



**THUNDERBAY FED COM #1H
CLOSURE REQUEST**

**API NO. 30-005-64308
LEGALS: U/L E, S20, T15S, R29E
CHAVES COUNTY, NEW MEXICO**

**DATE OF RELEASE: 08/20/2018
INCIDENT NO. NMAP1825441890
RP NO. 2RP-4955**

June 6, 2022

Prepared By:



**2734 NW County Road
Hobbs, NM 88240**



June 8, 2022

New Mexico Energy, Minerals & Natural Resources
NMOCD District I
C/O Mike Bratcher, Robert Hamlet & Chad Hensley
1625 N. French Drive
Hobbs, NM 88240

Bureau of Land Management
C/O Jim Amos
620 E. Green Street
Carlsbad, NM 88220

Mack Energy Corporation
C/O Matt Buckles
PO Box 960
Artesia, NM 88211

Subject: Closure Request for Mack Energy Corporation – Thunderbay Fed Com 1H

API No. 30-005-64308
Incident No. NMAP18255441890 (2RP-4955)
Unit Letter E, Section 20, Township 15 South, Range 29 East
Chaves County, New Mexico

To Whom it May Concern:

Mack Energy Corporation has retained Energy Staffing Services (ESS), to conduct a spill assessment, delineation, and remediation for the Thunderbay Fed Com #1H (hereafter known as the Thunderbay) for the produced water release that occurred on August 20th, 2018. Mack Energy provided the immediate notification email on August 20th of 2018, followed by the Initial C141 on August 31st, 2018. (Please see email notification and initial C141 attached herein) to the BLM and to the New Mexico Oil Conservation Division (NMOCD) and the Bureau of Land Management (BLM). The C141 was accepted as record on September 4th, 2018, with the incident number of NMAP1825441890.

This report provided a detailed description of the spill assessment, delineation and remedial activities conducted at the Thunderbay and demonstrates that the closure criteria has been established in the *19.15.29.12 New Mexico Administrative Code (NMAC: New Mexico Oil Conservation Division, 2018)* have been met and all applicable regulations have been followed. This document is intended to serve as the final report to obtain approval from the NMOCD/BLM for the closure of the above-mentioned release.

Incident Description

On August 20th of 2018 it was found that a clamp on Pure-Line lay flat line was not securely fastened and drained a section of the line into the pasture area. Approximately 500bbls of produced water was released with recovering of 40bbls of standing fluid.

Site Characterization

The release at the Thunderbay occurred on Federal Land and is located at 33.002218 latitude and -104.056481 longitude (see Vertex Report), approximately 17.55 miles southeast of Hagerman, New Mexico. The C141 was reported with an incorrect GPS. The legal description of the site is Unit Letter E, Section 20, Township 15 South and Range 29 East. This site is in Chaves County, New Mexico. Site map attached.

The Thunderbay consists of pastureland. The elevation of the release is 3,844 ft. This area is historically or has been primarily dominated by black grama, bush muhly, creosotebush and other perennial forbs and grasses. (Please see the attached Rangeland and Vegetation Classification information).

The *United States Department of Agriculture Natural Resources Conservation Service*, indicates that the soil type found in the area of the Thunderbay, consists of 100% Tencee-Sotim Association Soils. (Soil Map Attached). In the area of the Thunderbay the *FEMA National Flood Hazard Layer*, indicates that there is 0.2% annual chance of a flood hazard in this area (see map attached).

There is "No potential" for Karst Geology to be present near the Thunderbay site, according to the *United States Department of the Interior, Bureau of Land Management*. Please find the Karst Map attached herein.

There is no surface water located near or around the Thunderbay. This site is not near a continuously flowing watercourse and or lakebed within ½ mile from the release. No other critical or community features at the Thunderbay were found. (Attached Watercourse Map).

The nearest and most recent water well to the site according to the *New Mexico Office of the State Engineer* is RA12428, which is located 7,569' from the site and shows to be drilled in 2016. This well is listed to have groundwater data at 125'bgs. The next well is L14514 POD1, drilled in 2018, found 7,707' from the site, with groundwater data at 77'bgs. The third well is RA09248, drilled in 1996, found at 9,483' from the site, with groundwater data to be at 45'bgs. An extended groundwater search was conducted using the *OSE POD Location Mapping System* and three other wells were found. One being inside the ½ mile radius, labelled LWD-03196-POD1, this well does not have any information regarding the depth of the well or drilling information. The other two wells (RA-12006-POD1 and RA-1200-POD1) also do not have any groundwater information available. Therefore, it has been determined that, no wells exist within a ½ mile radius of the Thunderbay. Please find the NMOSE, OSE POD and Ground Water Map attached to this report.

Closure Criteria Determination

The Closure Criteria for Soils impacted by a Release is shown in the below chart. No groundwater data was found within a ½ a mile radius from the release point, being on Federal Land and with having a "no (low) karst potential," the site fell under <50' to ground water.

DGW	Constituent	Method	Limit
≤ 50'	Chloride	EPA 300.0 OR SM4500 CLB	600 mg/kg
	TPH (GRO + DRO + MRO)	EPA SW-846 METHOD 8015M	100 mg/kg
	GRO + DRO	EPA SW-846 METHOD 8015M	50 mg/kg
	BTEX	EPA SW-846 METHOD 8021B OR 8260B	10 mg/kg
	Benzene	EPA SW-846 METHOD 8021B OR 8260B	10 mg/kg

Soil Remediation Action Levels

ESS has provided sufficient data that this release has impacted the soil at the Thunderbay and that the protocol is consistent with the remediation/abatement goals and objectives set forth in the *NMOCD Closure Criteria for Soils Impacted by a Release, dated August 14, 2018*. The guidance document provides direction for Mack's initial response actions, site assessment and sample procedures conducted by ESS Staff. We would like to present to you the following information concerning the delineation process for the release detailed herein.

Soil Sampling Procedures

Soil sampling for laboratory analysis was conducted according to the NMOCD – approved industry standards. Accepted NMOCD soil sampling procedures and laboratory analytical methods are as follows:

- Collect clean samples in airtight glass jars supplied by the laboratory to conduct the analysis
- Each sample jar was labelled with site and sample information
- Samples were kept in and stored in a cool place and packed on ice
- Promptly ship sample to the lab for analysis following the chain of custody procedures

The following lab analysis method was used for each bottom hole (vertical) and sidewall sample (horizontal) was submitted to Envirotech Analytical Laboratory:

Volatile Organics by EPA 8021B

- Benzene, Toluene, Ethylbenzene, p.m. Xylene, o-Xylene and Total Xylenes

Nonhalogenated Organics by EPA 8015D – GRO

- Gasoline Range Organics (C6-C10)

Nonhalogenated Organics by EPA 8015D – DRO/ORO

- Diesel Range Organics (C10-C28)
- Oil Range Organics (C28-C40)

Anions by EPA 300.0/9056A

- Chloride

Release Investigation Data Evaluation

The Thunderbay had previous excavation done by American Safety Services, Inc. (ASI), according to Vertex. After this timeframe in November of 2018, Vertex Resource Group was contracted by Mack Energy to complete additional site assessments and remediation fieldwork, to obtain closure for this release. Sometime around September 18, 2019 an impact map was uploaded showing the site had 80,000 sq. ft. of impacted surface. In December of 2019 Vertex delineated the site and submitted a Remediation Workplan (find attached). The Remediation Workplan was approved by the NMOCD on June 24th of 2021, under conditions of approval. The condition of approval is listed below:

- Samples are representative of more than 200 sq. ft. Please collect more confirmation samples, representing no more than 200 square feet, unless MACK chooses to provide a sampling plan for approval prior to conducting additional sampling.
- The OCD requests an attempt to be made in the center of the spill area. A bore sample be taken to prove contaminants have not penetrated past the rock layer.

No further delineation or remediation had taken place at this site. Therefore, Mack contracted ESS to further delineate the impacted area. Upon review of the previous documentation that was provided on the Thunderbay and the length of time, since the delineation it was then determined that a full delineation of the impacted area was to be performed. Upon arrival of the site, the visual impact of the release was visible, and this area was remapped. On page six

of Vertex report, it shows the Site Schematic map indicating the impacted area was 45,735 sq. ft. not 80,000 sq. ft. In the proposed remedial activities, it is suggested that 1.5'bgs would be excavated in the area of impact. Please see the impact map for details.

ESS began delineation of the impacted area on February 15th, 2022 after the one-call was cleared to begin excavation sampling. It was found that little to no contamination was found at the surface of the barren area except at SP5, SP18 and SP24. A total of 24 sample points were placed, mapped and GPS'd. Please see the field sample data along with confirmation from Envirotech Laboratories below:

SURFACE SAMPLE LAB ANALYSIS

SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL
SP1	SURF	40	ND	ND	ND	ND	ND	ND	ND
SP2	SURF	60	ND	ND	ND	ND	ND	ND	50.1
SP3	SURF	80	ND	ND	ND	ND	ND	ND	64.4
SP4	SURF	20	ND	ND	ND	ND	ND	ND	ND
SP5	SURF	1600	ND	ND	ND	ND	ND	ND	1630
SP6	SURF	440	ND	ND	ND	ND	ND	ND	428
SP7	SURF	40	ND	ND	ND	ND	ND	ND	68.9
SP8	SURF	20	ND	ND	ND	ND	ND	ND	ND
SP9	SURF	480	ND	ND	ND	ND	ND	ND	425
SP10	SURF	80	ND	ND	ND	ND	ND	ND	ND
SP11	SURF	280	ND	ND	ND	ND	ND	ND	289
SP12	SURF	40	ND	ND	ND	ND	ND	ND	ND
SP13	SURF	500	ND	ND	ND	ND	ND	ND	514
SP14	SURF	100	ND	ND	ND	ND	ND	ND	ND
SP15	SURF	20	ND	ND	ND	ND	ND	ND	28.1
SP16	SURF	20	ND	ND	ND	ND	ND	ND	ND
SP17	SURF	200	ND	ND	ND	ND	ND	ND	163
SP18	SURF	1880	ND	ND	ND	ND	ND	ND	1920
SP19	SURF	20	ND	ND	ND	ND	ND	ND	ND
SP20	SURF	40	ND	ND	ND	ND	ND	ND	ND
SP21	SURF	260	ND	ND	ND	ND	ND	ND	232
SP22	SURF	60	ND	ND	ND	ND	ND	ND	58.4
SP23	SURF	140	ND	ND	ND	ND	ND	ND	128
SP24	SURF	1800	ND	ND	ND	ND	ND	ND	1630

Further delineation of the site was completed by use of track-hoe due to the solid rock. A cap was found 2' thru 4' in depths across the impacted area. Once the cap was removed further delineation took place. It is evident that migration of contaminants had occurred.

The process of the delineation phase took several days due to the cap that was encountered. After vertical delineation was completed, horizontal delineation began. Below you find the vertical field final depth data and the lab analysis:

DELINEATION VERTICAL SAMPLE DATA

SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL
SP1	10'	300	ND	ND	ND	ND	ND	ND	270
SP2	6'	400	ND	ND	ND	ND	ND	ND	380
SP3	6'	40	ND	ND	ND	ND	ND	ND	ND
SP4	6'	400	ND	ND	ND	ND	ND	ND	377
SP5	6'	200	ND	ND	ND	ND	ND	ND	193
SP6	10'	200	ND	ND	ND	ND	ND	ND	204
SP7	6'	300	ND	ND	ND	ND	ND	ND	234
SP8	6'	100	ND	ND	ND	ND	ND	ND	104
SP9	8'	40	ND	ND	ND	ND	ND	ND	ND
SP10	10'	460	ND	ND	ND	ND	ND	ND	434
SP11	6'	240	ND	ND	ND	ND	ND	ND	227
SP12	4'	240	ND	ND	ND	ND	ND	ND	138
SP13	8'	320	ND	ND	ND	ND	ND	ND	346
SP14	4'	100	ND	ND	ND	ND	ND	ND	94.8
SP15	6'	480	ND	ND	ND	ND	ND	ND	489
SP16	8'	240	ND	ND	ND	ND	ND	ND	265
SP17	6'	300	ND	ND	ND	ND	ND	ND	288
SP18	4'	120	ND	ND	ND	ND	ND	ND	101
SP19	4'	100	ND	ND	ND	ND	ND	ND	91.9
SP20	6'	260	ND	ND	25.4	ND	25.4	ND	279
SP21	6'	40	ND	ND	ND	ND	ND	ND	27.2
SP22	4'	140	ND	ND	ND	ND	ND	ND	125
SP23	4'	140	ND	ND	ND	ND	ND	ND	144
SP24	4'	160	ND	ND	ND	ND	ND	ND	146

Horizontal samples were then obtained, field evaluated and submitted to the lab for confirmation. Please see the horizontal data lab analysis below:

SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL
SW1	SURF	160		ND	ND	ND	ND	ND	ND
	2	160		ND	ND	ND	ND	ND	ND
	4	80							
SW2	SURF	140		ND	ND	ND	ND	ND	122
	2	560							
	4	320							
	6	200		ND	ND	ND	ND	ND	210
SW3	SURF	60		ND	ND	ND	ND	ND	66.3
	1	60							
	2	60		ND	ND	ND	ND	ND	60.2
SW4	SURF	80		ND	ND	ND	ND	ND	ND
		80							
	2	80		ND	ND	ND	ND	ND	ND
SW5	SURF	80		ND	ND	ND	ND	ND	ND
		80							
	2	80		ND	ND	ND	ND	ND	ND
SW6	SURF	60		ND	ND	ND	ND	ND	ND
		60							
	2	60		ND	ND	ND	ND	ND	ND
SW7	SURF	140		ND	ND	ND	ND	ND	110
		100							
	2	20		ND	ND	ND	ND	ND	ND
SW8	SURF	160		ND	ND	ND	ND	ND	ND
		100							
	2	20		ND	ND	ND	ND	ND	ND
SW9	SURF	200		ND	ND	ND	ND	ND	158
		60							
	2	40		ND	ND	ND	ND	ND	24.4
SW10	SURF	40		ND	ND	ND	ND	ND	ND
		40							
	2	40		ND	ND	ND	ND	ND	31.4

SW11	SURF	20		ND	ND	ND	ND	ND	ND
	1	20							
	2	20		ND	ND	ND	ND	ND	ND
SW12	SURF	60		ND	ND	ND	ND	ND	ND
	1	40							
	2	20		ND	ND	ND	ND	ND	ND
SW13	SURF	1400		ND	ND	ND	ND	ND	1350
	2	880							
	4	480							
	6	480		ND	ND	ND	ND	ND	ND
SW14	SURF	60		ND	ND	ND	ND	ND	49.1
	1	40							
	2	20		ND	ND	ND	ND	ND	20.9
SW15	SURF	20		ND	ND	ND	ND	ND	ND
	1	20							
	2	20		ND	ND	ND	ND	ND	ND
SW16	SURF	540		ND	ND	ND	ND	ND	515
	2	640							
	4	880							
	6	480							
	8	300		ND	ND	ND	ND	ND	308
SW17	SURF	20		ND	ND	ND	ND	ND	ND
	1	20							
	2	20		ND	ND	ND	ND	ND	ND
SW18	SURF	160		ND	ND	ND	ND	ND	ND
	1	160							
	2	160		ND	ND	ND	ND	ND	ND
SW19	SURF	240		ND	ND	ND	ND	ND	ND
	1	240							
	2	240		ND	ND	ND	ND	ND	22.3
SW20	SURF	160		ND	ND	ND	ND	ND	ND
	1	160							
	2	160		ND	ND	ND	ND	ND	32.7
SW21	SURF	160		ND	ND	ND	ND	ND	ND
	1	180							
	2	160		ND	ND	ND	ND	ND	52.4

SW22	SURF	160		ND	ND	ND	ND	ND	27.7
	1	120							
	2	80		ND	ND	ND	ND	ND	65.2

Please find the delineation sample map attached to this report along with the delineation confirmation lab analysis reports.

Remedial Activities

Excavation began on February 23rd of 2022. In the area of SP1, SP6 and SP10 a total depth of 10’bgs was excavated, SP9 and SP16 to 8’bgs. In the areas of SP2 thru SP5, SP7 thru SP8, SP11, SP15, SP17, SP20 thru SP21 was excavated to 6’bgs. A total of 4’bgs was excavated in the areas of SP12, SP14, SP18 thru SP19, SP22 thru SP24. The impacted soil was excavated and hauled to Gandy Disposal.

ESS submitted the Composite Notification email on February 24th, followed by a request for variance taking the composite protocol from 200 sq. ft. to 500 sq. ft. on March 2nd. The NMOCD approved the Composite Variance on March 2nd. On March 7th, Matt Buckles of Mack also sent an email to the BLM of the composite sampling request. Please find emails attached herein.

ESS crews began the composite sampling process on March 7th of 2022. These samples were field tested and submitted to Envirotech Labs for confirmation. Please find the composite field sample data along with lab analysis below:

SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL
COMP 1	8	480		ND	ND	ND	ND	ND	ND
COMP 2	4	400		ND	ND	ND	ND	ND	ND
COMP 3	4	400		ND	ND	ND	ND	ND	ND
COMP 4	6	160		ND	ND	ND	ND	ND	ND
COMP 5	6	80		ND	ND	ND	ND	ND	ND
COMP 6	2	240		ND	ND	ND	ND	ND	245
COMP 7	10	160		ND	ND	ND	ND	ND	133
COMP 8	10	400		ND	ND	ND	ND	ND	419
COMP 9	2	240		ND	ND	ND	ND	ND	ND
COMP 10	2	240		ND	ND	ND	ND	ND	ND
COMP 11	2	240		ND	ND	ND	ND	ND	ND
COMP 12	6	160		ND	ND	ND	ND	ND	ND
COMP 13	2	160		ND	ND	ND	ND	ND	ND
COMP 14	2	480		ND	ND	ND	ND	ND	ND

COMP 15	2	80		ND	ND	ND	ND	ND	ND
COMP 16	2	160		ND	ND	ND	ND	ND	ND
COMP 17	2	240		ND	ND	ND	ND	ND	262
COMP 18	2	400		ND	ND	ND	ND	ND	27.5
COMP 19	2	160		ND	ND	ND	ND	ND	24.1
COMP 20	2	160		ND	ND	ND	ND	ND	24.6
COMP 21	2	240		ND	ND	ND	ND	ND	35.9
COMP 22	2	80		ND	ND	ND	ND	ND	22.8
COMP 23	2	160		ND	ND	ND	ND	ND	23.1
COMP 24	2	80		ND	ND	ND	ND	ND	62.2
COMP 25	2	400		ND	ND	ND	ND	ND	ND
COMP 26	2	400		ND	ND	ND	ND	ND	ND
COMP 27	2	240		ND	ND	ND	ND	ND	ND
COMP 28	2	480		ND	ND	ND	ND	ND	ND
COMP 29	4	400		ND	ND	ND	ND	ND	ND
COMP 30	4	320		ND	ND	ND	ND	ND	ND
COMP 31	2	320		ND	ND	ND	ND	ND	ND
COMP 32	2	80		ND	ND	ND	ND	ND	ND
COMP 33	2	80		ND	ND	ND	ND	ND	ND
COMP 34	2	400		ND	ND	ND	ND	ND	ND
COMP 35	2	400		ND	ND	ND	ND	ND	ND
COMP 36	2	320		ND	ND	ND	ND	ND	ND
COMP 37	2	320		ND	ND	ND	ND	ND	ND
COMP 38	2	480		ND	ND	ND	ND	ND	ND
COMP 39	2	400		ND	ND	ND	ND	ND	ND
COMP 40	2	400		ND	ND	ND	ND	ND	ND
COMP 41	2	240		ND	ND	ND	ND	ND	ND
COMP 42	2	400		ND	ND	ND	ND	ND	25.3
COMP 43	2	400		ND	ND	ND	ND	ND	ND
COMP 44	2	160		ND	ND	ND	ND	ND	ND
COMP 45	2	240		ND	ND	ND	ND	ND	ND
COMP 46	2	160		ND	ND	ND	ND	ND	24.6
COMP 47	2	80		ND	ND	ND	ND	ND	ND
COMP 48	2	400		ND	ND	ND	ND	ND	ND
COMP 49	2	240		ND	ND	ND	ND	ND	116
COMP 50	2	240		ND	ND	ND	ND	ND	168
COMP 51	2	160		ND	ND	ND	ND	ND	23.9
COMP 52	2	240		ND	ND	ND	ND	ND	122
COMP 53	2	240		ND	ND	ND	ND	ND	143
COMP 54	2	80		ND	ND	ND	ND	ND	ND
COMP 55	2	80		ND	ND	ND	ND	ND	ND
COMP 56	2	240		ND	ND	ND	ND	ND	46.4
COMP 57	2	240		ND	ND	ND	ND	ND	65.7

COMP 58	2	320		ND	ND	ND	ND	ND	139
COMP 59	2	320		ND	ND	ND	ND	ND	154
COMP 60	2	320		ND	ND	ND	ND	ND	203
COMP 61	2	240		ND	ND	ND	ND	ND	48
COMP 62	2	240		ND	ND	ND	ND	ND	56.6
COMP 63	2	320		ND	ND	ND	ND	ND	137
COMP 64	2	320		ND	ND	ND	ND	ND	167
COMP 65	2	160		ND	ND	ND	ND	ND	24.8
COMP 66	2	80		ND	ND	ND	ND	ND	ND
COMP 67	2	80		ND	ND	ND	ND	ND	ND
COMP 68	2	80		ND	ND	ND	ND	ND	ND
COMP 69	2	160		ND	ND	ND	ND	ND	25.6
COMP 70	2	160		ND	ND	ND	ND	ND	27
COMP 71	5	160		ND	ND	ND	ND	ND	27
COMP 72	2	240		ND	ND	ND	ND	ND	67
COMP 73	2	240		ND	ND	ND	ND	ND	70.2
COMP 74	5	240		ND	ND	ND	ND	ND	72.7
COMP 75	2	240		ND	ND	ND	ND	ND	80.1
COMP 76	2	320		ND	ND	ND	ND	ND	24.5
COMP 77	2	320		ND	ND	ND	ND	ND	173
COMP 78	2	320		ND	ND	ND	ND	ND	183
COMP 79	2	320		ND	ND	ND	ND	ND	180
COMP 80	2	240		ND	ND	ND	ND	ND	87.6
COMP 81	2	240		ND	ND	ND	ND	ND	83.9
COMP 82	2	320		ND	ND	ND	ND	ND	215
COMP 83	2	240		ND	ND	ND	ND	ND	85.9
COMP 84	2	320		ND	ND	ND	ND	ND	178
COMP 85	2	320		ND	ND	ND	ND	ND	185
COMP 86	2	320		ND	ND	ND	ND	ND	173
COMP 87	2	240		ND	ND	ND	ND	ND	93.1
COMP 88	2	240		ND	ND	ND	ND	ND	149
COMP 89	2	240		ND	ND	ND	ND	ND	147
COMP 90	2	240		ND	ND	ND	ND	ND	141
COMP 91	2	160		ND	ND	ND	ND	ND	25.5
COMP 92	2	160		ND	ND	ND	ND	ND	ND
COMP 93	2	240		ND	ND	ND	ND	ND	146
SW C1	2	20		ND	ND	ND	ND	ND	ND
SW C2	2	180		ND	ND	ND	ND	ND	150
SW C3	2	160		ND	ND	ND	ND	ND	148
SW C4	2	20		ND	ND	ND	ND	ND	ND
SW C5	2	20		ND	ND	ND	ND	ND	ND
SW C6	2	20		ND	ND	ND	ND	ND	ND

Once ESS received the confirmed lab analysis of the excavation area that the full extent of the contaminated soil was removed, backfilling commenced. A total of 2,478 cubic yards of contaminated soil was disposed of. A total of 2,374 cubic yards of topsoil and 1,024 cubic yards of caliche was purchased and hauled back to the site and was stockpiled. Due to the large rocks pulled out from the cap, more topsoil was needed than expected for the 4' vadose zone. The site was contoured to its natural state.

On April 3rd ESS emailed the OCD and the BLM for the 48-hour seeding notification. The site was seeded with 100lbs of BLM #3 seed. The seed was hand broadcasted across the backfilled area.

Closure Request

On behalf of Mack Energy, ESS requests that this incident (NMAP1825441890), be closed for the release that occurred in the pasture area of the Thunderbay. Mack Energy and ESS certifies that all of the information provided and that is detailed in this report, is true and correct. We have complied with all applicable closure requirements for the release that occurred on the Thunderbay Fed Com #1H.

After review of this report if you have any questions or concerns, please do not hesitate to contact the undersigned at (575) 390-6397 or (575) 393-9048. You may also email any issues to natalie@energystaffingllc.com.

Sincerely,



Director of Environmental and Regulatory Services

Energy Staffing Services, LLC.

2724 NW County Road

Hobbs, NM 88240

Office: 575-393-9048

Cell: 575-390-6397

Email: natalie@energystaffingllc.com



Attachments:

Spill Notification Email
Initial C141
Site Map
Rangeland and Vegetation Classification
Soil Map
FEMA Flood Map
Karst Map
Surface Water Map
Groundwater Data and Map
OSE Groundwater Map
Vertex Remediation Plan w/conditions of Approval
Impact Map
Delineation Sample Map
Delineation Sample Data and Sample GPS
OCD – Composite Notification
Composite Sample Map
Composite Sample Data and Sample GPS
Lab Analysis
Remediation and Final Photos
Final C141

From: Matt Buckles
To: [Pruett, Maria, EMNRD](mailto:Pruett.Maria@EMNRD)
Subject: Fwd: Release Notice
Date: Tuesday, August 21, 2018 10:54:25 AM

From: Matt Buckles
Sent: Monday, August 20, 2018 5:26 PM
To: Tucker, Shelly (stucker@blm.gov<<mailto:stucker@blm.gov>>);
'Crystal.Weaver@state.nm.us<<mailto:Crystal.Weaver@state.nm.us>>'
Cc: Lee Livingston; Jerry Sherrell
Subject: Release Notice

Shelly and Crystal,

We had a line transporting treated produced water separate this morning around 10am on BLM land for our Thunder Bay Fed Com 1H API # 30-005-64308 . The coordinates of the release are 33.0019167, -104.056111. I Will gather all the data and submit a C-141 shortly.

Thanks,

Matt Buckles
Mack Energy Corporation
11344 Lovington Highway
Artesia NM 88210
575-748-1288 Office

From: Matt Buckles
To: [Pruett, Maria, EMNRD](mailto:Pruett.Maria@EMNRD)
Subject: Fwd: Release Notice
Date: Tuesday, August 21, 2018 10:54:25 AM

From: Matt Buckles
Sent: Monday, August 20, 2018 5:26 PM
To: Tucker, Shelly (stucker@blm.gov<<mailto:stucker@blm.gov>>);
'Crystal.Weaver@state.nm.us<<mailto:Crystal.Weaver@state.nm.us>>'
Cc: Lee Livingston; Jerry Sherrell
Subject: Release Notice

Shelly and Crystal,

We had a line transporting treated produced water separate this morning around 10am on BLM land for our Thunder Bay Fed Com 1H API # 30-005-64308. The coordinates of the release are 33.0019167, -104.056111. I will gather all the data and submit a C-141 shortly.

Thanks,

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Artesia NM 88210
575-748-1288 Office

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 Department

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

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

Incident ID	NMAP1825441890
District RP	2RP-4955
Facility ID	N/A
Application ID	pMAP1824763569

Release Notification

Responsible Party

Responsible Party Mack Energy Corporation	OGRID 013837
Contact Name Matt Buckles	Contact Telephone 575-748-1288
Contact email mattbuckles@mec.com	Incident # (assigned by OCD)
Contact mailing address PO Box 960, Artesia, NM 88211	

Location of Release Source

Latitude 33.0019167 Longitude -104.056111
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Thunderbay	Site Type Pasture
Date Release Discovered 8/20/2018	API# (if applicable) 30-005-64308

Unit Letter	Section	Township	Range	County
E	20	15S	29E	Chaves

Surface Owner: State Federal Tribal Private (Name: _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 500	Volume Recovered (bbls) 40
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release **Clamp on Pureline's lay flat line was not securely fastened and drained section of line.**

Form C-141

State of New Mexico
Oil Conservation Division

Page 2

Incident ID	NMAP1825441890
District RP	2RP-4955
Facility ID	N/A
Application ID	pMAP1824763569


Was this a major release as defined by 19.15.29.7(A) NMAC? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? unauthorized release was greater then 25 bbls
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? Yes, by Matt Buckles to Marie Pruettt by Email on Aug 21, 2018 10:54 AM	


Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.
If all the actions described above have <u>not</u> been undertaken, explain why:
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.
Printed Name: <u>Matt Buckles</u> Title: <u>Project Manager</u> Signature: _____ Date: <u>8/31/2018</u> email: <u>mattbuckles@mec.com</u> Telephone: <u>575-748-1288</u>
OCD Only Received by: <u></u> Date: <u>09/04/18</u>

Legend Page 19 of 508

-  THUNDERBAY RELEASE

 THUNDERBAY RELEASE

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition

In areas that have similar climate and topography, differences in the kind and amount of rangeland or forest understory vegetation are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

This table shows, for each soil that supports vegetation, the ecological site, plant association, or habitat type; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. An explanation of the column headings in the table follows.

An *ecological site, plant association, or habitat type* is the product of all the environmental factors responsible for its development. It has characteristic soils that have developed over time throughout the soil development process; a characteristic hydrology, particularly infiltration and runoff that has developed over time; and a characteristic plant community (kind and amount of vegetation). The hydrology of the site is influenced by development of the soil and plant community. The vegetation, soils, and hydrology are all interrelated. Each is influenced by the others and influences the development of the others. The plant community on an ecological site, plant association, or habitat type is typified by an association of species that differs from that of other ecological sites, plant associations, or habitat types in the kind and/or proportion of species or in total production. Descriptions of ecological sites are provided in the Field Office Technical Guide, which is available in local offices of the Natural Resources Conservation Service (NRCS). Descriptions of plant associations or habitat types are available from local U.S. Forest Service offices.

Total dry-weight production is the amount of vegetation that can be expected to grow annually in a well managed area that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruits of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture. Yields are adjusted to a common percent of air-dry moisture content.

Characteristic vegetation (the grasses, forbs, shrubs, and understory trees that make up most of the potential natural plant community on each soil) is listed by common name. Under *rangeland composition and forest understory*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The percentages are by dry weight for rangeland. Percentages for forest understory are by either dry weight or canopy cover. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range management requires knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range similarity index and rangeland trend. Range similarity index is determined by comparing the present plant community with the potential natural plant community on a particular rangeland ecological site. The more closely the existing community resembles the potential community, the higher the range similarity index. Rangeland trend is defined as the direction of change in an existing plant community relative to the potential natural plant community. Further information about the range similarity index and rangeland trend is available in the "National Range and Pasture Handbook," which is available in local offices of NRCS or on the Internet.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, control of undesirable brush species, conservation of water, and control of erosion. Sometimes, however, an area with a range similarity index somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Reference:

United States Department of Agriculture, Natural Resources Conservation Service, [National range and pasture handbook](#).

Report—Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition---Chaves County, New Mexico, Southern Part

THUNDERBAY FED COM 1H

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition—Chaves County, New Mexico, Southern Part								
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition	Rangeland	Forest understory
		Favorable year	Normal year	Unfavorable year				
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct dry wt</i>	<i>Pct dry wt</i>	
TS—Tencee-Sotim association								

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition---Chaves County, New Mexico, Southern Part

THUNDERBAY FED COM 1H

Rangeland and Forest Vegetation Classification, Productivity, and Plant Composition—Chaves County, New Mexico, Southern Part								
Map unit symbol and soil name	Ecological Site, Plant Association, or Habitat Type	Total dry-weight production			Characteristic rangeland or forest understory vegetation	Composition	Rangeland	Forest understory
		Favorable year	Normal year	Unfavorable year				
		<i>Lb/ac</i>	<i>Lb/ac</i>	<i>Lb/ac</i>		<i>Pct dry wt</i>	<i>Pct dry wt</i>	
Tencee	Shallow (R042XC025NM)	500	375	125	black grama	20		
					bush muhly	20		
					creosotebush	10		
					other perennial forbs	10		
					other perennial grasses	10		
					broom snakeweed	5		
					Eriogonum	5		
					low woollygrass	5		
					mariola	5		
					rabo de ardilla	5		
					sand dropseed	5		
					crown of thorns	3		
					fourwing saltbush	3		
					javelina brush	2		
Nevada jointfir	2							
Sotim	Sandy (R042XC004NM)	1,200	—	600	black grama	35		
					dropseed	15		
					other perennial forbs	10		
					blue grama	5		
					bush muhly	5		
					little bluestem	5		
					other shrubs	5		
					other perennial grasses	5		
					plains lovegrass	5		
					threeawn	5		
					yucca	5		

Data Source Information

Soil Survey Area: Chaves County, New Mexico, Southern Part
Survey Area Data: Version 16, Sep 12, 2021

Soil Map—Chaves County, New Mexico, Southern Part
(THUNDERBAY FED COM 1H)



Map Scale: 1:1,050 if printed on A landscape (11" x 8.5") sheet.

0 15 30 60 90 Meters

0 50 100 200 300 Feet


Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84



Soil Map—Chaves County, New Mexico, Southern Part
(THUNDERBAY FED COM 1H)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features





-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Chaves County, New Mexico, Southern Part
Survey Area Data: Version 16, Sep 12, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Feb 5, 2021—Feb 8, 2021

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
So	Sotim fine sandy loam	0.3	4.6%
TS	Tencee-Sotim association	5.4	95.4%
Totals for Area of Interest		5.7	100.0%

National Flood Hazard Layer FIRMette



104°3'41"W 33°0'23"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- SPECIAL FLOOD HAZARD AREAS**
 - Without Base Flood Elevation (BFE) Zone A, V, A99
 - With BFE or Depth Zone AE, AO, AH, VE, AR
 - Regulatory Floodway
- OTHER AREAS OF FLOOD HAZARD**
 - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
 - Future Conditions 1% Annual Chance Flood Hazard Zone X
 - Area with Reduced Flood Risk due to Levee. See Notes. Zone X
 - Area with Flood Risk due to Levee Zone D
- OTHER AREAS**
 - NO SCREEN Area of Minimal Flood Hazard Zone X
 - Effective LOMRs
 - Area of Undetermined Flood Hazard Zone D
- GENERAL STRUCTURES**
 - Channel, Culvert, or Storm Sewer
 - Levee, Dike, or Floodwall
- OTHER FEATURES**
 - Cross Sections with 1% Annual Chance Water Surface Elevation
 - Coastal Transect
 - Base Flood Elevation Line (BFE)
 - Limit of Study
 - Jurisdiction Boundary
 - Coastal Transect Baseline
 - Profile Baseline
 - Hydrographic Feature
- MAP PANELS**
 - Digital Data Available
 - No Digital Data Available
 - Unmapped



The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 6/6/2022 at 1:44 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

MACK ENERGY

THUNDERBAY FED COM 1H
KARST MAP

Legend


- High
- Low
- Medium
- THUNDERBAY RELEASE



MACK ENERGY

THUNDERBAY FED COM 1H
WATER COURSE MAP

Legend

 THUNDERBAY RELEASE





New Mexico Office of the State Engineer

Wells with Well Log Information

No wells found.

UTMNAD83 Radius Search (in meters):

Easting (X): 588139

Northing (Y): 3651928.13

Radius: 1000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/6/22 11:52 AM

WELLS WITH WELL LOG INFORMATION



New Mexico Office of the State Engineer

Wells with Well Log Information

No wells found.

UTMNA83 Radius Search (in meters):

Easting (X): 588139

Northing (Y): 3651928.13

Radius: 5000

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/6/22 11:53 AM

WELLS WITH WELL LOG INFORMATION



New Mexico Office of the State Engineer

Wells with Well Log Information

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

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

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

(NAD83 UTM in meters)

(in feet)

POD Number	Code	POD Subbasin	County	Source	q	q	q	Sec	Tws	Rng	X	Y	Distance	Start Date	Finish Date	Log File Date	Depth Well	Depth Water	Driller	License Number
RA 12428		RA	CH	Shallow	4	2	1	21	15S	28E	580579	3652317	7569	07/28/2016	08/04/2016	08/08/2016	170	125	DONALD KUEHN III	1058
L 14514 POD1		L	LE	Shallow	2	2	1	32	15S	36E	595494	3649622	7707	08/09/2018	08/10/2018	08/17/2018	208	77	JOHN GOERTZEN	1611
RA 09248		RA	CH	Shallow	1	4	3	17	15S	28E	578704	3652884*	9483	07/10/1996	07/13/1996	07/25/1996	150	45	RAYMOND ANDERSON	1344
RA 10280		RA	CH	Shallow	4	3	3	17	15S	28E	578501	3652680*	9667	06/20/2002	07/15/2002	04/23/2003	70	40	CARREON, FERNANDO	1490
RA 12429 POD1		RA	CH	Shallow	1	1	4	32	15S	28E	579093	3648401	9709	11/17/2016	11/17/2016	11/28/2016	62	27	EADES, ALAN	1044

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 588139

Northing (Y): 3651928.13

Radius: 10000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/6/22 11:53 AM

WELLS WITH WELL LOG INFORMATION



New Mexico Office of the State Engineer

Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
20765	L 14514 POD1	2	2	1	32	15S	36E	595494	3649622

Driller License: 1611 **Driller Company:** GOERTZEN DRILLING

Driller Name: JOHN GOERTZEN

Drill Start Date: 08/09/2018	Drill Finish Date: 08/10/2018	Plug Date:
Log File Date: 08/17/2018	PCW Rcv Date:	Source: Shallow
Pump Type:	Pipe Discharge Size:	Estimated Yield:
Casing Size: 5.00	Depth Well: 208 feet	Depth Water: 77 feet

Water Bearing Stratifications:	Top	Bottom	Description
	104	125	Sandstone/Gravel/Conglomerate
	125	150	Sandstone/Gravel/Conglomerate
	150	160	Sandstone/Gravel/Conglomerate
	162	175	Other/Unknown
	175	185	Sandstone/Gravel/Conglomerate
	185	202	Sandstone/Gravel/Conglomerate
	202	205	Other/Unknown
	205	208	Other/Unknown

Casing Perforations:	Top	Bottom
	0	208

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New Mexico Office of the State Engineer Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	LWD 03196 POD1				20	15S	29E	588694	3651839*

Driller License:

Driller Company:

Driller Name:

Drill Start Date:

Drill Finish Date:

Plug Date:

Log File Date:

PCW Rcv Date:

Source:

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

Depth Water:

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/6/22 12:03 PM

POINT OF DIVERSION SUMMARY




New Mexico Office of the State Engineer Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
	RA 09248	1 4 3	17	15S	28E	578704	3652884* 

Driller License: 1344 **Driller Company:** ANDERSON, RAYMOND

Driller Name: RAYMOND ANDERSON

Drill Start Date: 07/10/1996 **Drill Finish Date:** 07/13/1996 **Plug Date:**

Log File Date: 07/25/1996 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 2 GPM

Casing Size: 4.50 **Depth Well:** 150 feet **Depth Water:** 45 feet

Water Bearing Stratifications:	Top	Bottom	Description
	50	60	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	45	100

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 12429 POD1	1	1	4	32	15S	28E	579093	3648401

Driller License: 1044 **Driller Company:** EADES WELL DRILLING & PUMP SERVICE

Driller Name: EADES, ALAN

Drill Start Date: 11/17/2016 **Drill Finish Date:** 11/17/2016 **Plug Date:**

Log File Date: 11/28/2016 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:**

Casing Size: 5.13 **Depth Well:** 62 feet **Depth Water:** 27 feet

Water Bearing Stratifications:	Top	Bottom	Description
	27	33	Sandstone/Gravel/Conglomerate
	33	62	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	22	62

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New Mexico Office of the State Engineer

Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
RA 10280		4	3	3	17	15S	28E	578501	3652680*

Driller License: 1490	Driller Company: FERNANDO'S WATER WELL	
Driller Name: CARREON, FERNANDO		
Drill Start Date: 06/20/2002	Drill Finish Date: 07/15/2002	Plug Date:
Log File Date: 04/23/2003	PCW Rcv Date:	Source: Shallow
Pump Type: SUBMER	Pipe Discharge Size: 1.25	Estimated Yield: 10 GPM
Casing Size: 5.00	Depth Well: 70 feet	Depth Water: 40 feet

Water Bearing Stratifications:	Top	Bottom	Description
	1	70	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	40	70

*UTM location was derived from PLSS - see Help

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New Mexico Office of the State Engineer

Point of Diversion Summary

		(quarters are 1=NW 2=NE 3=SW 4=SE)				(NAD83 UTM in meters)	
Well Tag	POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
RA 12006	POD1	2 2 3	19	15S	29E	587049	3651703

Driller License:

Driller Company:

Driller Name:

Drill Start Date:

Drill Finish Date:

Plug Date:

Log File Date:

PCW Rcv Date:

Source:

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

Depth Water:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.


6/6/22 12:04 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 12007 POD1	4	2	3	19	15S	29E	586999	3651508 

Driller License:

Driller Company:

Driller Name:

Drill Start Date:

Drill Finish Date:

Plug Date:

Log File Date:

PCW Rcv Date:

Source:

Pump Type:

Pipe Discharge Size:

Estimated Yield:

Casing Size:

Depth Well:

Depth Water:

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

6/6/22 12:05 PM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

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

(quarters are smallest to largest)

(NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	RA 12428	4	2	1	21	15S	28E	580579	3652317

Driller License: 1058 **Driller Company:** KEY'S DRILLING & PUMP SERVICE

Driller Name: DONALD KUEHN III

Drill Start Date: 07/28/2016 **Drill Finish Date:** 08/04/2016 **Plug Date:**

Log File Date: 08/08/2016 **PCW Rcv Date:** **Source:** Shallow

Pump Type: **Pipe Discharge Size:** **Estimated Yield:** 15 GPM

Casing Size: 4.50 **Depth Well:** 170 feet **Depth Water:** 125 feet

Water Bearing Stratifications:	Top	Bottom	Description
	125	140	Sandstone/Gravel/Conglomerate
	140	160	Sandstone/Gravel/Conglomerate
	160	170	Sandstone/Gravel/Conglomerate

Casing Perforations:	Top	Bottom
	125	170

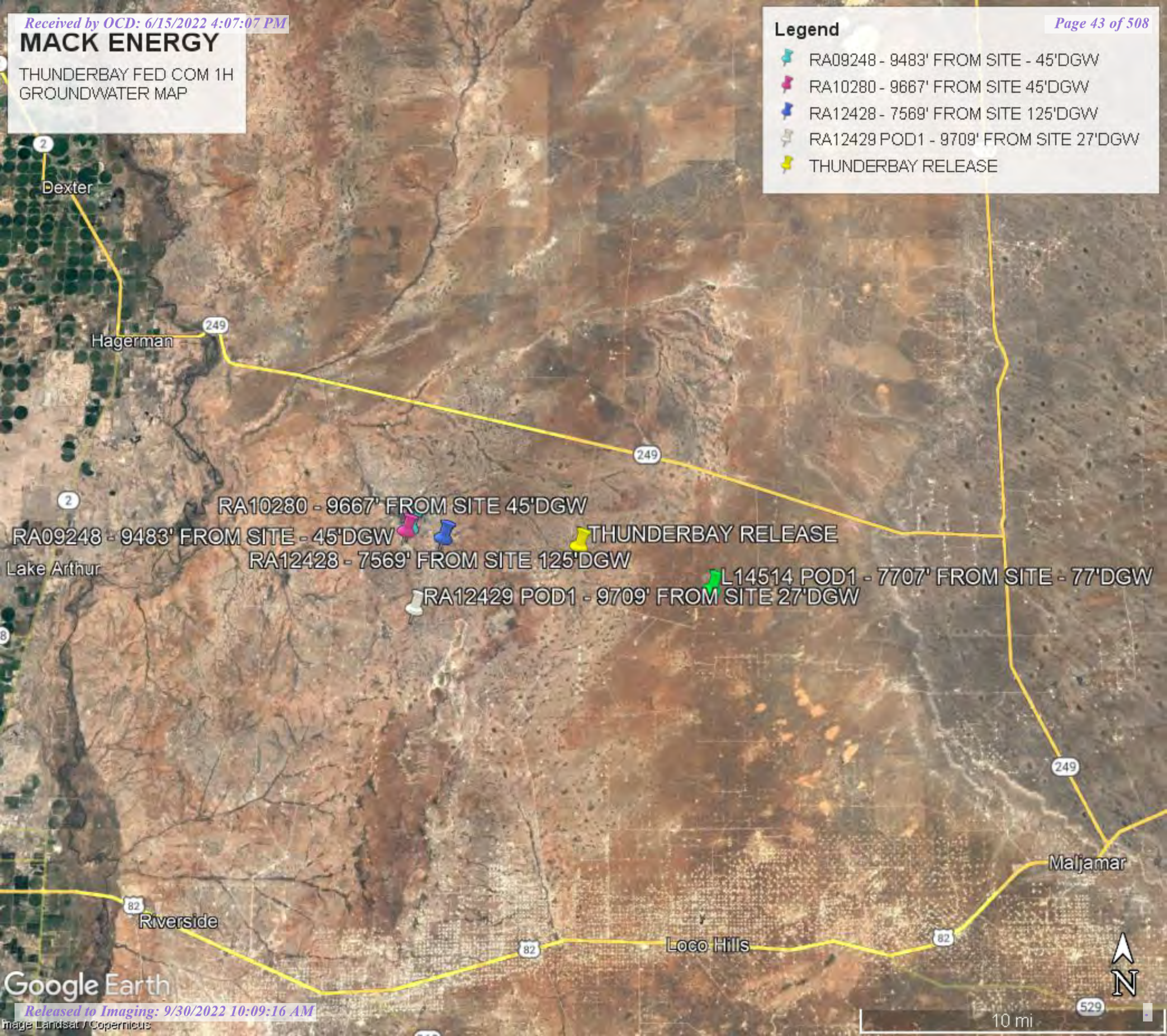
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

MACK ENERGY

THUNDERBAY FED COM 1H
GROUNDWATER MAP

Legend

- RA09248 - 9483' FROM SITE - 45'DGW
- RA10280 - 9667' FROM SITE 45'DGW
- RA12428 - 7569' FROM SITE 125'DGW
- RA12429 POD1 - 9709' FROM SITE 27'DGW
- THUNDERBAY RELEASE



RA10280 - 9667' FROM SITE 45'DGW

RA09248 - 9483' FROM SITE - 45'DGW

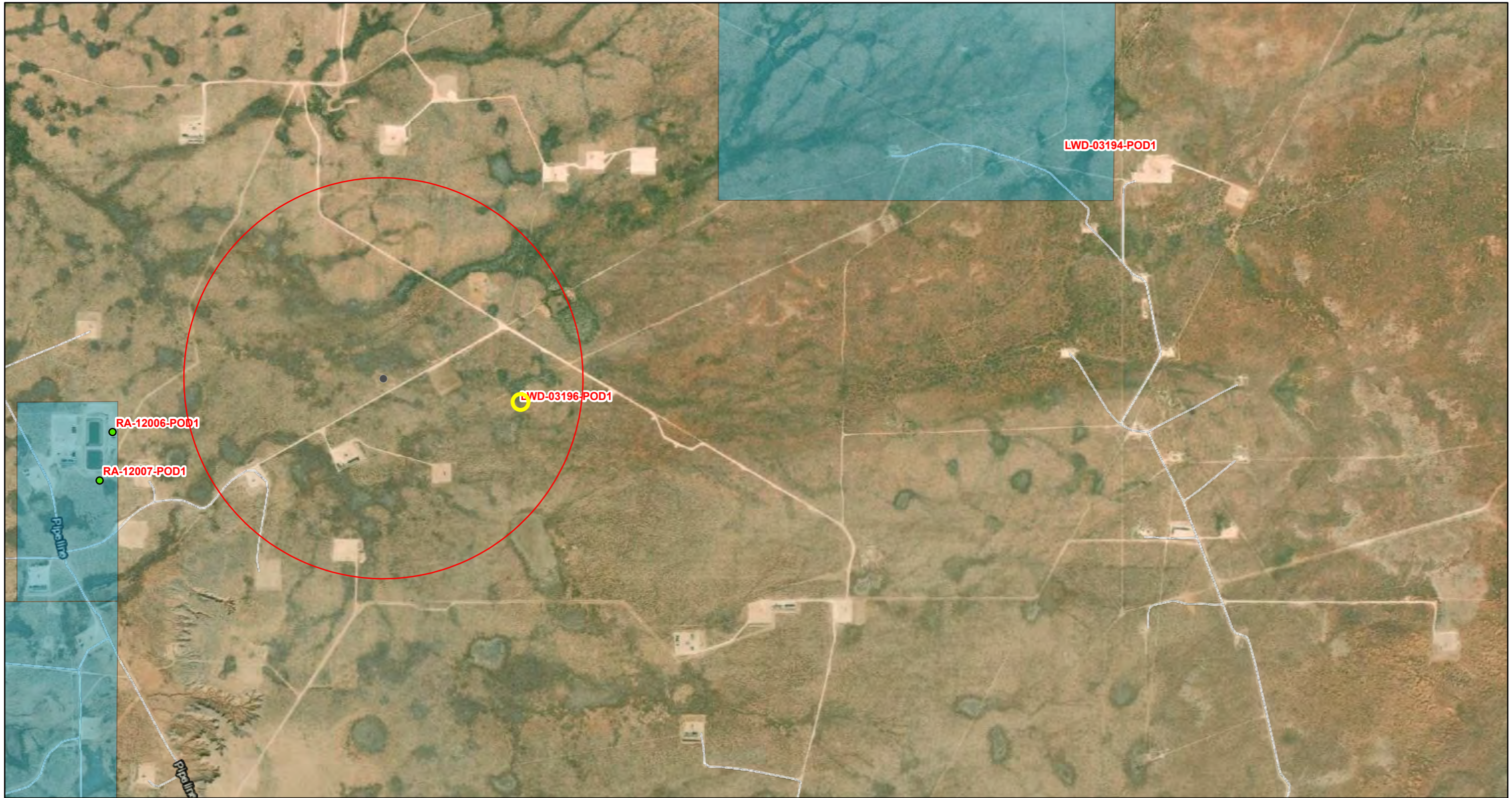
THUNDERBAY RELEASE

RA12428 - 7569' FROM SITE 125'DGW

L14514 POD1 - 7707' FROM SITE - 77'DGW

RA12429 POD1 - 9709' FROM SITE 27'DGW

OSE POD Locations Map



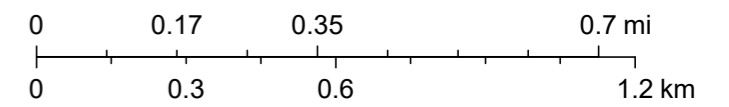
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GIS WATERS PODs

New Mexico State Trust Lands

- Pending
- OSE District Boundary
- Both Estates
- Site Boundaries



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Thunderbay Release
80,000 Sq ft Surface contamination

Environmental Site Remediation Work Plan



General Information

NMOCD District:	District 2	Incident #	NMAP1825441890
Landowner:	Federal	RP #	2RP-4955
Client:	Mack Energy Corporation	Site Location:	Thunderbay
Date:	June 23, 2020	Project #:	19E-04217-004
Client Contact:	Matt Buckles	Phone #:	(575) 748-1288
Vertex PM:	Natalie Gordon	Phone #:	(505) 506-0040

Objective

The objective of this environmental remediation work plan is to identify areas of exceedance for constituents of concern found during spill assessment and site characterization activities and propose appropriate remediation techniques to address the open release at Thunderbay. This incident was discovered on August 20, 2018, and is the result of a clamp on Pureline's lay flat line that was not securely fastened, allowing a section of the line to drain. Approximately 500 barrels (bbls) of produced water were released into pasture area. Approximately 40 bbls of produced water were recovered. The release was reported to the New Mexico Oil Conservation Division (NM OCD) District 2 office and incident tracking number NMAP1825441890 was assigned to the spill. The original location and boundaries of this release, as mapped shortly after the incident, are identified on Figure 1 (Attachment 1).

Initial site research and characterization has been completed and a closure criteria determination worksheet is included in Attachment 2. The release at Thunderbay is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 *New Mexico Administrative Code* (NMAC) and the closure criteria for the site are determined to be associated with the following constituent concentration limits.

Minimum depth below any point within the horizontal boundary of the release to groundwater less than 10,000 mg/L TDS ¹	Constituent	Limit
< 50 feet	Chloride	600 mg/kg
	TPH ² (GRO + DRO + MRO)	100 mg/kg
	BTEX ³	50 mg/kg
	Benzene	10 mg/kg

¹Total Dissolved Solids (TDS)

²Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

³Benzene, toluene, ethyl benzene and xylenes (BTEX)

Site Assessment/Characterization

The Thunderbay release characterization was originally completed by American Safety Services, Inc (ASI) in November 2018, after which some level of remediation was completed. However, the release was not closed with NM OCD. In December 2019, Mack Energy retained Vertex Resource Group (Vertex) to complete additional site assessment and remediation fieldwork, as necessary, to obtain closure of the incident with the requisite regulatory agencies. A second site assessment was completed to characterize any remaining contamination associated with this release.

A total of thirteen sample points were established across the release area as shown on Figure 2 (Attachment 1) and soil samples were collected from these locations at varying depths up to 3 feet below ground surface (bgs). Each soil sample was

Environmental Site Remediation Work Plan



field screened, using an electrical conductivity (EC) meter to estimate the level of chloride in the soil. The results were then used to determine the horizontal extent of the release. Typically, this same method is used to determine the vertical extent of the release; however, at Thunderbay, there is a layer of rock refusal at approximately 1-1.5 feet bgs across much of the area that prevented soil sampling at deeper depths. Based on field screening and lab data from soil samples collected at this rock layer, chloride appears to have penetrated to that layer and remained there. Additional sampling of the rock itself is advised to demonstrate that contaminants have not permeated past the layer of refusal and can be done at the time of remediation fieldwork.

The NM OCD requires full release delineation to the extent possible and has provided guidance specific to this situation, whereby remediation to the rock layer is required and full documentation should be conducted to demonstrate that everything possible was done to clean up contaminants. The NM OCD response regarding this remediation process is included as Attachment 3.

Data from the field screening process have been compared to the above-noted closure and reclamation criteria to establish the appropriate level of remediation required. Field screening and laboratory results associated with the release characterization are presented in Table 2 (Attachment 4) and exceedances are identified in the table as bold with a grey background. Because this was a produced water release, the presence of hydrocarbons is considered to be negligible.

Proposed Remedial Activities

Vertex proposes areas identified with contaminant concentrations approaching, or above, closure criteria be remediated through excavation and removal of contaminated soil with the use of mechanical equipment, to a depth of approximately 1.5 feet bgs or to rock refusal. Excavation would be guided by an onsite Vertex environmental technician, who would be conducting field screening during the excavation activities. Approximately 2,550 cubic yards of contaminated soil are projected to be removed. Contaminated soils should be stored on a heavy-duty liner prior to disposal at an approved facility.

Once the environmental technician confirms removal of contaminated soil to below applicable closure and reclamation criteria as shown in Table 1, confirmatory sampling will be conducted. Five-point composite confirmatory samples will be collected from the base and sidewalls of the excavation, in accordance with the sampling plan detailed in Attachment 5. This sampling plan is based on a non-parametric statistical sampling design using the Hahn and Meeker method through the Visual Sample Plan (VSP) program that meets the Environmental Protection Agency's data quality assessment standards for composite sampling.

Confirmatory samples will be placed into laboratory-provided containers, preserved on ice and submitted to a National Environmental Laboratory Accreditation Program-approved laboratory for chemical analysis. Laboratory analyses will include Method 300.0 for chlorides, Method 8021B for volatile organics, including benzene and BTEX, and EPA Method 8015 for TPH, including MRO, DRO and GRO.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit, or equivalent, will be used to map the approximate center of each of the five-point composite samples.

Following laboratory analysis of confirmatory samples, excavations will be backfilled with clean soil sourced locally. Because the native soil at Thunderbay is not currently four feet deep, the depth of clean soil meeting Table 1 criteria will likely be limited to no more than two feet, as required to reconstruct existing grade, and pending NM OCD and Bureau of Land Management (BLM) approval. The remediated area will be re-seeded with a BLM-approved seed mix at the appropriate time of year to take advantage of seasonal rains, in order to aid in the reestablishment of vegetation over the impacted area.

Environmental Site Remediation Work Plan



Timeline for Completion

Remediation activities, as outlined in this workplan, are projected to be completed within 90 days of NM OCD approval of the sampling plan.

If there are any questions regarding this report, please contact Natalie Gordon at 505-506-0040.

Sincerely,

A handwritten signature in cursive script that reads "Natalie Gordon".

Natalie Gordon
PROJECT MANAGER

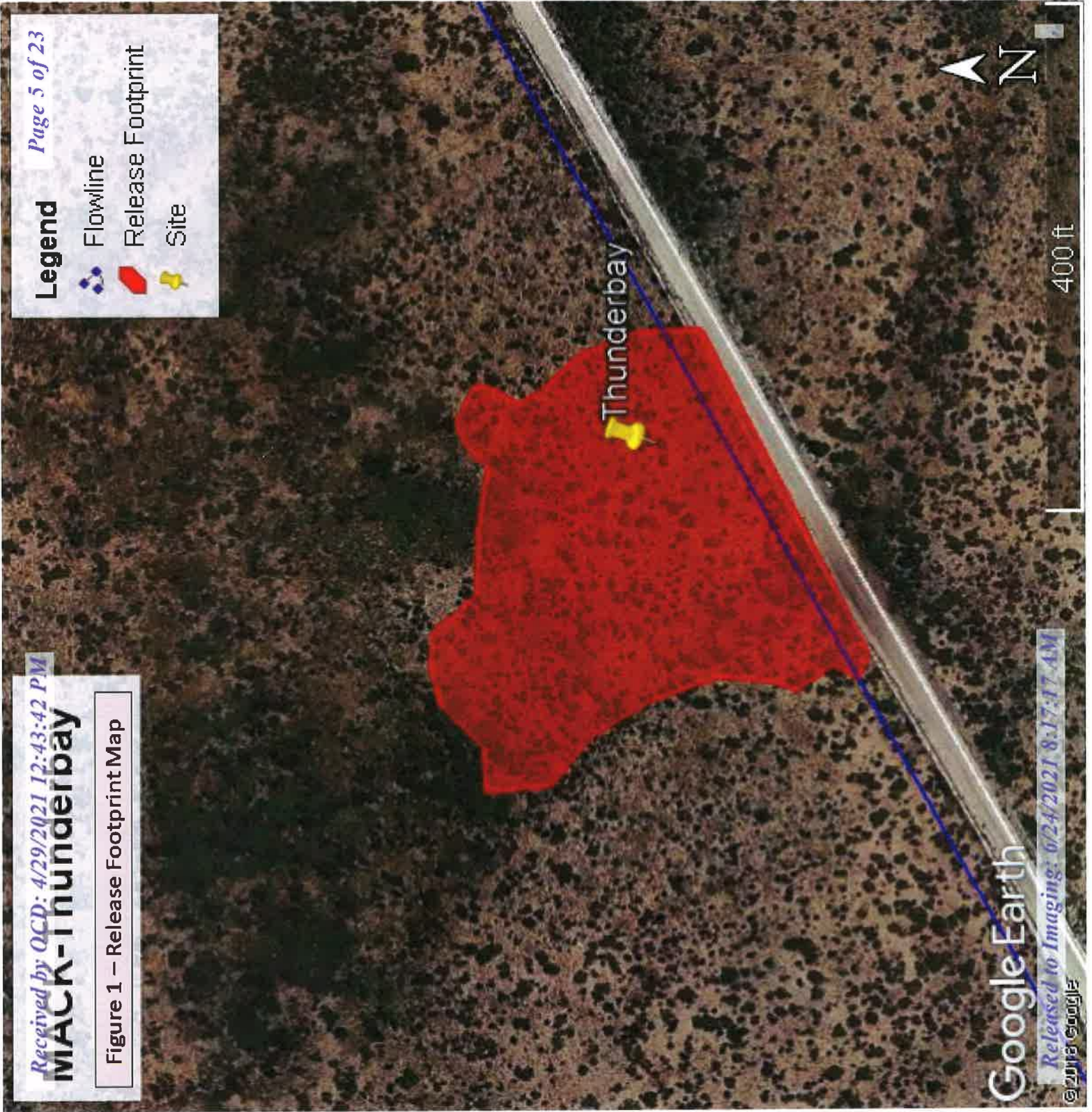
Attachments

- Attachment 1. Figures
- Attachment 2. Closure Criteria Determination Worksheet
- Attachment 3. NM OCD Guidance on Remediation of Soils on Solid Rock
- Attachment 4. Table 2 – Release Characterization Sampling – Field Screen and Laboratory Data
- Attachment 5. Sampling Plan

ATTACHMENT 1

Legend

-  Flowline
-  Release Footprint
-  Site



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MACK-1 Thunderbay

Figure 1 - Release Footprint Map

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Google Earth



FIGURE: 2

Site Schematic and Release Re-Characterization Thunderbay



NAD 1983 UTM Zone 13N
Date: May 19/20

Map Center:
Lat/Long: 33.002218, -104.056481



Geospatial data presence in this figure may be derived from external sources and Vertex does not assume any liability for inaccuracies. This figure is intended for reference use only and is not certified for legal, survey, or engineering purposes. Note: Imagery from ESRI, 2018.

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ATTACHMENT 2

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

Based on evaluation of the scoring criteria, Thunderbay 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.

ATTACHMENT 3

Natalie Gordon

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Tuesday, May 12, 2020 4:30 PM
To: Natalie Gordon
Subject: Fwd: [EXT] Release characterization/delineation question

----- Forwarded message -----

From: **Hamlet, Robert, EMNRD** <Robert.Hamlet@state.nm.us>
Date: Tue, May 12, 2020 at 4:11 PM
Subject: RE: [EXT] Release characterization/delineation question
To: Dhugal Hanton <vertexresourcegroupusa@gmail.com>, Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>, Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>, rmann@slo.state.nm.us <rmann@slo.state.nm.us>

Dhugal,

Rock Refusal (Remediation Process)

If rock refusal interferes with the remediation process, use a back-hoe/track-hoe to remove the rock. If the rock is immovable and target depth cannot be reached, use a hydrovac to clean the contaminated soil off of the rock surface and outline specific locations and steps taken on the Closure Report.

The OCD likes to see samples taken from the rock to see if the liquids have permeated the rock. This might consist of a 12-18" hole drilled with a rotary drill. If the drill sample doesn't show contaminants, spray the rock with Microblaze or other surfactants that will digest the organics (Get Approval by State/Federal Agency). At that point you've shown the OCD that you've done everything possible to clean up the contaminants.

Hopefully this helps.

Robert J Hamlet

State of New Mexico

Energy, Minerals, and Natural Resources

Oil Conservation Division

811 S. First St., Artesia NM 88210

(575) 748-1283

Robert.Hamlet@state.nm.us

From: Dhugal Hanton <vertexresourcegroupusa@gmail.com>
Sent: Tuesday, May 12, 2020 2:27 PM
To: Venegas, Victoria, EMNRD <Victoria.Venegas@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; rmann@slo.state.nm.us
Subject: [EXT] Release characterization/delineation question

Hello District 2 and SLO reps,

I have a question regarding delineating a release vertically. When we try to vertically delineate a produced water release and hit a solid hardpan/refusal at approximately 1-2 feet below ground surface, are we supposed to try to drill or break through that rock layer? The soil collected and field screened/analyzed from immediately atop the refusal layer still shows chloride levels of greater than 10,000 mg/Kg so within closure criteria for the area, but NOT within reclamation standards of 600 mg/Kg for the off-pad portion.

Breaking through the solid layer opens a conduit for contamination to move deeper into the soil so it seems like a less-than-great idea. However, fully delineating the release is a necessity.

Please advise the OCD preferred method for handling this type of situation.

Thank you,

Natalie

Natalie Gordon
Project Manager

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Vertex Resource Group Ltd.
213 S. Mesa Street
Carlsbad, NM 88220

P 575.725.5001 ext 709

C 505.506.0040

F

www.vertex.ca

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ATTACHMENT 4

Client Name: Mack Energy Corporation
 Site Name: Thunderbay
 NM OCD Incident Tracking Numbers: NMAP1825441890
 Project #: 19E-04217-004
 Lab Report: 2005973

Table 2. Characterization Field Screening and Sampling Laboratory Data - Depth to Groundwater < 50 feet													
Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID) (ppm)	Extractable Organic Compounds (Petro Flag) (ppm)	Inorganics (Electroconductivity) (ppm)	Volatile		Extractable					Chloride (mg/kg)
						Benzene (mg/kg)	BTEX (Total) (mg/kg)	Gasoline Range Organics (GRO) (mg/kg)	Diesel Range Organics (DRO) (mg/kg)	Motor Oil Range Organics (MRO) (mg/kg)	(GRO + DRO) (mg/kg)	Total Petroleum Hydrocarbons (TPH) (mg/kg)	
SS20-01	0-0.5	May 19, 2020	-	-	114	-	-	-	-	-	-	-	88
SS20-02	0-0.5	May 19, 2020	-	-	<0	-	-	-	-	-	-	-	-
SS20-03	0-0.5	May 19, 2020	-	-	<0	-	-	-	-	-	-	-	<60
SS20-04	0-0.5	May 19, 2020	-	-	<0	-	-	-	-	-	-	-	<60
SS20-05	0-0.5	May 19, 2020	-	-	1	-	-	-	-	-	-	-	-
SS20-06	0-0.5	May 19, 2020	-	-	<0	-	-	-	-	-	-	-	<61
SS20-07	0-0.5	May 19, 2020	-	-	<0	-	-	-	-	-	-	-	-
BH20-01	0	May 19, 2020	-	-	1,665	<0.025	<0.221	<4.9	<9.9	<49	<14.8	<63.8	2,300
BH20-01	0.5	May 19, 2020	-	-	650	-	-	-	-	-	-	-	-
BH20-01	1	May 19, 2020	-	-	874	<0.025	<0.224	<5.0	<9.6	95	<14.6	95	1,300
BH20-02	0	May 19, 2020	-	-	278	-	-	-	-	-	-	-	-
BH20-02	0.5	May 19, 2020	-	-	1,703	-	-	-	-	-	-	-	-
BH20-02	1.25	May 19, 2020	-	-	1,688	-	-	-	-	-	-	-	-
BH20-03	0	May 19, 2020	-	-	<0	<0.025	<0.221	<4.9	<9.6	<48	<14.5	<62.5	<60
BH20-03	0.5	May 19, 2020	-	-	95	-	-	-	-	-	-	-	-
BH20-03	1	May 19, 2020	-	-	466	-	-	-	-	-	-	-	-
BH20-03	2	May 19, 2020	-	-	1,098	-	-	-	-	-	-	-	-
BH20-03	3	May 19, 2020	-	-	128	<0.025	<0.225	<5.0	<9.4	<47	<14.4	<61.4	210
BH20-04	0	May 19, 2020	-	-	421	-	-	-	-	-	-	-	-
BH20-04	0.5	May 19, 2020	-	-	1,167	-	-	-	-	-	-	-	-
BH20-04	1	May 19, 2020	-	-	1,645	-	-	-	-	-	-	-	-
BH20-05	0	May 19, 2020	-	-	4,205	-	-	-	-	-	-	-	-
BH20-05	0.5	May 19, 2020	-	-	1,924	-	-	-	-	-	-	-	-
BH20-05	1	May 19, 2020	-	-	1,405	-	-	-	-	-	-	-	-
BH20-06	0	May 19, 2020	-	-	6,877	-	-	-	-	-	-	-	9,700
BH20-06	0.5	May 19, 2020	-	-	2,188	-	-	-	-	-	-	-	-
BH20-06	1	May 19, 2020	-	-	1,993	-	-	-	-	-	-	-	2,900

"-" - Not applicable/assessed

Bold and shaded indicates exceedance outside of applied action level



ATTACHMENT 5

Sampling to Compute a Nonparametric (Distribution-Free) One-Sided Upper Tolerance Limit to Test that a Large Portion of Room Surfaces Does Not Contain Contamination

Summary

This report summarizes the sampling design developed by VSP based on inputs provided by the VSP user. The following table summarizes the sampling design developed by VSP. A figure that shows the sample placement on the map is also provided below.

SUMMARY OF SAMPLING DESIGN	
Primary Objective of Design	Use a nonparametric (distribution-free) one-sided upper tolerance limit (UTL) to test if the true P th percentile of a population exceeds the action level
Required fraction of the population to be less than the action level	0.955 (P=95.5)
Required percent confidence on the decision made using the UTL	99%
Method used to compute the number of samples, <i>n</i>	Hahn and Meeker (1991, page 169) (See equations below)
Sample placement method	Simple random point sampling
Calculated total number of samples	101
Number of samples on map ^a	101
Number of selected sample areas that are not rooms	1
Total sampling surface area ^b	50191.79 ft ²
Total cost of sampling ^c	\$11,807.00

^a This number may differ from the calculated number because of 1) grid edge effects, 2) adding judgment samples, or 3) selecting or unselecting sample areas (rooms).

^b This is the total surface area of all selected rooms and other selected sample areas on the map of the site.

^c Including measurement analyses and fixed overhead costs. See the Cost of Sampling section for an explanation of the costs presented here.



Floor Plan Map

Primary Sampling Objective

The primary objective of this sampling effort is to make a decision whether an unacceptably large portion (fraction) of a

specified surface area (target population) is contaminated above a specified action level (AL) or is otherwise defective. It is presumed that suitable actions have been identified to be implemented for either way the decision may go.

Population Parameter of Interest

The population parameter of interest is the true P^{th} percentile of the population of contaminant concentrations, where $0 < P < 100$, in this case, the 95.5th percentile ($P = 95.5$). The true P^{th} percentile is the value above which $(100 - P)\%$ of the population lies and below which $P\%$ of the population lies. The objective is to reject the null hypothesis if the true P^{th} percentile exceeds the specified action level (AL). But, the true P^{th} percentile will never be known with 100% confidence because all possible measurements from the population cannot be obtained. Hence the decision whether to reject the null hypothesis is made using the computed upper tolerance limit (UTL) for the P^{th} percentile, that is, by computing the upper $100(1-\alpha)\%$ confidence limit on the P^{th} percentile (see Decision Rule below). For the current design α is 0.01, which means that the decision will be made using the computed UTL for the 99% confidence limit on the 95.5th percentile.

Hypothesis Being Tested

The null hypothesis (baseline assumption) is as follows:

$$H_0: \text{The true } P^{th} \text{ percentile} \leq \text{AL}$$

or equivalently,

$$H_0: \text{Less than } P\% \text{ of the population} < \text{AL}$$

The H_0 is rejected if $\text{UTL} < \text{AL}$, in which case the alternative hypothesis (H_a) is accepted as being true, where:

$$H_a: \text{More than } P\% \text{ of the population} < \text{AL}$$

Sampling Design Options

VSP offers many options to determine the locations at which measurements are made or samples are collected and subsequently measured. For this design, simple random point sampling was chosen. Locating the sample points randomly provides data that are separated by varying distances, providing good information about the spatial structure of the potential contamination. Knowledge of the spatial structure is useful for geostatistical analysis. However, it may not ensure that all portions of the site are equally represented.

Decision Rule and Number of Samples, n

The null hypothesis is rejected and the alternative hypothesis is accepted if the nonparametric (distribution-free) UTL for the P^{th} percentile is less than the specified action level (AL). The nonparametric UTL is simply the maximum of the n measurements obtained from the population of interest, where n is computed using the following equation

$$n = \frac{\ln(\alpha)}{\ln(P/100)}$$

(from Hahn and Meeker 1991, page 169). These authors discuss the statistical meaning, use, and computation of nonparametric tolerance limits and the number of samples required (pages 91, 92, 169, and 326).

The following table displays the values of the input parameters used for this design:

Parameter	Value
Input	
P	95.5
α	0.01 (1%)
Confidence ($1-\alpha$)	99%
Output	
n	101

Statistical Assumptions

1. Representative measurements have been obtained from a defined target population using simple random sampling or a systematic grid pattern that has a randomly selected starting location.
2. The n measurements are statistically independent, i.e., there is no spatial correlation (no spatial patterns) of

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contaminant levels throughout the target population.

3. The maximum of the n measurements is not an invalid value, i.e., it is not a mistake or an unacceptably uncertain value due to faulty sample handling, transport, treatment, storage, or measurement.

Sensitivity Analysis

The sensitivity of the calculation of number of samples was explored by varying the required percent of the population to be less than the action level, and confidence level ($1-\alpha$) (%). The following table shows the results of this analysis.

	Number of Samples				
	CL=99	CL=97	CL=95	CL=93	CL=91
P=91	49	38	32	29	26
P=95	90	69	59	52	47
P=99	459	349	299	265	240

P = Required Percent of the Population to be Less Than the Action Level.

CL = Confidence Level ($1-\alpha$) (%)

Cost of Sampling

The total cost of the completed sampling program depends on several cost inputs, some of which are fixed, and others that are based on the number of samples collected and measured. Based on the numbers of samples determined above, the estimated total cost of sampling and analysis at this site is \$11,807.00, which averages out to a per sample cost of \$116.90. The following table summarizes the inputs and resulting cost estimates.

COST INFORMATION			
Cost Details	Per Analysis	Per Sample	101 Samples
Field collection costs		\$7.00	\$707.00
Analytical costs (Analyte 1)	\$100.00	\$100.00	\$10,100.00
Sum of Field & Analytical costs		\$107.00	\$10,807.00
Fixed planning and validation costs			\$1,000.00
Total cost			\$11,807.00

Recommended Data Analysis Activities

Post data collection activities generally follow those outlined in EPA's Guidance for Data Quality Assessment (EPA, 2000). The data analysts should become familiar with the context of the problem and goals for data collection and assessment. The n data should be verified and validated before being used to test the null hypothesis. The VSP user should enter the validated and verified n data values into the VSP dialog box and click on appropriate tabs to obtain the following statistical summaries of the data. If there is strong evidence that the n data are normally distributed, the VSP user may want to use VSP to determine the number of samples, n , required to compute the normal distribution UTL and then use that UTL (rather than the nonparametric UTL) to test the null hypothesis.

Summary statistics: n , minimum and maximum of the n measurements, range of the n data, mean, median, standard deviation, variance, skewness, percentiles, and the interquartile range

Statistical Tests of Normality Assumption: Shapiro-Wilk test (if $n \leq 50$) (Gilbert 1987), Lilliefors test (if $n > 50$) (EPA 2000).

Graphical Displays of the Data: Histogram, box-and-whisker plots and quantile-quantile (probability) plots (EPA 2000).

References

EPA. 2000. *Guidance for Data Quality Assessment, Practical Methods for Data Analysis*, EPA QA/G-9, EPA/600/R-96/084, July 2000, Office of Environmental Information, U.S. Environmental Protection Agency.

Gilbert, R.O. 1987. *Statistical Methods for Environmental Pollution Monitoring*, Wiley & Sons, New York, NY.

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Hahn, G.J. and W.Q. Meeker. 1991. *Statistical Intervals*. Wiley & Sons, Inc, New York, NY.

A

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Form C-141

State of New Mexico
Oil Conservation Division

Page 3

Incident ID	NMAP1825441890
District RP	2RP-4955
Facility ID	
Application ID	pMAP1824763569

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	<u><50</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within 1/2-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141

State of New Mexico
Oil Conservation Division

Page 5

Incident ID	NMAP1825441890
District RP	2RP-4955
Facility ID	
Application ID	pMAP1824763569

Remediation Plan

Remediation Plan Checklist: Each of the following items must be included in the plan.


- Detailed description of proposed remediation technique
- Scaled sitemap with GPS coordinates showing delineation points
- Estimated volume of material to be remediated
- Closure criteria is to Table 1 specifications subject to 19.15.29.12(C)(4) NMAC
- Proposed schedule for remediation (note if remediation plan timeline is more than 90 days OCD approval is required)

Deferral Requests Only: Each of the following items must be confirmed as part of any request for deferral of remediation.

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Matt Buckles Title: Project Manager


Signature:  Date: 8-7-2020

email: mattbuckles@mec.com Telephone: 575-748-1288

OCD Only

Received by: Chad Hensley Date: 06/24/2021

Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature:  Date: 06/24/2021

District I

1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720

District II

811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720

District III

1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170

District IV

1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505**

CONDITIONS

Action 26346

CONDITIONS

Operator: MACK ENERGY CORP P.O. Box 960 Artesia, NM 882110960	OGRID: 13837
	Action Number: 26346
	Action Type: [C-141] Release Corrective Action (C-141)



CONDITIONS

Created By	Condition	Condition Date
chensley	Samples are representative of more than 200 square feet. Please collect more confirmation samples, representing no more than 200 square feet, unless MACK chooses to provide a sampling plan for approval prior to conduction additional sampling.	6/24/2021
chensley	The OCD request an attempt be made in the center of the spill area. A bore sample be taken to prove contaminates have not penetrated past the rock layer.	6/24/2021

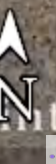
MACK ENERGY

THUNDERBAY FED COM 1H
IMPACT AREA MAP

Legend

-  THUNDERBAY IMPACT AREA 44,701 SQ. FT.
-  THUNDERBAY RELEASE




THUNDERBAY RELEASE

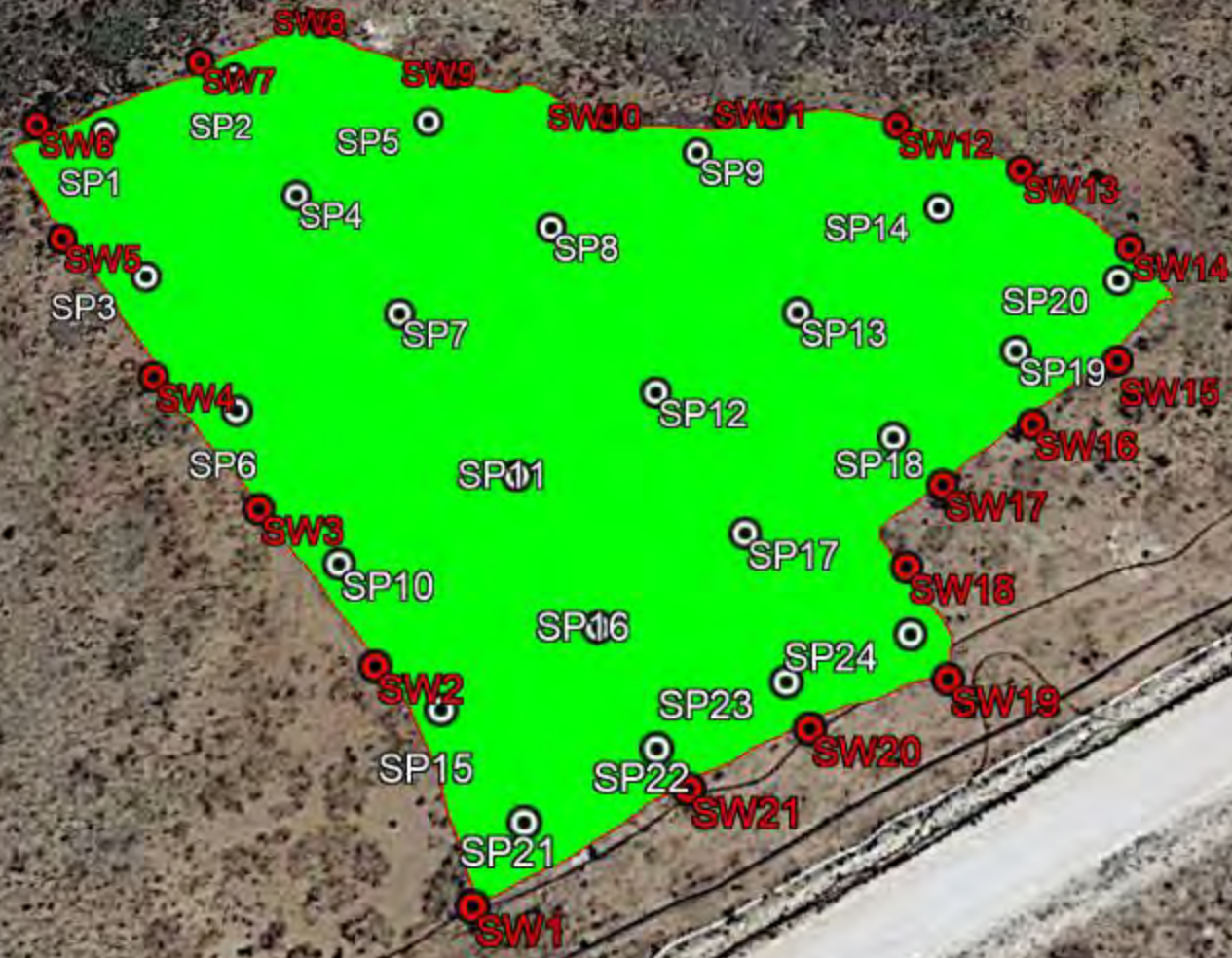


MACK ENERGY

THUNDERBAY FED COM 1H
DELINEATION MAP

Legend

-  HORIZONTAL SAMPLE POINTS
-  THUNDERBAY IMPACT AREA 44,701 SQ. FT.
-  VERTICAL SAMPLE POINTS



Company Name: MACK E Location Name: THUNDER BAY FED COM 1 Release Date: 8/20/2018

DELINEATION SAMPLE DATA

SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL	Soil	Notes
SP1	SURF	40		ND	ND	ND	ND	ND	ND		
	2	640									
	4	800									
	6	680		ND	ND	ND	ND	ND	696		
	8	400									
	10	300		ND	ND	ND	ND	ND	270		
SP2	SURF	60		ND	ND	ND	ND	ND	50.1		
	2	1000									
	4	400									
	6	400		ND	ND	ND	ND	ND	380		
SP3	SURF	80		ND	ND	ND	ND	ND	65.4		
	1	1200									
	2	800		ND	ND	ND	ND	ND	732		
	4	400									
	6	40		ND	ND	ND	ND	ND	ND		
SP4	SURF	20		ND	ND	ND	ND	ND	ND		
	2	1600									
	4	460									
	6	400		ND	ND	ND	ND	ND	377		
SP5	SURF	1600		ND	ND	ND	ND	ND	1630		
	2	1440									
	4	240									
	6	200		ND	ND	ND	ND	ND	193		
SP6	SURF	440		ND	ND	ND	ND	ND	428		
	2	1200									
	4	1360									

	6	1120									
	8	320									
	10	200		ND	ND	ND	ND	ND	204		
SP7	SURF	40		ND	ND	ND	ND	ND	68.9		
	2	840									
	4	400									
	6	300		ND	ND	ND	ND	ND	234		
SP8	SURF	20		ND	ND	ND	ND	ND	ND		
	2	800									
	4	160									
	6	100		ND	ND	ND	ND	ND	104		
SP9	SURF	480		ND	ND	ND	ND	ND	425		
	2	400		ND	ND	ND	ND	ND	352		
	4	600									
	6	240									
	8	40		ND	ND	ND	ND	ND	ND		
SP10	SURF	80		ND	ND	ND	ND	ND	ND		
	2	1600									
	4	1080									
	6	620									
	8	460									
	10	460		ND	ND	ND	ND	ND	434		
SP11	SURF	280		ND	ND	ND	ND	ND	289		
	2	1040									
	4	320									
	6	240		ND	ND	ND	ND	ND	227		
SP12	SURF	40		ND	ND	ND	ND	ND	ND		
	2	280									

	4	240		ND	ND	ND	ND	ND	138		
SP13	SURF	500		ND	ND	ND	ND	ND	514		
	2	2080									
	4	2400									
	6	400									
	8	320		ND	ND	ND	ND	ND	346		
SP14	SURF	100		ND	ND	ND	ND	ND	ND		
	2	100									
	4	100		ND	ND	ND	ND	ND	94.8		
SP15	SURF	20		ND	ND	ND	ND	ND	28.1		
	2	600									
	4	500									
	6	480		ND	ND	ND	ND	ND	489		
SP16	SURF	20		ND	ND	ND	ND	ND	ND		
	2	1600									
	4	720									
	6	280									
	8	240		ND	ND	ND	ND	ND	265		
SP17	SURF	200		ND	ND	ND	ND	ND	163		
	2	640									
	4	400									
	6	300		ND	ND	ND	ND	ND	288		
SP18	SURF	1880		ND	ND	ND	ND	ND	1920		
	2	400									
	4	120		ND	ND	ND	ND	ND	101		
SP19	SURF	20		ND	ND	ND	ND	ND	ND		
	2	200									

	4	100		ND	ND	ND	ND	ND	91.9		
SP20	SURF	40		ND	ND	ND	ND	ND	ND		
	2	620									
	4	300									
	6	260		ND	ND	25.4	ND	25.4	279		
SP21	SURF	260		ND	ND	ND	ND	ND	232		
	2	680									
	4	160									
	6	40		ND	ND	ND	ND	ND	27.2		
SP22	SURF	60		ND	ND	ND	ND	ND	58.4		
	2	240									
	4	140		ND	ND	ND	ND	ND	125		
SP23	SURF	140		ND	ND	ND	ND	ND	128		
	2	140									
	4	140		ND	ND	ND	ND	ND	144		
SP24	SURF	1800		ND	ND	ND	ND	ND	1630		
	2	320									
	4	160		ND	ND	ND	ND	ND	146		
SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL	Soil	Notes
SW1	SURF	160		ND	ND	ND	ND	ND	ND		
	2	160		ND	ND	ND	ND	ND	ND		
	4	80									
SW2	SURF	140		ND	ND	ND	ND	ND	122		
	2	560									
	4	320									
	6	200		ND	ND	ND	ND	ND	210		

SW3	SURF	60		ND	ND	ND	ND	ND	66.3		
	1	60									
	2	60		ND	ND	ND	ND	ND	60.2		
SW4	SURF	80		ND	ND	ND	ND	ND	ND		
		80									
	2	80		ND	ND	ND	ND	ND	ND		
SW5	SURF	80		ND	ND	ND	ND	ND	ND		
		80									
	2	80		ND	ND	ND	ND	ND	ND		
SW6	SURF	60		ND	ND	ND	ND	ND	ND		
		60									
	2	60		ND	ND	ND	ND	ND	ND		
SW7	SURF	140		ND	ND	ND	ND	ND	110		
		100									
	2	20		ND	ND	ND	ND	ND	ND		
SW8	SURF	160		ND	ND	ND	ND	ND	ND		
		100									
	2	20		ND	ND	ND	ND	ND	ND		
SW9	SURF	200		ND	ND	ND	ND	ND	158		
		60									
	2	40		ND	ND	ND	ND	ND	24.4		
SW10	SURF	40		ND	ND	ND	ND	ND	ND		
		40									
	2	40		ND	ND	ND	ND	ND	31.4		
SW11	SURF	20		ND	ND	ND	ND	ND	ND		
	1	20									

	2	20		ND	ND	ND	ND	ND	ND		
SW12	SURF	60		ND	ND	ND	ND	ND	ND		
	1	40									
	2	20		ND	ND	ND	ND	ND	ND		
SW13	SURF	1400		ND	ND	ND	ND	ND	1350		
	2	880									
	4	480									
	6	480		ND	ND	ND	ND	ND	ND		
SW14	SURF	60		ND	ND	ND	ND	ND	49.1		
	1	40									
	2	20		ND	ND	ND	ND	ND	20.9		
SW15	SURF	20		ND	ND	ND	ND	ND	ND		
	1	20									
	2	20		ND	ND	ND	ND	ND	ND		
SW16	SURF	540		ND	ND	ND	ND	ND	515		
	2	640									
	4	880									
	6	480									
	8	300		ND	ND	ND	ND	ND	308		
SW17	SURF	20		ND	ND	ND	ND	ND	ND		
	1	20									
	2	20		ND	ND	ND	ND	ND	ND		
SW18	SURF	160		ND	ND	ND	ND	ND	ND		
	1	160									
	2	160		ND	ND	ND	ND	ND	ND		
SW19	SURF	240		ND	ND	ND	ND	ND	ND		

DELINEATION GPS DATA
MACK ENERGY THUNDERBAY FED COM #1H

SAMPLE ID	LAT	LONG
SP1	33.002362	-104.056956
SP2	33.002414	-104.05684
SP3	33.002230	-104.056898
SP4	33.002302	-104.056769
SP5	33.002371	-104.056651
SP6	33.002116	-104.056803
SP7	33.002197	-104.056666
SP8	33.002272	-104.056532
SP9	33.002341	-104.056397
SP10	33.001995	-104.056702
SP11	33.002063	-104.056555
SP12	33.00213	-104.056436
SP13	33.002197	-104.056309
SP14	33.002289	-104.056227
SP15	33.001888	-104.05661
SP16	33.001947	-104.056484
SP17	33.002018	-104.05636
SP18	33.002093	-104.056229
SP19	33.002164	-104.056117
SP20	33.002224	-104.056018
SP21	33.00181	-104.05654
SP22	33.00186	-104.056435
SP23	33.001907	-104.056329
SP24	33.001942	-104.056225
SW1	33.001754	-104.056577
SW2	33.001908	-104.05666
SW3	33.002037	-104.056775
SW4	33.002144	-104.05688
SW5	33.002264	-104.05698
SW6	33.002369	-104.057021
SW7	33.00243	-104.056874
SW8	33.002467	-104.05676
SW9	33.002416	-104.056631
SW10	33.002373	-104.056482
SW11	33.002375	-104.056325
SW12	33.002366	-104.056209
SW13	33.002323	-104.056096
SW14	33.002252	-104.056005
SW15	33.002155	-104.056028
SW16	33.002103	-104.056108
SW17	33.002055	-104.05619
SW18	33.001992	-104.056225

SW19	33.001909	-104.056196
SW20	33.001874	-104.056311
SW21	33.001832	-104.056409
SW22	33.001787	-104.056495

Natalie Gladden

From: Natalie Gladden
Sent: Wednesday, March 2, 2022 11:41 AM
To: ocdonline, emnrd, EMNRD; Bratcher, Mike, EMNRD; Hamlet, Robert, EMNRD; Hensley, Chad, EMNRD
Cc: mattbuckles@mec.com; dakotah@energystaffingllc.com
Subject: RE: MACK ENERGY CORP - COMPOSITE SAMPLING NOTIFICATION - THUNDERBAY FED COM 1H

Importance: High

Tracking:	Recipient	Read
	ocdonline, emnrd, EMNRD	
	Bratcher, Mike, EMNRD	
	Hamlet, Robert, EMNRD	
	Hensley, Chad, EMNRD	
	mattbuckles@mec.com	
	dakotah@energystaffingllc.com	
	Dakotah Montanez	Read: 3/7/2022 4:45 PM

All,

ESS would like to request a variance for the composite sampling protocol from 200 sq. ft. to 500 sq. ft. The site measures 45,735 sq. ft. We will begin the composite sampling tomorrow at this site. The below 48-hour notification was sent on 2/24/22.

Natalie Gladden

Director of Environmental and Regulatory Services

Energy Staffing Services, LLC.

2724 NW County Road

Hobbs, NM 88240

Cell: 575-390-6397

Office: 575-393-9048

Email: natalie@energystaffingllc.com



From: Natalie Gladden
Sent: Thursday, February 24, 2022 5:15 PM
To: ocdonline, emnrd, EMNIRD <EMNIRD.OCDOnline@state.nm.us>; Bratcher, Mike, EMNIRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNIRD <Robert.Hamlet@state.nm.us>; Hensley, Chad, EMNIRD <Chad.Hensley@state.nm.us>
Cc: mattbuckles@mec.com; dakatah@energystaffingllc.com; Eddie Gaytan <eddie@energystaffingllc.com>
Subject: MACK ENERGY CORP - COMPOSITE SAMPLING NOTIFICATION - THUNDERBAY FED COM 1H
Importance: High

All,

Please use this email for the 48-hour composite sampling event notification. The release information is below:

Thunderbay Fed Com #1H
API: 30-005-64308
Incident ID: NMAP1825441890
District RP: 2RP-4955
DOR: 8/20/2018

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Natalie Gladden

Director of Environmental and Regulatory Services
Energy Staffing Services, LLC.

2724 NW County Road
Hobbs, NM 88240
Cell: 575-390-6397
Office: 575-393-9048
Email: natalie@energystaffingllc.com



3

Natalie Gladden

From: Matt Buckles <mattbuckles@mec.com>
Sent: Monday, March 7, 2022 10:32 AM
To: rflorez@blm.gov; Davis, Harley
Cc: Natalie Gladden
Subject: FW: [EXTERNAL] RE: MACK ENERGY CORP - COMPOSITE SAMPLING NOTIFICATION - THUNDERBAY FED COM 1H
Attachments: FW: Unauthorized Release Notice

Ricky and Harley,

We are working on completing reclamation on the Thunderbay Release (NMAP1825441890), (33.00191, -104.0561) from 08/2018, just wanted to keep you guys up to date. Let me know if you have any questions or concerns.

Thanks,
 Matt Buckles
 Mack Energy
 575-748-1288

From: Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>
Sent: Wednesday, March 02, 2022 2:45 PM
To: Natalie Gladden <natalie@energystaffingllc.com>; ocdonline, emnrd, EMNRD <EMNRD.OCDOnline@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Cc: Matt Buckles <mattbuckles@mec.com>; Dakoatah Montanez <dakoatah@energystaffingllc.com>
Subject: RE: [EXTERNAL] RE: MACK ENERGY CORP - COMPOSITE SAMPLING NOTIFICATION - THUNDERBAY FED COM 1H

EXTERNAL EMAIL - Verify the sender and use caution before opening attachments or clicking links

Natalie,

Chad Hensley is the reviewer on this incident, but is gone most of this week. Being the release measures 45,735 sq. ft., the variance for confirmation samples of 500 ft2 is approved. Please include a copy of this variance approval in the remedial and/or closure report to ensure the variance is documented in the project file. If rock refusal is encountered, use a hydrovac to clean contaminated soil off rock. Use rotary drill to drill 18"-24" hole into the rock, pull sample and do lab analysis. If clean, layer clean rock with microbial strains to digest organics and hydrocarbons. Back-fill with clean material. This will ensure the release is vertically delineated.

Regards,

Robert Hamlet • Environmental Specialist - Advanced
Environmental Bureau
EMNRD - Oil Conservation Division
811 S. First Street | Artesia, NM 88210
575.909.0302 | robert.hamlet@state.nm.us
<http://www.emnrd.state.nm.us/OCD/>



From: Natalie Gladden <natalie@energystaffingllc.com>
Sent: Wednesday, March 2, 2022 11:41 AM
To: ocdonline, emnrd, EMNRD <EMNRD.OCDOnline@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>
Cc: mattbuckles@mec.com; Dakoatah Montanez <dakoatah@energystaffingllc.com>
Subject: [EXTERNAL] RE: MACK ENERGY CORP - COMPOSITE SAMPLING NOTIFICATION - THUNDERBAY FED COM 1H
Importance: High

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

All,

ESS would like to request a variance for the composite sampling protocol from 200 sq. ft. to 500 sq. ft. The site measures 45,735 sq. ft. We will begin the composite sampling tomorrow at this site. The below 48-hour notification was sent on 2/24/22.

Natalie Gladden

Director of Environmental and Regulatory Services

Energy Staffing Services, LLC.

2724 NW County Road

Hobbs, NM 88240

Cell: 575-390-6397

Office: 575-393-9048

Email: natalie@energystaffingllc.com



From: Natalie Gladden

Sent: Thursday, February 24, 2022 5:15 PM

To: ocdonline, emnrd, EMNRD <EMNRD.OCDOnline@state.nm.us>; Bratcher, Mike, EMNRD <mike.bratcher@state.nm.us>; Hamlet, Robert, EMNRD <Robert.Hamlet@state.nm.us>; Hensley, Chad, EMNRD <Chad.Hensley@state.nm.us>

Cc: mattbuckles@mec.com; dakotah@energystaffingllc.com; Eddie Gaytan <eddie@energystaffingllc.com>

Subject: MACK ENERGY CORP - COMPOSITE SAMPLING NOTIFICATION - THUNDERBAY FED COM 1H
Importance: High

All,

Please use this email for the 48-hour composite sampling event notification. The release information is below:

Thunderbay Fed Com #1H

API: 30-005-64308

Incident ID: NMAP1825441890

District RP: 2RP-4955

DOR: 8/20/2018

If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Natalie Gladden

Director of Environmental and Regulatory Services

Energy Staffing Services, LLC.

2724 NW County Road

Hobbs, NM 88240

Cell: 575-390-6397




Office: 575-393-9048

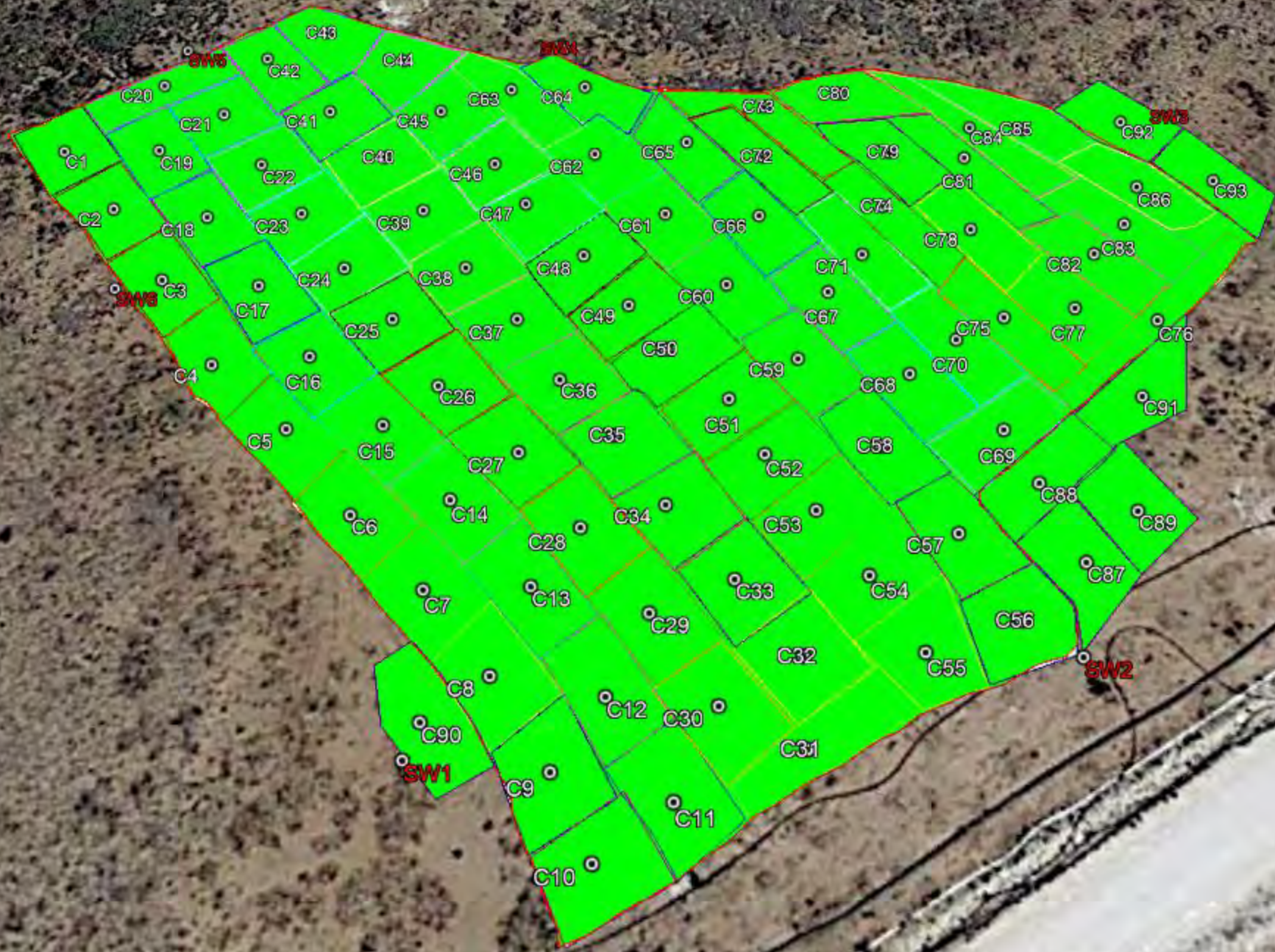


MACK ENERGY

THUNDERBAY FED COM 1H
COMPOSITE SAMPLE MAP

Legend

-  EXCAVATION AREA
-  HORIZONTAL SAMPLE PTS
-  VERTICAL SAMPLE PTS



Company Name: MACK Location Name: THUNDER BAY COMP. Release Date: _____

SP ID	Depth	Titr	PID	L-BTEX	L-GRO	L-DRO	L-ORO	L-TPH	L-CHL	Soil	Notes
COMP 1	8	480		ND	ND	ND	ND	ND	ND		
COMP 2	4	400		ND	ND	ND	ND	ND	ND		
COMP 3	4	400		ND	ND	ND	ND	ND	ND		
COMP 4	6	160		ND	ND	ND	ND	ND	ND		
COMP 5	6	80		ND	ND	ND	ND	ND	ND		
COMP 6	2	240		ND	ND	ND	ND	ND	245		
COMP 7	10	160		ND	ND	ND	ND	ND	133		
COMP 8	10	400		ND	ND	ND	ND	ND	419		
COMP 9	2	240		ND	ND	ND	ND	ND	ND		
COMP 10	2	240		ND	ND	ND	ND	ND	ND		
COMP 11	2	240		ND	ND	ND	ND	ND	ND		
COMP 12	6	160		ND	ND	ND	ND	ND	ND		
COMP 13	2	160		ND	ND	ND	ND	ND	ND		
COMP 14	2	480		ND	ND	ND	ND	ND	ND		
COMP 15	2	80		ND	ND	ND	ND	ND	ND		
COMP 16	2	160		ND	ND	ND	ND	ND	ND		
COMP 17	2	240		ND	ND	ND	ND	ND	262		
COMP 18	2	400		ND	ND	ND	ND	ND	27.5		
COMP 19	2	160		ND	ND	ND	ND	ND	24.1		
COMP 20	2	160		ND	ND	ND	ND	ND	24.6		
COMP 21	2	240		ND	ND	ND	ND	ND	35.9		
COMP 22	2	80		ND	ND	ND	ND	ND	22.8		
COMP 23	2	160		ND	ND	ND	ND	ND	23.1		
COMP 24	2	80		ND	ND	ND	ND	ND	62.2		
COMP 25	2	400		ND	ND	ND	ND	ND	ND		
COMP 26	2	400		ND	ND	ND	ND	ND	ND		
COMP 27	2	240		ND	ND	ND	ND	ND	ND		
COMP 28	2	480		ND	ND	ND	ND	ND	ND		
COMP 29	4	400		ND	ND	ND	ND	ND	ND		
COMP 30	4	320		ND	ND	ND	ND	ND	ND		
COMP 31	2	320		ND	ND	ND	ND	ND	ND		

COMP 32	2	80		ND	ND	ND	ND	ND	ND		
COMP 33	2	80		ND	ND	ND	ND	ND	ND		
COMP 34	2	400		ND	ND	ND	ND	ND	ND		
COMP 35	2	400		ND	ND	ND	ND	ND	ND		
COMP 36	2	320		ND	ND	ND	ND	ND	ND		
COMP 37	2	320		ND	ND	ND	ND	ND	ND		
COMP 38	2	480		ND	ND	ND	ND	ND	ND		
COMP 39	2	400		ND	ND	ND	ND	ND	ND		
COMP 40	2	400		ND	ND	ND	ND	ND	ND		
COMP 41	2	240		ND	ND	ND	ND	ND	ND		
COMP 42	2	400		ND	ND	ND	ND	ND	25.3		
COMP 43	2	400		ND	ND	ND	ND	ND	ND		
COMP 44	2	160		ND	ND	ND	ND	ND	ND		
COMP 45	2	240		ND	ND	ND	ND	ND	ND		
COMP 46	2	160		ND	ND	ND	ND	ND	24.6		
COMP 47	2	80		ND	ND	ND	ND	ND	ND		
COMP 48	2	400		ND	ND	ND	ND	ND	ND		
COMP 49	2	240		ND	ND	ND	ND	ND	116		
COMP 50	2	240		ND	ND	ND	ND	ND	168		
COMP 51	2	160		ND	ND	ND	ND	ND	23.9		
COMP 52	2	240		ND	ND	ND	ND	ND	122		
COMP 53	2	240		ND	ND	ND	ND	ND	143		
COMP 54	2	80		ND	ND	ND	ND	ND	ND		
COMP 55	2	80		ND	ND	ND	ND	ND	ND		
COMP 56	2	240		ND	ND	ND	ND	ND	46.4		
COMP 57	2	240		ND	ND	ND	ND	ND	65.7		
COMP 58	2	320		ND	ND	ND	ND	ND	139		
COMP 59	2	320		ND	ND	ND	ND	ND	154		
COMP 60	2	320		ND	ND	ND	ND	ND	203		
COMP 61	2	240		ND	ND	ND	ND	ND	48		
COMP 62	2	240		ND	ND	ND	ND	ND	56.6		
COMP 63	2	320		ND	ND	ND	ND	ND	137		
COMP 64	2	320		ND	ND	ND	ND	ND	167		
COMP 65	2	160		ND	ND	ND	ND	ND	24.8		

COMP 66	2	80		ND	ND	ND	ND	ND	ND		
COMP 67	2	80		ND	ND	ND	ND	ND	ND		
COMP 68	2	80		ND	ND	ND	ND	ND	ND		
COMP 69	2	160		ND	ND	ND	ND	ND	25.6		
COMP 70	2	160		ND	ND	ND	ND	ND	27		
COMP 71	5	160		ND	ND	ND	ND	ND	27		
COMP 72	2	240		ND	ND	ND	ND	ND	67		
COMP 73	2	240		ND	ND	ND	ND	ND	70.2		
COMP 74	5	240		ND	ND	ND	ND	ND	72.7		
COMP 75	2	240		ND	ND	ND	ND	ND	80.1		
COMP 76	2	320		ND	ND	ND	ND	ND	24.5		
COMP 77	2	320		ND	ND	ND	ND	ND	173		
COMP 78	2	320		ND	ND	ND	ND	ND	183		
COMP 79	2	320		ND	ND	ND	ND	ND	180		
COMP 80	2	240		ND	ND	ND	ND	ND	87.6		
COMP 81	2	240		ND	ND	ND	ND	ND	83.9		
COMP 82	2	320		ND	ND	ND	ND	ND	215		
COMP 83	2	240		ND	ND	ND	ND	ND	85.9		
COMP 84	2	320		ND	ND	ND	ND	ND	178		
COMP 85	2	320		ND	ND	ND	ND	ND	185		
COMP 86	2	320		ND	ND	ND	ND	ND	173		
COMP 87	2	240		ND	ND	ND	ND	ND	93.1		
COMP 88	2	240		ND	ND	ND	ND	ND	149		
COMP 89	2	240		ND	ND	ND	ND	ND	147		
COMP 90	2	240		ND	ND	ND	ND	ND	141		
COMP 91	2	160		ND	ND	ND	ND	ND	25.5		
COMP 92	2	160		ND	ND	ND	ND	ND	ND		
COMP 93	2	240		ND	ND	ND	ND	ND	146		
SW C1	2	20		ND	ND	ND	ND	ND	ND		
SW C2	2	180		ND	ND	ND	ND	ND	150		
SW C3	2	160		ND	ND	ND	ND	ND	148		
SW C4	2	20		ND	ND	ND	ND	ND	ND		
SW C5	2	20		ND	ND	ND	ND	ND	ND		
SW C6	2	20		ND	ND	ND	ND	ND	ND		

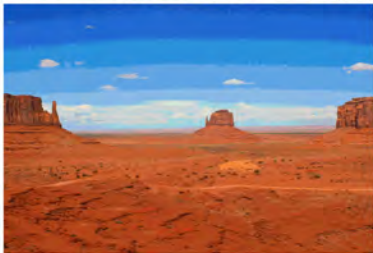
COMPOSITE SAMPLE GPS DATA
MACK ENERGY THUNDERBAY FED COM #1H

SAMPLE ID	LAT	LONG
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C2	33.002278	-104.056942
C3	33.002215	-104.056893
C4	33.002144	-104.056844
C5	33.002092	-104.056781
C6	33.002028	-104.056727
C7	33.001975	-104.056671
C8	33.001917	-104.056622
C9	33.001858	-104.056581
C10	33.001805	-104.056555
C11	33.001838	-104.056497
C12	33.001902	-104.056540
C13	33.001974	-104.056591
C14	33.002036	-104.056651
C15	33.002092	-104.056704
C16	33.002148	-104.056765
C17	33.002207	-104.056812
C18	33.002268	-104.056861
C19	33.002231	-104.056909
C20	33.002394	-104.056912
C21	33.002364	-104.056855
C22	33.002314	-104.056818
C23	33.002268	-104.05678
C24	33.002219	-104.056741
C25	33.002175	-104.056699
C26	33.002121	-104.056661
C27	33.002068	-104.056598
C28	33.002013	-104.056553
C29	33.001954	-104.056505
C30	33.001893	-104.05646
C31	33.001865	-104.0564
C32	33.001922	-104.056395
C33	33.001974	-104.05644
C34	33.002027	-104.056487
C35	33.002078	-104.056523
C36	33.002122	-104.056564
C37	33.002171	-104.056597
C38	33.002216	-104.056639
C39	33.002267	-104.056675
C40	33.002317	-104.056711
C41	33.002363	-104.056761
C42	33.002417	-104.056821

C43	33.002442	-104.056768
C44	33.002411	-104.056695
C45	33.002359	-104.056661
C46	33.002307	-104.056613
C47	33.00227	104.056587
C48	33.002223	-104.05654
C49	33.00218	-104.056505
C50	33.002143	-104.056477
C51	33.002102	-104.05643
C52	33.00206	-104.056407
C53	33.002019	-104.056373
C54	33.001973	-104.056339
C55	33.001921	-104.056307
C56	33.001939	-104.056233
C57	33.001999	-104.056267
C58	33.002063	-104.056315
C59	33.002131	-104.056371
C60	33.002194	-104.256422
C61	33.002256	-104.056468
C62	33.002313	-104.056526
C63	33.002378	-104.056598
C64	33.002378	-104.056531
C65	33.002321	-104.056444
C66	33.002252	-104.056388
C67	33.002184	-104.056335
C68	33.002116	-104.056283
C69	33.002071	-104.056217
C70	33.002142	-104.056241
C71	33.002215	-104.056306
C72	33.002305	-104.056379
C73	33.002352	-104.056372
C74	33.002256	-104.056281
C75	33.002158	-104.056198
C76	33.002151	-104.056074
C77	33.002164	-104.056138
C78	33.002233	-104.05621
C79	33.002305	-104.056268
C80	33.002362	-104.056303
C81	33.002297	-104.056203
C82	33.002208	-104.056111
C83	33.002233	-104.056079
C84	33.002325	-104.056193
C85	33.002322	-104.056147
C86	33.002265	-104.05606
C87	33.001966	-104.056176
C88	33.002032	-104.056199
C89	33.002009	-104.056128

C90	33.001891	-104.056672
C91	33.002092	-104.056102
C92	33.002326	-104.056058
C93	33.002268	-104.055992
SW1	33.001892	-104.056644
SW2	33.001914	-104.056194
SW3	33.002313	-104.056078
SW4	33.002417	-104.056548
SW5	33.002428	-104.056895
SW6	33.002209	-104.056931

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E202104

Job Number: 20046-0001

Received: 2/17/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
2/22/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
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Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 2/22/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E202104
Date Received: 2/17/2022 1:07:00PM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/17/2022 1:07:00PM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

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Sample Summary

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 02/22/22 09:14
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Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP 1 Surf	E202104-01A	Soil	02/15/22	02/17/22	Glass Jar, 4 oz.
SP 1 - 6'	E202104-02A	Soil	02/15/22	02/17/22	Glass Jar, 4 oz.
SP 2 Surf	E202104-03A	Soil	02/15/22	02/17/22	Glass Jar, 4 oz.
SP 2 - 6'	E202104-04A	Soil	02/15/22	02/17/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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SP 1 Surf

E202104-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Benzene	ND	0.0250	1	02/17/22	02/18/22	
Ethylbenzene	ND	0.0250	1	02/17/22	02/18/22	
Toluene	ND	0.0250	1	02/17/22	02/18/22	
o-Xylene	ND	0.0250	1	02/17/22	02/18/22	
p,m-Xylene	ND	0.0500	1	02/17/22	02/18/22	
Total Xylenes	ND	0.0250	1	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>	95.3 %	70-130		02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96.8 %	70-130		02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>	101 %	70-130		02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>	95.3 %	70-130		02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96.8 %	70-130		02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>	101 %	70-130		02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2208087
Diesel Range Organics (C10-C28)	ND	25.0	1	02/17/22	02/18/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/17/22	02/18/22	
<i>Surrogate: n-Nonane</i>	107 %	50-200		02/17/22	02/18/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2208090
Chloride	ND	20.0	1	02/17/22	02/18/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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SP 1 - 6'

E202104-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Benzene	ND	0.0250	1	02/17/22	02/18/22	
Ethylbenzene	ND	0.0250	1	02/17/22	02/18/22	
Toluene	ND	0.0250	1	02/17/22	02/18/22	
o-Xylene	ND	0.0250	1	02/17/22	02/18/22	
p,m-Xylene	ND	0.0500	1	02/17/22	02/18/22	
Total Xylenes	ND	0.0250	1	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>		95.5 %	70-130	02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>		95.5 %	70-130	02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2208087
Diesel Range Organics (C10-C28)	ND	25.0	1	02/17/22	02/18/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/17/22	02/18/22	
<i>Surrogate: n-Nonane</i>		110 %	50-200	02/17/22	02/18/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2208090
Chloride	696	20.0	1	02/17/22	02/18/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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SP 2 Surf
E202104-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Benzene	ND	0.0500	2	02/17/22	02/18/22	
Ethylbenzene	ND	0.0500	2	02/17/22	02/18/22	
Toluene	ND	0.0500	2	02/17/22	02/18/22	
o-Xylene	ND	0.0500	2	02/17/22	02/18/22	
p,m-Xylene	ND	0.100	2	02/17/22	02/18/22	
Total Xylenes	ND	0.0500	2	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>		95.6 %	70-130	02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.3 %	70-130	02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Gasoline Range Organics (C6-C10)	ND	40.0	2	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>		95.6 %	70-130	02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.3 %	70-130	02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2208087
Diesel Range Organics (C10-C28)	ND	25.0	1	02/17/22	02/18/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/17/22	02/18/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	02/17/22	02/18/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2208090
Chloride	50.1	20.0	1	02/17/22	02/18/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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SP 2 - 6'

E202104-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Benzene	ND	0.0250	1	02/17/22	02/18/22	
Ethylbenzene	ND	0.0250	1	02/17/22	02/18/22	
Toluene	ND	0.0250	1	02/17/22	02/18/22	
o-Xylene	ND	0.0250	1	02/17/22	02/18/22	
p,m-Xylene	ND	0.0500	1	02/17/22	02/18/22	
Total Xylenes	ND	0.0250	1	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>		95.6 %	70-130	02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.6 %	70-130	02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2208089
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/17/22	02/18/22	
<i>Surrogate: Bromofluorobenzene</i>		95.6 %	70-130	02/17/22	02/18/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		96.6 %	70-130	02/17/22	02/18/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/17/22	02/18/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2208087
Diesel Range Organics (C10-C28)	ND	25.0	1	02/17/22	02/18/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/17/22	02/18/22	
<i>Surrogate: n-Nonane</i>		103 %	50-200	02/17/22	02/18/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2208090
Chloride	380	20.0	1	02/17/22	02/18/22	



QC Summary Data

Mack Energy	Project Name: Thunderbay	Reported: 2/22/2022 9:14:40AM
7 W. Compress Road	Project Number: 20046-0001	
Artesia NM, 88210	Project Manager: Natalie Gladden	

Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
	mg/kg	mg/kg	mg/kg	mg/kg					

Blank (2208089-BLK1)

Prepared: 02/17/22 Analyzed: 02/18/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.469		0.500		93.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.481		0.500		96.2	70-130			
Surrogate: Toluene-d8	0.505		0.500		101	70-130			

LCS (2208089-BS1)

Prepared: 02/17/22 Analyzed: 02/18/22

Benzene	2.42	0.0250	2.50		96.7	70-130			
Ethylbenzene	2.56	0.0250	2.50		102	70-130			
Toluene	2.53	0.0250	2.50		101	70-130			
o-Xylene	2.49	0.0250	2.50		99.4	70-130			
p,m-Xylene	5.01	0.0500	5.00		100	70-130			
Total Xylenes	7.49	0.0250	7.50		99.9	70-130			
Surrogate: Bromofluorobenzene	0.494		0.500		98.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.482		0.500		96.3	70-130			
Surrogate: Toluene-d8	0.518		0.500		104	70-130			

Matrix Spike (2208089-MS1)

Source: E202104-01

Prepared: 02/17/22 Analyzed: 02/18/22

Benzene	2.61	0.0250	2.50	ND	104	48-131			
Ethylbenzene	2.77	0.0250	2.50	ND	111	45-135			
Toluene	2.74	0.0250	2.50	ND	110	48-130			
o-Xylene	2.72	0.0250	2.50	ND	109	43-135			
p,m-Xylene	5.41	0.0500	5.00	ND	108	43-135			
Total Xylenes	8.12	0.0250	7.50	ND	108	43-135			
Surrogate: Bromofluorobenzene	0.496		0.500		99.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.494		0.500		98.8	70-130			
Surrogate: Toluene-d8	0.512		0.500		102	70-130			

Matrix Spike Dup (2208089-MSD1)

Source: E202104-01

Prepared: 02/17/22 Analyzed: 02/18/22

Benzene	2.65	0.0250	2.50	ND	106	48-131	1.50	23	
Ethylbenzene	2.85	0.0250	2.50	ND	114	45-135	2.85	27	
Toluene	2.80	0.0250	2.50	ND	112	48-130	2.16	24	
o-Xylene	2.77	0.0250	2.50	ND	111	43-135	1.77	27	
p,m-Xylene	5.55	0.0500	5.00	ND	111	43-135	2.72	27	
Total Xylenes	8.32	0.0250	7.50	ND	111	43-135	2.40	27	
Surrogate: Bromofluorobenzene	0.476		0.500		95.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.498		0.500		99.5	70-130			
Surrogate: Toluene-d8	0.514		0.500		103	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2208089-BLK1)

Prepared: 02/17/22 Analyzed: 02/18/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.469		0.500		93.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.481		0.500		96.2	70-130			
Surrogate: Toluene-d8	0.505		0.500		101	70-130			

LCS (2208089-BS2)

Prepared: 02/17/22 Analyzed: 02/18/22

Gasoline Range Organics (C6-C10)	65.6	20.0	50.0		131	70-130			L2
Surrogate: Bromofluorobenzene	0.477		0.500		95.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.472		0.500		94.4	70-130			
Surrogate: Toluene-d8	0.518		0.500		104	70-130			

Matrix Spike (2208089-MS2)

Source: E202104-01

Prepared: 02/17/22 Analyzed: 02/18/22

Gasoline Range Organics (C6-C10)	62.3	20.0	50.0	ND	125	70-130			
Surrogate: Bromofluorobenzene	0.489		0.500		97.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.470		0.500		94.0	70-130			
Surrogate: Toluene-d8	0.506		0.500		101	70-130			

Matrix Spike Dup (2208089-MSD2)

Source: E202104-01

Prepared: 02/17/22 Analyzed: 02/18/22

Gasoline Range Organics (C6-C10)	61.3	20.0	50.0	ND	123	70-130	1.56	20	
Surrogate: Bromofluorobenzene	0.487		0.500		97.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1	70-130			
Surrogate: Toluene-d8	0.523		0.500		105	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2208087-BLK1)

Prepared: 02/17/22 Analyzed: 02/20/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: <i>n</i> -Nonane	51.9		50.0		104	50-200			

LCS (2208087-BS1)

Prepared: 02/17/22 Analyzed: 02/20/22

Diesel Range Organics (C10-C28)	486	25.0	500		97.2	38-132			
Surrogate: <i>n</i> -Nonane	53.8		50.0		108	50-200			

Matrix Spike (2208087-MS1)

Source: E202069-22

Prepared: 02/17/22 Analyzed: 02/20/22

Diesel Range Organics (C10-C28)	509	25.0	500	ND	102	38-132			
Surrogate: <i>n</i> -Nonane	56.8		50.0		114	50-200			

Matrix Spike Dup (2208087-MSD1)

Source: E202069-22

Prepared: 02/17/22 Analyzed: 02/20/22

Diesel Range Organics (C10-C28)	497	25.0	500	ND	99.4	38-132	2.34	20	
Surrogate: <i>n</i> -Nonane	55.7		50.0		111	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/22/2022 9:14:40AM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2208090-BLK1)

Prepared: 02/17/22 Analyzed: 02/18/22

Chloride ND 20.0

LCS (2208090-BS1)

Prepared: 02/17/22 Analyzed: 02/18/22

Chloride 254 20.0 250 101 90-110

Matrix Spike (2208090-MS1)

Source: E202104-01

Prepared: 02/17/22 Analyzed: 02/18/22

Chloride 272 20.0 250 ND 109 80-120

Matrix Spike Dup (2208090-MSD1)

Source: E202104-01

Prepared: 02/17/22 Analyzed: 02/18/22

Chloride 274 20.0 250 ND 110 80-120 1.02 20

QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	02/22/22 09:14

L2 The LCS spike recovery was above acceptance limits. This analyte was not detected in the sample.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Client: mac/c Energy
 Project: Thunderbay
 Project Manager: M. Buckles
 Address: _____
 City, State, Zip _____
 Phone: _____
 Email: _____
 Report due by: _____

Bill To
 Attention: ESS
 Address: 2427 County Rd
 City, State, Zip Hobbes, NM
 Phone: _____
 Email: Nataie

Lab Use Only		TAT			EPA Program		
Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA
<u>E202104</u>	<u>20046-0001</u>		<input checked="" type="checkbox"/>				
Analysis and Method							RCRA

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	State	Remarks
														NM CO UT AZ TX	
	<u>2/15</u>	<u>S</u>	<u>1</u>	<u>SP 1 Surf</u>	<u>1</u>							<input checked="" type="checkbox"/>			
				<u>SP 1 - 6'</u>	<u>2</u>										
				<u>SP 2 Surf</u>	<u>3</u>										
				<u>SP 2 - 6'</u>	<u>4</u>										

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>Tommy Perry</u>	Date <u>2/15</u>	Time <u>3:05 pm</u>	Received by: (Signature) <u>Jim Gal</u>	Date <u>2-16-22</u>	Time <u>1325</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>Jim Gal</u>	Date <u>2-16-22</u>	Time <u>1650</u>	Received by: (Signature) <u>Carsten Chuter</u>	Date <u>2/17/22</u>	Time <u>13:07</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

Envirotech Analytical Laboratory

Printed: 2/17/2022 5:23:31PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy Date Received: 02/17/22 13:07 Work Order ID: E202104
Phone: (575) 390-6397 Date Logged In: 02/17/22 13:50 Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com Due Date: 02/18/22 17:00 (1 day TAT)

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
5. Were all samples received within holding time? Yes

Carrier: UPS

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
Sample ID? Yes
Date/Time Collected? No
Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

Empty box for client instruction.

Comments/Resolution

Sample times not provided on COC.

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E202120

Job Number: 20046-0001

Received: 2/23/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
2/24/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 2/24/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E202120
Date Received: 2/23/2022 11:00:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/23/2022 11:00:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
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Cell: 775-287-1762
whinchman@envirotech-inc.com

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Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay
Project Number: 20046-0001
Project Manager: Natalie Gladden

Reported:
02/24/22 16:40

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP 22 - Surf	E202120-01A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SP 22 - 4'	E202120-02A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SP 23 - Surf	E202120-03A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SP 23 - 4'	E202120-04A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SP 24 - Surf	E202120-05A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SP 24 - 4'	E202120-06A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 1 Surf	E202120-07A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 1 - 2'	E202120-08A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 2 Surf	E202120-09A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 2 - 6'	E202120-10A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 3 Surf	E202120-11A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 3 - 2'	E202120-12A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 4 Surf	E202120-13A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 4 - 2'	E202120-14A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 5 Surf	E202120-15A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 5 - 2'	E202120-16A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 6 Surf	E202120-17A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 6 - 2'	E202120-18A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 7 Surf	E202120-19A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 7 - 2'	E202120-20A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 8	E202120-21A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 8 - 2'	E202120-22A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 9	E202120-23A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.
SW 9 - 2'	E202120-24A	Soil	02/21/22	02/23/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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**SP 22 - Surf
E202120-01**

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.2 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		84.5 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	58.4	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SP 22 - 4'

E202120-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.5 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		80.5 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	125	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SP 23 - Surf
E202120-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.5 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		87.2 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	128	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SP 23 - 4'

E202120-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.0 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		82.6 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	144	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SP 24 - Surf
E202120-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.3 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.0 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		83.7 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	1630	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SP 24 - 4'

E202120-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		90.7 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		66.4 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	146	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 1 Surf
E202120-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		91.6 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>						
		83.6 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 1 - 2'

E202120-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.7 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.6 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		83.5 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 2 Surf
E202120-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.6 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		89.1 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	122	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 2 - 6'

E202120-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		85.7 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	210	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 3 Surf
E202120-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		86.7 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	66.3	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 3 - 2'

E202120-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		91.3 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	60.2	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 4 Surf
E202120-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		82.6 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 4 - 2'

E202120-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.5 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		80.6 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 5 Surf
E202120-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		93.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>						
		84.9 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 5 - 2'

E202120-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.3 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		88.4 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 6 Surf
E202120-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		89.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		86.8 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 6 - 2'

E202120-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.5 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		78.2 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 7 Surf
E202120-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0500	2	02/23/22	02/24/22	
Ethylbenzene	ND	0.0500	2	02/23/22	02/24/22	
Toluene	ND	0.0500	2	02/23/22	02/24/22	
o-Xylene	ND	0.0500	2	02/23/22	02/24/22	
p,m-Xylene	ND	0.100	2	02/23/22	02/24/22	
Total Xylenes	ND	0.0500	2	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		90.2 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	40.0	2	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>						
		88.4 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	110	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 7 - 2'

E202120-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		90.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209018
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209030
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		89.6 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209025
Chloride	ND	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 8

E202120-21

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.8 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		96.9 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209031
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		88.0 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209022
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 8 - 2'

E202120-22

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.1 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.8 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209031
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		83.8 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209022
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 9

E202120-23

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.9 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.5 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209031
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		85.3 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209022
Chloride	158	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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SW 9 - 2'

E202120-24

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.0 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209017
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.4 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209031
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		89.8 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2209022
Chloride	24.4	20.0	1	02/23/22	02/23/22	M2



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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Volatile Organics by EPA 8021B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209017-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.30		8.00		91.2	70-130			

LCS (2209017-BS1)

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	3.96	0.0250	5.00		79.2	70-130			
Ethylbenzene	4.12	0.0250	5.00		82.4	70-130			
Toluene	4.21	0.0250	5.00		84.1	70-130			
o-Xylene	4.22	0.0250	5.00		84.5	70-130			
p,m-Xylene	8.39	0.0500	10.0		83.9	70-130			
Total Xylenes	12.6	0.0250	15.0		84.1	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.63		8.00		95.3	70-130			

Matrix Spike (2209017-MS1)

Source: E202119-01

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	3.83	0.0250	5.00	ND	76.6	54-133			
Ethylbenzene	3.99	0.0250	5.00	ND	79.8	61-133			
Toluene	4.07	0.0250	5.00	ND	81.4	61-130			
o-Xylene	4.10	0.0250	5.00	ND	81.9	63-131			
p,m-Xylene	8.13	0.0500	10.0	ND	81.3	63-131			
Total Xylenes	12.2	0.0250	15.0	ND	81.5	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.67		8.00		95.8	70-130			

Matrix Spike Dup (2209017-MSD1)

Source: E202119-01

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	4.12	0.0250	5.00	ND	82.5	54-133	7.33	20	
Ethylbenzene	4.29	0.0250	5.00	ND	85.8	61-133	7.14	20	
Toluene	4.38	0.0250	5.00	ND	87.5	61-130	7.26	20	
o-Xylene	4.39	0.0250	5.00	ND	87.8	63-131	6.99	20	
p,m-Xylene	8.72	0.0500	10.0	ND	87.2	63-131	6.98	20	
Total Xylenes	13.1	0.0250	15.0	ND	87.4	63-131	6.98	20	
Surrogate: 4-Bromochlorobenzene-PID	7.61		8.00		95.1	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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Volatile Organics by EPA 8021B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209018-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.9	70-130			

LCS (2209018-BS1)

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	4.02	0.0250	5.00		80.5	70-130			
Ethylbenzene	4.19	0.0250	5.00		83.9	70-130			
Toluene	4.28	0.0250	5.00		85.6	70-130			
o-Xylene	4.29	0.0250	5.00		85.8	70-130			
p,m-Xylene	8.53	0.0500	10.0		85.3	70-130			
Total Xylenes	12.8	0.0250	15.0		85.4	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.65		8.00		95.7	70-130			

Matrix Spike (2209018-MS1)

Source: E202120-02

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	4.09	0.0250	5.00	ND	81.9	54-133			
Ethylbenzene	4.25	0.0250	5.00	ND	85.1	61-133			
Toluene	4.35	0.0250	5.00	ND	87.0	61-130			
o-Xylene	4.36	0.0250	5.00	ND	87.2	63-131			
p,m-Xylene	8.65	0.0500	10.0	ND	86.5	63-131			
Total Xylenes	13.0	0.0250	15.0	ND	86.7	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.66		8.00		95.7	70-130			

Matrix Spike Dup (2209018-MSD1)

Source: E202120-02

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	4.01	0.0250	5.00	ND	80.2	54-133	2.08	20	
Ethylbenzene	4.18	0.0250	5.00	ND	83.7	61-133	1.66	20	
Toluene	4.26	0.0250	5.00	ND	85.2	61-130	2.04	20	
o-Xylene	4.29	0.0250	5.00	ND	85.8	63-131	1.51	20	
p,m-Xylene	8.51	0.0500	10.0	ND	85.1	63-131	1.69	20	
Total Xylenes	12.8	0.0250	15.0	ND	85.3	63-131	1.63	20	
Surrogate: 4-Bromochlorobenzene-PID	7.62		8.00		95.2	70-130			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported:
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	2/24/2022 4:40:04PM

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209017-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.18		8.00		102	70-130			

LCS (2209017-BS2)

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	47.7	20.0	50.0		95.4	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.01		8.00		100	70-130			

Matrix Spike (2209017-MS2)

Source: E202119-01

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	44.0	20.0	50.0	ND	88.0	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.83		8.00		97.9	70-130			

Matrix Spike Dup (2209017-MSD2)

Source: E202119-01

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	49.7	20.0	50.0	ND	99.4	70-130	12.1	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.97		8.00		99.6	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209018-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.97		8.00		99.6	70-130			

LCS (2209018-BS2)

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	48.5	20.0	50.0		97.0	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.00		8.00		99.9	70-130			

Matrix Spike (2209018-MS2)

Source: E202120-02

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	45.3	20.0	50.0	ND	90.6	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.03		8.00		100	70-130			

Matrix Spike Dup (2209018-MSD2)

Source: E202120-02

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	48.6	20.0	50.0	ND	97.1	70-130	6.96	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.96		8.00		99.5	70-130			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported: 2/24/2022 4:40:04PM
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209030-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	42.4		50.0		84.8	50-200			

LCS (2209030-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	507	25.0	500		101	38-132			
Surrogate: n-Nonane	45.6		50.0		91.2	50-200			

Matrix Spike (2209030-MS1)

Source: E202120-07

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	489	25.0	500	ND	97.8	38-132			
Surrogate: n-Nonane	42.1		50.0		84.3	50-200			

Matrix Spike Dup (2209030-MSD1)

Source: E202120-07

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	494	25.0	500	ND	98.7	38-132	0.993	20	
Surrogate: n-Nonane	45.1		50.0		90.3	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209031-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	53.3		50.0		107	50-200			

LCS (2209031-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	474	25.0	500		94.8	38-132			
Surrogate: n-Nonane	38.7		50.0		77.4	50-200			

Matrix Spike (2209031-MS1)

Source: E202120-21

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	471	25.0	500	ND	94.3	38-132			
Surrogate: n-Nonane	43.9		50.0		87.8	50-200			

Matrix Spike Dup (2209031-MSD1)

Source: E202120-21

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	486	25.0	500	ND	97.2	38-132	3.03	20	
Surrogate: n-Nonane	46.5		50.0		93.0	50-200			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported:
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	2/24/2022 4:40:04PM

Anions by EPA 300.0/9056A

Analyst: KL

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2209022-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	ND	20.0							
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LCS (2209022-BS1)

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	247	20.0	250		98.8	90-110			
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Matrix Spike (2209022-MS1)

Source: E202059-01

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	258	20.0	250	ND	103	80-120			
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Matrix Spike Dup (2209022-MSD1)

Source: E202059-01

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	258	20.0	250	ND	103	80-120	0.0466	20	
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QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:40:04PM
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Anions by EPA 300.0/9056A

Analyst: KL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209025-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	ND	20.0							
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LCS (2209025-BS1)

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	267	20.0	250		107	90-110			
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Matrix Spike (2209025-MS1)

Source: E202120-01

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	356	20.0	250	58.4	119	80-120			
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Matrix Spike Dup (2209025-MSD1)

Source: E202120-01

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	342	20.0	250	58.4	113	80-120	4.04	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 02/24/22 16:40
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- M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.
- M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to Imaging: 9/30/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: Macl Energy
 Project: Thunder Bay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Roswell, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2427 W County
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only
 Lab WO# E 202120 Job Number 20046-0001
 TAT
 1D 2D 3D Standard
 EPA Program
 CWA SDWA
 RCRA

Analysis and Method
 DRO/DRO by 8015 GRO/DRO by 8015 BTEX by 8021 VOC by 8260 Metals 6010 Chloride 300.0 BGDOC NM BGDOC TX
 State
 NM CO UT AZ TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/21	S	1	SP 22 - Surf	1							<input checked="" type="checkbox"/>		
				SP 22 - 4'	2									
				SP 23 - Surf	3									
				SP 23 - 4'	4									
				SP 24 - Surf	5									
				SP 24 - 4'	6									
				SW 1 Surf	7									
				SW 1 - 2'	8									
				SW 2 Surf	9									
				SW 2 - 4'	10									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2/21</u>	Time <u>5:22 PM</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1500</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1545</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2/23/22</u>	Time <u>11:00</u>	
Relinquished by: (Signature) _____	Date _____	Time _____	Received by: (Signature) _____	Date _____	Time _____	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Released to Imaging: 9/30/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: <u>Mack Energy</u> Project: <u>Thunder Bay</u> Project Manager: <u>M. Buckles</u> Address: City, State, Zip <u>Roswell, NM</u> Phone: Email: Report due by:	Bill To Attention: <u>ESS</u> Address: <u>2427 W County</u> City, State, Zip <u>Hobbs, NM 88240</u> Phone: Email: <u>Natalie</u>	Lab Use Only Lab WO# <u>E 202120</u> Job Number <u>20046-0001</u>	TAT 1D <input type="checkbox"/> 2D <input checked="" type="checkbox"/> 3D <input type="checkbox"/>	EPA Program CWA <input type="checkbox"/> SDWA <input type="checkbox"/> RCRA <input type="checkbox"/>
		Analysis and Method		
		DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021
		VOC by 8260	Metals 6010	Chloride 300.0
		BGDOC NM	BGDOC TX	
		State		
		NM <input checked="" type="checkbox"/>	CO <input type="checkbox"/>	UT <input type="checkbox"/>
		AZ <input type="checkbox"/>	TX <input type="checkbox"/>	

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/21	S	1	SW 3 Surf	11							<input checked="" type="checkbox"/>		
				SW 3-2'	12									
				SW 4 Surf	13									
				SW 4-2'	14									
				SW 5 Surf	15									
				SW 5-2'	16									
				SW 6 Surf	17									
				SW 6-2'	18									
				SW 7 Surf	19									
				SW 7-2'	20									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: *[Signature]*

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u><i>[Signature]</i></u>	Date 2/21	Time 5:22 PM	Received by: (Signature) <u><i>[Signature]</i></u>	Date 2-22-22	Time 1500	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N
Relinquished by: (Signature) <u><i>[Signature]</i></u>	Date 2-22-22	Time 1545	Received by: (Signature) <u><i>[Signature]</i></u>	Date 2/23/22	Time 11:00	T1 _____ T2 _____ T3 _____
Relinquished by: (Signature) <u><i>[Signature]</i></u>	Date	Time	Received by: (Signature)	Date	Time	AVG Temp °C <u>4</u>

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Released to Imaging: 6/15/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: Mack Energy
 Project: Thunder Bay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Roswell, NM
 Phone:
 Email:

Bill To
 Attention: ESS
 Address: 2427 W County
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only		TAT			EPA Program		
Lab WO# <u>E 202120</u>	Job Number <u>20046-009</u>	1D	2D	3D	Standard	CWA	SDWA
Analysis and Method							RCRA
DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX
						<input checked="" type="checkbox"/>	

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	<u>2/21</u>	<u>S</u>	<u>1</u>	<u>SW 8</u>	<u>21</u>							<input checked="" type="checkbox"/>		
				<u>SW 8-2'</u>	<u>22</u>									
				<u>SW 9</u>	<u>23</u>									
				<u>SW 9-2'</u>	<u>24</u>									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
 Sampled by: [Signature]

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2/21</u>	Time <u>5:22 PM</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1500</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1545</u>	Received by: (Signature) <u>Carla Chute</u>	Date <u>2/23/22</u>	Time <u>11:00</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Envirotech Analytical Laboratory

Printed: 2/23/2022 11:22:11AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy Date Received: 02/23/22 11:00 Work Order ID: E202120
Phone: (575) 390-6397 Date Logged In: 02/22/22 15:41 Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com Due Date: 02/24/22 17:00 (1 day TAT)

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
2. Does the number of samples per sampling site location match the COC? Yes
3. Were samples dropped off by client or carrier? Yes
4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
5. Were all samples received within holding time? Yes

Carrier: UPS

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
8. If yes, was cooler received in good condition? Yes
9. Was the sample(s) received intact, i.e., not broken? Yes
10. Were custody/security seals present? No
11. If yes, were custody/security seals intact? NA
12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
15. Are VOC samples collected in VOA Vials? NA
16. Is the head space less than 6-8 mm (pea sized or less)? NA
17. Was a trip blank (TB) included for VOC analyses? NA
18. Are non-VOC samples collected in the correct containers? Yes
19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
Sample ID? Yes
Date/Time Collected? No
Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
22. Are sample(s) correctly preserved? NA
24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

Empty box for client instruction.

Comments/Resolution

No sample times provided on COC.

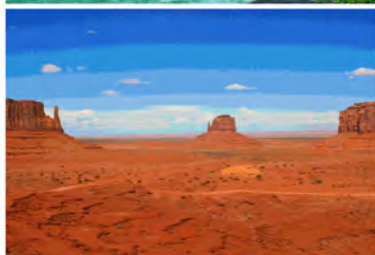
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E202121

Job Number: 20046-0001

Received: 2/23/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
2/24/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)

Date Reported: 2/24/22



Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E202121
Date Received: 2/23/2022 11:05:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/23/2022 11:05:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

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Laboratory Director
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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay
Project Number: 20046-0001
Project Manager: Natalie Gladden

Reported:
02/24/22 16:43

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP 3 Surf	E202121-01A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 4 Surf	E202121-02A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 5 Surf	E202121-03A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 6 Surf	E202121-04A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 7 Surf	E202121-05A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 8 Surf	E202121-06A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 9 Surf	E202121-07A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 10 Surf	E202121-08A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 11 Surf	E202121-09A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 12 Surf	E202121-10A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 13 Surf	E202121-11A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 14 Surf	E202121-12A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 15 Surf	E202121-13A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 3 - 2'	E202121-14A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 5 - 6'	E202121-15A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 4 - 6'	E202121-16A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 7 - 6'	E202121-17A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.
SP 9 - 2'	E202121-18A	Soil	02/17/22	02/23/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 3 Surf
E202121-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B		mg/kg	mg/kg	Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.6 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO		mg/kg	mg/kg	Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)		ND	20.0	1	02/23/22	02/23/22
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO		mg/kg	mg/kg	Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)		ND	25.0	1	02/23/22	02/24/22
Oil Range Organics (C28-C36)		ND	50.0	1	02/23/22	02/24/22
<i>Surrogate: n-Nonane</i>		83.2 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A		mg/kg	mg/kg	Analyst: RAS		Batch: 2209024
Chloride	65.4	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 4 Surf
E202121-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B		mg/kg	mg/kg	Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.4 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO		mg/kg	mg/kg	Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO		mg/kg	mg/kg	Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		83.7 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A		mg/kg	mg/kg	Analyst: RAS		Batch: 2209024
Chloride	ND	20.0	1	02/23/22	02/23/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 5 Surf
E202121-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.7 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>						
		82.3 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	1630	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 6 Surf
E202121-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.6 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		85.5 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	428	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 7 Surf
E202121-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0500	2	02/23/22	02/23/22	
Ethylbenzene	ND	0.0500	2	02/23/22	02/23/22	
Toluene	ND	0.0500	2	02/23/22	02/23/22	
o-Xylene	ND	0.0500	2	02/23/22	02/23/22	
p,m-Xylene	ND	0.100	2	02/23/22	02/23/22	
Total Xylenes	ND	0.0500	2	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.2 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	40.0	2	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		83.9 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	68.9	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 8 Surf
E202121-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	95.1 %	70-130		02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	102 %	70-130		02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>						
	85.5 %	50-200		02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 9 Surf
E202121-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.8 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		76.3 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	425	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 10 Surf
E202121-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.6 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>						
		86.0 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	ND	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 11 Surf

E202121-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		84.6 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	289	20.0	1	02/23/22	02/23/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 12 Surf
E202121-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.6 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		102 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>						
		85.6 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	ND	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 13 Surf

E202121-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		82.8 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	514	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 14 Surf
E202121-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		93.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		102 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>						
		86.5 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	ND	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 15 Surf
E202121-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		93.7 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	28.1	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 3 - 2'

E202121-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.0 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		86.2 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	732	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 5 - 6'

E202121-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0500	2	02/23/22	02/24/22	
Ethylbenzene	ND	0.0500	2	02/23/22	02/24/22	
Toluene	ND	0.0500	2	02/23/22	02/24/22	
o-Xylene	ND	0.0500	2	02/23/22	02/24/22	
p,m-Xylene	ND	0.100	2	02/23/22	02/24/22	
Total Xylenes	ND	0.0500	2	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.8 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	40.0	2	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		86.7 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	193	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 4 - 6'

E202121-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		87.3 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	377	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 7 - 6'

E202121-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0500	2	02/23/22	02/24/22	
Ethylbenzene	ND	0.0500	2	02/23/22	02/24/22	
Toluene	ND	0.0500	2	02/23/22	02/24/22	
o-Xylene	ND	0.0500	2	02/23/22	02/24/22	
p,m-Xylene	ND	0.100	2	02/23/22	02/24/22	
Total Xylenes	ND	0.0500	2	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	40.0	2	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		94.6 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	234	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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SP 9 - 2'

E202121-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209019
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209029
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		98.8 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209024
Chloride	352	20.0	1	02/23/22	02/24/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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Volatile Organics by EPA 8021B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209019-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.61		8.00		95.1	70-130			

LCS (2209019-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	4.43	0.0250	5.00		88.6	70-130			
Ethylbenzene	4.67	0.0250	5.00		93.4	70-130			
Toluene	4.88	0.0250	5.00		97.6	70-130			
o-Xylene	4.64	0.0250	5.00		92.7	70-130			
p,m-Xylene	9.48	0.0500	10.0		94.8	70-130			
Total Xylenes	14.1	0.0250	15.0		94.1	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.27		8.00		90.9	70-130			

Matrix Spike (2209019-MS1)

Source: E202121-03

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	4.54	0.0250	5.00	ND	90.8	54-133			
Ethylbenzene	4.85	0.0250	5.00	ND	97.0	61-133			
Toluene	5.02	0.0250	5.00	ND	100	61-130			
o-Xylene	4.81	0.0250	5.00	ND	96.2	63-131			
p,m-Xylene	9.86	0.0500	10.0	ND	98.6	63-131			
Total Xylenes	14.7	0.0250	15.0	ND	97.8	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.63		8.00		95.3	70-130			

Matrix Spike Dup (2209019-MSD1)

Source: E202121-03

Prepared: 02/23/22 Analyzed: 02/23/22

Benzene	4.68	0.0250	5.00	ND	93.5	54-133	2.88	20	
Ethylbenzene	4.98	0.0250	5.00	ND	99.7	61-133	2.72	20	
Toluene	5.16	0.0250	5.00	ND	103	61-130	2.72	20	
o-Xylene	4.94	0.0250	5.00	ND	98.8	63-131	2.63	20	
p,m-Xylene	10.1	0.0500	10.0	ND	101	63-131	2.51	20	
Total Xylenes	15.0	0.0250	15.0	ND	100	63-131	2.55	20	
Surrogate: 4-Bromochlorobenzene-PID	7.69		8.00		96.1	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209019-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.08		8.00		101	70-130			

LCS (2209019-BS2)

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	44.6	20.0	50.0		89.2	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.24		8.00		103	70-130			

Matrix Spike (2209019-MS2)

Source: E202121-03

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	46.6	20.0	50.0	ND	93.2	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.30		8.00		104	70-130			

Matrix Spike Dup (2209019-MSD2)

Source: E202121-03

Prepared: 02/23/22 Analyzed: 02/23/22

Gasoline Range Organics (C6-C10)	46.4	20.0	50.0	ND	92.9	70-130	0.336	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.18		8.00		102	70-130			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported: 2/24/2022 4:43:27PM
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209029-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: <i>n</i> -Nonane	44.2		50.0		88.3	50-200			

LCS (2209029-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	507	25.0	500		101	38-132			
Surrogate: <i>n</i> -Nonane	40.0		50.0		79.9	50-200			

Matrix Spike (2209029-MS1)

Source: E202121-10

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	499	25.0	500	ND	99.7	38-132			
Surrogate: <i>n</i> -Nonane	42.9		50.0		85.7	50-200			

Matrix Spike Dup (2209029-MSD1)

Source: E202121-10

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	490	25.0	500	ND	97.9	38-132	1.79	20	
Surrogate: <i>n</i> -Nonane	40.8		50.0		81.6	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:43:27PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209024-BLK1)

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	ND	20.0							
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LCS (2209024-BS1)

Prepared: 02/23/22 Analyzed: 02/23/22

Chloride	252	20.0	250		101	90-110			
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Matrix Spike (2209024-MS1)

Source: E202121-01

Prepared: 02/23/22 Analyzed: 02/24/22

Chloride	386	20.0	250	65.4	128	80-120			M2
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Matrix Spike Dup (2209024-MSD1)

Source: E202121-01

Prepared: 02/23/22 Analyzed: 02/24/22

Chloride	400	20.0	250	65.4	134	80-120	3.50	20	M2
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	02/24/22 16:43

M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Client: MAC Energy
 Project: Thunderbay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Lake Arthur, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2427 Comnty Rd
 City, State, Zip Hobbs, NM
 Phone:
 Email: Natalie

Lab Use Only		TAT			EPA Program		
Lab WO# <u>E 202121</u>	Job Number <u>20046-0001</u>	1D	2D	3D	Standard	CWA	SDWA
Analysis and Method					RCRA		

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/17	S	1	SP 3 surf	1							X		
				SP 4 surf	2									
				SP 5 surf	3									
				SP 6 surf	4									
				SP 7 surf	5									
				SP 8 surf	6									
				SP 9 surf	7									
				SP 10 surf	8									
				SP 11 surf	9									
				SP 12 surf	10									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date 2/17	Time 5:10 PM	Received by: (Signature) <u>[Signature]</u>	Date 2-22-22	Time 1500	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date 2-22-22	Time 1545	Received by: (Signature) <u>[Signature]</u>	Date 2/23/22	Time 11:05	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____
 Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, **v** - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Client: MacK Energy
 Project: Thunderbay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Lake Arthur, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2427 county
 City, State, Zip Hobbs, NM
 Phone:
 Email: Natalie

Lab Use Only		TAT			EPA Program		
Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA
<u>E 202121</u>	<u>20046-001</u>		<input checked="" type="checkbox"/>				
Analysis and Method							RCRA

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	<u>2/17</u>	<u>S</u>	<u>1</u>	<u>SP 13 surf</u>	<u>11</u>							<input checked="" type="checkbox"/>		
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 14 surf</u>	<u>12</u>									
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 15 surf</u>	<u>13</u>									
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 3-2'</u>	<u>14</u>									
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 5-6'</u>	<u>15</u>									
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 4-6'</u>	<u>16</u>									
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 7-6'</u>	<u>17</u>									
	<u>(wavy)</u>	<u>(wavy)</u>	<u>(wavy)</u>	<u>SP 9-2'</u>	<u>18</u>									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2/17</u>	Time <u>5:10 PM</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1500</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1545</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2/23/22</u>	Time <u>11:05</u>	
Relinquished by: (Signature) _____	Date _____	Time _____	Received by: (Signature) _____	Date _____	Time _____	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.

Envirotech Analytical Laboratory

Printed: 2/23/2022 12:01:15PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 02/23/22 11:05	Work Order ID: E202121
Phone: (575) 390-6397	Date Logged In: 02/23/22 08:13	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 02/24/22 17:00 (1 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
- 2. Does the number of samples per sampling site location match the COC? Yes
- 3. Were samples dropped off by client or carrier? Yes
- 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
- 5. Were all samples received within holding time? Yes

Carrier: UPS

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Comments/Resolution

No sample times provided on COC.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
- 8. If yes, was cooler received in good condition? Yes
- 9. Was the sample(s) received intact, i.e., not broken? Yes
- 10. Were custody/security seals present? No
- 11. If yes, were custody/security seals intact? NA
- 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

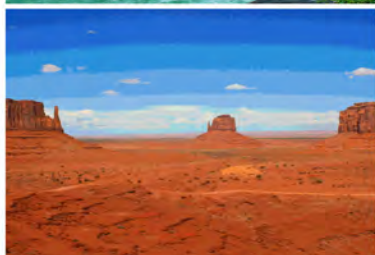
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E202122

Job Number: 20046-0001

Received: 2/23/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
2/24/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 2/24/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E202122
Date Received: 2/23/2022 11:05:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/23/2022 11:05:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
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Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
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Sample Custody Officer
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labadmin@envirotech-inc.com

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Rayny Hagan
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Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay
Project Number: 20046-0001
Project Manager: Natalie Gladden

Reported:
02/24/22 16:46

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP 18 - Surf	E202122-01A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 17 - Surf	E202122-02A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 13 - 8'	E202122-03A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 11 - 6'	E202122-04A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 15 - 6'	E202122-05A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 17 - 6'	E202122-06A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 20 - 6'	E202122-07A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 19 - 4'	E202122-08A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 12 - 4'	E202122-09A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 16 - Surf	E202122-10A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 14 - 4'	E202122-11A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 16 - 8'	E202122-12A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 10 - 10'	E202122-13A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 6 - 10'	E202122-14A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 21 - 6'	E202122-15A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 18 - 4'	E202122-16A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 19 - Surf	E202122-17A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 20 - Surf	E202122-18A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.
SP 21 - Surf	E202122-19A	Soil	02/18/22	02/23/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 18 - Surf

E202122-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>	89.4 %	70-130		02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98.1 %	70-130		02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>	100 %	70-130		02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>	89.4 %	70-130		02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	98.1 %	70-130		02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>	100 %	70-130		02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>	97.7 %	50-200		02/23/22	02/23/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	1920	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 17 - Surf
E202122-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B		mg/kg	mg/kg	Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.1 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO		mg/kg	mg/kg	Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.1 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO		mg/kg	mg/kg	Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		91.6 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A		mg/kg	mg/kg	Analyst: RAS		Batch: 2209023
Chloride	163	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 13 - 8'

E202122-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		93.3 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		93.3 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		97.1 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	346	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 11 - 6'
E202122-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		89.7 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		89.7 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		98.7 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	227	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 15 - 6'
E202122-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/23/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/23/22	
<i>Surrogate: n-Nonane</i>		92.8 %	50-200	02/23/22	02/23/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	489	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 17 - 6'

E202122-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		89.2 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.4 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		89.2 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.4 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		98.8 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	288	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 20 - 6'

E202122-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		90.3 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		90.3 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	25.4	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		105 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	279	100	5	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 19 - 4'

E202122-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/23/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/23/22	
Toluene	ND	0.0250	1	02/23/22	02/23/22	
o-Xylene	ND	0.0250	1	02/23/22	02/23/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/23/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		91.2 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		91.2 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		97.3 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	91.9	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 12 - 4'
E202122-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0500	2	02/23/22	02/23/22	
Ethylbenzene	ND	0.0500	2	02/23/22	02/23/22	
Toluene	ND	0.0500	2	02/23/22	02/23/22	
o-Xylene	ND	0.0500	2	02/23/22	02/23/22	
p,m-Xylene	ND	0.100	2	02/23/22	02/23/22	
Total Xylenes	ND	0.0500	2	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		94.2 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		99.7 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	40.0	2	02/23/22	02/23/22	
<i>Surrogate: Bromofluorobenzene</i>		94.2 %	70-130	02/23/22	02/23/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	70-130	02/23/22	02/23/22	
<i>Surrogate: Toluene-d8</i>		99.7 %	70-130	02/23/22	02/23/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		97.7 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	138	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 16 - Surf

E202122-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		96.5 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	ND	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 14 - 4'
E202122-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.9 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		97.5 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	94.8	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 16 - 8'

E202122-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.1 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.1 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		93.8 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	265	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 10 - 10'

E202122-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.3 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.3 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	434	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 6 - 10'

E202122-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		91.1 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		91.1 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		100 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	204	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 21 - 6'
E202122-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		89.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.2 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		89.8 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.2 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		98.4 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	27.2	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 18 - 4'

E202122-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.5 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		92.5 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		98.6 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	101	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 19 - Surf
E202122-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		90.1 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		90.1 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	ND	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 20 - Surf

E202122-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		90.2 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		90.2 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		93.2 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	ND	20.0	1	02/23/22	02/24/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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SP 21 - Surf
E202122-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Benzene	ND	0.0250	1	02/23/22	02/24/22	
Ethylbenzene	ND	0.0250	1	02/23/22	02/24/22	
Toluene	ND	0.0250	1	02/23/22	02/24/22	
o-Xylene	ND	0.0250	1	02/23/22	02/24/22	
p,m-Xylene	ND	0.0500	1	02/23/22	02/24/22	
Total Xylenes	ND	0.0250	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		91.0 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.5 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2209020
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/23/22	02/24/22	
<i>Surrogate: Bromofluorobenzene</i>		91.0 %	70-130	02/23/22	02/24/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	02/23/22	02/24/22	
<i>Surrogate: Toluene-d8</i>		99.5 %	70-130	02/23/22	02/24/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209028
Diesel Range Organics (C10-C28)	ND	25.0	1	02/23/22	02/24/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/23/22	02/24/22	
<i>Surrogate: n-Nonane</i>		89.7 %	50-200	02/23/22	02/24/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209023
Chloride	232	20.0	1	02/23/22	02/24/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209020-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.450		0.500		89.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.496		0.500		99.1	70-130			
Surrogate: Toluene-d8	0.500		0.500		99.9	70-130			

LCS (2209020-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	2.43	0.0250	2.50		97.0	70-130			
Ethylbenzene	2.54	0.0250	2.50		102	70-130			
Toluene	2.58	0.0250	2.50		103	70-130			
o-Xylene	2.45	0.0250	2.50		98.1	70-130			
p,m-Xylene	4.92	0.0500	5.00		98.4	70-130			
Total Xylenes	7.37	0.0250	7.50		98.3	70-130			
Surrogate: Bromofluorobenzene	0.482		0.500		96.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.483		0.500		96.6	70-130			
Surrogate: Toluene-d8	0.533		0.500		107	70-130			

Matrix Spike (2209020-MS1)

Source: E202122-04

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	2.61	0.0250	2.50	ND	105	48-131			
Ethylbenzene	2.71	0.0250	2.50	ND	108	45-135			
Toluene	2.69	0.0250	2.50	ND	108	48-130			
o-Xylene	2.67	0.0250	2.50	ND	107	43-135			
p,m-Xylene	5.32	0.0500	5.00	ND	106	43-135			
Total Xylenes	7.98	0.0250	7.50	ND	106	43-135			
Surrogate: Bromofluorobenzene	0.488		0.500		97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.488		0.500		97.6	70-130			
Surrogate: Toluene-d8	0.511		0.500		102	70-130			

Matrix Spike Dup (2209020-MSD1)

Source: E202122-04

Prepared: 02/23/22 Analyzed: 02/24/22

Benzene	2.55	0.0250	2.50	ND	102	48-131	2.32	23	
Ethylbenzene	2.91	0.0250	2.50	ND	116	45-135	7.17	27	
Toluene	2.58	0.0250	2.50	ND	103	48-130	4.12	24	
o-Xylene	3.08	0.0250	2.50	ND	123	43-135	14.4	27	
p,m-Xylene	6.14	0.0500	5.00	ND	123	43-135	14.3	27	
Total Xylenes	9.22	0.0250	7.50	ND	123	43-135	14.4	27	
Surrogate: Bromofluorobenzene	0.535		0.500		107	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.467		0.500		93.3	70-130			
Surrogate: Toluene-d8	0.496		0.500		99.1	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209020-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.450		0.500		89.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.496		0.500		99.1	70-130			
Surrogate: Toluene-d8	0.500		0.500		99.9	70-130			

LCS (2209020-BS2)

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	52.8	20.0	50.0		106	70-130			
Surrogate: Bromofluorobenzene	0.470		0.500		94.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.492		0.500		98.4	70-130			
Surrogate: Toluene-d8	0.512		0.500		102	70-130			

Matrix Spike (2209020-MS2)

Source: E202122-04

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	53.5	20.0	50.0	ND	107	70-130			
Surrogate: Bromofluorobenzene	0.468		0.500		93.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.482		0.500		96.3	70-130			
Surrogate: Toluene-d8	0.516		0.500		103	70-130			

Matrix Spike Dup (2209020-MSD2)

Source: E202122-04

Prepared: 02/23/22 Analyzed: 02/24/22

Gasoline Range Organics (C6-C10)	59.7	20.0	50.0	ND	119	70-130	11.1	20	
Surrogate: Bromofluorobenzene	0.482		0.500		96.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.473		0.500		94.6	70-130			
Surrogate: Toluene-d8	0.555		0.500		111	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2209028-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	47.7		50.0		95.5	50-200			

LCS (2209028-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	473	25.0	500		94.7	38-132			
Surrogate: n-Nonane	48.0		50.0		95.9	50-200			

Matrix Spike (2209028-MS1)

Source: E202122-06

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	475	25.0	500	ND	95.1	38-132			
Surrogate: n-Nonane	48.0		50.0		95.9	50-200			

Matrix Spike Dup (2209028-MSD1)

Source: E202122-06

Prepared: 02/23/22 Analyzed: 02/24/22

Diesel Range Organics (C10-C28)	470	25.0	500	ND	94.1	38-132	1.09	20	
Surrogate: n-Nonane	44.8		50.0		89.6	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/24/2022 4:46:41PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
---------	-----------------	-----------------------------	-------------------------	---------------------------	----------	--------------------	----------	-------------------	-------

Blank (2209023-BLK1)

Prepared: 02/23/22 Analyzed: 02/24/22

Chloride	ND	20.0							
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LCS (2209023-BS1)

Prepared: 02/23/22 Analyzed: 02/24/22

Chloride	251	20.0	250		101	90-110			
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Matrix Spike (2209023-MS1)

Source: E202122-01

Prepared: 02/23/22 Analyzed: 02/24/22

Chloride	1910	20.0	250	1920	NR	80-120			M2
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Matrix Spike Dup (2209023-MSD1)

Source: E202122-01

Prepared: 02/23/22 Analyzed: 02/24/22

Chloride	1950	20.0	250	1920	14.2	80-120	2.11	20	M2
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 02/24/22 16:46
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M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to Imaging: 9/30/2022 10:09:16 AM

Client: Mack Energy
 Project: Thunder Bay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Lake Arthur, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: FSS
 Address: 2427 County Rd
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only		TAT				EPA Program	
Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA
<u>E 2021122</u>	<u>20040-0001</u>		<input checked="" type="checkbox"/>				
Analysis and Method <u>IC 212/122</u>							
RCRA State NM <input checked="" type="checkbox"/> CO <input type="checkbox"/> UT <input type="checkbox"/> AZ <input type="checkbox"/> TX <input type="checkbox"/>							

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 18 - Surf</u>	<u>1</u>							<input checked="" type="checkbox"/>		
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 17 - Surf</u>	<u>2</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 13 - 8'</u>	<u>3</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 11 - 6'</u>	<u>4</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 15 - 6'</u>	<u>5</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 17 - 6'</u>	<u>6</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 20 - 6'</u>	<u>7</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 19 - 4'</u>	<u>8</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 12 - 4'</u>	<u>9</u>									
	<u>2/18</u>	<u>S</u>	<u>1</u>	<u>SP 16 - Surf</u>	<u>10</u>									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: [Signature]

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2/18</u>	Time <u>4:16 PM</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1500</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-22-22</u>	Time <u>1545</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2/23/22</u>	Time <u>11:05</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by OCD: 6/15/2022 4:07:07 PM

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Released to Imaging: 9/30/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: <u>Mack Energy</u> Project: <u>Thunder Bay</u> Project Manager: <u>M. Buckles</u> Address: City, State, Zip <u>Lake Arthur, NM</u> Phone: Email: Report due by:	Bill To Attention: <u>ESS</u> Address: <u>2427 County Rd</u> City, State, Zip <u>Hobbs, NM 88240</u> Phone: Email: <u>Natalie</u>	Lab Use Only Lab WO# <u>E 202122</u> Job Number <u>20046-0001</u> Analysis and Method	TAT 1D <input type="checkbox"/> 2D <input checked="" type="checkbox"/> 3D <input type="checkbox"/>	EPA Program CWA <input type="checkbox"/> SDWA <input type="checkbox"/> RCRA <input type="checkbox"/> State NM <input checked="" type="checkbox"/> CO <input type="checkbox"/> UT <input type="checkbox"/> AZ <input type="checkbox"/> TX <input type="checkbox"/>
--	---	--	--	--

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BDOC NM	BDOC TX	Remarks
	2/18	S	1	SP 14-4'	11							<input checked="" type="checkbox"/>		
				SP 16-8'	12									
				SP 10-10'	13									
				SP 12-surf										
				SP 6-10'	14									
				SP 21-6'	15									
				SP 18-4'	16									
				SP 19-surf	17									
				SP 20-surf	18									
				SP 21-surf	19									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u> Date <u>2/18</u> Time <u>4:16 PM</u>	Received by: (Signature) <u>[Signature]</u> Date <u>2-22-22</u> Time <u>1530</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u> Date <u>2-22-22</u> Time <u>1545</u>	Received by: (Signature) <u>[Signature]</u> Date <u>2/23/22</u> Time <u>11:05</u>	
Relinquished by: (Signature) _____ Date _____ Time _____	Received by: (Signature) _____ Date _____ Time _____	

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____ Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, **v** - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Envirotech Analytical Laboratory

Printed: 2/23/2022 11:38:19AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 02/23/22 11:05	Work Order ID: E202122
Phone: (575) 390-6397	Date Logged In: 02/23/22 09:12	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 02/24/22 17:00 (1 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
 - 2. Does the number of samples per sampling site location match the COC? Yes
 - 3. Were samples dropped off by client or carrier? Yes
 - 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
 - 5. Were all samples received within holding time? Yes
- Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Carrier: UPS

Comments/Resolution

No sample times provided on COC.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
 - 8. If yes, was cooler received in good condition? Yes
 - 9. Was the sample(s) received intact, i.e., not broken? Yes
 - 10. Were custody/security seals present? No
 - 11. If yes, were custody/security seals intact? NA
 - 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes
- Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling
13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

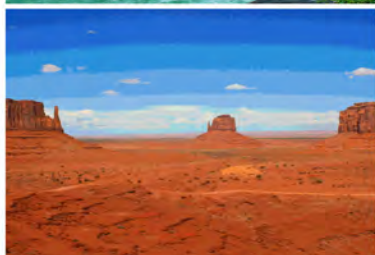
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E202128

Job Number: 20046-0001

Received: 2/25/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
2/25/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 2/25/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E202128
Date Received: 2/25/2022 10:10:00

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/25/2022 10:10:00, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
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Office: 505-632-1881
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ljjarboe@envirotech-inc.com

West Texas Midland/Odessa Area
Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay
Project Number: 20046-0001
Project Manager: Natalie Gladden

Reported:
02/25/22 18:12

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SW 10	E202128-01A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 10 - 2'	E202128-02A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 11	E202128-03A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 11 - 2'	E202128-04A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 12	E202128-05A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 12 - 2'	E202128-06A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 13	E202128-07A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 13 - 6'	E202128-08A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 14	E202128-09A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 14 - 2'	E202128-10A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 15	E202128-11A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 15 - 2'	E202128-12A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 16	E202128-13A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 16 - 8'	E202128-14A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 17	E202128-15A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SW 17 - 2'	E202128-16A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.
SP 1 - 10'	E202128-17A	Soil	02/22/22	02/25/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 10

E202128-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		96.5 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.8 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
		92.8 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 10 - 2'

E202128-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.8 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		99.9 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	31.4	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 11

E202128-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.8 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.0 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 11 - 2'

E202128-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.1 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.5 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		99.6 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 12

E202128-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.2 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		100 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
		102 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 12 - 2'

E202128-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.0 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.9 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		80.3 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 13

E202128-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.0 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.3 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		85.1 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	1350	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 13 - 6'
E202128-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		93.0 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		101 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
		89.0 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	1300	20.0	1	02/25/22	02/25/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 14

E202128-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	93.2 %	70-130		02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	99.5 %	70-130		02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
	87.5 %	50-200		02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	49.1	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 14 - 2'

E202128-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	93.2 %	70-130		02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	100 %	70-130		02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
	84.7 %	50-200		02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	20.9	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 15

E202128-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.4 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		85.8 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 15 - 2'

E202128-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.0 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.8 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
		86.5 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 16
E202128-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.8 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		87.4 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	515	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 16 - 8'

E202128-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.3 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.9 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>						
		89.3 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	308	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 17

E202128-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.1 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		88.8 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SW 17 - 2'

E202128-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.1 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.7 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		94.3 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	ND	20.0	1	02/25/22	02/25/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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SP 1 - 10'

E202128-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Benzene	ND	0.0250	1	02/25/22	02/25/22	
Ethylbenzene	ND	0.0250	1	02/25/22	02/25/22	
Toluene	ND	0.0250	1	02/25/22	02/25/22	
o-Xylene	ND	0.0250	1	02/25/22	02/25/22	
p,m-Xylene	ND	0.0500	1	02/25/22	02/25/22	
Total Xylenes	ND	0.0250	1	02/25/22	02/25/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.2 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2209047
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/25/22	02/25/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		102 %	70-130	02/25/22	02/25/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2209043
Diesel Range Organics (C10-C28)	ND	25.0	1	02/25/22	02/25/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/25/22	02/25/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	02/25/22	02/25/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2209046
Chloride	270	20.0	1	02/25/22	02/25/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209047-BLK1)

Prepared: 02/25/22 Analyzed: 02/25/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.44		8.00		93.0	70-130			

LCS (2209047-BS1)

Prepared: 02/25/22 Analyzed: 02/25/22

Benzene	4.81	0.0250	5.00		96.1	70-130			
Ethylbenzene	5.13	0.0250	5.00		103	70-130			
Toluene	5.31	0.0250	5.00		106	70-130			
o-Xylene	5.07	0.0250	5.00		101	70-130			
p,m-Xylene	10.4	0.0500	10.0		104	70-130			
Total Xylenes	15.5	0.0250	15.0		103	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.52		8.00		94.0	70-130			

LCS Dup (2209047-BSD1)

Prepared: 02/25/22 Analyzed: 02/25/22

Benzene	4.94	0.0250	5.00		98.9	70-130	2.77	20	
Ethylbenzene	5.28	0.0250	5.00		106	70-130	2.79	20	
Toluene	5.45	0.0250	5.00		109	70-130	2.50	20	
o-Xylene	5.23	0.0250	5.00		105	70-130	3.04	20	
p,m-Xylene	10.7	0.0500	10.0		107	70-130	2.65	20	
Total Xylenes	15.9	0.0250	15.0		106	70-130	2.78	20	
Surrogate: 4-Bromochlorobenzene-PID	7.58		8.00		94.7	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209047-BLK1)

Prepared: 02/25/22 Analyzed: 02/25/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.99		8.00		99.9	70-130			

LCS (2209047-BS2)

Prepared: 02/25/22 Analyzed: 02/25/22

Gasoline Range Organics (C6-C10)	59.7	20.0	50.0		119	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.17		8.00		102	70-130			

LCS Dup (2209047-BSD2)

Prepared: 02/25/22 Analyzed: 02/25/22

Gasoline Range Organics (C6-C10)	49.9	20.0	50.0		99.9	70-130	17.8	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.09		8.00		101	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 2/25/2022 18:12:34
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2209043-BLK1)

Prepared: 02/24/22 Analyzed: 02/25/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	54.6		50.0		109	50-200			

LCS (2209043-BS1)

Prepared: 02/24/22 Analyzed: 02/25/22

Diesel Range Organics (C10-C28)	481	25.0	500		96.3	38-132			
Surrogate: n-Nonane	55.0		50.0		110	50-200			

LCS Dup (2209043-BSD1)

Prepared: 02/24/22 Analyzed: 02/25/22

Diesel Range Organics (C10-C28)	490	25.0	500		98.0	38-132	1.81	20	
Surrogate: n-Nonane	55.2		50.0		110	50-200			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported:
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	2/25/2022 18:12:34

Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2209046-BLK1)

Prepared: 02/25/22 Analyzed: 02/25/22

Chloride	ND	20.0							
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LCS (2209046-BS1)

Prepared: 02/25/22 Analyzed: 02/25/22

Chloride	250	20.0	250		99.8	90-110			
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LCS Dup (2209046-BSD1)

Prepared: 02/25/22 Analyzed: 02/25/22

Chloride	247	20.0	250		98.9	90-110	0.959	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	02/25/22 18:12

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to Imaging: 9/30/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: Mack Energy
 Project: Thunder Bay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Roswell, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2427 County Rd
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only		TAT			EPA Program							
Lab WO# <u>E 202128</u>	Job Number <u>20046-0001</u>	1D	2D	3D	Standard	CWA	SDWA					
Analysis and Method							RCRA					
State												
<table border="1"> <tr> <td>NM</td> <td>CO</td> <td>UT</td> <td>AZ</td> <td>TX</td> </tr> </table>							NM	CO	UT	AZ	TX	
NM	CO	UT	AZ	TX								

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/22	S	1	SW 10	1							X		
				SW 10-2'	2									
				SW 11	3									
				SW 11-2'	4									
				SW 12	5									
				SW 12-2'	6									
				SW 13	7									
				SW 13-2'	8									
				SW 14	9									
				SW 14-2'	10									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2/22</u>	Time <u>4:19</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-23-22</u>	Time <u>1440</u>	Lab Use Only Received on ice: <input checked="" type="radio"/> Y / <input type="radio"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-23-22</u>	Time <u>1525</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2/25/22</u>	Time <u>10:10</u>	
Relinquished by: (Signature) <u>[Signature]</u>	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Page 241 of 508

Client: <u>Mack Energy</u> Project: <u>Thunder Bay</u> Project Manager: <u>M. Buckles</u> Address: City, State, Zip <u>Roswell, NM</u> Phone: Email: Report due by:	Bill To	Lab Use Only	TAT				EPA Program					
	Attention: <u>ESS</u>	Lab WO# <u>E 202128</u>	Job Number <u>20046-0001</u>	1D	2D	3D	Standard	CWA	SDWA			
	Address: <u>2427 County Rd</u>	Analysis and Method							RCRA			
	City, State, Zip <u>Hobbs, NM 88240</u>	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX			
Phone:								State				
Email: <u>Natalie</u>								NM	CO	UT	AZ	TX
Remarks												

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/22	S	1	SW 14								<input checked="" type="checkbox"/>		
				SW 14-2'										
				SW 15	11									
				SW 15-2'	12									
				SW 16	13									
				SW 16-8'	14									
				SW 17	15									
				SW 17-2'	16									
				Sp 1-10'	17									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.						Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.					
Relinquished by: (Signature) <u>[Signature]</u> Date <u>2/22</u> Time <u>4:19</u>						Received by: (Signature) <u>[Signature]</u> Date <u>2-23-22</u> Time <u>1440</u>					
Relinquished by: (Signature) <u>[Signature]</u> Date <u>2-23-22</u> Time <u>1525</u>						Received by: (Signature) <u>[Signature]</u> Date <u>2/25/22</u> Time <u>10:10</u>					
Relinquished by: (Signature) <u>[Signature]</u> Date _____ Time _____						Received by: (Signature) _____ Date _____ Time _____					
						Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>					

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Envirotech Analytical Laboratory

Printed: 2/25/2022 10:28:42AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 02/25/22 10:10	Work Order ID: E202128
Phone: (575) 390-6397	Date Logged In: 02/24/22 09:42	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 02/25/22 17:00 (0 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
- 2. Does the number of samples per sampling site location match the COC? No
- 3. Were samples dropped off by client or carrier? Yes
- 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
- 5. Were all samples received within holding time? Yes

Carrier: FedEx

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
- 8. If yes, was cooler received in good condition? Yes
- 9. Was the sample(s) received intact, i.e., not broken? Yes
- 10. Were custody/security seals present? No
- 11. If yes, were custody/security seals intact? NA
- 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? No
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Comments/Resolution

No sample times provided on COC. Duplicate Sample names for sample numbers 11 and 12.

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Client: Mack Energy
 Project: Thunder Bay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Roswell, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2427 County Rd
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only
 Lab WO# E202128 Job Number 20046-0001
 TAT
 1D 2D 3D Standard
 EPA Program
 CWA SDWA
 RCRA
 Analysis and Method
 DRO/DRO by 8015 GRO/DRO by 8015 BTEX by 8021 VOC by 8260 Metals 6010 Chloride 300.0 BGDOC NM BGDOC TX
 State
 NM CO UT AZ TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/22	S	1	SW 10	1							<input checked="" type="checkbox"/>		
				SW 10-2'	2									
				SW 11	3									
				SW 11-2'	4									
				SW 12	5									
				SW 12-2'	6									
				SW 13	7									
				SW 13-2'	8									
				SW 14	9									
				SW 14-2'	10									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) [Signature] Date 2/22 Time 4:19 Received by: (Signature) [Signature] Date 2-23-22 Time 1440
 Relinquished by: (Signature) [Signature] Date 2-23-22 Time 1525 Received by: (Signature) [Signature] Date 2/25/22 Time 10:10
 Relinquished by: (Signature) [Signature] Date 2-23-22 Time 1525 Received by: (Signature) [Signature] Date 2/25/22 Time 10:10
 Lab Use Only
 Received on ice: Y / N
 T1 _____ T2 _____ T3 _____
 AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other
 Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA
 Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Client: <u>Mack Energy</u> Project: <u>Thunder Bay</u> Project Manager: <u>M. Buckles</u> Address: City, State, Zip <u>Roswell, NM</u> Phone: Email: Report due by:		Bill To Attention: <u>ESS</u> Address: <u>2427 County Rd</u> City, State, Zip <u>Hobbs, NM 88240</u> Phone: Email: <u>Natalie</u>		Lab Use Only Lab WO# <u>E202128</u> Job Number <u>20046-0001</u> Analysis and Method		TAT 1D <input type="checkbox"/> 2D <input checked="" type="checkbox"/> 3D <input type="checkbox"/> Standard		EPA Program CWA <input type="checkbox"/> SDWA <input type="checkbox"/> RCRA <input type="checkbox"/> State NM <input checked="" type="checkbox"/> CO <input type="checkbox"/> UT <input type="checkbox"/> AZ <input type="checkbox"/> TX <input type="checkbox"/>	
--	--	--	--	--	--	--	--	---	--

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	2/22	S	1	SW 14								<input checked="" type="checkbox"/>		Duplicate Sample names 2/25/22 CC
				SW 14-2'										
				SW 15	11									
				SW 15-2'	12									
				SW 16	13									
				SW 16-8'	14									
				SW 17	15									
				SW 17-2'	16									
				SP 1-10'	17									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

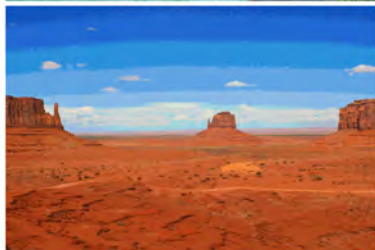
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2/22</u>	Time <u>4:19</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-23-22</u>	Time <u>1440</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-23-22</u>	Time <u>1525</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2/25/22</u>	Time <u>10:10</u>	
Relinquished by: (Signature) _____	Date _____	Time _____	Received by: (Signature) _____	Date _____	Time _____	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____
 Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E202135

Job Number: 20046-0001

Received: 2/28/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/1/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)

Date Reported: 3/1/22



Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E202135
Date Received: 2/28/2022 8:10:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 2/28/2022 8:10:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

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Sample Summary

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 03/01/22 12:45
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Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SW 18	E202135-01A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 18-2'	E202135-02A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 19	E202135-03A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 19-2'	E202135-04A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 20	E202135-05A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 20-2'	E202135-06A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 21	E202135-07A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 21-2'	E202135-08A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 22	E202135-09A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.
SW 22-2'	E202135-10A	Soil	02/23/22	02/28/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 18

E202135-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B		mg/kg	mg/kg	Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.6 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO		mg/kg	mg/kg	Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)		ND	20.0	1	02/28/22	02/28/22
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.2 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO		mg/kg	mg/kg	Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)		ND	25.0	1	02/28/22	02/28/22
Oil Range Organics (C28-C36)		ND	50.0	1	02/28/22	02/28/22
<i>Surrogate: n-Nonane</i>		78.5 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A		mg/kg	mg/kg	Analyst: KL		Batch: 2210004
Chloride		ND	20.0	1	02/28/22	02/28/22



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 18-2'

E202135-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		80.8 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	ND	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 19

E202135-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.3 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		82.2 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	ND	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 19-2'

E202135-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		95.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>						
		80.9 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	22.3	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 20

E202135-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.1 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.3 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		82.7 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	ND	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 20-2'

E202135-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.1 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		83.5 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	32.7	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 21

E202135-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		96.1 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.7 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		84.3 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	ND	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 21-2'

E202135-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.9 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		81.9 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	52.4	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 22

E202135-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.0 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.3 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		84.1 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	27.7	20.0	1	02/28/22	02/28/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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SW 22-2'

E202135-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Benzene	ND	0.0250	1	02/28/22	02/28/22	
Ethylbenzene	ND	0.0250	1	02/28/22	02/28/22	
Toluene	ND	0.0250	1	02/28/22	02/28/22	
o-Xylene	ND	0.0250	1	02/28/22	02/28/22	
p,m-Xylene	ND	0.0500	1	02/28/22	02/28/22	
Total Xylenes	ND	0.0250	1	02/28/22	02/28/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.6 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2210001
Gasoline Range Organics (C6-C10)	ND	20.0	1	02/28/22	02/28/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.6 %	70-130	02/28/22	02/28/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: AK		Batch: 2210002
Diesel Range Organics (C10-C28)	ND	25.0	1	02/28/22	02/28/22	
Oil Range Organics (C28-C36)	ND	50.0	1	02/28/22	02/28/22	
<i>Surrogate: n-Nonane</i>		82.7 %	50-200	02/28/22	02/28/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: KL		Batch: 2210004
Chloride	65.2	20.0	1	02/28/22	02/28/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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Volatile Organics by EPA 8021B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2210001-BLK1)

Prepared: 02/28/22 Analyzed: 02/28/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.41		8.00		92.6	70-130			

LCS (2210001-BS1)

Prepared: 02/28/22 Analyzed: 02/28/22

Benzene	4.65	0.0250	5.00		92.9	70-130			
Ethylbenzene	4.98	0.0250	5.00		99.7	70-130			
Toluene	5.14	0.0250	5.00		103	70-130			
o-Xylene	4.92	0.0250	5.00		98.4	70-130			
p,m-Xylene	10.1	0.0500	10.0		101	70-130			
Total Xylenes	15.0	0.0250	15.0		100	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.55		8.00		94.4	70-130			

Matrix Spike (2210001-MS1)

Source: E202135-01

Prepared: 02/28/22 Analyzed: 02/28/22

Benzene	4.89	0.0250	5.00	ND	97.8	54-133			
Ethylbenzene	5.21	0.0250	5.00	ND	104	61-133			
Toluene	5.41	0.0250	5.00	ND	108	61-130			
o-Xylene	5.13	0.0250	5.00	ND	103	63-131			
p,m-Xylene	10.6	0.0500	10.0	ND	106	63-131			
Total Xylenes	15.7	0.0250	15.0	ND	105	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.40		8.00		92.5	70-130			

Matrix Spike Dup (2210001-MSD1)

Source: E202135-01

Prepared: 02/28/22 Analyzed: 02/28/22

Benzene	4.61	0.0250	5.00	ND	92.2	54-133	5.87	20	
Ethylbenzene	4.93	0.0250	5.00	ND	98.6	61-133	5.49	20	
Toluene	5.11	0.0250	5.00	ND	102	61-130	5.62	20	
o-Xylene	4.88	0.0250	5.00	ND	97.5	63-131	5.07	20	
p,m-Xylene	10.0	0.0500	10.0	ND	100	63-131	5.35	20	
Total Xylenes	14.9	0.0250	15.0	ND	99.3	63-131	5.26	20	
Surrogate: 4-Bromochlorobenzene-PID	7.38		8.00		92.2	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2210001-BLK1)

Prepared: 02/28/22 Analyzed: 02/28/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.82		8.00		97.8	70-130			

LCS (2210001-BS2)

Prepared: 02/28/22 Analyzed: 02/28/22

Gasoline Range Organics (C6-C10)	45.0	20.0	50.0		90.1	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.09		8.00		101	70-130			

Matrix Spike (2210001-MS2)

Source: E202135-01

Prepared: 02/28/22 Analyzed: 02/28/22

Gasoline Range Organics (C6-C10)	47.7	20.0	50.0	ND	95.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.00		8.00		100	70-130			

Matrix Spike Dup (2210001-MSD2)

Source: E202135-01

Prepared: 02/28/22 Analyzed: 02/28/22

Gasoline Range Organics (C6-C10)	49.6	20.0	50.0	ND	99.1	70-130	3.90	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.08		8.00		101	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: AK

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2210002-BLK1)

Prepared: 02/28/22 Analyzed: 02/28/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: <i>n</i> -Nonane	39.8		50.0		79.5	50-200			

LCS (2210002-BS1)

Prepared: 02/28/22 Analyzed: 02/28/22

Diesel Range Organics (C10-C28)	458	25.0	500		91.6	38-132			
Surrogate: <i>n</i> -Nonane	38.1		50.0		76.2	50-200			

Matrix Spike (2210002-MS1)

Source: E202135-03

Prepared: 02/28/22 Analyzed: 02/28/22

Diesel Range Organics (C10-C28)	463	25.0	500	ND	92.7	38-132			
Surrogate: <i>n</i> -Nonane	39.2		50.0		78.4	50-200			

Matrix Spike Dup (2210002-MSD1)

Source: E202135-03

Prepared: 02/28/22 Analyzed: 02/28/22

Diesel Range Organics (C10-C28)	526	25.0	500	ND	105	38-132	12.6	20	
Surrogate: <i>n</i> -Nonane	45.8		50.0		91.6	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/1/2022 12:45:52PM
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Anions by EPA 300.0/9056A

Analyst: KL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2210004-BLK1)

Prepared: 02/28/22 Analyzed: 02/28/22

Chloride	ND	20.0							
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LCS (2210004-BS1)

Prepared: 02/28/22 Analyzed: 02/28/22

Chloride	244	20.0	250		97.5	90-110			
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Matrix Spike (2210004-MS1)

Source: E202135-01

Prepared: 02/28/22 Analyzed: 02/28/22

Chloride	267	20.0	250	ND	107	80-120			
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Matrix Spike Dup (2210004-MSD1)

Source: E202135-01

Prepared: 02/28/22 Analyzed: 02/28/22

Chloride	269	20.0	250	ND	108	80-120	0.749	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	03/01/22 12:45

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to: Unbranded - 9307292510-09:16 AM

Received by: OCD: 6/15/2022 4:07:07 PM

Project Information

Chain of Custody

Client: Mack Energy
 Project: Thunder Bay
 Project Manager: M. Buckles
 Address:
 City, State, Zip Roswell, NM
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2427 County Rd
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only
 Lab WO# E202135 Job Number 200400001
 Analysis and Method

DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX
						<input checked="" type="checkbox"/>	

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number
	2/23		1	SW 18	1
	}		}	SW 18-2'	2
				SW 19	3
				SW 19-2'	4
				SW 20	5
				SW 20-2'	6
				SW 21	7
				SW 21-2'	8
				SW 22	9
				SW 22-2'	10

TAT							
1D	2D	3D	Standard	EPA Program			
	<input checked="" type="checkbox"/>			CWA	SDWA	RCRA	
State							
NM	CO	UT	AZ	TX	Remarks		
<input checked="" type="checkbox"/>							

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. - Sampled by: Thomas Curley

Relinquished by: (Signature) <u>Thomas Curley</u>	Date <u>2/23</u>	Time <u>1:22pm</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>2-25-22</u>	Time <u>15:05</u>	Lab Use Only	
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>2-25-22</u>	Time <u>16:30</u>	Received by: (Signature) <u>Carsten Chntm</u>	Date <u>2/28/22</u>	Time <u>8:10</u>	Received on ice: <input checked="" type="checkbox"/> Y / N	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	T1 _____ T2 _____ T3 _____	
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____						Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA	AVG Temp °C <u>4</u>

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Envirotech Analytical Laboratory

Printed: 2/28/2022 8:41:27AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 02/28/22 08:10	Work Order ID: E202135
Phone: (575) 390-6397	Date Logged In: 02/25/22 16:08	Logged In By: Alexa Michaels
Email: Natalie@energystaffingllc.com	Due Date: 03/01/22 17:00 (1 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
- 2. Does the number of samples per sampling site location match the COC? Yes
- 3. Were samples dropped off by client or carrier? Yes
- 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
- 5. Were all samples received within holding time? Yes

Carrier: UPS

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
- 8. If yes, was cooler received in good condition? Yes
- 9. Was the sample(s) received intact, i.e., not broken? Yes
- 10. Were custody/security seals present? No
- 11. If yes, were custody/security seals intact? NA
- 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: NA

Client Instruction

Comments/Resolution

Time Sampled and Sample matrix not provided on COC.

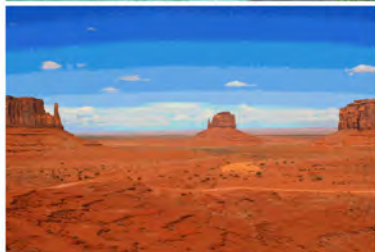
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E203043

Job Number: 20046-0001

Received: 3/9/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/10/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 3/10/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E203043
Date Received: 3/9/2022 8:10:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/9/2022 8:10:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
rainaschwanz@envirotech-inc.com

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labadmin@envirotech-inc.com

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Lynn Jarboe
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Cell: 505-320-4759
ljjarboe@envirotech-inc.com

West Texas Midland/Odessa Area
Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 03/10/22 17:16
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Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SP8 - 6'	E203043-01A	Soil	03/03/22	03/09/22	Glass Jar, 4 oz.
SP9 - 6'	E203043-02A	Soil	03/03/22	03/09/22	Glass Jar, 4 oz.
SW13 - 6'	E203043-03A	Soil	03/03/22	03/09/22	Glass Jar, 4 oz.
SP3 - 6'	E203043-04A	Soil	03/03/22	03/09/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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SP8 - 6'

E203043-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Benzene	ND	0.0250	1	03/09/22	03/09/22	
Ethylbenzene	ND	0.0250	1	03/09/22	03/09/22	
Toluene	ND	0.0250	1	03/09/22	03/09/22	
o-Xylene	ND	0.0250	1	03/09/22	03/09/22	
p,m-Xylene	ND	0.0500	1	03/09/22	03/09/22	
Total Xylenes	ND	0.0250	1	03/09/22	03/09/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		96.7 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/09/22	03/09/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.2 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: KL		Batch: 2211020
Diesel Range Organics (C10-C28)	ND	25.0	1	03/09/22	03/09/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/09/22	03/09/22	
<i>Surrogate: n-Nonane</i>						
		83.8 %	50-200	03/09/22	03/09/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211035
Chloride	104	20.0	1	03/09/22	03/09/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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SP9 - 6'

E203043-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Benzene	ND	0.0250	1	03/09/22	03/09/22	
Ethylbenzene	ND	0.0250	1	03/09/22	03/09/22	
Toluene	ND	0.0250	1	03/09/22	03/09/22	
o-Xylene	ND	0.0250	1	03/09/22	03/09/22	
p,m-Xylene	ND	0.0500	1	03/09/22	03/09/22	
Total Xylenes	ND	0.0250	1	03/09/22	03/09/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.9 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/09/22	03/09/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.0 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: KL		Batch: 2211020
Diesel Range Organics (C10-C28)	ND	25.0	1	03/09/22	03/09/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/09/22	03/09/22	
<i>Surrogate: n-Nonane</i>		94.3 %	50-200	03/09/22	03/09/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211035
Chloride	ND	20.0	1	03/09/22	03/09/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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SW13 - 6'

E203043-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Benzene	ND	0.0250	1	03/09/22	03/09/22	
Ethylbenzene	ND	0.0250	1	03/09/22	03/09/22	
Toluene	ND	0.0250	1	03/09/22	03/09/22	
o-Xylene	ND	0.0250	1	03/09/22	03/09/22	
p,m-Xylene	ND	0.0500	1	03/09/22	03/09/22	
Total Xylenes	ND	0.0250	1	03/09/22	03/09/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		98.8 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/09/22	03/09/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.4 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: KL		Batch: 2211020
Diesel Range Organics (C10-C28)	ND	25.0	1	03/09/22	03/09/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/09/22	03/09/22	
<i>Surrogate: n-Nonane</i>		109 %	50-200	03/09/22	03/09/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211035
Chloride	ND	20.0	1	03/09/22	03/09/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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SP3 - 6'

E203043-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Benzene	ND	0.0250	1	03/09/22	03/09/22	
Ethylbenzene	ND	0.0250	1	03/09/22	03/09/22	
Toluene	ND	0.0250	1	03/09/22	03/09/22	
o-Xylene	ND	0.0250	1	03/09/22	03/09/22	
p,m-Xylene	ND	0.0500	1	03/09/22	03/09/22	
Total Xylenes	ND	0.0250	1	03/09/22	03/09/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.3 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211034
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/09/22	03/09/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.0 %	70-130	03/09/22	03/09/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: KL		Batch: 2211020
Diesel Range Organics (C10-C28)	ND	25.0	1	03/09/22	03/09/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/09/22	03/09/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	03/09/22	03/09/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211035
Chloride	ND	20.0	1	03/09/22	03/09/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211034-BLK1)

Prepared: 03/09/22 Analyzed: 03/09/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.83		8.00		97.8	70-130			

LCS (2211034-BS1)

Prepared: 03/09/22 Analyzed: 03/09/22

Benzene	4.22	0.0250	5.00		84.3	70-130			
Ethylbenzene	4.48	0.0250	5.00		89.6	70-130			
Toluene	4.54	0.0250	5.00		90.7	70-130			
o-Xylene	4.58	0.0250	5.00		91.5	70-130			
p,m-Xylene	9.12	0.0500	10.0		91.2	70-130			
Total Xylenes	13.7	0.0250	15.0		91.3	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.76		8.00		97.0	70-130			

Matrix Spike (2211034-MS1)

Source: E203042-01

Prepared: 03/09/22 Analyzed: 03/09/22

Benzene	4.27	0.0250	5.00	ND	85.4	54-133			
Ethylbenzene	4.72	0.0250	5.00	0.137	91.7	61-133			
Toluene	4.62	0.0250	5.00	0.0387	91.6	61-130			
o-Xylene	5.14	0.0250	5.00	0.373	95.3	63-131			
p,m-Xylene	9.97	0.0500	10.0	0.809	91.7	63-131			
Total Xylenes	15.1	0.0250	15.0	1.18	92.9	63-131			
Surrogate: 4-Bromochlorobenzene-PID	9.77		8.00		122	70-130			

Matrix Spike Dup (2211034-MSD1)

Source: E203042-01

Prepared: 03/09/22 Analyzed: 03/09/22

Benzene	4.27	0.0250	5.00	ND	85.4	54-133	0.0234	20	
Ethylbenzene	4.72	0.0250	5.00	0.137	91.7	61-133	0.0847	20	
Toluene	4.63	0.0250	5.00	0.0387	91.8	61-130	0.216	20	
o-Xylene	5.14	0.0250	5.00	0.373	95.3	63-131	0.0399	20	
p,m-Xylene	10.0	0.0500	10.0	0.809	91.9	63-131	0.211	20	
Total Xylenes	15.1	0.0250	15.0	1.18	93.0	63-131	0.153	20	
Surrogate: 4-Bromochlorobenzene-PID	9.90		8.00		124	70-130			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported: 3/10/2022 5:16:55PM
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211034-BLK1)

Prepared: 03/09/22 Analyzed: 03/09/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.86		8.00		98.2	70-130			

LCS (2211034-BS2)

Prepared: 03/09/22 Analyzed: 03/09/22

Gasoline Range Organics (C6-C10)	50.5	20.0	50.0		101	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.07		8.00		101	70-130			

Matrix Spike (2211034-MS2)

Source: E203042-01

Prepared: 03/09/22 Analyzed: 03/09/22

Gasoline Range Organics (C6-C10)	93.4	20.0	50.0	40.0	107	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.68		8.00		96.0	70-130			

Matrix Spike Dup (2211034-MSD2)

Source: E203042-01

Prepared: 03/09/22 Analyzed: 03/09/22

Gasoline Range Organics (C6-C10)	90.9	20.0	50.0	40.0	102	70-130	2.68	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.73		8.00		96.7	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: KL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211020-BLK1)

Prepared: 03/08/22 Analyzed: 03/08/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	52.0		50.0		104	50-200			

LCS (2211020-BS1)

Prepared: 03/08/22 Analyzed: 03/08/22

Diesel Range Organics (C10-C28)	460	25.0	500		92.0	38-132			
Surrogate: n-Nonane	51.7		50.0		103	50-200			

Matrix Spike (2211020-MS1)

Source: E203028-21

Prepared: 03/08/22 Analyzed: 03/08/22

Diesel Range Organics (C10-C28)	492	25.0	500	ND	98.4	38-132			
Surrogate: n-Nonane	57.4		50.0		115	50-200			

Matrix Spike Dup (2211020-MSD1)

Source: E203028-21

Prepared: 03/08/22 Analyzed: 03/08/22

Diesel Range Organics (C10-C28)	497	25.0	500	ND	99.5	38-132	1.08	20	
Surrogate: n-Nonane	59.3		50.0		119	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/10/2022 5:16:55PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211035-BLK1)

Prepared: 03/09/22 Analyzed: 03/09/22

Chloride	ND	20.0							
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LCS (2211035-BS1)

Prepared: 03/09/22 Analyzed: 03/09/22

Chloride	248	20.0	250		99.2	90-110			
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Matrix Spike (2211035-MS1)

Source: E203042-01

Prepared: 03/09/22 Analyzed: 03/09/22

Chloride	15600	400	250	10500	NR	80-120			M2
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Matrix Spike Dup (2211035-MSD1)

Source: E203042-01

Prepared: 03/09/22 Analyzed: 03/09/22

Chloride	14200	400	250	10500	NR	80-120	9.18	20	M2
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	03/10/22 17:16

M2 Matrix spike recovery was outside quality control limits. The associated LCS spike recovery was acceptable.

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to: Uniting 9/28/2022 10:09:16 AM

Received by: OCD: 6/15/2022 4:07:07 PM

Project Information

Chain of Custody

Client: <u>Max Energy</u> Project: <u>Thunderbay</u> Project Manager: Address: City, State, Zip Phone: Email: <u>Natalie @ Dakota</u> Report due by:	Bill To Attention: <u>ESS</u> Address: City, State, Zip Phone: Email:	Lab Use Only Lab WO# <u>E203043</u> Job Number <u>20246-0001</u>	TAT 1D <input type="checkbox"/> 2D <input checked="" type="checkbox"/> 3D <input type="checkbox"/>	EPA Program CWA <input type="checkbox"/> SDWA <input type="checkbox"/> RCRA <input type="checkbox"/> State NM <input checked="" type="checkbox"/> CO <input type="checkbox"/> UT <input type="checkbox"/> AZ <input type="checkbox"/> TX <input type="checkbox"/>
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Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/RO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	3/3	soil	1	SP8 - 6'	1									
	3/3		1	SP9 - 6'	2									
	3/3		1	SW13 - 10'	3									
	3/3		1	SP3 - 6'	4									
	3/3		1	SP1 - 4'										2.7.2 per Dakota

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Sampled by: Marc Rivera

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3/7/21</u>	Time <u>2:16</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>3-7-22</u>	Time <u>14:16</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3-8-22</u>	Time <u>9:10</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>3/9/22</u>	Time <u>8:10</u>	
Relinquished by: (Signature) _____	Date _____	Time _____	Received by: (Signature) _____	Date _____	Time _____	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Envirotech Analytical Laboratory

Printed: 3/9/2022 10:10:32AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/09/22 08:10	Work Order ID: E203043
Phone: (575) 390-6397	Date Logged In: 03/07/22 16:25	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 03/09/22 17:00 (0 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
- 2. Does the number of samples per sampling site location match the COC? Yes
- 3. Were samples dropped off by client or carrier? Yes
- 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
- 5. Were all samples received within holding time? Yes

Carrier: Courier

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Comments/Resolution

Sample times not provided on COC.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
- 8. If yes, was cooler received in good condition? Yes
- 9. Was the sample(s) received intact, i.e., not broken? Yes
- 10. Were custody/security seals present? No
- 11. If yes, were custody/security seals intact? NA
- 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Matt Buckles



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay Fed Com #1

Work Order: E203053

Job Number: 20046-0001

Received: 3/11/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/11/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)

Date Reported: 3/11/22



Matt Buckles
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay Fed Com #1
Workorder: E203053
Date Received: 3/11/2022 7:30:00AM

Matt Buckles,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/11/2022 7:30:00AM, under the Project Name: Thunderbay Fed Com #1.

The analytical test results summarized in this report with the Project Name: Thunderbay Fed Com #1 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
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Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
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Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay Fed Com #1
Project Number: 20046-0001
Project Manager: Matt Buckles

Reported:
03/11/22 17:47

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Comp 1	E203053-01A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 2	E203053-02A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 3	E203053-03A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 4	E203053-04A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 5	E203053-05A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 6	E203053-06A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 7	E203053-07A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 8	E203053-08A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 9	E203053-09A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 10	E203053-10A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 11	E203053-11A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 12	E203053-12A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 13	E203053-13A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 14	E203053-14A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 15	E203053-15A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 16	E203053-16A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 17	E203053-17A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 18	E203053-18A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 19	E203053-19A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 20	E203053-20A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 1
E203053-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.0 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		108 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 2
E203053-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/11/22	
Toluene	ND	0.0250	1	03/10/22	03/11/22	
o-Xylene	ND	0.0250	1	03/10/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.9 %	70-130	03/10/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	03/10/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 3
E203053-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		86.4 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 4
E203053-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.3 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.8 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		95.6 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 5
E203053-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.1 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.2 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		103 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	ND	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 6
E203053-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.7 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.3 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		112 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	245	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 7
E203053-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.2 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		113 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	133	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 8
E203053-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.2 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		113 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	419	20.0	1	03/10/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 9
E203053-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.8 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 10
E203053-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		96.2 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.3 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		107 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 11
E203053-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		91.8 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		104 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 12
E203053-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.2 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.2 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 13
E203053-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.3 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.3 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 14

E203053-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		93.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		93.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 15
E203053-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.0 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.0 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		107 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 16
E203053-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		97.5 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 17

E203053-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.5 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		113 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	262	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 18
E203053-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.1 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.0 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	64.5	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	116	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		107 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	348	20.0	1	03/10/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 19

E203053-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.7 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.4 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	329	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	549	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	25.2	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Comp 20

E203053-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		96.4 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	726	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	1380	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		108 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	28.0	20.0	1	03/10/22	03/11/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211080-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.446		0.500		89.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101	70-130			
Surrogate: Toluene-d8	0.492		0.500		98.4	70-130			

LCS (2211080-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.85	0.0250	2.50		114	70-130			
Ethylbenzene	3.05	0.0250	2.50		122	70-130			
Toluene	3.01	0.0250	2.50		121	70-130			
o-Xylene	2.93	0.0250	2.50		117	70-130			
p,m-Xylene	5.82	0.0500	5.00		116	70-130			
Total Xylenes	8.76	0.0250	7.50		117	70-130			
Surrogate: Bromofluorobenzene	0.480		0.500		96.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.515		0.500		103	70-130			
Surrogate: Toluene-d8	0.524		0.500		105	70-130			

LCS Dup (2211080-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.77	0.0250	2.50		111	70-130	2.60	23	
Ethylbenzene	2.93	0.0250	2.50		117	70-130	3.83	27	
Toluene	2.92	0.0250	2.50		117	70-130	3.32	24	
o-Xylene	2.80	0.0250	2.50		112	70-130	4.66	27	
p,m-Xylene	5.64	0.0500	5.00		113	70-130	3.29	27	
Total Xylenes	8.43	0.0250	7.50		112	70-130	3.75	27	
Surrogate: Bromofluorobenzene	0.486		0.500		97.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.505		0.500		101	70-130			
Surrogate: Toluene-d8	0.519		0.500		104	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211064-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.8	70-130			

LCS (2211064-BS1)

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	4.83	0.0250	5.00		96.5	70-130			
Ethylbenzene	5.10	0.0250	5.00		102	70-130			
Toluene	5.32	0.0250	5.00		106	70-130			
o-Xylene	5.05	0.0250	5.00		101	70-130			
p,m-Xylene	10.3	0.0500	10.0		103	70-130			
Total Xylenes	15.4	0.0250	15.0		103	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.58		8.00		94.8	70-130			

Matrix Spike (2211064-MS1)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	4.82	0.0250	5.00	ND	96.3	54-133			
Ethylbenzene	5.10	0.0250	5.00	ND	102	61-133			
Toluene	5.33	0.0250	5.00	ND	107	61-130			
o-Xylene	5.03	0.0250	5.00	ND	101	63-131			
p,m-Xylene	10.3	0.0500	10.0	ND	103	63-131			
Total Xylenes	15.4	0.0250	15.0	ND	102	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.48		8.00		93.5	70-130			

Matrix Spike Dup (2211064-MSD1)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	4.81	0.0250	5.00	ND	96.3	54-133	0.0561	20	
Ethylbenzene	5.07	0.0250	5.00	ND	101	61-133	0.550	20	
Toluene	5.30	0.0250	5.00	ND	106	61-130	0.389	20	
o-Xylene	5.01	0.0250	5.00	ND	100	63-131	0.486	20	
p,m-Xylene	10.3	0.0500	10.0	ND	103	63-131	0.599	20	
Total Xylenes	15.3	0.0250	15.0	ND	102	63-131	0.562	20	
Surrogate: 4-Bromochlorobenzene-PID	7.40		8.00		92.5	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211077-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.44		8.00		93.0	70-130			

LCS (2211077-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	4.74	0.0250	5.00		94.8	70-130			
Ethylbenzene	5.01	0.0250	5.00		100	70-130			
Toluene	5.24	0.0250	5.00		105	70-130			
o-Xylene	4.96	0.0250	5.00		99.2	70-130			
p,m-Xylene	10.1	0.0500	10.0		101	70-130			
Total Xylenes	15.1	0.0250	15.0		101	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.9	70-130			

LCS Dup (2211077-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	4.94	0.0250	5.00		98.8	70-130	4.14	20	
Ethylbenzene	5.20	0.0250	5.00		104	70-130	3.74	20	
Toluene	5.44	0.0250	5.00		109	70-130	3.78	20	
o-Xylene	5.14	0.0250	5.00		103	70-130	3.55	20	
p,m-Xylene	10.5	0.0500	10.0		105	70-130	3.60	20	
Total Xylenes	15.7	0.0250	15.0		104	70-130	3.58	20	
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.9	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211064-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.96		8.00		99.6	70-130			

LCS (2211064-BS2)

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	47.0	20.0	50.0		94.0	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.16		8.00		102	70-130			

Matrix Spike (2211064-MS2)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	48.1	20.0	50.0	ND	96.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.09		8.00		101	70-130			

Matrix Spike Dup (2211064-MSD2)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	47.5	20.0	50.0	ND	95.0	70-130	1.28	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.97		8.00		99.6	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211077-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.91		8.00		98.9	70-130			

LCS (2211077-BS2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	46.9	20.0	50.0		93.8	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.87		8.00		98.3	70-130			

LCS Dup (2211077-BSD2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	46.4	20.0	50.0		92.8	70-130	1.08	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.89		8.00		98.6	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211080-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.446		0.500		89.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101	70-130			
Surrogate: Toluene-d8	0.492		0.500		98.4	70-130			

LCS (2211080-BS2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	60.8	20.0	50.0		122	70-130			
Surrogate: Bromofluorobenzene	0.475		0.500		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1	70-130			
Surrogate: Toluene-d8	0.527		0.500		105	70-130			

LCS Dup (2211080-BSD2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	63.5	20.0	50.0		127	70-130	4.31	20	
Surrogate: Bromofluorobenzene	0.476		0.500		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.511		0.500		102	70-130			
Surrogate: Toluene-d8	0.515		0.500		103	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211066-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	55.5		50.0		111	50-200			

LCS (2211066-BS1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	458	25.0	500		91.5	38-132			
Surrogate: n-Nonane	54.1		50.0		108	50-200			

Matrix Spike (2211066-MS1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	488	25.0	500	ND	97.6	38-132			
Surrogate: n-Nonane	53.6		50.0		107	50-200			

Matrix Spike Dup (2211066-MSD1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	485	25.0	500	ND	97.0	38-132	0.628	20	
Surrogate: n-Nonane	53.5		50.0		107	50-200			



QC Summary Data

Mack Energy	Project Name:	Thunderbay Fed Com #1	Reported: 3/11/2022 5:47:40PM
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Matt Buckles	

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211074-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	48.9		50.0		97.9	50-200			

LCS (2211074-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	476	25.0	500		95.3	38-132			
Surrogate: n-Nonane	49.3		50.0		98.5	50-200			

LCS Dup (2211074-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	478	25.0	500		95.7	38-132	0.406	20	
Surrogate: n-Nonane	49.2		50.0		98.4	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211065-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride ND 20.0

LCS (2211065-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride 248 20.0 250 99.3 90-110

Matrix Spike (2211065-MS1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride 500 20.0 250 262 95.4 80-120

Matrix Spike Dup (2211065-MSD1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride 499 20.0 250 262 94.8 80-120 0.307 20



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 5:47:40PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211070-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Chloride	ND	20.0							
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LCS (2211070-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	247	20.0	250		98.7	90-110			
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LCS Dup (2211070-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	249	20.0	250		99.5	90-110	0.827	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay Fed Com #1	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Matt Buckles	03/11/22 17:47

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released by: [unclear] 9/30/2023 10:09:16 AM

Client: <u>Macik Energy</u> Project: <u>Thunderbay Fed Com #1</u> Project Manager: <u>Matt Buckles</u> Address: _____ City, State, Zip: _____ Phone: _____ Email: _____ Report due by: _____	Bill To Attention: <u>ESS</u> Address: <u>2724 New County Rd</u> City, State, Zip: <u>Hobbs, NM 88240</u> Phone: <u>353-9048</u> Email: <u>matthew@energy</u> <u>Staffing LLC.com</u>	Lab Use Only Lab WO#: <u>E203053</u> Job Number: <u>20046-0001</u>	TAT 1D <input checked="" type="checkbox"/> 2D <input type="checkbox"/> 3D <input type="checkbox"/>	EPA Program CWA <input type="checkbox"/> SDWA <input type="checkbox"/> RCRA <input type="checkbox"/>
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Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Analysis and Method										State					Remarks	
						DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	NM	CO	UT	AZ	TX				
		Soil	1	Comp 1	1																	
		}	}	Comp 2	2																	
				Comp 3	3																	
				Comp 4	4																	
				Comp 5	5																	
				Comp 6	6																	
				Comp 7	7																	
				Comp 8	8																	
				Comp 9	9																	
				Comp 10	10																	

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
<u>Matthew Buckles</u>	<u>3/3/22</u>		<u>Don Kimble</u>	<u>3.10.22</u>	<u>1540</u>	
<u>Don Kimble</u>	<u>3.10.22</u>	<u>1900</u>	<u>Caitlin Carter</u>	<u>3/16/22</u>	<u>7:30</u>	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by: OCD: 6/15/2022 4:07:07 PM

Page 318 of 508

Released to: Himgang - 9/23/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: _____
 Project: _____
 Project Manager: _____
 Address: Same
 City, State, Zip _____
 Phone: _____
 Email: _____
 Report due by: _____

Bill To
 Attention: _____
 Address: _____
 City, State, Zip Same
 Phone: _____
 Email: _____

Lab Use Only
 Lab WO# E203053 Job Number 20046-0001
 1D 2D 3D Standard
EPA Program
 CWA SDWA

Analysis and Method
 DRO/DRO by 8015 GRO/DRO by 8015 BTEX by 8021 VOC by 8260 Metals 6010 Chloride 300.0
 BGDOC NM BGDOC TX
State
 NM CO UT AZ TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	3/3	Soil	1	Comp 11	11									
				Comp 12	12									
				Comp 13	13									
				Comp 14	14									
				Comp 15	15									
				Comp 16	16									
				Comp 17	17									
				Comp 18	18									
				Comp 19	19									
				Comp 20	20									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: Don Kimble

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3/3/22</u>	Time _____	Received by: (Signature) <u>[Signature]</u>	Date <u>3.10.22</u>	Time <u>1540</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3.10.22</u>	Time <u>1900</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>3/10/22</u>	Time <u>7:30</u>
Relinquished by: (Signature) _____	Date _____	Time _____	Received by: (Signature) _____	Date _____	Time _____

Lab Use Only
 Received on ice: Y / N
 T1 _____ T2 _____ T3 _____
 AVG Temp °C 4

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Envirotech Analytical Laboratory

Printed: 3/11/2022 12:31:43PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/11/22 07:30	Work Order ID: E203053
Phone: (575) 746-9547	Date Logged In: 03/08/22 16:32	Logged In By: Caitlin Christian
Email: natalie@energystaffingllc.com	Due Date: 03/11/22 17:00 (0 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
 - 2. Does the number of samples per sampling site location match the COC? Yes
 - 3. Were samples dropped off by client or carrier? Yes
 - 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
 - 5. Were all samples received within holding time? Yes
- Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Carrier: Courier

Comments/Resolution

Project has been separated into 2 reports due to amount of samples. Workorders are as follows:
 E203053 COC page 1&2 of 5, E203054 COC page 3,4 &5 of 5. Sample times not provided on coc.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
 - 8. If yes, was cooler received in good condition? Yes
 - 9. Was the sample(s) received intact, i.e., not broken? Yes
 - 10. Were custody/security seals present? No
 - 11. If yes, were custody/security seals intact? NA
 - 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C Yes
- Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling
13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

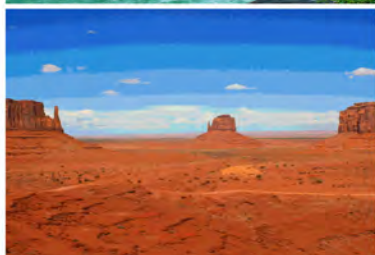
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Matt Buckles



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay Fed Com #1

Work Order: E203054

Job Number: 20046-0001

Received: 3/11/2022

Revision: 2

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/11/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)

Date Reported: 3/11/22



Matt Buckles
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay Fed Com #1
Workorder: E203054
Date Received: 3/11/2022 7:30:00AM

Matt Buckles,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/11/2022 7:30:00AM, under the Project Name: Thunderbay Fed Com #1.

The analytical test results summarized in this report with the Project Name: Thunderbay Fed Com #1 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
rainaschwanz@envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay Fed Com #1
Project Number: 20046-0001
Project Manager: Matt Buckles

Reported:
03/11/22 19:08

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Comp 21	E203054-01A	Solid	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 22	E203054-02A	Solid	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 23	E203054-03A	Solid	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 24	E203054-04A	Solid	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 25	E203054-05A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 26	E203054-06A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 27	E203054-07A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 28	E203054-08A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 29	E203054-09A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 30	E203054-10A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 31	E203054-11A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 32	E203054-12A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 33	E203054-13A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 34	E203054-14A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 35	E203054-15A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 36	E203054-16A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 37	E203054-17A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 38	E203054-18A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 39	E203054-19A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 40	E203054-20A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 41	E203054-21A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 42	E203054-22A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 43	E203054-23A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 44	E203054-24A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 45	E203054-25A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 46	E203054-26A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 47	E203054-27A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.
Comp 48	E203054-28A	Soil	03/03/22	03/11/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 21
E203054-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.4 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211066
Diesel Range Organics (C10-C28)	38.8	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	73.5	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		107 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	ND	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 22

E203054-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.3 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	97.0	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	169	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	ND	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 23

E203054-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		97.3 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	391	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	646	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		107 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	33.8	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 24
E203054-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/10/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/10/22	
Toluene	ND	0.0250	1	03/10/22	03/10/22	
o-Xylene	ND	0.0250	1	03/10/22	03/10/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/10/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/10/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		91.7 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/10/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		100 %	70-130	03/10/22	03/10/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211066
Diesel Range Organics (C10-C28)	65.3	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	110	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		104 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	ND	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 25

E203054-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.1 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.3 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.1 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.3 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		103 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 26
E203054-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 27
E203054-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.3 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.5 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.3 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.5 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211074
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		99.0 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 28
E203054-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.4 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		103 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211070
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 29
E203054-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		100 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 30
E203054-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		111 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 31
E203054-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.0 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		103 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.0 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		103 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		103 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 32
E203054-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		101 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.9 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		103 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		101 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.9 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		103 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		98.3 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 33
E203054-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		99.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		99.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		107 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 34
E203054-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		93.8 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.1 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		102 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		93.8 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		92.1 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		102 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		107 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 35
E203054-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		95.5 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		95.5 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		108 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 36

E203054-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		97.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.2 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		97.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.2 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		111 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 37
E203054-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		98.3 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		104 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		98.3 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		104 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		105 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 38
E203054-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		95.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		89.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		102 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		95.7 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		89.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		102 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		108 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 39
E203054-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		99.9 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		91.5 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211079
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		99.9 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		91.5 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		110 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 40

E203054-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		91.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		106 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 41
E203054-21

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.1 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.0 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		109 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 42
E203054-22

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/11/22	
Toluene	ND	0.0250	1	03/10/22	03/11/22	
o-Xylene	ND	0.0250	1	03/10/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.8 %	70-130	03/10/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.8 %	70-130	03/10/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	89.6	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	171	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		92.7 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	110	20.0	1	03/10/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 43
E203054-23

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		98.2 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		109 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 44

E203054-24

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.2 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 45

E203054-25

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		92.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.9 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 46

E203054-26

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Benzene	ND	0.0250	1	03/10/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/10/22	03/11/22	
Toluene	ND	0.0250	1	03/10/22	03/11/22	
o-Xylene	ND	0.0250	1	03/10/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/10/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/10/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	93.4 %	70-130		03/10/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211064
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/10/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	100 %	70-130		03/10/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	88.3	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	166	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
	105 %	50-200		03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211065
Chloride	110	20.0	1	03/10/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 47

E203054-27

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.0 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.0 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		107 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Comp 48
E203054-28

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		92.1 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		98.0 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211069
Diesel Range Organics (C10-C28)	ND	25.0	1	03/11/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/11/22	03/11/22	
<i>Surrogate: n-Nonane</i>						
		106 %	50-200	03/11/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211071
Chloride	ND	20.0	1	03/11/22	03/11/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211079-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.492		0.500		98.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.477		0.500		95.4	70-130			
Surrogate: Toluene-d8	0.510		0.500		102	70-130			

LCS (2211079-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.46	0.0250	2.50		98.3	70-130			
Ethylbenzene	2.73	0.0250	2.50		109	70-130			
Toluene	2.67	0.0250	2.50		107	70-130			
o-Xylene	2.65	0.0250	2.50		106	70-130			
p,m-Xylene	5.39	0.0500	5.00		108	70-130			
Total Xylenes	8.05	0.0250	7.50		107	70-130			
Surrogate: Bromofluorobenzene	0.503		0.500		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.498		0.500		99.6	70-130			
Surrogate: Toluene-d8	0.529		0.500		106	70-130			

LCS Dup (2211079-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.43	0.0250	2.50		97.3	70-130	0.981	23	
Ethylbenzene	2.85	0.0250	2.50		114	70-130	4.35	27	
Toluene	2.79	0.0250	2.50		112	70-130	4.41	24	
o-Xylene	2.78	0.0250	2.50		111	70-130	4.55	27	
p,m-Xylene	5.60	0.0500	5.00		112	70-130	3.72	27	
Total Xylenes	8.37	0.0250	7.50		112	70-130	3.99	27	
Surrogate: Bromofluorobenzene	0.506		0.500		101	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.455		0.500		91.0	70-130			
Surrogate: Toluene-d8	0.520		0.500		104	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211080-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.446		0.500		89.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101	70-130			
Surrogate: Toluene-d8	0.492		0.500		98.4	70-130			

LCS (2211080-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.85	0.0250	2.50		114	70-130			
Ethylbenzene	3.05	0.0250	2.50		122	70-130			
Toluene	3.01	0.0250	2.50		121	70-130			
o-Xylene	2.93	0.0250	2.50		117	70-130			
p,m-Xylene	5.82	0.0500	5.00		116	70-130			
Total Xylenes	8.76	0.0250	7.50		117	70-130			
Surrogate: Bromofluorobenzene	0.480		0.500		96.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.515		0.500		103	70-130			
Surrogate: Toluene-d8	0.524		0.500		105	70-130			

LCS Dup (2211080-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.77	0.0250	2.50		111	70-130	2.60	23	
Ethylbenzene	2.93	0.0250	2.50		117	70-130	3.83	27	
Toluene	2.92	0.0250	2.50		117	70-130	3.32	24	
o-Xylene	2.80	0.0250	2.50		112	70-130	4.66	27	
p,m-Xylene	5.64	0.0500	5.00		113	70-130	3.29	27	
Total Xylenes	8.43	0.0250	7.50		112	70-130	3.75	27	
Surrogate: Bromofluorobenzene	0.486		0.500		97.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.505		0.500		101	70-130			
Surrogate: Toluene-d8	0.519		0.500		104	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211064-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.8	70-130			

LCS (2211064-BS1)

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	4.83	0.0250	5.00		96.5	70-130			
Ethylbenzene	5.10	0.0250	5.00		102	70-130			
Toluene	5.32	0.0250	5.00		106	70-130			
o-Xylene	5.05	0.0250	5.00		101	70-130			
p,m-Xylene	10.3	0.0500	10.0		103	70-130			
Total Xylenes	15.4	0.0250	15.0		103	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.58		8.00		94.8	70-130			

Matrix Spike (2211064-MS1)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	4.82	0.0250	5.00	ND	96.3	54-133			
Ethylbenzene	5.10	0.0250	5.00	ND	102	61-133			
Toluene	5.33	0.0250	5.00	ND	107	61-130			
o-Xylene	5.03	0.0250	5.00	ND	101	63-131			
p,m-Xylene	10.3	0.0500	10.0	ND	103	63-131			
Total Xylenes	15.4	0.0250	15.0	ND	102	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.48		8.00		93.5	70-130			

Matrix Spike Dup (2211064-MSD1)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Benzene	4.81	0.0250	5.00	ND	96.3	54-133	0.0561	20	
Ethylbenzene	5.07	0.0250	5.00	ND	101	61-133	0.550	20	
Toluene	5.30	0.0250	5.00	ND	106	61-130	0.389	20	
o-Xylene	5.01	0.0250	5.00	ND	100	63-131	0.486	20	
p,m-Xylene	10.3	0.0500	10.0	ND	103	63-131	0.599	20	
Total Xylenes	15.3	0.0250	15.0	ND	102	63-131	0.562	20	
Surrogate: 4-Bromochlorobenzene-PID	7.40		8.00		92.5	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211077-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.44		8.00		93.0	70-130			

LCS (2211077-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	4.74	0.0250	5.00		94.8	70-130			
Ethylbenzene	5.01	0.0250	5.00		100	70-130			
Toluene	5.24	0.0250	5.00		105	70-130			
o-Xylene	4.96	0.0250	5.00		99.2	70-130			
p,m-Xylene	10.1	0.0500	10.0		101	70-130			
Total Xylenes	15.1	0.0250	15.0		101	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.9	70-130			

LCS Dup (2211077-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	4.94	0.0250	5.00		98.8	70-130	4.14	20	
Ethylbenzene	5.20	0.0250	5.00		104	70-130	3.74	20	
Toluene	5.44	0.0250	5.00		109	70-130	3.78	20	
o-Xylene	5.14	0.0250	5.00		103	70-130	3.55	20	
p,m-Xylene	10.5	0.0500	10.0		105	70-130	3.60	20	
Total Xylenes	15.7	0.0250	15.0		104	70-130	3.58	20	
Surrogate: 4-Bromochlorobenzene-PID	7.51		8.00		93.9	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211064-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.96		8.00		99.6	70-130			

LCS (2211064-BS2)

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	47.0	20.0	50.0		94.0	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.16		8.00		102	70-130			

Matrix Spike (2211064-MS2)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	48.1	20.0	50.0	ND	96.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.09		8.00		101	70-130			

Matrix Spike Dup (2211064-MSD2)

Source: E203053-19

Prepared: 03/10/22 Analyzed: 03/10/22

Gasoline Range Organics (C6-C10)	47.5	20.0	50.0	ND	95.0	70-130	1.28	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.97		8.00		99.6	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211077-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.91		8.00		98.9	70-130			

LCS (2211077-BS2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	46.9	20.0	50.0		93.8	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.87		8.00		98.3	70-130			

LCS Dup (2211077-BSD2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	46.4	20.0	50.0		92.8	70-130	1.08	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.89		8.00		98.6	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211079-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.492		0.500		98.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.477		0.500		95.4	70-130			
Surrogate: Toluene-d8	0.510		0.500		102	70-130			

LCS (2211079-BS2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	58.8	20.0	50.0		118	70-130			
Surrogate: Bromofluorobenzene	0.494		0.500		98.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.508		0.500		102	70-130			
Surrogate: Toluene-d8	0.514		0.500		103	70-130			

LCS Dup (2211079-BSD2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	54.4	20.0	50.0		109	70-130	7.81	20	
Surrogate: Bromofluorobenzene	0.472		0.500		94.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.471		0.500		94.1	70-130			
Surrogate: Toluene-d8	0.512		0.500		102	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211080-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.446		0.500		89.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101	70-130			
Surrogate: Toluene-d8	0.492		0.500		98.4	70-130			

LCS (2211080-BS2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	60.8	20.0	50.0		122	70-130			
Surrogate: Bromofluorobenzene	0.475		0.500		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1	70-130			
Surrogate: Toluene-d8	0.527		0.500		105	70-130			

LCS Dup (2211080-BSD2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	63.5	20.0	50.0		127	70-130	4.31	20	
Surrogate: Bromofluorobenzene	0.476		0.500		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.511		0.500		102	70-130			
Surrogate: Toluene-d8	0.515		0.500		103	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211066-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: <i>n</i> -Nonane	55.5		50.0		111	50-200			

LCS (2211066-BS1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	458	25.0	500		91.5	38-132			
Surrogate: <i>n</i> -Nonane	54.1		50.0		108	50-200			

Matrix Spike (2211066-MS1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	488	25.0	500	ND	97.6	38-132			
Surrogate: <i>n</i> -Nonane	53.6		50.0		107	50-200			

Matrix Spike Dup (2211066-MSD1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	485	25.0	500	ND	97.0	38-132	0.628	20	
Surrogate: <i>n</i> -Nonane	53.5		50.0		107	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211069-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	55.5		50.0		111	50-200			

LCS (2211069-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	481	25.0	500		96.3	38-132			
Surrogate: n-Nonane	50.9		50.0		102	50-200			

LCS Dup (2211069-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	488	25.0	500		97.7	38-132	1.45	20	
Surrogate: n-Nonane	50.1		50.0		100	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211074-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	48.9		50.0		97.9	50-200			

LCS (2211074-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	476	25.0	500		95.3	38-132			
Surrogate: n-Nonane	49.3		50.0		98.5	50-200			

LCS Dup (2211074-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	478	25.0	500		95.7	38-132	0.406	20	
Surrogate: n-Nonane	49.2		50.0		98.4	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211065-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride ND 20.0

LCS (2211065-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride 248 20.0 250 99.3 90-110

Matrix Spike (2211065-MS1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride 500 20.0 250 262 95.4 80-120

Matrix Spike Dup (2211065-MSD1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride 499 20.0 250 262 94.8 80-120 0.307 20



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211070-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Chloride	ND	20.0							
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LCS (2211070-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	247	20.0	250		98.7	90-110			
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LCS Dup (2211070-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	249	20.0	250		99.5	90-110	0.827	20	
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QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Matt Buckles	Reported: 3/11/2022 7:08:22PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211071-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	ND	20.0							
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LCS (2211071-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	250	20.0	250		100	90-110			
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LCS Dup (2211071-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	250	20.0	250		100	90-110	0.168	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay Fed Com #1	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Matt Buckles	03/11/22 19:08

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to: Imaging: 9/30/2022 10:09:16 AM

Client: Macl Energy
 Project: Thunder Bay
 Project Manager:
 Address:
 City, State, Zip
 Phone:
 Email:
 Report due by:

Bill To
 Attention: Ebb
 Address: 2724 N CR
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only
 Lab WO# E203054 Job Number 20046-0001
 1D 2D 3D Standard
TAT
EPA Program
 CWA SDWA
 RCRA

Analysis and Method

DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX
						<input checked="" type="checkbox"/>	

State
 NM CO UT AZ TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks		
	3-3-22	S	1	Comp 21	1							<input checked="" type="checkbox"/>				
	}	}	}	Comp 22	2											
				Comp 23	3											
				Comp 24	4											
				Comp 25	5											
				Comp 26	6											
				Comp 27	7											
				Comp 28	8											
				Comp 29	9											
				Comp 30	10											

Additional Instructions:
 See COC Page 1 of 5 for project name - WO E203053

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only Received on ice: <input checked="" type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
<u>[Signature]</u>	3-3-22		<u>[Signature]</u>	3-10-22	1540	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
<u>[Signature]</u>	3-10-22	1900	<u>Courtney Clutter</u>	3/11/22	7:30	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by: OCD: 6/15/2022 4:07:07 PM

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Released to Imaging: 9/30/2022 10:09:16 AM

Client: Mack Energy
 Project: Thunder Bay
 Project Manager:
 Address:
 City, State, Zip
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2724 N CR
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only		TAT			EPA Program		
Lab WO# <u>E 203054</u>	Job Number <u>20246-0001</u>	1D	2D	3D	Standard	CWA	SDWA
Analysis and Method							RCRA

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	State					Remarks
														NM	CO	UT	AZ	TX	
	<u>3-3-22</u>	<u>S</u>	<u>1</u>	<u>Comp 31</u>	<u>11</u>							<u>X</u>							
				<u>Comp 32</u>	<u>12</u>														
				<u>Comp 33</u>	<u>13</u>														
				<u>Comp 34</u>	<u>14</u>														
				<u>Comp 35</u>	<u>15</u>														
				<u>Comp 36</u>	<u>16</u>														
				<u>Comp 37</u>	<u>17</u>														
				<u>Comp 38</u>	<u>18</u>														
				<u>Comp 39</u>	<u>19</u>														
				<u>Comp 40</u>	<u>20</u>														

Additional Instructions:
see COC Page 1 of 5 for Project Name - WO E203053

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3-3-22</u>	Time	Received by: (Signature) <u>[Signature]</u>	Date <u>3-10-22</u>	Time <u>1540</u>	Lab Use Only Received on ice: <u>(Y) / N</u> T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3-10-22</u>	Time <u>1900</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>3/11/22</u>	Time <u>7:30</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____ Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, **v** - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by OCD: 6/15/2022 4:07:07 PM

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Released to Imaging: 9/30/2022 10:09:16 AM

Received by OCD: 6/15/2022 4:07:07 PM

Client: Mack Energy
 Project: Thunder Bay
 Project Manager:
 Address:
 City, State, Zip
 Phone:
 Email:
 Report due by:

Bill To
 Attention: FSS
 Address: 7724 N CR
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only
 Lab WO# E 203054 Job Number 20046-000
 1D 2D 3D Standard
EPA Program
 CWA SDWA
 RCRA

Analysis and Method
 DRO/DRO by 8015 GRO/DRO by 8015 BTEX by 8021 VOC by 8260 Metals 6010 Chloride 300.0
 BGDOC NM BGDOC TX
State
 NM CO UT AZ TX

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	3-3-22	S	1	Comp 41	21									
				Comp 42	22									
				Comp 43	23									
				Comp 44	24									
				Comp 45	25									
				Comp 46	26									
				Comp 47	27									
				Comp 48	28							X		
					29									

Additional Instructions:
 See COC Page 1 of 5 for Project Name - WO E203053

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.
 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3-3-22</u>	Time	Received by: (Signature) <u>[Signature]</u>	Date <u>3-10-22</u>	Time <u>1540</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3-10-22</u>	Time <u>1900</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>3/11/22</u>	Time <u>7:30</u>	
Relinquished by: (Signature) _____	Date _____	Time _____	Received by: (Signature) _____	Date _____	Time _____	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other
 Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



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Envirotech Analytical Laboratory

Printed: 3/11/2022 12:30:28PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/11/22 07:30	Work Order ID: E203054
Phone: (575) 746-9547	Date Logged In: 03/08/22 16:37	Logged In By: Caitlin Christian
Email: natalie@energystaffingllc.com	Due Date: 03/11/22 17:00 (0 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
 - 2. Does the number of samples per sampling site location match the COC? Yes
 - 3. Were samples dropped off by client or carrier? Yes
 - 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
 - 5. Were all samples received within holding time? Yes
- Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Carrier: Courier

Comments/Resolution

Project has been separated into 2 reports due to amount of samples. Workorders are as follows:
 E203053 COC page 1&2 of 5, E203054 COC page 3,4 & 5 of 5. Sampled times not provided on coc.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
 - 8. If yes, was cooler received in good condition? Yes
 - 9. Was the sample(s) received intact, i.e., not broken? Yes
 - 10. Were custody/security seals present? No
 - 11. If yes, were custody/security seals intact? NA
 - 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes
- Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling
13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

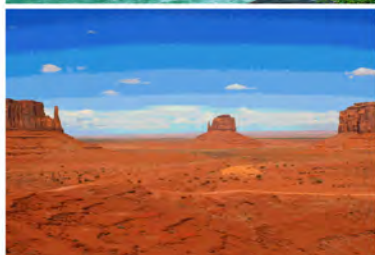
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E203057

Job Number: 20046-0001

Received: 3/10/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/15/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 3/15/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E203057
Date Received: 3/10/2022 10:30:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/10/2022 10:30:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
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ljjarboe@envirotech-inc.com

West Texas Midland/Odessa Area
Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay
Project Number: 20046-0001
Project Manager: Natalie Gladden

Reported:
03/15/22 18:19

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Comp 49 - 2'	E203057-01A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 50 - 2'	E203057-02A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 51 - 2'	E203057-03A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 52 - 2'	E203057-04A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 53 - 2'	E203057-05A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 54 - 2'	E203057-06A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 55 - 2'	E203057-07A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 56 - 2'	E203057-08A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 57 - 2'	E203057-09A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 58 - 2'	E203057-10A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 59 - 2'	E203057-11A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 60 - 2'	E203057-12A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 61 - 2'	E203057-13A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 62 - 2'	E203057-14A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 63 - 2'	E203057-15A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 64 - 2'	E203057-16A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 65 - 2'	E203057-17A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 66 - 2'	E203057-18A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 67 - 2'	E203057-19A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 68 - 2'	E203057-20A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
--	--	---

Comp 49 - 2'

E203057-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
---------	--------	-----------------	----------	----------	----------	-------

Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg	Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22
Toluene	ND	0.0250	1	03/11/22	03/14/22
o-Xylene	ND	0.0250	1	03/11/22	03/14/22
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22

<i>Surrogate: Bromofluorobenzene</i>	95.0 %	70-130		03/11/22	03/14/22
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96.9 %	70-130		03/11/22	03/14/22
<i>Surrogate: Toluene-d8</i>	101 %	70-130		03/11/22	03/14/22

Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg	Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22
<i>Surrogate: Bromofluorobenzene</i>	95.0 %	70-130		03/11/22	03/14/22
<i>Surrogate: 1,2-Dichloroethane-d4</i>	96.9 %	70-130		03/11/22	03/14/22
<i>Surrogate: Toluene-d8</i>	101 %	70-130		03/11/22	03/14/22

Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg	Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22
<i>Surrogate: n-Nonane</i>	106 %	50-200		03/14/22	03/15/22

Anions by EPA 300.0/9056A	mg/kg	mg/kg	Analyst: RAS		Batch: 2212005
Chloride	116	20.0	1	03/14/22	03/15/22



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
--	--	---

Comp 50 - 2'

E203057-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.4 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		108 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	168	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
--	--	---

Comp 51 - 2'
E203057-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		90.8 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		106 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	95.2	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	79.7	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	20.2	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
--	--	---

Comp 52 - 2'

E203057-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.9 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.1 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.9 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		99.1 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		110 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	122	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 53 - 2'
E203057-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		90.6 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		90.6 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		111 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	143	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 54 - 2'
E203057-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		97.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		97.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		112 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 55 - 2'
E203057-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.8 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.2 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.8 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.2 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		109 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 56 - 2'

E203057-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		98.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		98.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		93.4 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	46.4	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 57 - 2'

E203057-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.9 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		98.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.9 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		98.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		114 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	65.7	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 58 - 2'
E203057-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.0 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		98.8 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.0 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		98.8 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		115 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	139	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 59 - 2'

E203057-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.1 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		92.1 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		96.0 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	154	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 60 - 2'

E203057-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.3 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.3 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		97.2 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	203	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 61 - 2'
E203057-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		97.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		91.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		97.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		101 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	48.0	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 62 - 2'
E203057-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		90.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		90.7 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		99.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		97.6 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	56.6	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 63 - 2'

E203057-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		92.3 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.6 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		92.3 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.6 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		101 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		100 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	137	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 64 - 2'
E203057-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		93.3 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		98.5 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		93.3 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		98.5 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		96.3 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	167	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 65 - 2'
E203057-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		118 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.9 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		105 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		118 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		97.9 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		105 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	81.4	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	69.9	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		96.9 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	22.1	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 66 - 2'
E203057-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		102 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		104 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		102 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		104 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		96.9 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 67 - 2'
E203057-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		94.1 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		94.1 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		97.7 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Comp 68 - 2'
E203057-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		92.3 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		99.3 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211088
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		92.3 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		99.3 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212015
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		96.5 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212005
Chloride	ND	20.0	1	03/14/22	03/15/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211088-BLK1)

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.468		0.500		93.5			70-130	
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1			70-130	
Surrogate: Toluene-d8	0.500		0.500		99.9			70-130	

LCS (2211088-BS1)

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	2.88	0.0250	2.50		115			70-130	
Ethylbenzene	2.98	0.0250	2.50		119			70-130	
Toluene	2.97	0.0250	2.50		119			70-130	
o-Xylene	2.86	0.0250	2.50		114			70-130	
p,m-Xylene	5.76	0.0500	5.00		115			70-130	
Total Xylenes	8.62	0.0250	7.50		115			70-130	
Surrogate: Bromofluorobenzene	0.488		0.500		97.6			70-130	
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101			70-130	
Surrogate: Toluene-d8	0.528		0.500		106			70-130	

Matrix Spike (2211088-MS1)

Source: E203057-01

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	2.67	0.0250	2.50	ND	107			48-131	
Ethylbenzene	2.72	0.0250	2.50	ND	109			45-135	
Toluene	2.69	0.0250	2.50	ND	108			48-130	
o-Xylene	2.63	0.0250	2.50	ND	105			43-135	
p,m-Xylene	5.26	0.0500	5.00	ND	105			43-135	
Total Xylenes	7.89	0.0250	7.50	ND	105			43-135	
Surrogate: Bromofluorobenzene	0.487		0.500		97.4			70-130	
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1			70-130	
Surrogate: Toluene-d8	0.510		0.500		102			70-130	

Matrix Spike Dup (2211088-MSD1)

Source: E203057-01

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	2.89	0.0250	2.50	ND	116			48-131	8.08	23
Ethylbenzene	2.89	0.0250	2.50	ND	116			45-135	6.31	27
Toluene	2.87	0.0250	2.50	ND	115			48-130	6.47	24
o-Xylene	2.80	0.0250	2.50	ND	112			43-135	6.28	27
p,m-Xylene	5.58	0.0500	5.00	ND	112			43-135	5.86	27
Total Xylenes	8.38	0.0250	7.50	ND	112			43-135	6.00	27
Surrogate: Bromofluorobenzene	0.486		0.500		97.1			70-130		
Surrogate: 1,2-Dichloroethane-d4	0.490		0.500		97.9			70-130		
Surrogate: Toluene-d8	0.508		0.500		102			70-130		



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211088-BLK1)

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.468		0.500		93.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1	70-130			
Surrogate: Toluene-d8	0.500		0.500		99.9	70-130			

LCS (2211088-BS2)

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	64.4	20.0	50.0		129	70-130			
Surrogate: Bromofluorobenzene	0.476		0.500		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.479		0.500		95.7	70-130			
Surrogate: Toluene-d8	0.512		0.500		102	70-130			

Matrix Spike (2211088-MS2)

Source: E203057-01

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	64.3	20.0	50.0	ND	129	70-130			
Surrogate: Bromofluorobenzene	0.485		0.500		97.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.476		0.500		95.2	70-130			
Surrogate: Toluene-d8	0.524		0.500		105	70-130			

Matrix Spike Dup (2211088-MSD2)

Source: E203057-01

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	61.7	20.0	50.0	ND	123	70-130	4.16	20	
Surrogate: Bromofluorobenzene	0.469		0.500		93.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.2	70-130			
Surrogate: Toluene-d8	0.512		0.500		102	70-130			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported: 3/15/2022 6:19:13PM
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	

Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212015-BLK1)

Prepared: 03/14/22 Analyzed: 03/15/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: <i>n</i> -Nonane	54.1		50.0		108	50-200			

LCS (2212015-BS1)

Prepared: 03/14/22 Analyzed: 03/15/22

Diesel Range Organics (C10-C28)	450	25.0	500		90.1	38-132			
Surrogate: <i>n</i> -Nonane	45.7		50.0		91.4	50-200			

Matrix Spike (2212015-MS1)

Source: E203057-11

Prepared: 03/14/22 Analyzed: 03/15/22

Diesel Range Organics (C10-C28)	453	25.0	500	ND	90.6	38-132			
Surrogate: <i>n</i> -Nonane	42.5		50.0		85.0	50-200			

Matrix Spike Dup (2212015-MSD1)

Source: E203057-11

Prepared: 03/14/22 Analyzed: 03/15/22

Diesel Range Organics (C10-C28)	455	25.0	500	ND	91.0	38-132	0.442	20	
Surrogate: <i>n</i> -Nonane	47.8		50.0		95.5	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:19:13PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212005-BLK1)

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	ND	20.0							
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LCS (2212005-BS1)

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	247	20.0	250		98.7	90-110			
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Matrix Spike (2212005-MS1)

Source: E203057-01

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	347	20.0	250	116	92.5	80-120			
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Matrix Spike Dup (2212005-MSD1)

Source: E203057-01

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	355	20.0	250	116	95.6	80-120	2.22	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	03/15/22 18:19

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Client: MACK ENERGY				Bill To				Lab Use Only				TAT			EPA Program			
Project: THUNDER BAY				Attention: ESS				Lab WO#		Job Number		1D	2D	3D	Standard	CWA	SDWA	
Project Manager:				Address: 2427 W. COUNTY RD				E 203057		20046-000					<input checked="" type="checkbox"/>			
Address:				City, State, Zip HOOBS NM 88240				Analysis and Method										
City, State, Zip				Phone: 575 390-6397				DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0					
Phone:				Email: NATALIE GLADDEN														
Email:																		
Report due by:																		
Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number													Remarks
	3-7-22	S	1	COMP 49-2'	1													
				COMP 50-2'	2													
				COMP 51-2'	3													
				COMP 52-2'	4													
				COMP 53-2'	5													
				COMP 54-2'	6													
				COMP 55-2'	7													
				COMP 56-2'	8													
				COMP 57-2'	9													
				COMP 58-2'	10													
Additional Instructions:																		
I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Sampled by: MARC RIVERA MRC																		
Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.																		
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only												
<i>[Signature]</i>	3-8-22	2:45 PM	<i>[Signature]</i>	3-8-22	1445	Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N												
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	T1 _____ T2 _____ T3 _____												
<i>[Signature]</i>	3-9-22	1630	<i>[Signature]</i>	3-10-22	10:30	AVG Temp °C 4												
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____												
						Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA												
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.																		



Client: MAK ENERGY	Attention: ESS	Lab Use Only		TAT			EPA Program					
Project: THUNDER GAY	Address: 247 W. COUNTY RD	Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA			
Project Manager:	City, State, Zip: HOBBS N.M 88240	E203057	20042-0001									
Address:	Phone: 575 390-6397	Analysis and Method										
City, State, Zip	Email: NATALIE GLADEN	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	RCRA				
Phone:								State				
Email:								NM	CO	UT	AZ	TX
Report due by:								<input checked="" type="checkbox"/>				

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	Remarks
	3-7-22	S	1	COMP 59-2	11							X 06090 NM
				COMP 60-2	12							
				COMP 61-2	13							
				COMP 62-2	14							
				COMP 63-2	15							
				COMP 64-2	16							
				COMP 65-2	17							
				COMP 66-2	18							
				COMP 67-2	19							
				COMP 68-2	20							

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location date or time of collection is considered fraud and may be grounds for legal action. Sampled by: **MARC RIVERA**

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C 4
<i>[Signature]</i>	3-8-22	2:45 pm	<i>[Signature]</i>	3-8-22	1445	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	
<i>[Signature]</i>	3-9-22	1630	<i>[Signature]</i>	3-10-22	10:30	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Envirotech Analytical Laboratory

Printed: 3/10/2022 12:22:54PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/10/22 10:30	Work Order ID: E203057
Phone: (575) 390-6397	Date Logged In: 03/09/22 09:53	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 03/15/22 17:00 (3 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
 - 2. Does the number of samples per sampling site location match the COC? Yes
 - 3. Were samples dropped off by client or carrier? Yes
 - 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
 - 5. Were all samples received within holding time? Yes
- Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Carrier: UPS

Comments/Resolution

Project has been separated into 2 reports due to amount of samples. Workorders are as follows:
 E203057 COC page 1&2 of 5, E203058 COC pages 3,4& 5 of 5. Sample times not provided on the COC.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
 - 8. If yes, was cooler received in good condition? Yes
 - 9. Was the sample(s) received intact, i.e., not broken? Yes
 - 10. Were custody/security seals present? No
 - 11. If yes, were custody/security seals intact? NA
 - 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes
- Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

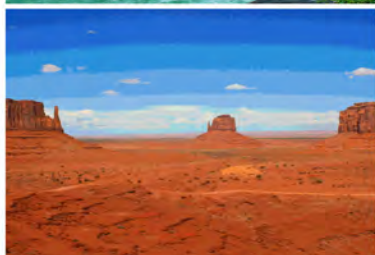
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E203058

Job Number: 20046-0001

Received: 3/10/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/15/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)

Date Reported: 3/15/22



Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E203058
Date Received: 3/10/2022 10:30:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/10/2022 10:30:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
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Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy
7 W. Compress Road
Artesia NM, 88210

Project Name: Thunderbay
Project Number: 20046-0001
Project Manager: Natalie Gladden

Reported:
03/15/22 18:43

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Comp 69 - 2'	E203058-01A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 70 - 2'	E203058-02A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 71 - 2'	E203058-03A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 72 - 2'	E203058-04A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 73 - 2'	E203058-05A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 74 - 2'	E203058-06A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 75 - 2'	E203058-07A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 76 - 2'	E203058-08A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 77 - 2'	E203058-09A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 78 - 2'	E203058-10A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 79 - 2'	E203058-11A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 80 - 2'	E203058-12A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 81 - 2'	E203058-13A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 82 - 2'	E203058-14A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 83 - 2'	E203058-15A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 84 - 2'	E203058-16A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 85 - 2'	E203058-17A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 86 - 2'	E203058-18A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 87 - 2'	E203058-19A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 88 - 2'	E203058-20A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 89 - 2'	E203058-21A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 90 - 2'	E203058-22A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 91 - 2'	E203058-23A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 92 - 2'	E203058-24A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.
Comp 93 - 3'	E203058-25A	Soil	03/07/22	03/10/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 69 - 2'
E203058-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B		mg/kg	mg/kg	Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.1 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO		mg/kg	mg/kg	Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		95.9 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO		mg/kg	mg/kg	Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	66.1	25.0	1	03/14/22	03/14/22	
Oil Range Organics (C28-C36)	109	50.0	1	03/14/22	03/14/22	
<i>Surrogate: n-Nonane</i>		112 %	50-200	03/14/22	03/14/22	
Anions by EPA 300.0/9056A		mg/kg	mg/kg	Analyst: RAS		Batch: 2212006
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 70 - 2'
E203058-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	95.5 %	70-130		03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	96.5 %	70-130		03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	35.2	25.0	1	03/14/22	03/14/22	
Oil Range Organics (C28-C36)	59.0	50.0	1	03/14/22	03/14/22	
<i>Surrogate: n-Nonane</i>						
	113 %	50-200		03/14/22	03/14/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 71 - 2'
E203058-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		95.0 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		97.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	34.8	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	63.9	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		112 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 72 - 2'

E203058-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		95.2 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		96.0 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		102 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	67.0	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 73 - 2'

E203058-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.5 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		97.5 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		115 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	70.2	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 74 - 2'
E203058-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		97.2 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		115 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	72.7	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 75 - 2'

E203058-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		96.3 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		112 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	80.1	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 76 - 2'

E203058-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.6 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		96.3 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	40.2	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	69.1	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		111 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	ND	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 77 - 2'

E203058-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.1 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		96.7 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		112 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	173	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 78 - 2'
E203058-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		93.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		98.8 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		114 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	183	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 79 - 2'
E203058-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		93.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.0 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		111 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	180	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 80 - 2'
E203058-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.5 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		98.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		115 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	87.6	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 81 - 2'
E203058-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.6 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.7 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		116 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	83.9	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 82 - 2'
E203058-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.1 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.9 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		116 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	215	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 83 - 2'
E203058-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.7 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.8 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		114 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	85.9	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 84 - 2'

E203058-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.5 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.4 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		112 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	178	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 85 - 2'

E203058-17

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		94.0 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.6 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>						
		108 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	185	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 86 - 2'

E203058-18

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.2 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.9 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		110 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	173	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 87 - 2'
E203058-19

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.5 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.2 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		111 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	93.1	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 88 - 2'

E203058-20

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.4 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: RKS		Batch: 2211089
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.7 %	70-130	03/11/22	03/15/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212014
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		111 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212006
Chloride	149	20.0	1	03/14/22	03/15/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 89 - 2'

E203058-21

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		113 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		94.6 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		76.2 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		113 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		94.6 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		76.2 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212009
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		118 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212004
Chloride	147	20.0	1	03/14/22	03/14/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 90 - 2'
E203058-22

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Benzene	ND	0.0250	1	03/11/22	03/14/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/14/22	
Toluene	ND	0.0250	1	03/11/22	03/14/22	
o-Xylene	ND	0.0250	1	03/11/22	03/14/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/14/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		98.1 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		73.0 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/14/22	
<i>Surrogate: Bromofluorobenzene</i>		98.1 %	70-130	03/11/22	03/14/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.4 %	70-130	03/11/22	03/14/22	
<i>Surrogate: Toluene-d8</i>		73.0 %	70-130	03/11/22	03/14/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212009
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		119 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212004
Chloride	141	20.0	1	03/14/22	03/14/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 91 - 2'
E203058-23

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		79.4 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.7 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		66.7 %	70-130	03/11/22	03/15/22	SI
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		79.4 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.7 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		66.7 %	70-130	03/11/22	03/15/22	SI
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212009
Diesel Range Organics (C10-C28)	50.2	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	82.8	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		124 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212004
Chloride	ND	20.0	1	03/14/22	03/14/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 92 - 2'
E203058-24

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B		mg/kg	mg/kg	Analyst: IY		Batch: 2211087
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		67.6 %	70-130	03/11/22	03/15/22	SI
Nonhalogenated Organics by EPA 8015D - GRO		mg/kg	mg/kg	Analyst: IY		Batch: 2211087
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		67.6 %	70-130	03/11/22	03/15/22	SI
Nonhalogenated Organics by EPA 8015D - DRO/ORO		mg/kg	mg/kg	Analyst: JL		Batch: 2212009
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		120 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A		mg/kg	mg/kg	Analyst: RAS		Batch: 2212004
Chloride	ND	20.0	1	03/14/22	03/14/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Comp 93 - 3'

E203058-25

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Benzene	ND	0.0250	1	03/11/22	03/15/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/15/22	
Toluene	ND	0.0250	1	03/11/22	03/15/22	
o-Xylene	ND	0.0250	1	03/11/22	03/15/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/15/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		66.5 %	70-130	03/11/22	03/15/22	SI
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211087
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/15/22	
<i>Surrogate: Bromofluorobenzene</i>		101 %	70-130	03/11/22	03/15/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/15/22	
<i>Surrogate: Toluene-d8</i>		66.5 %	70-130	03/11/22	03/15/22	SI
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212009
Diesel Range Organics (C10-C28)	ND	25.0	1	03/14/22	03/15/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/14/22	03/15/22	
<i>Surrogate: n-Nonane</i>		121 %	50-200	03/14/22	03/15/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212004
Chloride	146	20.0	1	03/14/22	03/14/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211087-BLK1)

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.525		0.500		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.436		0.500		87.1	70-130			
Surrogate: Toluene-d8	0.531		0.500		106	70-130			

LCS (2211087-BS1)

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	2.83	0.0250	2.50		113	70-130			
Ethylbenzene	2.90	0.0250	2.50		116	70-130			
Toluene	2.89	0.0250	2.50		115	70-130			
o-Xylene	2.80	0.0250	2.50		112	70-130			
p,m-Xylene	5.59	0.0500	5.00		112	70-130			
Total Xylenes	8.40	0.0250	7.50		112	70-130			
Surrogate: Bromofluorobenzene	0.488		0.500		97.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.497		0.500		99.4	70-130			
Surrogate: Toluene-d8	0.518		0.500		104	70-130			

Matrix Spike (2211087-MS1)

Source: E203056-02

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	2.79	0.0250	2.50	ND	112	48-131			
Ethylbenzene	2.84	0.0250	2.50	ND	113	45-135			
Toluene	2.83	0.0250	2.50	ND	113	48-130			
o-Xylene	2.73	0.0250	2.50	ND	109	43-135			
p,m-Xylene	5.48	0.0500	5.00	ND	110	43-135			
Total Xylenes	8.20	0.0250	7.50	ND	109	43-135			
Surrogate: Bromofluorobenzene	0.489		0.500		97.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.514		0.500		103	70-130			
Surrogate: Toluene-d8	0.507		0.500		101	70-130			

Matrix Spike Dup (2211087-MSD1)

Source: E203056-02

Prepared: 03/11/22 Analyzed: 03/15/22

Benzene	2.82	0.0250	2.50	ND	113	48-131	1.14	23	
Ethylbenzene	2.92	0.0250	2.50	ND	117	45-135	2.78	27	
Toluene	2.92	0.0250	2.50	ND	117	48-130	3.15	24	
o-Xylene	2.79	0.0250	2.50	ND	112	43-135	2.32	27	
p,m-Xylene	5.62	0.0500	5.00	ND	112	43-135	2.60	27	
Total Xylenes	8.41	0.0250	7.50	ND	112	43-135	2.51	27	
Surrogate: Bromofluorobenzene	0.490		0.500		97.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.492		0.500		98.3	70-130			
Surrogate: Toluene-d8	0.521		0.500		104	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Volatile Organics by EPA 8021B

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211089-BLK1)

Prepared: 03/11/22 Analyzed: 03/14/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.47		8.00		93.4	70-130			

LCS (2211089-BS1)

Prepared: 03/11/22 Analyzed: 03/14/22

Benzene	4.82	0.0250	5.00		96.5	70-130			
Ethylbenzene	5.16	0.0250	5.00		103	70-130			
Toluene	5.34	0.0250	5.00		107	70-130			
o-Xylene	5.13	0.0250	5.00		103	70-130			
p,m-Xylene	10.5	0.0500	10.0		105	70-130			
Total Xylenes	15.6	0.0250	15.0		104	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.60		8.00		95.0	70-130			

Matrix Spike (2211089-MS1)

Source: E203058-01

Prepared: 03/11/22 Analyzed: 03/14/22

Benzene	5.16	0.0250	5.00	ND	103	54-133			
Ethylbenzene	5.48	0.0250	5.00	ND	110	61-133			
Toluene	5.69	0.0250	5.00	ND	114	61-130			
o-Xylene	5.43	0.0250	5.00	ND	109	63-131			
p,m-Xylene	11.1	0.0500	10.0	ND	111	63-131			
Total Xylenes	16.5	0.0250	15.0	ND	110	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.66		8.00		95.7	70-130			

Matrix Spike Dup (2211089-MSD1)

Source: E203058-01

Prepared: 03/11/22 Analyzed: 03/14/22

Benzene	4.83	0.0250	5.00	ND	96.5	54-133	6.59	20	
Ethylbenzene	5.17	0.0250	5.00	ND	103	61-133	5.95	20	
Toluene	5.34	0.0250	5.00	ND	107	61-130	6.21	20	
o-Xylene	5.12	0.0250	5.00	ND	102	63-131	5.93	20	
p,m-Xylene	10.5	0.0500	10.0	ND	105	63-131	5.85	20	
Total Xylenes	15.6	0.0250	15.0	ND	104	63-131	5.87	20	
Surrogate: 4-Bromochlorobenzene-PID	7.63		8.00		95.4	70-130			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported: 3/15/2022 6:43:50PM
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	

Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211087-BLK1)

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.525		0.500		105	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.436		0.500		87.1	70-130			
Surrogate: Toluene-d8	0.531		0.500		106	70-130			

LCS (2211087-BS2)

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	51.6	20.0	50.0		103	70-130			
Surrogate: Bromofluorobenzene	0.513		0.500		103	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.469		0.500		93.8	70-130			
Surrogate: Toluene-d8	0.489		0.500		97.8	70-130			

Matrix Spike (2211087-MS2)

Source: E203056-02

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	76.6	20.0	50.0	ND	153	70-130			M7
Surrogate: Bromofluorobenzene	0.487		0.500		97.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.490		0.500		97.9	70-130			
Surrogate: Toluene-d8	0.450		0.500		89.9	70-130			

Matrix Spike Dup (2211087-MSD2)

Source: E203056-02

Prepared: 03/11/22 Analyzed: 03/15/22

Gasoline Range Organics (C6-C10)	69.1	20.0	50.0	ND	138	70-130	10.3	20	M7
Surrogate: Bromofluorobenzene	0.462		0.500		92.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.345		0.500		69.0	70-130			SI
Surrogate: Toluene-d8	0.740		0.500		148	70-130			SI



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: RKS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211089-BLK1)

Prepared: 03/11/22 Analyzed: 03/14/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.77		8.00		97.2	70-130			

LCS (2211089-BS2)

Prepared: 03/11/22 Analyzed: 03/14/22

Gasoline Range Organics (C6-C10)	49.2	20.0	50.0		98.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.66		8.00		95.8	70-130			

Matrix Spike (2211089-MS2)

Source: E203058-01

Prepared: 03/11/22 Analyzed: 03/14/22

Gasoline Range Organics (C6-C10)	48.7	20.0	50.0	ND	97.3	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.83		8.00		97.9	70-130			

Matrix Spike Dup (2211089-MSD2)

Source: E203058-01

Prepared: 03/11/22 Analyzed: 03/14/22

Gasoline Range Organics (C6-C10)	48.9	20.0	50.0	ND	97.8	70-130	0.542	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	7.96		8.00		99.5	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212009-BLK1)

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	63.1		50.0		126	50-200			

LCS (2212009-BS1)

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	448	25.0	500		89.6	38-132			
Surrogate: n-Nonane	55.4		50.0		111	50-200			

Matrix Spike (2212009-MS1)

Source: E203058-24

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	458	25.0	500	ND	91.7	38-132			
Surrogate: n-Nonane	53.8		50.0		108	50-200			

Matrix Spike Dup (2212009-MSD1)

Source: E203058-24

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	472	25.0	500	ND	94.4	38-132	2.94	20	
Surrogate: n-Nonane	59.1		50.0		118	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212014-BLK1)

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	53.7		50.0		107	50-200			

LCS (2212014-BS1)

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	454	25.0	500		90.8	38-132			
Surrogate: n-Nonane	49.8		50.0		99.5	50-200			

Matrix Spike (2212014-MS1)

Source: E203058-08

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	482	25.0	500	40.2	88.3	38-132			
Surrogate: n-Nonane	52.6		50.0		105	50-200			

Matrix Spike Dup (2212014-MSD1)

Source: E203058-08

Prepared: 03/14/22 Analyzed: 03/14/22

Diesel Range Organics (C10-C28)	491	25.0	500	40.2	90.2	38-132	1.98	20	
Surrogate: n-Nonane	52.2		50.0		104	50-200			



QC Summary Data

Mack Energy	Project Name:	Thunderbay	Reported:
7 W. Compress Road	Project Number:	20046-0001	
Artesia NM, 88210	Project Manager:	Natalie Gladden	3/15/2022 6:43:50PM

Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result	Reporting Limit	Spike Level	Source Result	Rec	Rec Limits	RPD	RPD Limit	Notes
	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	

Blank (2212004-BLK1)

Prepared: 03/14/22 Analyzed: 03/14/22

Chloride	ND	20.0							
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LCS (2212004-BS1)

Prepared: 03/14/22 Analyzed: 03/14/22

Chloride	255	20.0	250		102	90-110			
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Matrix Spike (2212004-MS1)

Source: E203056-01

Prepared: 03/14/22 Analyzed: 03/14/22

Chloride	346	20.0	250	98.5	99.1	80-120			
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Matrix Spike Dup (2212004-MSD1)

Source: E203056-01

Prepared: 03/14/22 Analyzed: 03/14/22

Chloride	347	20.0	250	98.5	99.5	80-120	0.314	20	
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QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/15/2022 6:43:50PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212006-BLK1)

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	ND	20.0							
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LCS (2212006-BS1)

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	241	20.0	250		96.4	90-110			
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Matrix Spike (2212006-MS1)

Source: E203058-01

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	259	20.0	250	ND	104	80-120			
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Matrix Spike Dup (2212006-MSD1)

Source: E203058-01

Prepared: 03/14/22 Analyzed: 03/15/22

Chloride	258	20.0	250	ND	103	80-120	0.198	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 03/15/22 18:43
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- M7 Matrix Spike was outside the acceptance limits.
- S1 Surrogate spike recovery was outside of the established acceptance limits.
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- RPD Relative Percent Difference
- DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.
Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.

Client: MACK ENERGY	Bill To: ESS	Lab Use Only		TAT		EPA Program			
Project: THUNDERBAY	Attention: ESS	Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA
Project Manager:	Address: 2427 W. COUNTY RD	F203058	200460001						
Address:	City, State, Zip: HOBBS NM 88240	Analysis and Method							
City, State, Zip:	Phone: 575 390-6397	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	RCRA	
Phone:	Email: NATALIE GLADEN							State	
Email:								NM	CO
Report due by:								UT	AZ
								TX	

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	Remarks
	3-8-22	S	1	COMP 69-2'	1							
				COMP 70-2'	2							
				COMP 71-2'	3							
				COMP 72-2'	4							
				COMP 73-2'	5							
				COMP 74-2'	6							
				COMP 75-2'	7							
				COMP 76-2'	8							
				COMP 77-2'	9							
				COMP 78-2'	10							

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location date or time of collection is considered fraud and may be grounds for legal action.
 Sampled by: **Mack Rivera** *[Signature]*
 Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <i>[Signature]</i>	Date: 3-8-22	Time	Received by: (Signature) <i>[Signature]</i>	Date: 3-8-22	Time: 1445	Lab Use Only
Relinquished by: (Signature) <i>[Signature]</i>	Date: 3-9-22	Time: 1630	Received by: (Signature) <i>[Signature]</i>	Date: 3/10/22	Time: 10:30	Received on ice: <input checked="" type="radio"/> Y <input type="radio"/> N
Relinquished by: (Signature) <i>[Signature]</i>	Date	Time	Received by: (Signature)	Date	Time	T1 _____ T2 _____ T3 _____
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other						AVG Temp °C 4

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Client: <u>MACK ENERGY</u> Project: <u>THUNDERBAY</u> Project Manager: Address: City, State, Zip Phone: Email: Report due by:	Bill To Attention: <u>ESS</u> Address: <u>2427 W. COUNTY RD</u> City, State, Zip: <u>HOBBS N.M. 88404</u> Phone: <u>575 390-6397</u> Email: <u>NATALIE GLADEN</u>	Lab Use Only Lab WO# <u>E208058</u> Job Number <u>20046000</u> Analysis and Method	TAT 1D 2D 3D Standard	EPA Program CWA SDWA RCRA
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Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	State	Remarks
	3-7-22	S	1	COMP 79-2 ⁻	11							NM	
				COMP 80-2 ⁻	12							CO	
				COMP 81-2 ⁻	13							UT	
				COMP 82-2 ⁻	14							AZ	
				COMP 83-2 ⁻	15							TX	
				COMP 84-2 ⁻	16								
				COMP 85-2 ⁻	17								
				COMP 86-2 ⁻	18								
				COMP 87-2 ⁻	19								

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Sampled by: MARC RIVERA

Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date	Time	Received by: (Signature) <u>[Signature]</u>	Date	Time	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date	Time	Received by: (Signature) <u>[Signature]</u>	Date	Time	
Relinquished by: (Signature) <u>[Signature]</u>	Date	Time	Received by: (Signature) <u>[Signature]</u>	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other

Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Client: <u>MACK ENERGY</u>		Bill To: <u>ESS</u>		Lab Use Only		TAT		EPA Program							
Project: <u>THUNDERBOLT</u>		Attention: <u>ESS</u>		Lab WO# <u>E203058</u>		Job Number <u>20046-0001</u>		1D	2D	3D	Standard	CWA	SDWA		
Project Manager:		Address: <u>2427 W. COUNTY RD</u>		Analysis and Method								RCRA			
Address:		City, State, Zip <u>HOBBS NM 88240</u>		DRO/DRO by 8015		GRO/DRO by 8015		BTEX by 8021		VOC by 8260		Metals 6010		Chloride 300.0	
City, State, Zip		Phone: <u>575 390-6397</u>													
Phone:		Email: <u>NATALIE GLADSON</u>													
Email:															
Report due by:															
Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number							State		Remarks	
	<u>3-7-22</u>	<u>S</u>	<u>1</u>	<u>COMP 88-2'</u>	<u>20</u>							<u>NM</u>			
				<u>COMP 89-2'</u>	<u>21</u>							<u>CO</u>			
				<u>COMP 90-2'</u>	<u>22</u>							<u>UT</u>			
				<u>COMP 91-2'</u>	<u>23</u>							<u>AZ</u>			
				<u>COMP 92-2'</u>	<u>24</u>							<u>TX</u>			
				<u>COMP 93-3'</u>	<u>25</u>										
				SW COMP 1-2'											
				SW COMP 2-2'											
				SW COMP 3-2'											
Additional Instructions:															
I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.										Sampled by:		Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.			
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	Lab Use Only		Received on ice: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N					
<u>[Signature]</u>		<u>3-8-22</u>		<u>[Signature]</u>		<u>3-8-22</u>	<u>1445</u>	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N							
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	T1		T2		T3			
<u>[Signature]</u>		<u>3-9-22</u>	<u>11:30</u>	<u>[Signature]</u>		<u>3/10/22</u>	<u>10:30</u>								
Relinquished by: (Signature)		Date	Time	Received by: (Signature)		Date	Time	AVG Temp °C		<u>4</u>					
<u>[Signature]</u>				<u>[Signature]</u>				<u>4</u>							
Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other						Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA									
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.															



Envirotech Analytical Laboratory

Printed: 3/10/2022 12:27:52PM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/10/22 10:30	Work Order ID: E203058
Phone: (575) 390-6397	Date Logged In: 03/09/22 09:55	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 03/15/22 17:00 (3 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
 - 2. Does the number of samples per sampling site location match the COC? Yes
 - 3. Were samples dropped off by client or carrier? Yes
 - 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
 - 5. Were all samples received within holding time? Yes
- Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Carrier: UPS

Comments/Resolution

Project has been separated into 2 reports due to amount of samples. Workorders are as follows:
 E203057 COC page 1&2 of 5, E203058 COC pages 3,4& 5 of 5. Sample times not provided on the COC.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
 - 8. If yes, was cooler received in good condition? Yes
 - 9. Was the sample(s) received intact, i.e., not broken? Yes
 - 10. Were custody/security seals present? No
 - 11. If yes, were custody/security seals intact? NA
 - 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes
- Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Client Instruction

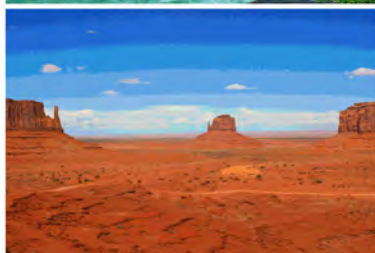
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay Fed Com #1

Work Order: E203075

Job Number: 20046-0001

Received: 3/11/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/14/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)

Date Reported: 3/14/22



Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay Fed Com #1
Workorder: E203075
Date Received: 3/11/2022 7:30:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/11/2022 7:30:00AM, under the Project Name: Thunderbay Fed Com #1.

The analytical test results summarized in this report with the Project Name: Thunderbay Fed Com #1 apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
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Cell: 775-287-1762
whinchman@envirotech-inc.com

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Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 03/14/22 17:02
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Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
SW Comp 1 - 2'	E203075-01A	Soil	03/09/22	03/11/22	Glass Jar, 4 oz.
SW Comp 2 - 2'	E203075-02A	Soil	03/09/22	03/11/22	Glass Jar, 4 oz.
SW Comp 3 - 2'	E203075-03A	Soil	03/09/22	03/11/22	Glass Jar, 4 oz.
SW Comp 4 - 2'	E203075-04A	Soil	03/09/22	03/11/22	Glass Jar, 4 oz.
SW Comp 5 - 2'	E203075-05A	Soil	03/09/22	03/11/22	Glass Jar, 4 oz.
SW Comp 6 - 2'	E203075-06A	Soil	03/09/22	03/11/22	Glass Jar, 4 oz.



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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SW Comp 1 - 2'

E203075-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.5 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.5 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		100 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		111 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211073
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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SW Comp 2 -2'
E203075-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.2 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.2 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.6 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		109 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211073
Chloride	150	20.0	1	03/11/22	03/11/22	

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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SW Comp 3 - 2'

E203075-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.0 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		92.0 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		103 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		114 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211073
Chloride	148	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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SW Comp 4 - 2'

E203075-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.3 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		91.3 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		102 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		99.1 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		114 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2211073
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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SW Comp 5 - 2'

E203075-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.6 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		98.7 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		114 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211073
Chloride	ND	20.0	1	03/11/22	03/11/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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SW Comp 6 - 2'

E203075-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organic Compounds by EPA 8260B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Benzene	ND	0.0250	1	03/11/22	03/11/22	
Ethylbenzene	ND	0.0250	1	03/11/22	03/11/22	
Toluene	ND	0.0250	1	03/11/22	03/11/22	
o-Xylene	ND	0.0250	1	03/11/22	03/11/22	
p,m-Xylene	ND	0.0500	1	03/11/22	03/11/22	
Total Xylenes	ND	0.0250	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.1 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2211080
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/11/22	03/11/22	
<i>Surrogate: Bromofluorobenzene</i>		90.1 %	70-130	03/11/22	03/11/22	
<i>Surrogate: 1,2-Dichloroethane-d4</i>		104 %	70-130	03/11/22	03/11/22	
<i>Surrogate: Toluene-d8</i>		100 %	70-130	03/11/22	03/11/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2211066
Diesel Range Organics (C10-C28)	ND	25.0	1	03/10/22	03/11/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/10/22	03/11/22	
<i>Surrogate: n-Nonane</i>		114 %	50-200	03/10/22	03/11/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2211073
Chloride	ND	20.0	1	03/11/22	03/11/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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Volatile Organic Compounds by EPA 8260B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211080-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: Bromofluorobenzene	0.446		0.500		89.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101	70-130			
Surrogate: Toluene-d8	0.492		0.500		98.4	70-130			

LCS (2211080-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.85	0.0250	2.50		114	70-130			
Ethylbenzene	3.05	0.0250	2.50		122	70-130			
Toluene	3.01	0.0250	2.50		121	70-130			
o-Xylene	2.93	0.0250	2.50		117	70-130			
p,m-Xylene	5.82	0.0500	5.00		116	70-130			
Total Xylenes	8.76	0.0250	7.50		117	70-130			
Surrogate: Bromofluorobenzene	0.480		0.500		96.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.515		0.500		103	70-130			
Surrogate: Toluene-d8	0.524		0.500		105	70-130			

LCS Dup (2211080-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Benzene	2.77	0.0250	2.50		111	70-130	2.60	23	
Ethylbenzene	2.93	0.0250	2.50		117	70-130	3.83	27	
Toluene	2.92	0.0250	2.50		117	70-130	3.32	24	
o-Xylene	2.80	0.0250	2.50		112	70-130	4.66	27	
p,m-Xylene	5.64	0.0500	5.00		113	70-130	3.29	27	
Total Xylenes	8.43	0.0250	7.50		112	70-130	3.75	27	
Surrogate: Bromofluorobenzene	0.486		0.500		97.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.505		0.500		101	70-130			
Surrogate: Toluene-d8	0.519		0.500		104	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211080-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: Bromofluorobenzene	0.446		0.500		89.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.507		0.500		101	70-130			
Surrogate: Toluene-d8	0.492		0.500		98.4	70-130			

LCS (2211080-BS2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	60.8	20.0	50.0		122	70-130			
Surrogate: Bromofluorobenzene	0.475		0.500		95.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.486		0.500		97.1	70-130			
Surrogate: Toluene-d8	0.527		0.500		105	70-130			

LCS Dup (2211080-BSD2)

Prepared: 03/10/22 Analyzed: 03/11/22

Gasoline Range Organics (C6-C10)	63.5	20.0	50.0		127	70-130	4.31	20	
Surrogate: Bromofluorobenzene	0.476		0.500		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.511		0.500		102	70-130			
Surrogate: Toluene-d8	0.515		0.500		103	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211066-BLK1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: <i>n</i> -Nonane	55.5		50.0		111	50-200			

LCS (2211066-BS1)

Prepared: 03/10/22 Analyzed: 03/10/22

Diesel Range Organics (C10-C28)	458	25.0	500		91.5	38-132			
Surrogate: <i>n</i> -Nonane	54.1		50.0		108	50-200			

Matrix Spike (2211066-MS1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	488	25.0	500	ND	97.6	38-132			
Surrogate: <i>n</i> -Nonane	53.6		50.0		107	50-200			

Matrix Spike Dup (2211066-MSD1)

Source: E203053-17

Prepared: 03/10/22 Analyzed: 03/11/22

Diesel Range Organics (C10-C28)	485	25.0	500	ND	97.0	38-132	0.628	20	
Surrogate: <i>n</i> -Nonane	53.5		50.0		107	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Fed Com #1 Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/14/2022 5:02:05PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2211073-BLK1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	ND	20.0							
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LCS (2211073-BS1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	247	20.0	250		98.6	90-110			
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LCS Dup (2211073-BSD1)

Prepared: 03/10/22 Analyzed: 03/11/22

Chloride	248	20.0	250		99.2	90-110	0.587	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay Fed Com #1	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	03/14/22 17:02

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to: Inaugurating: 9/30/2022 10:09:16 AM

Client: Wack Energy
 Project: Thunderbay Well com #1
 Project Manager: Adatt Buckles
 Address:
 City, State, Zip
 Phone:
 Email:
 Report due by: 5/5

Bill To
 Attention: Natalie Ladden
 Address: 8724 NW County rd
 City, State, Zip Hobbs NM 88240
 Phone: 575-393-9048
 Email:
natalie@energystaffingllc.com
adatt@energystaffingllc.com

Lab Use Only		TAT			EPA Program		
Lab WO#	Job Number	1D	2D	3D	Standard	CWA	SDWA
<u>E203075</u>	<u>20046-0001</u>						

Analysis and Method										State					
DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0			BGDOC NM	BGDOC TX						

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	3/9	Soil	1	Sw Comp 1 - 2'	1							/		
				Sw Comp 2 - 2'	2							/		
				Sw Comp 3 - 2'	3							/		
				Sw Comp 4 - 2'	4							/		
				Sw Comp 5 - 2'	5							/		
				Sw. Comp 6 - 2'	6							/		

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>Cabrita L. Y...</u>	Date 3/10/22	Time 1540	Received by: (Signature) <u>Jan Job</u>	Date 3-10-22	Time 1540	Lab Use Only Received on ice: <input checked="" type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>Jan Job</u>	Date 3-10-22	Time 1900	Received by: (Signature) <u>Cecilia Christ</u>	Date 3/10/22	Time 7:30	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by: OCD: 6/15/2022 4:07:07 PM

Page 464 of 508

Envirotech Analytical Laboratory

Printed: 3/11/2022 8:22:01AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/11/22 07:30	Work Order ID: E203075
Phone: (575) 746-9547	Date Logged In: 03/10/22 17:20	Logged In By: Caitlin Christian
Email: natalie@energystaffingllc.com	Due Date: 03/11/22 17:00 (0 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
- 2. Does the number of samples per sampling site location match the COC? Yes
- 3. Were samples dropped off by client or carrier? Yes
- 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
- 5. Were all samples received within holding time? Yes

Carrier: Courier

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
- 8. If yes, was cooler received in good condition? Yes
- 9. Was the sample(s) received intact, i.e., not broken? Yes
- 10. Were custody/security seals present? No
- 11. If yes, were custody/security seals intact? NA
- 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Comments/Resolution

Sample times not provided on COC.

Client Instruction

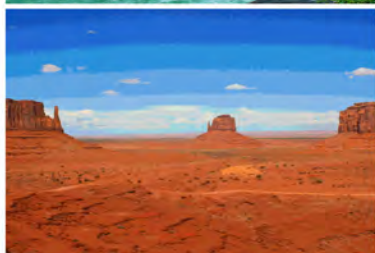
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

Report to:
Natalie Gladden



envirotech

Practical Solutions for a Better Tomorrow

Analytical Report

Mack Energy

Project Name: Thunderbay

Work Order: E203109

Job Number: 20046-0001

Received: 3/18/2022

Revision: 1

Report Reviewed By:

Walter Hinchman
Laboratory Director
3/22/22

5796 U.S. Hwy 64
Farmington, NM 87401

Phone: (505) 632-1881
Envirotech-inc.com



Envirotech Inc. certifies the test results meet all requirements of TNI unless noted otherwise.
Statement of Data Authenticity: Envirotech Inc, attests the data reported has not been altered in any way.
Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech Inc.
Envirotech Inc, holds the Utah TNI certification NM00979 for data reported.
Envirotech Inc, holds the Texas TNI certification T104704557 for data reported.
Envirotech Inc, holds the NM SDWA certification for data reported. (Lab #NM00979)



Date Reported: 3/22/22

Natalie Gladden
7 W. Compress Road
Artesia, NM 88210

Project Name: Thunderbay
Workorder: E203109
Date Received: 3/18/2022 8:15:00AM

Natalie Gladden,

Thank you for choosing Envirotech, Inc. as your analytical testing laboratory for the sample(s) received on, 3/18/2022 8:15:00AM, under the Project Name: Thunderbay.

The analytical test results summarized in this report with the Project Name: Thunderbay apply to the individual samples collected, identified and submitted bearing the project name on the enclosed chain-of-custody. Subcontracted sample analyses not conducted by Envirotech, Inc., are attached in full as issued by the subcontract laboratory.

Please review the Chain-of-Custody (COC) and Sample Receipt Checklist (SRC) for any issues regarding sample receipt temperature, containers, preservation etc. To best understand your test results, review the entire report summarizing your sample data and the associated quality control batch data.

All reported data in this analytical report were analyzed according to the referenced method(s) and are in compliance with the latest NELAC/TNI standards, unless otherwise noted. Samples or analytical quality control parameters not meeting specific QC criteria are qualified with a data flag. Data flag definitions are located in the Notes and Definitions section of this analytical report.

If you have any questions concerning this report, please feel free to contact Envirotech, Inc.

Respectfully,

Walter Hinchman
Laboratory Director
Office: 505-632-1881
Cell: 775-287-1762
whinchman@envirotech-inc.com

Raina Schwanz
Laboratory Administrator
Office: 505-632-1881
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Rayny Hagan
Technical Representative
Office: 505-421-LABS(5227)

Envirotech Web Address: www.envirotech-inc.com

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Sample Summary

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 03/22/22 16:34
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Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Comp 18	E203109-01A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 19	E203109-02A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 20	E203109-03A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 21	E203109-04A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 22	E203109-05A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 23	E203109-06A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 24	E203109-07A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 42	E203109-08A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 46	E203109-09A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 51	E203109-10A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 65	E203109-11A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 69	E203109-12A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 70	E203109-13A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 71	E203109-14A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 76	E203109-15A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.
Comp 91	E203109-16A	Soil	03/17/22	03/18/22	Glass Jar, 4 oz.

Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 18

E203109-01

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	94.0 %	70-130		03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	101 %	70-130		03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>						
	133 %	50-200		03/18/22	03/21/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	27.5	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 19

E203109-02

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.3 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		120 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	24.1	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 20

E203109-03

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.4 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.3 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		109 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	24.6	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 21

E203109-04

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.3 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		98.6 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		98.0 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	35.9	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 22
E203109-05

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
	95.3 %	70-130		03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
	99.5 %	70-130		03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>						
	105 %	50-200		03/18/22	03/21/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	22.8	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 23

E203109-06

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B						
	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>						
		95.0 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO						
	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>						
		99.4 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO						
	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>						
		107 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A						
	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	23.1	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 24

E203109-07

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.1 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.5 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		97.9 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	62.2	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 42

E203109-08

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		95.0 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.2 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		103 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	25.3	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 46
E203109-09

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.7 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.6 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		97.0 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	24.6	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 51
E203109-10

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.4 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		88.9 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	23.9	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 65

E203109-11

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.2 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	24.8	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 69

E203109-12

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/19/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/19/22	
Toluene	ND	0.0250	1	03/18/22	03/19/22	
o-Xylene	ND	0.0250	1	03/18/22	03/19/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/19/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/19/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.0 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/19/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.4 %	70-130	03/18/22	03/19/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		102 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	25.6	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 70

E203109-13

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/20/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/20/22	
Toluene	ND	0.0250	1	03/18/22	03/20/22	
o-Xylene	ND	0.0250	1	03/18/22	03/20/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/20/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/20/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.8 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/20/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.1 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	27.0	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 71
E203109-14

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/20/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/20/22	
Toluene	ND	0.0250	1	03/18/22	03/20/22	
o-Xylene	ND	0.0250	1	03/18/22	03/20/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/20/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/20/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.3 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/20/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		99.8 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		109 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	27.0	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 76

E203109-15

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/20/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/20/22	
Toluene	ND	0.0250	1	03/18/22	03/20/22	
o-Xylene	ND	0.0250	1	03/18/22	03/20/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/20/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/20/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		94.2 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/20/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		101 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		104 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	24.5	20.0	1	03/18/22	03/21/22	



Sample Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Comp 91

E203109-16

Analyte	Result	Reporting Limit	Dilution	Prepared	Analyzed	Notes
Volatile Organics by EPA 8021B	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Benzene	ND	0.0250	1	03/18/22	03/20/22	
Ethylbenzene	ND	0.0250	1	03/18/22	03/20/22	
Toluene	ND	0.0250	1	03/18/22	03/20/22	
o-Xylene	ND	0.0250	1	03/18/22	03/20/22	
p,m-Xylene	ND	0.0500	1	03/18/22	03/20/22	
Total Xylenes	ND	0.0250	1	03/18/22	03/20/22	
<i>Surrogate: 4-Bromochlorobenzene-PID</i>		93.8 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - GRO	mg/kg	mg/kg		Analyst: IY		Batch: 2212077
Gasoline Range Organics (C6-C10)	ND	20.0	1	03/18/22	03/20/22	
<i>Surrogate: 1-Chloro-4-fluorobenzene-FID</i>		100 %	70-130	03/18/22	03/20/22	
Nonhalogenated Organics by EPA 8015D - DRO/ORO	mg/kg	mg/kg		Analyst: JL		Batch: 2212079
Diesel Range Organics (C10-C28)	ND	25.0	1	03/18/22	03/21/22	
Oil Range Organics (C28-C36)	ND	50.0	1	03/18/22	03/21/22	
<i>Surrogate: n-Nonane</i>		106 %	50-200	03/18/22	03/21/22	
Anions by EPA 300.0/9056A	mg/kg	mg/kg		Analyst: RAS		Batch: 2212083
Chloride	25.5	20.0	1	03/18/22	03/21/22	



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Volatiles Organics by EPA 8021B

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212077-BLK1)

Prepared: 03/18/22 Analyzed: 03/19/22

Benzene	ND	0.0250							
Ethylbenzene	ND	0.0250							
Toluene	ND	0.0250							
o-Xylene	ND	0.0250							
p,m-Xylene	ND	0.0500							
Total Xylenes	ND	0.0250							
Surrogate: 4-Bromochlorobenzene-PID	7.40		8.00		92.5	70-130			

LCS (2212077-BS1)

Prepared: 03/18/22 Analyzed: 03/19/22

Benzene	4.10	0.0250	5.00		82.1	70-130			
Ethylbenzene	4.53	0.0250	5.00		90.5	70-130			
Toluene	4.54	0.0250	5.00		90.7	70-130			
o-Xylene	4.65	0.0250	5.00		93.0	70-130			
p,m-Xylene	9.21	0.0500	10.0		92.1	70-130			
Total Xylenes	13.9	0.0250	15.0		92.4	70-130			
Surrogate: 4-Bromochlorobenzene-PID	7.54		8.00		94.2	70-130			

Matrix Spike (2212077-MS1)

Source: E203109-01

Prepared: 03/18/22 Analyzed: 03/19/22

Benzene	4.08	0.0250	5.00	ND	81.6	54-133			
Ethylbenzene	4.53	0.0250	5.00	ND	90.6	61-133			
Toluene	4.53	0.0250	5.00	ND	90.6	61-130			
o-Xylene	4.66	0.0250	5.00	ND	93.2	63-131			
p,m-Xylene	9.23	0.0500	10.0	ND	92.3	63-131			
Total Xylenes	13.9	0.0250	15.0	ND	92.6	63-131			
Surrogate: 4-Bromochlorobenzene-PID	7.71		8.00		96.4	70-130			

Matrix Spike Dup (2212077-MSD1)

Source: E203109-01

Prepared: 03/18/22 Analyzed: 03/19/22

Benzene	3.55	0.0250	5.00	ND	71.0	54-133	13.9	20	
Ethylbenzene	3.95	0.0250	5.00	ND	78.9	61-133	13.8	20	
Toluene	3.95	0.0250	5.00	ND	78.9	61-130	13.8	20	
o-Xylene	4.10	0.0250	5.00	ND	82.1	63-131	12.7	20	
p,m-Xylene	8.05	0.0500	10.0	ND	80.5	63-131	13.6	20	
Total Xylenes	12.2	0.0250	15.0	ND	81.0	63-131	13.3	20	
Surrogate: 4-Bromochlorobenzene-PID	7.70		8.00		96.2	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Nonhalogenated Organics by EPA 8015D - GRO

Analyst: IY

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec % %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212077-BLK1)

Prepared: 03/18/22 Analyzed: 03/19/22

Gasoline Range Organics (C6-C10)	ND	20.0							
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.13		8.00		102	70-130			

LCS (2212077-BS2)

Prepared: 03/18/22 Analyzed: 03/19/22

Gasoline Range Organics (C6-C10)	52.0	20.0	50.0		104	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.19		8.00		102	70-130			

Matrix Spike (2212077-MS2)

Source: E203109-01

Prepared: 03/18/22 Analyzed: 03/19/22

Gasoline Range Organics (C6-C10)	52.5	20.0	50.0	ND	105	70-130			
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.13		8.00		102	70-130			

Matrix Spike Dup (2212077-MSD2)

Source: E203109-01

Prepared: 03/18/22 Analyzed: 03/19/22

Gasoline Range Organics (C6-C10)	53.0	20.0	50.0	ND	106	70-130	0.989	20	
Surrogate: 1-Chloro-4-fluorobenzene-FID	8.06		8.00		101	70-130			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Nonhalogenated Organics by EPA 8015D - DRO/ORO

Analyst: JL

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212079-BLK1)

Prepared: 03/18/22 Analyzed: 03/21/22

Diesel Range Organics (C10-C28)	ND	25.0							
Oil Range Organics (C28-C36)	ND	50.0							
Surrogate: n-Nonane	51.2		50.0		102	50-200			

LCS (2212079-BS1)

Prepared: 03/18/22 Analyzed: 03/21/22

Diesel Range Organics (C10-C28)	530	25.0	500		106	38-132			
Surrogate: n-Nonane	67.7		50.0		135	50-200			

Matrix Spike (2212079-MS1)

Source: E203109-11

Prepared: 03/18/22 Analyzed: 03/21/22

Diesel Range Organics (C10-C28)	516	25.0	500	ND	103	38-132			
Surrogate: n-Nonane	62.7		50.0		125	50-200			

Matrix Spike Dup (2212079-MSD1)

Source: E203109-11

Prepared: 03/18/22 Analyzed: 03/21/22

Diesel Range Organics (C10-C28)	522	25.0	500	ND	104	38-132	1.18	20	
Surrogate: n-Nonane	63.3		50.0		127	50-200			



QC Summary Data

Mack Energy 7 W. Compress Road Artesia NM, 88210	Project Name: Thunderbay Project Number: 20046-0001 Project Manager: Natalie Gladden	Reported: 3/22/2022 4:34:14PM
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Anions by EPA 300.0/9056A

Analyst: RAS

Analyte	Result mg/kg	Reporting Limit mg/kg	Spike Level mg/kg	Source Result mg/kg	Rec %	Rec Limits %	RPD %	RPD Limit %	Notes
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Blank (2212083-BLK1)

Prepared: 03/18/22 Analyzed: 03/21/22

Chloride	ND	20.0							
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LCS (2212083-BS1)

Prepared: 03/18/22 Analyzed: 03/21/22

Chloride	252	20.0	250		101	90-110			
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Matrix Spike (2212083-MS1)

Source: E203109-01

Prepared: 03/18/22 Analyzed: 03/21/22

Chloride	327	20.0	250	27.5	120	80-120			
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Matrix Spike Dup (2212083-MSD1)

Source: E203109-01

Prepared: 03/18/22 Analyzed: 03/21/22

Chloride	315	20.0	250	27.5	115	80-120	3.75	20	
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QC Summary Report Comment:

Calculations are based off of the raw (non-rounded) data. However, for reporting purposes all QC data is rounded to three significant figures. Therefore, hand calculated values may differ slightly.



Definitions and Notes

Mack Energy	Project Name:	Thunderbay	
7 W. Compress Road	Project Number:	20046-0001	Reported:
Artesia NM, 88210	Project Manager:	Natalie Gladden	03/22/22 16:34

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

RPD Relative Percent Difference

DNI Did Not Ignite

Note (1): Methods marked with ** are non-accredited methods.

Note (2): Soil data is reported on an "as received" weight basis, unless reported otherwise.



Released to: Jmings: 9/30/2022 10:09:16 AM

Client: <u>Max Energy</u> Project: <u>Thunder Bay</u> Project Manager: Address: City, State, Zip Phone: Email: Report due by:	Bill To Attention: <u>ESS</u> Address: <u>2724 N CR</u> City, State, Zip <u>Hobbs, NM</u> Phone: Email: <u>Natalie</u>	Lab Use Only Lab WO# <u>E 203109</u> Job Number <u>20046-0001</u>	TAT 1D <input type="checkbox"/> 2D <input checked="" type="checkbox"/> 3D <input type="checkbox"/>	EPA Program CWA <input type="checkbox"/> SDWA <input type="checkbox"/> RCRA <input type="checkbox"/> State NM <input checked="" type="checkbox"/> CO <input type="checkbox"/> UT <input type="checkbox"/> AZ <input type="checkbox"/> TX <input type="checkbox"/>
--	--	--	--	--

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	DRO/ORO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	Remarks
	<u>3-17</u>	<u>S</u>	<u>1</u>	<u>Comp 18</u>	<u>1</u>							<input checked="" type="checkbox"/>		
				<u>Comp 19</u>	<u>2</u>									
				<u>Comp 20</u>	<u>3</u>									
				<u>Comp 21</u>	<u>4</u>									
				<u>Comp 22</u>	<u>5</u>									
				<u>Comp 23</u>	<u>6</u>									
				<u>Comp 24</u>	<u>7</u>									
				<u>Comp 42</u>	<u>8</u>									
				<u>Comp 46</u>	<u>9</u>									
				<u>Comp 51</u>	<u>10</u>									

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	Lab Use Only Received on ice: <input checked="" type="checkbox"/> / N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
	<u>3/17/22</u>	<u>2:30</u>		<u>3-17-22</u>	<u>1430</u>	
	<u>3-17-22</u>	<u>1730</u>		<u>3/18/22</u>	<u>8:15</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by OCD: 6/15/2022 4:07:07 PM

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Released to: [unclear] 9/28/2023 10:09:16 AM

Project Information

Chain of Custody

Client: Mack Energy
 Project: Thunder Bay
 Project Manager:
 Address:
 City, State, Zip
 Phone:
 Email:
 Report due by:

Bill To
 Attention: ESS
 Address: 2724 N CR
 City, State, Zip Hobbs, NM 88240
 Phone:
 Email: Natalie

Lab Use Only
 Lab WO# E203109 Job Number 20046-0001
 TAT: 1D 2D 3D
 Standard
 EPA Program: CWA SDWA RCRA

Time Sampled	Date Sampled	Matrix	No. of Containers	Sample ID	Lab Number	Analysis and Method										State					Remarks	
						DRO/DRO by 8015	GRO/DRO by 8015	BTEX by 8021	VOC by 8260	Metals 6010	Chloride 300.0	BGDOC NM	BGDOC TX	NM	CO	UT	AZ	TX				
	<u>3-17</u>	<u>S</u>	<u>1</u>	<u>Comp 65</u>	<u>11</u>																	
				<u>Comp 69</u>	<u>12</u>																	
				<u>Comp 70</u>	<u>13</u>																	
				<u>Comp 71</u>	<u>14</u>																	
				<u>Comp 76</u>	<u>15</u>																	
				<u>Comp 91</u>	<u>16</u>									<u>X</u>								

Additional Instructions:

I, (field sampler), attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabelling the sample location, date or time of collection is considered fraud and may be grounds for legal action. Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3/17/22</u>	Time <u>2:30</u>	Received by: (Signature) <u>[Signature]</u>	Date <u>3-17-22</u>	Time <u>1430</u>	Lab Use Only Received on ice: <input checked="" type="checkbox"/> Y / <input type="checkbox"/> N T1 _____ T2 _____ T3 _____ AVG Temp °C <u>4</u>
Relinquished by: (Signature) <u>[Signature]</u>	Date <u>3-17-22</u>	Time <u>1730</u>	Received by: (Signature) <u>Caitlin Chater</u>	Date <u>3/18/22</u>	Time <u>8:15</u>	
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time	

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____ Container Type: g - glass, p - poly/plastic, ag - amber glass, v - VOA

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at the client expense. The report for the analysis of the above samples is applicable only to those samples received by the laboratory with this COC. The liability of the laboratory is limited to the amount paid for on the report.



Received by OCD: 6/15/2022 4:07:07 PM

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Envirotech Analytical Laboratory

Printed: 3/18/2022 10:00:07AM

Sample Receipt Checklist (SRC)

Instructions: Please take note of any NO checkmarks.

If we receive no response concerning these items within 24 hours of the date of this notice, all the samples will be analyzed as requested.

Client: Mack Energy	Date Received: 03/18/22 08:15	Work Order ID: E203109
Phone: (575) 390-6397	Date Logged In: 03/17/22 14:59	Logged In By: Caitlin Christian
Email: Natalie@energystaffingllc.com	Due Date: 03/21/22 17:00 (1 day TAT)	

Chain of Custody (COC)

- 1. Does the sample ID match the COC? Yes
- 2. Does the number of samples per sampling site location match the COC? Yes
- 3. Were samples dropped off by client or carrier? Yes
- 4. Was the COC complete, i.e., signatures, dates/times, requested analyses? No
- 5. Were all samples received within holding time? Yes

Carrier: Courier

Note: Analysis, such as pH which should be conducted in the field, i.e, 15 minute hold time, are not included in this discussion.

Sample Turn Around Time (TAT)

- 6. Did the COC indicate standard TAT, or Expedited TAT? Yes

Sample Cooler

- 7. Was a sample cooler received? Yes
- 8. If yes, was cooler received in good condition? Yes
- 9. Was the sample(s) received intact, i.e., not broken? Yes
- 10. Were custody/security seals present? No
- 11. If yes, were custody/security seals intact? NA
- 12. Was the sample received on ice? If yes, the recorded temp is 4°C, i.e., 6°±2°C? Yes

Note: Thermal preservation is not required, if samples are received w/i 15 minutes of sampling

- 13. If no visible ice, record the temperature. Actual sample temperature: 4°C

Sample Container

- 14. Are aqueous VOC samples present? No
- 15. Are VOC samples collected in VOA Vials? NA
- 16. Is the head space less than 6-8 mm (pea sized or less)? NA
- 17. Was a trip blank (TB) included for VOC analyses? NA
- 18. Are non-VOC samples collected in the correct containers? Yes
- 19. Is the appropriate volume/weight or number of sample containers collected? Yes

Field Label

- 20. Were field sample labels filled out with the minimum information:
 - Sample ID? Yes
 - Date/Time Collected? No
 - Collectors name? No

Sample Preservation

- 21. Does the COC or field labels indicate the samples were preserved? No
- 22. Are sample(s) correctly preserved? NA
- 24. Is lab filtration required and/or requested for dissolved metals? No

Multiphase Sample Matrix

- 26. Does the sample have more than one phase, i.e., multiphase? No
- 27. If yes, does the COC specify which phase(s) is to be analyzed? NA

Subcontract Laboratory

- 28. Are samples required to get sent to a subcontract laboratory? No
- 29. Was a subcontract laboratory specified by the client and if so who? NA Subcontract Lab: na

Comments/Resolution

Time sampled and project manager not provided on the coc.

Client Instruction

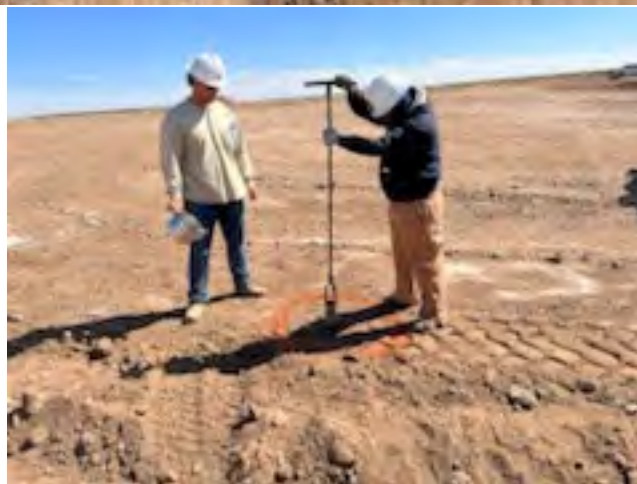
Signature of client authorizing changes to the COC or sample disposition.

Date



envirotech Inc.

SITE PHOTOS















Natalie Gladden

From: Natalie Gladden
Sent: Sunday, April 3, 2022 12:00 PM
To: CFO_Spill, BLM_NM, ocdonline, emnrrd, EMNRRD, Hamlet, Robert, EMNRRD, Amos, James A, Hensley, Chad, EMNRRD, Bratcher, Mike, EMNRRD, ocdonline, emnrrd, EMNRRD
Cc: mattbuckles@mec.com; Dakoatah Montanez
Subject: MACK - THUNDERBAY FED COM #1 SEEDING NOTIFICATION

Importance: High

Tracking:

Recipient	Read
CFO_Spill, BLM_NM	
ocdonline, emnrrd, EMNRRD	
Hamlet, Robert, EMNRRD	
Amos, James A	
Hensley, Chad, EMNRRD	
Bratcher, Mike, EMNRRD	
ocdonline, emnrrd, EMNRRD	
mattbuckles@mec.com	
Dakoatah Montanez	Read: 4/6/2022 6:44 AM

All,

ESS would like to request the 48-hour seeding notification. Crews will be out on Wednesday to seed the site. Spill information is below:

DOR: 8/20/18
API NO: 30-005-64308
RP NO: 2RP-4955
INCIDENT ID: NMAP1825441890

If you have any questions or concerns, please let me know.

Sincerely,

Natalie Gladden

Director of Environmental and Regulatory Services

Energy Staffing Services, LLC

2724 NW County Road

Hobbs, NM 88240

Cell: 575-390-6397

Office: 575-393-9048

Email: natalie@energystaffingllc.com



Bamert Seed Company Inc.

1897 CR 1018 Muleshoe, TX 79347

(800) 262-9892

Permit # TX00905

BLM # 3 Shallow Sites

Lot/Sales # SO-75021

Kind & Variety	Pure Seed	Germ	Dormant	Hard Seed	Origin
Bristlegrass Plains, (Setaria vulpiseta)	12.74%	11.00%	77.00%	0.00%	OK
Gramma, Sideoats "Vaughn" (Bouteloua curtipendula)	60.94%	47.00%	45.00%	0.00%	TX
Green Sprangletop, "Van Horn" (Elymus caput-medusae)	22.88%	87.00%	11.00%	0.00%	TX

Purity: 96.56%

Inert Matter: 3.40%

Other Crop Seed: 0.00%

Weed Seed: 0.01%

Noxious Weed Seed Per/Lb: None

Test Date: 03/2022

Net Wt: 25 lbs

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	125' (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: *Each of the following items must be included in the report.*

- Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- Field data
- Data table of soil contaminant concentration data
- Depth to water determination
- Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- Boring or excavation logs
- Photographs including date and GIS information
- Topographic/Aerial maps
- Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: NATALIE GLADDEN Title: DIRECTOR OF ENVIRONMENTAL AND REGULATORY

Signature:  Date: 4/8/22

email: natalie@energystaffingllc.com Telephone: 575-390-6397

OCD Only

Received by: _____ Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

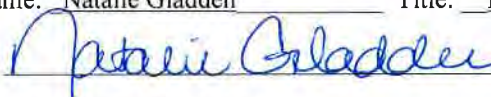
Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

- Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*
- A scaled site and sampling diagram as described in 19.15.29.11 NMAC
 - Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
 - Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
 - Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Natalie Gladden Title: Director of Environmental and Regulatory

Signature:  Date: 6/18/22

email: natalie@energystaffingllc.com Telephone: 575-390-6397

OCD Only

Received by: _____ Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by:  Date: 9/30/2022

Printed Name: Brittany Hall Title: Environmental Specialist

District I
 1625 N. French Dr., Hobbs, NM 88240
 Phone:(575) 393-6161 Fax:(575) 393-0720
District II
 811 S. First St., Artesia, NM 88210
 Phone:(575) 748-1283 Fax:(575) 748-9720
District III
 1000 Rio Brazos Rd., Aztec, NM 87410
 Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
 1220 S. St Francis Dr., Santa Fe, NM 87505
 Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 117680

CONDITIONS

Operator: MACK ENERGY CORP P.O. Box 960 Artesia, NM 882110960	OGRID: 13837
	Action Number: 117680
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
bhall	Closure approved. 2RP-4955 closed. Requires closure approval from the BLM.	9/30/2022