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***											Nov-15-17 11:00	
	Analyzed:											Nov-16-17 20:13	
	Units/RL:											mg/kg	RL
Benzene												<0.00334	0.00334
Toluene												<0.00334	0.00334
Ethylbenzene												<0.00334	0.00334
m,p-Xylenes												<0.00669	0.00669
o-Xylene												<0.00334	0.00334
Total Xylenes												<0.00334	0.00334
Total BTEX												<0.00334	0.00334
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 11:00		Nov-15-17 16:00		Nov-15-17 16:00	
	Analyzed:	Nov-15-17 18:54		Nov-15-17 19:01		Nov-15-17 19:07		Nov-15-17 19:14		Nov-15-17 17:30		Nov-15-17 17:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		824	4.99	519	4.98	227	4.98	141	4.92	87.0	4.91	38.4	4.99
TPH By SW8015 Mod	***Extracted:***											Nov-16-17 09:00	
	Analyzed:											Nov-16-17 18:52	
	Units/RL:											mg/kg	RL
Gasoline Range Hydrocarbons (GRO)												<15.0	15.0
Diesel Range Organics (DRO)												<15.0	15.0
Oil Range Hydrocarbons (ORO)												<15.0	15.0
Total TPH												<15.0	15.0

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-082		568179-083		568179-084		568179-085		568179-086		568179-087	
	Field Id:	BH #9 (0-1')		BH #9 (2-3')		BH #9 (4-5')		BH #9 (6-7')		BH #9 (9-10')		BH #9 (14-15')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-15-17 11:00											
	Analyzed:	Nov-16-17 20:32											
	Units/RL:	mg/kg	RL										
Benzene		0.00336	0.00202										
Toluene		0.0454	0.00202										
Ethylbenzene		0.0307	0.00202										
m,p-Xylenes		0.0978	0.00404										
o-Xylene		0.112	0.00202										
Total Xylenes		0.210	0.00202										
Total BTEX		0.289	0.00202										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-17 16:00		Nov-15-17 16:00		Nov-15-17 16:00		Nov-15-17 16:00		Nov-15-17 16:00		Nov-15-17 16:00	
	Analyzed:	Nov-15-17 18:05		Nov-15-17 18:14		Nov-15-17 18:23		Nov-15-17 18:49		Nov-15-17 18:58		Nov-15-17 19:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4190	24.9	2590	24.6	994	4.99	1110	4.99	1220	4.93	843	4.98
TPH By SW8015 Mod	***Extracted:***	Nov-16-17 09:00		Nov-20-17 15:00		Nov-20-17 15:00		Nov-22-17 08:00					
	Analyzed:	Nov-16-17 19:13		Nov-21-17 11:47		Nov-21-17 16:38		Nov-22-17 13:52					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		500	74.9	151	15.0	86.8	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		6390	74.9	586	15.0	386	15.0	<15.0	15.0				
Oil Range Hydrocarbons (ORO)		759	74.9	62.9	15.0	37.4	15.0	<15.0	15.0				
Total TPH		7650	74.9	800	15.0	510	15.0	<15.0	15.0				

Mike Kimmel
Client Services Manager

Certificate of Analysis Summary 568179

Tetra Tech- Midland, Midland, TX

Project Name: Marathon

Project Id: Warren State #1
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Mon Nov-13-17 11:10 am
Report Date: 03-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	568179-088		568179-089		568179-090		568179-091					
	Field Id:	BH #9 (19-20')		BH #9 (24-25')		BH #9 (29-30')		BH #9 (40')					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00		Nov-09-17 00:00					
BTEX by EPA 8021B	***Extracted:***							Nov-15-17 11:00					
	Analyzed:							Nov-16-17 20:51					
	Units/RL:							mg/kg	RL				
Benzene								<0.00322	0.00322				
Toluene								<0.00322	0.00322				
Ethylbenzene								<0.00322	0.00322				
m,p-Xylenes								<0.00643	0.00643				
o-Xylene								<0.00322	0.00322				
Total Xylenes								<0.00322	0.00322				
Total BTEX								<0.00322	0.00322				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-15-17 16:00		Nov-15-17 16:00		Nov-15-17 16:00		Nov-15-17 16:00					
	Analyzed:	Nov-15-17 19:16		Nov-15-17 19:25		Nov-15-17 19:34		Nov-15-17 20:00					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		393	4.92	289	4.92	257	4.93	72.1	4.99				
TPH By SW8015 Mod	***Extracted:***							Nov-16-17 09:00					
	Analyzed:							Nov-16-17 19:34					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								<15.0	15.0				
Oil Range Hydrocarbons (ORO)								<15.0	15.0				
Total TPH								<15.0	15.0				

Mike Kimmel
Client Services Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033435 **Sample:** 568179-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/17 10:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 3033483 **Sample:** 568179-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 00:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 3033483 **Sample:** 568179-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 01:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 3033814 **Sample:** 568179-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 12:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.8	99.8	92	70-135	
o-Terphenyl	47.1	49.9	94	70-135	

Lab Batch #: 3033814 **Sample:** 568179-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 12:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.6	99.7	91	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033814 **Sample:** 568179-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 13:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.8	99.7	91	70-135	
o-Terphenyl	47.4	49.9	95	70-135	

Lab Batch #: 3033814 **Sample:** 568179-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 14:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.8	91	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 3033814 **Sample:** 568179-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 14:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.2	99.8	93	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3033607 **Sample:** 568179-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 14:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 3033814 **Sample:** 568179-033 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 14:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	100	93	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033814 **Sample:** 568179-036 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 15:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.3	99.8	90	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 3033607 **Sample:** 568179-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 15:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	80-120	

Lab Batch #: 3033814 **Sample:** 568179-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 15:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.1	99.6	89	70-135	
o-Terphenyl	44.4	49.8	89	70-135	

Lab Batch #: 3033607 **Sample:** 568179-033 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 15:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 3033814 **Sample:** 568179-043 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 15:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.7	100	95	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033607 **Sample:** 568179-036 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 15:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 3033814 **Sample:** 568179-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 16:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	99.8	87	70-135	
o-Terphenyl	43.6	49.9	87	70-135	

Lab Batch #: 3033607 **Sample:** 568179-043 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 16:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 3033607 **Sample:** 568179-050 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 17:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

Lab Batch #: 3033814 **Sample:** 568179-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 17:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.3	99.9	98	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033607 **Sample:** 568179-051 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 17:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 3033814 **Sample:** 568179-062 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 17:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.5	99.9	92	70-135	
o-Terphenyl	44.4	50.0	89	70-135	

Lab Batch #: 3033814 **Sample:** 568179-063 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 17:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	99.7	96	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3033814 **Sample:** 568179-072 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 18:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.5	99.6	88	70-135	
o-Terphenyl	42.6	49.8	86	70-135	

Lab Batch #: 3033814 **Sample:** 568179-073 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 18:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.7	99.6	90	70-135	
o-Terphenyl	46.0	49.8	92	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033814 **Sample:** 568179-081 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 18:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	99.7	86	70-135	
o-Terphenyl	42.6	49.9	85	70-135	

Lab Batch #: 3033607 **Sample:** 568179-062 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 18:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 3033814 **Sample:** 568179-082 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 19:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	47.0	50.0	94	70-135	

Lab Batch #: 3033607 **Sample:** 568179-063 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 19:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 3033814 **Sample:** 568179-091 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 19:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	99.9	87	70-135	
o-Terphenyl	40.5	50.0	81	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033607 **Sample:** 568179-072 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 19:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 3033607 **Sample:** 568179-073 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 19:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

Lab Batch #: 3033607 **Sample:** 568179-081 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 20:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 3033607 **Sample:** 568179-082 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 20:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 3033607 **Sample:** 568179-091 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 20:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0263	0.0300	88	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033607 **Sample:** 568179-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 21:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

Lab Batch #: 3033962 **Sample:** 568179-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 09:43

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	51.8	50.0	104	70-135	

Lab Batch #: 3033962 **Sample:** 568179-052 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 10:45

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.9	100	90	70-135	
o-Terphenyl	43.4	50.0	87	70-135	

Lab Batch #: 3033962 **Sample:** 568179-064 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 11:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	100	92	70-135	
o-Terphenyl	45.1	50.0	90	70-135	

Lab Batch #: 3033962 **Sample:** 568179-074 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 11:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	100	92	70-135	
o-Terphenyl	42.5	50.0	85	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033962 **Sample:** 568179-083 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 11:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.7	50.0	107	70-135	

Lab Batch #: 3033962 **Sample:** 568179-053 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 13:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.7	100	96	70-135	
o-Terphenyl	38.0	50.0	76	70-135	

Lab Batch #: 3033962 **Sample:** 568179-065 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 13:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.4	100	92	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

Lab Batch #: 3033962 **Sample:** 568179-075 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 14:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	52.0	50.0	104	70-135	

Lab Batch #: 3033962 **Sample:** 568179-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 14:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	51.0	50.0	102	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033962 **Sample:** 568179-054 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 16:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	100	90	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 3033962 **Sample:** 568179-084 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 16:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	100	94	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 3033962 **Sample:** 568179-055 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 16:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	43.6	50.0	87	70-135	

Lab Batch #: 3034077 **Sample:** 568179-056 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/22/17 12:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.7	99.8	93	70-135	
o-Terphenyl	44.4	49.9	89	70-135	

Lab Batch #: 3034077 **Sample:** 568179-057 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/22/17 12:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.9	99.7	94	70-135	
o-Terphenyl	40.0	49.9	80	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3034077 **Sample:** 568179-058 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/22/17 13:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	54.1	49.8	109	70-135	

Lab Batch #: 3034077 **Sample:** 568179-085 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/22/17 13:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.8	92	70-135	
o-Terphenyl	48.8	49.9	98	70-135	

Lab Batch #: 3033435 **Sample:** 7634470-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/17 03:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	80-120	

Lab Batch #: 3033483 **Sample:** 7634508-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/17 17:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 3033814 **Sample:** 7634594-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/16/17 11:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	100	93	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033607 **Sample:** 7634550-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/16/17 14:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 3033962 **Sample:** 7634803-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/21/17 04:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	100	96	70-135	
o-Terphenyl	49.3	50.0	99	70-135	

Lab Batch #: 3034077 **Sample:** 7634875-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/22/17 11:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	99.9	86	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 3033435 **Sample:** 7634470-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/17 01:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 3033483 **Sample:** 7634508-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/17 14:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033814 **Sample:** 7634594-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/16/17 11:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 3033607 **Sample:** 7634550-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/16/17 12:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0295	0.0300	98	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 3033962 **Sample:** 7634803-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/21/17 05:15

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	59.0	50.0	118	70-135	

Lab Batch #: 3034077 **Sample:** 7634875-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/22/17 11:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.2	100	89	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 3033435 **Sample:** 7634470-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/17 01:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033483 **Sample:** 7634508-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/17 14:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 3033814 **Sample:** 7634594-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/16/17 12:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	55.0	50.0	110	70-135	

Lab Batch #: 3033607 **Sample:** 7634550-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/16/17 12:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 3033962 **Sample:** 7634803-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/21/17 05:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 3034077 **Sample:** 7634875-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/22/17 11:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.1	99.9	99	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033435 **Sample:** 568179-013 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/17 02:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 3033483 **Sample:** 568429-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/17 16:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 3033607 **Sample:** 568179-042 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 13:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 3033814 **Sample:** 568179-013 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 13:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	56.4	50.0	113	70-135	

Lab Batch #: 3033962 **Sample:** 568955-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 06:17

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3034077 **Sample:** 568179-057 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/22/17 12:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.8	104	70-135	
o-Terphenyl	50.8	49.9	102	70-135	

Lab Batch #: 3033435 **Sample:** 568179-013 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/17 02:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 3033483 **Sample:** 568429-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/17 16:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 3033607 **Sample:** 568179-042 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 13:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0244	0.0300	81	80-120	

Lab Batch #: 3033814 **Sample:** 568179-013 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/16/17 13:32

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	46.5	50.0	93	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Marathon

Work Orders : 568179,

Project ID: Warren State #1

Lab Batch #: 3033962 **Sample:** 568955-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/21/17 06:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	100	100	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

Lab Batch #: 3034077 **Sample:** 568179-057 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/22/17 13:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Marathon

Work Order #: 568179 **Project ID:** Warren State #1

Analyst: ALJ **Date Prepared:** 11/14/2017 **Date Analyzed:** 11/15/2017

Lab Batch ID: 3033435 **Sample:** 7634470-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.101	0.0856	85	0.101	0.0886	88	3	70-130	35	
Toluene	<0.00201	0.101	0.0826	82	0.101	0.0870	86	5	70-130	35	
Ethylbenzene	<0.00201	0.101	0.0892	88	0.101	0.0927	92	4	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.171	85	0.202	0.179	89	5	70-135	35	
o-Xylene	<0.00201	0.101	0.0883	87	0.101	0.0889	88	1	71-133	35	

Analyst: ALJ **Date Prepared:** 11/15/2017 **Date Analyzed:** 11/15/2017

Lab Batch ID: 3033483 **Sample:** 7634508-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.0998	0.124	124	0.100	0.125	125	1	70-130	35	
Toluene	<0.00200	0.0998	0.114	114	0.100	0.110	110	4	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.107	107	0.100	0.104	104	3	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.208	104	0.201	0.204	101	2	70-135	35	
o-Xylene	<0.00200	0.0998	0.0967	97	0.100	0.0942	94	3	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Marathon

Work Order #: 568179 **Project ID:** Warren State #1

Analyst: ALJ **Date Prepared:** 11/15/2017 **Date Analyzed:** 11/16/2017

Lab Batch ID: 3033607 **Sample:** 7634550-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00200	0.100	0.109	109	0.101	0.117	116	7	70-130	35	
Toluene	<0.00200	0.100	0.101	101	0.101	0.110	109	9	70-130	35	
Ethylbenzene	<0.00200	0.100	0.104	104	0.101	0.108	107	4	71-129	35	
m,p-Xylenes	<0.00401	0.200	0.204	102	0.202	0.209	103	2	70-135	35	
o-Xylene	<0.00200	0.100	0.100	100	0.101	0.103	102	3	71-133	35	

Analyst: MNV **Date Prepared:** 11/14/2017 **Date Analyzed:** 11/14/2017

Lab Batch ID: 3033393 **Sample:** 7634369-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	248	99	250	247	99	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Marathon

Work Order #: 568179 **Project ID:** Warren State #1

Analyst: MNV **Date Prepared:** 11/14/2017 **Date Analyzed:** 11/14/2017

Lab Batch ID: 3033394 **Sample:** 7634383-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	235	94	250	236	94	0	90-110	20	

Analyst: MNV **Date Prepared:** 11/14/2017 **Date Analyzed:** 11/14/2017

Lab Batch ID: 3033399 **Sample:** 7634386-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	244	98	250	237	95	3	90-110	20	

Analyst: MNV **Date Prepared:** 11/15/2017 **Date Analyzed:** 11/15/2017

Lab Batch ID: 3033470 **Sample:** 7634447-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	250	100	250	251	100	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Marathon

Work Order #: 568179 **Project ID:** Warren State #1

Analyst: MNV **Date Prepared:** 11/15/2017 **Date Analyzed:** 11/15/2017

Lab Batch ID: 3033476 **Sample:** 7634450-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	249	100	250	250	100	0	90-110	20	

Analyst: MNV **Date Prepared:** 11/15/2017 **Date Analyzed:** 11/15/2017

Lab Batch ID: 3033477 **Sample:** 7634451-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	250	100	250	250	100	0	90-110	20	

Analyst: MNV **Date Prepared:** 11/15/2017 **Date Analyzed:** 11/15/2017

Lab Batch ID: 3033484 **Sample:** 7634475-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	237	95	250	238	95	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

BS / BSD Recoveries

Project Name: Marathon

Work Order #: 568179 **Project ID:** Warren State #1

Analyst: ARM **Date Prepared:** 11/16/2017 **Date Analyzed:** 11/16/2017

Lab Batch ID: 3033814 **Sample:** 7634594-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	972	97	1000	954	95	2	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1020	102	1000	1010	101	1	70-135	35	

Analyst: JUM **Date Prepared:** 11/20/2017 **Date Analyzed:** 11/21/2017

Lab Batch ID: 3033962 **Sample:** 7634803-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	998	100	1000	1030	103	3	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1070	107	1000	1140	114	6	70-135	35	

Analyst: ALJ **Date Prepared:** 11/22/2017 **Date Analyzed:** 11/22/2017

Lab Batch ID: 3034077 **Sample:** 7634875-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	999	100	999	979	98	2	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1030	103	999	1010	101	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033435 **QC- Sample ID:** 568179-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/14/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.0833	83	0.0996	0.0802	81	4	70-130	35	
Toluene	<0.00201	0.100	0.0828	83	0.0996	0.0789	79	5	70-130	35	
Ethylbenzene	<0.00201	0.100	0.0876	88	0.0996	0.0856	86	2	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.167	83	0.199	0.163	82	2	70-135	35	
o-Xylene	<0.00201	0.100	0.0822	82	0.0996	0.0871	87	6	71-133	35	

Lab Batch ID: 3033483 **QC- Sample ID:** 568429-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.101	101	0.100	0.116	116	14	70-130	35	
Toluene	<0.00199	0.0996	0.0790	79	0.100	0.0884	88	11	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0602	60	0.100	0.0657	66	9	71-129	35	X
m,p-Xylenes	<0.00398	0.199	0.111	56	0.200	0.110	55	1	70-135	35	X
o-Xylene	<0.00199	0.0996	0.0601	60	0.100	0.0690	69	14	71-133	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033607 **QC- Sample ID:** 568179-042 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/16/2017 **Date Prepared:** 11/15/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.106	106	0.101	0.100	99	6	70-130	35	
Toluene	<0.00201	0.100	0.0991	99	0.101	0.0928	92	7	70-130	35	
Ethylbenzene	<0.00201	0.100	0.0988	99	0.101	0.0916	91	8	71-129	35	
m,p-Xylenes	<0.00402	0.201	0.193	96	0.202	0.180	89	7	70-135	35	
o-Xylene	<0.00201	0.100	0.0945	95	0.101	0.0887	88	6	71-133	35	

Lab Batch ID: 3033393 **QC- Sample ID:** 568179-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2017 **Date Prepared:** 11/14/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	979	247	1170	77	247	1160	73	1	90-110	20	X

Lab Batch ID: 3033393 **QC- Sample ID:** 568179-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2017 **Date Prepared:** 11/14/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	115	246	351	96	246	352	96	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033394 **QC- Sample ID:** 568179-026 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/14/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	855	250	1040	74	250	1030	70	1	90-110	20	X

Lab Batch ID: 3033394 **QC- Sample ID:** 568321-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2017 **Date Prepared:** 11/14/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	9.56	250	252	97	250	254	98	1	90-110	20	

Lab Batch ID: 3033399 **QC- Sample ID:** 568179-036 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2017 **Date Prepared:** 11/14/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1190	250	1420	92	250	1420	92	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033399 **QC- Sample ID:** 568179-046 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2017 **Date Prepared:** 11/14/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	739	249	994	102	249	994	102	0	90-110	20	

Lab Batch ID: 3033470 **QC- Sample ID:** 568121-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	354	247	582	92	247	582	92	0	90-110	20	

Lab Batch ID: 3033470 **QC- Sample ID:** 568121-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	31.6	250	296	106	250	306	110	3	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033476 **QC- Sample ID:** 568179-060 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1120	250	1270	60	250	1270	60	0	90-110	20	X

Lab Batch ID: 3033476 **QC- Sample ID:** 568179-070 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	335	246	564	93	246	557	90	1	90-110	20	

Lab Batch ID: 3033477 **QC- Sample ID:** 568380-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	5.24	247	260	103	247	256	102	2	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033477 **QC- Sample ID:** 568429-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	435	246	654	89	246	649	87	1	90-110	20	X

Lab Batch ID: 3033484 **QC- Sample ID:** 568179-080 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	87.0	246	313	92	246	314	92	0	90-110	20	

Lab Batch ID: 3033484 **QC- Sample ID:** 568179-090 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2017 **Date Prepared:** 11/15/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	257	247	508	102	247	510	102	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Marathon

Work Order # : 568179 **Project ID:** Warren State #1

Lab Batch ID: 3033814 **QC- Sample ID:** 568179-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/16/2017 **Date Prepared:** 11/16/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	962	96	999	972	97	1	70-135	35	
Diesel Range Organics (DRO)	<15.0	999	1050	105	999	1060	106	1	70-135	35	

Lab Batch ID: 3033962 **QC- Sample ID:** 568955-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/21/2017 **Date Prepared:** 11/20/2017 **Analyst:** JUM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	900	90	1000	838	84	7	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	944	94	1000	904	90	4	70-135	35	

Lab Batch ID: 3034077 **QC- Sample ID:** 568179-057 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/22/2017 **Date Prepared:** 11/22/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	235	998	949	72	999	1030	80	8	70-135	35	
Diesel Range Organics (DRO)	1440	998	1860	42	999	2000	56	7	70-135	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

568179

Client Name: Marathon

Site Manager: Ike Tavarez

Project Name: Warren State #1

Project Location: (county, state) Lea County, New Mexico

Project #: Pending

Invoice to: Tetra Tech

Receiving Laboratory: Xenco Midland Tx

Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	BH #1 (0-1') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (2-3') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (4-5') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (6-7') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (9-10') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (14-15') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (19-20') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (24-25') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (29-30') 2'BEB	11/7/2017			X				X			1	N
	BH #1 (34-35') 2'BEB	11/7/2017			X				X			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
X		X												X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							

Relinquished by: Date: 11-13-17 Time: 1110

Received by: Date: 11/13 Time: 11:10

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

- [x] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Temp: 9 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 7

Final 1.002

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Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

568179

Client Name: Marathon

Site Manager: Ike Tavarez

Project Name: Warren State #1

Project Location: (county, state) Lea County, New Mexico

Project #: Pending

Invoice to: Tetra Tech

Receiving Laboratory: Xenco Midland Tx

Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	BH #1 (39-40') 2'BEB	11/7/2017			X				X			1	N															X							
	BH #1 (44-45') 2'BEB	11/7/2017			X				X			1	N															X							
	BH #1 (50') 2'BEB	11/7/2017			X				X			1	N															X							
	BH #2 (0-1')	11/7/2017			X				X			1	N	X		X												X							
	BH #2 (2-3')	11/7/2017			X				X			1	N	X		X												X							
	BH #2 (4-5')	11/7/2017			X				X			1	N															X							
	BH #2 (6-7')	11/7/2017			X				X			1	N															X							
	BH #2 (9-10')	11/7/2017			X				X			1	N															X							
	BH #2 (14-15')	11/7/2017			X				X			1	N															X							
	BH #2 (19-20')	11/7/2017			X				X			1	N															X							

ANALYSIS REQUEST
(Circle or Specify Method No.)

Relinquished by: Date: 11-13-17 Time: 1110

Received by: Date: 11/13 Time: 11:10

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

- [x] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

le) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL C(

Temp: 9

IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: .7

Final 1.002

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Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

508179

Client Name: Marathon	Site Manager: Ike Tavarez
Project Name: Warren State #1	
Project Location: (county, state) Lea County, New Mexico	Project #: Pending
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance			Hold
	BH #2 (24-25')	11/7/2017			X			X		1	N															X						
	BH #2 (30')	11/7/2017			X			X		1	N															X						
	BH #2 (40')	11/7/2017			X			X		1	N	X		X												X						
	BH #2 (50')	11/7/2017			X			X		1	N																					X
	BH #3 (0-1') 1.5'BEB	11/7/2017			X			X		1	N	X		X												X						
	BH #3 (2-3') 1.5'BEB	11/7/2017			X			X		1	N															X						
	BH #3 (4-5') 1.5'BEB	11/7/2017			X			X		1	N															X						
	BH #3 (6-7') 1.5'BEB	11/7/2017			X			X		1	N															X						
	BH #3 (9-10') 1.5'BEB	11/7/2017			X			X		1	N															X						
	BH #3 (14-15') 1.5'BEB	11/7/2017			X			X		1	N															X						

Relinquished by:	Date: 11-13-17	Time: 1110	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 11/13 Time: 11:10

LAB USE ONLY

Sample Temperature

REMARKS:

- ☑ STANDARD
- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

e) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL CC Temp: 9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 7

Final 1.002

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

508179

Client Name: Marathon	**Site Manager:** Ike Tavarez
Project Name: Warren State #1	
Project Location: (county, state) Lea County, New Mexico	**Project #:** Pending
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:** Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	BH #3 (19-20') 1.5'BEB	11/7/2017			X				X			1	N															X							
	BH #3 (24-25') 1.5'BEB	11/7/2017			X				X			1	N															X							
	BH #3 (29-30') 1.5'BEB	11/7/2017			X				X			1	N	X		X												X							
	BH #3 (40') 1.5'BEB	11/7/2017			X				X			1	N																						X
	BH #3 (50') 1.5'BEB	11/7/2017			X				X			1	N																						X
	BH #4 (0-1') 1.5'BEB	11/9/2017			X				X			1	N	X		X												X							
	BH #4 (2-3') 1.5'BEB	11/9/2017			X				X			1	N															X							
	BH #4 (4-5') 1.5'BEB	11/9/2017			X				X			1	N															X							
	BH #4 (6-7') 1.5'BEB	11/9/2017			X				X			1	N															X							
	BH #4 (9-10') 1.5'BEB	11/9/2017			X				X			1	N															X							

Relinquished by:	Date: 11-13-17	Time: 1110	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 11/13 Time: 11:10

LAB USE ONLY

Sample Temperature

REMARKS:

- ☑ STANDARD
- ☐ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL CC

Temp: .9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: .7

Final 1.002

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

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401 Midland,Texas 79705
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Fax (432) 682-3946

568179

Client Name: Marathon

Site Manager: Ike Tavarez

Project Name: Warren State #1

Project Location: (county, state) Lea County, New Mexico

Project #: Pending

Invoice to: Tetra Tech

Receiving Laboratory: Xenco Midland Tx

Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)
	BH #4 (14-15') 1.5'BEB	11/9/2017			X				X			1	N
	BH #4 (19-20') 1.5'BEB	11/9/2017			X				X			1	N
	BH #5 (0-1')	11/9/2017			X				X			1	N
	BH #5 (2-3')	11/9/2017			X				X			1	N
	BH #5 (4-5')	11/9/2017			X				X			1	N
	BH #5 (6-7')	11/9/2017			X				X			1	N
	BH #5 (9-10')	11/9/2017			X				X			1	N
	BH #5 (14-15')	11/9/2017			X				X			1	N
	BH #5 (19-20')	11/9/2017			X				X			1	N
	BH #5 (24-25')	11/9/2017			X				X			1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
														X							
X		X												X							
X		X												X							
														X							
														X							
														X							
														X							
														X							
														X							
														X							
X		X												X							

Final 1.002

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Relinquished by: Date: 11-13-17 Time: 1110

Received by: Date: 11/13 Time: 11:10

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

- [x] STANDARD
- [ ] RUSH: Same Day 24 hr 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

~~HAND DELIVERED~~ FEDEX UPS Tracking #:

ORIGINAL CO

Temp: .9 IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: .7

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

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401 Midland,Texas 79705
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Fax (432) 682-3946

568179

Client Name: Marathon	Site Manager: Ike Tavarez
Project Name: Warren State #1	
Project Location: (county, state) Lea County, New Mexico	Project #: Pending
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

ANALYSIS REQUEST

(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	BH #6 (0-1')	11/9/2017			X				X			1	N	X		X												X							
	BH #6 (2-3')	11/9/2017			X				X			1	N															X							
	BH #6 (4-5')	11/9/2017			X				X			1	N															X							
	BH #6 (6-7')	11/9/2017			X				X			1	N															X							
	BH #6 (9-10')	11/9/2017			X				X			1	N															X							
	BH #6 (14-15')	11/9/2017			X				X			1	N															X							
	BH #6 (19-20')	11/9/2017			X				X			1	N															X							
	BH #6 (24-25')	11/9/2017			X				X			1	N															X							
	BH #6 (29-30')	11/9/2017			X				X			1	N															X							
	BH #6 (40')	11/9/2017			X				X			1	N															X							
	BH #6 (50')	11/9/2017			X				X			1	N															X							

Relinquished by:	Date: 11-13-17	Time: 1110
Received by:	Date: 11/13	Time: 11:10
Relinquished by:	Date:	Time:
Received by:	Date:	Time:
Relinquished by:	Date:	Time:
Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature

REMARKS:

☑ STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

Temp: .9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: .7

Final 1.002

Page 59 of 62

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

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401 Midland,Texas 79705
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Fax (432) 682-3946

568179

Client Name: Marathon	Site Manager: Ike Tavarez
Project Name: Warren State #1	
Project Location: (county, state) Lea County, New Mexico	Project #: Pending
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2017)	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
	BH #6 (55')	11/9/2017			X			X		1	N	X		X												X				
	BH #7 (0-1')	11/9/2017			X			X		1	N	X		X												X				
	BH #7 (2-3')	11/9/2017			X			X		1	N															X				
	BH #7 (4-5')	11/9/2017			X			X		1	N															X				
	BH #7 (6-7')	11/9/2017			X			X		1	N															X				
	BH #7 (9-10')	11/9/2017			X			X		1	N															X				
	BH #7 (14-15')	11/9/2017			X			X		1	N															X				
	BH #7 (19-20')	11/9/2017			X			X		1	N															X				
	BH #7 (24-25')	11/9/2017			X			X		1	N															X				
	BH #7 (29-30')	11/9/2017			X			X		1	N															X				

Relinquished by: Date: 11-13-17 Time: 1110
Received by: Date: 11/13 Time: 11:10

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

☑ STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Temp: .9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: .7

Final 1.002

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Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

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Fax (432) 682-3946

568179

Client Name: Marathon

Site Manager: Ike Tavarez

Project Name: Warren State #1

Project Location: (county, state) Lea County, New Mexico

Project #: Pending

Invoice to: Tetra Tech

Receiving Laboratory: Xenco Midland Tx

Sampler Signature: Mike Carmona

Comments:

If TPH exceeds 100 mg/kg, Benzene exceeds 10 mg/kg, or Total BTEX exceeds 50 mg/kg run deeper samples

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	BH #7 (40')	11/9/2017			X				X			1	N
	BH #8 (0-1')	11/9/2017			X				X			1	N
	BH #8 (2-3')	11/9/2017			X				X			1	N
	BH #8 (4-5')	11/9/2017			X				X			1	N
	BH #8 (6-7')	11/9/2017			X				X			1	N
	BH #8 (9-10')	11/9/2017			X				X			1	N
	BH #8 (14-15')	11/9/2017			X				X			1	N
	BH #8 (19-20')	11/9/2017			X				X			1	N
	BH #8 (24-25')	11/9/2017			X				X			1	N
	BH #8 (29-30')	11/9/2017			X				X			1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
X		X												X				
X		X												X				
														X				
														X				
														X				
														X				
														X				
														X				
														X				
														X				
X		X												X				

Relinquished by: Date: 11/13 Time: 1110

Received by: Date: 11/13 Time: 11:10

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

☑ STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGIN. Temp: .9 IR ID:R-8

CF:(0-6: -0.2°C)

(6-23: +0.2°C)

Corrected Temp: .7

Final 1.002

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Analysis Request of Chain of Custody Record

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568179

Client Name: Marathon	Site Manager: Ike Tavarez
Project Name: Warren State #1	
Project Location: (county, state) Lea County, New Mexico	Project #: Pending
Invoice to: Tetra Tech	
Receiving Laboratory: Xenco Midland Tx	Sampler Signature: Mike Carmona
Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2017 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)
	BH #9 (0-1')	11/9/2017			X				X			1	N
	BH #9 (2-3')	11/9/2017			X				X			1	N
	BH #9 (4-5')	11/9/2017			X				X			1	N
	BH #9 (6-7')	11/9/2017			X				X			1	N
	BH #9 (9-10')	11/9/2017			X				X			1	N
	BH #9 (14-15')	11/9/2017			X				X			1	N
	BH #9 (19-20')	11/9/2017			X				X			1	N
	BH #9 (24-25')	11/9/2017			X				X			1	N
	BH #9 (29-30')	11/9/2017			X				X			1	N
	BH #9 (40')	11/9/2017			X				X			1	N
	BH #9 (50')	11/9/2017			X				X			1	N

ANALYSIS REQUEST
(Circle or Specify Method No.)

BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance			Hold
X		X													X					
															X					
															X					
															X					
															X					
															X					
															X					
															X					
															X					
															X					
X		X													X					
															X					X

Relinquished by: Date: 11-13-17 Time: 1110
Received by: Date: 11/13 Time: 11:10
Relinquished by: Date: Time:
Received by: Date: Time:
Relinquished by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature

REMARKS:
☑ STANDARD
☐ RUSH: Same Day 24 hr 48 hr 72 hr
☐ Rush Charges Authorized
☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

Temp: .9 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: .7

Final 1.002

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 11/13/2017 11:10:00 AM

Work Order #: 568179

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.7
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 11/13/2017

Checklist reviewed by: Gale Denman Date: 11/15/2017