

REMEDIATION WORK PLAN

Property:

Mack Energy Corporation
North Pole Fed TB
Eddy County, New Mexico
Unit Letter "M", Section 15, Township 16 South, Range 28 East
Latitude 32.9163, Longitude -104.1712
API Number: 30-015-36079
2RP-4685

September 2018

Prepared for:

Mack Energy Corporation 11344 Lovington Highway Artesia, NM 88210 Attn: Mr. Matt Buckles

Prepared by:

Thomas Franklin Environmental Manager

Ryan Reich Environmental Project Manager

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WORK PLAN

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September 2018 Page 1

1.0 INTRODUCTION

1.1 Site Description & Background

American Safety Services Inc. (ASSI) has prepared this Work Plan for the Mack Energy Corporation (Mack) North Pole Fed TB (referred to hereinafter as the "Site" or "subject Site"). This Work Plan is based upon the interpretation of the data collected by ASSI.

The Site is located in Unit Letter "M", Section 15, Township 16 South, Range 28 East, Eddy County, New Mexico (GPS 32.9163, -104.1712). Figures 1, 2, and 3 (Appendix A) show the Site location.

Remedial actions will be conducted in accordance with New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (NMOCD) rules (NMAC 19.15.29 Release Notification).

1.2 Project Objective

The objective of the Work Plan is to present documentation of the activities that were performed to date and to request an effective means to remediate the Site.

1.3 Standard of Care

ASSI's services are performed in accordance with standards provided by a firm rendering the same or similar services in the area during the same time frame. ASSI makes no warranties, expressed or implied, as to the services performed hereunder. Additionally, ASSI does not warranty the work of third parties supplying information used in the report (e.g. laboratories, regulatory agencies, or other third parties). This scope of services will be performed in accordance with the scope of work agreed with the client.

1.4 Reliance

This report has been prepared for the exclusive use of Mack, and any authorization for use or reliance by any other party (except a governmental entity having jurisdiction over the Site) is prohibited without the express written authorization of Mack and ASSI. Any unauthorized distribution or reuse is at the sole risk of Mack. Notwithstanding the foregoing, reliance by authorized parties will be subject to the terms, conditions and limitations stated in the proposal, the report, and ASSI's Agreement. The limitation of liability defined in the agreement is the aggregate limit of ASSI's liability to the client.

2.0 SITE RANKING & PROPOSED REMEDIAL ACTION GOALS

The Site is subject to regulatory oversight by the Bureau of Land Management (BLM). To address activities related to releases, the NMOCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the NMOCD rules, specifically NMAC 19.15.29.9 *Release Notification*. These documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

In accordance with the NMAC 19.15.29, ASSI utilized the general site characteristics to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the table below:

Rankin	Ranking Score		
	<50 feet	20	
Depth to Groundwater	50 to 99 feet	10	20
	>100 feet	0	
Wellhead Protection Area,	Yes	20	
<1,000 feet from a water source, or; <200 feet from private domestic water source.	No	0	0
Distance to Surface	<200 feet	20	
Water Body	200 to 1,000 feet	10	0
Water Body	>1,000 feet	0	
Total Rai	20		

Based on ASSI's evaluation of the scoring criteria, the Site would have a Total Ranking Score of 20. This ranking is based on the following:

- The depth to the initial groundwater-bearing zone is less than 50 feet at the Site.
- The impacted area is greater than 200 feet from a private domestic water source.
- Distance to the nearest surface water body is greater than 1,000 ft.

Based on a Total Ranking Score of 20, cleanup goals for soils remaining in place include: 10 milligrams per kilogram (mg/Kg) for Benzene, 50 mg/Kg for Total Benzene, Toluene, Ethylbenzene and Xylene (BTEX), 100 mg/Kg for Total Petroleum Hydrocarbons (TPH) and 600 mg/Kg for Chloride.

Figure 5 shows the location of the Site in Eddy Co, New Mexico and surrounding topography.

3.0 INITIAL RESPONSE & SAMPLING ACTIVITIES

3.1 Initial Response

On July 9, 2018, ASSI personnel performed a site inspection in response to a release of twenty-five (25) barrels (bbls) of oil (2RP-4685). The release was caused when a gasket on an 8' x 20' developed a leak on the top side of the clean out plate causing the release to occur directly to the ground. Ten (10) bbls of the fluid were recovered. The release impacted approximately twenty-three thousand (23,000) square feet of pasture area adjacent to the production pad.

3.2 Sampling Activities

Initial sampling activities were conducted on July 9th by ASSI personnel, using a stainless-steel hand auger. Twenty (20) auger holes were installed at discrete locations collecting material at intervals ranging from surface (0-0.5') to a depth of two and one-half (2.5) foot below ground surface (bgs). Table 1 in Appendix B presents analytical results and Figure 3 in Appendix A shows Auger Hole locations. Soil was field screened for Chloride utilizing electro conductivity during sampling activities

3.3 Soil Sampling Analytical Results

Twenty-six (26) soil samples were collected during initial sampling activities from sample locations Auger Hole-1 through Auger Hole-20. On July 12th, samples were delivered by ASSI personnel for laboratory analysis. The samples were analyzed for BTEX , TPH and Chloride (Table 1). Analytical results were compared to *Table I of 19.15.29.12* and show only elevated TPH concentrations exist above guidance clean-up goals at sample locations Auger Hole-1 and Auger Hole-2. However, vertical and horizontal delineation was achieved during initial sampling efforts.

4.0 LABORATORY ANALYTICAL METHODS

The samples were analyzed for TPH utilizing EPA method SW-846 8015 and BTEX using EPA method SW-846 8021B and Chloride utilizing EPA method SW-846 300.1. Laboratory analysis is provided in Appendix D.

Soil was collected, in laboratory prepared glassware, placed on ice, and packed in a cooler. The sample coolers and completed chain-of-custody forms were relinquished to Xenco Laboratories in Midland, Texas for normal turn-around time.

Under Appendix A, Figure 3 indicates the approximate location of the auger holes previously installed in relation to pertinent land features and Figure 4 indicates general Site boundaries and anticipated excavation depth during the proposed removal action.

5.0 WORK PLAN

Based upon the data collected and the work completed by ASSI, the constituent of concern (COC) has been both vertically and horizontally delineated.

Based on the analytical data presented in Table I, Mack Energy and ASSI propose to excavate impacted soils in the areas adjacent and around sample locations Auger Hole-1 and Auger Hole-2. As shown in the highlighted portions of Table 1 and on Figure 4, the proposed excavated depths for sample location Auger Hole-1 is one (1) foot and two (2) foot bgs for location Auger Hole-2. All material removed from the excavated areas will be stockpiled onsite, sufficiently blended, and sampled for TPH. Upon a sample that confirms the reduction in TPH from the stockpiled material, the native excavated soils will be backfilled into its original locations and the Site will be retuned to its original conditions.



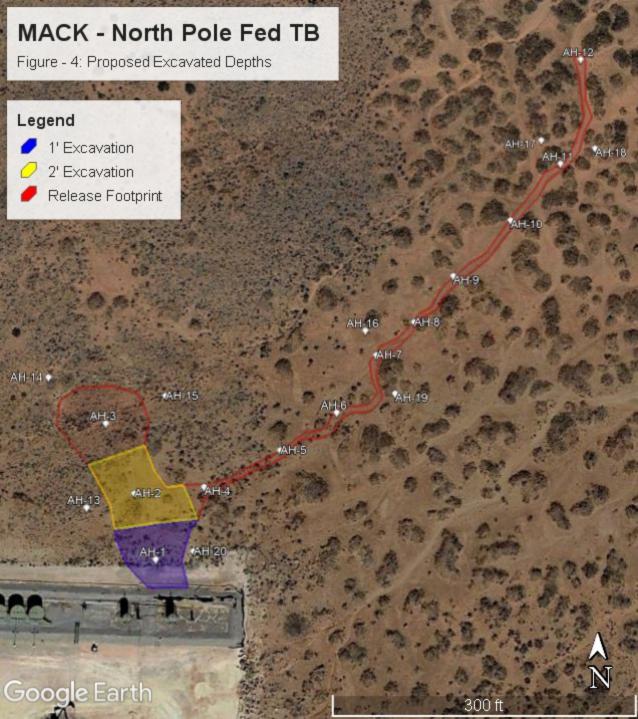
APPENDIX A

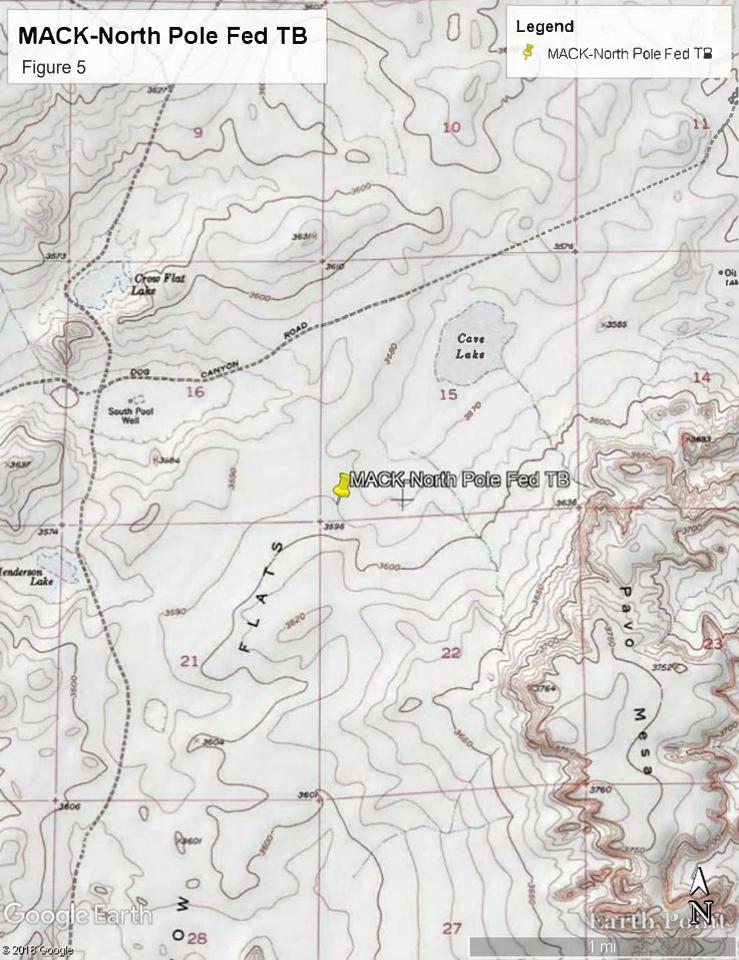
Figures













APPENDIX B

Table 1

TABLE 1

Summary of Delineation Sampling Analytical Results

Concentrations of Benzene, BTEX, TPH & Chloride in Soil

Mack Energy

Mack Energy North Pole Fed TB Eddy County, New Mexico 2RP-4685

	T			8021B 8015M									200.4
						0UZ1D				80:	JIDINI		300.1
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYLBENZENE (mg/Kg)	XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	MRO (mg/Kg)	Total TPH (mg/Kg)	CHLORIDE (mg/Kg)
	NMAC 19.15.29			10	NE	NE	NE	50	NE	NE	NE	100	600
					De	lination Sampling							
Auger Hole-1	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	352	81.9	434	295
Auger Hole-1	0.5'-1'	7/9/2018	In-Situ	-	-	-	-	-	ND	468	131	599	161
Auger Hole-1	1'-1.5'	7/9/2018	In-Situ	-	-	=	-	-	ND	63.7	ND	63.7	-
Auger Hole-2	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	245	49.7	295	190
Auger Hole-2	0.5'-1'	7/9/2018	In-Situ	-	-	-	-	-	ND	207	47.3	254	-
Auger Hole-2 Auger Hole-2	1'-1.5' 1.5'-2'	7/9/2018 7/9/2018	In-Situ In-Situ	-	-	-	-	-	ND ND	135 158	ND 35	135 193	<u> </u>
Auger Hole-2	2'-2.5'	7/9/2018	In-Situ	-	-	-	-	-	ND	38	ND	38	-
Auger Hole-3	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	56.8	ND	56.8	3.53
Auger Hole-4	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-5	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-6	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	39.9	ND	39.9	ND
Auger Hole-7	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-8	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-9	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-10	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-11	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-12	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-13	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	33.9	ND	33.9	ND
Auger Hole-14	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	32.2	ND	32.2	ND
Auger Hole-15	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-16	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	48.9	26.2	75.1	ND
Auger Hole-17	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	36.8
Auger Hole-18	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-19	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Auger Hole-20	0-0.5'	7/9/2018	In-Situ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

In-situ = sample collected in place

mg/Kg - milligrams per Kilogram

- = Not Established

Concentrations in **BOLD** exceed the NMOCD Guidelines

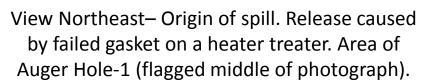
Proposed material to be excavated and blended



APPENDIX C

Photo Page







View Northeast– Area of Auger Hole-2 (flagged middle of photograph).







View Southeast – Area of Auger Hole-3 (flagged in middle of photograph).



View Southwest – Area of Auger Hole-4 (flagged in middle of photograph).







View Southwest – Area of Auger Hole-5 (flagged in middle of photograph).



View Southwest – Area of Auger Hole-6 (flagged in middle of photograph).







View Southwest – Area of Auger Hole-7 (flagged in middle of photograph).



View Southwest – Area of Auger Hole-8 (flagged in middle of photograph).







View Southwest – Area of Auger Hole-9 (flagged in middle of photograph).



View Southwest – Area of Auger Hole-10 (flagged in middle of photograph).







View North – Area of Auger Hole-11 (flagged in middle of photograph).



View North – Area of Auger Hole-12 (flagged in middle of photograph).







APPENDIX D

Laboratory Analysis

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



Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]
Location: Eddy Co. NM

Lab Order Number: 8G12006



NELAP/TCEQ # T104704516-17-8

Report Date: 07/31/18

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Auger Hole 1 (0.0'-0.5')	8G12006-01	Soil	07/09/18 12:30	07-12-2018 08:50
Auger Hole 1 (0.5'-1.0')	8G12006-02	Soil	07/09/18 12:32	07-12-2018 08:50
Auger Hole 1 (1.0'-1.5')	8G12006-03	Soil	07/09/18 12:34	07-12-2018 08:50
Auger Hole 2 (0.0'-0.5')	8G12006-05	Soil	07/09/18 12:41	07-12-2018 08:50
Auger Hole 2 (0.5'-1.0')	8G12006-06	Soil	07/09/18 12:43	07-12-2018 08:50
Auger Hole 2 (1.0'-1.5')	8G12006-07	Soil	07/09/18 12:45	07-12-2018 08:50
Auger Hole 2 (1.5'-2.0')	8G12006-08	Soil	07/09/18 12:47	07-12-2018 08:50
Auger Hole 2 (2.0'-2.5')	8G12006-09	Soil	07/09/18 12:49	07-12-2018 08:50
Auger Hole 3 (0.0'-0.5')	8G12006-11	Soil	07/09/18 12:59	07-12-2018 08:50
Auger Hole 4 (0.0'-0.5')	8G12006-15	Soil	07/09/18 13:07	07-12-2018 08:50
Auger Hole 5 (0.0'-0.5')	8G12006-17	Soil	07/09/18 13:14	07-12-2018 08:50
Auger Hole 6 (0.0'-0.5')	8G12006-19	Soil	07/09/18 13:21	07-12-2018 08:50
Auger Hole 7 (0.0'-0.5')	8G12006-21	Soil	07/09/18 13:28	07-12-2018 08:50
Auger Hole 8 (0.0'-0.5')	8G12006-23	Soil	07/09/18 13:35	07-12-2018 08:50
Auger Hole 9 (0.0'-0.5')	8G12006-25	Soil	07/09/18 13:42	07-12-2018 08:50
Auger Hole 10 (0.0'-0.5')	8G12006-27	Soil	07/09/18 13:49	07-12-2018 08:50
Auger Hole 11 (0.0'-0.5')	8G12006-29	Soil	07/09/18 13:56	07-12-2018 08:50
Auger Hole 12 (0.0'-0.5')	8G12006-31	Soil	07/09/18 14:03	07-12-2018 08:50
Auger Hole 13 (0.0'-0.5')	8G12006-33	Soil	07/10/18 09:50	07-12-2018 08:50
Auger Hole 14 (0.0'-0.5')	8G12006-34	Soil	07/10/18 09:55	07-12-2018 08:50
Auger Hole 15 (0.0'-0.5')	8G12006-35	Soil	07/10/18 10:00	07-12-2018 08:50
Auger Hole 16 (0.0'-0.5')	8G12006-36	Soil	07/10/18 10:05	07-12-2018 08:50
Auger Hole 17 (0.0'-0.5')	8G12006-37	Soil	07/10/18 10:10	07-12-2018 08:50
Auger Hole 18 (0.0'-0.5')	8G12006-38	Soil	07/10/18 10:15	07-12-2018 08:50
Auger Hole 19 (0.0'-0.5')	8G12006-39	Soil	07/10/18 10:20	07-12-2018 08:50
Auger Hole 20 (0.0'-0.5')	8G12006-40	Soil	07/10/18 10:25	07-12-2018 08:50

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.0'-0.5') 8G12006-01 (Soil)

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M C6-C12 ND 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C12-C28 352 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C28-C35 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M	Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene ND 0.00106 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B		Perm	nian Basin E	nvironmen	tal Lab, l	L.P.				
Toluene ND 0.0106 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B	Organics by GC									
Ethylbenzene ND 0.00532 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B Xylene (p/m) ND 0.0213 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B Xylene (o) ND 0.0106 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B Xylene (o) ND 0.0106 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 4-Bromofluorobenzene 107 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B Surrogate: 1-Chlorooctane 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 1434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 1434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 1434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 1434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 1434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 TPH 8015M Surrogate: 0-Terphenyl 1434 26.6 mg/kg dry 1 [CALC] 07	Benzene	ND	0.00106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m) ND 0.0213 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B	Toluene	ND	0.0106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o) ND 0.0106 mg/kg dry 1 P8G1701 07/17/18 07/17/18 EPA 8021B	Ethylbenzene	ND	0.00532	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene 107 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B	Xylene (p/m)	ND	0.0213	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene 87.8 % 75-125 P8G1701 07/17/18 07/17/18 EPA 8021B General Chemistry Parameters by EPA / Standard Methods % Moisture 6.0 0.1 % 1 P8G1604 07/16/18 O7/16/18 ASTM D221c Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M C6-C12 ND 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C12-C28 352 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: I-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC]	Xylene (o)	ND	0.0106	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA / Standard Methods % Moisture 6.0 0.1 % 1 P8G1604 07/16/18 O7/16/18 ASTM D2216 Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M C6-C12 ND 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C12-C28 352 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C28-C35 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 calc C6-C35 Total BTEX ND 0.0460 mg/kg 1 [CALC] 0.7/17/18 0.7/17/18 0.7/17/18 EPA 8021B	Surrogate: 4-Bromofluorobenzene		107 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
% Moisture 6.0 0.1 % 1 P8G1604 07/16/18 O7/16/18 ASTM D221-D21-D21-D21-D21-D21-D21-D21-D21-D21	Surrogate: 1,4-Difluorobenzene		87.8 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M C6-C12 ND 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C12-C28 352 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C28-C35 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 calc C6-C35 BTEX by 8021B Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B										
C6-C12 ND 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M >C12-C28 352 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C28-C35 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 calc C6-C35 BTEX by 8021B Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
>C12-C28 352 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M >C28-C35 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon C6-C35 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 calc BTEX by 8021B Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	015M							
>C28-C35 81.9 26.6 mg/kg dry 1 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: 1-Chlorooctane 121 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon C6-C35 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 calc BTEX by 8021B ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	C6-C12	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: I-Chlorooctane	>C12-C28	352	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl 137 % 70-130 P8G1305 07/13/18 07/13/18 TPH 8015M Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 calc C6-C35 BTEX by 8021B Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	>C28-C35	81.9	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon 434 26.6 mg/kg dry 1 [CALC] 07/13/18 07/13/18 07/13/18 calc C6-C35 BTEX by 8021B Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	Surrogate: 1-Chlorooctane		121 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
C6-C35 BTEX by 8021B Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	Surrogate: o-Terphenyl		137 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	S-GC
Total BTEX ND 0.0460 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	ū	434	26.6	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
	BTEX by 8021B									
Xylenes (total) ND 0.0300 mg/kg 1 [CALC] 07/17/18 07/17/18 EPA 8021B	Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
	Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.5'-1.0') 8G12006-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permi	an Basin E	nvironme	ental Lab, L	.P.				

General Chemistry Parameters by EP.	A / Standard Methods	S						
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M						
C6-C12	ND	26.6	mg/kg dry	1	P8G2704	07/27/18	07/30/18	TPH 8015M
>C12-C28	468	26.6	mg/kg dry	1	P8G2704	07/27/18	07/30/18	TPH 8015M
>C28-C35	131	26.6	mg/kg dry	1	P8G2704	07/27/18	07/30/18	TPH 8015M
Surrogate: 1-Chlorooctane		125 %	70-130		P8G2704	07/27/18	07/30/18	TPH 8015M
Surrogate: o-Terphenyl		129 %	70-130		P8G2704	07/27/18	07/30/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	599	26.6	mg/kg dry	1	[CALC]	07/27/18	07/30/18	calc

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (1.0'-1.5') 8G12006-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Permian	Basin Er	nvironme	ental Lab, I	Р .				
General Chemistry Parameters by EPA	/ Standard Methods								
% Moisture	4.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	

Total Petroleum Hydrocarbon	ns C6-C35 by EPA Method 8015M
C6-C12	ND
C12 C20	(2.7

C6-C35

Total Petroleum Hydrocarbon	63.7	26.0	mg/kg dry	1	[CALC]	07/27/18	07/27/18	calc	
Surrogate: o-Terphenyl		95.8 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.8 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
>C12-C28	63.7	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
C6-C12	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (0.0'-0.5') 8G12006-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	nvironment	al Lah. I	[P .				
Organics by GC	101.	nun Dusin L	, ошс	2, 1					
Benzene	ND	0.00105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00526	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0211	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0105	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.0 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP	A / Standard Method	ds							
% Moisture	5.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 80	015M							
C6-C12	ND	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	245	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	49.7	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		98.2 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		113 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	295	26.3	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg		[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (0.5'-1.0') 8G12006-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

% Moisture	5.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M						
C6-C12	ND	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
>C12-C28	207	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
>C28-C35	47.3	26.3	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
Surrogate: 1-Chlorooctane		97.0 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M
Surrogate: o-Terphenyl		110 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	254	26.3	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (1.0'-1.5') 8G12006-07 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EP	A / Standard Method	s						
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M						
C6-C12	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
>C12-C28	135	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M
Surrogate: 1-Chlorooctane		95.2 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M
Surrogate: o-Terphenyl		109 %	70-130		P8G1305	07/13/18	07/13/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	135	26.6	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (1.5'-2.0') 8G12006-08 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

	1 (11111	an Dasin E	anvii ommentai	Lab,	, L.1 .			
General Chemistry Parameters by EPA	/ Standard Methods							
% Moisture	6.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216
Total Petroleum Hydrocarbons C6-C35	by EPA Method 801	5M						
C6-C12	ND	26.6	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
>C12-C28	158	26.6	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
>C28-C35	35.0	26.6	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M
Surrogate: 1-Chlorooctane		95.2 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M
Surrogate: o-Terphenyl		95.9 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	193	26.6	mg/kg dry	1	[CALC]	07/27/18	07/27/18	calc

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (2.0'-2.5') 8G12006-09 (Soil)

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

General Chemistry Parameters by EP.	A / Standard Method	s							
% Moisture	4.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	5 by EPA Method 80	15M							
C6-C12	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
>C12-C28	38.0	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
>C28-C35	ND	26.0	mg/kg dry	1	P8G2704	07/27/18	07/27/18	TPH 8015M	
Surrogate: 1-Chlorooctane		90.2 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M	
Surrogate: o-Terphenyl		91.2 %	70-130		P8G2704	07/27/18	07/27/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	38.0	26.0	mg/kg dry	1	[CALC]	07/27/18	07/27/18	calc	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 3 (0.0'-0.5') 8G12006-11 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.6 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP			0/	1	D0C1604			ACTM DOOL	
% Moisture	2.0	0.1	%	I	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	56.8	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.3 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon	56.8	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
C6-C35									
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 4 (0.0'-0.5') 8G12006-15 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.5 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.4 %	70-1	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-1	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 5 (0.0'-0.5') 8G12006-17 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Invironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		92.5 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	8015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		91.8 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		104 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 6 (0.0'-0.5') 8G12006-19 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Pern	nian Basin E	Environment	al Lab, l	Ĺ. P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		110 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.2 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EF % Moisture	PA / Standard Method		%	1	P8G1604	07/16/10	07/16/10	ASTM D2216	
% Moisture	3.0	0.1	/0	1	1001004	07/16/18	07/16/18	A31WI D2210	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	39.9	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.2 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-130)	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	39.9	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 7 (0.0'-0.5') 8G12006-21 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	Environmen	tal Lab, l	L.P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.3 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	oy EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		93.5 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 8 (0.0'-0.5') 8G12006-23 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Invironmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.5 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.9 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 9 (0.0'-0.5') 8G12006-25 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.8 %	75-12	?5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.1 %	70-13	20	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		108 %	70-13	80	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 10 (0.0'-0.5') 8G12006-27 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Per	mian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		112 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		93.2 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		89.5 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 11 (0.0'-0.5') 8G12006-29 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		108 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		73.1 %	75-1	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.3 %	70-1	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-1	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 12 (0.0'-0.5') 8G12006-31 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Invironmen	tal Lab, l	L.P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.3 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		94.3 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		102 %	70-13	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 13 (0.0'-0.5') 8G12006-33 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perm	ian Basin E	Invironment	al Lab,	L .P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		106 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.5 %	75-12	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EF	PA / Standard Method	s							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C	35 by EPA Method 80	15M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C12-C28	33.9	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		92.0 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-13	0	P8G1305	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	33.9	25.8	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 14 (0.0'-0.5') 8G12006-34 (Soil)

Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
						,		
Pern	nian Basin E	invironmen	tal Lab, l	L .P.				
ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
	110 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
	90.2 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
/ Standard Method	le							
2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
by EPA Method 80)15M							
ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
32.2	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/13/18	TPH 8015M	
	88.9 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
	98.6 %	70-1.	30	P8G1305	07/13/18	07/13/18	TPH 8015M	
32.2	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
	ND ND ND ND ND / Standard Method 2.0 by EPA Method 80 ND 32.2 ND	ND 0.00102 ND 0.00102 ND 0.00510 ND 0.0204 ND 0.0102 I10 % 90.2 % Standard Methods 2.0 0.1 by EPA Method 8015M ND 25.5 32.2 25.5 ND 25.5 88.9 % 98.6 % 32.2 25.5 ND 0.0460	ND	ND	ND	Result	ND 0.00102 mg/kg dry 1 P8G1701 07/17/18 07/17/18 ND 0.00102 mg/kg dry 1 P8G1701 07/17/18 07/17/18 ND 0.00510 mg/kg dry 1 P8G1701 07/17/18 07/17/18 ND 0.0204 mg/kg dry 1 P8G1701 07/17/18 07/17/18 ND 0.0102 mg/kg dry 1 P8G1701 07/17/18 07/17/18 ND 0.0102 mg/kg dry 1 P8G1701 07/17/18 07/17/18 07/17/18 ND 0.0102 mg/kg dry 1 P8G1701 07/17/18 0	Result

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 15 (0.0'-0.5') 8G12006-35 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	tal Lab,	L.P.				
Organics by GC									
Benzene	ND	0.00103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00515	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0206	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0103	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.1 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	3.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	25.8	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		96.7 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		106 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 16 (0.0'-0.5') 8G12006-36 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	nian Basin E	nvironment	al Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.8 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		105 %	75-12.	5	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EP % Moisture	PA / Standard Metho 2.0	ds 0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C3	35 by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	48.9	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	26.2	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		91.6 %	70-13	0	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		99.9 %	70-13	0	P8G1305	07/13/18	07/14/18	TPH 8015M	
Fotal Petroleum Hydrocarbon C6-C35	75.1	25.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 17 (0.0'-0.5') 8G12006-37 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	ıtal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Toluene	ND	0.0122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Ethylbenzene	ND	0.00610	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (p/m)	ND	0.0244	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Xylene (o)	ND	0.0122	mg/kg dry	1	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		111 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		91.0 %	75-1.	25	P8G1701	07/17/18	07/17/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	18.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	30.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.3 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-1.	30	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	30.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/17/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 18 (0.0'-0.5') 8G12006-38 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Perr	nian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		107 %	75-12	?5	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		85.8 %	75-12	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: 1-Chlorooctane		87.1 %	70-13	20	P8G1305	07/13/18	07/14/18	TPH 8015M	
Surrogate: o-Terphenyl		95.7 %	70-13	20	P8G1305	07/13/18	07/14/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/14/18	calc	
BTEX by 8021B									
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 19 (0.0'-0.5') 8G12006-39 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Per	mian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		104 %	75-1.	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		86.3 %	75-1.	25	P8G1702	07/17/18	07/18/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35	by EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		96.1 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		105 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/18/18	EPA 8021B	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 20 (0.0'-0.5') 8G12006-40 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
	Peri	mian Basin E	Environmen	tal Lab, l	L .P.				
Organics by GC									
Benzene	ND	0.00102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Toluene	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Ethylbenzene	ND	0.00510	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Xylene (p/m)	ND	0.0204	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Xylene (o)	ND	0.0102	mg/kg dry	1	P8G1702	07/17/18	07/19/18	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.3 %	75-1.	25	P8G1702	07/17/18	07/19/18	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		83.0 %	75-1.	25	P8G1702	07/17/18	07/19/18	EPA 8021B	
General Chemistry Parameters by EPA	Standard Metho	ds							
% Moisture	2.0	0.1	%	1	P8G1604	07/16/18	07/16/18	ASTM D2216	
Total Petroleum Hydrocarbons C6-C35 l	oy EPA Method 8	015M							
C6-C12	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C12-C28	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
>C28-C35	ND	25.5	mg/kg dry	1	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: 1-Chlorooctane		95.0 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Surrogate: o-Terphenyl		103 %	70-1.	30	P8G1306	07/13/18	07/13/18	TPH 8015M	
Total Petroleum Hydrocarbon C6-C35	ND	25.5	mg/kg dry	1	[CALC]	07/13/18	07/13/18	calc	
BTEX by 8021B									
Total BTEX	ND	0.0460	mg/kg	1	[CALC]	07/17/18	07/19/18	EPA 8021B	
Xylenes (total)	ND	0.0300	mg/kg	1	[CALC]	07/17/18	07/19/18	EPA 8021B	

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Odessa TEXAS, 79765

Fax: (432) 363-0198

Project Manager: Thomas Franklin

Project Number: [none]

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G1701 - General Preparation (GC)										

Blank (P8G1701-BLK1)				Prepared &	Analyzed:	07/17/18				
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	0.0532		"	0.0600		88.6	75-125			
Surrogate: 4-Bromofluorobenzene	0.0619		"	0.0600		103	75-125			
LCS (P8G1701-BS1)				Prepared &	Analyzed:	07/17/18				
Benzene	0.119	0.00100	mg/kg wet	0.100		119	70-130			
Toluene	0.114	0.0100	"	0.100		114	70-130			
Ethylbenzene	0.115	0.00500	"	0.100		115	70-130			
Xylene (p/m)	0.199	0.0200	"				70-130			
Xylene (o)	0.107	0.0100	"				70-130			
Surrogate: 1,4-Difluorobenzene	0.0593		"	0.0600		98.9	75-125			
Surrogate: 4-Bromofluorobenzene	0.0606		"	0.0600		101	75-125			
LCS Dup (P8G1701-BSD1)				Prepared &	Analyzed:	07/17/18				
Benzene	0.118	0.00100	mg/kg wet	0.100		118	70-130	0.371	20	
Toluene	0.119	0.0100	"	0.100		119	70-130	4.75	20	
Ethylbenzene	0.118	0.00500	"	0.100		118	70-130	3.10	20	
Xylene (p/m)	0.200	0.0200	"				70-130		20	
Xylene (o)	0.109	0.0100	"				70-130		20	
Surrogate: 4-Bromofluorobenzene	0.0597		"	0.0600		99.5	75-125			
Surrogate: 1,4-Difluorobenzene	0.0600		"	0.0600		100	75-125			
Matrix Spike (P8G1701-MS1)	Sour	ce: 8G16001	-02	Prepared &	Analyzed:	07/17/18				
Benzene	0.0908	0.00102	mg/kg dry	0.102	ND	89.0	80-120			
Toluene	0.0877	0.0102	"	0.102	ND	85.9	80-120			
Ethylbenzene	0.104	0.00510	"	0.102	ND	102	80-120			
Xylene (p/m)	0.160	0.0204	"		ND		80-120			
Xylene (o)	0.0817	0.0102	"		ND		80-120			
Surrogate: 1,4-Difluorobenzene	0.0623		"	0.0612		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.0686		"	0.0612		112	75-125			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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
Batch P8G1701 - General Preparation (G	GC)									
Matrix Spike Dup (P8G1701-MSD1)	Sou	rce: 8G16001	1-02	Prepared &	: Analyzed:	07/17/18				
Benzene	0.103	0.00102	mg/kg dry	0.102	ND	101	80-120	12.4	20	
Toluene	0.0972	0.0102	"	0.102	ND	95.2	80-120	10.3	20	
Ethylbenzene	0.114	0.00510	"	0.102	ND	111	80-120	9.17	20	
Xylene (p/m)	0.173	0.0204	"		ND		80-120		20	
Xylene (o)	0.0940	0.0102	"		ND		80-120		20	
Surrogate: 1,4-Difluorobenzene	0.0647		"	0.0612		106	75-125			
Surrogate: 4-Bromofluorobenzene	0.0715		"	0.0612		117	75-125			
Batch P8G1702 - General Preparation (C	GC)									
Blank (P8G1702-BLK1)				Prepared: 0	07/17/18 A	nalyzed: 07	//18/18			
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	0.0577		"	0.0600		96.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0458		"	0.0600		76.4	75-125			
LCS (P8G1702-BS1)				Prepared: 0	07/17/18 A	nalyzed: 07	//18/18			
Benzene	0.0953	0.00100	mg/kg wet	0.100		95.3	70-130			
Toluene	0.0948	0.0100	"	0.100		94.8	70-130			
Ethylbenzene	0.110	0.00500	"	0.100		110	70-130			
Xylene (p/m)	0.193	0.0200	"				70-130			
Xylene (o)	0.103	0.0100	"				70-130			
Surrogate: 4-Bromofluorobenzene	0.0583		"	0.0600		97.2	75-125			
Surrogate: 1,4-Difluorobenzene	0.0605		"	0.0600		101	75-125			

American Safety Services, Inc

8715 Andrews Hwy

Project: Mack Energy - North Pole Fed TB

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Fax: (432) 363-0198

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
Batch P8G1702 - General Preparation (GC)										
LCS Dup (P8G1702-BSD1)				Prepared: 0	07/17/18 A	nalyzed: 07	7/18/18			
Benzene	0.102	0.00100	mg/kg wet	0.100		102	70-130	6.40	20	
Toluene	0.105	0.0100	"	0.100		105	70-130	10.4	20	
Ethylbenzene	0.121	0.00500	"	0.100		121	70-130	9.54	20	
Xylene (p/m)	0.206	0.0200	"				70-130		20	
Xylene (o)	0.104	0.0100	"				70-130		20	
Surrogate: 1,4-Difluorobenzene	0.0627		"	0.0600		104	75-125			
Surrogate: 4-Bromofluorobenzene	0.0649		"	0.0600		108	75-125			
Matrix Spike (P8G1702-MS1)	Sou	ırce: 8G12006	5-38	Prepared: 0	07/17/18 A	nalyzed: 07	7/19/18			
Benzene	0.0663	0.00102	mg/kg dry	0.102	ND	65.0	80-120			QM-0
Toluene	0.0648	0.0102	"	0.102	ND	63.5	80-120			QM-0
Ethylbenzene	0.0766	0.00510	"	0.102	ND	75.1	80-120			QM-0
Xylene (p/m)	0.130	0.0204	"		ND		80-120			
Xylene (o)	0.0655	0.0102	"		ND		80-120			
Surrogate: 4-Bromofluorobenzene	0.0688		"	0.0612		112	75-125			
Surrogate: 1,4-Difluorobenzene	0.0671		"	0.0612		110	75-125			
Matrix Spike Dup (P8G1702-MSD1)	Sou	ırce: 8G12006	5-38	Prepared: 0	07/17/18 A	nalyzed: 07	7/19/18			
Benzene	0.0915	0.00102	mg/kg dry	0.102	ND	89.7	80-120	31.9	20	QM-0
Toluene	0.0847	0.0102	"	0.102	ND	83.0	80-120	26.6	20	QM-0
Ethylbenzene	0.100	0.00510	"	0.102	ND	98.0	80-120	26.5	20	QM-0
Xylene (p/m)	0.167	0.0204	"		ND		80-120		20	
Xylene (o)	0.0896	0.0102	"		ND		80-120		20	
Surrogate: 4-Bromofluorobenzene	0.0628		"	0.0612		103	75-125			
Surrogate: 1,4-Difluorobenzene	0.0642		"	0.0612		105	75-125			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G1604 - *** DEFAULT PREP ***										
Blank (P8G1604-BLK1)				Prepared &	Analyzed:	07/16/18				
% Moisture	ND	0.1	%							
Duplicate (P8G1604-DUP1)	Sour	rce: 8G12006-	-13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP2)	Sour	rce: 8G12006-	-40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%	·	2.0	·	·	66.7	20	
Duplicate (P8G1604-DUP3)	Sour	rce: 8G13002-	-13	Prepared &	Analyzed:	07/16/18				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P8G1604-DUP4)	Sour	rce: 8G13004-	-04	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP5)	Sour	rce: 8G12022-	02	Prepared &	Analyzed:	07/16/18				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Duplicate (P8G1604-DUP6)	Sour	rce: 8G12022-	-08	Prepared &	Analyzed:	07/16/18				
% Moisture	14.0	0.1	%		13.0			7.41	20	
Duplicate (P8G1604-DUP7)	Sour	rce: 8G13001-	-13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP8)	Sou	rce: 8G12006-	-40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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

		D		C-:1	C		0/DEC		DDD	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Batch P8G1305 - General Preparation (GC)										
Blank (P8G1305-BLK1)				Prepared &	Analyzed:	07/13/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	95.8		"	100		95.8	70-130			
Surrogate: o-Terphenyl	55.4		"	50.0		111	70-130			
LCS (P8G1305-BS1)				Prepared &	: Analyzed:	07/13/18				
C6-C12	937	25.0	mg/kg wet	1000		93.7	75-125			
>C12-C28	1000	25.0	"	1000		100	75-125			
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	51.2		"	50.0		102	70-130			
LCS Dup (P8G1305-BSD1)				Prepared &	: Analyzed:	07/13/18				
C6-C12	930	25.0	mg/kg wet	1000		93.0	75-125	0.769	20	
>C12-C28	985	25.0	"	1000		98.5	75-125	1.52	20	
Surrogate: 1-Chlorooctane	117		"	100		117	70-130			
Surrogate: o-Terphenyl	50.1		"	50.0		100	70-130			
Matrix Spike (P8G1305-MS1)	Sou	ırce: 8G12000	5-38	Prepared: (07/13/18 A	nalyzed: 07	//14/18			
C6-C12	978	25.5	mg/kg dry	1020	10.1	94.9	75-125			
>C12-C28	1020	25.5	"	1020	ND	99.6	75-125			
Surrogate: 1-Chlorooctane	131		"	102		129	70-130			
Surrogate: o-Terphenyl	57.4		"	51.0		113	70-130			
Matrix Spike Dup (P8G1305-MSD1)	Sou	ırce: 8G12000	5-38	Prepared: (07/13/18 A:	nalyzed: 07	//14/18			
C6-C12	1010	25.5	mg/kg dry	1020	10.1	98.4	75-125	3.65	20	
>C12-C28	1030	25.5	"	1020	ND	101	75-125	1.24	20	
Surrogate: 1-Chlorooctane	126		"	102		123	70-130			
Surrogate: o-Terphenyl	58.2		"	51.0		114	70-130			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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

		Dt.		C:1	C		0/DEC		DDD	
Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
						,,,,,,,,,				
Batch P8G1306 - General Preparation (GC)										
Blank (P8G1306-BLK1)				Prepared &	Analyzed:	07/13/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	109		"	100		109	70-130			
Surrogate: o-Terphenyl	60.7		"	50.0		121	70-130			
LCS (P8G1306-BS1)				Prepared &	Analyzed:	07/13/18				
C6-C12	1020	25.0	mg/kg wet	1000		102	75-125			
>C12-C28	1090	25.0	"	1000		109	75-125			
Surrogate: 1-Chlorooctane	103		"	100		103	70-130			
Surrogate: o-Terphenyl	50.1		"	50.0		100	70-130			
LCS Dup (P8G1306-BSD1)				Prepared &	Analyzed:	07/13/18				
C6-C12	1020	25.0	mg/kg wet	1000		102	75-125	0.495	20	
>C12-C28	1100	25.0	"	1000		110	75-125	0.832	20	
Surrogate: 1-Chlorooctane	102		"	100		102	70-130			
Surrogate: o-Terphenyl	50.0		"	50.0		99.9	70-130			
Matrix Spike (P8G1306-MS1)	Sou	rce: 8G1200	5-39	Prepared: (07/13/18 A:	nalyzed: 07	//14/18			
C6-C12	1040	25.5	mg/kg dry	1020	22.7	100	75-125			
>C12-C28	1070	25.5	"	1020	13.9	104	75-125			
Surrogate: 1-Chlorooctane	115		"	102		112	70-130			
Surrogate: o-Terphenyl	57.5		"	51.0		113	70-130			
Matrix Spike Dup (P8G1306-MSD1)	Sou	rce: 8G1200	5-39	Prepared: (07/13/18 A:	nalyzed: 07	//14/18			
C6-C12	1090	25.5	mg/kg dry	1020	22.7	105	75-125	4.97	20	
>C12-C28	1130	25.5	"	1020	13.9	109	75-125	4.92	20	
Surrogate: 1-Chlorooctane	119		"	102		116	70-130			
Surrogate: o-Terphenyl	56.7		"				70-130			

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G2704 - General Preparation (GC)										
Blank (P8G2704-BLK1)				Prepared &	: Analyzed:	07/27/18				
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	89.0		"	100		89.0	70-130			
Surrogate: o-Terphenyl	44.7		"	50.0		89.5	70-130			
LCS (P8G2704-BS1)				Prepared &	: Analyzed:	07/27/18				
C6-C12	877	25.0	mg/kg wet	1000		87.7	75-125			
>C12-C28	944	25.0	"	1000		94.4	75-125			
Surrogate: 1-Chlorooctane	114		"	100		114	70-130			
Surrogate: o-Terphenyl	41.7		"	50.0		83.4	70-130			
LCS Dup (P8G2704-BSD1)				Prepared &	: Analyzed:	07/27/18				
C6-C12	914	25.0	mg/kg wet	1000		91.4	75-125	4.15	20	
>C12-C28	961	25.0	"	1000		96.1	75-125	1.77	20	
Surrogate: 1-Chlorooctane	118		"	100		118	70-130			
Surrogate: o-Terphenyl	42.2		"	50.0		84.5	70-130			
Matrix Spike (P8G2704-MS1)	Sou	rce: 8G1200	7-06	Prepared: 0	07/27/18 A	nalyzed: 07	/28/18			
C6-C12	1030	28.4	mg/kg dry	1140	23.8	88.7	75-125			
>C12-C28	1060	28.4	"	1140	15.4	92.2	75-125			
Surrogate: 1-Chlorooctane	133		"	114		117	70-130			
Surrogate: o-Terphenyl	50.4		"	56.8		88.7	70-130			
Matrix Spike Dup (P8G2704-MSD1)	Sou	rce: 8G1200	7-06	Prepared: 0)7/27/18 A	nalyzed: 07	//28/18			
C6-C12	1010	28.4	mg/kg dry	1140	23.8	86.4	75-125	2.67	20	
>C12-C28	1060	28.4	"	1140	15.4	91.9	75-125	0.310	20	
Surrogate: 1-Chlorooctane	129		"	114		113	70-130			
Surrogate: o-Terphenyl	50.0		"	56.8		88.1	70-130			

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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.

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

	Drew	Darron			
Report Approved By:			Date:	7/31/2018	

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.

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elder More												ORDER #: O	6	(lab use only)	Sample	Telephone No:	City/State/Zip:	Compar	Compar	Project	
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7/n/16 Date	Date								·							432-557-9868/432-552-7625	79765	vs Hwy.	American Safety Services Inc.		
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PERMIAN BASIN ENVIRONMENTAL LAB, LP 1400 Rankin Hwy Midland, TX 79701



Analytical Report

Prepared for:

Thomas Franklin
American Safety Services, Inc
8715 Andrews Hwy
Odessa, TEXAS 79765

Project: Mack Energy - North Pole Fed TB

Project Number: [none]
Location: Eddy Co. NM

Lab Order Number: 8G13001



NELAP/TCEQ # T104704516-17-8

Report Date: 07/24/18

American Safety Services, Inc

Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Project Number: [none]

Odessa TEXAS, 79765

Project Manager: Thomas Franklin

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Auger Hole 1 (0.0'-0.5')	8G13001-01	Soil	07/09/18 12:30	07-12-2018 08:50
Auger Hole 1 (0.5'-1.0')	8G13001-02	Soil	07/09/18 12:32	07-12-2018 08:50
Auger Hole 2 (0.0'-0.5')	8G13001-05	Soil	07/09/18 12:41	07-12-2018 08:50
Auger Hole 3 (0.0'-0.5')	8G13001-11	Soil	07/09/18 12:59	07-12-2018 08:50
Auger Hole 4 (0.0'-0.5')	8G13001-15	Soil	07/09/18 13:07	07-12-2018 08:50
Auger Hole 5 (0.0'-0.5')	8G13001-17	Soil	07/09/18 13:14	07-12-2018 08:50
Auger Hole 6 (0.0'-0.5')	8G13001-19	Soil	07/09/18 13:21	07-12-2018 08:50
Auger Hole 7 (0.0'-0.5')	8G13001-21	Soil	07/09/18 13:28	07-12-2018 08:50
Auger Hole 8 (0.0'-0.5')	8G13001-23	Soil	07/09/18 13:35	07-12-2018 08:50
Auger Hole 9 (0.0'-0.5')	8G13001-25	Soil	07/09/18 13:42	07-12-2018 08:50
Auger Hole 10 (0.0'-0.5')	8G13001-27	Soil	07/09/18 13:49	07-12-2018 08:50
Auger Hole 11 (0.0'-0.5')	8G13001-29	Soil	07/09/18 13:56	07-12-2018 08:50
Auger Hole 12 (0.0'-0.5')	8G13001-31	Soil	07/09/18 14:03	07-12-2018 08:50
Auger Hole 13 (0.0'-0.5')	8G13001-33	Soil	07/09/18 09:50	07-12-2018 08:50
Auger Hole 14 (0.0'-0.5')	8G13001-34	Soil	07/09/18 09:55	07-12-2018 08:50
Auger Hole 15 (0.0'-0.5')	8G13001-35	Soil	07/09/18 10:00	07-12-2018 08:50
Auger Hole 16 (0.0'-0.5')	8G13001-36	Soil	07/09/18 10:05	07-12-2018 08:50
Auger Hole 17 (0.0'-0.5')	8G13001-37	Soil	07/09/18 10:10	07-12-2018 08:50
Auger Hole 18 (0.0'-0.5')	8G13001-38	Soil	07/09/18 10:15	07-12-2018 08:50
Auger Hole 19 (0.0'-0.5')	8G13001-39	Soil	07/09/18 10:20	07-12-2018 08:50
Auger Hole 20 (0.0'-0.5')	8G13001-40	Soil	07/09/18 10:25	07-12-2018 08:50

Fax: (432) 363-0198

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.0'-0.5') 8G13001-01 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	295	1.06 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	6.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 1 (0.5'-1.0') 8G13001-02 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	161	1.06 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	6.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 2 (0.0'-0.5') 8G13001-05 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	190	1.05 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	5.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 3 (0.0'-0.5') 8G13001-11 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	3.53	1.02 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 4 (0.0'-0.5') 8G13001-15 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 5 (0.0'-0.5') 8G13001-17 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 6 (0.0'-0.5') 8G13001-19 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 7 (0.0'-0.5') 8G13001-21 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 8 (0.0'-0.5') 8G13001-23 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 9 (0.0'-0.5') 8G13001-25 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1706	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 10 (0.0'-0.5') 8G13001-27 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 11 (0.0'-0.5') 8G13001-29 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 12 (0.0'-0.5') 8G13001-31 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 13 (0.0'-0.5') 8G13001-33 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 14 (0.0'-0.5') 8G13001-34 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 15 (0.0'-0.5') 8G13001-35 (Soil)

									I .
		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.03 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	3.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 16 (0.0'-0.5') 8G13001-36 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 17 (0.0'-0.5') 8G13001-37 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	36.8	1.22 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	18.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 18 (0.0'-0.5') 8G13001-38 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 19 (0.0'-0.5') 8G13001-39 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Auger Hole 20 (0.0'-0.5') 8G13001-40 (Soil)

		Reporting							
Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes

Permian Basin Environmental Lab, L.P.

Chloride	ND	1.02 mg/kg dry	1	P8G1707	07/17/18	07/18/18	EPA 300.0
% Moisture	2.0	0.1 %	1	P8G1604	07/16/18	07/16/18	ASTM D2216

American Safety Services, Inc Project: Mack Energy - North Pole Fed TB

8715 Andrews Hwy

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Fax: (432) 363-0198

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

Project Number: [none]

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P8G1604 - *** DEFAULT PREP ***						,,,,,,,,,				
Blank (P8G1604-BLK1)				Prepared &	. Analyzed	07/16/18				
% Moisture	ND	0.1	%	1 repared of	7 mary 20a	07/10/10				
Duplicate (P8G1604-DUP1)	Sour	rce: 8G12006-	13	Prepared &	: Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP2)	Sour	ce: 8G12006-	40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	
Duplicate (P8G1604-DUP3)	Sour	rce: 8G13002-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	6.0	0.1	%		6.0			0.00	20	
Duplicate (P8G1604-DUP4)	Sour	rce: 8G13004-	04	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP5)	Sour	rce: 8G12022-	02	Prepared &	Analyzed:	07/16/18				
% Moisture	10.0	0.1	%		10.0			0.00	20	
Duplicate (P8G1604-DUP6)	Sour	rce: 8G12022-	08	Prepared &	Analyzed:	07/16/18				
% Moisture	14.0	0.1	%		13.0			7.41	20	
Duplicate (P8G1604-DUP7)	Sour	rce: 8G13001-	13	Prepared &	Analyzed:	07/16/18				
% Moisture	3.0	0.1	%		3.0			0.00	20	
Duplicate (P8G1604-DUP8)	Sour	rce: 8G12006-	40	Prepared &	Analyzed:	07/16/18				
% Moisture	4.0	0.1	%		2.0			66.7	20	
Batch P8G1706 - *** DEFAULT PREP ***										
Blank (P8G1706-BLK1)				Prepared: (07/17/18 A	nalyzed: 07	/18/18			
Chloride	ND	1.00	mg/kg wet							

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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

	·	Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch P8G1706 - *** DEFAULT PREP ***										
LCS (P8G1706-BS1)				Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	378	1.00	mg/kg wet	400		94.6	80-120	·		
LCS Dup (P8G1706-BSD1)				Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	380	1.00	mg/kg wet	400		95.1	80-120	0.525	20	
Duplicate (P8G1706-DUP1)	Sou	rce: 8G12007	7-12	Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	ND	1.04	mg/kg dry	-	ND	-			20	
Duplicate (P8G1706-DUP2)	Sou	rce: 8G13001	1-08	Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	397	1.06	mg/kg dry		398			0.0963	20	
Matrix Spike (P8G1706-MS1)	Sou	rce: 8G12007	7-12	Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	1040	1.04	mg/kg dry	1040	ND	99.8	80-120			
Batch P8G1707 - *** DEFAULT PREP ***										
Blank (P8G1707-BLK1)				Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	ND	1.00	mg/kg wet							
LCS (P8G1707-BS1)				Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	396	1.00	mg/kg wet	400		99.0	80-120			
LCS Dup (P8G1707-BSD1)				Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	399	1.00	mg/kg wet	400		99.7	80-120	0.742	20	
Duplicate (P8G1707-DUP1)	Sou	rce: 8G13001	1-27	Prepared:	07/17/18 A	nalyzed: 07	7/18/18			
Chloride	ND	1.02	mg/kg dry		ND				20	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

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

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

Duplicate (P8G1707-DUP2)	Source	: 8G13001-40	Prepared: 0	7/17/18 A	nalyzed: 07	7/18/18	
Chloride	ND	1.02 mg/kg dry		ND			20
Matrix Spike (P8G1707-MS1)	Source	: 8G13001-27	Prepared: 0	7/17/18 A	nalyzed: 07	7/18/18	
Chloride	952	1.02 mg/kg dry	1020	ND	93.3	80-120	

8715 Andrews Hwy Project Number: [none]

Odessa TEXAS, 79765 Project Manager: Thomas Franklin

Notes and Definitions

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

	Drew	Darron			
Report Approved By:			Date:	7/24/2018	

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.

AND ANALYSIS REQUEST

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ORDER# (lab use only) Special Instructions: Relinquished by: Relinquished by: Relinquished by: Company Name Project Manager: Sampler Signature: Telephone No: City/State/Zip: Company Address: Auger Hole 10 Auger Hole 10 Auger Hole 11 Auger Hole 11 Auger Hole 9 Auger Hole 7 Auger Hole 9 Auger Hole 8 Auger Hole 7 Auger Hole 8 FIELD CODE 8715 Andrews Hwy. American Safety Services Inc. 432-557-9868/432-552-7625 Jay Latta Odessa, TX 79765 miller. CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST 7/12/18 Date Date 0220 0.0 0.5 0.0 0.5 0.0 0 0.0 <u>0</u>1 0 0.0 Beginning Depth me Time me 0.5 0.5 1.0' . 0 1.0' 0.5 1.Q <u>1</u>0 0.5 1. Q Ending Depth Received by Received by: Received by: 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 7/9/2018 Date Sampled 1337 1356 1351 1349 1344 1342 1335 1330 1328 1358 Fax No: Time Sampled e-mail: ield Filtered Permian Basin Environmental Lab, LP z z Z Z z Z Z Z Z Z Midiand, Texas 79706 10014 S. County Road 1213 4 Total #. of Containers latta@americansafety.net zimmerman@americansafety.net. ndial@americansafety.net eich@americansafety.net されている × × × × × × lce × l× HNO₃ HCI H₂SO₄ NaOH Na₂S₂O₃ None Other (Specify) Date Date S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab S-Grab DW≃Drinking Water SL=Sludge Matrix Report Format: GW = Groundwater S=Soil/Solid Project Name: Mack Energy-North Pole Fed TB 2000 NP≕Non-Potable Specify Othe Project Loc: Eddy Co. Car E me ime TPH: 418.1 8015M 8015B Project #: TPH: TX 1005 TX 1006 PO #: by Sampler(Client Rep.?)
by Counter? UPS Dt
Temperature Upon Receipt
Received: "C "C Fac
Adjusted" D, C Fac Custody seals on coeler(s).
Sample Hand Delivered VOCs Free of Headspace?
Labels on container(s)
Custody seals on container(s) Laboratory Comments:
Sample Containers Intact? Cations (Ca, Mg, Na, K) Anions (CI, SO4, Alkalinity) TOTAL ☐ Standard TCLP: SAR / ESP / CEC Phone: 432-686-7235 Metais: As Ag Ba Cd Cr Pb Hg Se Analyze Volatiles 11 Semivolatiles 8 °C Factor BTEX 8021B/5030 or BTEX 8260 TAP RCI N.O.R.M. 3/2/ × Chloride 300 × × O S × C Hold ZZ NPDES Lone Star RUSH TAT (Pre-Schedule) 24, 48, 72 hrs Standard TAT Page 30 of 31

AB # (lab use only)

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Property Property	Fax No: Fax	Relinquished by: Date Time Rece	Time	0,690 91) Date Time	Special instructions:	0.0' 0.5'	Auger Hole 19 0.0' 0.5'	0.0' 0.5'	Auger Hole 17 0.0' 0.5'	0.0' 0.5'	Auger Hole 15 0.0' 0.5'	Auger Hole 14 0.0' 0.5'	Auger Hole 13 0.0' 0.5'	Auger Hole 12 0.5' 1.0'	Auger Hole 12 0.0' 0.5'	LAB # (lab use only) FIELD CODE Beginning Depth Ending Depth		ORDER #: 8 (2100) @	(lab use only) (1300.)		Sampler Signature: Multiple	Telephone No: 432-557-9868/432-552-7625	City/State/Zip: Odessa, TX 79765	Company Address: 8715 Andrews Hwy.	Company Name American Safety Services Inc.	Project Manager: Jay Latta	
None Date Preserve Preser	Midland, Texas 79706	red by PBL:	/ed by:	/ed by:	ed by:			╁	+	 	+-											e-mail	Fax No					
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APPENDIX E

Initial C-141

NM OIL CONSERVATION

ARTESIA DISTRICT

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio 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

MAR 28 2018

Form C-141 Revised April 3, 2017

Submit 1 Copy to appropriate District Office in **RECEIVED** redance with 19.15.29 NMAC.

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

		r ()	Rele	ase Notific	ation	and Co	rrective A	ction							
nable	3 0 435	5413				OPERA	TOR	1	☐ Initia	ıl Report	П	Final Report			
Name of Co			Corporat	ion 1383	71	Contact Ma	tt Buckles					•			
		gton Highwa					lo. 575-748-128	38							
Facility Nan	ne Nort	h Pole Fed T	В		F	Facility Typ	e Tank Battery								
Surface Own	ner BLM			Mineral O	wner E	BLM			API No	. 30-015-	36079				
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Was Immedia	te Notice (Given?		• •		If YES, To			3/21/2010	7.00 am					
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By Whom? M							lour 3/21/18 7:42								
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If a Watercou	rce was Im														
If a Watercourse was Impacted, Describe Fully.*															
Describe Cau	Describe Cause of Problem and Remedial Action Taken.*														
	A gasket on an 8' x 20' heater treater developed a leak on the top side of the clean out plate. Immediately upon discovery we dug out and hauled any														
saturated only	A gasket on an 8' x 20' heater treater developed a leak on the top side of the clean out plate. Immediately upon discovery we dug out and hauled any														
	saturated oily dirt to an approved disposal site to prevent further leaching.														
Dagariha Ana	a A GGo at a 1	1 Cl	A -4' T-1												
Describe Area The area affect				en.* Pole TB. The oil f	ollowed	l a path of 24	0 vards northeast	less than	ı 1 vard wi	de and an a	irea nort	hwest of the			
heater treater	65 yards by	y 35 yards. Tl		orthwest was cause											
and discuss re	emediation	plans.													
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				nd/or file certain re se of a C-141 repo											
should their c	perations l	nave failed to a	adequately	investigate and re	mediate	e contaminati	on that pose a thr	eat to gr	ound water	, surface w	ater, hu	man health			
		iddition, NMC ws and/or regi		tance of a C-141 r	eport do	oes not reliev	e the operator of	responsi	bility for c	ompliance	with any	other			
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									7	el	<u> </u>				
Signature: Ma	att Buckles						Signed			DATE COL	#10				
Printed Name	: Matt Buc	kles		_	4	Approved by	Environmental S	pecialist	:						
Title: Enviro	nmental					Approval Da	te: 4/2/18	1	Expiration	Date: K	IIA				
THE EHVIRO	micital								apiration	Date.	<u> </u>				
E-mail Addre	ess: mattbu	ckles@mec.co	om	_	(Conditions o	f Approval:	11		Attache	d₄□	11.50			
Date: 3/	28/2017		Ph	one: 575-748-1288	8		Bee at	tuci	<i>rea</i>		ZRP	.4485			



APPENDIX F

Groundwater Data



USGS Home Contact USGS Search USGS

National Water Information System: Web Interface

USGS Water Resources

Data Category:

Geographic Area:

United States

GO

GO

Click to hideNews Bulletins

- Please see news on new formats
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

325448104071801

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

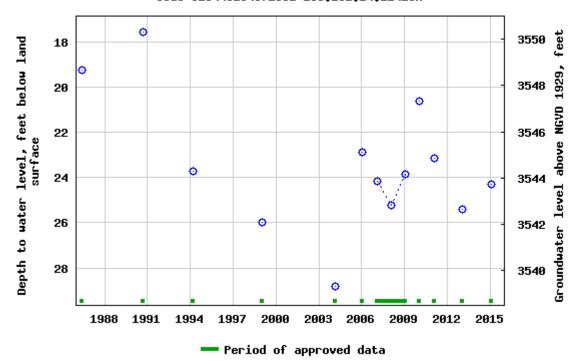
USGS 325448104071801 16S.28E.24.22423A

Available data for this site	Groundwater:	Field measurements	_ ▼	GO		
Eddy County, New Mexico						
Hydrologic Unit Code 1306	0011					
Latitude 32°54'48", Longit	tude 104°0	7'18" NAD27				
Land-surface elevation 3,5	68 feet abo	ve NGVD29				
This well is completed in th	ne Alluvium	, Bolson Deposits	and	Other	Surface	Deposits
(110AVMB) local aquifer.						

Output formats

Table of data	
Tab-separated data	
Graph of data	
Reselect period	

USGS 325448104071801 16S.28E.24.22423A



Breaks in the plot represent a gap of at least one year between field measurements. <u>Download a presentation-quality graph</u>

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help
Data Tips
Explanation of terms
Subscribe for system changes
News

Accessibility Plug-Ins FOIA Privacy Policies and Notices

U.S. Department of the Interior | U.S. Geological Survey

Title: Groundwater for USA: Water Levels

URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: <u>USGS Water Data Support Team</u>

Page Last Modified: 2018-07-12 10:09:47 EDT

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