



CLOSURE REQUEST AND REMEDIATION SUMMARY

**Plains Pipeline, LP.
Mewbourne Mad Dog 26 MP State Com No. 001H
Lea County, New Mexico
SRS #: 2018-120
Unit Letter "M", Section 26, Township 23 South, Range 34 East
Latitude 32.2687600° North, Longitude 103.4482740° West
NMOCD Reference # 1RP-5168**

Prepared For:

**Plains Pipeline, LP.
333 Clay Street, Suite 1600
Houston, Texas 77002**

Prepared By:

**2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa, Texas 79764**

January 2019

A handwritten signature in blue ink that reads 'Rebecca Blake'.

**Rebecca Blake
Staff Scientist**

A handwritten signature in blue ink that reads 'Matthew Green'.

**Matthew Green, P.G.
President**

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INTRODUCTION

2M Environmental Services, LLC. (2M), on behalf of Plains Pipeline L.P. (Plains), has prepared this Closure Request and Remediation Summary for the Release Site known as Mewbourne Mad Dog 26 MP State Com No. 001H. The legal description of the Release Site is Unit Letter “M”, Section 26, Township 23 South, Range 34 East, in Lea County, New Mexico. The subject property is located on New Mexico State Trust Land. The Release Site GPS coordinates are 32.2687600° North and 103.4482740° West. Please reference Figure 1 for the Site Location Map and Figure 2 for the Site Details and Confirmation Soil Sample Location Map.

On August 19, 2018, Plains discovered a leak had developed on the Tri-Plex pump due to mechanical failure, resulting in the release. Approximately nine (9) barrels of crude oil were released with approximately six (6) barrels recovered, resulting in a net loss of approximately three (3) barrels of crude oil. On August 21, 2018, Plains filed a *Release Notification and Corrective Action Form* (Form C-141) with the New Mexico Oil Conservation Division (NMOCD) and NMSLO documenting the release. The Form C-141 is provided as Appendix D. Photographic documentation for the site are provided as Appendix A.

NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 26, Township 23 South, Range 34 East. A reference map utilized by the NMOCD Hobbs District Office, indicates groundwater should be encountered at approximately one hundred fifty (150) feet below ground surface (bgs). No water wells were observed within one-thousand (1,000) feet of the Release Site. No surface water was observed within one thousand (1,000) feet of the release. Based on the NMOCD site classification system, zero (0) points will be assigned to the Mad Dog 26 MP State Com No. 001H Release Site as a result of this criterion. Based on this score, the soil remediation levels for a site with a ranking score of zero (0) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 1,000 mg/Kg (ppm)
- Chloride – 600 mg/Kg (ppm)

SUMMARY OF SOIL REMEDIATION ACTIVITIES

On August 28, 2018, 2M commenced excavation activities at the Release Site. On September 4, 2018, fourteen (14) confirmation soil samples were collected from the excavated area. Samples identified as Bottomhole-1 @ 6”, Bottomhole-2 @ 3’, Bottomhole-3 @ 3’, Bottomhole-4 @ 3’, Bottomhole-5 @ 5’, and Bottomhole-6 @ 5’ were collected from the base of the excavated area and samples identified as Bottomhole-5 NW @ 2’, Bottomhole-5 SW @ 2’, Bottomhole-5 EW @ 2’, Bottomhole-5 WW @ 2’, Bottomhole-6 NW @ 2’, Bottomhole-6 SW @ 2’, Bottomhole-6 EW @ 2’, and Bottomhole-6 WW @ 2’) were collected from the sidewalls of the excavated area. Soil samples were submitted to the laboratory and analyzed for benzene, toluene, ethylbenzene, and xylene (BTEX) using EPA Method SW 846-8021B, Total Petroleum Hydrocarbons (TPH) using EPA Method SW 846-8015M, and chloride using EPA Method E 300.0. A review of laboratory

analytical results indicated additional excavation activities were necessary in the area represented by soil samples Bottomhole-2 @ 3', Bottomhole-3 @ 3', Bottomhole-4 @ 3', Bottomhole-5 WW @ 2', and Bottomhole-6 SW @ 2'. Please reference Figure 2 for site details and soil sampling locations. A composite waste characterization soil sample was collected from the impacted stockpile and submitted to the laboratory. The analytical results are attached to this report.

On October 11, 2018, after additional excavation activities, six (6) confirmation soil samples (Bottomhole-2 @ 3.5', Bottomhole-3 @ 3.5', Bottomhole-4 @ 3.5', Bottomhole-5 WW @ 3', Bottomhole-6 SW @ 2', and Bottomhole-6 SW @ 3') were collected from the excavated area and submitted to the laboratory for BTEX and TPH analysis. Please reference Figure 2 for site details and soil sampling locations. A review of laboratory analytical results indicated all collected soil samples were below applicable NMOCD limits.

Table 1 summarizes the Concentrations of Benzene, BTEX, TPH, and Chlorides in Soil. Analytical reports are provided as Appendix B.

SOIL DISPOSAL AND BACKFILL ACTIVITIES

On December 5, through December 7, 2018, Plains transported one hundred eighty (180) cubic yards of material to Lazy Ace Landfarm (NMOCD Permit #NM-01-0041), located west of Eunice, New Mexico. Please reference Lazy Ace Landfarm Manifests attached as Appendix E. The excavated area was backfilled with non-impacted, locally obtained soil and contoured to fit the surrounding area.

SITE CLOSURE REQUEST

Based on the analytical results, Plains requests NMOCD and NMSLO grant Site Closure Status to the Mewbourne Mad Dog 26 MP State Com No. 001H incident.

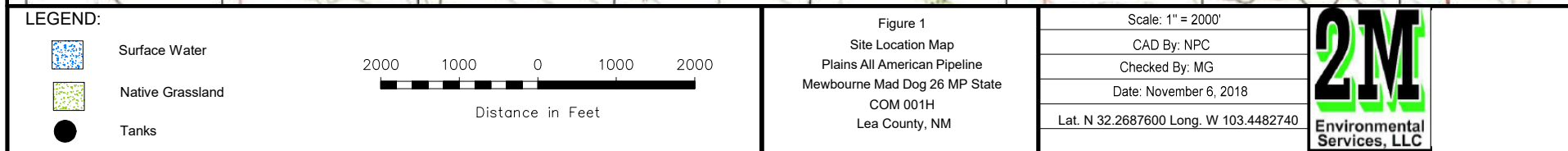
LIMITATIONS

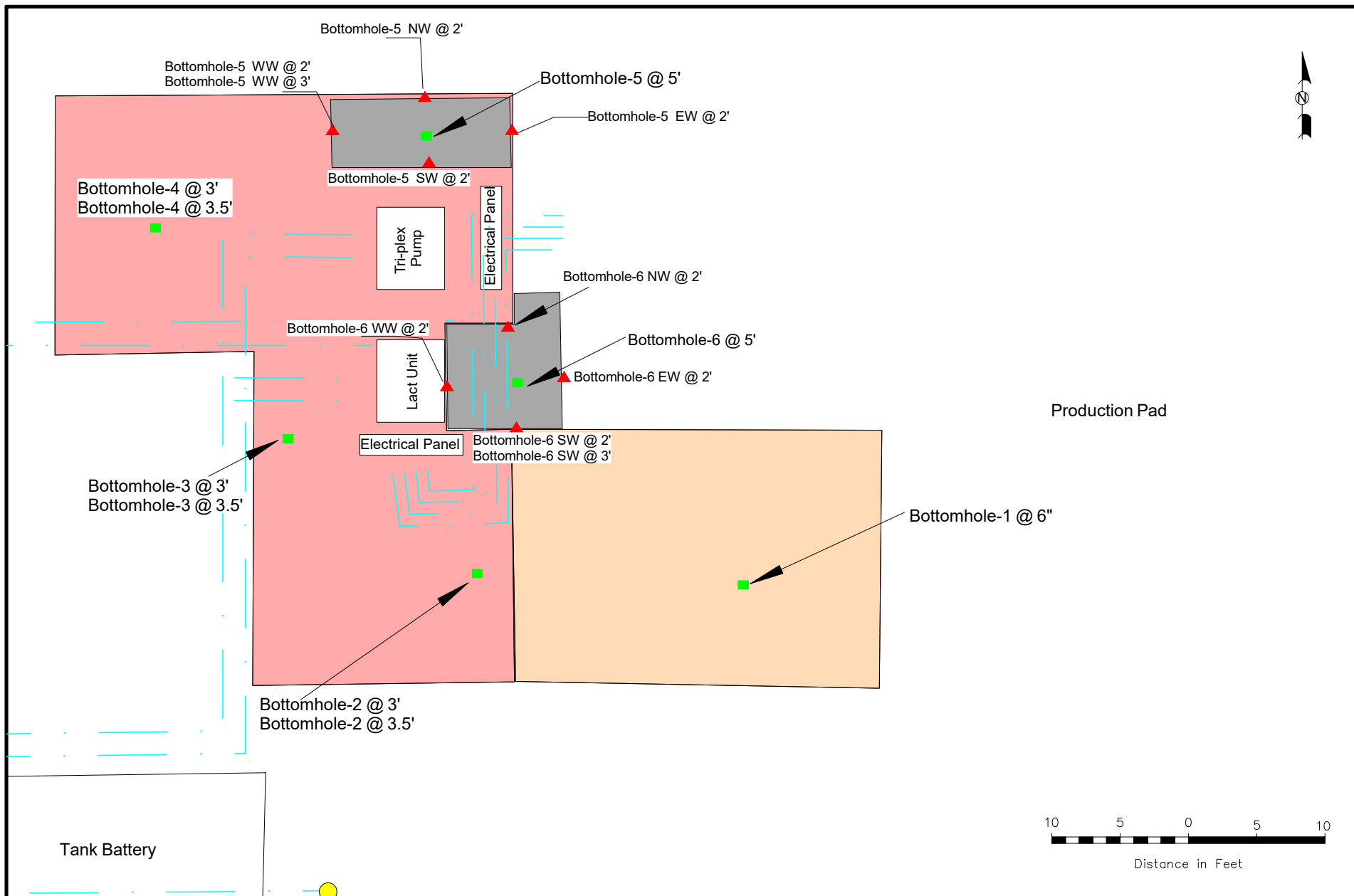
2M has prepared this Closure Request and Remediation Summary to the best of its ability. No other warranty, expressed or implied, is made or intended. 2M has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. 2M has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. 2M has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. 2M also notes that the facts and conditions referenced in this report may change over time and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Plains Pipeline L.P.. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of 2M and/or Plains Pipeline L.P..

DISTRIBUTION

- Copy 1: Christina Hernandez
New Mexico Energy, Minerals and Natural Resources Department
Oil Conservation Division (District 1)
1625 N. French Drive
Hobbs, New Mexico 88240
- Copy 2: Ryan Mann
New Mexico State Land Office
District Resource Specialist
2827 N. Dal Paso Suite 117
Hobbs, NM 88240
- Copy 3: Camille Bryant
Plains Pipeline L.P.
505 N. Big Spring Street, Suite 600
Midland, Texas 79701
- Copy 4: 2M Environmental Corporation
1219 W. University Blvd.
Odessa, Texas 79764





LEGEND:

- | | |
|-------------------------|---|
| Flow Line | Confirmation Grab Soil Sample Location |
| Excavation 5 feet bgs | Side Wall Confirmation Soil Sample Location |
| Excavation 3.5 feet bgs | |
| Excavation 6 inches bgs | |

Figure 2
 Site Details & Confirmation Soil
 Sample Location Map Plains All
 American Pipeline Mewbourne
 Mad Dog 26 MP State COM
 001H
 Lea County, NM

Scale: 1" = 10'
CAD By: NPC
Checked By: MG
Draft: November 6, 2018
Lat. N 32.2687600 Long. W 103.4482740



TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL

Plains All American Pipeline

MEWBOURNE MAD DOG 26 MP STATE COM No. 001H RELEASE SITE

LEA COUNTY, NEW MEXICO

All concentrations are reported in mg/Kg

SAMPLE LOCATION	SAMPLE DATE	METHODS: SW 846-8021B						METHOD: SW 8015M					E 300.1
		BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENE	TOTAL XYLENES	TOTAL BTEX	TPH GRO C ₆ -C ₁₂	TPH DRO C ₁₂ -C ₂₈	TPH ORO C ₂₈ -C ₃₅	TOTAL TPH C ₆ -C ₃₅	CHLORIDE
Limits		10 mg/Kg						50 mg/Kg				1,000 mg/Kg	600 mg/Kg
Bottomhole-1 @ 6"	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	321	103	424	71.6
Bottomhole-2 @ 3'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	161	3,620	459	4,240	23.2
Bottomhole-3 @ 3'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	235	4,900	634	5,769	59.1
Bottomhole-4 @ 3'	9/4/2018	ND	ND	0.00895	0.0523	0.0213	0.0736	0.08255	716	9,150	1,280	11,146	52.3
Bottomhole-5 @ 5'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	407	77.6	484.6	66.0
Bottomhole-5 NW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	346	52.7	398.7	113
Bottomhole-5 SW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	760	108	868	73.3
Bottomhole-5 EW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	295	49.4	344.4	62.1
Bottomhole-5 WW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	215	4,370	519	5,104	49.3
Bottomhole-6 @ 5'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	233	61.2	294.2	131
Bottomhole-6 NW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	221	43.0	264.0	124
Bottomhole-6 SW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	48.6	1,570	186	1,804.6	7.59
Bottomhole-6 EW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	172	27.3	199.3	55.4
Bottomhole-6 WW @ 2'	9/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	92.1	ND	92.1	124
Bottomhole-2 @ 3.5'	10/11/2018	ND	ND	ND	ND	ND	ND	ND	ND	147	33.1	180.1	-
Bottomhole-3 @ 3.5'	10/11/2018	ND	ND	ND	ND	ND	ND	ND	ND	221	33.3	254.3	-
Bottomhole-4 @ 3.5'	10/11/2018	ND	ND	ND	ND	ND	ND	ND	ND	78.8	ND	78.8	-
Bottomhole-5 WW @ 3'	10/11/2018	ND	ND	ND	ND	ND	ND	ND	30.8	617	90.7	738.5	-
Bottomhole-6 SW @ 2'	10/11/2018	ND	ND	ND	ND	ND	ND	ND	ND	231	49.1	280.1	-
Bottomhole-6 SW @ 3'	10/11/2018	ND	ND	ND	ND	ND	ND	ND	ND	78.9	ND	78.9	-

Site Name: *Mewbourne Mad Dog 26 MP State COM 001H Release*
2M Environmental Project #: *8151-06*

Date: *12/28/2018*
Site Location: *Lea County, New Mexico*

Photographic Documentation

Photograph No. 1

Date:
8/28/2018

Direction:
Northeast

Description:
View of Impacted Area.



Photograph No. 2

Date:
8/28/2018

Direction:
West

Description:
View of Impacted Area.



Site Name: *Mewbourne Mad Dog 26 MP State COM 001H Release*
2M Environmental Project #: *8151-06*

Date: *12/28/2018*
Site Location: *Lea County, New Mexico*

Photographic Documentation

Photograph No. 3

Date:
10/4/2018

Direction:
Southwest

Description:
View of excavation activities.



Photograph No. 4

Date:
9/4/2018

Direction:
Northwest

Description:
View of excavation activities.



Site Name: *Mewbourne Mad Dog 26 MP State COM 001H Release*
2M Environmental Project #: *8151-06*

Date: *12/28/2018*
Site Location: *Lea County, New Mexico*

Photographic Documentation

Photograph No. 5

Date:
12/7/2018

Direction:
Northwest

Description:
View of remediated area.



Photograph No. 6

Date:
12/7/2018

Direction:
North

Description:
View of remediated area.



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



Analytical Report

Prepared for:

Matt Green
2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa, TEXAS 79764

Project: Plains Mad Dog 26
Project Number: [none]
Location: Lea County, New Mexico
Lab Order Number: 8I07008



NELAP/TCEQ # T104704516-17-8

Report Date: 09/14/18

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Bottomhole-1 @ 6"	8I07008-01	Soil	09/04/18 09:00	09-07-2018 14:06
Bottomhole-2 @ 3'	8I07008-02	Soil	09/04/18 09:15	09-07-2018 14:06
Bottomhole-3 @ 3'	8I07008-03	Soil	09/04/18 09:30	09-07-2018 14:06
Bottomhole-4 @ 3'	8I07008-04	Soil	09/04/18 09:45	09-07-2018 14:06
Bottomhole-5 @ 5'	8I07008-05	Soil	09/04/18 10:00	09-07-2018 14:06
Bottomhole-5 NW @ 2'	8I07008-06	Soil	09/04/18 10:15	09-07-2018 14:06
Bottomhole-5 SW @ 2'	8I07008-07	Soil	09/04/18 10:30	09-07-2018 14:06
Bottomhole-5 EW @ 2'	8I07008-08	Soil	09/04/18 10:45	09-07-2018 14:06
Bottomhole-5 WW @ 2'	8I07008-09	Soil	09/04/18 11:00	09-07-2018 14:06
Bottomhole-6 @ 5'	8I07008-10	Soil	09/04/18 11:15	09-07-2018 14:06
Bottomhole-6 NW @ 2'	8I07008-12	Soil	09/04/18 11:30	09-07-2018 14:06
Bottomhole-6 SW @ 2'	8I07008-13	Soil	09/04/18 11:45	09-07-2018 14:06
Bottomhole-6 EW @ 2'	8I07008-14	Soil	09/04/18 12:00	09-07-2018 14:06
Bottomhole-6 WW @ 2'	8I07008-15	Soil	09/04/18 12:15	09-07-2018 14:06
Stockpile	8I07008-16	Soil	09/04/18 12:30	09-07-2018 14:06

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-1 @ 6"

8107008-01 (Soil)

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

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Toluene	ND	0.0105	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Ethylbenzene	ND	0.00526	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Xylene (p/m)	ND	0.0211	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Xylene (o)	ND	0.0105	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
<i>Surrogate: 4-Bromofluorobenzene</i>		<i>124 %</i>	<i>75-125</i>		<i>P811105</i>	<i>09/11/18</i>	<i>09/11/18</i>	<i>EPA 8021B</i>
<i>Surrogate: 1,4-Difluorobenzene</i>		<i>108 %</i>	<i>75-125</i>		<i>P811105</i>	<i>09/11/18</i>	<i>09/11/18</i>	<i>EPA 8021B</i>
C6-C12	ND	26.3	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005
>C12-C28	321	26.3	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005
>C28-C35	103	26.3	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005
<i>Surrogate: 1-Chlorooctane</i>		<i>92.8 %</i>	<i>70-130</i>		<i>P811102</i>	<i>09/10/18</i>	<i>09/10/18</i>	<i>TX 1005</i>
<i>Surrogate: o-Terphenyl</i>		<i>86.9 %</i>	<i>70-130</i>		<i>P811102</i>	<i>09/10/18</i>	<i>09/10/18</i>	<i>TX 1005</i>
Total Hydrocarbon nC6-nC35	424	26.3	mg/kg dry	1	[CALC]	09/10/18	09/10/18	[CALC]

General Chemistry Parameters by EPA / Standard Methods

Chloride	71.6	1.05	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0
% Moisture	5.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-2 @ 3'
8107008-02 (Soil)

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

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Toluene	ND	0.0105	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Ethylbenzene	ND	0.00526	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Xylene (p/m)	ND	0.0211	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
Xylene (o)	ND	0.0105	mg/kg dry	1	P811105	09/11/18	09/11/18	EPA 8021B
<i>Surrogate: 4-Bromofluorobenzene</i>		98.7 %	75-125		P811105	09/11/18	09/11/18	EPA 8021B
<i>Surrogate: 1,4-Difluorobenzene</i>		95.0 %	75-125		P811105	09/11/18	09/11/18	EPA 8021B
C6-C12	161	26.3	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005
>C12-C28	3620	26.3	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005
>C28-C35	459	26.3	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005
<i>Surrogate: 1-Chlorooctane</i>		119 %	70-130		P811102	09/10/18	09/10/18	TX 1005
<i>Surrogate: o-Terphenyl</i>		103 %	70-130		P811102	09/10/18	09/10/18	TX 1005
Total Hydrocarbon nC6-nC35	4240	26.3	mg/kg dry	1	[CALC]	09/10/18	09/10/18	[CALC]

General Chemistry Parameters by EPA / Standard Methods

Chloride	23.2	1.05	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0
% Moisture	5.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-3 @ 3'
8107008-03 (Soil)

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

Organics by GC

Benzene	ND	0.00114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00568	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0227	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		95.6 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.7 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	235	28.4	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005	
>C12-C28	4900	28.4	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005	
>C28-C35	634	28.4	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005	
Surrogate: 1-Chlorooctane		117 %	70-130		P811102	09/10/18	09/10/18	TX 1005	
Surrogate: o-Terphenyl		104 %	70-130		P811102	09/10/18	09/10/18	TX 1005	
Total Hydrocarbon nC6-nC35	5770	28.4	mg/kg dry	1	[CALC]	09/10/18	09/10/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	59.1	1.14	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	12.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-4 @ 3'
8107008-04 (Soil)

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

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0108	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	0.00895	0.00538	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	0.0523	0.0215	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	0.0213	0.0108	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		88.4 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		96.2 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	716	134	mg/kg dry	5	P811102	09/10/18	09/10/18	TX 1005	
>C12-C28	9150	134	mg/kg dry	5	P811102	09/10/18	09/10/18	TX 1005	
>C28-C35	1280	134	mg/kg dry	5	P811102	09/10/18	09/10/18	TX 1005	
Surrogate: 1-Chlorooctane		121 %	70-130		P811102	09/10/18	09/10/18	TX 1005	
Surrogate: o-Terphenyl		88.5 %	70-130		P811102	09/10/18	09/10/18	TX 1005	
Total Hydrocarbon nC6-nC35	11100	134	mg/kg dry	5	[CALC]	09/10/18	09/10/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	52.3	1.08	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	7.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-5 @ 5'
8107008-05 (Soil)

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

Organics by GC

Benzene	ND	0.00110	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0110	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00549	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0220	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0110	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		113 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		95.0 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	ND	27.5	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005	
>C12-C28	407	27.5	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005	
>C28-C35	77.6	27.5	mg/kg dry	1	P811102	09/10/18	09/10/18	TX 1005	
Surrogate: 1-Chlorooctane		99.5 %	70-130		P811102	09/10/18	09/10/18	TX 1005	
Surrogate: o-Terphenyl		90.3 %	70-130		P811102	09/10/18	09/10/18	TX 1005	
Total Hydrocarbon nC6-nC35	484	27.5	mg/kg dry	1	[CALC]	09/10/18	09/10/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	66.0	1.10	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	9.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-5 NW @ 2'
8107008-06 (Soil)

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

Organics by GC

Benzene	ND	0.00119	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0119	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00595	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0238	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0119	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.4 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		117 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	ND	29.8	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	346	29.8	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	52.7	29.8	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
Surrogate: 1-Chlorooctane		123 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Surrogate: o-Terphenyl		115 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	398	29.8	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	113	1.19	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	16.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

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Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-5 SW @ 2'
8107008-07 (Soil)

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

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0109	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00543	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0217	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0109	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.2 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		124 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	ND	27.2	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	760	27.2	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	108	27.2	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
Surrogate: 1-Chlorooctane		128 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Surrogate: o-Terphenyl		117 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	868	27.2	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	73.3	1.09	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	8.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-5 EW @ 2'
8107008-08 (Soil)

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

Organics by GC

Benzene	ND	0.00115	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0115	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00575	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0230	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0115	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		98.6 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	ND	28.7	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	295	28.7	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	49.4	28.7	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
Surrogate: 1-Chlorooctane		88.4 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Surrogate: o-Terphenyl		81.6 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	344	28.7	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	62.1	1.15	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	13.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-5 WW @ 2'
8107008-09 (Soil)

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

Organics by GC

Benzene	ND	0.00114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Toluene	ND	0.0114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Ethylbenzene	ND	0.00568	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Xylene (p/m)	ND	0.0227	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Xylene (o)	ND	0.0114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Surrogate: 1,4-Difluorobenzene		93.8 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B
Surrogate: 4-Bromofluorobenzene		86.9 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B
C6-C12	215	28.4	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
>C12-C28	4370	28.4	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
>C28-C35	519	28.4	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
Surrogate: 1-Chlorooctane		127 %	70-130		P811102	09/10/18	09/11/18	TX 1005
Surrogate: o-Terphenyl		112 %	70-130		P811102	09/10/18	09/11/18	TX 1005
Total Hydrocarbon nC6-nC35	5110	28.4	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]

General Chemistry Parameters by EPA / Standard Methods

Chloride	49.3	1.14	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0
% Moisture	12.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216

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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-6 @ 5'
8107008-10 (Soil)

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

Organics by GC

Benzene	ND	0.00114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00568	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0227	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0114	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		100 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	ND	28.4	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	233	28.4	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	61.2	28.4	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
Surrogate: 1-Chlorooctane		115 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Surrogate: o-Terphenyl		106 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	294	28.4	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	131	1.14	mg/kg dry	1	P811109	09/11/18	09/11/18	EPA 300.0	
% Moisture	12.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-6 NW @ 2'
8107008-12 (Soil)

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

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Toluene	ND	0.0106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Ethylbenzene	ND	0.00532	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Xylene (o)	ND	0.0106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Surrogate: 1,4-Difluorobenzene		90.8 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B
C6-C12	ND	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
>C12-C28	221	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
>C28-C35	43.0	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
Surrogate: 1-Chlorooctane		90.0 %	70-130		P811102	09/10/18	09/11/18	TX 1005
Surrogate: o-Terphenyl		83.4 %	70-130		P811102	09/10/18	09/11/18	TX 1005
Total Hydrocarbon nC6-nC35	264	26.6	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]

General Chemistry Parameters by EPA / Standard Methods

Chloride	124	1.06	mg/kg dry	1	P811109	09/11/18	09/12/18	EPA 300.0
% Moisture	6.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216

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1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-6 SW @ 2'
8107008-13 (Soil)

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

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0109	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00543	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0217	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0109	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		130 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		97.2 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	48.6	27.2	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	1570	27.2	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	186	27.2	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
Surrogate: 1-Chlorooctane		109 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Surrogate: o-Terphenyl		99.1 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	1800	27.2	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	7.59	1.09	mg/kg dry	1	P811109	09/11/18	09/12/18	EPA 300.0	
% Moisture	8.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-6 EW @ 2'
8107008-14 (Soil)

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

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Toluene	ND	0.0106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Ethylbenzene	ND	0.00532	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Xylene (o)	ND	0.0106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B
Surrogate: 1,4-Difluorobenzene		98.7 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B
Surrogate: 4-Bromofluorobenzene		118 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B
C6-C12	ND	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
>C12-C28	172	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
>C28-C35	27.3	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005
Surrogate: 1-Chlorooctane		97.6 %	70-130		P811102	09/10/18	09/11/18	TX 1005
Surrogate: o-Terphenyl		91.3 %	70-130		P811102	09/10/18	09/11/18	TX 1005
Total Hydrocarbon nC6-nC35	199	26.6	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]

General Chemistry Parameters by EPA / Standard Methods

Chloride	55.4	1.06	mg/kg dry	1	P811109	09/11/18	09/12/18	EPA 300.0
% Moisture	6.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216

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1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Bottomhole-6 WW @ 2'
8107008-15 (Soil)

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

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.2 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	ND	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	92.1	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	ND	26.6	mg/kg dry	1	P811102	09/10/18	09/11/18	TX 1005	
Surrogate: 1-Chlorooctane		96.4 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Surrogate: o-Terphenyl		90.0 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	92.1	26.6	mg/kg dry	1	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	124	1.06	mg/kg dry	1	P811109	09/11/18	09/12/18	EPA 300.0	
% Moisture	6.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

2M Environmental Services, LLC.
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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Stockpile
8107008-16 (Soil)

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

Organics by GC

Benzene	ND	0.00104	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Toluene	0.0389	0.0104	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Ethylbenzene	0.0534	0.00521	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (p/m)	0.269	0.0208	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
Xylene (o)	0.158	0.0104	mg/kg dry	1	P811106	09/11/18	09/12/18	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		74.5 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		76.5 %	75-125		P811106	09/11/18	09/12/18	EPA 8021B	
C6-C12	918	130	mg/kg dry	5	P811102	09/10/18	09/11/18	TX 1005	
>C12-C28	9770	130	mg/kg dry	5	P811102	09/10/18	09/11/18	TX 1005	
>C28-C35	1150	130	mg/kg dry	5	P811102	09/10/18	09/11/18	TX 1005	
<i>Surrogate: 1-Chlorooctane</i>		109 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
<i>Surrogate: o-Terphenyl</i>		84.2 %	70-130		P811102	09/10/18	09/11/18	TX 1005	
Total Hydrocarbon nC6-nC35	11800	130	mg/kg dry	5	[CALC]	09/10/18	09/11/18	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

Chloride	86.0	1.04	mg/kg dry	1	P811109	09/11/18	09/12/18	EPA 300.0	
% Moisture	4.0	0.1	%	1	P811001	09/10/18	09/10/18	ASTM D2216	

2M Environmental Services, LLC.
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Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8I1102 - TX 1005

Blank (P8I1102-BLK1)

Prepared & Analyzed: 09/10/18

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	50.0		"	50.0		100	70-130			

LCS (P8I1102-BS1)

Prepared & Analyzed: 09/10/18

C6-C12	1080	25.0	mg/kg wet	1000		108	75-125			
>C12-C28	1050	25.0	"	1000		105	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	50.0		"	50.0		100	70-130			

LCS Dup (P8I1102-BSD1)

Prepared & Analyzed: 09/10/18

C6-C12	906	25.0	mg/kg wet	1000		90.6	75-125	17.2	20	
>C12-C28	916	25.0	"	1000		91.6	75-125	13.2	20	
Surrogate: 1-Chlorooctane	128		"	100		128	70-130			
Surrogate: o-Terphenyl	43.6		"	50.0		87.2	70-130			

Duplicate (P8I1102-DUP1)

Source: 8I07008-16

Prepared: 09/10/18 Analyzed: 09/11/18

C6-C12	966	130	mg/kg dry		918			5.11	20	
>C12-C28	10600	130	"		9770			7.95	20	
Surrogate: 1-Chlorooctane	107		"	104		103	70-130			
Surrogate: o-Terphenyl	44.7		"	52.1		85.9	70-130			

Batch P8I1105 - General Preparation (GC)

Blank (P8I1105-BLK1)

Prepared & Analyzed: 09/11/18

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 4-Bromofluorobenzene	0.0641		"	0.0600		107	75-125			
Surrogate: 1,4-Difluorobenzene	0.0561		"	0.0600		93.6	75-125			

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1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8I1105 - General Preparation (GC)

LCS (P8I1105-BS1)

Prepared & Analyzed: 09/11/18

Benzene	0.0997	0.00100	mg/kg wet	0.100		99.7	70-130			
Toluene	0.107	0.0100	"	0.100		107	70-130			
Ethylbenzene	0.115	0.00500	"	0.100		115	70-130			
Xylene (p/m)	0.225	0.0200	"	0.200		112	70-130			
Xylene (o)	0.119	0.0100	"	0.100		119	70-130			
Surrogate: 1,4-Difluorobenzene	0.0655		"	0.0600		109	75-125			
Surrogate: 4-Bromofluorobenzene	0.0651		"	0.0600		109	75-125			

LCS Dup (P8I1105-BSD1)

Prepared & Analyzed: 09/11/18

Benzene	0.102	0.00100	mg/kg wet	0.100		102	70-130	2.36	20	
Toluene	0.110	0.0100	"	0.100		110	70-130	2.17	20	
Ethylbenzene	0.115	0.00500	"	0.100		115	70-130	0.330	20	
Xylene (p/m)	0.227	0.0200	"	0.200		114	70-130	1.05	20	
Xylene (o)	0.114	0.0100	"	0.100		114	70-130	4.13	20	
Surrogate: 1,4-Difluorobenzene	0.0660		"	0.0600		110	75-125			
Surrogate: 4-Bromofluorobenzene	0.0670		"	0.0600		112	75-125			

Matrix Spike (P8I1105-MS1)

Source: 8I10009-17

Prepared & Analyzed: 09/11/18

Benzene	0.0914	0.00120	mg/kg dry	0.120	ND	75.8	80-120			QM-07
Toluene	0.0940	0.0120	"	0.120	ND	78.0	80-120			QM-07
Ethylbenzene	0.101	0.00602	"	0.120	ND	84.2	80-120			
Xylene (p/m)	0.176	0.0241	"	0.241	ND	72.9	80-120			QM-07
Xylene (o)	0.0974	0.0120	"	0.120	ND	80.9	80-120			
Surrogate: 4-Bromofluorobenzene	0.108		"	0.0723		150	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0761		"	0.0723		105	75-125			

Matrix Spike Dup (P8I1105-MSD1)

Source: 8I10009-17

Prepared & Analyzed: 09/11/18

Benzene	0.103	0.00120	mg/kg dry	0.120	ND	85.4	80-120	11.8	20	
Toluene	0.108	0.0120	"	0.120	ND	89.5	80-120	13.7	20	
Ethylbenzene	0.128	0.00602	"	0.120	ND	106	80-120	22.9	20	QM-07
Xylene (p/m)	0.219	0.0241	"	0.241	ND	90.9	80-120	22.0	20	QM-07
Xylene (o)	0.119	0.0120	"	0.120	ND	98.5	80-120	19.7	20	
Surrogate: 1,4-Difluorobenzene	0.0796		"	0.0723		110	75-125			
Surrogate: 4-Bromofluorobenzene	0.0857		"	0.0723		119	75-125			

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Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8I1106 - General Preparation (GC)

Blank (P8I1106-BLK1)

Prepared: 09/11/18 Analyzed: 09/12/18

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 1,4-Difluorobenzene	0.0535		"	0.0600		89.1	75-125			
Surrogate: 4-Bromofluorobenzene	0.0632		"	0.0600		105	75-125			

LCS (P8I1106-BS1)

Prepared & Analyzed: 09/11/18

Benzene	0.0956	0.00100	mg/kg wet	0.100		95.6	70-130			
Toluene	0.102	0.0100	"	0.100		102	70-130			
Ethylbenzene	0.111	0.00500	"	0.100		111	70-130			
Xylene (p/m)	0.211	0.0200	"	0.200		106	70-130			
Xylene (o)	0.117	0.0100	"	0.100		117	70-130			
Surrogate: 1,4-Difluorobenzene	0.0653		"	0.0600		109	75-125			
Surrogate: 4-Bromofluorobenzene	0.0672		"	0.0600		112	75-125			

LCS Dup (P8I1106-BSD1)

Prepared & Analyzed: 09/11/18

Benzene	0.101	0.00100	mg/kg wet	0.100		101	70-130	5.37	20	
Toluene	0.107	0.0100	"	0.100		107	70-130	4.54	20	
Ethylbenzene	0.118	0.00500	"	0.100		118	70-130	6.76	20	
Xylene (p/m)	0.226	0.0200	"	0.200		113	70-130	6.85	20	
Xylene (o)	0.118	0.0100	"	0.100		118	70-130	0.561	20	
Surrogate: 1,4-Difluorobenzene	0.0668		"	0.0600		111	75-125			
Surrogate: 4-Bromofluorobenzene	0.0726		"	0.0600		121	75-125			

Matrix Spike (P8I1106-MS1)

Source: 8107008-03

Prepared: 09/11/18 Analyzed: 09/12/18

Benzene	0.0206	0.00114	mg/kg dry	0.114	ND	18.1	80-120			QM-07
Toluene	0.0131	0.0114	"	0.114	0.00228	9.48	80-120			QM-07
Ethylbenzene	0.00951	0.00568	"	0.114	0.00510	3.88	80-120			QM-07
Xylene (p/m)	0.0156	0.0227	"	0.227	0.0188	NR	80-120			QM-07
Xylene (o)	0.0105	0.0114	"	0.114	0.00570	4.26	80-120			QM-07
Surrogate: 1,4-Difluorobenzene	0.0739		"	0.0682		108	75-125			
Surrogate: 4-Bromofluorobenzene	0.0926		"	0.0682		136	75-125			S-GC

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8I1106 - General Preparation (GC)

Matrix Spike Dup (P8I1106-MSD1)

Source: 8107008-03

Prepared: 09/11/18 Analyzed: 09/12/18

Benzene	0.0229	0.00114	mg/kg dry	0.114	ND	20.2	80-120	10.7	20	QM-07
Toluene	0.0145	0.0114	"	0.114	0.00228	10.7	80-120	12.3	20	QM-07
Ethylbenzene	0.0107	0.00568	"	0.114	0.00510	4.89	80-120	23.0	20	QM-07
Xylene (p/m)	0.0160	0.0227	"	0.227	0.0188	NR	80-120	NR	20	QM-07
Xylene (o)	0.0126	0.0114	"	0.114	0.00570	6.09	80-120	35.4	20	QM-07
Surrogate: 4-Bromofluorobenzene	0.0973		"	0.0682		143	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0734		"	0.0682		108	75-125			

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8I1001 - * DEFAULT PREP *****

Blank (P8I1001-BLK1)		Prepared & Analyzed: 09/10/18								
% Moisture	ND	0.1	%							
Duplicate (P8I1001-DUP1)		Source: 8107005-04		Prepared & Analyzed: 09/10/18						
% Moisture	7.0	0.1	%		9.0			25.0	20	
Duplicate (P8I1001-DUP2)		Source: 8107006-17		Prepared & Analyzed: 09/10/18						
% Moisture	2.0	0.1	%		2.0			0.00	20	
Duplicate (P8I1001-DUP3)		Source: 8107008-16		Prepared & Analyzed: 09/10/18						
% Moisture	5.0	0.1	%		4.0			22.2	20	

Batch P8I1109 - * DEFAULT PREP *****

Blank (P8I1109-BLK1)		Prepared & Analyzed: 09/11/18								
Chloride	ND	1.00	mg/kg wet							
LCS (P8I1109-BS1)		Prepared & Analyzed: 09/11/18								
Chloride	404	1.00	mg/kg wet	400		101	80-120			
LCS Dup (P8I1109-BSD1)		Prepared & Analyzed: 09/11/18								
Chloride	404	1.00	mg/kg wet	400		101	80-120	0.0446	20	
Duplicate (P8I1109-DUP1)		Source: 8107008-01		Prepared & Analyzed: 09/11/18						
Chloride	72.1	1.05	mg/kg dry		71.6			0.645	20	
Duplicate (P8I1109-DUP2)		Source: 8107008-12		Prepared: 09/11/18 Analyzed: 09/12/18						
Chloride	125	1.06	mg/kg dry		124			0.956	20	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8I1109 - * DEFAULT PREP *****

Matrix Spike (P8I1109-MS1)

Source: 8107008-01

Prepared & Analyzed: 09/11/18

Chloride	585	1.05	mg/kg dry	526	71.6	97.6	80-120
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2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Notes and Definitions

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

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

9/14/2018

Brent Barron, Laboratory Director/Technical Director

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Project Manager: Matt Green

Project Name: Plains Mad Dog 26

Company Name: 2M Environmental Services, LLC.

Project #: SRS #:

Company Address: 1219 W. University Blvd.

Project Loc: Lea County, NM

City/State/Zip: Odessa, Texas 79764

PO #:

Telephone No: (432)230-3763

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: mgreen@2m-environmental.com
rdlake@2m-environmental.com
ALGroves@paalp.com

(lab use only)

ORDER #: 810-1008

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 Ext TX 1008	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021 5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	TCLP Benzene	TCLP BTEX	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
01	Bottomhole-1 @ 6"			9/4/2018	900		1	X								S	X															X
02	Bottomhole-2 @ 3'			9/4/2018	915		1	X								S	X															X
03	Bottomhole-3 @ 3'			9/4/2018	930		1	X								S	X															X
04	Bottomhole-4 @ 3'			9/4/2018	945		1	X								S	X															X
05	Bottomhole-5 @ 5'			9/4/2018	1000		1	X								S	X															X
06	Bottomhole-5 NW @ 2'			9/4/2018	1015		1	X								S	X															X
07	Bottomhole-5 SW @ 2'			9/4/2018	1030		1	X								S	X															X
08	Bottomhole-5 EW @ 2'			9/4/2018	1045		1	X								S	X															X
09	Bottomhole-5 WW @ 2'			9/4/2018	1100		1	X								S	X															X
10	Bottomhole-6 @ 5'			9/4/2018	1115		1	X								S	X															X

Special Instructions:

Relinquished by: [Signature]

Date: 9-6-18 Time: 14:05

Received by: [Signature]

Date: 9-6-18 Time: 14:05

Relinquished by: [Signature]

Date: 9-6-18 Time: 14:05

Received by: [Signature]

Date: 9-6-18 Time: 14:05

Relinquished by: [Signature]

Date: 9-6-18 Time: 14:05

Received by: [Signature]

Date: 9-6-18 Time: 14:05

Laboratory Comments:

Sample Containers intact? N

VOCs Free of Headspace? N

Labels on containers? N

Custody seals on containers? N

Sample Hand Delivered? N

by Courier? N

Temperature Upon Receipt: 77 °C

Adjusted: 11 °C

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



Analytical Report

Prepared for:

Matt Green
2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa, TEXAS 79764

Project: Plains Mad Dog 26
Project Number: [none]
Location: Lea County, New Mexico
Lab Order Number: 8I07010



NELAP/TCEQ # T104704516-17-8

Report Date: 09/27/18

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WC	8I07010-01	Soil	09/04/18 11:15	09-07-2018 14:06

TCLP Metals, RCI and TCLP BTEX analysis were subcontracted to Test America. Their report is attached to the back of this report. Their certification number is T104704223-10-6-TX.

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

WC
8I07010-01 (Soil)

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

General Chemistry Parameters by EPA / Standard Methods

Reactive Cyanide	ND	0.250	mg/kg	1	P8I2704	09/18/18	09/20/18	SW846 9010B	SUB-1
Ignitability by Flashpoint	> 160		°F	1	P8I2704	09/26/18	09/26/18	ASTM D93-80	SUB-1
pH	8.90	0.10	pH Units	1	P8I2704	09/17/18	09/17/18	EPA 9045B	SUB-1
Reactive Sulfide	ND	50.0	mg/kg	1	P8I2704	09/18/18	09/21/18	SW846 9030B	SUB-1

TCLP Metals 1311 by EPA / Standard Methods

Mercury	ND	0.000250	mg/L	1	P8I2706	09/18/18	09/18/18	EPA 7470A	SUB-1
Arsenic	ND	0.100	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1
Barium	0.350	0.200	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1
Cadmium	ND	0.0500	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1
Chromium	ND	0.100	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1
Lead	ND	0.100	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1
Selenium	ND	0.400	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1
Silver	ND	0.100	mg/L	1	P8I2706	09/17/18	09/18/18	EPA 6010B	SUB-1

TCLP Volatile Organic Compounds by EPA Method 1311/8260B

Benzene	ND	25.0	ug/l	1	P8I2706	09/18/18	09/18/18	EPA 8260B	SUB-1
Toluene	ND	25.0	ug/l	1	P8I2706	09/18/18	09/18/18	EPA 8260B	SUB-1
Ethylbenzene	ND	25.0	ug/l	1	P8I2706	09/18/18	09/18/18	EPA 8260B	SUB-1
Xylene (p/m)	ND	25.0	ug/l	1	P8I2706	09/18/18	09/18/18	EPA 8260B	SUB-1
Xylene (o)	ND	25.0	ug/l	1	P8I2706	09/18/18	09/18/18	EPA 8260B	SUB-1

Physical Parameters by APHA/ASTM/EPA Methods

Free Liquid	PASS		N/A	1	P8I2501	09/10/18	09/10/18	EPA 9095	
-------------	------	--	-----	---	---------	----------	----------	----------	--

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch P8I2501 - * DEFAULT PREP *****

Duplicate (P8I2501-DUP1)		Source: 8H30008-01		Prepared & Analyzed: 09/05/18					
Free Liquid	PASS		N/A		0.00				200
Duplicate (P8I2501-DUP2)		Source: 8I07010-01		Prepared & Analyzed: 09/10/18					
Free Liquid	PASS		N/A		PASS				200
Duplicate (P8I2501-DUP3)		Source: 8I21002-02		Prepared & Analyzed: 09/25/18					
Free Liquid	PASS		N/A		0.00				200

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: [none]
Project Manager: Matt Green

Fax:

Notes and Definitions

SUB-1 Subcontract of analyte/analysis to Test America TCEQ/NELAC # T104704223-10-6-TX
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:



Date:

9/27/2018

Brent Barron, Laboratory Director/Technical Director

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

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Project Manager: Matt Green

Project Name: Plains Mad Dog 26

Company Name: 2M Environmental Services, LLC.

Project #: SRS #:

Company Address: 1219 W. University Blvd.

Project Loc: Lea County, NM

City/State/Zip: Odessa, Texas 79764

PO #:

Telephone No: (432)230-3763

Fax No:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: mgreen@2m-environmental.com
tblake@2m-environmental.com
ALGroves@paalp.com

(lab use only)

ORDER #: 8109010

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418 8015M 8015B	TPH: TX 1005 Ext TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8D21B 5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	Paint Filter	TCLP BTEX	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT	
01	WC			9/4/2018	1115		2	X								S																	

Special Instructions:

Relinquished by: [Signature] Date: 9-6-18 Time: Received by: [Signature] Date: 9-6-18 Time: 14:05

Relinquished by: [Signature] Date: 9-6-18 Time: Received by: [Signature] Date: 9-6-18 Time: 14:05

Relinquished by: [Signature] Date: 9-6-18 Time: Received by: [Signature] Date: 9-6-18 Time: 14:05

Relinquished by: [Signature] Date: 9-6-18 Time: Received by: [Signature] Date: 9-6-18 Time: 14:05

Laboratory Comments:

Sample Containers Intact? N
VOCs Free of Headspace? N
Labels on Containers? N
Custody seals on container(s) N
Custody seals on cooler(s) N
Sample Hand Delivered by Sampler/Client Rep? N
by Courier? N
Temperature Upon Receipt: 72 °C Factor: 1
Temperature Upon Receipt: 72 °C Factor: 1



CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
1400 Rankin HWY
Midland, Texas 79701

Phone: 432-686-7235
PBELAB_SUB_COC_V2

Project Manager: Brent Barron

Project Name: SUBCONTRACT

Company Name PBEL

Project #:

Company Address: 1400 Rankin HWY

Project Loc:

City/State/Zip: Midland Texas 79701

PO #=

Telephone No: 432-661-4184

Report Format: X Standard

☐ TRRP

☐ NPDES

Sampler Signature: N/A

e-mail:

brentbarron@pbjelab.com

(lab use only)

ORDER

[illegible]

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Houston

6310 Rothway Street

Houston, TX 77040

Tel: (713)690-4444

TestAmerica Job ID: 600-172496-1

Client Project/Site: 8I07010

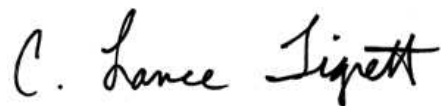
For:

Permian Basin Environmental Lab LP

10014 South County Road 1213

Midland, Texas 79706

Attn: Brent Barron



Authorized for release by:

9/24/2018 7:17:53 AM

C. Lance Tigrett, Project Manager II

(713)690-4444

lance.tigrett@testamericainc.com

LINKS

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results through

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Job ID: 600-172496-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative 600-172496-1

Comments

No additional comments.

Receipt

The sample was received on 9/12/2018 9:55 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.5° C.

GC/MS VOA

Method(s) 8260B: The following samples were diluted due to limited volume: 8I07010-01 (600-172496-1), (600-172496-A-1-D MS) and (600-172496-A-1-C MSD). Elevated reporting limits (RL) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

Method(s) 6010B: The TCLP leachate blank for Prep Batch 247525 contained Barium above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Method Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
6010B	Metals (ICP)	SW846	TAL HOU
7470A	Mercury (CVAA)	SW846	TAL HOU
7.4.4	Reactive Sulfide	EPA	TAL HOU
9012	Cyanide, Reactive	SW846	TAL HOU
9045C	Corrosivity as pH	SW846	TAL HOU
D92	Flashpoint	ASTM	TAL HOU
1311	TCLP Extraction	SW846	TAL HOU
1311	Toxicity Characteristic Leaching Procedure (ZHE)	SW846	TAL HOU
3010A	Preparation, Total Metals	SW846	TAL HOU
5030B	Purge and Trap on Leachates	SW846	TAL HOU
7.3.3	Cyanide, Reactive	SW846	TAL HOU
7.3.4	Sulfide, Reactive	SW846	TAL HOU
7470A	Preparation, Mercury	SW846	TAL HOU

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-172496-1	8I07010-01	Solid	09/04/18 11:15	09/12/18 09:55

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Client Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Client Sample ID: 8I07010-01

Lab Sample ID: 600-172496-1

Date Collected: 09/04/18 11:15

Matrix: Solid

Date Received: 09/12/18 09:55

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.8	U	25	2.8	ug/L			09/18/18 15:44	5
Ethylbenzene	6.5	U	25	6.5	ug/L			09/18/18 15:44	5
Toluene	2.8	U	25	2.8	ug/L			09/18/18 15:44	5
Xylenes, Total	9.9	U	25	9.9	ug/L			09/18/18 15:44	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		50 - 134		09/18/18 15:44	5
Dibromofluoromethane	108		62 - 130		09/18/18 15:44	5
Toluene-d8 (Surr)	118		70 - 130		09/18/18 15:44	5
4-Bromofluorobenzene	109		67 - 139		09/18/18 15:44	5

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.013	U	0.10	0.013	mg/L		09/17/18 12:30	09/18/18 14:26	1
Arsenic	0.029	U	0.10	0.029	mg/L		09/17/18 12:30	09/18/18 14:26	1
Barium	0.35	B	0.20	0.0053	mg/L		09/17/18 12:30	09/18/18 14:26	1
Cadmium	0.0030	J	0.050	0.0028	mg/L		09/17/18 12:30	09/18/18 14:26	1
Chromium	0.057	J	0.10	0.016	mg/L		09/17/18 12:30	09/18/18 14:26	1
Lead	0.029	J	0.10	0.022	mg/L		09/17/18 12:30	09/18/18 14:26	1
Selenium	0.029	U	0.40	0.029	mg/L		09/17/18 12:30	09/18/18 14:26	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00010	U	0.00025	0.00010	mg/L		09/18/18 07:08	09/18/18 13:46	1

General Chemistry

Analyte	Result	Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	14	U	49	14	mg/Kg		09/18/18 13:00	09/21/18 18:00	1
Cyanide, Reactive	0.084	U	0.25	0.084	mg/Kg		09/18/18 13:00	09/20/18 01:23	1
pH	8.9	H	0.01	0.01	SU			09/17/18 16:54	1
Flashpoint	>160		1.00	1.00	Degrees F			09/21/18 12:10	1

TestAmerica Houston

Definitions/Glossary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Surrogate Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (50-134)	DBFM (62-130)	TOL (70-130)	BFB (67-139)
LCS 600-247667/5	Lab Control Sample	106	111	115	115
LCS 600-247667/6	Lab Control Sample Dup	108	113	112	119
MB 600-247667/9	Method Blank	108	108	116	112

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: TCLP

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (50-134)	DBFM (62-130)	TOL (70-130)	BFB (67-139)
600-172496-1	8I07010-01	105	108	118	109
600-172496-1 MS	8I07010-01	102	108	111	110
600-172496-1 MSD	8I07010-01	108	115	114	116
LB 600-247548/1-A	Method Blank	105	108	116	110

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 600-247667/9

Matrix: Solid

Analysis Batch: 247667

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.56	U	5.0	0.56	ug/L			09/18/18 14:59	1
Ethylbenzene	1.3	U	5.0	1.3	ug/L			09/18/18 14:59	1
Toluene	0.55	U	5.0	0.55	ug/L			09/18/18 14:59	1
Xylenes, Total	2.0	U	5.0	2.0	ug/L			09/18/18 14:59	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		50 - 134		09/18/18 14:59	1
Dibromofluoromethane	108		62 - 130		09/18/18 14:59	1
Toluene-d8 (Surr)	116		70 - 130		09/18/18 14:59	1
4-Bromofluorobenzene	112		67 - 139		09/18/18 14:59	1

Lab Sample ID: LCS 600-247667/5

Matrix: Solid

Analysis Batch: 247667

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.5		ug/L		97	70 - 131
Ethylbenzene	50.0	52.1		ug/L		104	70 - 130
Toluene	50.0	49.8		ug/L		100	70 - 130
Xylenes, Total	100	103		ug/L		103	70 - 130
m-Xylene & p-Xylene	50.0	51.4		ug/L		103	70 - 130
o-Xylene	50.0	51.4		ug/L		103	69 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		50 - 134
Dibromofluoromethane	111		62 - 130
Toluene-d8 (Surr)	115		70 - 130
4-Bromofluorobenzene	115		67 - 139

Lab Sample ID: LCSD 600-247667/6

Matrix: Solid

Analysis Batch: 247667

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	47.0		ug/L		94	70 - 131	3	20
Ethylbenzene	50.0	49.8		ug/L		100	70 - 130	4	20
Toluene	50.0	47.5		ug/L		95	70 - 130	5	20
Xylenes, Total	100	97.9		ug/L		98	70 - 130	5	20
m-Xylene & p-Xylene	50.0	49.1		ug/L		98	70 - 130	5	20
o-Xylene	50.0	48.8		ug/L		98	69 - 130	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		50 - 134
Dibromofluoromethane	113		62 - 130
Toluene-d8 (Surr)	112		70 - 130
4-Bromofluorobenzene	119		67 - 139

TestAmerica Houston

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 600-247548/1-A

Matrix: Solid

Analysis Batch: 247667

Client Sample ID: Method Blank

Prep Type: TCLP

Analyte	LB Result	LB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.56	U	5.0	0.56	ug/L			09/18/18 15:21	1
Ethylbenzene	1.3	U	5.0	1.3	ug/L			09/18/18 15:21	1
Toluene	0.55	U	5.0	0.55	ug/L			09/18/18 15:21	1
Xylenes, Total	2.0	U	5.0	2.0	ug/L			09/18/18 15:21	1

Surrogate	LB %Recovery	LB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		50 - 134		09/18/18 15:21	1
Dibromofluoromethane	108		62 - 130		09/18/18 15:21	1
Toluene-d8 (Surr)	116		70 - 130		09/18/18 15:21	1
4-Bromofluorobenzene	110		67 - 139		09/18/18 15:21	1

Lab Sample ID: 600-172496-1 MS

Matrix: Solid

Analysis Batch: 247667

Client Sample ID: 8I07010-01

Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	2.8	U	250	232		ug/L		93	70 - 131
Ethylbenzene	6.5	U	250	247		ug/L		99	70 - 130
Toluene	2.8	U	250	236		ug/L		95	70 - 130
Xylenes, Total	9.9	U	500	495		ug/L		99	70 - 130
m-Xylene & p-Xylene	6.3	U	250	245		ug/L		98	70 - 130
o-Xylene	4.7	U	250	250		ug/L		100	69 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		50 - 134
Dibromofluoromethane	108		62 - 130
Toluene-d8 (Surr)	111		70 - 130
4-Bromofluorobenzene	110		67 - 139

Lab Sample ID: 600-172496-1 MSD

Matrix: Solid

Analysis Batch: 247667

Client Sample ID: 8I07010-01

Prep Type: TCLP

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	2.8	U	250	242		ug/L		97	70 - 131	5	21
Ethylbenzene	6.5	U	250	242		ug/L		97	70 - 130	2	25
Toluene	2.8	U	250	237		ug/L		95	70 - 130	0	21
Xylenes, Total	9.9	U	500	492		ug/L		98	70 - 130	1	25
m-Xylene & p-Xylene	6.3	U	250	244		ug/L		98	70 - 130	0	25
o-Xylene	4.7	U	250	248		ug/L		99	69 - 130	1	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	108		50 - 134
Dibromofluoromethane	115		62 - 130
Toluene-d8 (Surr)	114		70 - 130
4-Bromofluorobenzene	116		67 - 139

TestAmerica Houston

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 600-247563/34-A

Matrix: Solid

Analysis Batch: 247673

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247563

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.0013	U	0.010	0.0013	mg/L		09/17/18 12:30	09/18/18 12:58	1
Arsenic	0.0029	U	0.010	0.0029	mg/L		09/17/18 12:30	09/18/18 12:58	1
Barium	0.00053	U	0.020	0.00053	mg/L		09/17/18 12:30	09/18/18 12:58	1
Cadmium	0.00028	U	0.0050	0.00028	mg/L		09/17/18 12:30	09/18/18 12:58	1
Chromium	0.0016	U	0.010	0.0016	mg/L		09/17/18 12:30	09/18/18 12:58	1
Lead	0.0022	U	0.010	0.0022	mg/L		09/17/18 12:30	09/18/18 12:58	1
Selenium	0.0029	U	0.040	0.0029	mg/L		09/17/18 12:30	09/18/18 12:58	1

Lab Sample ID: LCS 600-247563/35-A

Matrix: Solid

Analysis Batch: 247673

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247563

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.500	0.510		mg/L		102	80 - 120
Arsenic	1.00	1.04		mg/L		104	80 - 120
Barium	1.00	1.03		mg/L		103	80 - 120
Cadmium	0.500	0.514		mg/L		103	80 - 120
Chromium	1.00	0.993		mg/L		99	80 - 120
Lead	1.00	1.00		mg/L		100	80 - 120
Selenium	1.00	1.04		mg/L		104	80 - 120

Lab Sample ID: LB 600-247525/1-B

Matrix: Solid

Analysis Batch: 247673

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 247563

Analyte	LB Result	LB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	0.013	U	0.10	0.013	mg/L		09/17/18 12:30	09/18/18 13:41	1
Arsenic	0.029	U	0.10	0.029	mg/L		09/17/18 12:30	09/18/18 13:41	1
Barium	0.173	J	0.20	0.0053	mg/L		09/17/18 12:30	09/18/18 13:41	1
Cadmium	0.0028	U	0.050	0.0028	mg/L		09/17/18 12:30	09/18/18 13:41	1
Chromium	0.016	U	0.10	0.016	mg/L		09/17/18 12:30	09/18/18 13:41	1
Lead	0.022	U	0.10	0.022	mg/L		09/17/18 12:30	09/18/18 13:41	1
Selenium	0.029	U	0.40	0.029	mg/L		09/17/18 12:30	09/18/18 13:41	1

Lab Sample ID: 600-172495-A-1-H MS

Matrix: Solid

Analysis Batch: 247673

Client Sample ID: Matrix Spike

Prep Type: TCLP

Prep Batch: 247563

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Silver	0.013	U	5.00	5.25		mg/L		105	75 - 125
Arsenic	0.046	J	10.0	11.0		mg/L		110	75 - 125
Barium	0.52	B	10.0	10.9		mg/L		104	75 - 125
Cadmium	0.0028	U	5.00	5.31		mg/L		106	75 - 125
Chromium	0.016	U	10.0	9.56		mg/L		96	75 - 125
Lead	0.022	U	10.0	9.97		mg/L		100	75 - 125
Selenium	0.035	J	10.0	11.0		mg/L		110	75 - 125

TestAmerica Houston

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 600-172496-1 MS

Matrix: Solid

Analysis Batch: 247673

Client Sample ID: 8I07010-01

Prep Type: TCLP

Prep Batch: 247563

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.	
	Result	Qualifier	Added	Result	Qualifier				Limits	
Silver	0.013	U	5.00	5.76		mg/L		115	75 - 125	
Arsenic	0.029	U	10.0	11.6		mg/L		116	75 - 125	
Barium	0.35	B	10.0	10.7		mg/L		103	75 - 125	
Cadmium	0.0030	J	5.00	5.55		mg/L		111	75 - 125	
Chromium	0.057	J	10.0	9.59		mg/L		95	75 - 125	
Lead	0.029	J	10.0	10.0		mg/L		100	75 - 125	
Selenium	0.029	U	10.0	11.5		mg/L		115	75 - 125	

Lab Sample ID: 600-172496-1 DU

Matrix: Solid

Analysis Batch: 247673

Client Sample ID: 8I07010-01

Prep Type: TCLP

Prep Batch: 247563

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD	
	Result	Qualifier	Result	Qualifier				Limit	
Silver	0.013	U	0.013	U	mg/L		NC	20	
Arsenic	0.029	U	0.029	U	mg/L		NC	20	
Barium	0.35	B	0.348		mg/L		0.6	20	
Cadmium	0.0030	J	0.0028	U	mg/L		NC	20	
Chromium	0.057	J	0.0490	J	mg/L		15	20	
Lead	0.029	J	0.0300	J	mg/L		3	20	
Selenium	0.029	U	0.029	U	mg/L		NC	20	

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 600-247618/7-A

Matrix: Solid

Analysis Batch: 247660

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247618

Analyte	MB	MB	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.00010	U	0.00025	0.00010	mg/L		09/18/18 07:08	09/18/18 10:12	1

Lab Sample ID: LCS 600-247618/8-A

Matrix: Solid

Analysis Batch: 247660

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247618

Analyte	Spike		LCS	LCS	Unit	D	%Rec	%Rec.	
	Added	Result	Result	Qualifier				Limits	
Mercury	0.00375	0.00374			mg/L		100	70 - 130	

Lab Sample ID: LB 600-247525/1-C

Matrix: Solid

Analysis Batch: 247660

Client Sample ID: Method Blank

Prep Type: TCLP

Prep Batch: 247618

Analyte	LB	LB	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	0.00010	U	0.00025	0.00010	mg/L		09/18/18 07:08	09/18/18 10:19	1

TestAmerica Houston

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: 600-172496-1 MS

Matrix: Solid

Analysis Batch: 247660

Client Sample ID: 8I07010-01

Prep Type: TCLP

Prep Batch: 247618

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00010	U	0.00375	0.00289		mg/L		77	75 - 125

Lab Sample ID: 600-172431-A-1-E DU

Matrix: Solid

Analysis Batch: 247660

Client Sample ID: Duplicate

Prep Type: TCLP

Prep Batch: 247618

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Mercury	0.00010	U	0.00010	U	mg/L		NC	20

Method: 7.4.4 - Reactive Sulfide

Lab Sample ID: MB 600-247700/1-A

Matrix: Solid

Analysis Batch: 248079

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247700

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide, Reactive	14	U	50	14	mg/Kg		09/18/18 13:00	09/21/18 18:00	1

Lab Sample ID: LCS 600-247700/3-A

Matrix: Solid

Analysis Batch: 248079

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide, Reactive	1000	1200		mg/Kg		120	0 - 200

Lab Sample ID: 600-172612-A-1-E MS

Matrix: Solid

Analysis Batch: 248079

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247700

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide, Reactive	14	U	978	215		mg/Kg		22	0 - 200

Lab Sample ID: 600-172612-A-1-C DU

Matrix: Solid

Analysis Batch: 248079

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 247700

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Sulfide, Reactive	14	U	14	U	mg/Kg		NC	20

Method: 9012 - Cyanide, Reactive

Lab Sample ID: MB 600-247700/1-A

Matrix: Solid

Analysis Batch: 247914

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 247700

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Reactive	0.086	U	0.25	0.086	mg/Kg		09/18/18 13:00	09/20/18 01:10	1

TestAmerica Houston

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 9012 - Cyanide, Reactive (Continued)

Lab Sample ID: LCS 600-247700/2-A

Matrix: Solid

Analysis Batch: 247914

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 247700

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Reactive	1000	13.6		mg/Kg		1	0 - 200

Lab Sample ID: 600-172612-A-1-D MS ^40

Matrix: Solid

Analysis Batch: 247914

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 247700

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Reactive	0.085	U	986	62.5		mg/Kg		6	0 - 200

Lab Sample ID: 600-172612-A-1-C DU

Matrix: Solid

Analysis Batch: 247914

Client Sample ID: Duplicate

Prep Type: Total/NA

Prep Batch: 247700

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Cyanide, Reactive	0.085	U	0.085	U	mg/Kg		NC	20

Method: 9045C - Corrosivity as pH

Lab Sample ID: LCS 600-247583/26

Matrix: Solid

Analysis Batch: 247583

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
pH	7.00	7.0		SU		100	99 - 101

Lab Sample ID: 600-172423-A-1 DU

Matrix: Solid

Analysis Batch: 247583

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	8.2		8.2		SU		0.1	1

Method: D92 - Flashpoint

Lab Sample ID: MB 600-248070/1

Matrix: Solid

Analysis Batch: 248070

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	MQL (Adj)	SDL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint	>160		1.00	1.00	Degrees F			09/21/18 12:10	1

Lab Sample ID: LCS 600-248070/2

Matrix: Solid

Analysis Batch: 248070

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Flashpoint	81.0	>160		Degrees F		NaN	88 - 112

TestAmerica Houston

QC Sample Results

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: D92 - Flashpoint (Continued)

Lab Sample ID: 600-172295-A-1 DU				Client Sample ID: Duplicate			
Matrix: Solid				Prep Type: Total/NA			
Analysis Batch: 248070							
Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD
Flashpoint	>160		>160		Degrees F		NC
							20

Unadjusted Detection Limits

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Method: 8260B - Volatile Organic Compounds (GC/MS) - TCLP

Leach: 1311

Analyte	MQL	MDL	Units	Method
Benzene	5.0	0.56	ug/L	8260B
Ethylbenzene	5.0	1.3	ug/L	8260B
Toluene	5.0	0.55	ug/L	8260B
Xylenes, Total	5.0	2.0	ug/L	8260B

Method: 6010B - Metals (ICP) - TCLP

Prep: 3010A

Leach: 1311

Analyte	MQL	MDL	Units	Method
Arsenic	0.010	0.0029	mg/L	6010B
Barium	0.020	0.00053	mg/L	6010B
Cadmium	0.0050	0.00028	mg/L	6010B
Chromium	0.010	0.0016	mg/L	6010B
Lead	0.010	0.0022	mg/L	6010B
Selenium	0.040	0.0029	mg/L	6010B
Silver	0.010	0.0013	mg/L	6010B

Method: 7470A - Mercury (CVAA) - TCLP

Prep: 7470A

Leach: 1311

Analyte	MQL	MDL	Units	Method
Mercury	0.00020	0.000082	mg/L	7470A

General Chemistry

Analyte	MQL	MDL	Units	Method
pH	0.01	0.01	SU	9045C
Flashpoint	1.00	1.00	Degrees F	D92

General Chemistry

Prep: 7.3.4

Analyte	MQL	MDL	Units	Method
Sulfide, Reactive	50	14	mg/Kg	7.4.4
Cyanide, Reactive	0.25	0.086	mg/Kg	9012

QC Association Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

GC/MS VOA

Leach Batch: 247548

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	1311	
LB 600-247548/1-A	Method Blank	TCLP	Solid	1311	
600-172496-1 MS	8I07010-01	TCLP	Solid	1311	
600-172496-1 MSD	8I07010-01	TCLP	Solid	1311	

Analysis Batch: 247667

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	8260B	247548
LB 600-247548/1-A	Method Blank	TCLP	Solid	8260B	247548
MB 600-247667/9	Method Blank	Total/NA	Solid	8260B	
LCS 600-247667/5	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 600-247667/6	Lab Control Sample Dup	Total/NA	Solid	8260B	
600-172496-1 MS	8I07010-01	TCLP	Solid	8260B	247548
600-172496-1 MSD	8I07010-01	TCLP	Solid	8260B	247548

Metals

Leach Batch: 247525

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	1311	
LB 600-247525/1-B	Method Blank	TCLP	Solid	1311	
LB 600-247525/1-C	Method Blank	TCLP	Solid	1311	
600-172495-A-1-H MS	Matrix Spike	TCLP	Solid	1311	
600-172496-1 MS	8I07010-01	TCLP	Solid	1311	
600-172431-A-1-E DU	Duplicate	TCLP	Solid	1311	
600-172496-1 DU	8I07010-01	TCLP	Solid	1311	

Prep Batch: 247563

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	3010A	247525
LB 600-247525/1-B	Method Blank	TCLP	Solid	3010A	247525
MB 600-247563/34-A	Method Blank	Total/NA	Solid	3010A	
LCS 600-247563/35-A	Lab Control Sample	Total/NA	Solid	3010A	
600-172495-A-1-H MS	Matrix Spike	TCLP	Solid	3010A	247525
600-172496-1 MS	8I07010-01	TCLP	Solid	3010A	247525
600-172496-1 DU	8I07010-01	TCLP	Solid	3010A	247525

Prep Batch: 247618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	7470A	247525
LB 600-247525/1-C	Method Blank	TCLP	Solid	7470A	247525
MB 600-247618/7-A	Method Blank	Total/NA	Solid	7470A	
LCS 600-247618/8-A	Lab Control Sample	Total/NA	Solid	7470A	
600-172496-1 MS	8I07010-01	TCLP	Solid	7470A	247525
600-172431-A-1-E DU	Duplicate	TCLP	Solid	7470A	247525

Analysis Batch: 247660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	7470A	247618
LB 600-247525/1-C	Method Blank	TCLP	Solid	7470A	247618

TestAmerica Houston

QC Association Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Metals (Continued)

Analysis Batch: 247660 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 600-247618/7-A	Method Blank	Total/NA	Solid	7470A	247618
LCS 600-247618/8-A	Lab Control Sample	Total/NA	Solid	7470A	247618
600-172496-1 MS	8I07010-01	TCLP	Solid	7470A	247618
600-172431-A-1-E DU	Duplicate	TCLP	Solid	7470A	247618

Analysis Batch: 247673

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	TCLP	Solid	6010B	247563
LB 600-247525/1-B	Method Blank	TCLP	Solid	6010B	247563
MB 600-247563/34-A	Method Blank	Total/NA	Solid	6010B	247563
LCS 600-247563/35-A	Lab Control Sample	Total/NA	Solid	6010B	247563
600-172495-A-1-H MS	Matrix Spike	TCLP	Solid	6010B	247563
600-172496-1 MS	8I07010-01	TCLP	Solid	6010B	247563
600-172496-1 DU	8I07010-01	TCLP	Solid	6010B	247563

General Chemistry

Analysis Batch: 247583

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	Total/NA	Solid	9045C	
LCS 600-247583/26	Lab Control Sample	Total/NA	Solid	9045C	
600-172423-A-1 DU	Duplicate	Total/NA	Solid	9045C	

Prep Batch: 247700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	Total/NA	Solid	7.3.4	
MB 600-247700/1-A	Method Blank	Total/NA	Solid	7.3.4	
LCS 600-247700/2-A	Lab Control Sample	Total/NA	Solid	7.3.4	
LCS 600-247700/3-A	Lab Control Sample	Total/NA	Solid	7.3.4	
600-172612-A-1-D MS ^40	Matrix Spike	Total/NA	Solid	7.3.4	
600-172612-A-1-E MS	Matrix Spike	Total/NA	Solid	7.3.4	
600-172612-A-1-C DU	Duplicate	Total/NA	Solid	7.3.4	

Analysis Batch: 247914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	Total/NA	Solid	9012	247700
MB 600-247700/1-A	Method Blank	Total/NA	Solid	9012	247700
LCS 600-247700/2-A	Lab Control Sample	Total/NA	Solid	9012	247700
600-172612-A-1-D MS ^40	Matrix Spike	Total/NA	Solid	9012	247700
600-172612-A-1-C DU	Duplicate	Total/NA	Solid	9012	247700

Analysis Batch: 248070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	Total/NA	Solid	D92	
MB 600-248070/1	Method Blank	Total/NA	Solid	D92	
LCS 600-248070/2	Lab Control Sample	Total/NA	Solid	D92	
600-172295-A-1 DU	Duplicate	Total/NA	Solid	D92	

TestAmerica Houston

QC Association Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

General Chemistry (Continued)

Analysis Batch: 248079

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-172496-1	8I07010-01	Total/NA	Solid	7.4.4	247700
MB 600-247700/1-A	Method Blank	Total/NA	Solid	7.4.4	247700
LCS 600-247700/3-A	Lab Control Sample	Total/NA	Solid	7.4.4	247700
600-172612-A-1-E MS	Matrix Spike	Total/NA	Solid	7.4.4	247700
600-172612-A-1-C DU	Duplicate	Total/NA	Solid	7.4.4	247700

Lab Chronicle

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Client Sample ID: 8I07010-01

Date Collected: 09/04/18 11:15

Date Received: 09/12/18 09:55

Lab Sample ID: 600-172496-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			25.2 g	500 mL	247548	09/14/18 17:30	TWR	TAL HOU
TCLP	Analysis	8260B		5	5 mL	5 mL	247667	09/18/18 15:44	KLV	TAL HOU
TCLP	Leach	1311			1.0 g	1.0 mL	247525	09/14/18 16:00	SOT	TAL HOU
TCLP	Prep	3010A			5.0 mL	50.0 mL	247563	09/17/18 12:30	AML	TAL HOU
TCLP	Analysis	6010B		1			247673	09/18/18 14:26	DCL	TAL HOU
TCLP	Leach	1311			1.0 g	1.0 mL	247525	09/14/18 16:00	SOT	TAL HOU
TCLP	Prep	7470A			40 mL	50 mL	247618	09/18/18 07:08	KP1	TAL HOU
TCLP	Analysis	7470A		1			247660	09/18/18 13:46	KP1	TAL HOU
Total/NA	Prep	7.3.4			10.16 g	250 mL	247700	09/18/18 13:00	DTN	TAL HOU
Total/NA	Analysis	7.4.4		1			248079	09/21/18 18:00	KRD	TAL HOU
Total/NA	Prep	7.3.4			10.16 g	250 mL	247700	09/18/18 13:00	DTN	TAL HOU
Total/NA	Analysis	9012		1			247914	09/20/18 01:23	KRD	TAL HOU
Total/NA	Analysis	9045C		1			247583	09/17/18 16:54	SKR	TAL HOU
Total/NA	Analysis	D92		1			248070	09/21/18 12:10	KLR	TAL HOU

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Accreditation/Certification Summary

Client: Permian Basin Environmental Lab LP
Project/Site: 8I07010

TestAmerica Job ID: 600-172496-1

Laboratory: TestAmerica Houston

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Texas	NELAP	6	T104704223-17-22	10-31-18

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9012	7,3,4	Solid	Cyanide, Reactive
D92		Solid	Flashpoint

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Permian Basin Environmental Lab, LP
1400 Rankin HWY
Midland, Texas 79701

Phone: 432-686-7235
PBELAB_SUB_COC_V2

Project Manager: Brent Barron

Project Name: SUBCONTRACT

Company Name	PBEL

Project #:

Company Address: 1400 Rankin HWY

Project Loc:

City/State/Zip: Midland Texas 79701

PO #:

Telephone No: 432-661-4184

Fax No.:

Report Format: X Standard

Sampler Signature: N/A

brentbarron@pbelab.com

[illegible]

Sample Receipt Checklist

JOB NUMBER: _____

Date/Time Received: _____

UNPACKED BY: FMCLIENT: PBELCARRIER/DRIVER: FedexCustody Seal Present: ☒ YES ☐ NONumber of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Therm CF	Corrected Temp (°C)
<u>Blue</u>	<u>Y / N</u>	<u>Y / N</u>	<u>2.4</u>	<u>1070</u>	<u>-0.3</u>	<u>2.5</u>
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				
	<u>Y / N</u>	<u>Y / N</u>				

CF = correction factor

Samples received on ice? ☒ YES ☐ NOLABORATORY PRESERVATION OF SAMPLES REQUIRED: ☐ NO ☐ YESBase samples are >pH 12: ☐ YES ☐ NOAcid preserved are <pH 2: ☐ YES ☐ NO

pH paper Lot # _____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☒ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

COMMENTS:

Login Sample Receipt Checklist

Client: Permian Basin Environmental Lab LP

Job Number: 600-172496-1

Login Number: 172496

List Source: TestAmerica Houston

List Number: 1

Creator: Taylor, Jaquelyn R

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.5
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.

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



Analytical Report

Prepared for:

Matt Green
2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa, TEXAS 79764

Project: Plains Mad Dog 26

Project Number: SRS#

Location: Lea County, NM

Lab Order Number: 8J22002



NELAP/TCEQ # T104704516-17-8

Report Date: 10/23/18

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Bottomhole-2 @ 3.5'	8J22002-01	Soil	10/11/18 15:15	10-22-2018 13:47
Bottomhole-3 @ 3.5'	8J22002-02	Soil	10/11/18 14:50	10-22-2018 13:47
Bottomhole-4 @ 3.5'	8J22002-03	Soil	10/11/18 14:45	10-22-2018 13:47
Bottomhole-5 WW @ 3'	8J22002-04	Soil	10/11/18 12:45	10-22-2018 13:47
Bottomhole-6 SW @ 2'	8J22002-05	Soil	10/11/18 10:00	10-22-2018 13:47
Bottomhole-6 SW @ 3'	8J22002-06	Soil	10/11/18 10:15	10-22-2018 13:47

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Bottomhole-2 @ 3.5'

8J22002-01 (Soil)

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

Organics by GC

Benzene	ND	0.00109	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B
Toluene	ND	0.0109	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B
Ethylbenzene	ND	0.00543	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B
Xylene (p/m)	ND	0.0217	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B
Xylene (o)	ND	0.0109	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B
Surrogate: 4-Bromofluorobenzene		111 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B
Surrogate: 1,4-Difluorobenzene		91.0 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B

General Chemistry Parameters by EPA / Standard Methods

% Moisture	8.0	0.1	%	1	P8J2306	10/23/18	10/23/18	ASTM D2216
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.2	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M
>C12-C28	147	27.2	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M
>C28-C35	33.1	27.2	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M
Surrogate: 1-Chlorooctane		99.3 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M
Surrogate: o-Terphenyl		122 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	180	27.2	mg/kg dry	1	[CALC]	10/22/18	10/22/18	calc

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Bottomhole-3 @ 3.5'
8J22002-02 (Soil)

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

Organics by GC

Benzene	ND	0.00111	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Toluene	ND	0.0111	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Ethylbenzene	ND	0.00556	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0222	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (o)	ND	0.0111	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.7 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		116 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	10.0	0.1	%	1	P8J2306	10/23/18	10/23/18	ASTM D2216	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.8	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C12-C28	221	27.8	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C28-C35	33.3	27.8	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		103 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: o-Terphenyl		126 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	254	27.8	mg/kg dry	1	[CALC]	10/22/18	10/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Bottomhole-4 @ 3.5'
8J22002-03 (Soil)

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

Organics by GC

Benzene	ND	0.00111	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Toluene	ND	0.0111	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Ethylbenzene	ND	0.00556	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0222	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (o)	ND	0.0111	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		123 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		97.1 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	10.0	0.1	%	1	P8J2306	10/23/18	10/23/18	ASTM D2216	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	27.8	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C12-C28	78.8	27.8	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C28-C35	ND	27.8	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		100 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: o-Terphenyl		122 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	78.8	27.8	mg/kg dry	1	[CALC]	10/22/18	10/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Bottomhole-5 WW @ 3'
8J22002-04 (Soil)

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

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Toluene	ND	0.0106	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Ethylbenzene	ND	0.00532	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (o)	ND	0.0106	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		119 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.1 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P8J2306	10/23/18	10/23/18	ASTM D2216	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	30.8	26.6	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C12-C28	617	26.6	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C28-C35	90.7	26.6	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		119 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: o-Terphenyl		146 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	738	26.6	mg/kg dry	1	[CALC]	10/22/18	10/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Bottomhole-6 SW @ 2'
8J22002-05 (Soil)

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

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Toluene	ND	0.0108	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Ethylbenzene	ND	0.00538	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0215	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (o)	ND	0.0108	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.8 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		125 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	7.0	0.1	%	1	P8J2306	10/23/18	10/23/18	ASTM D2216	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C12-C28	231	26.9	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C28-C35	49.1	26.9	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		103 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: o-Terphenyl		125 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	280	26.9	mg/kg dry	1	[CALC]	10/22/18	10/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Bottomhole-6 SW @ 3'
8J22002-06 (Soil)

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

Organics by GC

Benzene	ND	0.00115	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Toluene	ND	0.0115	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Ethylbenzene	ND	0.00575	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (p/m)	ND	0.0230	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Xylene (o)	ND	0.0115	mg/kg dry	1	P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.9 %	75-125		P8J2210	10/22/18	10/22/18	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	13.0	0.1	%	1	P8J2306	10/23/18	10/23/18	ASTM D2216	
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	28.7	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C12-C28	78.9	28.7	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
>C28-C35	ND	28.7	mg/kg dry	1	P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: 1-Chlorooctane		100 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Surrogate: o-Terphenyl		121 %	70-130		P8J2308	10/22/18	10/22/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	78.9	28.7	mg/kg dry	1	[CALC]	10/22/18	10/22/18	calc	

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8J2210 - General Preparation (GC)

Blank (P8J2210-BLK1)

Prepared & Analyzed: 10/22/18

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.0100	"							
Ethylbenzene	ND	0.00500	"							
Xylene (p/m)	ND	0.0200	"							
Xylene (o)	ND	0.0100	"							
Surrogate: 1,4-Difluorobenzene	0.0560		"	0.0600		93.4	75-125			
Surrogate: 4-Bromofluorobenzene	0.0678		"	0.0600		113	75-125			

LCS (P8J2210-BS1)

Prepared & Analyzed: 10/22/18

Benzene	0.108	0.00100	mg/kg wet	0.100		108	70-130			
Toluene	0.118	0.0100	"	0.100		118	70-130			
Ethylbenzene	0.117	0.00500	"	0.100		117	70-130			
Xylene (p/m)	0.208	0.0200	"	0.200		104	70-130			
Xylene (o)	0.117	0.0100	"	0.100		117	70-130			
Surrogate: 1,4-Difluorobenzene	0.0614		"	0.0600		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.0682		"	0.0600		114	75-125			

LCS Dup (P8J2210-BSD1)

Prepared & Analyzed: 10/22/18

Benzene	0.111	0.00100	mg/kg wet	0.100		111	70-130	2.49	20	
Toluene	0.119	0.0100	"	0.100		119	70-130	1.15	20	
Ethylbenzene	0.118	0.00500	"	0.100		118	70-130	0.0851	20	
Xylene (p/m)	0.216	0.0200	"	0.200		108	70-130	3.56	20	
Xylene (o)	0.118	0.0100	"	0.100		118	70-130	1.14	20	
Surrogate: 1,4-Difluorobenzene	0.0629		"	0.0600		105	75-125			
Surrogate: 4-Bromofluorobenzene	0.0684		"	0.0600		114	75-125			

Matrix Spike (P8J2210-MS1)

Source: 8J22002-01

Prepared & Analyzed: 10/22/18

Benzene	0.0904	0.00109	mg/kg dry	0.109	ND	83.2	80-120			
Toluene	0.0960	0.0109	"	0.109	ND	88.3	80-120			
Ethylbenzene	0.111	0.00543	"	0.109	ND	102	80-120			
Xylene (p/m)	0.205	0.0217	"	0.217	ND	94.2	80-120			
Xylene (o)	0.110	0.0109	"	0.109	ND	101	80-120			
Surrogate: 1,4-Difluorobenzene	0.0723		"	0.0652		111	75-125			
Surrogate: 4-Bromofluorobenzene	0.0815		"	0.0652		125	75-125			

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8J2210 - General Preparation (GC)

Matrix Spike Dup (P8J2210-MSD1)

Source: 8J22002-01

Prepared & Analyzed: 10/22/18

Benzene	0.0839	0.00109	mg/kg dry	0.109	ND	77.2	80-120	7.53	20	QM-07
Toluene	0.0895	0.0109	"	0.109	ND	82.3	80-120	7.06	20	
Ethylbenzene	0.106	0.00543	"	0.109	ND	97.3	80-120	4.68	20	
Xylene (p/m)	0.190	0.0217	"	0.217	ND	87.2	80-120	7.70	20	
Xylene (o)	0.0935	0.0109	"	0.109	ND	86.0	80-120	16.3	20	
Surrogate: 1,4-Difluorobenzene	0.0723		"	0.0652		111	75-125			
Surrogate: 4-Bromofluorobenzene	0.0834		"	0.0652		128	75-125			S-GC

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8J2306 - * DEFAULT PREP *****

Blank (P8J2306-BLK1)

Prepared & Analyzed: 10/23/18

% Moisture	ND	0.1	%
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Duplicate (P8J2306-DUP1)

Source: 8J22003-06

Prepared & Analyzed: 10/23/18

% Moisture	11.0	0.1	%	11.0	0.00	20
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2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P8J2308 - TX 1005

Blank (P8J2308-BLK1)

Prepared & Analyzed: 10/22/18

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	99.2		"	100		99.2	70-130			
Surrogate: o-Terphenyl	59.3		"	50.0		119	70-130			

LCS (P8J2308-BS1)

Prepared & Analyzed: 10/22/18

C6-C12	844	25.0	mg/kg wet	1000		84.4	75-125			
>C12-C28	1040	25.0	"	1000		104	75-125			
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	51.5		"	50.0		103	70-130			

LCS Dup (P8J2308-BSD1)

Prepared & Analyzed: 10/22/18

C6-C12	864	25.0	mg/kg wet	1000		86.4	75-125	2.34	20	
>C12-C28	1010	25.0	"	1000		101	75-125	2.54	20	
Surrogate: 1-Chlorooctane	112		"	100		112	70-130			
Surrogate: o-Terphenyl	49.9		"	50.0		99.8	70-130			

Duplicate (P8J2308-DUP1)

Source: 8J18007-07

Prepared: 10/22/18 Analyzed: 10/23/18

C6-C12	170	30.9	mg/kg dry		172			0.946	20	
>C12-C28	855	30.9	"		845			1.23	20	
Surrogate: 1-Chlorooctane	131		"	123		106	70-130			
Surrogate: o-Terphenyl	76.7		"	61.7		124	70-130			

2M Environmental Services, LLC.
1219 W. University Blvd.
Odessa TEXAS, 79764

Project: Plains Mad Dog 26
Project Number: SRS#
Project Manager: Matt Green

Fax:

Notes and Definitions

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

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

10/23/2018

Brent Barron, Laboratory Director/Technical Director

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

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

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Pemian Basin Environmental Lab, LP
10014 S. County Road 1213
Midland, Texas 79706

Phone: 432-661-4184

Project Manager: Matt Green

Project Name: Plains Mad Dog 26

Company Name: 2M Environmental Services, LLC.

Project #: SRS #

Company Address: 1219 W. University Blvd.

Project Loc: Lea County, NM

City/State/Zip: Odessa, Texas 79764

PO #:

Telephone No: (432)230-3763

Fax No:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 

e-mail: mgreen@2m-environmental.com
tblake@2m-environmental.com

ALGroves@paalp.com

Analyze For:

ORDER #: 8122002

LAB # (lab use only)		FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO ₃	HCl	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	None	Other (Specify)	DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418, 1 8015M 8015B	TPH: TX 1005 Ext TX 1008	Cations (Ca, Mg, Na, K)	Anions (Cl, SO ₄ , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatiles	Semivolatiles	BTEX 8021, 5030 or BTEX 8260	RCI	N.O.R.M.	Chlorides E 300	TCLP Benzene	TCLP BTEX	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT	

Special Instructions:

Relinquished by:  Date: 10/22/18 Time: Received by: Date: Time:

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

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

Laboratory Comments:

Sample Containers Intact? ☒ VOCs Free of Headspace? ☒ Labels on containers? ☒ Custody seals on containers? ☒ Sample Hand Delivered by Sampler/Client Rep? ☒ by Courier? ☒ UPS ☒ DHL ☒ Temperature Upon Receipt: 24°C Factor: 

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-138
Revised August 1, 2011

*Surface Waste Management Facility Operator
and Generator shall maintain and make this
documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:

Plains Pipeline, LP
505 Big Spring St, Suite 600
Midland, Texas 79701

2. Originating Site: From the intersection of Delaware Basin Road and County Road 21B turn south on County Road 21B and go 4 miles to lease road. Turn east and go 1.48 miles then turn north and go 325 feet. Turn west and go 300 to location. Mewbourne Mad Dog 26 Battery GPS Point: 32.269032 -103.448013.

3.
4. Location of Material (Street Address, City, State or ULSTR):
1911 Connie Road, Carlsbad, New Mexico

5. Source and Description of Waste:

Non-Refined hydrocarbon waste generated during various maintenance activities related to permitted pipelines and/or pipeline facilities.

Estimated Volume 300 yd³ / bbls Known Volume (to be entered by the operator at the end of the haul) yd³ / bbls

GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Amber Groves, representative or authorized agent for Plains Pipeline, LP do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. Operator Use Only: Waste Acceptance Frequency ☐ Monthly ☐ Weekly ☐ Per Load

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, Amber Groves, representative for Plains Pipeline, LP do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: Lazy Ace Landfarm, LLC. - NMOCD Permit
#NM-01-0041

Address of Facility: Highway 176, Lea County, NM

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☐ Landfill ☐ Other

Waste Acceptance Status:

☐ APPROVED

☐ DENIED (Must Be Maintained As Permanent Record)

PRINT NAME: DANNY BERRY

TITLE: Partner

DATE: 11-30-18

SIGNATURE: Danny Berry

Surface Waste Management Facility Authorized Agent

TELEPHONE NO.: 575 369 5266

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	Plains Pipeline LP	Contact	Camille Bryant
Address	505 N. Big Spring Suite 600, Midland, TX 79701	Telephone No.	(575) 441-1099
Facility Name	Mewbourne Mad Dog 26 MP State Com #001H	Facility Type	Lact Unit
Surface Owner	NMSLO	Mineral Owner	NMSLO
		Lease No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
M	26	23S	34E					Lea

Latitude N 32.2687600° Longitude W 103.4482740° NAD83

NATURE OF RELEASE

Type of Release	Crude Oil	Volume of Release	9 bbls	Volume Recovered	6 bbls
Source of Release	Triplex Pump	Date and Hour of Occurrence	08/19/2018 @ 14:45	Date and Hour of Discovery	08/19/2018 @ 14:45
Was Immediate Notice Given?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom?	Voicemail to Olivia Yu		
By Whom?	Camille Bryant	Date and Hour	08/20/2018 @ 12:40		
Was a Watercourse Reached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.			

If a Watercourse was Impacted, Describe Fully.*

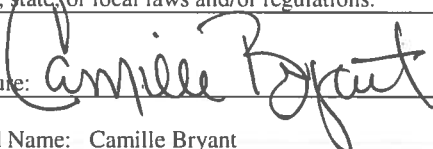

RECEIVED

By CHernandez at 5:12 pm, Aug 21, 2018

Describe Cause of Problem and Remedial Action Taken.* Mechanical failure of Triplex pump resulted in a release of crude oil. Released fluids were confined to the secondary containment and caliche pad of the facility.

Describe Area Affected and Cleanup Action Taken. The released crude oil impacted the bermed lact unit and adjacent production pad. The impacted area will be remediated as per applicable NMOCD guidelines.

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: 	OIL CONSERVATION DIVISION	
Printed Name: Camille Bryant	Approved by Environmental Specialist::	
Title: Remediation Supervisor	Approval Date: 8/21/2018	on Date:
E-mail Address: cjbryant@paalp.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 08/21/2018 Phone: (575) 441-1099	NMAC 19.15.29 effective August 14, 2018. Complete release characterization before any significant remediation.	

* Attach Additional Sheets If Necessary

1RP-5168

nCH1823364998

pCH1823362780

fCH1823364176

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: James D. Hice

Address: _____

Phone #: _____

Originating Location of waste material:

Lease Name: NEW PINE MAN. DOG 26

Sec _____ T _____ R _____

Transporter Information:

Name: Smith & Smith

Address: 7442 E. HANAS ST

Phone #: 375-602-3851

Driver Signature: [Signature]

Date: 12-7-18

Non-Hazardous Hydro-Carbons:

of Yards: 24

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations, and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

White - Original

Canary - Invoice

Pink - Truckee

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: Plants Pipeline LP
 Address: 1911 Cane Rd Fairbairn, MN
 Phone #: 575 100 5517

Originating Location of waste material:

Lease Name: Marathon Petroleum
 Sec. 26 T 13 R 54E

Transporter Information:

Name: LAZY ACE LANDFARM, L.L.C.
 Address: P.O. Box 130 Fairbairn, MN 56001
 Phone #: 575 393 6964
 Driver Signature: [Signature]
 Date: 1-17-98

Non-Hazardous Hydro-Carbons:

Waste material placed in cell number: A10 # of Yards: 12

Lazy Ace Landfarm, L.L.C.
 P.O. Box 130
 Fairbairn, MN 56001
 Permit # NM 01-0041
 W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
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Facility Representative: _____ Date: _____

White - Original Canary - Invoice Pink - Truckee

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: 2M Environmental Services, LLC
 Address: 1219 W University Ave NW
 Phone #: 432-614-6797

Originating Location of waste material:

Lease Name: Marathon Petroleum
 Sec. 26 T 13 R 54E

Transporter Information:

Name: LAZY ACE LANDFARM, L.L.C.
 Address: P.O. Box 130 Fairbairn, MN 56001
 Phone #: 575 393 6964
 Driver Signature: [Signature]
 Date: 1-17-98

Non-Hazardous Hydro-Carbons:

Waste material placed in cell number: A10 # of Yards: 36

Lazy Ace Landfarm, L.L.C.
 P.O. Box 130
 Fairbairn, MN 56001
 Permit # NM 01-0041
 W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
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Facility Representative: _____ Date: _____

White - Original Canary - Invoice Pink - Truckee

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: Plains Pipeline LP
Address: 1911 Comanche Rd, Cambridge, NM 88505
Phone #: 575 330-5517

Originating Location of waste material:

Lease Name: Newborn M&D Co. 21
Sec. 26 T 23S R 34E

Transporter Information:

Name: MTI Waste Transfer, Inc.
Address: P.O. Box 226, Lovell, NM 88505
Phone #: 505 204 2121
Driver Signature: [Signature]
Date: 12-7-15

Non-Hazardous Hydro-Carbons:

Waste material placed in cell number: A10 # of Yards: 12

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231
Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____
White - Original Canary - Invoice Pink - Truckee

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: 217 Environmental Services LLC
Address: 1219 W University Blvd Odessa, TX 79764
Phone #: Off 432-6614-6793

Originating Location of waste material:

Lease Name: Melbourne Prod Acq 26 ULT "M"
Sec. 26 T 23S R 34E

Transporter Information:

Name: DJ Truck Services
Address: 183 West Berry Hobbs NM 88240
Phone #: 575-631-9868
Driver Signature: [Signature]
Date: 12/7/18

Non-Hazardous Hydro-Carbons:

of Yards: _____

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

White - Original

Canary - Invoice

Pink - Trucker

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: 2M Environmental Services
Address: 1219 W University Blvd Odessa TX 79764
Phone #: Off: 432-614 6793

Originating Location of waste material:

Lease Name: Moubaume Prod Dog 26 ULT M
Sec. 26 T 23S R 34E

Transporter Information:

Name: DJ Truck Services
Address: 103 West Berry Hobbs NM 88240
Phone #: 575-631-9868
Driver Signature: [Signature]
Date: 12/6/18

Non-Hazardous Hydro-Carbons:

of Yards: 36

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations; and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

White - Original

Canary - Invoice

Pink - Trucker