

SITE INFORMATION					
Report Type: Closure Report      2RP-5160					
General Site Information:					
Site:	Marauder Federal #001H				
Company:	COG Operating LLC				
Section, Township and Range	Unit D	Sec. 31	T 19S	R 31E	
Lease Number:	API No. 30-015-38244				
County:	Eddy County				
GPS:	32.62291			-103.91497	
Surface Owner:	Federal				
Mineral Owner:					
Directions:	From the intersection of Hwy 360 and Co. Rd. 222 (Shugart Rd), head northeast on 222 and follow the road for 3.2 miles, turn left on to unnamed lease road (north) and go 0.78 miles, turn right (east) and go 0.4 miles and arrive on location. Work area is 325 feet to the southeast ( bermed area east of the stock tanks). There will be visible oil staining inside the bermed area.				
Release Data:					
Date Released:	10/21/2018				
Type Release:	Produced Water & Crude Oil				
Source of Contamination:	Reducer on the bottom of the FWKO				
Fluid Released:	45 bbls PW, 18 bbls Oil				
Fluids Recovered:	44 bbls PW, 17 bbls Oil				
Official Communication:					
Name:	Ike Tavaréz			Clair Gonzales	
Company:	COG Operating, LLC			Tetra Tech	
Address:	One Concho Center			901 West Wall Street	
	600 W. Illinois Ave.			Suite 100	
City:	Midland Texas, 79701			Midland, Texas	
Phone number:	(432) 686-3023			(432) 687-8110	
Fax:	(432) 684-7137				
Email:	itavarez@concho.com			Clair.Gonzales@tetrattech.com	

Site Characterization	
Depth to Groundwater:	50'-75'
Karst Potential	Medium

Recommended Remedial Action Levels (RRALs)				
Benzene	Total BTEX	TPH (GRO+DRO)	TPH (GRO+DRO+MRO)	Chlorides
10 mg/kg	50 mg/kg	1,000	2,500	10,000 mg/kg



**TETRA TECH**

March 18, 2019

Mr. Mike Bratcher  
District Supervisor  
Oil Conservation Division, District 2  
811 S. First Street  
Artesia, New Mexico 88210

**Re: Closure Request for the COG Operating, LLC, Marauder Federal #001H, Unit D, Section 31, Township 19 South, Range 31 East, Eddy County, New Mexico. 2RP-5160**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess a release that occurred at the Marauder Federal #001H, Unit D, Section 31, Township 19 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.62291°, -103.91497°. The site location is shown on Figures 1 and 2.

## **Background**

According to the State of New Mexico C-141 Initial Report, the leak was discovered on December 21, 2018, and released approximately 45 barrels of produced water and 18 barrels of oil due to the reducer failing on the bottom of the free water knockout tank. A vacuum truck was dispatched to remove all freestanding fluids. Approximately 44 barrels of produced and 17 barrels of oil was recovered. The release occurred within a lined bermed facility and impacted an area measuring approximately 95' x 25'. The equipment and the liner in the area was removed for replacement. The C-141 Form is included in Appendix A.

## **Site Characterization**

A site characterization was performed for the site and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. However, the site is located in a medium karst potential area. No water wells were listed within Section 31 on the New Mexico Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information database. The nearest well is listed in Section 33 on the USGS database, approximately 2.34 miles East of the site, and has a reported depth to groundwater of 140' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is 50'-75' below surface. The groundwater data is shown in Appendix B.

**Tetra Tech**

901 West Wall, Suite 100, Midland, TX 79701

Tel 432.682.4559

Fax 432.682.3946

[www.tetratech.com](http://www.tetratech.com)



## Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization the proposed RRAL for TPH is 100 mg/kg (GRO+DRO+MRO). Additionally, the proposed RRAL for chlorides is 600 mg/kg.

## Soil Assessment and Analytical Results

Tetra Tech personnel were onsite on February 20, 2019, to evaluate the soils underneath the liner. A total of two (2) boreholes were installed (BH-1 and BH-2) in the spill area to a total depth of 9'-10' below surface. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix D. The sampling results are summarized in Table 1. The bore locations are shown on Figure 3 and bore logs are shown on Appendix C.

Referring to Table 1, the area of boreholes (BH-1 and BH-2) showed, benzene, and total BTEX concentrations below the laboratory reporting limits. The area of borehole (BH-1) showed a TPH concentration of 36.6 mg/kg at the surface to 1.0' and the area borehole (BH-2) showed a TPH concentration of 186 mg/kg at the surface to 1.0' and 16.8 mg/kg at 2'-3' below the surface, respectively. The area of boreholes (BH-1 and BH-2) showed chloride concentrations ranging from 39 mg/kg to 484 mg/kg, all below the RRALs.

## Conclusion

Based on the soil assessment, which showed no significant impact beneath the liner, COG requests closure of this spill. The new liner has been installed and equipment at the facility has been replaced. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Clair Gonzales,  
Project Manager

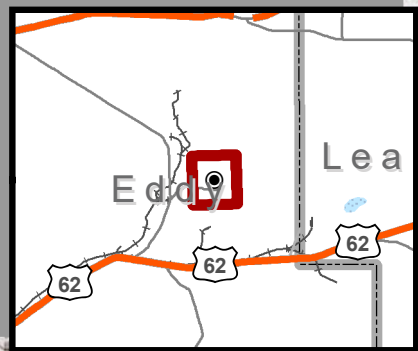
Mike Carmona,  
Geologist

cc: Ike Tavarez - COG  
Dakota Neel - COG  
Rebecca Haskell - COG  
Sheldon Hitchcock - COG  
DeAnn Grant - COG

## Figures



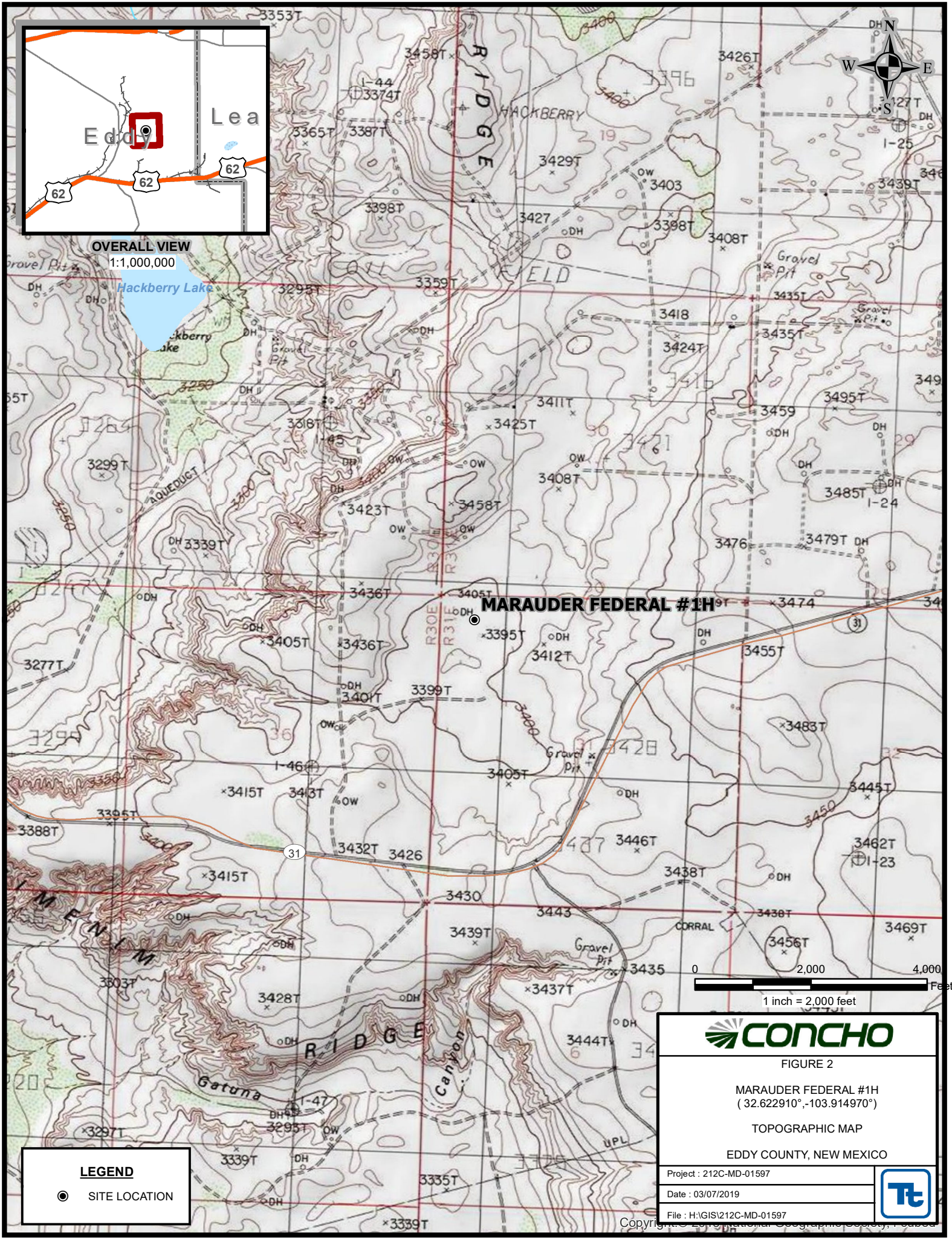




OVERALL VIEW

1:1,000,000

Hackberry Lake



MARAUDER FEDERAL #1H



FIGURE 2

MARAUDER FEDERAL #1H  
(32.622910°,-103.914970°)

TOPOGRAPHIC MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01597

Date : 03/07/2019

File : H:\GIS\212C-MD-01597



LEGEND

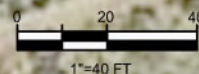
● SITE LOCATION



BOREHOLE DESIGNATIONS	LATITUDE	LONGITUDE
BH-1	32.622828°	-103.914478°
BH-2	32.622829°	-103.914648°
RELEASE POINT	32.622852°	-103.914658°



WELL



#### LEGEND

- BOREHOLE SAMPLE LOCATIONS
- SPILL AREA
- EQUIPMENT
- ABOVEGROUND POLY LINE
- STEEL PIPE



FIGURE 3

MARAUDER FEDERAL #1H  
(32.62291°, -103.91497°)

SPILL ASSESSMENT MAP  
EDDY COUNTY, NEW MEXICO

Project: 212C-MD-01597

Date: 03/07/2019

File: H:\GIS\212C-MD-01597



## Tables



**Table 1**  
**COG**  
**Marauder Fed #1H (12/21/18)**  
**Eddy County, New Mexico**

Sample ID	Sample Date	BEB (ft)	Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	GRO+DRO	MRO	Total						
<b>BH-1</b>	2/20/2019	-	0-1	X		<15.0	36.6	36.6	<15.0	36.6	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	117
	"	-	2-3	X		<15.0	<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	161
	"	-	4-5	X		-	-	-	-	-	-	-	-	-	-	50.3
	"	-	6-7	X		-	-	-	-	-	-	-	-	-	-	159
	"	-	9-10	X		-	-	-	-	-	-	-	-	-	-	75.5
<b>BH-2</b>	2/20/2019	-	0-1	X		<15.0	158	158	27.7	186	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	484
	"	-	2-3	X		<15.0	16.8	16.8	<15.0	16.8	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	160
	"	-	4-5	X		-	-	-	-	-	-	-	-	-	-	39.0
	"	-	6-7	X		-	-	-	-	-	-	-	-	-	-	172
	"	-	9-10	X		-	-	-	-	-	-	-	-	-	-	198

( - ) Not Analyzed

Photos

COG  
Marauder Fed #001H  
Eddy County, New Mexico



TETRA TECH



View West – Area of BH-1 and BH-2



View West – Area of BH-1 and BH-2



## Appendix A

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	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☐ Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input 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

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input type="checkbox"/> 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*

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input 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: _____	Title: _____
Signature: <u>Delann Opreant</u>	Date: _____
email: _____	Telephone: _____
<b><u>OCD Only</u></b>	
Received by: _____	Date: _____



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?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input 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 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 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 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 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input 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.

<p><b>Characterization Report Checklist:</b> <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"><li><input type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.</li><li><input type="checkbox"/> Field data</li><li><input type="checkbox"/> Data table of soil contaminant concentration data</li><li><input type="checkbox"/> Depth to water determination</li><li><input type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li><li><input type="checkbox"/> Boring or excavation logs</li><li><input type="checkbox"/> Photographs including date and GIS information</li><li><input type="checkbox"/> Topographic/Aerial maps</li><li><input type="checkbox"/> Laboratory data including chain of custody</li></ul>
--

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.

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: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Incident ID	
District RP	
Facility ID	
Application ID	

## Closure


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

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

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

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

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**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 B

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG Marauder Federal #1**  
**Eddy County, New Mexico**

18 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23 44	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15 98	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			32 East		
6	5	4 65	3	2	1
7 460	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 135
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

20 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

20 South			31 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

20 South			32 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

- 88** New Mexico State Engineers Well Reports
- 105** USGS Well Reports
- 90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)
- Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34** NMOCD - Groundwater Data
- 123 Tetra Tech installed temporary wells and field water level
- 143** NMOCD Groundwater map well location

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	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
<a href="#">CP 00641 POD1</a>		CP	ED	4	1	36	19S	31E		610247	3609634*	<input type="text"/>	300	130 170
<a href="#">CP 00642 POD1</a>		CP	ED	2	2	25	19S	31E		611025	3611657*	<input type="text"/>	250	
<a href="#">CP 00722 POD1</a>		CP	LE	4	3	3	28	19S	31E	605106	3610273*	<input type="text"/>	200	
<a href="#">CP 00722 POD3</a>		CP	LE	2	4	1	33	19S	31E	605519	3609673*	<input type="text"/>	220	140 80
<a href="#">CP 00723 POD1</a>		CP	ED	2	1	1	33	19S	31E	605111	3610071*	<input type="text"/>	139	
<a href="#">CP 00725 POD1</a>		CP	ED	1	3	3	28	19S	31E	604906	3610473*	<input type="text"/>	231	
<a href="#">CP 00829 POD1</a>		CP	LE		2	4	16	19S	31E	606165	3614009*	<input type="text"/>	120	
<a href="#">CP 00873 POD1</a>		CP	LE		1	1	19	19S	31E	601772	3613147*	<input type="text"/>	340	180 160
<a href="#">CP 01554 POD1</a>		CP	LE	2	2	1	22	19S	31E	607166	3613354	<input type="text"/>	400	
<a href="#">CP 01554 POD2</a>		CP	LE	2	2	1	22	19S	31E	607165	3613322	<input type="text"/>	400	

Average Depth to Water: **150 feet**

Minimum Depth: **130 feet**

Maximum Depth: **180 feet**

Record Count: 10

PLSS Search:

Township: 19S Range: 31E

\*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.

3/4/19 3:43 PM

WATER COLUMN/ AVERAGE DEPTH  
TO WATER



[USGS Home](#)  
[Contact USGS](#)  
[Search USGS](#)

[National Water Information System Web Interface](#)

**USGS Water Resources**

Data Category:  

Groundwater

 Geographic Area:  

New Mexico

GO

Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News RSS icon](#)

Groundwater levels for New Mexico

Click to hide state-specific text

**Search Results -- 1 sites found**

Agency code = usgs  
site\_no list =

- 323724103523801

Minimum number of levels = 1  
[Save file of selected sites](#) to local disk for future upload

**USGS 323724103523801 19S.31E..28.33433**

Eddy County, New Mexico  
Latitude 32°37'24", Longitude 103°52'38" NAD27  
Land-surface elevation 3,450 feet above NAVD88  
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data											
Tab-separated data											
Graph of data											
Reselect period											
1994-03-18 D 118.95 2 S U A											

Water-level accuracy	2	Water level accuracy to nearest hundredth of a foot
Method of measurement	S	Steel-tape measurement.
Measuring agency	Not determined	
Water-level approval status	A	Approved for publication -- Processing and review completed.

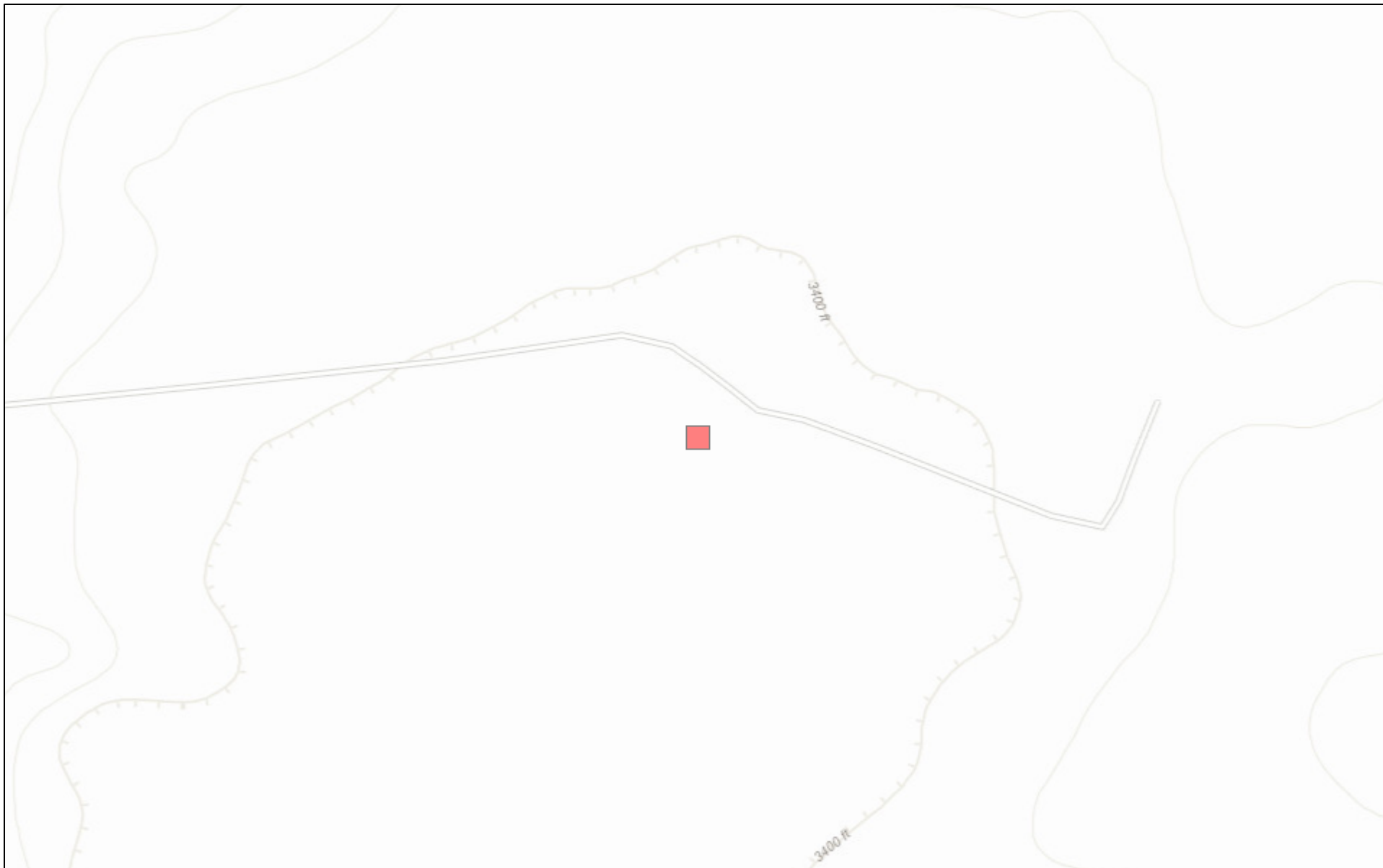
[Questions about sites/data?](#)  
[Feedback on this web site](#)  
[Automated retrievals](#)  
[Help](#)  
[Data Tips](#)  
[Explanation of terms](#)  
[Subscribe for system changes](#)  
[News](#)

[Accessibility](#) [Plug-Ins](#) [FOIA](#) [Privacy Policies and Notices](#)

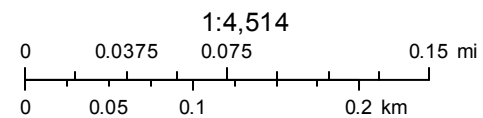
[USA.gov logo](#) [U.S. Department of the Interior](#) | [U.S. Geological Survey](#)

Title: Groundwater for New Mexico: Water Levels  
URL: <https://nwis.waterdata.usgs.gov/nm/nwis/gwlevels?>

# New Mexico NFHL Data



March 4, 2019



FEMA  
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS,

nmflood.org is made possible through a collaboration with NMDHSEM, EDAC, and FEMA  
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.



COG- Marauder Federal #1

- Legend**
- High
  - Low
  - Medium

32.62291 -103.91497

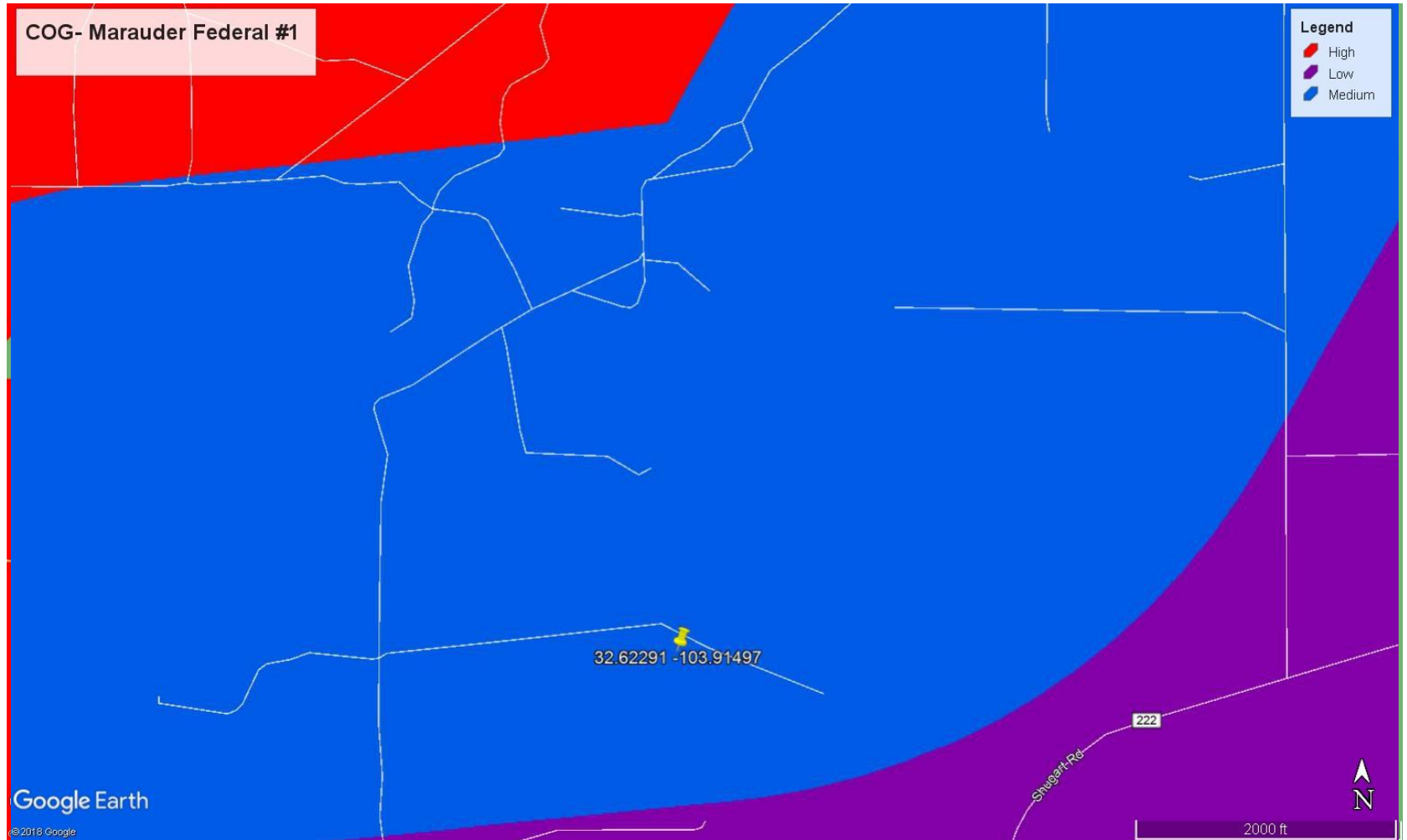
Google Earth  
© 2018 Google

Shugart Rd

222

2000 ft

N



## Appendix C

[illegible]

[illegible]

## Appendix D



# Analytical Report 615248

## for Tetra Tech- Midland

**Project Manager: Clair Gonzales**

**Marauder Fed #1H (12/21/18)**

**212C-MD-01597**

**01-MAR-19**

Collected By: Client



**1211 W. Florida Ave  
Midland TX 79701**

Xenco-Houston (EPA Lab Code: TX00122):  
Texas (T104704215-18-28), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)  
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):  
Texas (T104704295-18-17), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)  
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-18-18)  
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)  
Xenco-San Antonio (EPA Lab Code: TNi02385): Texas (T104704534-18-4)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)  
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)  
Xenco-Atlanta (LELAP Lab ID #04176)  
Xenco-Tampa: Florida (E87429), North Carolina (483)  
Xenco-Lakeland: Florida (E84098)



01-MAR-19

Project Manager: **Clair Gonzales**

**Tetra Tech- Midland**

901 West Wall ST

Midland, TX 79701

Reference: XENCO Report No(s): **615248**

**Marauder Fed #1H (12/21/18)**

Project Address: Eddy County, New Mexico

**Clair Gonzales:**

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) 615248. 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. 615248 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**

Project Assistant

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 615248



### Tetra Tech- Midland, Midland, TX

Marauder Fed #1H (12/21/18)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 (0'-1')	S	02-20-19 00:00		615248-001
BH-1 (2'-3')	S	02-20-19 00:00		615248-002
BH-1 (4'-5')	S	02-20-19 00:00		615248-003
BH-1 (6'-7')	S	02-20-19 00:00		615248-004
BH-1 (9'-10')	S	02-20-19 00:00		615248-005
BH-2 (0'-1')	S	02-20-19 00:00		615248-006
BH-2 (2'-3')	S	02-20-19 00:00		615248-007
BH-2 (4'-5')	S	02-20-19 00:00		615248-008
BH-2 (6'-7')	S	02-20-19 00:00		615248-009
BH-2 (9'-10')	S	02-20-19 00:00		615248-010



## CASE NARRATIVE

*Client Name: Tetra Tech- Midland*

*Project Name: Marauder Fed #1H (12/21/18)*

Project ID: 212C-MD-01597  
Work Order Number(s): 615248

Report Date: 01-MAR-19  
Date Received: 02/21/2019

---

**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3080327 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3080767 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



# Certificate of Analysis Summary 615248

Tetra Tech- Midland, Midland, TX

Project Name: Marauder Fed #1H (12/21/18)



**Project Id:** 212C-MD-01597  
**Contact:** Clair Gonzales  
**Project Location:** Eddy County, New Mexico

**Date Received in Lab:** Thu Feb-21-19 09:22 am  
**Report Date:** 01-MAR-19  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	615248-001	615248-002	615248-003	615248-004	615248-005	615248-006
	<i>Field Id:</i>	BH-1 (0'-1')	BH-1 (2'-3')	BH-1 (4'-5')	BH-1 (6'-7')	BH-1 (9'-10')	BH-2 (0'-1')
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-20-19 00:00	Feb-20-19 00:00	Feb-20-19 00:00	Feb-20-19 00:00	Feb-20-19 00:00	Feb-20-19 00:00
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Feb-25-19 16:30	Feb-25-19 16:30				Feb-28-19 12:00
	<i>Analyzed:</i>	Feb-26-19 00:54	Feb-26-19 01:13				Mar-01-19 11:49
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				mg/kg RL
Benzene		<0.00200 0.00200	<0.00199 0.00199				<0.00199 0.00199
Toluene		<0.00200 0.00200	<0.00199 0.00199				<0.00199 0.00199
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199				<0.00199 0.00199
m,p-Xylenes		<0.00401 0.00401	<0.00398 0.00398				<0.00398 0.00398
o-Xylene		<0.00200 0.00200	<0.00199 0.00199				<0.00199 0.00199
Total Xylenes		<0.00200 0.00200	<0.00199 0.00199				<0.00199 0.00199
Total BTEX		<0.00200 0.00200	<0.00199 0.00199				<0.00199 0.00199
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Feb-21-19 16:00	Feb-21-19 16:00	Feb-21-19 16:00	Feb-21-19 16:00	Feb-21-19 16:00	Feb-21-19 16:00
	<i>Analyzed:</i>	Feb-22-19 04:38	Feb-22-19 04:44	Feb-22-19 04:50	Feb-22-19 05:12	Feb-22-19 05:18	Feb-22-19 05:24
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		117 4.96	161 4.99	50.3 5.00	159 4.95	75.5 4.95	484 4.95
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Feb-22-19 07:00	Feb-22-19 07:00				Feb-27-19 08:00
	<i>Analyzed:</i>	Feb-22-19 18:10	Feb-22-19 18:29				Feb-27-19 17:22
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				mg/kg RL
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0	<15.0 15.0				<15.0 15.0
Diesel Range Organics (DRO)		36.6 15.0	<15.0 15.0				158 15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0	<15.0 15.0				27.7 15.0
Total TPH		36.6 15.0	<15.0 15.0				186 15.0

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.  
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.  
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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*Jessica Kramer*

Jessica Kramer  
Project Assistant





# Certificate of Analysis Summary 615248

Tetra Tech- Midland, Midland, TX

Project Name: Marauder Fed #1H (12/21/18)



**Project Id:** 212C-MD-01597  
**Contact:** Clair Gonzales  
**Project Location:** Eddy County, New Mexico

**Date Received in Lab:** Thu Feb-21-19 09:22 am  
**Report Date:** 01-MAR-19  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	615248-007	615248-008	615248-009	615248-010		
	<i>Field Id:</i>	BH-2 (2'-3')	BH-2 (4'-5')	BH-2 (6'-7')	BH-2 (9'-10')		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Feb-20-19 00:00	Feb-20-19 00:00	Feb-20-19 00:00	Feb-20-19 00:00		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Feb-28-19 12:00					
	<i>Analyzed:</i>	Mar-01-19 12:08					
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00201 0.00201					
Toluene		<0.00201 0.00201					
Ethylbenzene		<0.00201 0.00201					
m,p-Xylenes		<0.00402 0.00402					
o-Xylene		<0.00201 0.00201					
Total Xylenes		<0.00201 0.00201					
Total BTEX		<0.00201 0.00201					
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Feb-21-19 16:00	Feb-21-19 16:00	Feb-21-19 16:00	Feb-21-19 16:00		
	<i>Analyzed:</i>	Feb-22-19 05:31	Feb-22-19 05:37	Feb-22-19 05:43	Feb-22-19 06:01		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		160 4.95	39.0 5.00	172 4.99	198 5.03		
<b>TPH by SW8015 Mod</b>	<i>Extracted:</i>	Feb-27-19 08:00					
	<i>Analyzed:</i>	Feb-27-19 17:42					
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<15.0 15.0					
Diesel Range Organics (DRO)		16.8 15.0					
Motor Oil Range Hydrocarbons (MRO)		<15.0 15.0					
Total TPH		16.8 15.0					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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*Jessica Kramer*

Jessica Kramer  
Project Assistant

- 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



# Form 2 - Surrogate Recoveries

Project Name: Marauder Fed #1H (12/21/18)

Work Orders : 615248,

Project ID: 212C-MD-01597

Lab Batch #: 3080226

Sample: 615248-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/22/19 18:10

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.0	100	93	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 3080226

Sample: 615248-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/22/19 18:29

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	99.7	96	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3080327

Sample: 615248-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/26/19 00:54

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0345	0.0300	115	70-130	

Lab Batch #: 3080327

Sample: 615248-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/26/19 01:13

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0345	0.0300	115	70-130	
4-Bromofluorobenzene	0.0335	0.0300	112	70-130	

Lab Batch #: 3080673

Sample: 615248-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/19 17:22

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	51.1	49.9	102	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.



# Form 2 - Surrogate Recoveries

Project Name: Marauder Fed #1H (12/21/18)

Work Orders : 615248,

Lab Batch #: 3080673

Sample: 615248-007 / SMP

Project ID: 212C-MD-01597

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/19 17:42

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.6	99.8	74	70-135	
o-Terphenyl	36.4	49.9	73	70-135	

Lab Batch #: 3080767

Sample: 615248-006 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/01/19 11:49

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0341	0.0300	114	70-130	
4-Bromofluorobenzene	0.0324	0.0300	108	70-130	

Lab Batch #: 3080767

Sample: 615248-007 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/01/19 12:08

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	70-130	
4-Bromofluorobenzene	0.0335	0.0300	112	70-130	

Lab Batch #: 3080226

Sample: 7672373-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/22/19 11:57

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.4	100	98	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3080327

Sample: 7672488-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 20:30

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0326	0.0300	109	70-130	
4-Bromofluorobenzene	0.0278	0.0300	93	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.



# Form 2 - Surrogate Recoveries

Project Name: Marauder Fed #1H (12/21/18)

Work Orders : 615248,

Project ID: 212C-MD-01597

Lab Batch #: 3080673

Sample: 7672695-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/27/19 11:55

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	100	99	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3080767

Sample: 7672760-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/01/19 05:06

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	70-130	
4-Bromofluorobenzene	0.0281	0.0300	94	70-130	

Lab Batch #: 3080226

Sample: 7672373-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/22/19 12:17

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 3080327

Sample: 7672488-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 18:57

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0331	0.0300	110	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3080673

Sample: 7672695-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/27/19 12:14

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	47.5	50.0	95	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.



# Form 2 - Surrogate Recoveries

Project Name: Marauder Fed #1H (12/21/18)

Work Orders : 615248,

Lab Batch #: 3080767

Sample: 7672760-1-BKS / BKS

Project ID: 212C-MD-01597

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/01/19 03:32

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0323	0.0300	108	70-130	
4-Bromofluorobenzene	0.0297	0.0300	99	70-130	

Lab Batch #: 3080226

Sample: 7672373-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/22/19 12:36

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	62.5	50.0	125	70-135	

Lab Batch #: 3080327

Sample: 7672488-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/25/19 19:16

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0331	0.0300	110	70-130	
4-Bromofluorobenzene	0.0304	0.0300	101	70-130	

Lab Batch #: 3080673

Sample: 7672695-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 02/27/19 12:33

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	48.4	50.0	97	70-135	

Lab Batch #: 3080767

Sample: 7672760-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/01/19 03:51

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0321	0.0300	107	70-130	
4-Bromofluorobenzene	0.0298	0.0300	99	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.





# Form 2 - Surrogate Recoveries

Project Name: Marauder Fed #1H (12/21/18)

Work Orders : 615248,

Lab Batch #: 3080226

Sample: 614862-001 S / MS

Project ID: 212C-MD-01597

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/22/19 13:16

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	59.3	50.0	119	70-135	

Lab Batch #: 3080327

Sample: 615571-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/19 19:35

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3080673

Sample: 615724-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/19 13:12

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.9	112	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 3080767

Sample: 616045-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/01/19 04:10

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	70-130	
4-Bromofluorobenzene	0.0321	0.0300	107	70-130	

Lab Batch #: 3080226

Sample: 614862-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/22/19 13:35

## SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	58.7	50.0	117	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.



## Form 2 - Surrogate Recoveries

Project Name: Marauder Fed #1H (12/21/18)

Work Orders : 615248,

Lab Batch #: 3080327

Sample: 615571-001 SD / MSD

Project ID: 212C-MD-01597

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/25/19 19:54

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0332	0.0300	111	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3080673

Sample: 615724-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 02/27/19 13:31

### SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	99.9	117	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 3080767

Sample: 616045-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/01/19 04:29

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	70-130	
4-Bromofluorobenzene	0.0328	0.0300	109	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.



# BS / BSD Recoveries



**Project Name: Marauder Fed #1H (12/21/18)**

**Work Order #: 615248**

**Project ID: 212C-MD-01597**

**Analyst: SCM**

**Date Prepared: 02/25/2019**

**Date Analyzed: 02/25/2019**

**Lab Batch ID: 3080327**

**Sample: 7672488-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	<0.000386	0.100	0.127	127	0.0996	0.124	124	2	70-130	35	
Toluene	<0.000457	0.100	0.110	110	0.0996	0.107	107	3	70-130	35	
Ethylbenzene	<0.000566	0.100	0.106	106	0.0996	0.102	102	4	70-130	35	
m,p-Xylenes	<0.00102	0.200	0.211	106	0.199	0.204	103	3	70-130	35	
o-Xylene	<0.000345	0.100	0.104	104	0.0996	0.101	101	3	70-130	35	

**Analyst: SCM**

**Date Prepared: 02/28/2019**

**Date Analyzed: 03/01/2019**

**Lab Batch ID: 3080767**

**Sample: 7672760-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	<0.000387	0.101	0.117	116	0.0994	0.112	113	4	70-130	35	
Toluene	<0.000458	0.101	0.103	102	0.0994	0.0990	100	4	70-130	35	
Ethylbenzene	<0.000568	0.101	0.0988	98	0.0994	0.0955	96	3	70-130	35	
m,p-Xylenes	<0.00102	0.201	0.196	98	0.199	0.191	96	3	70-130	35	
o-Xylene	<0.000346	0.101	0.0982	97	0.0994	0.0955	96	3	70-130	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



## BS / BSD Recoveries



Project Name: Marauder Fed #1H (12/21/18)

Work Order #: 615248

Project ID: 212C-MD-01597

Analyst: CHE

Date Prepared: 02/21/2019

Date Analyzed: 02/22/2019

Lab Batch ID: 3080068

Sample: 7672297-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300	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
Analytes											
Chloride	<5.00	250	248	99	250	247	99	0	90-110	20	

Analyst: ARM

Date Prepared: 02/22/2019

Date Analyzed: 02/22/2019

Lab Batch ID: 3080226

Sample: 7672373-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	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
Analytes											
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	930	93	1000	991	99	6	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	927	93	1000	980	98	6	70-135	20	

Analyst: ARM

Date Prepared: 02/27/2019

Date Analyzed: 02/27/2019

Lab Batch ID: 3080673

Sample: 7672695-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod	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
Analytes											
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	935	94	1000	925	93	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	929	93	1000	928	93	0	70-135	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



# Form 3 - MS / MSD Recoveries



Project Name: Marauder Fed #1H (12/21/18)

Work Order #: 615248

Project ID: 212C-MD-01597

Lab Batch ID: 3080327

QC- Sample ID: 615571-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/25/2019

Date Prepared: 02/25/2019

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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	<0.000384	0.0998	0.0811	81	0.100	0.106	106	27	70-130	35	
Toluene	<0.000455	0.0998	0.0681	68	0.100	0.0905	91	28	70-130	35	X
Ethylbenzene	<0.000564	0.0998	0.0583	58	0.100	0.0825	83	34	70-130	35	X
m,p-Xylenes	<0.00101	0.200	0.117	59	0.200	0.164	82	33	70-130	35	X
o-Xylene	<0.000344	0.0998	0.0582	58	0.100	0.0819	82	34	70-130	35	X

Lab Batch ID: 3080767

QC- Sample ID: 616045-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 03/01/2019

Date Prepared: 02/28/2019

Analyst: SCM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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	<0.000384	0.0998	0.0861	86	0.0998	0.0835	84	3	70-130	35	
Toluene	<0.000455	0.0998	0.0634	64	0.0998	0.0597	60	6	70-130	35	X
Ethylbenzene	<0.000564	0.0998	0.0570	57	0.0998	0.0556	56	2	70-130	35	X
m,p-Xylenes	<0.00101	0.200	0.0971	49	0.200	0.100	50	3	70-130	35	X
o-Xylene	0.00105	0.0998	0.0672	66	0.0998	0.0663	65	1	70-130	35	X

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: Marauder Fed #1H (12/21/18)

Work Order #: 615248

Project ID: 212C-MD-01597

Lab Batch ID: 3080068

QC- Sample ID: 615248-009 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/22/2019

Date Prepared: 02/21/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	172	250	436	106	250	441	108	1	90-110	20	

Lab Batch ID: 3080068

QC- Sample ID: 615288-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/22/2019

Date Prepared: 02/21/2019

Analyst: CHE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	<0.858	250	276	110	250	273	109	1	90-110	20	

Lab Batch ID: 3080226

QC- Sample ID: 614862-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/22/2019

Date Prepared: 02/22/2019

Analyst: ARM

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)	<8.00	1000	970	97	1000	951	95	2	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	988	99	1000	986	99	0	70-135	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: Marauder Fed #1H (12/21/18)

Work Order # : 615248

Project ID: 212C-MD-01597

Lab Batch ID: 3080673

QC- Sample ID: 615724-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 02/27/2019

Date Prepared: 02/27/2019

Analyst: ARM

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)	<7.99	999	951	95	999	935	94	2	70-135	20	
Diesel Range Organics (DRO)	<8.12	999	918	92	999	926	93	1	70-135	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.





## Tetra Tech, Inc.

900 West Wall Street, Ste 100  
Midland, Texas 79701  
Tel (432) 682-4559  
Fax (432) 682-3946

Client Name:		COG		Site Manager:		Clair Gonzales				
Project Name:		Marauder Fed #1H		Project #:		212C-MD-01597				
Project Location: (county, state)		Eddy County, New Mexico		Project #:		212C-MD-01597				
Invoice to:		COG - Ike Taveraz		Sampler Signature:		<i>[Signature]</i>				
Receiving Laboratory:		Xenco		Sampler Signature:		<i>[Signature]</i>				
Comments: Run deeper Samples if TPH (GRO + DRO + MRO) exceeds 100 mg/kg. Run deeper Samples if Benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.										
LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)	
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>			ICE
	BH-1 (0-1')	2/20/2019		X		X			1	N
	BH-1 (2-3')	2/20/2019		X		X			1	N
	BH-1 (4-5')	2/20/2019		X		X			1	N
	BH-1 (6-7')	2/20/2019		X		X			1	N
	BH-1 (9-10')	2/20/2019		X		X			1	N
	BH-2 (0-1')	2/20/2019		X		X			1	N
	BH-2 (2-3')	2/20/2019		X		X			1	N
	BH-2 (4-5')	2/20/2019		X		X			1	N
	BH-2 (6-7')	2/20/2019		X		X			1	N
	BH-2 (9-10')	2/20/2019		X		X			1	N
Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
<i>[Signature]</i>		2-21-19		<i>[Signature]</i>		2/21/19	0922			
Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
<i>[Signature]</i>		2-21-19		<i>[Signature]</i>		2/21/19	0922			
Relinquished by:		Date:	Time:	Received by:		Date:	Time:			
<i>[Signature]</i>		2-21-19		<i>[Signature]</i>		2/21/19	0922			

ORIGINAL COPY

LAB USE ONLY		REMARKS:	
<input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr <u>72 hr</u> <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report		(Circle or Specify Method No.) ANALYSIS REQUEST BTEX 8021B BTEX 8260B TPH TX1005 (Ext to C35) TPH 8015M (GRO - DRO - ORO - MRO) PAH 8270C Total Metals Ag As Ba Cd Cr Pb Se Hg TCLP Metals Ag As Ba Cd Cr Pb Se Hg TCLP Volatiles TCLP Semi Volatiles RCI GC/MS Vol. 8260B / 624 GC/MS Semi. Vol. 8270C/625 PCB's 8082 / 608 NORM PLM (Asbestos) Chloride 300.0 Chloride Sulfate TDS General Water Chemistry (see attached list) Anion/Cation Balance TPH 8015R HOLD	

(Circle) HAND DELIVERED FEDEX UPS Tracking #:



# XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In



**Client:** Tetra Tech- Midland

**Date/ Time Received:** 02/21/2019 09:22:00 AM

**Work Order #:** 615248

**Acceptable Temperature Range:** 0 - 6 degC

**Air and Metal samples Acceptable Range:** Ambient

**Temperature Measuring device used :** R8

### Sample Receipt Checklist

### Comments

#1 *Temperature of cooler(s)?	3.4
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#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)?	N/A
#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:**

*Brianna Teel*

Brianna Teel

Date: 02/21/2019

**Checklist reviewed by:**

*Jessica Kramer*

Jessica Kramer

Date: 02/21/2019