

**APPROVED**

Republic Backhoe Service, LLC  
47 E. Dickens Rd.  
Lovington, NM 88260  
(575) 631-0131

April 14, 2023

District I  
1625 N. French Drive  
Hobbs, NM 88240

Subject: Site Assessment/Closure

On behalf of Manzano LLC, Republic Backhoe Service, LLC (RBS) prepared this Site Assessment/Closure Report associated with Rum Point State #002 production line. The release occurred in the pasture between Rum Point State #002 and Rum Point State #001. The site is located in Unit H, Section 12, Township 14 South, Range 37 East, Lea County, New Mexico, on private land. Attachment #1 and #2 illustrates the vicinity and location of the site. Alluvial and eolian deposits, and petrocalcic soils from the lower Pliocene to middle Miocene age make up the subsurface of the area ([mrdata.usgs.gov](http://mrdata.usgs.gov), Attachment #3 and #4). The site is categorized as Zone D, an area with potential flood risk, but with an undetermined probability (FEMA FIRMette Map, Attachment #4). The surface is privately owned by Alexander Ranch, LLC.

The following table summarizes the nature and volume of release. Also see table 5 for Spill Calculations.

**Table 1:**

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 18	Volume Recovered (bbls) 0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 14	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride 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 Pin-sized hole in underground 2 7/8" steel production line due to corrosion on the joint.		

## Regulatory Guidelines

New Mexico Oil Conservation Division (NMOCD) regulates surface impacts from unauthorized release of crude oil, produced water, condensate or other oilfield waste in accordance with 19.15.29 of the New Mexico Administrative Code (NMAC). In accordance with NMAC 19.15.29, the Rum Point State #002 production line release is assessed by the following guidelines:

**Table 2:**

What is the shallowest depth to groundwater beneath the area affected by the release?	120 (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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

## Groundwater Depth

A search of a groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) was conducted to determine the depth to groundwater at release site. POD L-00389-S2 is the nearest well (See Attachment #6). The distance between the release and POD L-00389-S2 is 1,370 feet (See Attachment #7). Current depth to water is 120 feet Bgs. The depth to water measurement was provided by the private land owner, Matt Alexander.

## Closure Criteria

According to ground water depth determination and the distance of nearest wells, the following table summarizes NMOCD permissible level for the site. Closure criteria for TPH/BTEX/Benzene was assessed under the strictest limitations at all depths.

**Table 3:**

Table I Closure Criteria for Soils Impacted by a Release			
Minimum depth below any point within the horizontal boundary of the release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
≤ 50 feet	Chloride***	EPA 300.0 or SM4500 C1 B	600 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	100 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
51 feet-100 feet	Chloride***	EPA 300.0 or SM4500 C1 B	10,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg
>100 feet	Chloride***	EPA 300.0 or SM4500 C1 B	20,000 mg/kg
	TPH (GRO+DRO+MRO)	EPA SW-846 Method 8015M	2,500 mg/kg
	GRO+DRO	EPA SW-846 Method 8015M	1,000 mg/kg
	BTEX	EPA SW-846 Method 8021B or 8260B	50 mg/kg
	Benzene	EPA SW-846 Method 8021B or 8260B	10 mg/kg

\*Or other test methods approved by the division.

\*\*Numerical limits or natural background level, whichever is greater.

\*\*\*This applies to releases of produced water or other fluids, which may contain chloride.

[19.15.29.12 NMAC - N, 8/14/2018]

### Site Assessment/Delineation

On December 05, 2022, RBS went to the location to delineate the site. Initial soil analysis at a depth of 4 feet showed constituent levels for Chlorides/BTEX/TPH were significantly lower than NMOCD permissible values within the horizontal boundaries of the excavated area. Bottom hole sample B at four feet remained slightly above permissible levels for chlorides. TPH and BTEX results were also above permissible levels under the most protective concentration compliance for the top four feet of impacted soils. The following table summarizes the laboratory analytical results for soil samples collected during site delineation.

**Table 4:**

Sample ID	Depth (ft.)	Chloride (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)	Date	Location
A	4'	352	<0.300	199.7	12/05/2022	33.137749, -103.165126
B	4'	640	3.82	1,414.1	12/05/2022	33.137743, -103.165146
C	4'	480	<0.300	83.1	12/05/2022	33.137730, -103.165162
1	4' (Wall)	208	<0.300	<10.0	12/06/2022	NW Wall
2	4' (Wall)	272	<0.300	<10.0	12/06/2022	NE Wall
3	4' (Wall)	112	<0.300	<10.0	12/06/2022	SW Wall
4	4' (Wall)	128	<0.300	<10.0	12/06/2022	SE Wall



Based on visual inspection and porosity of soil, the initial spill calculation (11/18/2022) was estimated at 5 bbls crude oil and 4 bbls produced water. Incident # nAPP2232236458 was assigned. After excavation of the upper 4 ft, a ½ ft layer of compact caliche was removed. Upon further inspection and testing, it was determined that the release had worked through the compact layer and extended vertically an additional 4 ft. Calculations were then adjusted to reflect the new findings (03/24/2023) and submitted to the NMOCD. Incident #nAPP2308354642 was then assigned.

Released to Imaging: 7/17/2023 9:46:10 AM

Table 6:

Description	USCS	Porosity [-]			Reference
		min	max	Specific value	
Well graded gravel, sandy gravel, with little or no fines	GW	0.21	0.32		[1].
Poorly graded gravel, sandy gravel, with little or no fines	GP	0.21	0.32		[1].
Silty gravels, silty sandy gravels	GM	0.15	0.22		[1].
Gravel	(GW-GP)	0.23	0.38		[2].
Clayey gravels, clayey sandy gravels	GC	0.17	0.27		[1].
Glacial till, very mixed grained	(GC)	-	-	0.20	[4 cited in 5]
Well graded sands, gravelly sands, with little or no fines	SW	0.22	0.42		[1]. [2].
Coarse sand	(SW)	0.26	0.43		[2].
Fine sand	(SW)	0.29	0.46		[2].
Poorly graded sands, gravelly sands, with little or no fines	SP	0.23	0.43		[1]. [2].
Silty sands	SM	0.25	0.49		[1]. [2].
Clayey sands	SC	0.15	0.37		[1].
Inorganic silts, silty or clayey fine sands, with slight plasticity	ML	0.21	0.56		[1].
Uniform inorganic silt	(ML)	0.29	0.52		[3].
Inorganic clays, silty clays, sandy clays of low plasticity	CL	0.29	0.41		[1].
Organic silts and organic silty clays of low plasticity	OL	0.42	0.68		[1]. [3].
Silty or sandy clay	(CL-OL)	0.20	0.64		[3].
Inorganic silts of high plasticity	MH	0.53	0.68		[1].
Inorganic clays of high plasticity	CH	0.39	0.59		[1].
Soft glacial clay	-	-	-	0.55	[4 cited in 5]
Stiff glacial clay	-	-	-	0.38	[4 cited in 5]
Organic clays of high plasticity	OH	0.50	0.75		[1]. [3].
Soft slightly organic clay	(OH-OL)	-	-	0.66	[4 cited in 5]
Peat and other highly organic soils	Pt	-	-		[4 cited in 5]
soft very organic clay	(Pt)	-	-	0.75	[4 cited in 5]

**REFERENCES**

1. Swiss Standard SN 670 010b, Characteristic Coefficients of soils, Association of Swiss Road and Traffic Engineers
2. Das, B., Advanced Soil Mechanics, Taylor & Francis, London & New York, 2008.
3. Hough, B., Basic soil engineering, Ronald Press Company, New York, 1969.
4. Terzaghi, K., Peck, R., and Mesri, G., Soil Mechanics in Engineering Practice, Wiley, New York, 1996.
5. Obrzud R. & Truty, A. THE HARDENING SOIL MODEL - A PRACTICAL GUIDEBOOK Z Soil.PC 100701 report, revised 31.01.2012

Citation :  
Geotechdata.info, Soil void ratio, <http://geotechdata.info/parameter/soil-void-ratio.html> (as of November 16, 2013).

## Remediation/Closure

Commencement Date: November 07, 2022

Completion Date: April 11, 2023

The following remedial activities are in accordance with 19.15.29.12 NMAC. Remedial activities took place at the Rum Point State #002 production line approximately 940 ft. northwest of the well pad. The release was discovered due to a visible 3 ft. diameter surface stain above the buried line (See Photos). Upon discovery, A vacuum truck bled down the production line.

Republic Backhoe Service, LLC. began excavation on November 8, 2022. The production line was exposed at the point of release, and a crew installed a repair clamp over the hole in the line. Below surface, the horizontal extents of the release expanded beyond the visible surface stain measurements. A 20 ft. by 20 ft. area was excavated to a depth of 4 feet, at which point chloride field test results were below NMOCD permissible levels. Notice of intent to sample was emailed to NMOCD on 11/29/2022 (See Correspondences). Bottom hole and sidewall soil samples were collected on 12/5/2022 and 12/6/2023 (See Attachments #9, #10, #11). Laboratory analysis was performed by Cardinal Labs in Hobbs, NM.

After reviewing laboratory results, it was determined that sidewall samples 1,2,3, and 4 were within the permissible levels of NMOCD closure criteria for the upper 4 ft. Bottom hole sample C also tested within permissible levels. Bottom hole samples A and B did not meet closure criteria for TPH. Sample B, located directly beneath the hole in the production line, also tested slightly above permissible chloride levels (See Table 4). The vertical extent of the release had not been reached.

On December 15, 2022, excavation continued to remediate sample areas A and B. Below 4 feet, soil composition was comprised of dense/compacted caliche. After breaking through a ½ ft. layer, crude oil stains became visible. Due to this, excavation was extended vertically an additional 4 ft. Bottom hole sample C, which had previously tested within permissible levels, was excavated ½ ft. in order to remove the compacted layer of caliche and re-evaluate for the presence of TPH/BTEX/Chlorides. The NMOCD was notified on 12/27/2022 that sampling had been scheduled for 12/29/2022. Soil samples were collected and delivered to Cardinal Labs for Analysis (See Attachments #12, #13).

The release occurred on privately owned land off the well pad. Due to these circumstances, Manzano LLC. remediated to the satisfaction of the landowner. The strictest closure criteria for TPH/BTEX/Benzene were extended to depths below 4 feet, regardless of depth to water being greater than 100 ft. Chloride closure criteria below 4 feet was based on depth to water greater than 100. Soil sample analysis will be evaluated accordingly moving forward.

Laboratory analysis concluded that sample 2W-1 contained TPH above permissible levels. This area previously met closure criteria. Bottom hole sample G, with walls 5W-1 and 5W-2, also contained elevated constituents of TPH. Bottom hole samples D and E tested slightly above the strictest closure criteria for TPH. All nonmentioned samples were within permissible levels (See Table 7).

Sample area G was then excavated to a depth of 9 ft. In doing so, sidewalls 5W-1 and 5W-2 were excavated. Sample areas D, E, and F were excavated an additional 1 ft. Sidewall 2W-1 was excavated horizontally 2 ft.

Manzano, LLC. initially proposed replacing the damaged joint in the production line. Because of access issues due to the 9 ft. excavation depth, the upper 4 ft area of NW wall was benched. This allowed for easier access for crews and equipment. The benched area had met closure criteria on 12/05/2022 and 12/29/2022 (See Sample 1, 1W-1, 1W-2, 3W-1). The damaged joint was replaced, and supports were installed until the remediation was completed.

After a discussion with the private landowner, Manzano LLC took further action to ensure the integrity of the production line. The entire length of the line was uncovered and replaced with 2 7/8" flex line. Due to time constraints, an extension

of the 90-day time allowance for remediation was requested by Republic Backhoe Service, LLC. on 01/19/2023 (See Correspondences).

The northeast, southeast, and southwest sidewalls were also excavated an additional 2 ft. horizontally to meet expectations of the private landowner. The dimensions of the excavated area now measured 22 ft. X 24 ft. X 9. Notice of closure soil sampling was emailed to the NMOCD on 03/27/2023, but due to strong winds sampling was rescheduled. On 03/30/2023 the NMOCD was notified that closure sampling was rescheduled for 04/05/2023. Bottom hole and sidewall samples were collected and delivered to Cardinal Labs (See Attachment #14, #15).

All samples met closure criteria. TPH/BTEX/Benzene were not detected in any closure sample results (See Table 8). Throughout the duration of the remediation, a total of 254 cubic yards of contaminated material were hauled to Gandy Marley Disposal, an NMOCD approved disposal site.

Republic Backhoe Service LLC. began hauling in backfill material on 04/07/2023. A total of 220 cubic yards of caliche was backfilled in the bottom 5 ft. The upper 4 ft. was backfilled with 80 cubic yards of topsoil. Backfill material was hauled from the landowner's pit. On 04/11/2023 remediation of the production line release was completed. The surface will be seeded with a warm mixture seed upon approval of the landowner.

### **Revegetation and Noxious Weed Management**

Seed Mixture: Warm Season SSR Grass Seed Mix 350  
Seed Rate: Acre: 25 lbs./ Acre

Method of Dispersal: Seed mixture will be mechanically dispersed. Photos will be taken of the seed mixture bags, and all seeding activities. A total of 5 lbs. of seed mixture will be dispersed at the location.

Follow up Monitoring Plan: The location will be monitored in the late summer. At that time, evaluation of growth in the area will determine if reseeding will be necessary. The area will also be monitored for noxious weeds. The area is small enough to rid any noxious weeds mechanically.



Eric Garcia  
Republic Backhoe Service, LLC.

Table 7:

Sample ID	Depth (ft.)	Chloride (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)	Soil Classification	Date	GPS
D	8'	352	<0.300	101.5	GM	12/29/2023	33.137762, -103.165147
E	8'	320	<0.300	146.9	GM	12/29/2023	33.137745, -103.165135
F	8'	448	<0.300	17.9	GM	12/29/2023	33.137729, -103.165125
G	4 ½'	432	<0.300	812.4	GM	12/29/2023	33.137732, -103.165161
1W-1	4'	16.0	<0.300	<10.0	ML	12/29/2023	33.137771, -103.165154 NW Wall
1W-2	4'-8'	400	<0.300	18.4	GM	12/29/2023	NW Wall
2W-1	4'	32.0	<0.300	764	ML	12/29/2023	33.137754, -103.165117 NE Wall
2W-2	4'	48.0	<0.300	15.0	ML	12/29/2023	NE Wall
2W-3	4'-8'	2520	<0.300	<10.0	GM	12/29/2023	NE Wall
2W-4	4'-8'	1280	<0.300	<10.0	GM	12/29/2023	NE Wall
3W-1	4'	32.0	<0.300	<10.0	ML	12/29/2023	33.137758, -103.165181 NW Wall
3W-2	4'	32.0	<0.300	<10.0	ML	12/29/2023	33.137726, -103.165172 SW Wall
3W-3	4'	<16.0	<0.300	<10.0	ML	12/29/2023	33.137708, -103.165145 SE Wall
4W-1	4'	272	<0.300	<10.0	ML	12/29/2023	33.137720, -103.165118 SE Wall
4W-2	4'-8'	1220	<0.300	<10.0	GM	12/29/2023	SE Wall
5W-1	4'-8'	512	0.982	840.2	GM	12/29/2023	33.137726, -103.165143 SW Inner Wall
5W-2	4'-8'	1470	1.22	1,241.2	GM	12/29/2023	33.137746, -103.165159 SW Inner Wall

**Table 8:****Closure Samples**

Sample ID	Depth (ft.)	Chloride (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)	Soil Classification	Date	GPS
A	9'	592	<0.300	<10.0	GM	04/05/2023	33.137748, -103.165123
B	9'	688	<0.300	<10.0	GM	04/05/2023	33.137716, -103.165144
C	9'	400	<0.300	<10.0	GM	04/05/2023	33.137733, -103.165156
D	9'	608	<0.300	<10.0	GM	04/05/2023	33.137751, -103.165166
1	4'-9'	656	<0.300	<10.0	GM	04/05/2023	33.137721, -103.165177 SW Wall
2	4'-9'	816	<0.300	<10.0	GM	04/05/2023	33.137714, -103.165122 SE Wall
3	4'-9'	960	<0.300	<10.0	GM	04/05/2023	33.137757, -103.165110 NE Wall
4	4'	160	<0.300	<10.0	ML	04/05/2023	33.137721, -103.165177 SW Wall
5	4'-9'	800	<0.300	<10.0	GM	04/05/2023	33.137767, -103.165161 NW Wall
6	4'	416	<0.300	<10.0	ML	04/05/2023	33.137757, -103.165110 NE Wall
7	4'	384	<0.300	<10.0	ML	04/05/2023	33.137714, -103.165122 SE Wall

C-141



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

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

Incident ID	NAPP2232236458
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Manzano, LLC.	OGRID 231429
Contact Name Mike Hanagan	Contact Telephone (575) 623-1996 Ext: 310
Contact email mike@manzanoenergy.com	Incident # (assigned by OCD) # nAPP2232236458
Contact mailing address P.O. Box 1737, Roswell, NM 88202	

Location of Release Source

Latitude 33.137702 Longitude -103.165143  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Rum Point State #002	Site Type Production Flow Line
Date Release Discovered 10/24/2022	API# (if applicable) 30-025-36590

Unit Letter	Section	Township	Range	County
A	02	14S	37E	Lea

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (Name: Alexander Ranch, LLC.)

Nature and Volume of Release

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

<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls) 18	Volume Recovered (bbls) 0
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls) 14	Volume Recovered (bbls) 0
	Is the concentration of dissolved chloride 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

Pin-sized hole in underground 2 7/8" steel production line due to corrosion on the joint.



Incident ID	NAPP2232236458
District RP	
Facility ID	
Application ID	

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?  32 bbls total of produced water and crude oil were released from the production line.
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? On 10/24/2022, the NMOCD notified Manzano LLC. of a stain above the production line. Notice of release was filed with on 11/18/2022.	

## 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>Mike Hanagan</u>	Title: _____
Signature: _____	Date: _____
email: <u>mike@manzanoenergy.com</u>	Telephone: <u>(575) 632-1996 Ext: 310</u>
<b><u>OCD Only</u></b>	
Received by: <u>Jocelyn Harimon</u>	Date: <u>03/27/2023</u>

02 Production Line

Date of Discovery: 10/24/2022

Site Soil Type: Loam/CalicheDaily Production: 11 BBLs Oil 9 BBLs Water

## Total Area Calculations

Total Surface Area		Wet Soil Depth (In)		Oil (%)	H2O (%)	Soil Class.	Porosity%
Upper 4'	50		48	57	43	ML	21
Lower 4'	225		48	57	43	GM	15
Blank	0		0	0	0	0	0

## Saturated Soil Volume calculations:

		<u>H2O</u>	<u>OIL</u>
Upper 4'	200.00	3.22	4.26
Lower 4'	900	10.34	13.70
Blank	0.00	0.00	0.00

## Total Solid/ Liquid Volume:

Estimated Volumes SpilledH2OOIL

13.55

17.97

Liquid Recovered:

0

0

Total Spill Liquid:

13.55

17.97

**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 200721

CONDITIONS

Operator: MANZANO LLC P.O. Box 1737 Roswell, NM 88202	OGRID: 231429
	Action Number: 200721
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	3/27/2023

Incident ID	NAPP2308354642
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?	<u>120</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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> 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 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.

## Oil Conservation Division

Incident ID	NAPP2308354642
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: John Thompson Title: Vice President - Production  
Signature: *John Thompson* Date: 4/24/2023  
email: john@manzanoenergy.com Telephone: 575-623-1996

**OCD Only**

Received by: Jocelyn Harimon Date: 04/24/2023

Incident ID	NAPP2308354642
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: John Thompson Title: Vise President - Production  
Signature: *John Thompson* Date: 4/24/2023  
email: john@manzanoenergy.com Telephone: 585-623-1996

**OCD Only**

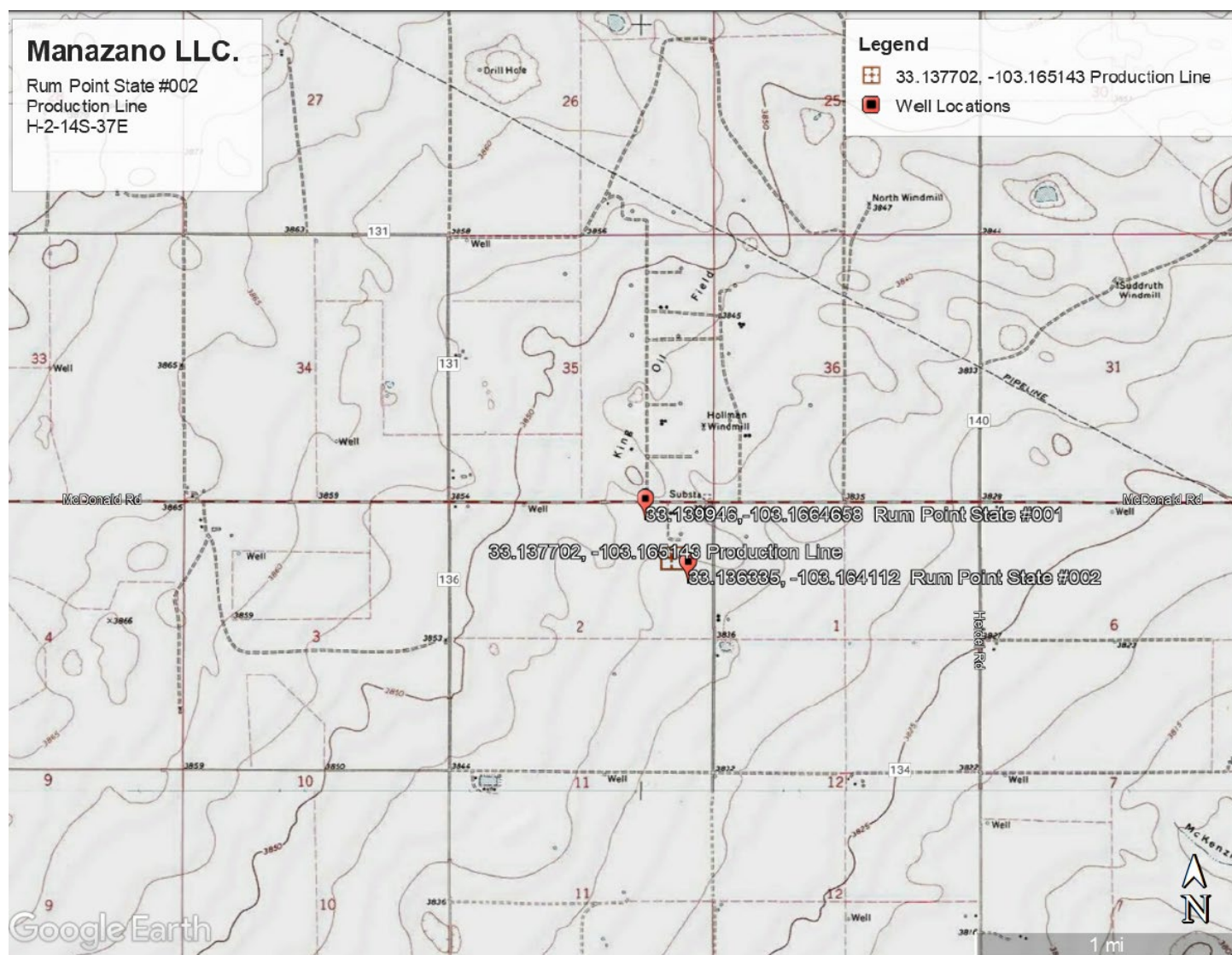
Received by: Jocelyn Harimon Date: 01/24/2023

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: *Nelson Velez* Date: 07/17/2023  
Printed Name: Nelson Velez Title: Environmental Specialist – Adv

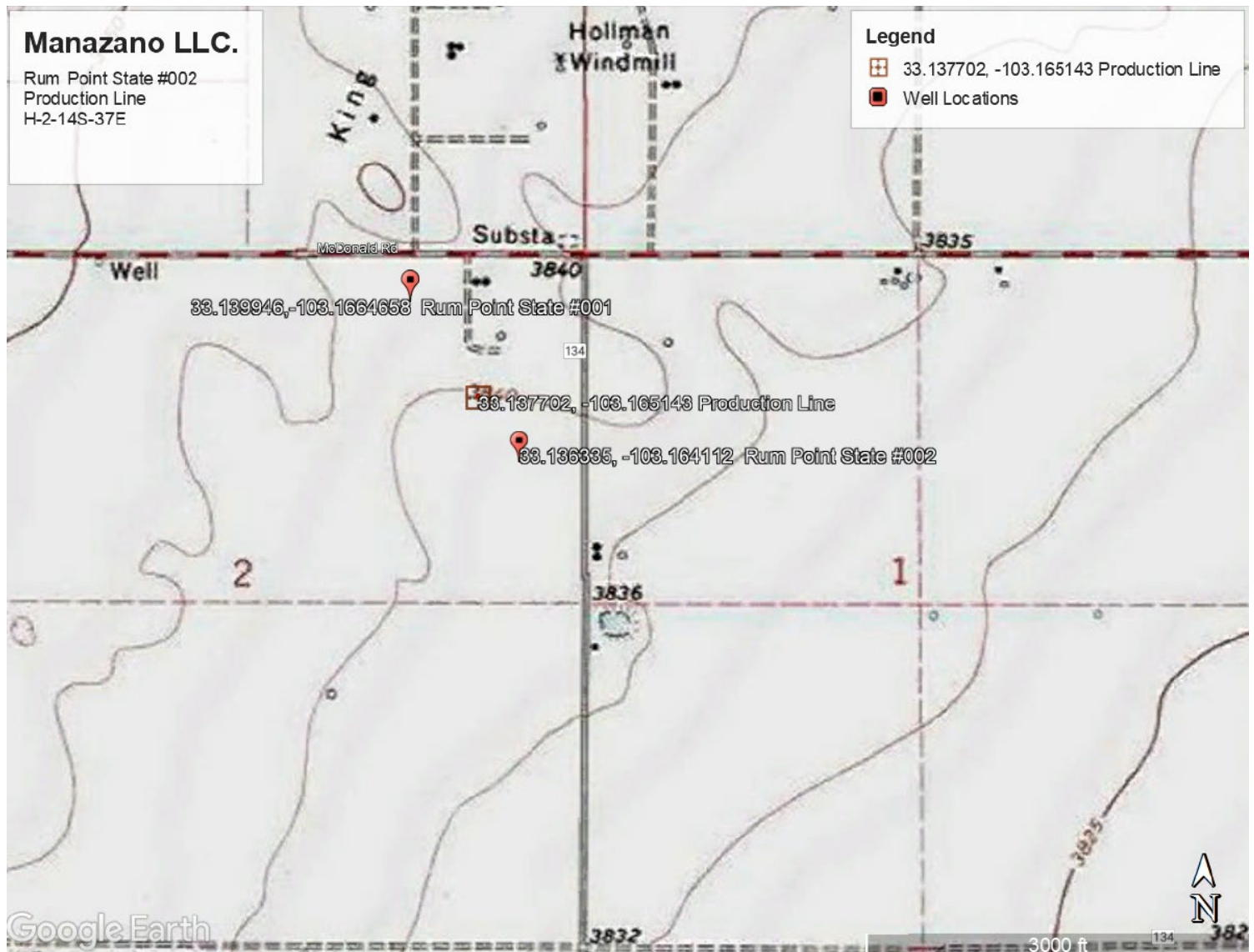
# Attachments

## Attachment #1:





## Attachment #2:



Attachment #3:

Scientific data near [33.13958,-103.23334]

Search area extends approximately 1.0 km east-west and 1.0 km north-south.

Narrower

Wider

JSON

XML

Geographic context

Counties, states, countries, continents, or oceans	
Lea	county
New Mexico	state
United States	country
North America	continent
Land	continent
Map quadrangles, from USGS or Canadian NTS	
Prairieview NW	quadrangle 1:24,000 scale
Tatum	quadrangle 1:100,000 scale
Brownfield	quadrangle 1:250,000 scale
Watershed boundaries (USGS hydrologic units)	
Mustang Draw	hydrologic unit
Upper Colorado	hydrologic accounting unit
Upper Colorado	hydrologic subregion
Texas-Gulf	hydrologic region

Geology of US states

Digital geologic maps of the US states with consistent lithology, age, GIS database structure, and format

Database Home

Unit	State	Lithology
Ogallala Formation	NM	Lower Pliocene to middle Miocene

Attachment #4:

Ogallala Formation

22974   22974   22974

Alluvial and eolian deposits, and petrocalcic soils of the southern High Plains. Locally includes Qoa.

State	New Mexico
Name	Ogallala Formation
Geologic age	Lower Pliocene to middle Miocene
Lithologic constituents	Major Unconsolidated > Coarse-detrital > Sand (Alluvial, Eolian) GEOLEX Minor Sedimentary > Carbonate (Calcareous) petrocalcic soils of the southern High Plains; marl
References	<div>Green, G.N., Jones, G.E., and Anderson, O.J., 1997, The Digital Geologic Map of New Mexico in ARC/INFO Format: U.S. Geological Survey Open-File Report 97-0052, 9 p., scale 1:500,000. <a href="https://pubs.er.usgs.gov/publication/ofr9752">https://pubs.er.usgs.gov/publication/ofr9752</a></div> <div>USGS Geologic Names lexicon found at: <a href="http://ngmdb.usgs.gov/Geolex/">http://ngmdb.usgs.gov/Geolex/</a> <a href="https://ngmdb.usgs.gov/Geolex/search">https://ngmdb.usgs.gov/Geolex/search</a></div>
NGMDB product	NGMDB product page for 22974
Counties	Chaves - Colfax - Curry - DeBaca - Eddy - Guadalupe - Harding - Lea - Lincoln - Mora - Quay - Roosevelt - San Miguel - Torrance - Union

Attachment #5:

National Flood Hazard Layer FIRMette



**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
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
		Area of Minimal Flood Hazard Zone X
OTHER AREAS		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
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 11/16/2022 at 3:13 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.



## Attachment #6:



## 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
	L 00389 S2			2	02	14S	37E	671003	3667976* 
Driller License: 1082		Driller Company:				SPEARS, JACK DRILLING CO.			
Driller Name:		SPEARS, JACK (LD)							
Drill Start Date:	02/19/1996	Drill Finish Date:				02/26/1996		Plug Date:	
Log File Date:	03/05/1996	PCW Rcv Date:				12/24/1997		Source:	Shallow
Pump Type:	SUBMER	Pipe Discharge Size:				6		Estimated Yield:	500 GPM
Casing Size:	12.75	Depth Well:				300 feet		Depth Water:	60 feet *
Water Bearing Stratifications:					Top	Bottom	Description		
					136	145	Sandstone/Gravel/Conglomerate		
					215	260	Sandstone/Gravel/Conglomerate		
Casing Perforations:					Top	Bottom			
					220	300			

\*UTM location was derived from PLSS - see Help

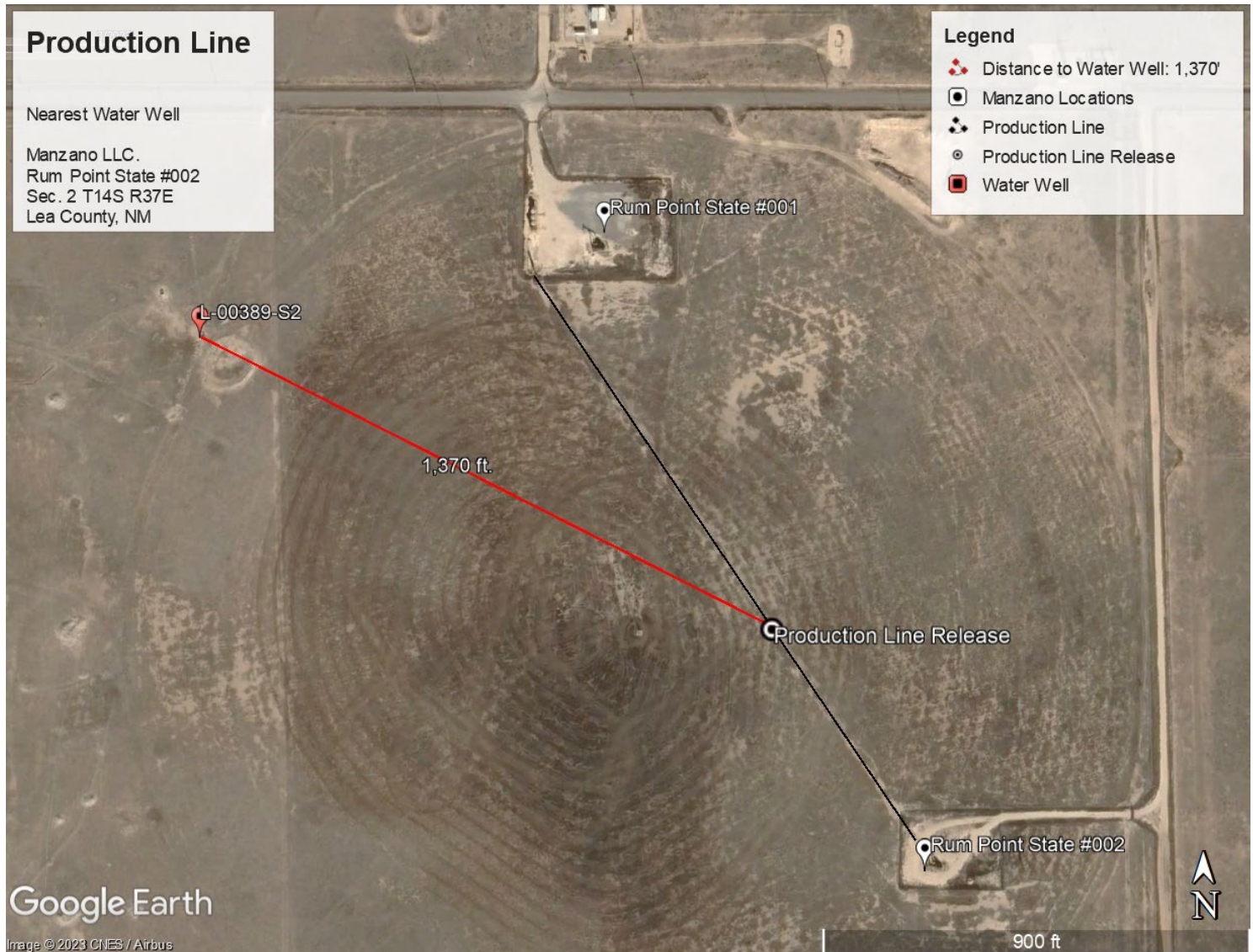
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

2/14/23 2:32 PM

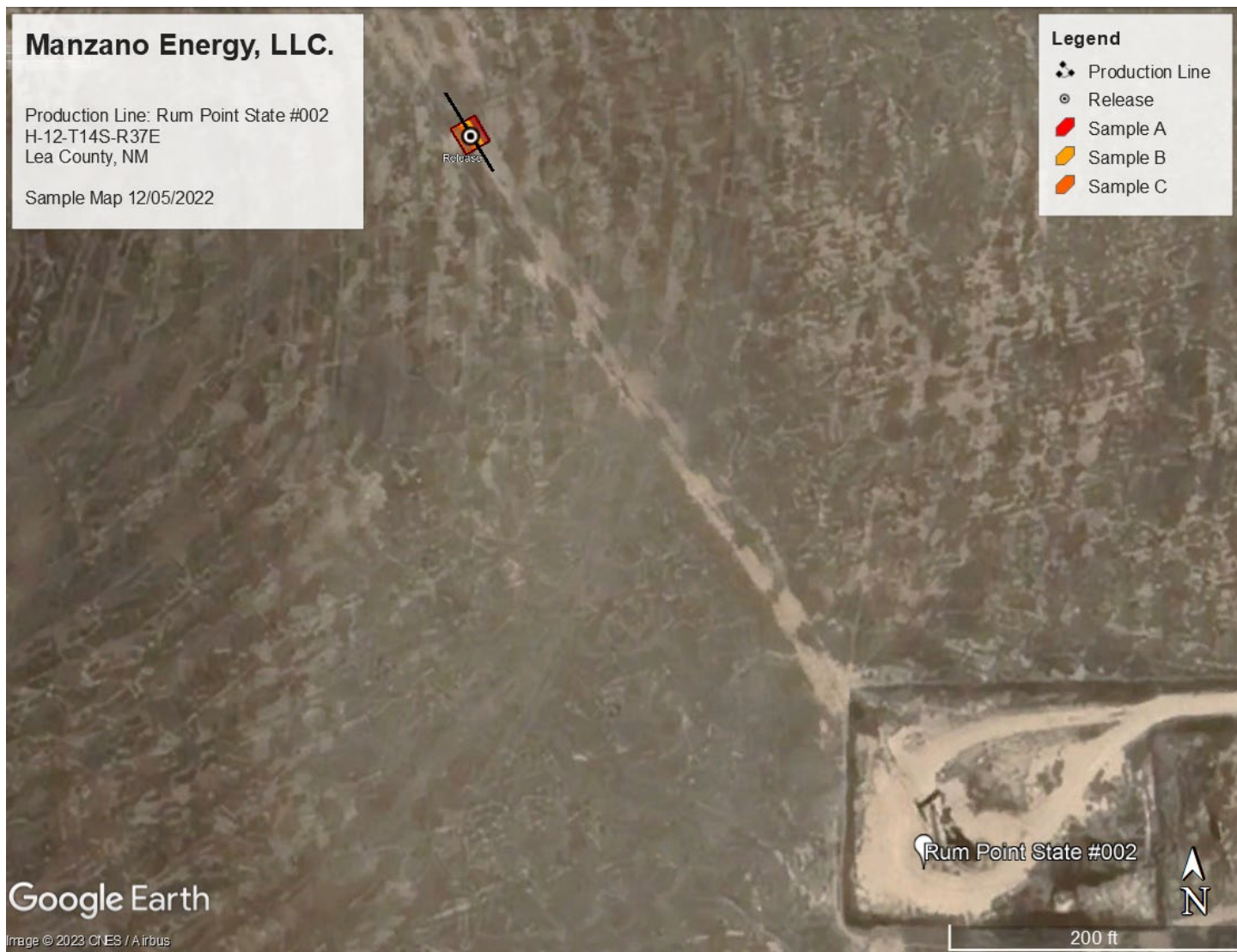
POINT OF DIVERSION SUMMARY

\*Private landowner Matt Alexander confirmed current depth to water of POD L 00389-S2 at 120' Bgs.

Attachment #7:

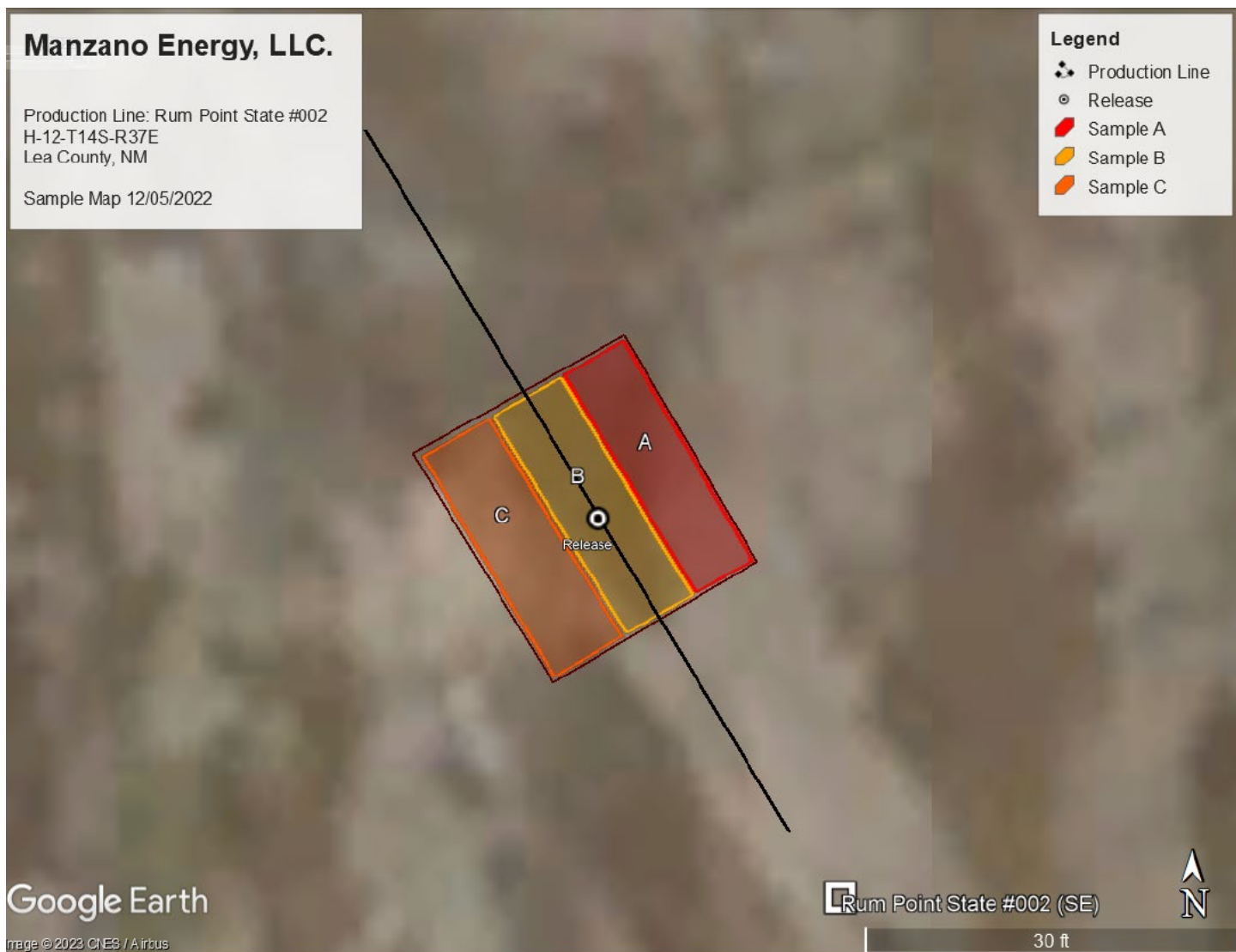


Attachment #8:



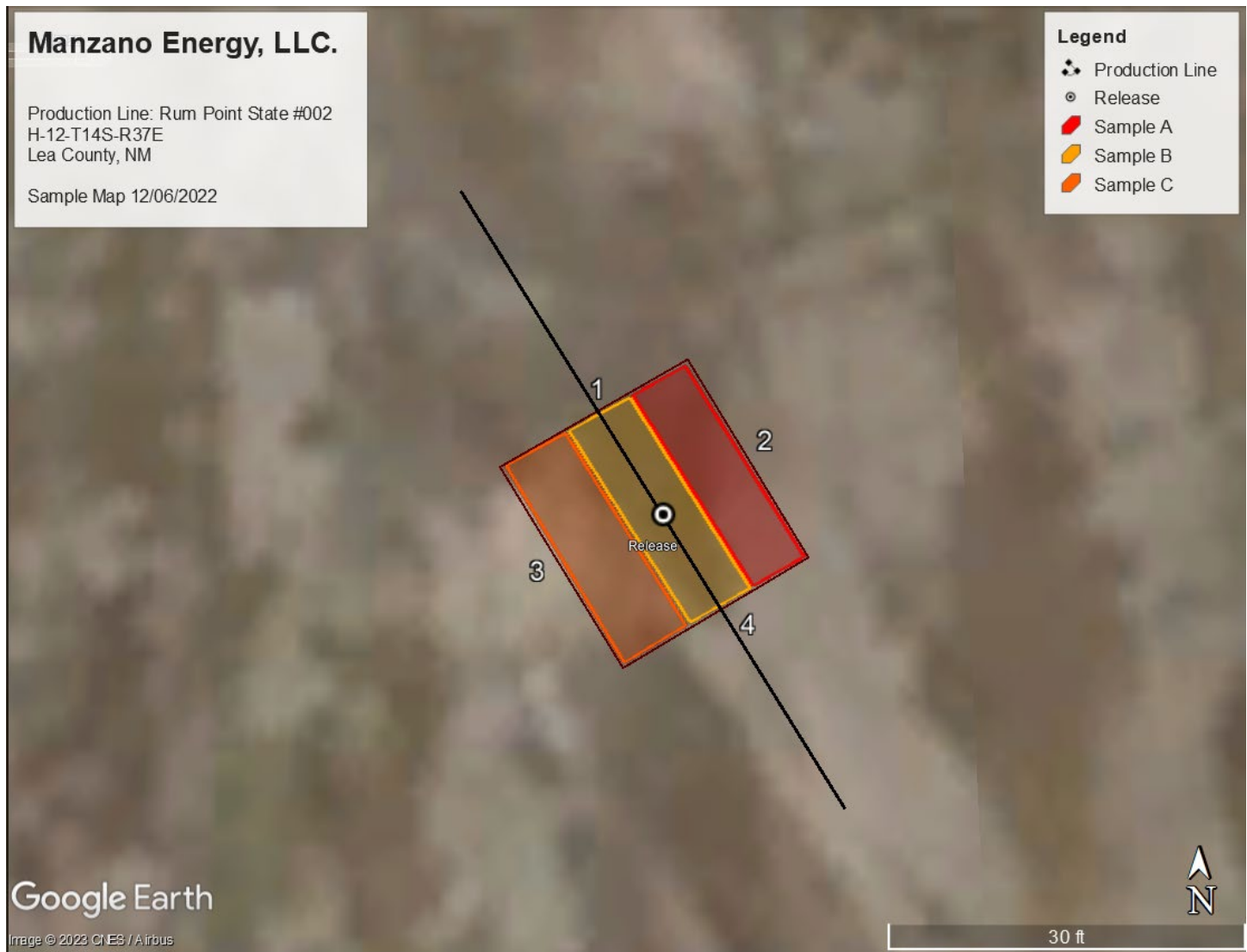


Attachment #9:

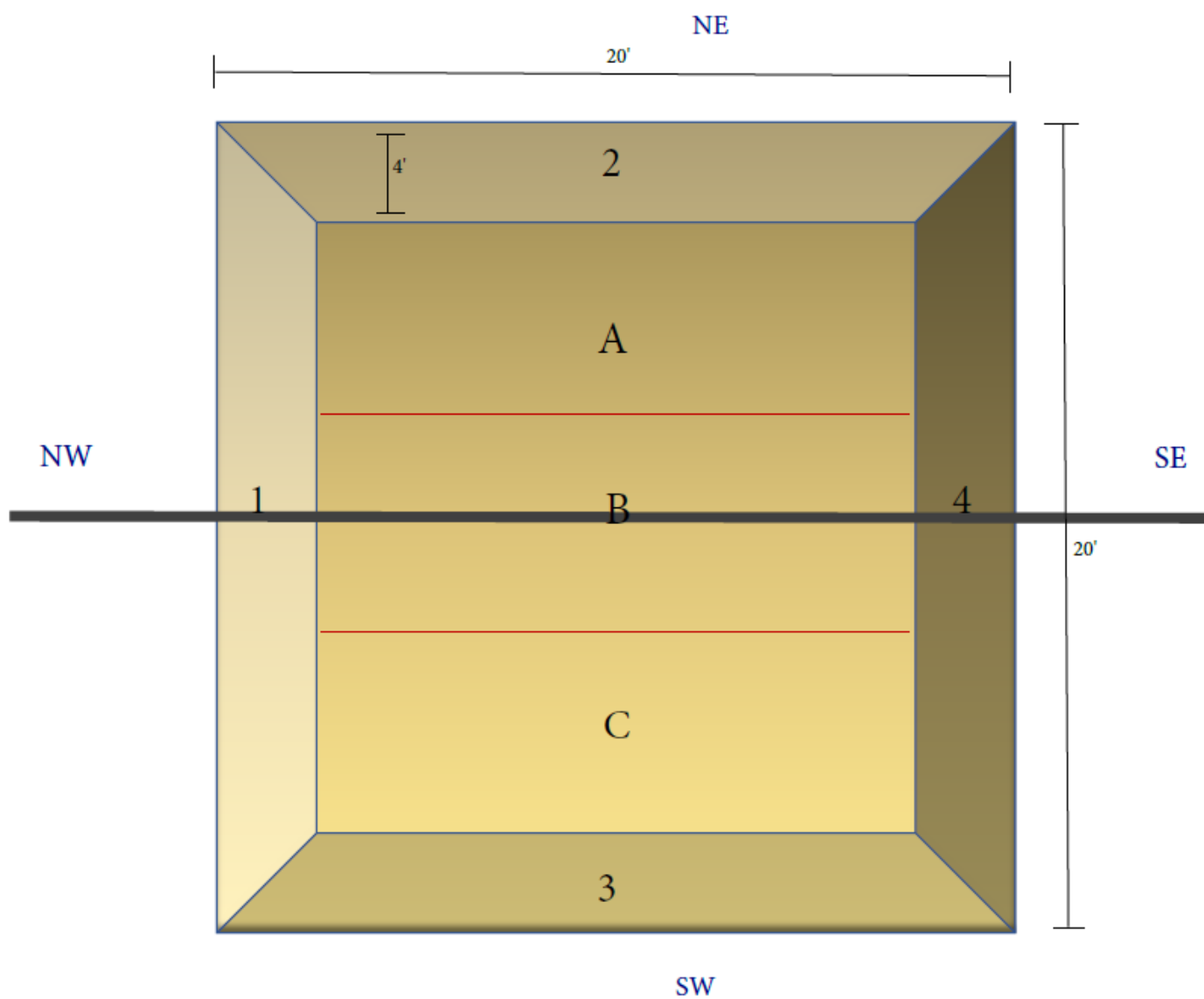




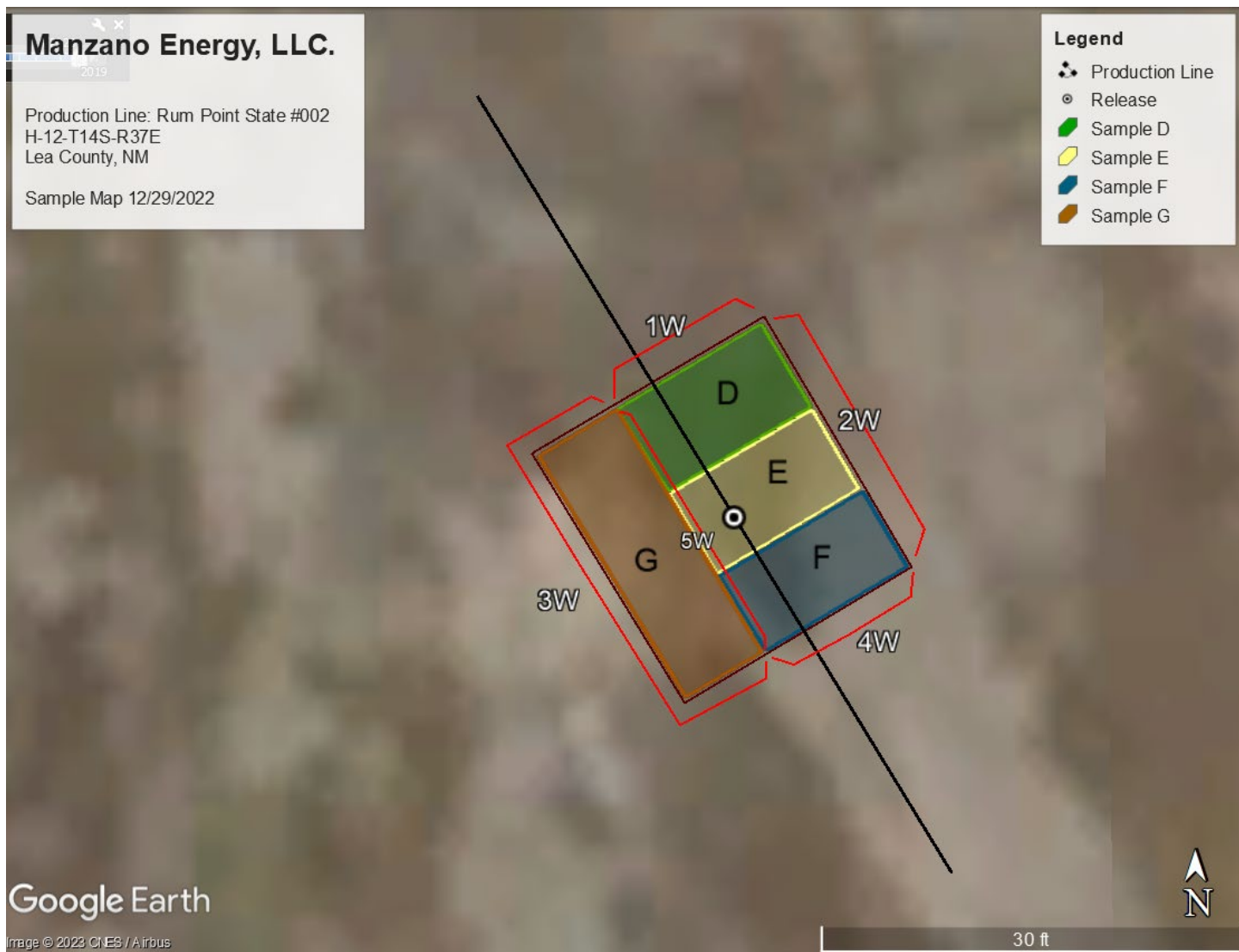
**Attachment #10:**



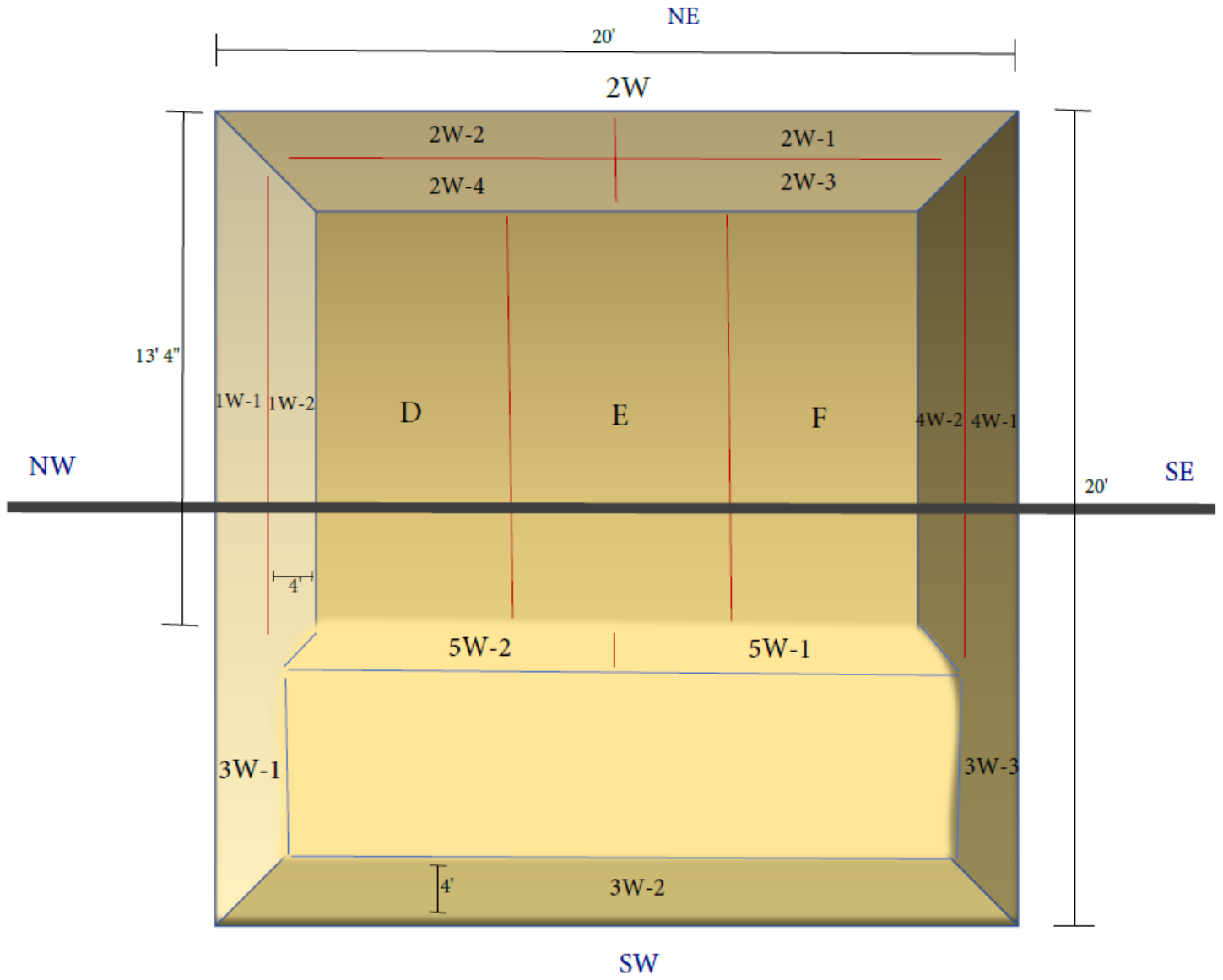
Attachment #11:



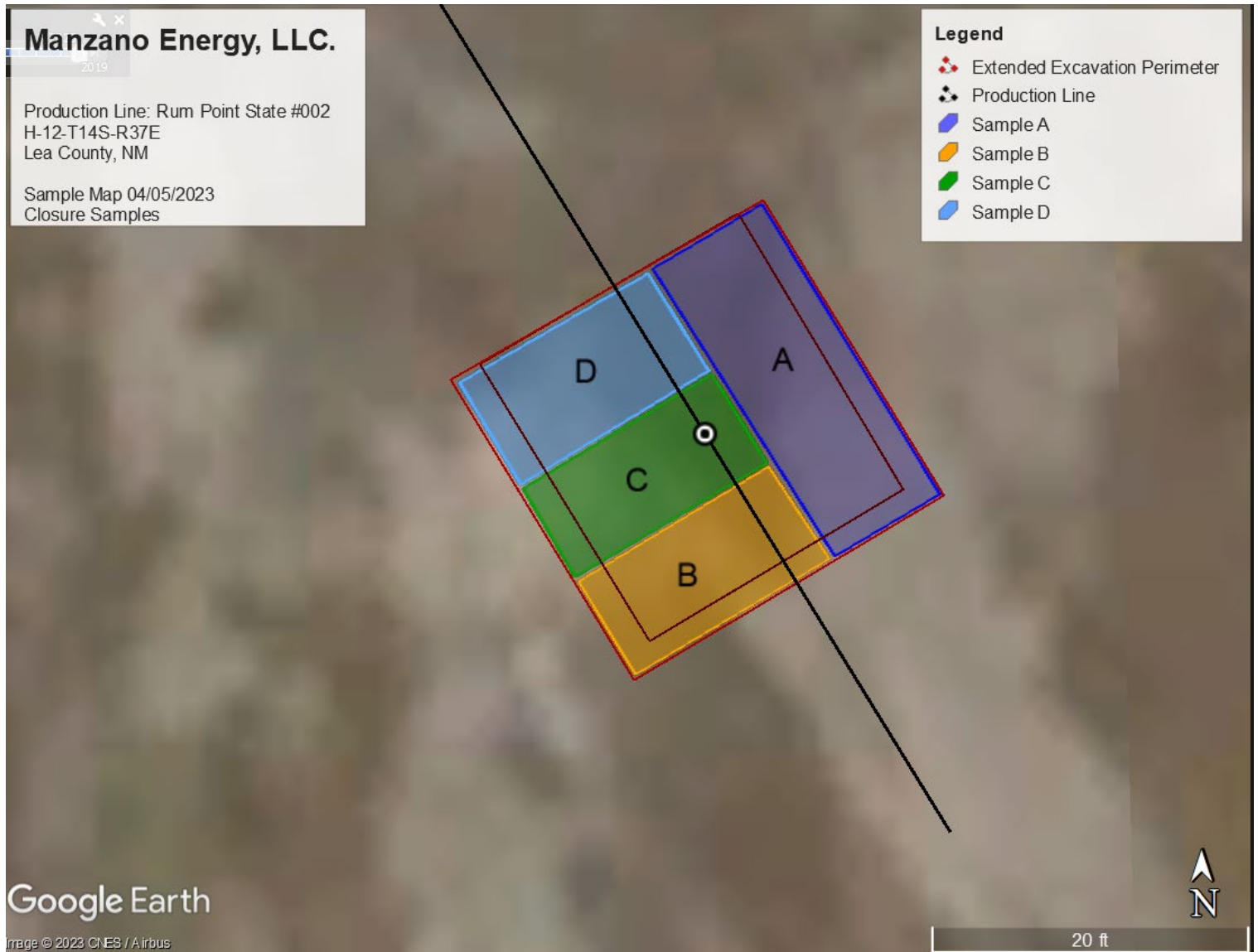
Attachment #12:



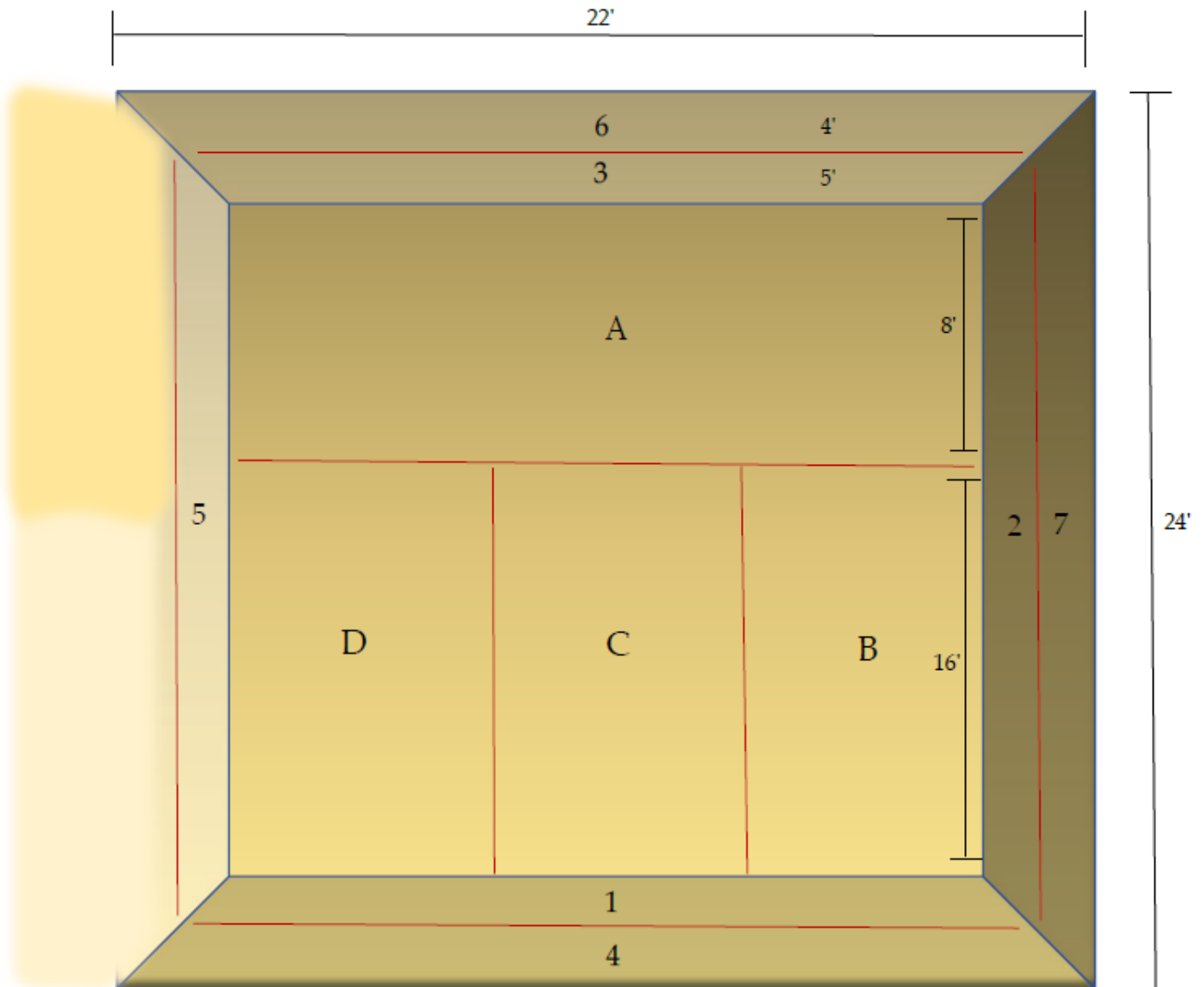
Attachment #13



Attachment #14:



Attachment #15:



## Attachment #16:

Site Name: Rum Point State #2 Date: 11/29/22  
production Line

## Soil Profile


Description	Soil	ft. bgs
Top soil:	ML	1
Sands, silt, clay		2
		3
		4
Caliche		5
gravel, sands	Gm	6
		7
		8
		9
		10
		11
		12
		13
		14



## Attachment #17:

Site Name: Rum Point State 2 Date: 12/27/2022  
Production Line

## Soil Profile

Description	Soil	ft. bgs
Top Soil	ML	1
		2
		3
		4
← compacted caliche		5 Dense, light sand
Caliche	Gm	6 gravel/sands
		7
		8
		9
		10
		11
		12
		13
		14





# Correspondences



**Nichole Calahan** <republiconecalls@gmail.com>

to OCD.Enviro, john ▾

Tue, Nov 29, 2022, 3:55 PM



Good afternoon,

In regard to incident # nAPP2232236458, soil sampling has been scheduled for 12/05/2022. Republic Backhoe Service, LLC. will be collecting samples on behalf of Manzano Energy, LLC. at Rum Point State #002 production line. It is our intent to use the samples for closure. If you have any questions, please contact Eric Garcia at (575) 631-0131.

Thank you.

**Nichole Calahan**

**Republic Backhoe Service, LLC.**

**47 E. Dickens Rd**

**Lovington, NM 88260**

**(575) 602-4251**





Thank you for the **notification**. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Jocelyn Harimon** • Environmental Specialist

Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

(505)469-2821 | [Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)

[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Nichole Calahan <[republiconecalls@gmail.com](mailto:republiconecalls@gmail.com)>

Sent: Tuesday, November 29, 2022 3:55 PM

To: Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>

Cc: [john@manzanoenergy.com](mailto:john@manzanoenergy.com)

Subject: [EXTERNAL] **Notice** of **Sampling**

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

Good afternoon,

In regard to incident # nAPP2232236458, soil **sampling** has been scheduled for 12/05/2022. Republic Backhoe Service, LLC. will be collecting **samples** on behalf of Manzano Energy, LLC. at Rum Point State #002 production line. It is our intent to use the **samples** for closure. If you have any questions, please contact Eric Garcia at (575) 631-0131.

Released to Imaging: 7/17/2023 9:46:10 AM

Thank you



**Nichole Calahan** <republiconecalls@gmail.com>

to OCD.Enviro, john ▾

Tue, Dec 27, 2022, 11:29 AM



Good morning,

In regard to incident # nAPP2232236458, additional soil sampling has been scheduled for 12/29/2022. It is our intent to use the samples for closure. Republic Backhoe Service, LLC. will be collecting samples on behalf of Manzano Energy, LLC. at Rum Point State #002 production line.

The excavated area was previously sampled on 12/05/2022. After receiving those results, the area was further excavated. If you have any questions, please contact Eric Garcia at (575) 631-0131.

Thank you.

**Nichole Calahan**

**Republic Backhoe Service, LLC.**

**47 E. Dickens Rd**

**Lovington, NM 88260**

**(575) 602-4251**



to Michael,, Jennifer,, me ▼

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

**Jocelyn Harimon** • Environmental Specialist  
Environmental Bureau  
EMNRD - Oil Conservation Division  
1220 South St. Francis Drive | Santa Fe, NM 87505  
(505)469-2821 | [Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)  
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



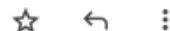
---

From: Nichole Calahan <[republiconecalls@gmail.com](mailto:republiconecalls@gmail.com)>  
Sent: Tuesday, December 27, 2022 11:30 AM  
To: Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>; [john@manzanoenergy.com](mailto:john@manzanoenergy.com)  
Subject: [EXTERNAL] Notice of Sampling



**Nichole Calahan** <republiconecalls@gmail.com>  
to OCD.Enviro ▾

Thu, Jan 19, 2:12 PM



Good afternoon,

On behalf of Manzano Energy LLC, Republic Backhoe Service LLC is requesting an extension of the 90 day time allowance for incident number nAPP2232236458, which will be exhausted on 01/24/2023.

The release was caused by corrosion resulting in a pin-sized hole in the production line from Rum Point State #002 to Rum Point State #001 Battery. The initial plan was to remediate the affected soil and replace the damaged joint. To avoid future incidents, Manzano Energy LLC has since decided to uncover the production line (approximately 1,450 ft) and replace the line in its entirety. With this, we are requesting an additional 60 days to complete the work and submit our closure report.

Thank you.

**Nichole Calahan**

**Republic Backhoe Service, LLC.**  
**47 E. Dickens Rd**  
**Lovington, NM 88260**  
**(575) 602-4251**





**Nobui, Jennifer, EMNRD** <Jennifer.Nobui@emnrd.nm.gov>

to me, Michael,, Jocelyn,, Robert, ▾

Thu, Jan 19, 4:26 PM



Hello Nichole

OCD approves your request for a 90-day extension to 4/24/23 to submit the closure report. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

Thanks,  
Jennifer Nobui

---

**From:** Nichole Calahan <[republiconecalls@gmail.com](mailto:republiconecalls@gmail.com)>

**Sent:** Thursday, January 19, 2023 2:12 PM

**To:** Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>

**Subject:** [EXTERNAL] Request for Extension: Incident nAPP2232236458

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

Good afternoon,

On behalf of Manzano Energy LLC, Republic Backhoe Service LLC is requesting an extension of the 90 day time allowance for incident number nAPP2232236458, which will be exhausted on 01/24/2023.

The release was caused by corrosion resulting in a pin-sized hole in the production line from Rum Point State #002 to Rum Point State #001 Battery. The initial plan was to remediate the affected soil and replace the damaged joint. To avoid future incidents, Manzano Energy LLC has since decided to uncover the production line (approximately 1,450 ft) and replace the line in its entirety. With this, we are requesting an additional 60 days to complete the work and submit our closure report.



**Nichole Calahan** <republiconecalls@gmail.com>

to OCD.Enviro, john, Mike ▼

Mon, Mar 27, 9:34 AM



Good morning,

In regard to incident # nAPP2308354642, soil sampling has been scheduled for 03/31/2023 . It is our intent to use the samples for closure. Republic Backhoe Service, LLC. will be collecting samples on behalf of Manzano, LLC. at the Rum Point State #002 production line.

Thank you.

**Nichole Calahan**

**Republic Backhoe Service, LLC.**

**47 E. Dickens Rd**

**Lovington, NM 88260**

**(575) 602-4251**



to Michael,, Jennifer,, me, john@manzanoenergy.com, Mike ▾

Nichole,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

**Jocelyn Harimon** • Environmental Specialist

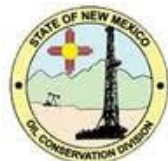
Environmental Bureau

EMNRD - Oil Conservation Division

1220 South St. Francis Drive | Santa Fe, NM 87505

(505)469-2821 | [Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)

[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Nichole Calahan <[republiconecalls@gmail.com](mailto:republiconecalls@gmail.com)>

Sent: Monday, March 27, 2023 9:35 AM

To: Enviro, OCD, EMNRD <[OCD.Enviro@emnrd.nm.gov](mailto:OCD.Enviro@emnrd.nm.gov)>; [john@manzanoenergy.com](mailto:john@manzanoenergy.com); Mike Hanagan <[mike@manzanoenergy.com](mailto:mike@manzanoenergy.com)>

Subject: [EXTERNAL] Notice of Sampling

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

Good morning,

In regard to incident # nAPP2308354642, soil sampling has been scheduled for 03/31/2023 . It is our intent to use the samples for closure. Republic Backhoe Service, LLC. will be collecting samples on behalf of Manzano, LLC. at the Rum Point State #002 production



From: [OCDOnline@state.nm.us](mailto:OCDOnline@state.nm.us) <[OCDOnline@state.nm.us](mailto:OCDOnline@state.nm.us)>

Sent: Friday, March 24, 2023 3:11 PM

To: Mike Hanagan <[mike@manzanoenergy.com](mailto:mike@manzanoenergy.com)>

Subject: The Oil Conservation Division (OCD) has accepted the application, Application ID: 200520

To whom it may concern (c/o Michael Hanagan for MANZANO LLC),

The OCD has accepted the submitted *Notification of a release* (NOR), for incident ID (n#) **nAPP2308354642**,

with the following conditions:

- When submitting future reports regarding this release, please submit the calculations used or specific justification for the volumes reported on the initial C-141.

Please reference nAPP2308354642, on all subsequent C-141 submissions and communications regarding the remediation of this release.

**NOTE:** As of December 2019, NMOCD has discontinued the use of the "RP" number.

If you have any questions regarding this application, or don't know why you have received this email, please contact us.

[ocd.enviro@state.nm.us](mailto:ocd.enviro@state.nm.us)

**New Mexico Energy, Minerals and Natural Resources Department**

1220 South St. Francis Drive

Santa Fe, NM 87505



**Nichole Calahan** <republiconecalls@gmail.com>

to OCD.Enviro, john, Mike, mattdalexander@hotmail.com ▼

Thu, Mar 30, 6:06 PM



Good afternoon,

In regard to incident # nAPP2308354642, soil sampling was scheduled for tomorrow, 03/31/2023. The National Weather Service has issued a Red Flag Warning until 6:00 pm tomorrow, and due to the possibility of strong winds, sampling has been rescheduled for 04/05/2023.

Thank you.

**Nichole Calahan**

**Republic Backhoe Service, LLC.**  
**47 E. Dickens Rd**  
**Lovington, NM 88260**  
**(575) 602-4251**



to Michael,, Jennifer,, me ▼

Nichole,

Thank you for the notification. Please include a copy of this and all notifications in the remedial and/or closure reports to ensure the notifications are documented in the project file.

JH

**Jocelyn Harimon** • Environmental Specialist  
Environmental Bureau  
EMNRD - Oil Conservation Division  
1220 South St. Francis Drive | Santa Fe, NM 87505  
(505)469-2821 | [Jocelyn.Harimon@emnrd.nm.gov](mailto:Jocelyn.Harimon@emnrd.nm.gov)  
[http:// www.emnrd.nm.gov](http://www.emnrd.nm.gov)



From: Nichole Calahan <[republiconecalls@gmail.com](mailto:republiconecalls@gmail.com)>

Sent: Thursday, March 30, 2023 6:07 PM

To: Enviro, OCD, EMNRD <[OCD\\_Enviro@emnrd.nm.gov](mailto:OCD_Enviro@emnrd.nm.gov)>; [john@manzanoenergy.com](mailto:john@manzanoenergy.com); Mike Hanagan <[mike@manzanoenergy.com](mailto:mike@manzanoenergy.com)>; [mattdalexander@hotmail.com](mailto:mattdalexander@hotmail.com)

Subject: [EXTERNAL] Soil Sampling: Rescheduled

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

Good afternoon,

In regard to incident # nAPP2308354642, soil sampling was scheduled for tomorrow, 03/31/2023. The National Weather Service has issued a Red Flag Warning until 6:00 pm tomorrow, and due to the possibility of strong winds, sampling has been rescheduled for



# Photos











































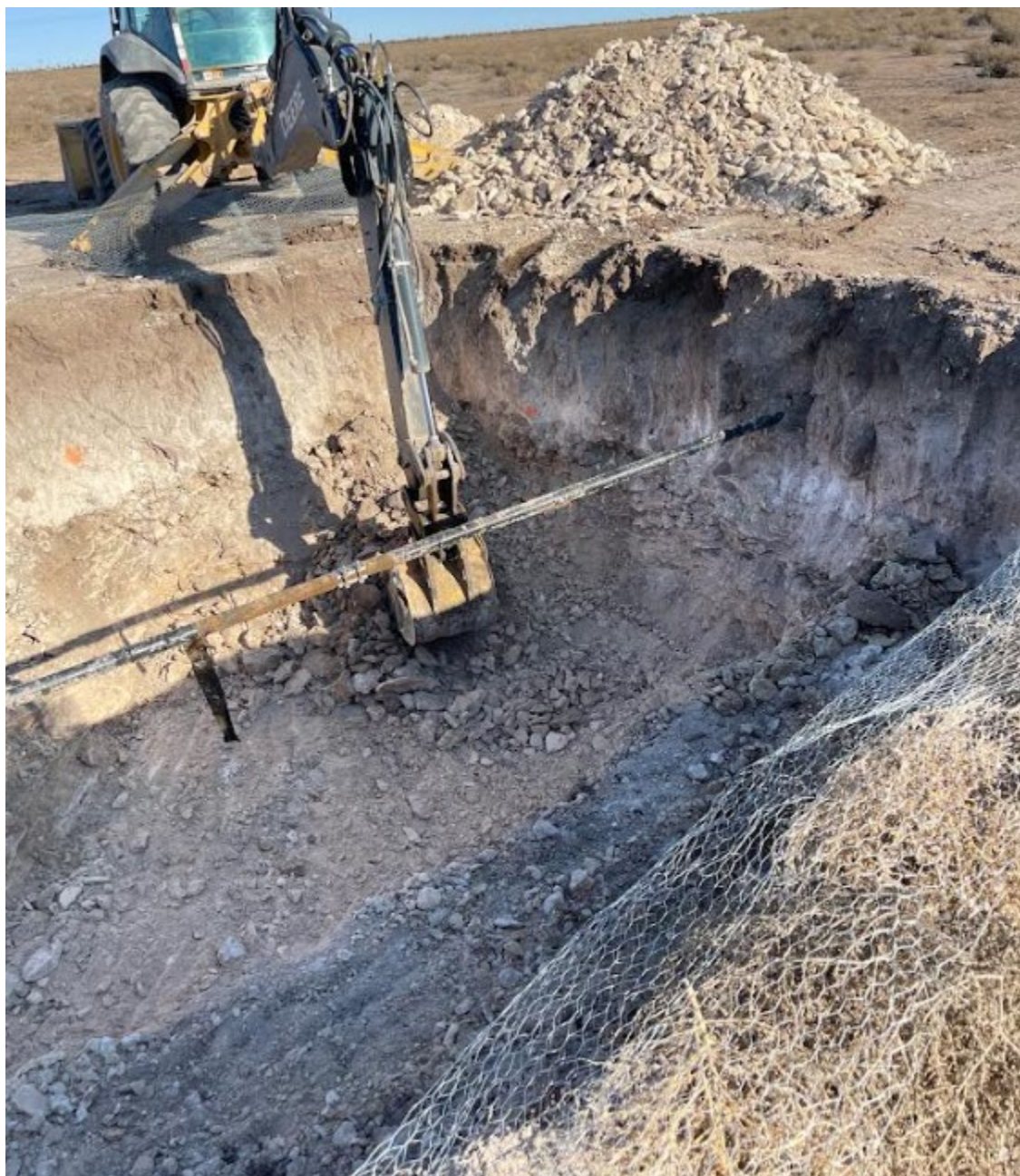


































































# **Laboratory Analysis**



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

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December 13, 2022

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: RUM POINT STATE #002 PRODUCTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 12/06/22 11:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/05/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: A (H225720-01)**

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22		
Toluene*	<0.050	0.050	12/09/2022	ND	2.11	105	2.00	2.21		
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.07	103	2.00	3.59		
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.41	107	6.00	3.86		
Total BTX	<0.300	0.300	12/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 116 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	352	16.0	12/08/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/08/2022	ND	180	89.9	200	11.2	
DRO >C10-C28*	175	10.0	12/08/2022	ND	175	87.6	200	15.5	
EXT DRO >C28-C36	24.7	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 95.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 116 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/05/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: B (H225720-02)**

BTX 8021B		mg/kg	Analyzed By: JH/					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22	
Toluene*	<b>0.164</b>	0.050	12/09/2022	ND	2.11	105	2.00	2.21	
Ethylbenzene*	<b>0.453</b>	0.050	12/09/2022	ND	2.07	103	2.00	3.59	
Total Xylenes*	<b>3.20</b>	0.150	12/09/2022	ND	6.41	107	6.00	3.86	
Total BTX	<b>3.82</b>	0.300	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 181 % 69.9-140

Chloride, SM4500CI-B		mg/kg	Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<b>640</b>	16.0	12/08/2022	ND	432	108	400	3.64	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<b>77.1</b>	10.0	12/08/2022	ND	180	89.9	200	11.2	
DRO >C10-C28*	<b>1160</b>	10.0	12/08/2022	ND	175	87.6	200	15.5	
EXT DRO >C28-C36	<b>177</b>	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 112 % 45.3-161

Surrogate: 1-Chlorooctadecane 127 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/05/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: C (H225720-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22		
Toluene*	<0.050	0.050	12/09/2022	ND	2.11	105	2.00	2.21		
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.07	103	2.00	3.59		
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.41	107	6.00	3.86		
Total BTEx	<0.300	0.300	12/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 115 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	480	16.0	12/08/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/08/2022	ND	194	96.9	200	0.719	
DRO >C10-C28*	83.1	10.0	12/08/2022	ND	185	92.4	200	7.07	
EXT DRO >C28-C36	<10.0	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 89.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 91.3 % 46.3-178

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

S-04	The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

December 13, 2022

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: RUM POINT STATE #002 PRODUCTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 12/06/22 12:00.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/06/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: 1 (H225721-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22	
Toluene*	<0.050	0.050	12/09/2022	ND	2.11	105	2.00	2.21	
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.07	103	2.00	3.59	
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.41	107	6.00	3.86	
Total BTX	<0.300	0.300	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	208	16.0	12/08/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/08/2022	ND	194	96.9	200	0.719	
DRO >C10-C28*	<10.0	10.0	12/08/2022	ND	185	92.4	200	7.07	
EXT DRO >C28-C36	<10.0	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 90.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 90.9 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/06/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: 2 (H225721-02)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22		
Toluene*	<0.050	0.050	12/09/2022	ND	2.11	105	2.00	2.21		
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.07	103	2.00	3.59		
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.41	107	6.00	3.86		
Total BTEx	<0.300	0.300	12/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 111 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	12/08/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/08/2022	ND	194	96.9	200	0.719	
DRO >C10-C28*	<10.0	10.0	12/08/2022	ND	185	92.4	200	7.07	
EXT DRO >C28-C36	<10.0	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 88.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 86.3 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/06/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: 3 (H225721-03)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22	
Toluene*	<0.050	0.050	12/09/2022	ND	2.11	105	2.00	2.21	
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.07	103	2.00	3.59	
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.41	107	6.00	3.86	
Total BTX	<0.300	0.300	12/09/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	12/08/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/08/2022	ND	194	96.9	200	0.719	
DRO >C10-C28*	<10.0	10.0	12/08/2022	ND	185	92.4	200	7.07	
EXT DRO >C28-C36	<10.0	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 92.1 % 45.3-161

Surrogate: 1-Chlorooctadecane 87.5 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	12/06/2022	Sampling Date:	12/06/2022
Reported:	12/13/2022	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2232236458	Sample Received By:	Tamara Oldaker
Project Location:	NONE GIVEN		

**Sample ID: 4 (H225721-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/09/2022	ND	2.10	105	2.00	3.22		
Toluene*	<0.050	0.050	12/09/2022	ND	2.11	105	2.00	2.21		
Ethylbenzene*	<0.050	0.050	12/09/2022	ND	2.07	103	2.00	3.59		
Total Xylenes*	<0.150	0.150	12/09/2022	ND	6.41	107	6.00	3.86		
Total BTEx	<0.300	0.300	12/09/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	128	16.0	12/08/2022	ND	432	108	400	3.64		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/08/2022	ND	194	96.9	200	0.719	
DRO >C10-C28*	<10.0	10.0	12/08/2022	ND	185	92.4	200	7.07	
EXT DRO >C28-C36	<10.0	10.0	12/08/2022	ND					

Surrogate: 1-Chlorooctane 85.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 81.0 % 46.3-178

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene", is written over a horizontal line.

---

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

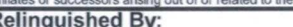
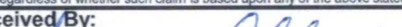

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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Page 7 of 7

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Relinquished By: 		Date: 12-6-22		Received By: 		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Time: 1200		Time:		All Results are emailed. Please provide Email address:		republiconecalls@gmail.com	
Relinquished By:		Date:		Received By:		REMARKS:	
Time:		Time:					
Delivered By: (Circle One)		Observed Temp. °C 6.6		Sample Condition		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Sampler - UPS - Bus - Other:		Corrected Temp. °C 6.0		CHECKED BY: (Initials) 		Bacteria (only) Sample Condition	
						Cool Intact Observed Temp. °C	
						<input type="checkbox"/> Yes <input type="checkbox"/> Yes	
						<input type="checkbox"/> No <input type="checkbox"/> No Corrected Temp. °C	

† Cardinal cannot accept verbal changes. Please email changes to [celey.keene@cardinallabsnm.com](mailto:celey.keene@cardinallabsnm.com)



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

January 04, 2023

ERIC GARCIA

MANZANO ENERGY

PO BOX 1737

ROSWELL, NM 88202

RE: RUM POINT STATE #002 PRODUCTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 12/30/22 10:52.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 2 W - 1 (H226113-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84	
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18	
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93	
Total BTX	<0.300	0.300	12/30/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	01/03/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	216	108	200	0.736	
DRO >C10-C28*	440	10.0	12/30/2022	ND	234	117	200	2.41	
EXT DRO >C28-C36	324	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 97.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 97.5 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
 ERIC GARCIA  
 PO BOX 1737  
 ROSWELL NM, 88202  
 Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 2 W - 2 (H226113-02)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84	
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18	
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13	
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93	
Total BTEX	<0.300	0.300	12/30/2022	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	216	108	200	0.736	
DRO >C10-C28*	15.0	10.0	12/30/2022	ND	234	117	200	2.41	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 96.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 98.5 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 2 W - 3 (H226113-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2520	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	216	108	200	0.736	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	234	117	200	2.41	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 94.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 94.1 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 2 W - 4 (H226113-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1280	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	216	108	200	0.736	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	234	117	200	2.41	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 84.8 % 45.3-161

Surrogate: 1-Chlorooctadecane 84.3 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 4 W - 2 (H226113-05)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEX	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1220	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	216	108	200	0.736	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	234	117	200	2.41	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 88.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 88.6 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
 ERIC GARCIA  
 PO BOX 1737  
 ROSWELL NM, 88202  
 Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 4 W - 1 (H226113-06)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	198	99.2	200	0.603	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	215	107	200	0.554	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 79.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 86.2 % 46.3-178

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 1 W - 1 (H226113-07)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	198	99.2	200	0.603	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	215	107	200	0.554	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 69.2 % 45.3-161

Surrogate: 1-Chlorooctadecane 73.9 % 46.3-178

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 1 W - 2 (H226113-08)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	198	99.2	200	0.603	
DRO >C10-C28*	18.4	10.0	12/30/2022	ND	215	107	200	0.554	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 70.9 % 45.3-161

Surrogate: 1-Chlorooctadecane 76.6 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 5 W - 1 (H226113-09)**

BTEx 8021B		mg/kg	Analyzed By: JH/							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	0.052	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	0.068	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	0.862	0.150	12/30/2022	ND	6.18	103	6.00	2.93	GC-NC1	
Total BTEX	0.982	0.300	12/30/2022	ND					GC-NC1	

Surrogate: 4-Bromofluorobenzene (PID) 107 % 69.9-140

Chloride, SM4500Cl-B		mg/kg	Analyzed By: GM							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	512	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	40.2	10.0	12/30/2022	ND	198	99.2	200	0.603		
DRO >C10-C28*	699	10.0	12/30/2022	ND	215	107	200	0.554		
EXT DRO >C28-C36	101	10.0	12/30/2022	ND						

Surrogate: 1-Chlorooctane 76.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 96.6 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

MANZANO ENERGY  
 ERIC GARCIA  
 PO BOX 1737  
 ROSWELL NM, 88202  
 Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 5 W - 2 (H226113-10)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
<b>Total Xylenes*</b>	<b>1.22</b>	0.150	12/30/2022	ND	6.18	103	6.00	2.93	GC-NC1	
<b>Total BTEX</b>	<b>1.22</b>	0.300	12/30/2022	ND						GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>1470</b>	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>67.2</b>	10.0	12/30/2022	ND	198	99.2	200	0.603		
<b>DRO &gt;C10-C28*</b>	<b>1010</b>	10.0	12/30/2022	ND	215	107	200	0.554		
<b>EXT DRO &gt;C28-C36</b>	<b>164</b>	10.0	12/30/2022	ND						

Surrogate: 1-Chlorooctane 83.8 % 45.3-161

Surrogate: 1-Chlorooctadecane 108 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 3 W - 1 (H226113-11)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	198	99.2	200	0.603	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	215	107	200	0.554	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 70.3 % 45.3-161

Surrogate: 1-Chlorooctadecane 76.1 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 3 W - 2 (H226113-12)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	12/30/2022	ND	2.10	105	2.00	3.84		
Toluene*	<0.050	0.050	12/30/2022	ND	2.08	104	2.00	3.18		
Ethylbenzene*	<0.050	0.050	12/30/2022	ND	2.06	103	2.00	3.13		
Total Xylenes*	<0.150	0.150	12/30/2022	ND	6.18	103	6.00	2.93		
Total BTEx	<0.300	0.300	12/30/2022	ND						

Surrogate: 4-Bromofluorobenzene (PID) 108 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	198	99.2	200	0.603	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	215	107	200	0.554	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 58.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 63.3 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: 3 W - 3 (H226113-13)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/03/2023	ND	1.98	99.1	2.00	1.10		
Toluene*	<0.050	0.050	01/03/2023	ND	2.09	105	2.00	2.78		
Ethylbenzene*	<0.050	0.050	01/03/2023	ND	2.03	101	2.00	4.30		
Total Xylenes*	<0.150	0.150	01/03/2023	ND	6.21	103	6.00	4.08		
Total BTEx	<0.300	0.300	01/03/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/30/2022	ND	198	99.2	200	0.603	
DRO >C10-C28*	<10.0	10.0	12/30/2022	ND	215	107	200	0.554	
EXT DRO >C28-C36	<10.0	10.0	12/30/2022	ND					

Surrogate: 1-Chlorooctane 66.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 73.6 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: D (H226113-14)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/03/2023	ND	1.98	99.1	2.00	1.10		
Toluene*	<0.050	0.050	01/03/2023	ND	2.09	105	2.00	2.78		
Ethylbenzene*	<0.050	0.050	01/03/2023	ND	2.03	101	2.00	4.30		
Total Xylenes*	<0.150	0.150	01/03/2023	ND	6.21	103	6.00	4.08		
Total BTEx	<0.300	0.300	01/03/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.3 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	352	16.0	01/03/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2023	ND	181	90.3	200	3.77	
DRO >C10-C28*	40.6	10.0	01/03/2023	ND	164	81.8	200	7.58	
EXT DRO >C28-C36	60.9	10.0	01/03/2023	ND					

Surrogate: 1-Chlorooctane 93.7 % 45.3-161

Surrogate: 1-Chlorooctadecane 96.0 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: E (H226113-15)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/03/2023	ND	1.98	99.1	2.00	1.10		
Toluene*	<0.050	0.050	01/03/2023	ND	2.09	105	2.00	2.78		
Ethylbenzene*	<0.050	0.050	01/03/2023	ND	2.03	101	2.00	4.30		
Total Xylenes*	<0.150	0.150	01/03/2023	ND	6.21	103	6.00	4.08		
Total BTEx	<0.300	0.300	01/03/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.2 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	320	16.0	01/03/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2023	ND	181	90.3	200	3.77	
DRO >C10-C28*	91.8	10.0	01/03/2023	ND	164	81.8	200	7.58	
EXT DRO >C28-C36	55.1	10.0	01/03/2023	ND					

Surrogate: 1-Chlorooctane 88.5 % 45.3-161

Surrogate: 1-Chlorooctadecane 91.8 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: F (H226113-16)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/03/2023	ND	1.98	99.1	2.00	1.10		
Toluene*	<0.050	0.050	01/03/2023	ND	2.09	105	2.00	2.78		
Ethylbenzene*	<0.050	0.050	01/03/2023	ND	2.03	101	2.00	4.30		
Total Xylenes*	<0.150	0.150	01/03/2023	ND	6.21	103	6.00	4.08		
Total BTEx	<0.300	0.300	01/03/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.4 % 69.9-140

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	448	16.0	01/03/2023	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2023	ND	181	90.3	200	3.77	
DRO >C10-C28*	17.9	10.0	01/03/2023	ND	164	81.8	200	7.58	
EXT DRO >C28-C36	<10.0	10.0	01/03/2023	ND					

Surrogate: 1-Chlorooctane 90.4 % 45.3-161

Surrogate: 1-Chlorooctadecane 92.0 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

MANZANO ENERGY  
ERIC GARCIA  
PO BOX 1737  
ROSWELL NM, 88202  
Fax To: NOT GIVEN

Received:	12/30/2022	Sampling Date:	12/29/2022
Reported:	01/04/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Shalyn Rodriguez
Project Location:	NONE GIVEN		

**Sample ID: G (H226113-17)**

BTEx 8021B		mg/kg		Analyzed By: JH						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	01/03/2023	ND	1.98	99.1	2.00	1.10		
Toluene*	<0.050	0.050	01/03/2023	ND	2.09	105	2.00	2.78		
Ethylbenzene*	<0.050	0.050	01/03/2023	ND	2.03	101	2.00	4.30		
<b>Total Xylenes*</b>	<b>0.797</b>	0.150	01/03/2023	ND	6.21	103	6.00	4.08	GC-NC1	
<b>Total BTEx</b>	<b>0.797</b>	0.300	01/03/2023	ND						GC-NC1

Surrogate: 4-Bromofluorobenzene (PID) 140 % 69.9-140

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>432</b>	16.0	01/03/2023	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>41.4</b>	10.0	01/03/2023	ND	181	90.3	200	3.77		
<b>DRO &gt;C10-C28*</b>	<b>662</b>	10.0	01/03/2023	ND	164	81.8	200	7.58		
<b>EXT DRO &gt;C28-C36</b>	<b>109</b>	10.0	01/03/2023	ND						

Surrogate: 1-Chlorooctane 95.0 % 45.3-161

Surrogate: 1-Chlorooctadecane 116 % 46.3-178

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
GC-NC1	8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are biased high with interfering compounds.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO				ANALYSIS REQUEST																					
Company Name: <u>Manzano Energy</u>				P.O. #:																					
Project Manager: <u>Republic Backhoe Service LLC</u>				Company: <u>Republic Backhoe</u>																					
Address: <u>47 E. Dickens Rd.</u>				Attn: <u>Eric Garcia</u>																					
City: <u>Livingston</u> State: <u>NM</u> Zip: <u>88260</u>				Address: <u>47 E Dickens Rd.</u>																					
Phone #: <u>575-631-0131</u> Fax #:				City: <u>Livingston</u>																					
Project #: _____ Project Owner: <u>Manzano</u>				State: <u>NM</u> Zip: <u>88260</u>																					
Project Name: <u>Rum Point State #002 Production Line</u>				Phone #: <u>575-631-0131</u>																					
Project Location: _____				Fax #:																					
Sampler Name: <u>Eric Garcia</u>																									
FOR LAB USE ONLY	Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.	SAMPLING															
					GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID/BASE:	ICE / COOL	OTHER:	DATE	TIME	Chlorides	TPH	BTEX							
	<u>H226013</u>	<u>2W-1</u>	<u>C</u>				<u>X</u>					<u>X</u>		<u>12/20/22</u>	<u>10:45</u>	<u>X</u>	<u>X</u>	<u>X</u>							
	<u>1</u>	<u>2W-2</u>	<u>C</u>												<u>11:00</u>										
	<u>2</u>	<u>2W-3</u>	<u>C</u>												<u>11:30</u>										
	<u>3</u>	<u>2W-4</u>	<u>C</u>												<u>11:50</u>										
	<u>4</u>	<u>4W-2</u>	<u>C</u>												<u>12:10</u>										
	<u>5</u>	<u>4W-1</u>	<u>C</u>												<u>12:35</u>										
	<u>6</u>	<u>1W-1</u>	<u>C</u>												<u>12:50</u>										
	<u>7</u>	<u>1W-2</u>	<u>C</u>												<u>1:15</u>										
	<u>8</u>	<u>5W-1</u>	<u>C</u>												<u>3:00</u>										
	<u>9</u>	<u>5W-2</u>	<u>C</u>												<u>3:15</u>										
	<u>10</u>																								

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Relinquished By: _____		Date: <u>12/30/22</u>	Received By: _____		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By: _____		Time: <u>1052</u>	Received By: _____		All Results are emailed. Please provide Email address: <u>republiconecalls@gmail.com</u>	
Relinquished By: _____		Date: _____	Received By: _____		REMARKS:	
Relinquished By: _____		Time: _____	Received By: _____		Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>	
Delivered By: (Circle One)		Observed Temp. °C <u>2.4°C</u>	Sample Condition Cool <input checked="" type="checkbox"/> Intact <input type="checkbox"/>		Bacteria (only) Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/>	
Sampler - UPS - Bus - Other:		Corrected Temp. °C <u>1.8°C</u>	Checked By: (Initials) <u>SR</u>		Thermometer ID #113	
					Correction Factor <u>-0.5°C</u>	
					Corrected Temp. °C	

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com





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(575) 393-2326 FAX (575) 393-2476

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: <u>Manzano Energy</u>				BILL TO				ANALYSIS REQUEST															
Project Manager: <u>Republic Backhoe Service LLC</u>				P.O. #:																			
Address: <u>47 E. Dickens Rd</u>				Company: <u>Republic Backhoe</u>																			
City: <u>Lovington</u> State: <u>NM</u> Zip: <u>88260</u>				Attn:																			
Phone #: <u>575-631-0131</u> Fax #:				Address: <u>47 E. Dickens</u>																			
Project #: _____ Project Owner: <u>Manzano</u>				City: <u>Lovington</u>																			
Project Name:				State: <u>NM</u> Zip: <u>88260</u>																			
Project Location: <u>Rum Point State #002 Production Line</u>				Phone #: <u>575-631-0131</u>																			
Sampler Name: <u>Eric Garcia</u>				Fax #:																			
FOR LAB USE ONLY				MATRIX		PRESERV.		SAMPLING															
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME									
<u>H226113</u>	<u>3W-1</u>	<u>C</u>				<u>X</u>					<u>X</u>		<u>12/24/22</u>	<u>3:30</u>	<u>Chloride</u>	<u>TPH</u>	<u>BTEX</u>						
<u>11</u>	<u>3W-2</u>	<u>C</u>				<u> </u>					<u> </u>		<u>12/24/22</u>	<u>3:40</u>	<u> </u>	<u> </u>	<u> </u>						
<u>12</u>	<u>3W-3</u>	<u>C</u>				<u> </u>					<u> </u>		<u>12/24/22</u>	<u>3:55</u>	<u> </u>	<u> </u>	<u> </u>						
<u>13</u>																							

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Relinquished By: <u>[Signature]</u>	Date: <u>12/30/22</u>	Received By: <u>[Signature]</u>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Time: <u>1052</u>			All Results are emailed. Please provide Email address:
Relinquished By:	Date:	Received By:	<u>republiconecalls@gmail.com</u>
Time:			REMARKS:
Delivered By: (Circle One)	Observed Temp. °C <u>2.4</u>	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Turnaround Time: Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
Sampler - UPS - Bus - Other:	Corrected Temp. °C <u>1.8</u>	CHECKED BY: (Initials) <u>[Signature]</u>	Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No
			Thermometer ID #113 Correction Factor <u>0.5°C</u> <u>0.00</u>
			Observed Temp. °C Corrected Temp. °C

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### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]

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Relinquished By: 		Date: 2/30/22	Received By: 		Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
		Time: 1052			All Results are emailed. Please provide Email address: republiconecalls@gmail.com	
Relinquished By:		Date:	Received By:		REMARKS:	
		Time:				
Delivered By: (Circle One)	Observed Temp. °C 2.4	Sample Condition	CHECKED BY: (Initials)		Turnaround Time:	Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/>
Sampler - UPS - Bus - Other:	Corrected Temp. °C 1.8	Cool <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No			Thermometer ID #113	Bacteria (only) Sample Condition
					Correction Factor -0.5°C - 0.0	Cool Intact Observed Temp. °C
						<input type="checkbox"/> Yes <input type="checkbox"/> Yes
						<input type="checkbox"/> No <input type="checkbox"/> No
						Corrected Temp. °C

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PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

---

April 06, 2023

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: RUM POINT STATE #002 PRODUCTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 04/06/23 8:22.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 1 (H231605-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	656	16.0	04/06/2023	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 77.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 80.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 2 (H231605-02)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTEx	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	816	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 108 % 48.2-134

Surrogate: 1-Chlorooctadecane 113 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 3 (H231605-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTEX	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	960	16.0	04/06/2023	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 90.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 95.0 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 4 (H231605-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTEX	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 99.0 % 48.2-134

Surrogate: 1-Chlorooctadecane 102 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 5 (H231605-05)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTEX	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	800	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 85.6 % 48.2-134

Surrogate: 1-Chlorooctadecane 91.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 6 (H231605-06)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	416	16.0	04/06/2023	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 88.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 94.2 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: 7 (H231605-07)**

BTEx 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTEX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 106 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	384	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 83.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 87.8 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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### Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager







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April 06, 2023

ERIC GARCIA

REPUBLIC BACKHOE SERVICES

47 E. DICKENS RD

LOVINGTON, NM 88260

RE: RUM POINT STATE #002 PRODUCTION LINE

Enclosed are the results of analyses for samples received by the laboratory on 04/06/23 8:22.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-22-15. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: A (H231604-01)**

BTX 8021B		mg/kg		Analyzed By: JH/					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91	QR-03
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05	QR-03
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54	QR-03
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67	
Total BTX	<0.300	0.300	04/06/2023	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	592	16.0	04/06/2023	ND	448	112	400	7.41	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 84.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 90.6 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: B (H231604-02)**

BTX 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTX	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 105 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	688	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 82.1 % 48.2-134

Surrogate: 1-Chlorooctadecane 89.3 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: C (H231604-03)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTEX	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 107 % 71.5-134

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	400	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 76.8 % 48.2-134

Surrogate: 1-Chlorooctadecane 81.6 % 49.1-148

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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**Analytical Results For:**

REPUBLIC BACKHOE SERVICES  
 ERIC GARCIA  
 47 E. DICKENS RD  
 LOVINGTON NM, 88260  
 Fax To: NONE

Received:	04/06/2023	Sampling Date:	04/05/2023
Reported:	04/06/2023	Sampling Type:	Soil
Project Name:	RUM POINT STATE #002 PRODUCTION I	Sampling Condition:	Cool & Intact
Project Number:	NAPP2308354642	Sample Received By:	Shalyn Rodriguez
Project Location:	MANZANO H-12-T14-R37		

**Sample ID: D (H231604-04)**

BTEx 8021B		mg/kg		Analyzed By: JH/						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/06/2023	ND	2.19	109	2.00	5.91		
Toluene*	<0.050	0.050	04/06/2023	ND	2.22	111	2.00	5.05		
Ethylbenzene*	<0.050	0.050	04/06/2023	ND	2.17	108	2.00	6.54		
Total Xylenes*	<0.150	0.150	04/06/2023	ND	6.79	113	6.00	7.67		
Total BTEx	<0.300	0.300	04/06/2023	ND						

Surrogate: 4-Bromofluorobenzene (PID) 104 % 71.5-134

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	608	16.0	04/06/2023	ND	448	112	400	7.41		

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/06/2023	ND	190	95.1	200	1.43	
DRO >C10-C28*	<10.0	10.0	04/06/2023	ND	187	93.7	200	0.441	
EXT DRO >C28-C36	<10.0	10.0	04/06/2023	ND					

Surrogate: 1-Chlorooctane 112 % 48.2-134

Surrogate: 1-Chlorooctadecane 117 % 49.1-148

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Celey D. Keene, Lab Director/Quality Manager





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### Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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A handwritten signature in black ink, appearing to read "Celey D. Keene".

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Celey D. Keene, Lab Director/Quality Manager



101 East Marland, Hobbs, NM 88240  
(575) 393-2326 FAX (575) 393-2476

# CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Manzano Energy, LLC.				<b>BILL TO</b>				<b>ANALYSIS REQUEST</b>											
Project Manager: Republic Backhoe Service, LLC				P.O. #:															
Address: 47 E Dickens Rd.				Company: Republic Backhoe															
City: Lovington State: NM Zip: 88260				Attn: Eric Garcia															
Phone #: (575) 631-0131 Fax #:				Address: 47 E. Dickens Rd.															
Project #: nAPP2308354642 Project Owner: Manzano, LLC.				City: Lovington															
Project Name: Rum Point State #002 Production Line				State: NM Zip: 88260															
Project Location: H-12-T14-R37				Phone #: (575) 631-0131															
Sampler Name: Eric Garcia				Fax #:															
FOR LAB USE ONLY																			
Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX				PRESERV.	SAMPLING		Chlorides	BTEX	TPH						
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME					
H231604	A					X					X		4/5/23	2:50	X	X	X		
2	B													3:15					
3	C													3:20					
4	D													3:40					

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Relinquished By: <i>Eric Garcia</i>	Date: 4/6/23 Time: 0822	Received By: <i>Spodriguey</i>	Verbal Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:
Relinquished By:	Date:	Received By:	REMARKS:
Delivered By: (Circle One) Sampler - UPS - Bus - Other:	Observed Temp. °C: 74.2 Corrected Temp. °C: 7.8	Sample Condition Cool Intact <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Yes <input type="checkbox"/> No <input type="checkbox"/> No	CHECKED BY: <i>SK</i> (Initials)
		Turnaround Time: Standard <input type="checkbox"/> Rush <input checked="" type="checkbox"/>	Bacteria (only) Sample Condition Cool Intact <input type="checkbox"/> Yes <input type="checkbox"/> No Observed Temp. °C: <input type="checkbox"/> Yes <input type="checkbox"/> No Corrected Temp. °C: <input type="checkbox"/> Yes <input type="checkbox"/> No
		Thermometer ID #113 Correction Factor -0.5°C	

FORM-006 R 3.2 10/07/21

† Cardinal cannot accept verbal changes. Please email changes to celey.keene@cardinallabsnm.com

**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 159999

CONDITIONS

Operator: MANZANO LLC P.O. Box 1737 Roswell, NM 88202	OGRID: 231429
	Action Number: 159999
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
nvelez	None	7/17/2023