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TALON LPE

Remediation and Closure Report

Hadar 10 Fed Com #4H
API # 30-015-42572
NRM2003156306
Talon Project #700794.308.01

Prepared For:

Devon Energy Production Company
6488 Seven Rivers Hwy
Artesia, NM 88210

Prepared By:

TALON/LPE
408 W. Texas Avenue
Artesia, New Mexico 88210

February 24, 2020

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Remediation and Closure Report**
Hadar 10 Fed Com #4H
API # 30-015-42572
NRM2003156306

Dear Mr. Bratcher,

Devon Energy Production Company (Devon Energy) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above-referenced location. The incident descriptions, soil sampling results, remedial actions, and closure requests are presented herein.

Site Information

The Hadar 10 Fed Com #4H is located approximately thirty-four (34) miles southeast of Artesia, New Mexico. The legal location for this release is Unit Letter M, Section 10, Township 19 South and Range 31 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.6692314 North and -103.8654938 West. A Site Map is presented in Appendix I.

According to the soil survey provided by the United States Department of Agriculture Natural Resources Conservation Service, the soil in this area is made up of Potter-Simona complex, 5 to 25 percent slopes. Per the New Mexico Bureau of Geology and Mineral Resources, the local surface and shallow geology is Ogallala Formation and is comprised of alluvial and eolian deposits. Drainage courses in this area are well-drained.

Ground Water and Site Ranking

The New Mexico Office of the State Engineer Database indicates the average reported depth to groundwater is 138-feet below ground surface (BGS). See Appendix II for the referenced groundwater depth. This site is located within a low potential Karst area.

If a release occurs within the following areas, the responsible party must treat the release as if it occurred less than 50 feet to the groundwater in Table I, New Mexico Oil Conservation Division (NMOCD) Rule 19.15.29 NMAC.

Approximate Depth to Groundwater	138 Feet/BGS

☐Yes ☒No	Within 300 feet of any continuously flowing watercourse or any other significant watercourse
☐Yes ☒No	Within 200 feet of any lakebed, sinkhole or a playa lake
☐Yes ☒No	Within 300 feet from an occupied permanent residence, school, hospital, institution or church
☐Yes ☒No	Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes
☐Yes ☒No	Within 1000 feet of any freshwater well or spring
☐Yes ☒No	Within incorporated municipal boundaries or within a defined municipal freshwater well field covered under a municipal ordinance adopted pursuant to Section 3-2703 NMSA 1978
☐Yes ☒No	Within 300 feet of a wetland
☐Yes ☒No	Within the area overlying a subsurface mine
☐Yes ☒No	Within an unstable area
☐Yes ☒No	Within a 100-year floodplain

Table I
Closure Criteria for Soils Impacted by a Release

Depth below horizontal extents of release to ground water less than 10,000 mg/l TDS	Constituent	Method*	Limit**
>100 feet	Total Chlorides***	EPA 300.0 or SM4500 Cl 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

Incident Descriptions

On November 16, 2019, a release occurred from the pumping unit packing failure releasing 20.3 barrels (bbls) of oil. The spill area remained on location. Vac trucks were dispatched to the site to recover the spilled fluids and were able to recover 14 bbls of oil. Site maps are presented in Appendix I. The initial C-141 is attached in Appendix III.

Talon mobilized personnel and equipment to the site to begin assessment and remediation activities. The impacted area was excavated utilizing a backhoe. Confirmation samples were collected from the bottom and sidewalls of the excavation to ensure that all environmental impacts had been addressed.

Soil Sampling

2-6-20 Soil Sample Laboratory Results

Sample ID	Sample Date	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg	Cl mg/kg
NMOCD Table 1 Closure Criteria 19.15.29 NMAC			50 mg/kg	10 mg/kg	DRO + GRO combined = 1000 mg/kg			2500 mg/kg	20,000 mg/kg
S-1	2/6/2020	0-1'	ND	ND	ND	44.8	11.7	56.5	823
S-2	2/6/2020	0-1'	1.41	ND	**133**	**4900**	**585**	**5618**	3030
S-3	2/6/2020	0-1'	2.36	ND	**195**	**4400**	**476**	**5071**	12400
S-4	2/6/2020	0-1'	ND	ND	ND	342	46.4	388.4	7640
S-5	2/6/2020	0-1'	0.992	ND	**106**	**3400**	**337**	**3843**	11900
S-6	2/6/2020	0-1'	ND	ND	**25**	**1000**	116	1141	18200
S-7	2/6/2020	0-1'	ND	ND	**14**	**3480**	**388**	**3882**	4130
S-8	2/6/2020	0-1'	0.795	ND	**117**	**4510**	**436**	**5063**	11400
S-9	2/6/2020	0-1'	ND	ND	ND	804	141	945	10400

ND-Analyte Not Detected

2-17-20 Confirmation Soil Sample Laboratory Results

Sample ID	Sample Date	Depth (BGS)	BTEX mg/kg	Benzene mg/kg	GRO mg/kg	DRO mg/kg	MRO mg/kg	Total TPH mg/kg
NMOCD Table 1 Closure Criteria 19.15.29 NMAC			50 mg/kg	10 mg/kg	DRO + GRO combined = 1000 mg/kg			2500 mg/kg
S-10 for S-2	2/17/2020	1.5 Composite	--	--	ND	23.7	ND	23.7
S-11	2/17/2020	1.5 Composite	--	--	ND	34.3	ND	34.3
S-12 for S-3	2/17/2020	1.5 Composite	--	--	ND	138	24.8	162.8
S-13	2/17/2020	1.5 Composite	--	--	ND	95.7	11.9	107.6
S-14 for S-5	2/17/2020	1.5 Composite	--	--	ND	30.9	ND	30.9
S-15 for S-7	2/17/2020	1.5 Composite	--	--	ND	114	24.1	138.1
S-16 for S-7	2/17/2020	1.5 Composite	--	--	ND	72.7	14.1	86.8
S-17 for S-6	2/17/2020	1.5 Composite	--	--	ND	ND	ND	ND
S-18	2/17/2020	1.5 Composite	--	--	ND	74.7	17	91.7
S-19	2/17/2020	1.5 Composite	--	--	ND	126	23.9	149.9
S-20 for S-8	2/17/2020	1.5 Composite	--	--	ND	126	26.2	152.2

ND-Analyte Not Detected, -- Analyte Not Tested

See Appendix V for the complete report of laboratory results.

Remedial Actions

- The impacted areas in the vicinity of S-2, S-3, S-5, S-6, S-7, and S-8 were excavated to a depth of 1.5-feet BGS, laboratory analytical results from confirmation bottom and sidewall composite soil samples indicated that TPH concentrations were below NMOCD Closure Criteria 19.15.29.12 D NMAC.

- The spill areas in the vicinity of S-4 and S-9 were scraped, removing the staining.

- All removed soil was transported to Lea Land, LLC, an NMOCD approved soil waste disposal facility.

- The excavated area was backfilled with clean caliche, machine compacted and contoured to match the surrounding location.

- Final C-141 is attached in Appendix IV

Closure

Based on this site characterization and analytical results, we request that no further actions be required and that closure with regard to the attached incident be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at 575-746-8768.

Respectfully submitted,

TALON/LPE

Chris Jones
Project Manager

Attachments:

Appendix I	Site Maps, Karst Map, TOPO Map & Locator Map
Appendix II	Groundwater Data, FEMA Flood Zone, Soil Survey
Appendix III	Initial and Final C-141's
Appendix IV	Photographic Documentation
Appendix V	Laboratory Results

APPENDIX I

SITE MAPS

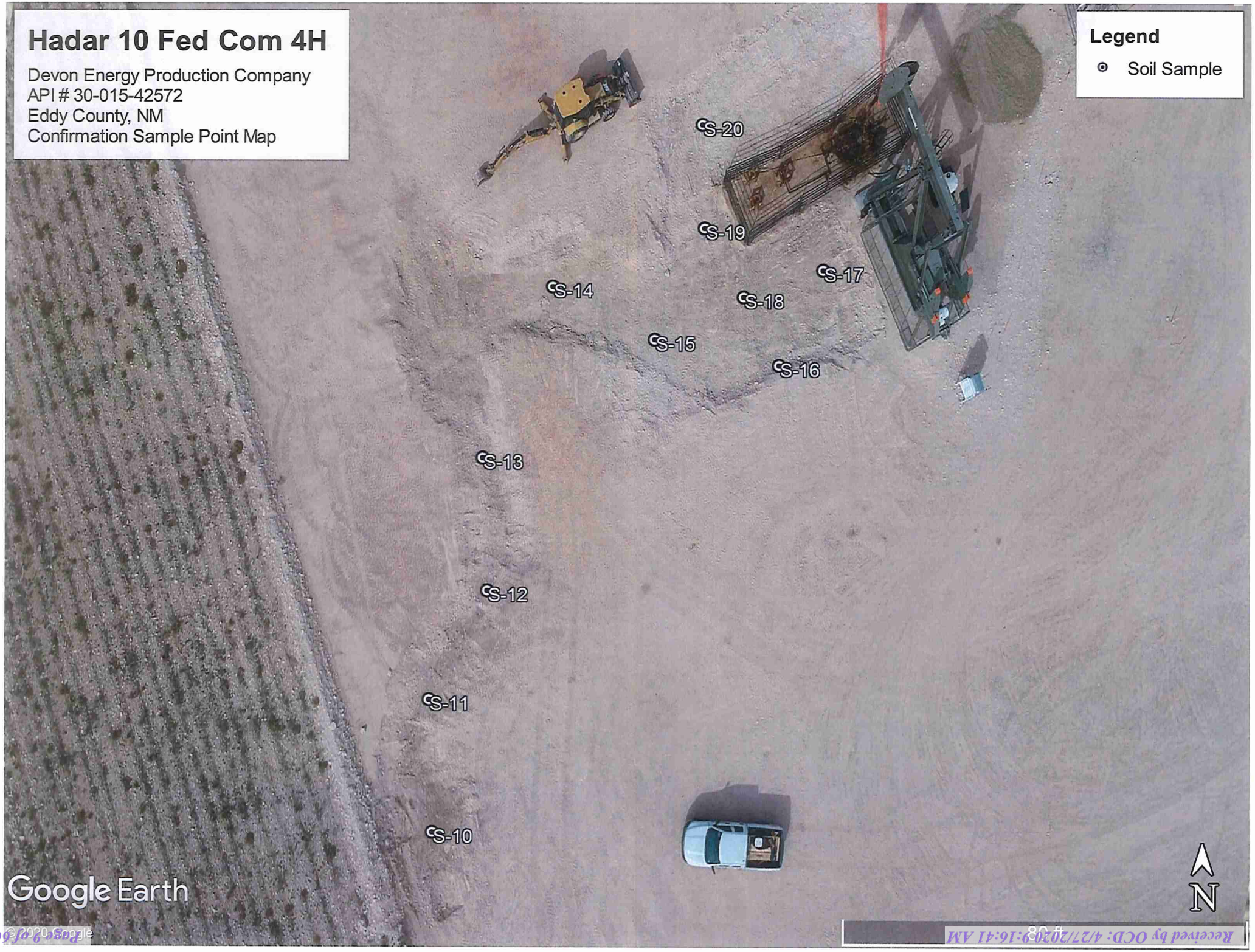
KARST MAP

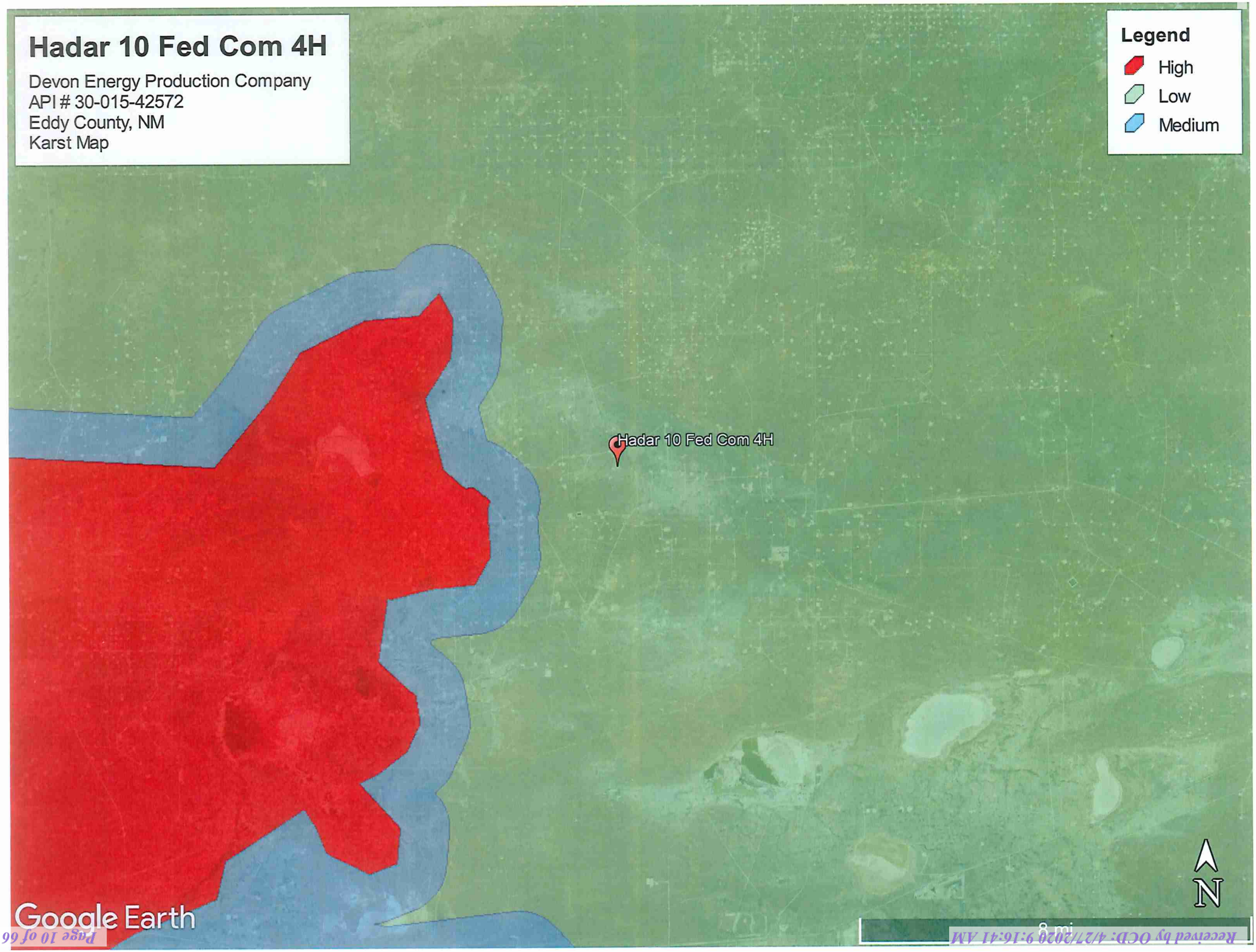
TOPO MAP

LOCATOR MAP

Hadar 10 Fed Com 4H

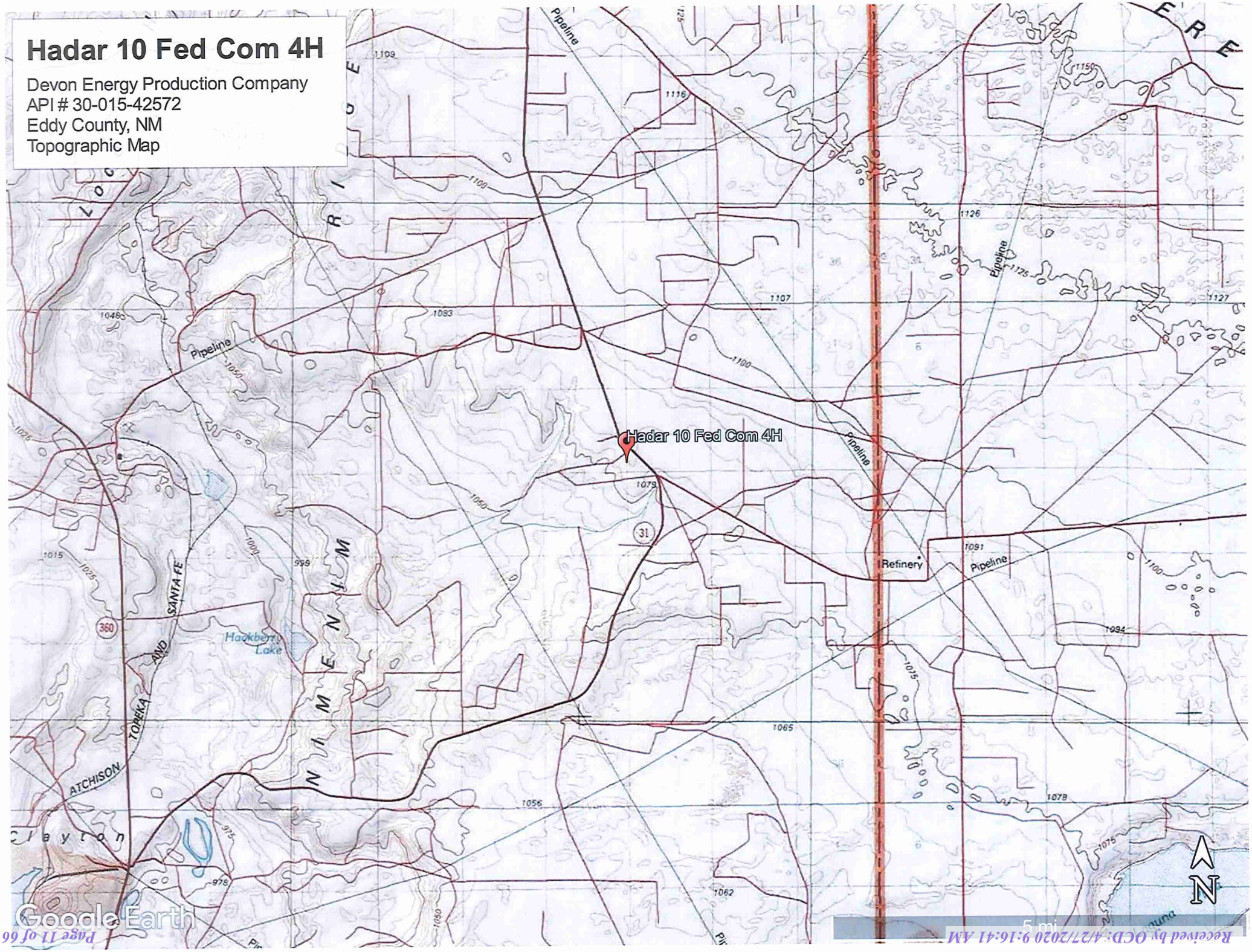
Devon Energy Production Company
API # 30-015-42572
Eddy County, NM
Site Map

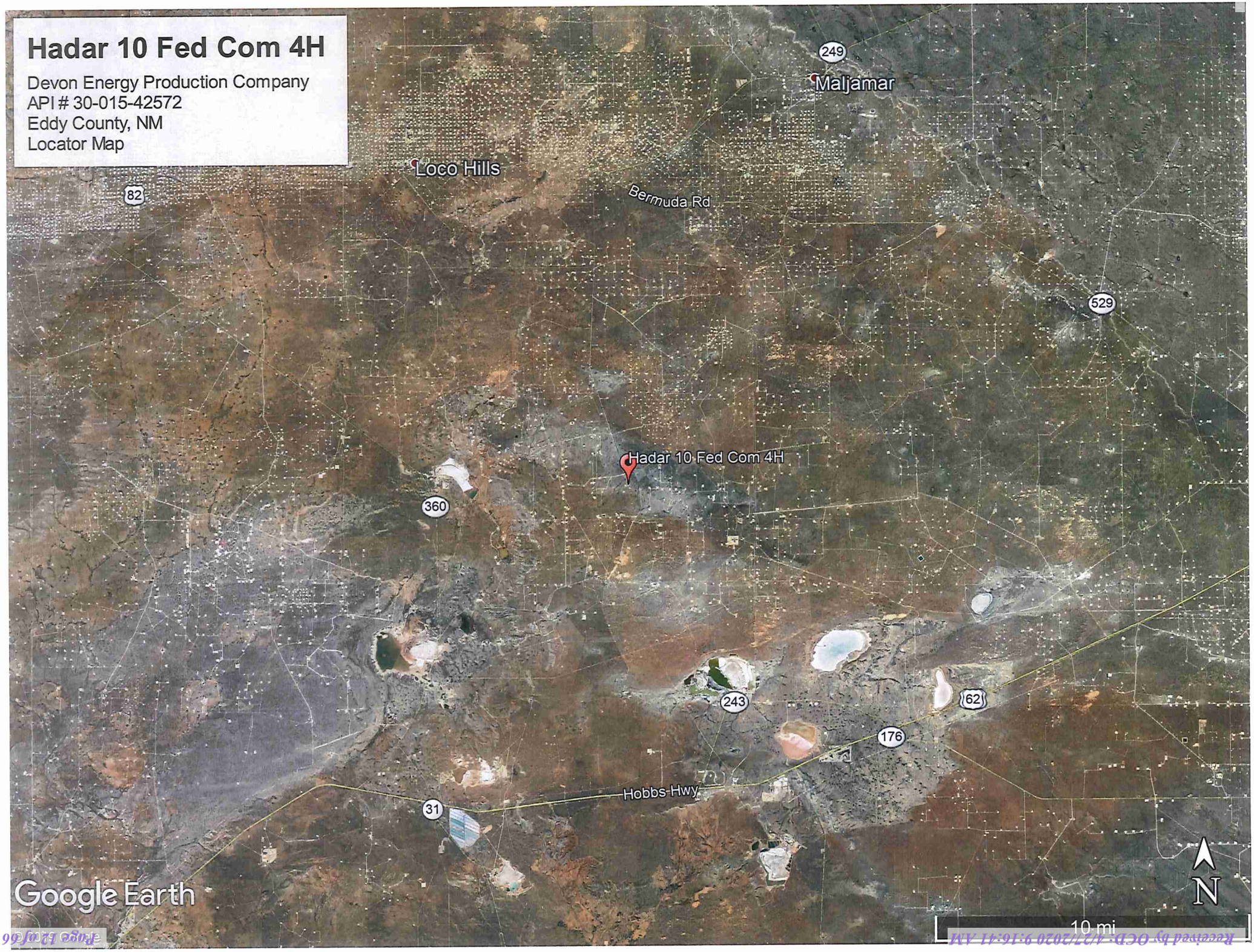




Hadar 10 Fed Com 4H

Devon Energy Production Company
API # 30-015-42572
Eddy County, NM
Topographic Map





APPENDIX II

GROUNDWATER DATA

SOIL SURVEY

FEMA FLOOD ZONE

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 00829 POD1		CP	LE		2	4	16	19S	31E	606165	3614009*	1193	120		
CP 01554 POD1		CP	LE	2	2	1	22	19S	31E	607166	3613354	1992	400		
CP 01554 POD2		CP	LE	2	2	1	22	19S	31E	607165	3613322	2021	400		
CP 00849 POD1		CP	LE	3	1	3	35	18S	31E	608012	3618757*	3929	300		
CP 00725 POD1		CP	ED	1	3	3	28	19S	31E	604906	3610473*	4935	231		
CP 00873 POD1		CP	LE		1	1	19	19S	31E	601772	3613147*	5035	340	180	160
CP 00722 POD1		CP	LE	4	3	3	28	19S	31E	605106	3610273*	5072	200		
CP 00723 POD1		CP	ED	2	1	1	33	19S	31E	605111	3610071*	5267	139		
CP 00722 POD3		CP	LE	2	4	1	33	19S	31E	605519	3609673*	5577	220	140	80
CP 00642 POD1		CP	ED		2	2	25	19S	31E	611025	3611657*	5834	250		
CP 00563 POD1		CP	LE	1	1	2	19	19S	32E	612118	3613376*	6019	300		
CP 00357 POD1		CP	ED	4	4	1	24	19S	30E	600667	3612631*	6254	630		
CP 00640 POD1		CP	LE		2	2	19	19S	32E	612621	3613280*	6527	260	102	158
CP 00357 POD2		CP	ED	4	3	1	24	19S	30E	600265	3612627*	6625	630		
CP 00641 POD1		CP	ED		4	1	36	19S	31E	610247	3609634*	6766	300	130	170

Average Depth to Water: **138 feet**

Minimum Depth: **102 feet**

Maximum Depth: **180 feet**

Record Count: 15

UTMNAD83 Radius Search (in meters):

Easting (X): 606376.9 **Northing (Y):** 3615183.93 **Radius:** 7000

***UTM location was derived from PLSS - see Help**

2/7/20 1:30 PM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Eddy Area, New Mexico

PS—Potter-Simona complex, 5 to 25 percent slopes

Map Unit Setting

National map unit symbol: 1w57
Elevation: 2,750 to 5,000 feet
Mean annual precipitation: 8 to 16 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Potter and similar soils: 80 percent
Simona and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Potter

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Backslope, footslope, shoulder, toeslope
Landform position (three-dimensional): Side slope, crest, nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

H1 - 0 to 10 inches: gravelly loam
H2 - 10 to 60 inches: cemented material

Properties and qualities

Slope: 5 to 25 percent
Depth to restrictive feature: About 10 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 60 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 1.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: Shallow (R042XC025NM)
Hydric soil rating: No

Description of Simona

Setting

Landform: Plains, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 11 inches: gravelly fine sandy loam
H2 - 11 to 19 inches: gravelly fine sandy loam
H3 - 19 to 60 inches: cemented material

Properties and qualities

Slope: 5 to 10 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow Sandy (R042XC002NM)
Hydric soil rating: No

Minor Components

Simona

Percent of map unit: 3 percent
Ecological site: Shallow Sandy (R042XC002NM)
Hydric soil rating: No

Rock outcrop

Percent of map unit: 2 percent

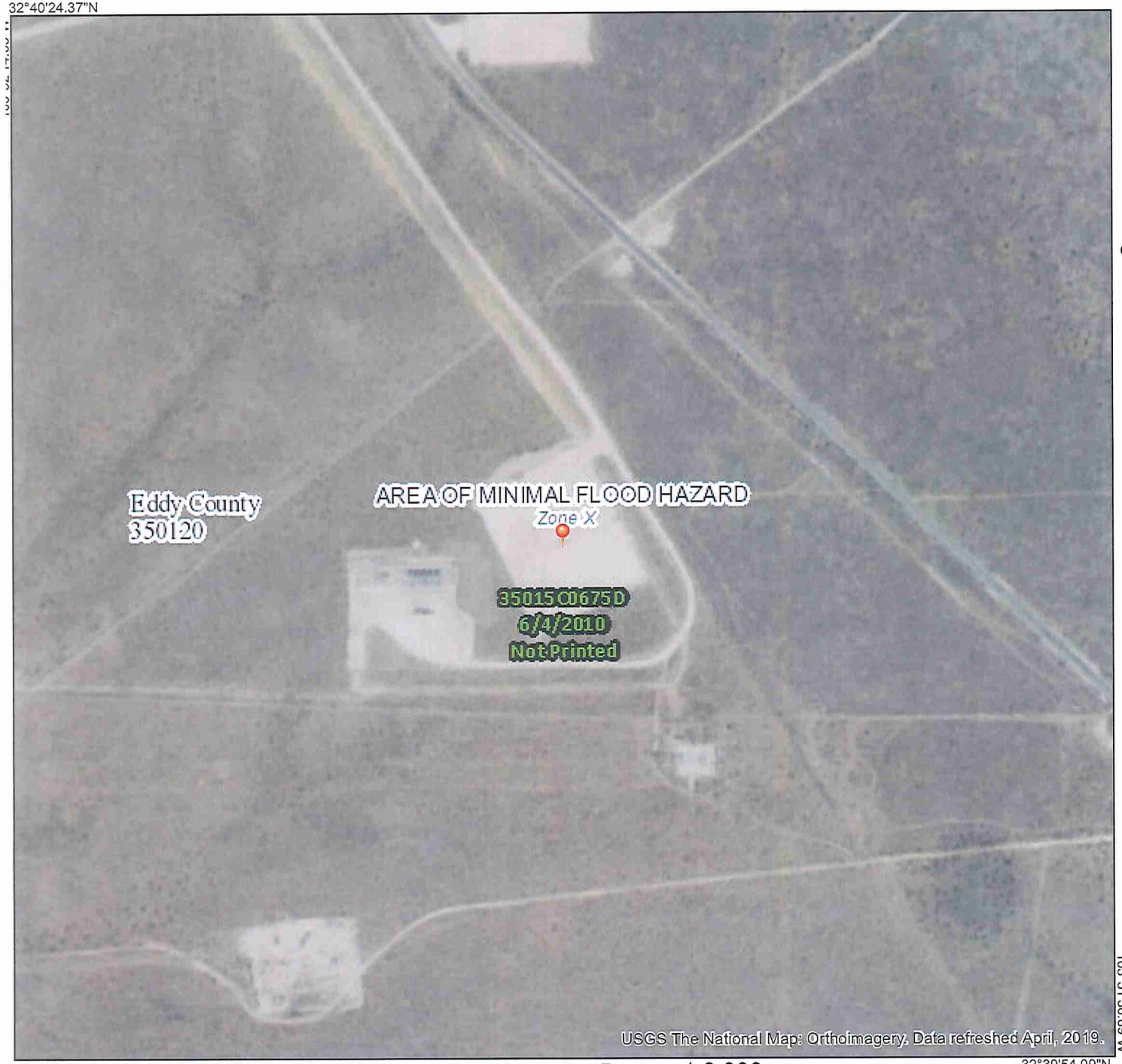
Hydric soil rating: No

Data Source Information

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

National Flood Hazard Layer FIRMette

FEMA



Legend

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

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Area of 1% annual chance flood with average depth less than one foot or with drainag areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represe 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 2/7/2020 at 3:56:10 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.

APPENDIX III

INITIAL C-141

&

FINAL 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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Devon Energy Production Company	OGRID 6137
Contact Name Amanda T. Davis	Contact Telephone 575-748-0176
Contact email amanda.davis@dvn.com	Incident # *(assigned by OCD)*
Contact mailing address 6488 Seven Rivers HWY	

Location of Release Source

Latitude 32.6692 Longitude -103.8655
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Hadar 10 Fed Com 4H	Site Type Oil
Date Release Discovered 11/16/2019	API# *(if applicable)* 30-015-42572

Unit Letter	Section	Township	Range	County
M	10	19S	31E	Eddy

Surface Owner: ☐ State ■ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

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

■ Crude Oil	Volume Released (bbls) 20.3	Volume Recovered (bbls) 14
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of total dissolved solids (TDS) in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)
Cause of Release	Pumping unit packing failed. Spill calculations 20'x30'x1/2", 30'x25'x1/2". 30'x15'x1/2", 59'x6'x1/2", 40'x16'x1/2"	

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Page 2

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ■ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

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

- ■ The source of the release has been stopped.
- ■ The impacted area has been secured to protect human health and the environment.
- ☐ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
- ■ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Spill was not in containment.

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: Kendra DeHoyos Title: EHS Associate

Signature: Kendra DeHoyos Date: 11/19/2019

email: kendra.dehoyos@dvn.com Telephone: 575-748-3371

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	102 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ 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)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ 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?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ 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.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Chris Jones

Title: Project Manager

Signature: _____

Date: 2-24-20

email: cjones@talonlpe.com

Telephone: 575-748-8768

OCD Only

Received by: _____

Date: _____

Form C-141
Page 5

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

☐ Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.

☐ Extents of contamination must be fully delineated.

☐ Contamination does not cause an imminent risk to human health, the environment, or groundwater.

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

Printed Name: Chris Jones Title: Project Manager

Signature: _____ Date: 2-24-20

email: cjones@talonlpe.com Telephone: 575-748-8768

OCD Only

Received by: _____ Date: _____

☐ Approved ☐ Approved with Attached Conditions of Approval ☐ Denied ☐ Deferral Approved

Signature: _____ Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Chris Jones

Title: Project Manager

Signature: _____

Date: 2-24-20

email: cjones@talonlpe.com

Telephone: 575-748-8768

OCD Only

Received by: _____

Date: _____

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____

Date: _____

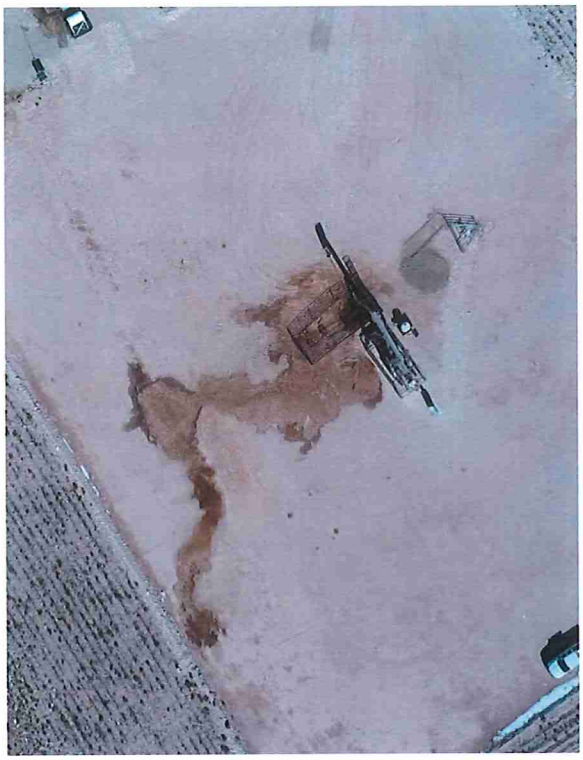
Printed Name: _____

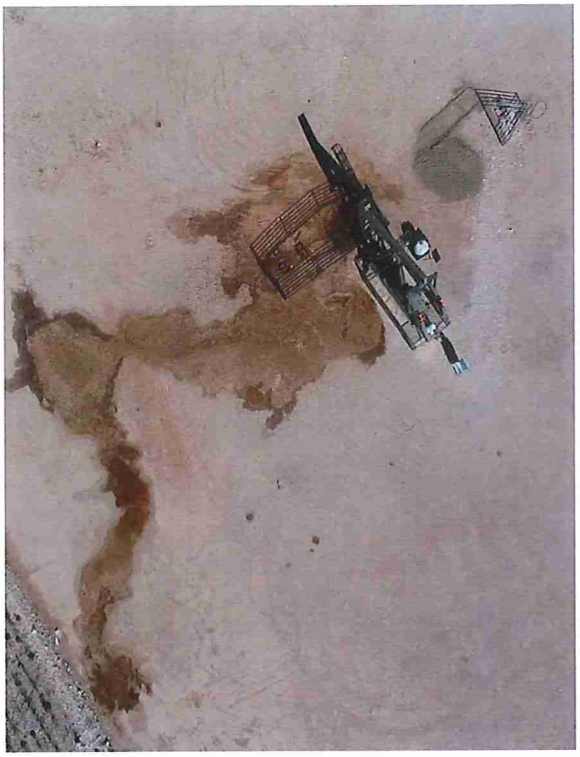
Title: _____

APPENDIX IV

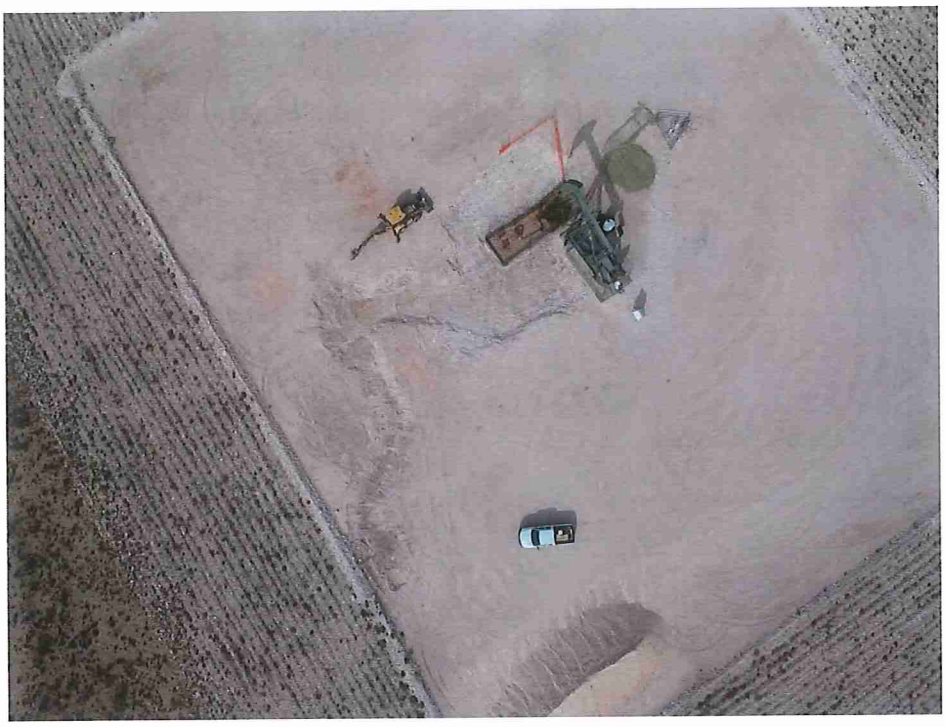
PHOTOGRAPHIC DOCUMENTATION

Aerial Photo of Incident





Excavation Photos



Completed Photos

APPENDIX V

LABORATORY DATA

Analytical Report 651629

for

Talon LPE-Artesia

Project Manager: Chris Jones

Hadar 10 Fed Com 4H

700794.308.01

07-FEB-20

Collected By: Client

1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)

XENCO LABORATORIES

07-FEB-20

Project Manager: **Chris Jones**
Talon LPE-Artesia
408 West Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): **651629**
Hadar 10 Fed Com 4H
Project Address: Eddy County

Chris Jones:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 651629. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 651629 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 651629

Talon LPE-Artesia, Artesia, NM

Hadar 10 Fed Com 4H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-1 0-1' R	S	02-06-20 11:50	0 - 1 ft	651629-001
S-2 0-1' R	S	02-06-20 12:15	0 - 1 ft	651629-002
S-3 0-1' R	S	02-06-20 12:20	0 - 1 ft	651629-003
S-4 0-1' R	S	02-06-20 12:30	0 - 1 ft	651629-004
S-5 0-1' R	S	02-06-20 12:40	0 - 1 ft	651629-005
S-6 0-1' R	S	02-06-20 12:47	0 - 1 ft	651629-006
S-7 0-1' R	S	02-06-20 12:55	0 - 1 ft	651629-007
S-8 0-1' R	S	02-06-20 13:05	0 - 1 ft	651629-008
S-9 0-1' R	S	02-06-20 13:10	0 - 1 ft	651629-009

CASE NARRATIVE

Client Name: Talon LPE-Artesia
Project Name: Hadar 10 Fed Com 4H

Project ID: *700794.308.01*
Work Order Number(s): *651629*

Report Date: *07-FEB-20*
Date Received: *02/06/2020*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-3115847 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-1 0-1' R** | Matrix: Soil | Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-001 | Date Collected: 02.06.20 11.50 | Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115855 | Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**823**	98.6	3.49	mg/kg	02.06.20 20:48		10

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015

Analyst: DTH | % Moist: | Tech: DTH

Seq Number: 3115857 | Date Prep: 02.06.20 16.40

Prep seq: 7696155

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	49.9	13.9	mg/kg	02.06.20 19:13	U	1
Diesel Range Organics (DRO)	C10C28DRO	**44.8**	49.9	11.4	mg/kg	02.06.20 19:13	J	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**11.7**	49.9	11.4	mg/kg	02.06.20 19:13	J	1
Total TPH	PHC635	**56.5**		11.4	mg/kg	02.06.20 19:13		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	104	70 - 135	%		
o-Terphenyl	104	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5030B

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115847 | Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000485	0.00200	0.000485	mg/kg	02.07.20 00:39	U	1
Toluene	108-88-3	<0.000527	0.00200	0.000527	mg/kg	02.07.20 00:39	U	1
Ethylbenzene	100-41-4	<0.000405	0.00200	0.000405	mg/kg	02.07.20 00:39	U	1
m_p-Xylenes	179601-23-1	<0.000752	0.00399	0.000752	mg/kg	02.07.20 00:39	U	1
o-Xylene	95-47-6	<0.000402	0.00200	0.000402	mg/kg	02.07.20 00:39	U	1
Xylenes, Total	1330-20-7	<0.000402		0.000402	mg/kg	02.07.20 00:39	U	
Total BTEX		<0.000402		0.000402	mg/kg	02.07.20 00:39	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	104	70 - 130	%		
4-Bromofluorobenzene	98	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-2 0-1' R** | Matrix: Soil | Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-002 | Date Collected: 02.06.20 12.15 | Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115855 | Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**3030**	100	3.55	mg/kg	02.06.20 20:53		10

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015

Analyst: DTH | % Moist: | Tech: DTH

Seq Number: 3115857 | Date Prep: 02.06.20 16.40

Prep seq: 7696155

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**133**	50.1	13.9	mg/kg	02.06.20 20:12		1
Diesel Range Organics (DRO)	C10C28DRO	**4900**	50.1	11.5	mg/kg	02.06.20 20:12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**585**	50.1	11.5	mg/kg	02.06.20 20:12		1
Total TPH	PHC635	**5620**		11.5	mg/kg	02.06.20 20:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	117	70 - 135	%		
o-Terphenyl	106	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5030B

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115847 | Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00441	0.0182	0.00441	mg/kg	02.07.20 03:43	U	9
Toluene	108-88-3	**0.0181**	0.0182	0.00480	mg/kg	02.07.20 03:43	J	9
Ethylbenzene	100-41-4	**0.313**	0.0182	0.00369	mg/kg	02.07.20 03:43		9
m_p-Xylenes	179601-23-1	**0.260**	0.0364	0.00685	mg/kg	02.07.20 03:43		9
o-Xylene	95-47-6	**0.823**	0.0182	0.00366	mg/kg	02.07.20 03:43		9
Xylenes, Total	1330-20-7	**1.08**		0.00366	mg/kg	02.07.20 03:43		
Total BTEX		**1.41**		0.00366	mg/kg	02.07.20 03:43		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	107	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-3 0-1' R** | Matrix: Soil | Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-003 | Date Collected: 02.06.20 12.20 | Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115855 | Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**12400**	99.0	3.50	mg/kg	02.06.20 20:59		10

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015

Analyst: DTH | % Moist: | Tech: DTH

Seq Number: 3115857 | Date Prep: 02.06.20 16.40

Prep seq: 7696155

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**195**	50.0	13.9	mg/kg	02.06.20 20:12		1
Diesel Range Organics (DRO)	C10C28DRO	**4400**	50.0	11.5	mg/kg	02.06.20 20:12		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**476**	50.0	11.4	mg/kg	02.06.20 20:12		1
Total TPH	PHC635	**5070**		11.4	mg/kg	02.06.20 20:12		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	123	70 - 135	%		
o-Terphenyl	117	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5030B

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115847 | Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00426	0.0175	0.00426	mg/kg	02.07.20 04:44	U	9
Toluene	108-88-3	**0.0378**	0.0175	0.00463	mg/kg	02.07.20 04:44		9
Ethylbenzene	100-41-4	**0.669**	0.0175	0.00356	mg/kg	02.07.20 04:44		9
m_p-Xylenes	179601-23-1	**0.855**	0.0351	0.00661	mg/kg	02.07.20 04:44		9
o-Xylene	95-47-6	**0.801**	0.0175	0.00354	mg/kg	02.07.20 04:44		9
Xylenes, Total	1330-20-7	**1.66**		0.00354	mg/kg	02.07.20 04:44		
Total BTEX		**2.36**		0.00354	mg/kg	02.07.20 04:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	98	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-4 0-1' R** Matrix: Soil Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-004 Date Collected: 02.06.20 12.30 Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115855 Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**7640**	99.8	3.53	mg/kg	02.06.20 21:17		10

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115871 Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.8	49.8	13.8	mg/kg	02.06.20 23:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	**342**	49.8	11.4	mg/kg	02.06.20 23:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**46.4**	49.8	11.4	mg/kg	02.06.20 23:49	J	1
Total TPH	PHC635	**388**		11.4	mg/kg	02.06.20 23:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	107	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115847 Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000489	0.00202	0.000489	mg/kg	02.07.20 05:04	U	1
Toluene	108-88-3	<0.000532	0.00202	0.000532	mg/kg	02.07.20 05:04	U	1
Ethylbenzene	100-41-4	<0.000409	0.00202	0.000409	mg/kg	02.07.20 05:04	U	1
m_p-Xylenes	179601-23-1	<0.000760	0.00403	0.000760	mg/kg	02.07.20 05:04	U	1
o-Xylene	95-47-6	<0.000406	0.00202	0.000406	mg/kg	02.07.20 05:04	U	1
Xylenes, Total	1330-20-7	<0.000406		0.000406	mg/kg	02.07.20 05:04	U	
Total BTEX		<0.000406		0.000406	mg/kg	02.07.20 05:04	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	102	70 - 130	%		
4-Bromofluorobenzene	98	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-5 0-1' R** | Matrix: Soil | Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-005 | Date Collected: 02.06.20 12.40 | Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 | Prep Method: E300P

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115855 | Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11900**	99.8	3.53	mg/kg	02.06.20 21:23		10

Analytical Method: TPH by SW8015 Mod | Prep Method: 8015

Analyst: DTH | % Moist: | Tech: DTH

Seq Number: 3115871 | Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**106**	50.1	13.9	mg/kg	02.06.20 23:49		1
Diesel Range Organics (DRO)	C10C28DRO	**3400**	50.1	11.5	mg/kg	02.06.20 23:49		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**337**	50.1	11.5	mg/kg	02.06.20 23:49		1
Total TPH	PHC635	**3840**		11.5	mg/kg	02.06.20 23:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	113	70 - 135	%		
o-Terphenyl	120	70 - 135	%		

Analytical Method: BTEX by EPA 8021 | Prep Method: 5030B

Analyst: MAB | % Moist: | Tech: MAB

Seq Number: 3115847 | Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00467	0.0192	0.00467	mg/kg	02.07.20 05:25	U	10
Toluene	108-88-3	<0.00507	0.0192	0.00507	mg/kg	02.07.20 05:25	U	10
Ethylbenzene	100-41-4	**0.180**	0.0192	0.00391	mg/kg	02.07.20 05:25		10
m_p-Xylenes	179601-23-1	**0.436**	0.0385	0.00725	mg/kg	02.07.20 05:25		10
o-Xylene	95-47-6	**0.376**	0.0192	0.00388	mg/kg	02.07.20 05:25		10
Xylenes, Total	1330-20-7	**0.812**		0.00388	mg/kg	02.07.20 05:25		
Total BTEX		**0.992**		0.00388	mg/kg	02.07.20 05:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	97	70 - 130	%		
4-Bromofluorobenzene	105	70 - 130	%		

XENCO LABORATORIES

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-6 0-1' R** Matrix: Soil Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-006 Date Collected: 02.06.20 12.47 Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115855 Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**18200**	99.8	3.53	mg/kg	02.06.20 21:28		10

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115871 Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**25.0**	49.9	13.9	mg/kg	02.07.20 00:08	J	1
Diesel Range Organics (DRO)	C10C28DRO	**1000**	49.9	11.4	mg/kg	02.07.20 00:08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**116**	49.9	11.4	mg/kg	02.07.20 00:08		1
Total TPH	PHC635	**1140**		11.4	mg/kg	02.07.20 00:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	105	70 - 135	%		
o-Terphenyl	106	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115847 Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00476	0.0196	0.00476	mg/kg	02.07.20 05:45	U	10
Toluene	108-88-3	<0.00517	0.0196	0.00517	mg/kg	02.07.20 05:45	U	10
Ethylbenzene	100-41-4	<0.00398	0.0196	0.00398	mg/kg	02.07.20 05:45	U	10
m_p-Xylenes	179601-23-1	<0.00739	0.0392	0.00739	mg/kg	02.07.20 05:45	U	10
o-Xylene	95-47-6	<0.00395	0.0196	0.00395	mg/kg	02.07.20 05:45	U	10
Xylenes, Total	1330-20-7	<0.00395		0.00395	mg/kg	02.07.20 05:45	U	
Total BTEX		<0.00395		0.00395	mg/kg	02.07.20 05:45	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-7 0-1' R** Matrix: Soil Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-007 Date Collected: 02.06.20 12.55 Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115855 Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**4130**	100	3.55	mg/kg	02.06.20 21:47		10

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115871 Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**14.0**	50.1	13.9	mg/kg	02.07.20 00:08	J	1
Diesel Range Organics (DRO)	C10C28DRO	**3480**	50.1	11.5	mg/kg	02.07.20 00:08		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**388**	50.1	11.5	mg/kg	02.07.20 00:08		1
Total TPH	PHC635	**3880**		11.5	mg/kg	02.07.20 00:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	98	70 - 135	%		
o-Terphenyl	119	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115847 Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00467	0.0192	0.00467	mg/kg	02.07.20 06:05	U	10
Toluene	108-88-3	<0.00507	0.0192	0.00507	mg/kg	02.07.20 06:05	U	10
Ethylbenzene	100-41-4	<0.00391	0.0192	0.00391	mg/kg	02.07.20 06:05	U	10
m_p-Xylenes	179601-23-1	<0.00725	0.0385	0.00725	mg/kg	02.07.20 06:05	U	10
o-Xylene	95-47-6	<0.00388	0.0192	0.00388	mg/kg	02.07.20 06:05	U	10
Xylenes, Total	1330-20-7	<0.00388		0.00388	mg/kg	02.07.20 06:05	U	
Total BTEX		<0.00388		0.00388	mg/kg	02.07.20 06:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	100	70 - 130	%		
4-Bromofluorobenzene	129	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-8 0-1' R** Matrix: Soil Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-008 Date Collected: 02.06.20 13.05 Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115855 Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**11400**	99.6	3.53	mg/kg	02.06.20 21:54		10

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115871 Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**117**	50.2	13.9	mg/kg	02.07.20 00:28		1
Diesel Range Organics (DRO)	C10C28DRO	**4510**	50.2	11.5	mg/kg	02.07.20 00:28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**436**	50.2	11.5	mg/kg	02.07.20 00:28		1
Total TPH	PHC635	**5060**		11.5	mg/kg	02.07.20 00:28		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	114	70 - 135	%		
o-Terphenyl	100	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115847 Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00476	0.0196	0.00476	mg/kg	02.07.20 06:26	U	10
Toluene	108-88-3	**0.00794**	0.0196	0.00517	mg/kg	02.07.20 06:26	J	10
Ethylbenzene	100-41-4	**0.183**	0.0196	0.00398	mg/kg	02.07.20 06:26		10
m_p-Xylenes	179601-23-1	**0.303**	0.0392	0.00739	mg/kg	02.07.20 06:26		10
o-Xylene	95-47-6	**0.301**	0.0196	0.00395	mg/kg	02.07.20 06:26		10
Xylenes, Total	1330-20-7	**0.604**		0.00395	mg/kg	02.07.20 06:26		
Total BTEX		**0.795**		0.00395	mg/kg	02.07.20 06:26		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	96	70 - 130	%		
4-Bromofluorobenzene	126	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **S-9 0-1' R** Matrix: Soil Sample Depth: 0 - 1 ft

Lab Sample Id: 651629-009 Date Collected: 02.06.20 13.10 Date Received: 02.06.20 15.32

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115855 Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**10400**	99.8	3.53	mg/kg	02.06.20 22:00		10

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115871 Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.2	13.9	mg/kg	02.07.20 00:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	**804**	50.2	11.5	mg/kg	02.07.20 00:28		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	**141**	50.2	11.5	mg/kg	02.07.20 00:28		1
Total TPH	PHC635	**945**		11.5	mg/kg	02.07.20 00:28		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115847 Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000483	0.00199	0.000483	mg/kg	02.07.20 06:46	U	1
Toluene	108-88-3	<0.000525	0.00199	0.000525	mg/kg	02.07.20 06:46	U	1
Ethylbenzene	100-41-4	<0.000404	0.00199	0.000404	mg/kg	02.07.20 06:46	U	1
m_p-Xylenes	179601-23-1	<0.000749	0.00398	0.000749	mg/kg	02.07.20 06:46	U	1
o-Xylene	95-47-6	<0.000401	0.00199	0.000401	mg/kg	02.07.20 06:46	U	1
Xylenes, Total	1330-20-7	<0.000401		0.000401	mg/kg	02.07.20 06:46	U	
Total BTEX		<0.000401		0.000401	mg/kg	02.07.20 06:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	99	70 - 130	%		
4-Bromofluorobenzene	120	70 - 130	%		

XENCO LABORATORIES

Certificate of Analytical Results
651629
Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **7696155-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7696155-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115857 Date Prep: 02.06.20 13.30

Prep seq: 7696155

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	02.06.20 16:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	02.06.20 16:12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.0	11.5	mg/kg	02.06.20 16:12	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	90	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Sample Id: **7696180-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7696180-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115847 Date Prep: 02.06.20 17.00

Prep seq: 7696180

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000486	0.00200	0.000486	mg/kg	02.06.20 22:16	U	1
Toluene	108-88-3	<0.000528	0.00200	0.000528	mg/kg	02.06.20 22:16	U	1
Ethylbenzene	100-41-4	<0.000406	0.00200	0.000406	mg/kg	02.06.20 22:16	U	1
m_p-Xylenes	179601-23-1	<0.000754	0.00400	0.000754	mg/kg	02.06.20 22:16	U	1
o-Xylene	95-47-6	<0.000403	0.00200	0.000403	mg/kg	02.06.20 22:16	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	105	70 - 130	%		
4-Bromofluorobenzene	96	70 - 130	%		

Certificate of Analytical Results
651629

Talon LPE-Artesia, Artesia, NM
Hadar 10 Fed Com 4H

Sample Id: **7696182-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7696182-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: MAB % Moist: Tech: MAB

Seq Number: 3115855 Date Prep: 02.06.20 17.25

Prep seq: 7696182

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.354	10.0	0.354	mg/kg	02.06.20 19:20	U	1

Sample Id: **7696210-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7696210-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 8015

Analyst: DTH % Moist: Tech: DTH

Seq Number: 3115871 Date Prep: 02.06.20 17.30

Prep seq: 7696210

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<13.9	50.0	13.9	mg/kg	02.07.20 09:46	U	1
Diesel Range Organics (DRO)	C10C28DRO	<11.5	50.0	11.5	mg/kg	02.07.20 09:46	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<11.5	50.0	11.5	mg/kg	02.07.20 09:46	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	106	70 - 135	%		

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

\+ NELAC certification not offered for this compound.

* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

XENCO LABORATORIES

Form 2 - Surrogate Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Orders : 651629, **Project ID:** 700794.308.01

Lab Batch #: 3115847 **Sample:** 7696180-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 22:16

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	70-130	
4-Bromofluorobenzene	0.0287	0.0300	96	70-130	

Lab Batch #: 3115847 **Sample:** 7696180-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 22:36

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0287	0.0300	96	70-130	

Lab Batch #: 3115847 **Sample:** 7696180-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 22:57

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	70-130	
4-Bromofluorobenzene	0.0293	0.0300	98	70-130	

Lab Batch #: 3115847 **Sample:** 651629-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/06/20 23:17

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	70-130	
4-Bromofluorobenzene	0.0305	0.0300	102	70-130	

Lab Batch #: 3115847 **Sample:** 651629-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/06/20 23:38

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0289	0.0300	96	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO LABORATORIES

Form 2 - Surrogate Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Orders : 651629,

Project ID: 700794.308.01

Lab Batch #: 3115847 **Sample:** CCB / CCB **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/07/20 04:23

BTEX by EPA 8021B	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	70-130	
4-Bromofluorobenzene	0.0306	0.0300	102	70-130	

Lab Batch #: 3115857 **Sample:** 7696155-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 16:12

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	54.3	50.0	109	70-135	

Lab Batch #: 3115857 **Sample:** 7696155-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 16:12

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.1	100	90	70-135	
o-Terphenyl	46.3	50.0	93	70-135	

Lab Batch #: 3115857 **Sample:** 7696155-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 16:34

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	100	126	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 3115857 **Sample:** 651533-017 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/06/20 16:54

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	60.7	50.1	121	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

XENCO LABORATORIES

Form 2 - Surrogate Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Orders : 651629, **Project ID:** 700794.308.01

Lab Batch #: 3115857 **Sample:** 651533-017 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/06/20 16:54

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.8	119	70-135	
o-Terphenyl	54.8	49.9	110	70-135	

Lab Batch #: 3115871 **Sample:** 7696210-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 20:51

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	52.2	50.0	104	70-135	

Lab Batch #: 3115871 **Sample:** 7696210-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/06/20 20:51

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	54.9	50.0	110	70-135	

Lab Batch #: 3115871 **Sample:** 651630-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/06/20 21:11

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	101	126	70-135	
o-Terphenyl	58.3	50.3	116	70-135	

Lab Batch #: 3115871 **Sample:** 651630-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/06/20 21:31

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.7	122	70-135	
o-Terphenyl	61.5	49.9	123	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

XENCO LABORATORIES

Form 2 - Surrogate Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Orders : 651629,

Project ID: 700794.308.01

Lab Batch #: 3115871 **Sample:** 7696210-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/07/20 09:46

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Order #: 651629 **Project ID:** 700794.308.01

Analyst: MAB **Date Prepared:** 02/06/2020 **Date Analyzed:** 02/06/2020

Lab Batch ID: 3115847 **Sample:** 7696180-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BTEX by EPA 8021 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.000486	0.100	0.108	108	0.100	0.110	110	2	70-130	35	
Toluene	<0.000528	0.100	0.104	104	0.100	0.105	105	1	70-130	35	
Ethylbenzene	<0.000406	0.100	0.0996	100	0.100	0.101	101	1	71-129	35	
m_p-Xylenes	<0.000754	0.200	0.204	102	0.200	0.209	105	2	70-135	35	
o-Xylene	<0.000403	0.100	0.103	103	0.100	0.105	105	2	71-133	35	

Analyst: MAB **Date Prepared:** 02/06/2020 **Date Analyzed:** 02/06/2020

Lab Batch ID: 3115855 **Sample:** 7696182-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Chloride	<0.354	250	252	101	250	253	101	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

XENCO LABORATORIES

BS / BSD Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Order #: 651629 **Project ID:** 700794.308.01

Analyst: DTH **Date Prepared:** 02/06/2020 **Date Analyzed:** 02/06/2020

Lab Batch ID: 3115857 **Sample:** 7696155-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	1000	1110	111	1000	1010	101	9	70-135	35	
Diesel Range Organics (DRO)	<11.5	1000	1110	111	1000	1040	104	7	70-135	35	

Analyst: DTH **Date Prepared:** 02/06/2020 **Date Analyzed:** 02/06/2020

Lab Batch ID: 3115871 **Sample:** 7696210-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	1000	1060	106	1000	1140	114	7	70-135	35	
Diesel Range Organics (DRO)	<11.5	1000	968	97	1000	985	99	2	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Order # : 651629 **Project ID:** 700794.308.01

Lab Batch ID: 3115847 **QC- Sample ID:** 651629-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/06/2020 **Date Prepared:** 02/06/2020 **Analyst:** MAB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000485	0.0998	0.111	111	0.0990	0.104	105	7	70-130	35	
Toluene	<0.000527	0.0998	0.104	104	0.0990	0.0985	99	5	70-130	35	
Ethylbenzene	<0.000405	0.0998	0.0982	98	0.0990	0.0932	94	5	71-129	35	
m_p-Xylenes	<0.000752	0.200	0.200	100	0.198	0.191	96	5	70-135	35	
o-Xylene	<0.000402	0.0998	0.101	101	0.0990	0.0961	97	5	71-133	35	

Lab Batch ID: 3115855 **QC- Sample ID:** 651629-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/06/2020 **Date Prepared:** 02/06/2020 **Analyst:** MAB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	12400	2000	14200	90	2000	14200	90	0	90-110	20	

Lab Batch ID: 3115855 **QC- Sample ID:** 651636-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/06/2020 **Date Prepared:** 02/06/2020 **Analyst:** MAB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	394	200	604	105	200	604	105	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: Hadar 10 Fed Com 4H

Work Order # : 651629 **Project ID:** 700794.308.01

Lab Batch ID: 3115857 **QC- Sample ID:** 651533-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/06/2020 **Date Prepared:** 02/06/2020 **Analyst:** DTH

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<13.9	1000	1240	124	998	1090	109	13	70-135	35	
Diesel Range Organics (DRO)	<11.5	1000	1100	110	998	1120	112	2	70-135	35	

Lab Batch ID: 3115871 **QC- Sample ID:** 651630-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/06/2020 **Date Prepared:** 02/06/2020 **Analyst:** DTH

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<14.0	1010	1130	112	997	1130	113	0	70-135	35	
Diesel Range Organics (DRO)	65.4	1010	1210	113	997	1050	99	14	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Chain of Custody

XENCO LABORATORIES

Houston,TX (281) 240-4200 Dallas,TX (214) 902-0300 San Antonio,TX (210) 509-3334
Midland,TX (432) 704-5440 EL Paso,TX (915) 585-3443 Lubbock,TX (806) 794-1296 Crasbad, NM (432) 704-5440
Phoenix,AZ (480) 355-0900 Atlanta,GA (770) 449-8800 Tampa,FL (813) 620-2000 West Palm Beach, FL (561) 689-6701 www.xenco.com Page 1 of 1

Work Order No: 605162 29

Project Manager:	Chris Jones	Bill to: (if different)	
Company Name:	Talon LPE	Company Name:	
Address:	408 W Texas Ave	Address:	
City, State ZIP:	Artesia, NM 88210	City, State ZIP:	
Phone:	575-~~746~~ 746-8768	Email:	cjones@talonlpe.com

Work Order Comments

Program: UST/PST ☐ PRP ☐ Brownfields ☐ RRC ☐ Superfund ☐
State of Project:
Reporting:Level II ☐ Level III ☐ PST/UST ☐ TRRP ☐ Level IV ☐
Deliverables: EDD ☐ ADaPT ☐ Other:

Project Name:	Hadar 10 Fed Com 4H	Turn Around	
Project Number:	700794.308.01	Routine	☒
Project Location	Eddy County	Rush:	
Sampler's Name:	Brandon Sinclair	Due Date:	
PO #:		Quote #:	

SAMPLE RECEIPT			
Temperature (°C):	1.0	Wet Ice:	Yes No
Received Intact:	Yes No	Thermometer ID	T-NM-007
Cooler Custody Seals:	Yes No N/A	Correction Factor:	-0.2
Sample Custody Seals:	Yes No N/A	Total Containers:	9

Lab ID	Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Pres. Code	Number of Containers	TPH Ext	BTEX	Total Chlorides
	S-1 0-1' R	Soil	2-6-20	11:50	0-1'			✓	✓	✓
	S-2 0-1' R			12:15						
	S-3 0-1' R			12:20						
	S-4 0-1' R			12:30						
	S-5 0-1' R			12:40						
	S-6 0-1' R			12:47						
	S-7 0-1' R			12:55						
	S-8 0-1' R			13:05						
	S-9 0-1' R			13:10						

ANALYSIS REQUEST

Preservative Codes

MeOH: Me
None: NO
HNO3: HN
H2S04: H2
HCL: HL
NaOH: Na
Zn Acetate+ NaOH: Zn

TAT starts the day recevied by the lab, if received by 4:00pm

Sample Comments

cc bsinclair@talonlpe.com

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Tl Sn U V Zn
Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Tl U 1631 / 245.1 / 7470 / 7471 : Hg

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of $75.00 will be applied to each project and a charge of $5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature)	Received by: (Signature)	Date/Time	Relinquished by: (Signature)	Received by: (Signature)	Date/Time
1		2/6/20 15:32	2		
3			4		
5			6		

Revised Date 022619 Rev. 2019.1

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Talon LPE-Artesia

Date/ Time Received: 02.06.2020 03.32.00 PM

Work Order #: 651629

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : T-NM-007

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6*Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	No
#18 Water VOC samples have zero headspace?	N/A

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst: PH Device/Lot#:

Checklist completed by: Elizabeth McClellan Date: 02.06.2020

Checklist reviewed by: Jessica Kramer Date: 02.07.2020

CARDINAL Laboratories

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

February 20, 2020

CHRIS JONES

TALON LPE

408 W. TEXAS AVE.

ARTESIA, NM 88210

RE: HADAR 10 FED COM 4H

Enclosed are the results of analyses for samples received by the laboratory on 02/19/20 13:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. 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.

Cardinal Laboratories is accreditated 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,

Celey D. Keene

Celey D. Keene

Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TALON LPE
CHRIS JONES
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	02/19/2020	Sampling Date:	02/17/2020
Reported:	02/20/2020	Sampling Type:	Soil
Project Name:	HADAR 10 FED COM 4H	Sampling Condition:	Cool & Intact
Project Number:	700794.308.01	Sample Received By:	Tamara Oldaker
Project Location:	DEVON ENERGY - EDDY CO NM		

Sample ID: S - 10 1.5' COMPOSITE (H000523-01)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**23.7**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	<10.0	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*99.6 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*105 %*	*42.2-156*

Sample ID: S - 11 1.5' COMPOSITE (H000523-02)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**34.3**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	<10.0	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*96.8 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*103 %*	*42.2-156*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TALON LPE
CHRIS JONES
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	02/19/2020	Sampling Date:	02/17/2020
Reported:	02/20/2020	Sampling Type:	Soil
Project Name:	HADAR 10 FED COM 4H	Sampling Condition:	Cool & Intact
Project Number:	700794.308.01	Sample Received By:	Tamara Oldaker
Project Location:	DEVON ENERGY - EDDY CO NM		

Sample ID: S - 12 1.5' COMPOSITE (H000523-03)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**138**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**24.8**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*92.4 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*99.0 %*	*42.2-156*

Sample ID: S - 13 1.5' COMPOSITE (H000523-04)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**95.7**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**11.9**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*89.9 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*97.4 %*	*42.2-156*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TALON LPE
CHRIS JONES
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	02/19/2020	Sampling Date:	02/17/2020
Reported:	02/20/2020	Sampling Type:	Soil
Project Name:	HADAR 10 FED COM 4H	Sampling Condition:	Cool & Intact
Project Number:	700794.308.01	Sample Received By:	Tamara Oldaker
Project Location:	DEVON ENERGY - EDDY CO NM		

Sample ID: S - 14 1.5' COMPOSITE (H000523-05)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**30.9**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	<10.0	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*101 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*105 %*	*42.2-156*

Sample ID: S - 15 1.5' COMPOSITE (H000523-06)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**114**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**24.1**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*102 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*110 %*	*42.2-156*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TALON LPE
CHRIS JONES
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	02/19/2020	Sampling Date:	02/17/2020
Reported:	02/20/2020	Sampling Type:	Soil
Project Name:	HADAR 10 FED COM 4H	Sampling Condition:	Cool & Intact
Project Number:	700794.308.01	Sample Received By:	Tamara Oldaker
Project Location:	DEVON ENERGY - EDDY CO NM		

Sample ID: S - 16 1.5' COMPOSITE (H000523-07)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**72.7**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**14.1**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*99.1 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*106 %*	*42.2-156*

Sample ID: S - 17 1.5' COMPOSITE (H000523-08)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	<10.0	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	<10.0	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*97.0 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*102 %*	*42.2-156*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TALON LPE
CHRIS JONES
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	02/19/2020	Sampling Date:	02/17/2020
Reported:	02/20/2020	Sampling Type:	Soil
Project Name:	HADAR 10 FED COM 4H	Sampling Condition:	Cool & Intact
Project Number:	700794.308.01	Sample Received By:	Tamara Oldaker
Project Location:	DEVON ENERGY - EDDY CO NM		

Sample ID: S - 18 1.5' COMPOSITE (H000523-09)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**74.7**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**17.0**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*92.9 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*101 %*	*42.2-156*

Sample ID: S - 19 1.5' COMPOSITE (H000523-10)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**126**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**23.9**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*93.6 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*104 %*	*42.2-156*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TALON LPE
CHRIS JONES
408 W. TEXAS AVE.
ARTESIA NM, 88210
Fax To: (575) 745-8905

Received:	02/19/2020	Sampling Date:	02/17/2020
Reported:	02/20/2020	Sampling Type:	Soil
Project Name:	HADAR 10 FED COM 4H	Sampling Condition:	Cool & Intact
Project Number:	700794.308.01	Sample Received By:	Tamara Oldaker
Project Location:	DEVON ENERGY - EDDY CO NM		

Sample ID: S - 20 1.5' COMPOSITE (H000523-11)

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	02/20/2020	ND	200	99.9	200	0.654	
DRO >C10-C28*	**126**	10.0	02/20/2020	ND	215	107	200	1.77	
EXT DRO >C28-C36	**26.2**	10.0	02/20/2020	ND					

Surrogate: 1-Chlorooctane	*93.0 %*	*44.3-144*
Surrogate: 1-Chlorooctadecane	*102 %*	*42.2-156*

Cardinal Laboratories

*=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

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

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Talon LPE		BILL TO	
Project Manager: Chris Jones		P.O. #: 700794.308.01	
Address: 408 W Texas Ave		Company: Talon LPE	
City: Artesia	State: NM Zip: 88210	Attn: Chris Jones	
Phone #: 575-746-8768	Fax #:	Address:	
Project #: 700794.308.01	Project Owner: Devon Energy	City:	
Project Name: Hadar 10 Fed Com 4H		State: Zip:	
Project Location: Eddy County		Phone #:	
Sampler Name: Brandon Sinclair		Fax #:	

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST
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	TPH EXT
H000523															
1	S-10 1.5' Composite	C				✓					✓		2-17-20	13:00	✓
2	S-11 1.5' Composite													13:05	
3	S-12 1.5' Composite													13:10	
4	S-13 1.5' Composite													13:15	
5	S-14 1.5' Composite													13:20	
6	S-15 1.5' Composite													13:25	
7	S-16 1.5' Composite													13:30	
8	S-17 1.5' Composite													13:35	
9	S-18 1.5' Composite													13:40	
10	S-19 1.5' Composite													13:50	

Relinquished By:	Date: 2-19-20	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1345		Fax Result: ☑ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Rush
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: -0.4°C #113

Sample Condition: Cool ☐ Yes ☐ No; Intact ☑ Yes ☐ No

CHECKED BY: (Initials) AO

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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CARDINAL Laboratories

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Company Name: Talon LPE	BILL TO
Project Manager: Chris Jones	P.O. #: 700794.308.01
Address: 408 W Texas Ave	Company: Talon LPE
City: Artesia State: NM Zip: 88210	Attn: Chris Jones
Phone #: 575-746-8768 Fax #:	Address:
Project #: 700794.308.01 Project Owner: Devon Energy	City:
Project Name: Hader 10 Fed Com 4H	State: Zip:
Project Location: Eddy County	Phone #:
Sampler Name: Brandon Sinclair	Fax #:

FOR LAB USE ONLY				MATRIX							PRESERV.			SAMPLING		ANALYSIS REQUEST
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	TPH EXT
H000523															
11	S-20 1.5' Composite	C				✓					✓		2-17-20	14:00	✓

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By:	Date: 2-19-20	Received By:	Phone Result: ☐ Yes ☐ No Add'l Phone #:
	Time: 1345		Fax Result: ☐ Yes ☐ No Add'l Fax #:
Relinquished By:	Date:	Received By:	REMARKS: Rush
	Time:		

Delivered By: (Circle One)
Sampler - UPS - Bus - Other: -04 E. #113

Sample Condition		CHECKED BY: (Initials)
Cool	Intact	
☑ Yes ☐ No	☑ Yes ☐ No	TO

† Cardinal cannot accept verbal changes. Please fax written changes to (575) 393-2326

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