



6101 Holiday Hill Road
Midland, TX 79707
(432) 687-1777
(432) 687-1570 (FAX)

July 19, 2017

Crystal Weaver
Environmental Specialist
OCD – Artesia District II
811 S. 1st Street
Artesia, NM 88210

James Amos
Supervisory Petroleum Engineering Tech
Bureau of Land Management
620 East Greene Street
Carlsbad, NM 88220-6292

Closure request: El Paso Federal No 12 Spill and Potential Oil Theft, API No. 30-015-30634

Ms. Weaver and Mr. Amos,

Incident Description

On March 25, 2017 a spill was discovered at Fasken's El Paso Federal No. 12 Battery by Fasken personnel arriving for routine daily work. At the time of discovery, oil staining was present on the tanks and catwalks, inside the firewall around two oil tanks, on the firewall, and a small area just outside the firewall in the drive area on the pad. According to Fasken production records, 31 barrels of crude oil was missing. No recoverable oil was present and no produced water was released. The area affected by the spilled crude oil was immediately determined to be too small for the volume of crude oil missing. The New Mexico OCD Artesia District office was notified via phone on March 25th in the late afternoon. A form C-141 was submitted to Mike Bratcher on March 28th via electronic mail. After additional internal investigation, Fasken also reported the loss to New Mexico law enforcement as a theft. See attached pictures of spill upon discovery.

Spill Response

On March 30th, Fasken Environmental Coordinator Aaron Pachlhofer supervised a work crew and a backhoe on site to perform an immediate response to stabilize and clean up the release. All affected soils were removed from around the two affected tanks until visually and olfactorally clean. However, the affected soil were not removed from under the tanks since the tanks are in service and cannot be moved. The affected section of the firewall was completely removed until level with the pad. The small affected area on the pad was scraped until it appears clean. All materials removed were placed on 20-mil thick plastic on the eastern edge of the pad edge of the pad. Fasken estimates the volume of the stockpile at about 20 cubic yards. Two samples were collected around the tanks and one sample was collected from the pad area. A sample was not collected from the firewall since it was fully removed. The stockpile was not sampled; instead it was scheduled to be sampled 90 days after excavation.

After materials were removed and stockpiled, the excavated portion of the firewall was replaced with new, clean soil that was already stockpiled on site. The interior of the firewall around the tanks was backfilled with new pea gravel after sample analysis was received and no further material needed to be removed around the tanks.

Sample Results

Sample results after the initial removal were:

	Benzene	Total BTEX	TPH
S-1	<0.0220	<0.154	222.96
S-2	<0.0220	<0.154	795.82
S-3 (PAD)	<0.0208	1.461	4385

After receipt of the analytical results, Mike Bratcher agreed to allow Fasken to re-sample S-3 (Pad) in order to confirm the concentration remaining on the drive area of the pad. On May 31, 2017, Aaron Pachlhofer collected a new sample from the pad area; and the stockpile was also sampled at this time.

Confirmation and stockpile sample results were:

	Benzene	Total BTEX	TPH
PAD Confirmation	<0.0208	<0.154	661.8
Stockpile	<0.0106	0.0052	2185.3

Please note all results in mg/kg and that since no produced water was spilled, chloride analysis was not requested. See attached lab reports.

Conclusions

1. This spill was likely the result of a theft of crude oil. Fasken personnel concluded that the volume of oil missing did not correlate with area affected by the crude oil that was spilled. Fasken asserts that if the full 31 barrels of the amount of oil had been spilled into the firewall of the battery, a much larger volume of soil would have been removed in the initial response.
2. According to the sample analysis, the initial response was appropriate to address the spilled oil. Three separate samples show any remaining crude oil below 1,000 mg/kg. Some crude oil remains beneath two oil tanks at the battery, since they are in service and could not be moved during response activities.
3. The stockpile that remains at the battery contains a low concentration of TPH, and it is ready for re-use as needed by Fasken personnel.

Recommendations

1. Fasken recommends no further action for this spill be taken until the battery is decommissioned or the oil tanks are removed from service at which time any contaminated soil can be removed from beneath the tanks.
2. Fasken recommends that the stockpile be released for re-use for firewall or road repair.

If there are any questions or comments, please do not hesitate to contact Aaron Pachlhofer at the letterhead address or 432-687-1777 or aaronp@forl.com.

Thank You,

Aaron Pachlhofer

Attachments:
Photographs
Laboratory Reports



Spill upon arrival



Spill upon arrival



Spill on arrival, backside of battery



Spill on arrival, between tanks from backside



Removing affected soils



Removing firewall



Firewall removed, affected soils mostly removed



Firewall removed, affected soils mostly removed



Firewall and fence replaced



Excavated area prior to backfilling with new pea gravel



Soil stockpile with El Paso Federal 12 battery in the background

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



Analytical Report

Prepared for:

Aaron Pachlhofer
Fasken Oil & Ranch, Ltd.
6101 Holiday Hill Road
Midland, TX 79707

Project: El Paso Federal #12

Project Number: [none]

Location: Eddy County, NM

Lab Order Number: 7C31012



NELAP/TCEQ # T104704156-16-6

Report Date: 04/07/17

Fasken Oil & Ranch, Ltd.
6101 Holiday Hill Road
Midland TX, 79707

Project: El Paso Federal #12
Project Number: [none]
Project Manager: Aaron Pachlhofer

Fax: 43-687-1570

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S-1	7C31012-01	Soil	03/30/17 13:35	03-31-2017 11:52
S-2	7C31012-02	Soil	03/30/17 13:40	03-31-2017 11:52
S-3 (Pad)	7C31012-03	Soil	03/30/17 13:45	03-31-2017 11:52

Fasken Oil & Ranch, Ltd.
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 Project Number: [none]
 Project Manager: Aaron Pachlhofer

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S-1
7C31012-01 (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	0.0220	mg/kg dry	20	P7D0503	04/03/17	04/03/17	EPA 8021B	
Toluene	ND	0.0440	mg/kg dry	20	P7D0503	04/03/17	04/03/17	EPA 8021B	
Ethylbenzene	ND	0.0220	mg/kg dry	20	P7D0503	04/03/17	04/03/17	EPA 8021B	
Xylene (p/m)	ND	0.0440	mg/kg dry	20	P7D0503	04/03/17	04/03/17	EPA 8021B	
Xylene (o)	ND	0.0220	mg/kg dry	20	P7D0503	04/03/17	04/03/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		82.8 %		75-125	P7D0503	04/03/17	04/03/17	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		91.6 %		75-125	P7D0503	04/03/17	04/03/17	EPA 8021B	
C6-C12	30.879	27.473	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
>C12-C28	138.98	27.473	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
>C28-C35	53.099	27.473	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
<i>Surrogate: 1-Chlorooctane</i>		105 %		70-130	P7D0609	04/05/17	04/06/17	TX 1005	
<i>Surrogate: o-Terphenyl</i>		103 %		70-130	P7D0609	04/05/17	04/06/17	TX 1005	
Total Hydrocarbon nC6-nC35	222.96	27.473	mg/kg dry	1	[CALC]	04/05/17	04/06/17	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	9.0	0.1	%	1	P7D0301	04/03/17	04/03/17	% calculation	
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 Midland TX, 79707

Project: El Paso Federal #12
 Project Number: [none]
 Project Manager: Aaron Pachlhofer

Fax: 43-687-1570

S-2
7C31012-02 (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	0.0215	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Toluene	ND	0.0430	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Ethylbenzene	ND	0.0215	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Xylene (p/m)	ND	0.0430	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Xylene (o)	ND	0.0215	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		97.6 %		75-125	P7D0503	04/03/17	04/04/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		89.4 %		75-125	P7D0503	04/03/17	04/04/17	EPA 8021B	
C6-C12	184.08	26.882	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
>C12-C28	531.51	26.882	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
>C28-C35	80.237	26.882	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
<i>Surrogate: 1-Chlorooctane</i>		101 %		70-130	P7D0609	04/05/17	04/06/17	TX 1005	
<i>Surrogate: o-Terphenyl</i>		99.1 %		70-130	P7D0609	04/05/17	04/06/17	TX 1005	
Total Hydrocarbon nC6-nC35	795.82	26.882	mg/kg dry	1	[CALC]	04/05/17	04/06/17	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	7.0	0.1	%	1	P7D0301	04/03/17	04/03/17	% calculation	
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Project: El Paso Federal #12
Project Number: [none]
Project Manager: Aaron Pachlhofer

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S-3 (Pad)
7C31012-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.0208	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Toluene	ND	0.0417	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Ethylbenzene	0.194	0.0208	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Xylene (p/m)	0.846	0.0417	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
Xylene (o)	0.421	0.0208	mg/kg dry	20	P7D0503	04/03/17	04/04/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		74.5 %	75-125		P7D0503	04/03/17	04/04/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		90.4 %	75-125		P7D0503	04/03/17	04/04/17	EPA 8021B	
C6-C12	629.52	26.042	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
>C12-C28	3316.6	26.042	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
>C28-C35	438.93	26.042	mg/kg dry	1	P7D0609	04/05/17	04/06/17	TX 1005	
<i>Surrogate: 1-Chlorooctane</i>		104 %	70-130		P7D0609	04/05/17	04/06/17	TX 1005	
<i>Surrogate: o-Terphenyl</i>		98.4 %	70-130		P7D0609	04/05/17	04/06/17	TX 1005	
Total Hydrocarbon nC6-nC35	4385	26.042	mg/kg dry	1	[CALC]	04/05/17	04/06/17	[CALC]	
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	4.0	0.1	%	1	P7D0301	04/03/17	04/03/17	% calculation	

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 P7D0503 - General Preparation (GC)

Blank (P7D0503-BLK1)

Prepared & Analyzed: 04/03/17

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0583</i>		<i>"</i>	<i>0.0600</i>		<i>97.1</i>	<i>75-125</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0505</i>		<i>"</i>	<i>0.0600</i>		<i>84.1</i>	<i>75-125</i>			

LCS (P7D0503-BS1)

Prepared & Analyzed: 04/03/17

Benzene	0.0924	0.00100	mg/kg wet	0.100		92.4	70-130			
Toluene	0.0872	0.00200	"	0.100		87.2	70-130			
Ethylbenzene	0.0855	0.00100	"	0.100		85.5	70-130			
Xylene (p/m)	0.180	0.00200	"	0.200		90.1	70-130			
Xylene (o)	0.0865	0.00100	"	0.100		86.5	70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0655</i>		<i>"</i>	<i>0.0600</i>		<i>109</i>	<i>75-125</i>			
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0629</i>		<i>"</i>	<i>0.0600</i>		<i>105</i>	<i>75-125</i>			

LCS Dup (P7D0503-BSD1)

Prepared & Analyzed: 04/03/17

Benzene	0.0991	0.00100	mg/kg wet	0.100		99.1	70-130	7.01	20	
Toluene	0.0826	0.00200	"	0.100		82.6	70-130	5.49	20	
Ethylbenzene	0.0802	0.00100	"	0.100		80.2	70-130	6.35	20	
Xylene (p/m)	0.168	0.00200	"	0.200		83.9	70-130	7.10	20	
Xylene (o)	0.0761	0.00100	"	0.100		76.1	70-130	12.8	20	
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0607</i>		<i>"</i>	<i>0.0600</i>		<i>101</i>	<i>75-125</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0531</i>		<i>"</i>	<i>0.0600</i>		<i>88.5</i>	<i>75-125</i>			

Matrix Spike (P7D0503-MS1)

Source: 7D03003-01

Prepared & Analyzed: 04/03/17

Benzene	0.0924	0.00101	mg/kg dry	0.101	ND	91.5	80-120			
Toluene	0.0754	0.00202	"	0.101	ND	74.7	80-120			QM-07
Ethylbenzene	0.0623	0.00101	"	0.101	ND	61.6	80-120			QM-07
Xylene (p/m)	0.118	0.00202	"	0.202	ND	58.3	80-120			QM-07
Xylene (o)	0.0585	0.00101	"	0.101	ND	57.9	80-120			QM-07
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0561</i>		<i>"</i>	<i>0.0606</i>		<i>92.6</i>	<i>75-125</i>			
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0613</i>		<i>"</i>	<i>0.0606</i>		<i>101</i>	<i>75-125</i>			

Fasken Oil & Ranch, Ltd.
6101 Holiday Hill Road
Midland TX, 79707

Project: El Paso Federal #12
Project Number: [none]
Project Manager: Aaron Pachlhofer

Fax: 43-687-1570

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 P7D0503 - General Preparation (GC)

Matrix Spike Dup (P7D0503-MSD1)	Source: 7D03003-01			Prepared & Analyzed: 04/03/17						
Benzene	0.116	0.00101	mg/kg dry	0.101	ND	115	80-120	22.6	20	R3
Toluene	0.0802	0.00202	"	0.101	ND	79.4	80-120	6.12	20	QM-07
Ethylbenzene	0.0597	0.00101	"	0.101	ND	59.1	80-120	4.21	20	QM-07
Xylene (p/m)	0.120	0.00202	"	0.202	ND	59.2	80-120	1.65	20	QM-07
Xylene (o)	0.0597	0.00101	"	0.101	ND	59.2	80-120	2.07	20	QM-07
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0608</i>		<i>"</i>	<i>0.0606</i>		<i>100</i>	<i>75-125</i>			
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0681</i>		<i>"</i>	<i>0.0606</i>		<i>112</i>	<i>75-125</i>			

Batch P7D0609 - TX 1005

Blank (P7D0609-BLK1)	Prepared: 04/05/16 Analyzed: 04/05/17									
C6-C12	ND	25.000	mg/kg wet							
>C12-C28	ND	25.000	"							
>C28-C35	ND	25.000	"							
<i>Surrogate: 1-Chlorooctane</i>	<i>108</i>		<i>"</i>	<i>100</i>		<i>108</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>53.2</i>		<i>"</i>	<i>50.0</i>		<i>106</i>	<i>70-130</i>			

LCS (P7D0609-BS1)	Prepared: 04/05/16 Analyzed: 04/05/17									
C6-C12	1000	25.000	mg/kg wet	1000		100	75-125			
>C12-C28	942	25.000	"	1000		94.2	75-125			
<i>Surrogate: 1-Chlorooctane</i>	<i>110</i>		<i>"</i>	<i>100</i>		<i>110</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>50.3</i>		<i>"</i>	<i>50.0</i>		<i>101</i>	<i>70-130</i>			

LCS Dup (P7D0609-BSD1)	Prepared: 04/05/16 Analyzed: 04/05/17									
C6-C12	1010	25.000	mg/kg wet	1000		101	75-125	0.511	20	
>C12-C28	938	25.000	"	1000		93.8	75-125	0.401	20	
<i>Surrogate: 1-Chlorooctane</i>	<i>106</i>		<i>"</i>	<i>100</i>		<i>106</i>	<i>70-130</i>			
<i>Surrogate: o-Terphenyl</i>	<i>48.7</i>		<i>"</i>	<i>50.0</i>		<i>97.4</i>	<i>70-130</i>			

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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 P7D0609 - TX 1005

Matrix Spike (P7D0609-MS1)

Source: 7D05001-01

Prepared: 04/05/16 Analyzed: 04/06/17

C6-C12	761	25.510	mg/kg dry	1020	36.5	71.0	75-125			QM-07
>C12-C28	1070	25.510	"	1020	796	26.6	75-125			QM-07
Surrogate: 1-Chlorooctane	100		"	102		98.0	70-130			
Surrogate: o-Terphenyl	46.2		"	51.0		90.5	70-130			

Matrix Spike Dup (P7D0609-MSD1)

Source: 7D05001-01

Prepared: 04/05/16 Analyzed: 04/06/17

C6-C12	786	25.510	mg/kg dry	1020	36.5	73.5	75-125	3.43	20	QM-07
>C12-C28	1070	25.510	"	1020	796	27.2	75-125	2.01	20	QM-07
Surrogate: 1-Chlorooctane	100		"	102		98.1	70-130			
Surrogate: o-Terphenyl	45.9		"	51.0		89.9	70-130			

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Project: El Paso Federal #12
 Project Number: [none]
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Fax: 43-687-1570

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 P7D0301 - * DEFAULT PREP *****

Blank (P7D0301-BLK1)				Prepared & Analyzed: 04/03/17						
% Moisture	ND	0.1	%							
Duplicate (P7D0301-DUP1)				Prepared & Analyzed: 04/03/17						
	Source: 7C31003-11									
% Moisture	7.0	0.1	%		7.0			0.00	20	
Duplicate (P7D0301-DUP2)				Prepared & Analyzed: 04/03/17						
	Source: 7C31008-06									
% Moisture	5.0	0.1	%		5.0			0.00	20	
Duplicate (P7D0301-DUP3)				Prepared & Analyzed: 04/03/17						
	Source: 7C31012-03									
% Moisture	4.0	0.1	%		4.0			0.00	20	

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
R3	The RPD exceeded the acceptance limit due to sample matrix effects.
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:

4/7/2017

Brent Barron, Laboratory Director/Technical Director

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

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

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



Analytical Report

Prepared for:

Aaron Pachlhofer
Fasken Oil & Ranch, Ltd.
6101 Holiday Hill Road
Midland, TX 79707

Project: El Paso Federal #12

Project Number: [none]

Location: Eddy Co NM

Lab Order Number: 7F01006



NELAP/TCEQ # T104704516-16-7

Report Date: 06/09/17

Fasken Oil & Ranch, Ltd.
6101 Holiday Hill Road
Midland TX, 79707

Project: El Paso Federal #12
Project Number: [none]
Project Manager: Aaron Pachlhofer

Fax: 43-687-1570

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Pad Confirmation	7F01006-01	Soil	05/31/17 12:24	06-01-2017 12:09
Stockpile	7F01006-02	Soil	05/31/17 12:30	06-01-2017 12:09

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Pad Confirmation
7F01006-01 (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	0.0202	mg/kg dry	20	P7F0703	06/01/17	06/02/17	EPA 8021B	
Toluene	ND	0.0404	mg/kg dry	20	P7F0703	06/01/17	06/02/17	EPA 8021B	
Ethylbenzene	ND	0.0202	mg/kg dry	20	P7F0703	06/01/17	06/02/17	EPA 8021B	
Xylene (p/m)	ND	0.0404	mg/kg dry	20	P7F0703	06/01/17	06/02/17	EPA 8021B	
Xylene (o)	ND	0.0202	mg/kg dry	20	P7F0703	06/01/17	06/02/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		73.6 %		75-125	P7F0703	06/01/17	06/02/17	EPA 8021B	S-GC
<i>Surrogate: 1,4-Difluorobenzene</i>		86.7 %		75-125	P7F0703	06/01/17	06/02/17	EPA 8021B	
C6-C12	ND	126.26	mg/kg dry	5	P7F0501	06/05/17	06/09/17	TX 1005	
>C12-C28	508.4	126.26	mg/kg dry	5	P7F0501	06/05/17	06/09/17	TX 1005	
>C28-C35	161.4	126.26	mg/kg dry	5	P7F0501	06/05/17	06/09/17	TX 1005	
<i>Surrogate: 1-Chlorooctane</i>		121 %		70-130	P7F0501	06/05/17	06/09/17	TX 1005	
<i>Surrogate: o-Terphenyl</i>		115 %		70-130	P7F0501	06/05/17	06/09/17	TX 1005	
Total Hydrocarbon nC6-nC35	669.8	126.26	mg/kg dry	5	[CALC]	06/05/17	06/09/17	[CALC]	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	1.0	0.1	%	1	P7F0503	06/05/17	06/05/17	ASTM D2216	
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Stockpile
7F01006-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Permian Basin Environmental Lab, L.P.									
Organics by GC									
Benzene	ND	0.00106	mg/kg dry	1	P7F0702	06/01/17	06/01/17	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P7F0702	06/01/17	06/01/17	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P7F0702	06/01/17	06/01/17	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P7F0702	06/01/17	06/01/17	EPA 8021B	
Xylene (o)	0.00520	0.00106	mg/kg dry	1	P7F0702	06/01/17	06/01/17	EPA 8021B	
<i>Surrogate: 4-Bromofluorobenzene</i>		113 %	75-125		P7F0702	06/01/17	06/01/17	EPA 8021B	
<i>Surrogate: 1,4-Difluorobenzene</i>		90.5 %	75-125		P7F0702	06/01/17	06/01/17	EPA 8021B	
C6-C12	75.372	26.596	mg/kg dry	1	P7F0501	06/05/17	06/08/17	TX 1005	
>C12-C28	1786.8	26.596	mg/kg dry	1	P7F0501	06/05/17	06/08/17	TX 1005	
>C28-C35	323.12	26.596	mg/kg dry	1	P7F0501	06/05/17	06/08/17	TX 1005	
<i>Surrogate: 1-Chlorooctane</i>		117 %	70-130		P7F0501	06/05/17	06/08/17	TX 1005	
<i>Surrogate: o-Terphenyl</i>		136 %	70-130		P7F0501	06/05/17	06/08/17	TX 1005	S-GC
Total Hydrocarbon nC6-nC35	2185.3	26.596	mg/kg dry	1	[CALC]	06/05/17	06/08/17	[CALC]	
General Chemistry Parameters by EPA / Standard Methods									
% Moisture	6.0	0.1	%	1	P7F0503	06/05/17	06/05/17	ASTM D2216	

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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 P7F0501 - TX 1005

Blank (P7F0501-BLK1)										
Prepared: 06/05/17 Analyzed: 06/07/17										
C6-C12	ND	25.000	mg/kg wet							
>C12-C28	ND	25.000	"							
>C28-C35	ND	25.000	"							
Surrogate: 1-Chlorooctane	92.1		"	100		92.1	70-130			
Surrogate: o-Terphenyl	47.2		"	50.0		94.4	70-130			

LCS (P7F0501-BS1)										
Prepared: 06/05/17 Analyzed: 06/07/17										
C6-C12	813	25.000	mg/kg wet	1000		81.3	75-125			
>C12-C28	872	25.000	"	1000		87.2	75-125			
Surrogate: 1-Chlorooctane	99.9		"	100		99.9	70-130			
Surrogate: o-Terphenyl	42.7		"	50.0		85.5	70-130			

LCS Dup (P7F0501-BSD1)										
Prepared: 06/05/17 Analyzed: 06/07/17										
C6-C12	817	25.000	mg/kg wet	1000		81.7	75-125	0.553	20	
>C12-C28	961	25.000	"	1000		96.1	75-125	9.75	20	
Surrogate: 1-Chlorooctane	110		"	100		110	70-130			
Surrogate: o-Terphenyl	46.5		"	50.0		92.9	70-130			

Matrix Spike (P7F0501-MS1)										
Source: 7F01004-06 Prepared: 06/05/17 Analyzed: 06/08/17										
C6-C12	850	25.510	mg/kg dry	1020	ND	83.3	75-125			
>C12-C28	1080	25.510	"	1020	ND	106	75-125			
Surrogate: 1-Chlorooctane	133		"	102		130	70-130			
Surrogate: o-Terphenyl	55.1		"	51.0		108	70-130			

Matrix Spike Dup (P7F0501-MSD1)										
Source: 7F01004-06 Prepared: 06/05/17 Analyzed: 06/08/17										
C6-C12	865	25.510	mg/kg dry	1020	ND	84.7	75-125	1.68	20	
>C12-C28	1090	25.510	"	1020	ND	107	75-125	0.917	20	
Surrogate: 1-Chlorooctane	129		"	102		126	70-130			
Surrogate: o-Terphenyl	49.0		"	51.0		96.0	70-130			

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 P7F0702 - General Preparation (GC)

Blank (P7F0702-BLK1)

Prepared & Analyzed: 06/01/17

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 4-Bromofluorobenzene	0.0589		"	0.0600		98.1	75-125			
Surrogate: 1,4-Difluorobenzene	0.0534		"	0.0600		89.0	75-125			

LCS (P7F0702-BS1)

Prepared & Analyzed: 06/01/17

Benzene	0.121	0.00100	mg/kg wet	0.100		121	70-130			
Toluene	0.111	0.00200	"	0.100		111	70-130			
Ethylbenzene	0.111	0.00100	"	0.100		111	70-130			
Xylene (p/m)	0.204	0.00200	"				70-130			
Xylene (o)	0.111	0.00100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0583		"	0.0600		97.2	75-125			
Surrogate: 4-Bromofluorobenzene	0.0597		"	0.0600		99.6	75-125			

LCS Dup (P7F0702-BS1)

Prepared & Analyzed: 06/01/17

Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130	1.25	20	
Toluene	0.107	0.00200	"	0.100		107	70-130	4.14	20	
Ethylbenzene	0.115	0.00100	"	0.100		115	70-130	3.60	20	
Xylene (p/m)	0.201	0.00200	"				70-130		20	
Xylene (o)	0.104	0.00100	"				70-130		20	
Surrogate: 4-Bromofluorobenzene	0.0562		"	0.0600		93.7	75-125			
Surrogate: 1,4-Difluorobenzene	0.0557		"	0.0600		92.9	75-125			

Matrix Spike (P7F0702-MS1)

Source: 7E31004-01

Prepared & Analyzed: 06/01/17

Benzene	0.0608	0.00103	mg/kg dry	0.103	ND	59.0	80-120			QM-05
Toluene	0.0531	0.00206	"	0.103	ND	51.5	80-120			QM-05
Ethylbenzene	0.0573	0.00103	"	0.103	ND	55.6	80-120			QM-05
Xylene (p/m)	0.119	0.00206	"		ND		80-120			
Xylene (o)	0.0625	0.00103	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0619		"	0.0619		100	75-125			
Surrogate: 1,4-Difluorobenzene	0.0570		"	0.0619		92.1	75-125			

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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 P7F0702 - General Preparation (GC)

Matrix Spike Dup (P7F0702-MSD1)	Source: 7E31004-01			Prepared & Analyzed: 06/01/17						
Benzene	0.0580	0.00103	mg/kg dry	0.103	ND	56.3	80-120	4.72	20	QM-05
Toluene	0.0539	0.00206	"	0.103	ND	52.3	80-120	1.50	20	QM-05
Ethylbenzene	0.0571	0.00103	"	0.103	ND	55.4	80-120	0.252	20	QM-05
Xylene (p/m)	0.112	0.00206	"		ND		80-120		20	
Xylene (o)	0.0556	0.00103	"		ND		80-120		20	
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0591</i>		<i>"</i>	<i>0.0619</i>		<i>95.6</i>	<i>75-125</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0607</i>		<i>"</i>	<i>0.0619</i>		<i>98.1</i>	<i>75-125</i>			

Batch P7F0703 - General Preparation (GC)

Blank (P7F0703-BLK1)	Prepared: 06/01/17 Analyzed: 06/02/17									
Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0516</i>		<i>"</i>	<i>0.0600</i>		<i>86.0</i>	<i>75-125</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0547</i>		<i>"</i>	<i>0.0600</i>		<i>91.2</i>	<i>75-125</i>			

LCS (P7F0703-BS1)	Prepared & Analyzed: 06/01/17									
Benzene	0.120	0.00100	mg/kg wet	0.100		120	70-130			
Toluene	0.107	0.00200	"	0.100		107	70-130			
Ethylbenzene	0.116	0.00100	"	0.100		116	70-130			
Xylene (p/m)	0.199	0.00200	"				70-130			
Xylene (o)	0.108	0.00100	"				70-130			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0592</i>		<i>"</i>	<i>0.0600</i>		<i>98.6</i>	<i>75-125</i>			
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0604</i>		<i>"</i>	<i>0.0600</i>		<i>101</i>	<i>75-125</i>			

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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 P7F0703 - General Preparation (GC)

LCS Dup (P7F0703-BSD1)

Prepared: 06/01/17 Analyzed: 06/02/17

Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130	0.343	20	
Toluene	0.107	0.00200	"	0.100		107	70-130	0.149	20	
Ethylbenzene	0.116	0.00100	"	0.100		116	70-130	0.423	20	
Xylene (p/m)	0.199	0.00200	"				70-130		20	
Xylene (o)	0.105	0.00100	"				70-130		20	
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0613</i>		<i>"</i>	<i>0.0600</i>		<i>102</i>	<i>75-125</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0604</i>		<i>"</i>	<i>0.0600</i>		<i>101</i>	<i>75-125</i>			

Duplicate (P7F0703-DUP1)

Source: 7F01009-02

Prepared: 06/01/17 Analyzed: 06/02/17

Benzene	ND	0.0208	mg/kg dry		ND				20	
Toluene	ND	0.0417	"		ND				20	
Ethylbenzene	ND	0.0208	"		ND				20	
Xylene (p/m)	ND	0.0417	"		ND				20	
Xylene (o)	ND	0.0208	"		ND				20	
<i>Surrogate: 1,4-Difluorobenzene</i>	<i>0.0550</i>		<i>"</i>	<i>0.0625</i>		<i>88.0</i>	<i>75-125</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0516</i>		<i>"</i>	<i>0.0625</i>		<i>82.5</i>	<i>75-125</i>			

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

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P7F0503 - *** DEFAULT PREP ***										
Blank (P7F0503-BLK1) Prepared & Analyzed: 06/05/17										
% Moisture	ND	0.1	%							
Blank (P7F0503-BLK2) Prepared & Analyzed: 06/05/17										
% Moisture	ND	0.1	%							
Blank (P7F0503-BLK3) Prepared & Analyzed: 06/05/17										
% Moisture	ND	0.1	%							
Duplicate (P7F0503-DUP1) Source: 7E31012-30 Prepared & Analyzed: 06/05/17										
% Moisture	9.0	0.1	%		10.0			10.5	20	
Duplicate (P7F0503-DUP2) Source: 7E31013-17 Prepared & Analyzed: 06/05/17										
% Moisture	8.0	0.1	%		9.0			11.8	20	
Duplicate (P7F0503-DUP3) Source: 7F01007-20 Prepared & Analyzed: 06/05/17										
% Moisture	11.0	0.1	%		11.0			0.00	20	
Duplicate (P7F0503-DUP4) Source: 7F01007-47 Prepared & Analyzed: 06/05/17										
% Moisture	5.0	0.1	%		5.0			0.00	20	

Notes and Definitions

S-GC	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
BULK	Samples received in Bulk soil containers
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:

6/9/2017

Brent Barron, Laboratory Director/Technical Director

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