SITE INFORMATION

Report Type: Closure Report NRM1927338634

General Site Information:						
Site:	**Roy Batty Fed Com #3H**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit N**	**Sec. 11**	**T 24S**	**R 33E**		
Lease Number:	**API No.**					
County:	**Lea County**					
GPS:	**32.22630**			**-103.5461**		
Surface Owner:	**Private**					
Directions:	From intersection of HWY 18 and HWY 28 in Jal, travel west on HWY 128for approximately 13.4 miles, turn north onto lease road for 0.45 mile to the location on the west side of the lease road.					

Release Data:	
Date Released:	8/29/2019
Type Release:	Produced water
Source of Contamination:	Flowline
Fluid Released:	60 bbls
Fluids Recovered:	40 bbls

Official Communication:			
Name:	Ike Tavarez		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@tetratech.com

Site Characterization	
Depth to Groundwater:	*60'*
Karst Potential:	*Low*

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

TETRA TECH

April 27, 2020

Dylan Rose-Coss
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

Re: Closure Report for the COG Operating, LLC, Roy Batty Fed Com #3H, Unit N, Section 11, Township 24 South, Range 33 East, Lea County, New Mexico. NRM1927338634

Mr. Rose-Coss:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess and remediate a release that occurred at the Roy Batty Fed Com #3H, Unit N, Section 11, Township 24 South, Range 33 East, Lea County, New Mexico (Site). The spill site coordinates are 32.2263°, -103.5461°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico, C-141 Initial Report the release was discovered on August 29, 2019, and released approximately 60 barrels of produced water due to a corroded flowline. A vacuum truck was dispatched to remove all freestanding fluids, recovering around 40 barrels of produced water. The release occurred along the lease road impacting an area measuring approximately 629' x 5' and migrated north into the pasture impacting an area measuring approximately 89' x 26' The initial 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. The site is in a low karst potential area. Two wells are near the site and listed in the New Mexico Office of the State Engineers website. The nearest well is listed in Section 10, Township 24 South, Range 33 East, approximately 1.25 miles northwest of the site, and has a reported depth to groundwater of 22 feet below ground surface. However, it was completed in 1920. The other well is listed in Section 01, Township 24 South, Range 33 East, approximately 2.26 miles northeast of the site, and has a reported depth to groundwater of 81 feet below ground surface. The well was installed in February 2017. In addition, the surface elevation of this site is 3,628,' and the surface elevation of the 20' well is approximately 3,608. Based on the relative elevation the depth to groundwater is estimated to be approximately 60' below surface. The groundwater data is shown in Appendix B.

Tetra Tech
901 W. Wall Street, Suite 100, Midland, TX 79701
Tel 432.682.4559 www.tetratech.com

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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 1,000 mg/kg (GRO + DRO) and 2,500 mg/kg (GRO + DRO+ MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 10,000 mg/kg.

Soil Assessment

Tetra Tech personnel were onsite on October 9, 2019, to assess the release area. A total of eight (8) auger holes (AH-1 through AH-8) were installed in the spill footprint to total depths ranging from 0-1' and 7'-7.5' below surface. Selected soil samples were submitted to the laboratory to be analyzed for TPH method 8015 extended, BTEX method 8021B, and Chloride by method SM4500. The sampling results are summarized in Table 1. The sample locations are shown in Figure 3.

Referring to Table 1, none of the samples analyzed showed any benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. Additionally, none of the samples collected showed chloride concentrations above the RRALs. However, concentrations above the reclamation standards were detected in the areas of AH-1, AH-2, and AH-6.

Remediation Activities

Tetra Tech personnel were onsite from December 19, 2019, and January 14, 2020, to supervise the remediation activities. The areas were excavated as shown on Figure 4 and highlighted (green) on Table 1. The areas of AH-1 and AH-2 were excavated to 4.0'-4.5', and the area of AH-6 was excavated to 4.5' below surface. Additionally, the impacted area on the lease road adjacent to the areas of AH-1 and AH-2 was scraped to a depth of 6" below surface. A total of thirteen (13) bottom hole composite samples (Bottomhole-1 through Bottomhole-13) and twenty-two (22) composite sidewall samples (NSW-1 through NSW-7, SSW-1 through SSW-7, ESW-1 through ESW-4, and WSW-1 through WSW-4) were collected every 200 square feet to ensure proper removal of the impacted soils. Selected samples were submitted to the laboratory to be analyzed for TPH method 8015 extended, BTEX method 8021B, and Chloride by method SM4500. The sampling results are summarized in Table 1. The excavation depths and sample locations are shown in Figure 4.

Referring to Table 1, none of the confirmation samples showed benzene, total BTEX, or TPH chloride concentrations above the RRALs. Additionally, none of the bottom hole samples collected showed chloride concentrations above the RRALs. Except for NSW-1 and NSW-2, which were collected along a surface line, none of the sidewall samples showed chloride concentrations above 600 mg/kg. The areas of NSW-1 and NSW-2 showed chloride concentrations of 1,640 mg/kg and 3,640 mg/kg, respectively. Based on the laboratory data, the areas of NSW-1 and NSW-2, beneath the surface pipeline, were removed, along with SSW-3 and SSW-4. A composite bottom hole sample (Bottomhole-12 and Bottomhole-13) in this area was then collected, as the sidewall between the two excavation areas had been removed and showed a chloride concentration of 64.0 mg/kg and 752 mg/kg.

Approximately 480 cubic yards of material were excavated and transported offsite for proper disposal. The area was then backfilled with clean material to surface grade.

TETRA TECH

Conclusion

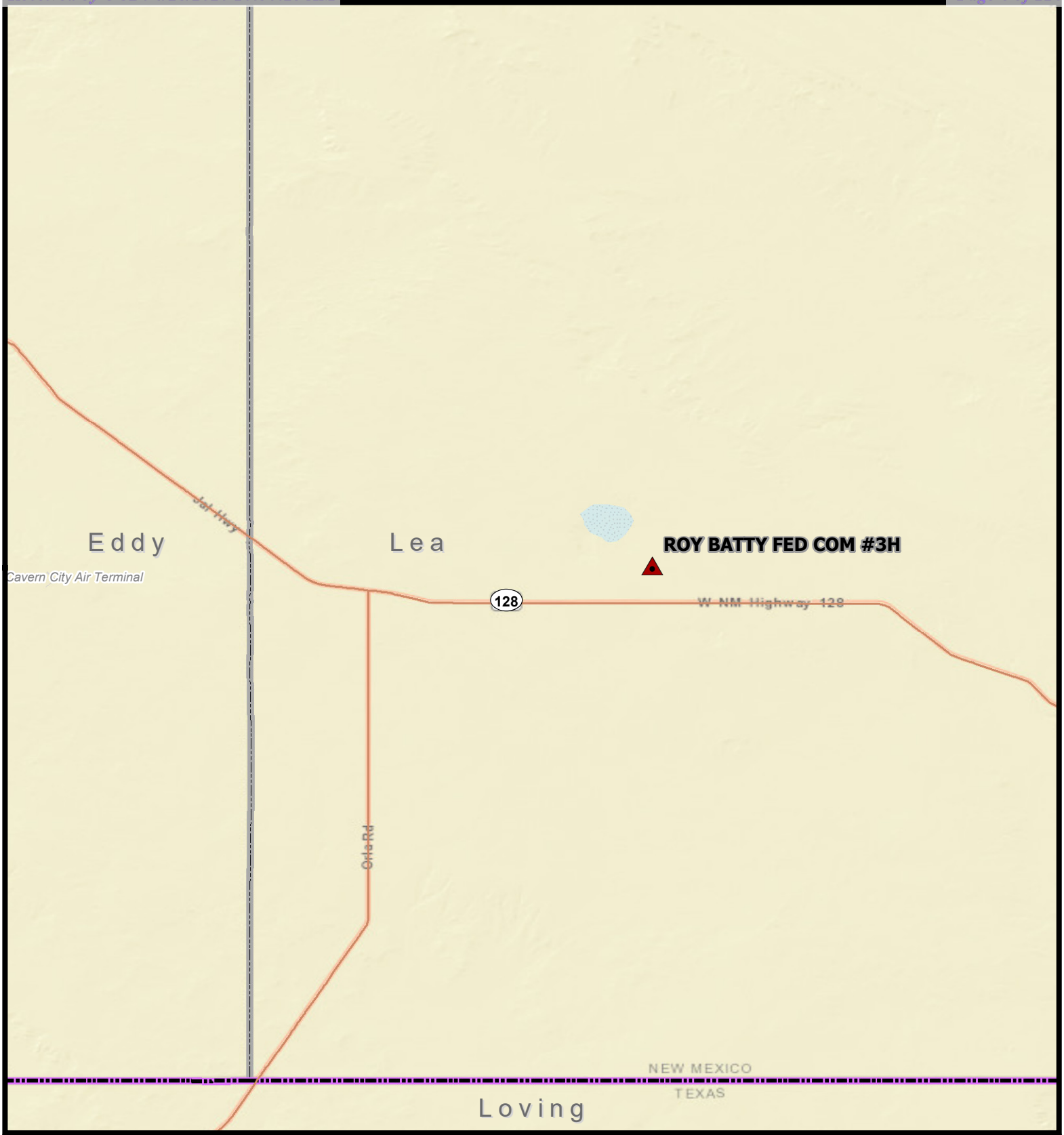
Based on the laboratory results and remediation activities performed, COG requests closure of this spill issue. The final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH

Clair Gonzales, P.G.,
Project Manager

Mike Carmona
Geologist

Figures



SITE LOCATION

N
W E
S

0 10,416.5 20,833

Approximate Scale in Feet

STATE LOCATOR MAP

Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

OVERVIEW MAP
ROY BATTY FED COM #3
Property Located at coordinates 32.2263°, -103.5461°
LEA COUNTY, NEW MEXICO

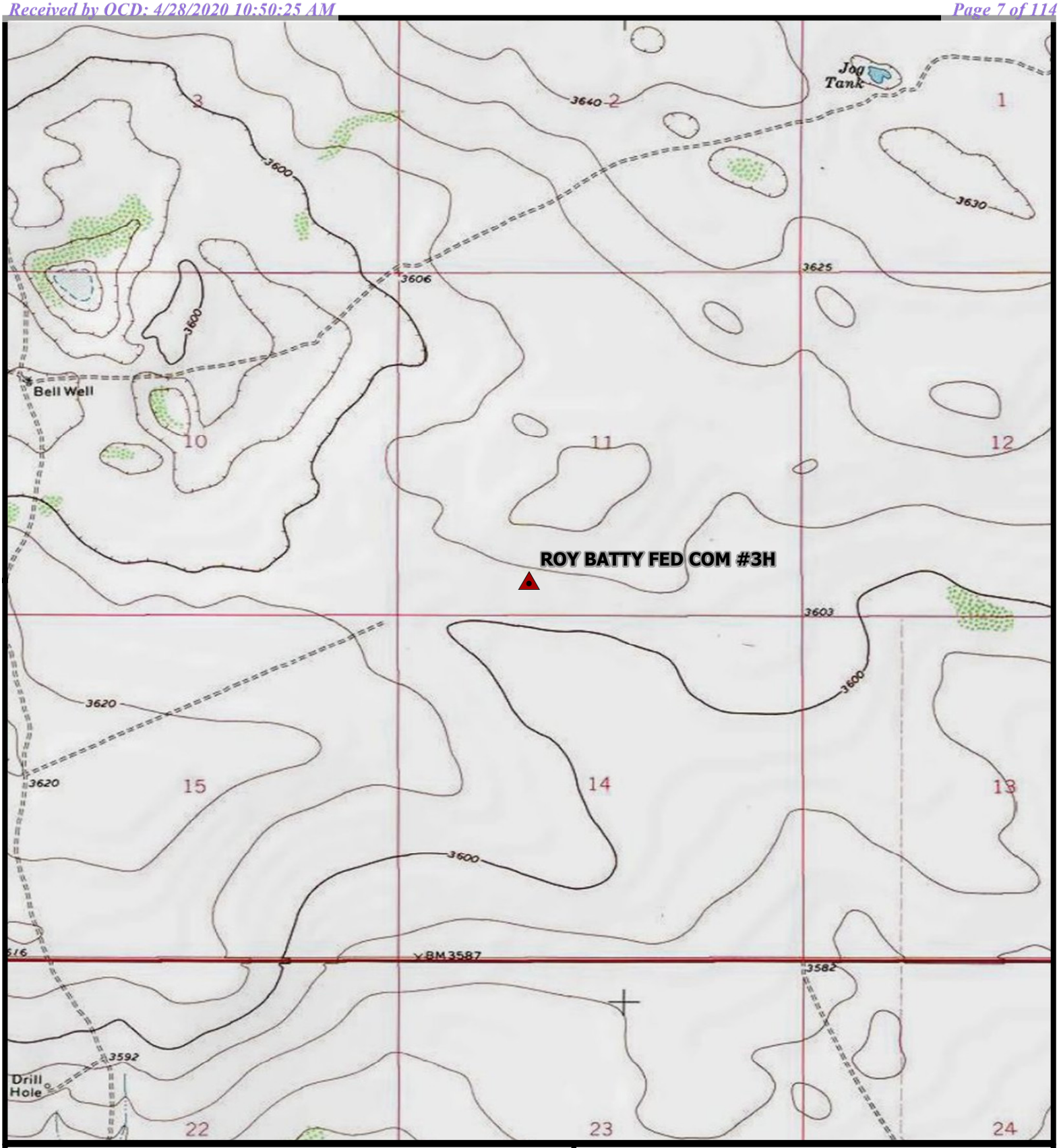
CONCHO

TETRA TECH
901 W Wall St Ste. 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-01962
Date: 01-15-2020
Drawn By: MLM

FIGURE 1

Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01962 ROY BATTY FED COM #3\MXD\212C-MD-01962 ROY BATTY FED COM #3 FIG. 1.mxd



SITE LOCATION

N
W E
S

0 1,000 2,000

Approximate Scale in Feet

Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

TOPOGRAPHIC MAP
ROY BATTY FED COM #3
Property Located at coordinates 32.2263°, -103.5461°
LEA COUNTY, NEW MEXICO

CONCHO

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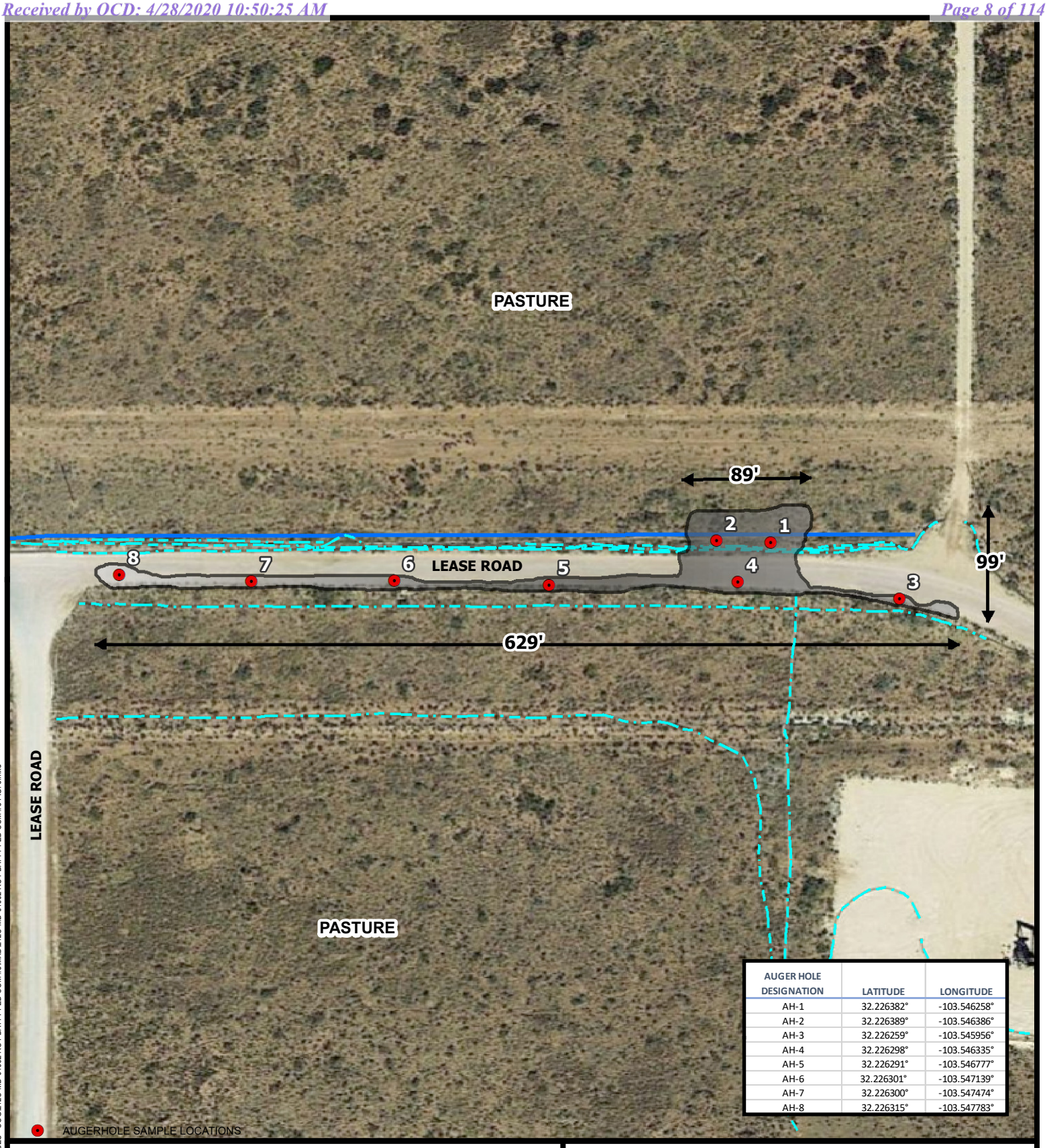
901 W Wall St Ste. 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-01962
Date: 01-15-2020
Drawn By: MLM

FIGURE 2

Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01962 ROY BATTY FED COM #3\MXD\212C-MD-01962 ROY BATTY FED COM #3 FIG. 2.mxd



AUGER HOLE DESIGNATION	LATITUDE	LONGITUDE
AH-1	32.226382°	-103.546258°
AH-2	32.226389°	-103.546386°
AH-3	32.226259°	-103.545956°
AH-4	32.226298°	-103.546335°
AH-5	32.226291°	-103.546777°
AH-6	32.226301°	-103.547139°
AH-7	32.226300°	-103.547474°
AH-8	32.226315°	-103.547783°

FLOWLINE
AFFECTED SPILL AREA
STEEL PIPE

N
W E
S

0 55 110
Approximate Scale in Feet

Source: "New Mexico". 32°13'34.68"N, 103°32'45.96"W. **Google Earth**. November 2017. January 15, 2020.

SPILL ASSESSMENT MAP
ROY BATTY FED COM #3
Property Located at coordinates 32.2263°, -103.5461°
LEA COUNTY, NEW MEXICO

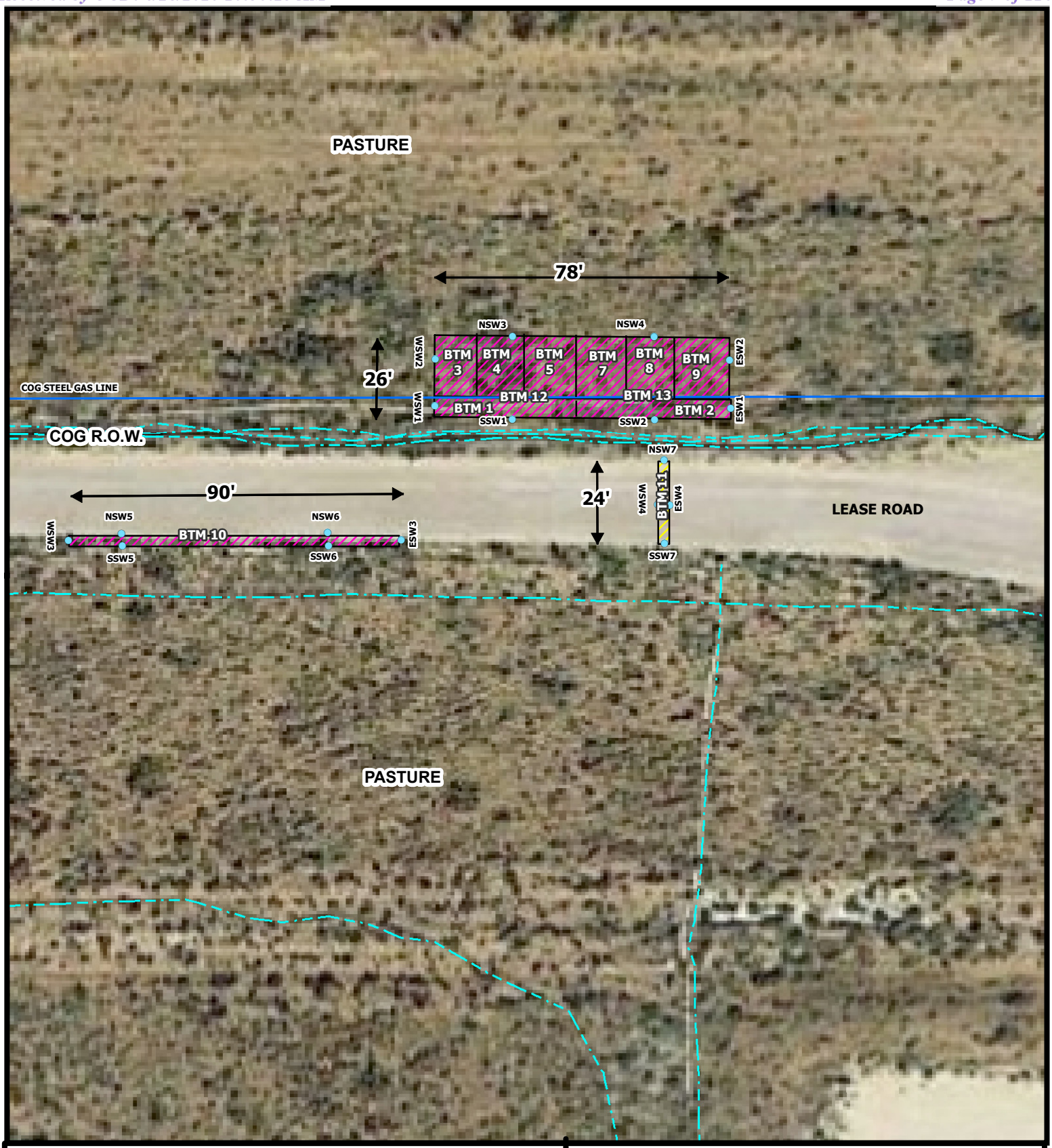
CONCHO

TETRA TECH
901 W Wall St Ste. 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-01962
Date: 01-15-2020
Drawn By: MLM

FIGURE 3

Date: 2/13/2020 Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01962 ROY BATTY FED COM #3\MXD\212C-MD-01962 ROY BATTY FED COM #3 FIG. 3.mxd



BTM BOTTOM HOLES
SIDE WALL SAMPLE LOCATIONS
STEEL PIPE
6"' EXCAVATED DEPTH
4.5' EXCAVATED DEPTH
FLOWLINE

N
W E
S

0 20 40
Approximate Scale in Feet

Source: "New Mexico". 32°13'34.68"N, 103°32'45.96"W. **Google Earth**. November 2017. January 15, 2020.

EXCAVATION AREA & DEPTH MAP
ROY BATTY FED COM #3
Property Located at coordinates 32.2263°, -103.5461°
LEA COUNTY, NEW MEXICO

CONCHO

TETRA TECH
901 W Wall St Ste. 100,
Midland, TX 79701
(432) 682-4559

Project #: 212C-MD-01962
Date: 04-27-2020
Drawn By: MLM

FIGURE 4

Date: 4/27/2020 Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01962 ROY BATTY FED COM #3\MXD\212C-MD-01962 ROY BATTY FED COM #3 FIG. 4.mxd

Tables

Table 1
COG
Roy Batty Fed Com #3
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Excavation Bottom (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	ORO	Total						
AH-1	10/9/2019	0-1	-		X	<49.9	<49.9	<49.9	<49.9	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	18.7
	"	1-1.5	-		X	<49.9	<49.9	<49.9	<49.9	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	33.8
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	-	90.5
	"	3-3.5	-		X	-	-	-	-	-	-	-	-	-	1,440
	"	3.5-4	-		X	-	-	-	-	-	-	-	-	-	5,390
AH-2	10/9/2019	0-1	-		X	<50.0	<50.0	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	19.3
	"	1-1.5	-		X	<49.9	<49.9	<49.9	<49.9	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	17.2
	"	2-2.5	-		X	-	-	-	-	-	-	-	-	-	56.5
	"	3-3.5	-		X	-	-	-	-	-	-	-	-	-	1,420
	"	4-4.5	-		X	-	-	-	-	-	-	-	-	-	319
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	-	635
	"	6-6.5	-	X		-	-	-	-	-	-	-	-	-	1,570
	"	7-7.5	-	X		-	-	-	-	-	-	-	-	-	184
AH-3	10/9/2019	0-1	-		X	<49.8	<49.8	<49.8	<49.8	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	13.3
AH-4	10/9/2019	0-1	-	X		<50.0	<50.0	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	23.2
AH-5	10/9/2019	0-1	-	X		<50.0	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	80.9
AH-6	10/9/2019	0-1	-		X	<50.0	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	146
	"	1-1.5	-		X	-	-	-	-	-	-	-	-	-	1,850
AH-7	10/9/2019	0-1	-	X		<50.0	<50.0	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	16.1
AH-8	10/9/2019	0-1	-	X		<49.8	<49.8	<49.8	<49.8	<0.0400	<0.0400	<0.0400	<0.0400	<0.0400	7.78
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	-	20.8
Bottomhole-1	12/19/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	1,760
Bottomhole-2	12/19/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	592
Bottomhole-3	12/19/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	16.0
Bottomhole-4	12/19/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	<16.0
Bottomhole-5	12/19/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	512
Bottomhole-6	12/20/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	1,120
Bottomhole-7	12/20/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	240
Bottomhole-8	12/20/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	6,000
Bottomhole-9	12/20/2019	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	5,680
Bottomhole-10	1/2/2020		4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	16.0
Bottomhole-11	1/3/2020		0.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	176
Bottomhole-12	1/13/2020	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	64.0
Bottomhole-13	1/13/2020	-	4-4.5	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	752

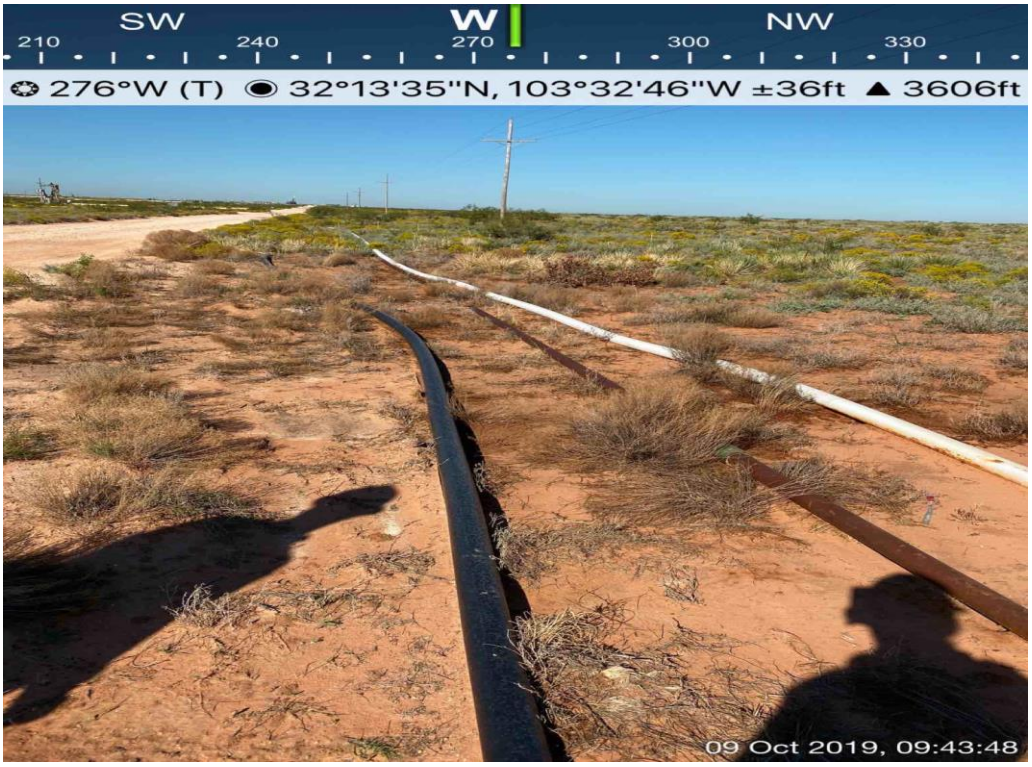
Table 1
COG
Roy Batty Fed Com #3
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Excavation Bottom (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	ORO	Total						
NSW-1	1/3/2020		-		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	1,640
NSW-2	1/3/2020		-		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	3,640
NSW-3	12/19/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	<16.0
NSW-4	12/20/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	32.0
NSW-5	1/2/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	<16.0
NSW-6	"		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	272
NSW-7	1/3/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	192
SSW-1	12/20/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	32.0
SSW-2	12/19/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	288
SSW-3	1/2/2020		-		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	112
SSW-4	"		-		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	192
SSW-5	"		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	32.0
SSW-6	"		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	16.0
SSW-7	1/3/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	176
ESW-1	12/19/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	112
ESW-2	12/20/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	192
ESW-3	1/2/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	112
ESW-4	1/3/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	144
WSW-1	12/19/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	384
WSW-2	12/20/2019		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	112
WSW-3	1/2/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	48.0
WSW-4	1/3/2020		-	X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.0150	<0.300	112

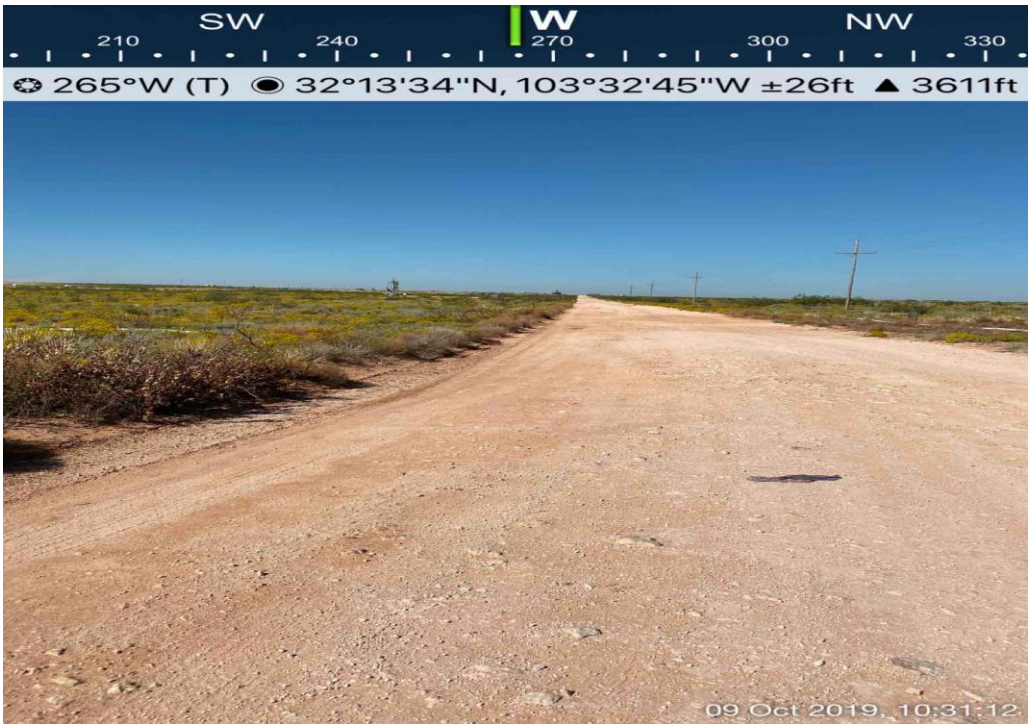
- Not Analyzed

Photos

COG Operating LLC
Roy Batty Fed Com #3H
Lea County, New Mexico

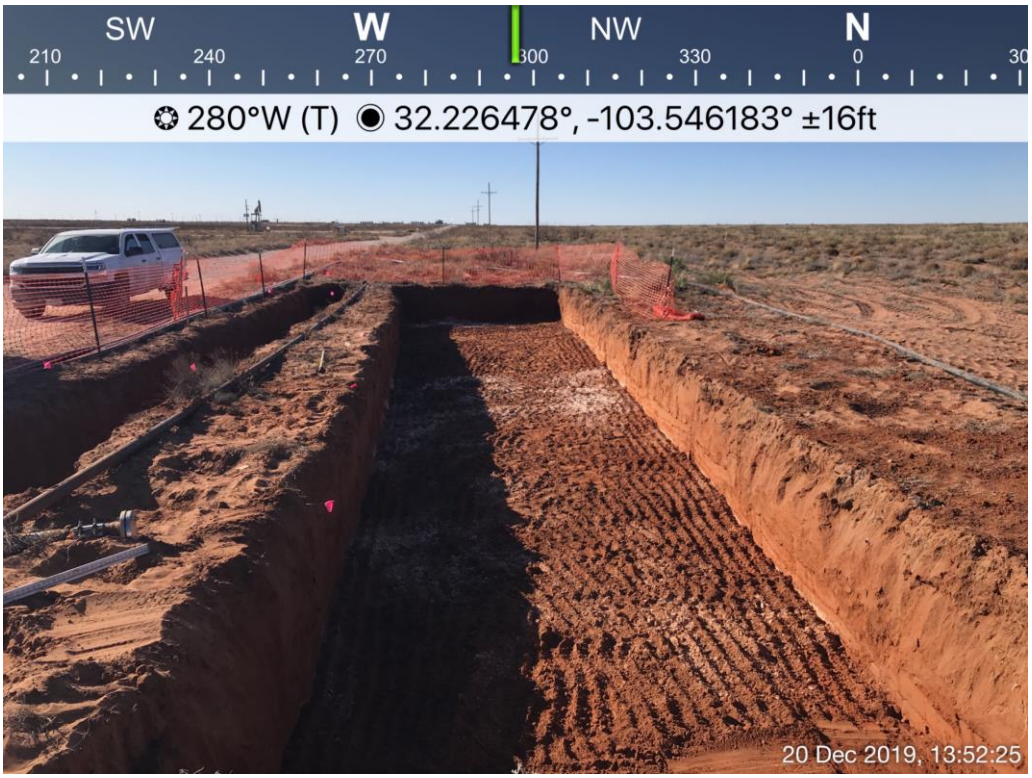


View West –Areas of AH-1 and AH-2



View West –Areas of AH-3 through AH-8

COG Operating LLC
Roy Batty Fed Com #3H
Lea County, New Mexico



View West – Excavated Areas of AH-1 and AH-2

View West – Excavated Areas of AH-1 and AH-2

COG Operating LLC
Roy Batty Fed Com #3H
Lea County, New Mexico

View East – Excavated Area of AH-6

View South – Surficial scrape along lease road

COG Operating LLC
Roy Batty Fed Com #3H
Lea County, New Mexico

View West – Removal of NSW-1 and NSW-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)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride 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		

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:

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: DeLinn Grant _____ Date: _____

email: _____ Telephone: _____

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?	_____ (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.

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: _____ 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)
Roy Batty
Lea County, New Mexico

23 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 400	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 400	20 400	21	22	23	24
30	29	28 400	27	26 225	25 225
31	32	33	34	35	36

23 South 34 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

24 South 32 East

6	5	4	3	2	1
7	8	9	10 20	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 290	34	35	36

24 South 33 East

6	5	4	3	2	1 81
7	8	9	10 20 22	11 Site	12
18	17	16 415	15	14 575	13 390
19	20	21	22	23 110 208	24 16.9
30	29	28	27	26	25 30
31	32	33 70 93.2	34	35	36

24 South 34 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

25 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	32 290	33	34	35	36

25 South 33 East

6	5	4	3 172	2	1
7	8	9	10	11 140	12 200
18	17	16	15	14	13
19	20 200	21 120	22	23	24
30	29	28	27 125	26	25
31 257	32	33	34	35	36

25 South 34 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	Twn	Rng	X	Y		Depth Well	Depth Water	Water Column
C 02308		CUB	LE	1	3	1	10	24S	33E	634953	3567364*		40	20	20
C 02309		CUB	LE	2	2	2	25	24S	33E	639638	3562994*		60	30	30
C 02310		CUB	LE	2	3	2	33	24S	33E	634437	3560918*		120	70	50
C 02311		CUB	LE	2	3	2	33	24S	33E	634437	3560918*		120	70	50
C 02430		CUB	LE	3	3	3	16	24S	33E	633377	3564732*		643	415	228
C 02431		CUB	LE	4	4	4	17	24S	33E	633175	3564728*		525	415	110
C 02432		CUB	LE	4	4	4	17	24S	33E	633175	3564728*		640	415	225
C 02563		CUB	LE	1	4	2	33	24S	33E	634639	3560923*		120		
C 02564		CUB	LE	2	4	2	33	24S	33E	634839	3560923*		120		
C 02890		C	LE		2	4	29	24S	33E	633114	3562012*		500		
C 03565 POD3		CUB	LE		3	4	08	24S	33E	632763	3566546			1533	
C 03591 POD1		CUB	LE	2	1	4	05	24S	33E	632731	3568518				
C 03600 POD1		CUB	LE	2	2	1	26	24S	33E	637275	3563023				
C 03600 POD2		CUB	LE	4	4	1	25	24S	33E	638824	3562329				
C 03600 POD3		CUB	LE	3	4	2	26	24S	33E	637784	3562340				
C 03600 POD4		CUB	LE	3	3	1	26	24S	33E	636617	3562293				
C 03600 POD5		CUB	LE	3	2	4	26	24S	33E	637857	3562020				
C 03600 POD6		CUB	LE	3	1	4	26	24S	33E	637383	3562026				
C 03600 POD7		CUB	LE	3	1	3	26	24S	33E	636726	3561968				
C 03601 POD1		CUB	LE	4	4	2	23	24S	33E	638124	3563937				
C 03601 POD2		CUB	LE	3	2	4	23	24S	33E	637846	3563588				
C 03601 POD3		CUB	LE	1	3	3	24	24S	33E	638142	3563413				
C 03601 POD4		CUB	LE	3	3	3	24	24S	33E	638162	3561375				
C 03601 POD5		CUB	LE	2	4	4	23	24S	33E	637988	3563384				
C 03601 POD6		CUB	LE	1	4	4	23	24S	33E	637834	3563338				
C 03601 POD7		CUB	LE	4	4	4	23	24S	33E	637946	3563170				
C 03602 POD2		CUB	LE	4	4	1	25	24S	33E	638824	3562329				
C 03603 POD1		CUB	LE	3	2	2	35	24S	33E	637805	3561225				
C 03603 POD2		CUB	LE	3	1	2	35	24S	33E	637384	3561167				
C 03603 POD3		CUB	LE	4	1	1	35	24S	33E	636890	3561092				
C 03603 POD4		CUB	LE	3	2	4	35	24S	33E	637789	3560461				
C 03603 POD5		CUB	LE	3	3	2	35	24S	33E	636745	3560767				
C 03603 POD6		CUB	LE	3	1	3	35	24S	33E	636749	3560447				
C 03662 POD1		C	LE	3	1	2	23	24S	33E	637342	3564428		550	110	440
C 03666 POD1		C	LE	2	3	4	13	24S	33E	639132	3565078		650	390	260
C 03679 POD1		C	ED	1	4	2	14	24S	33E	603567	3581547		700	575	125
C 03917 POD1		C	LE	4	1	3	13	24S	33E	638374	3565212		600	420	180
C 04014 POD2		CUB	LE	4	4	2	01	24S	33E	639656	3568917		95	81	14
C 04014 POD3		CUB	LE	2	4	2	01	24S	33E	639497	3569007		95	87	8
C 04014 POD4		CUB	LE	3	4	2	01	24S	33E	639295	3568859		96	86	10
C 04014 POD5		CUB	LE	1	4	2	01	24S	33E	639284	3569086		95	85	10
C 04339 POD1		CUB	LE	1	3	3	23	24S	33E	636525	3563309		47		
C 04339 POD10		CUB	LE	4	1	4	23	24S	33E	637688	3563503		49		
C 04339 POD2		CUB	LE	2	3	3	23	24S	33E	636789	3563315				
C 04339 POD3		CUB	LE	2	4	3	23	24S	33E	637273	3563323		38		
C 04339 POD4		CUB	LE	2	4	3	23	24S	33E	637273	3563323		47		
C 04339 POD5		CUB	LE	2	3	4	23	24S	33E	637580	3563328		54		
C 04339 POD6		CUB	LE	3	1	2	23	24S	33E	637340	3564386		60		

C 04339 POD7	CUB	LE	4	4	2	23	24S	33E	636473	3564011		43
C 04339 POD8	CUB	LE	1	1	3	23	24S	33E	636519	3563681		30
C 04339 POD9	CUB	LE	3	4	2	23	24S	33E	637731	3563913		45

Average Depth to Water: **300 feet**

Minimum Depth: **20 feet**

Maximum Depth: **1533 feet**

Record Count: 51

PLSS Search:

Township: 24S **Range:** 33E

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

10/22/19 9:54 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

National Water Information System: Mapper

Site Information

Roy Batty Federal Com #003H

Legend
- EOG Mars 10
- High
- Low
- Medium

Bell Lake

32.2263 -103.5461

Delaware Basin Rd

Co Rd 2-A

2

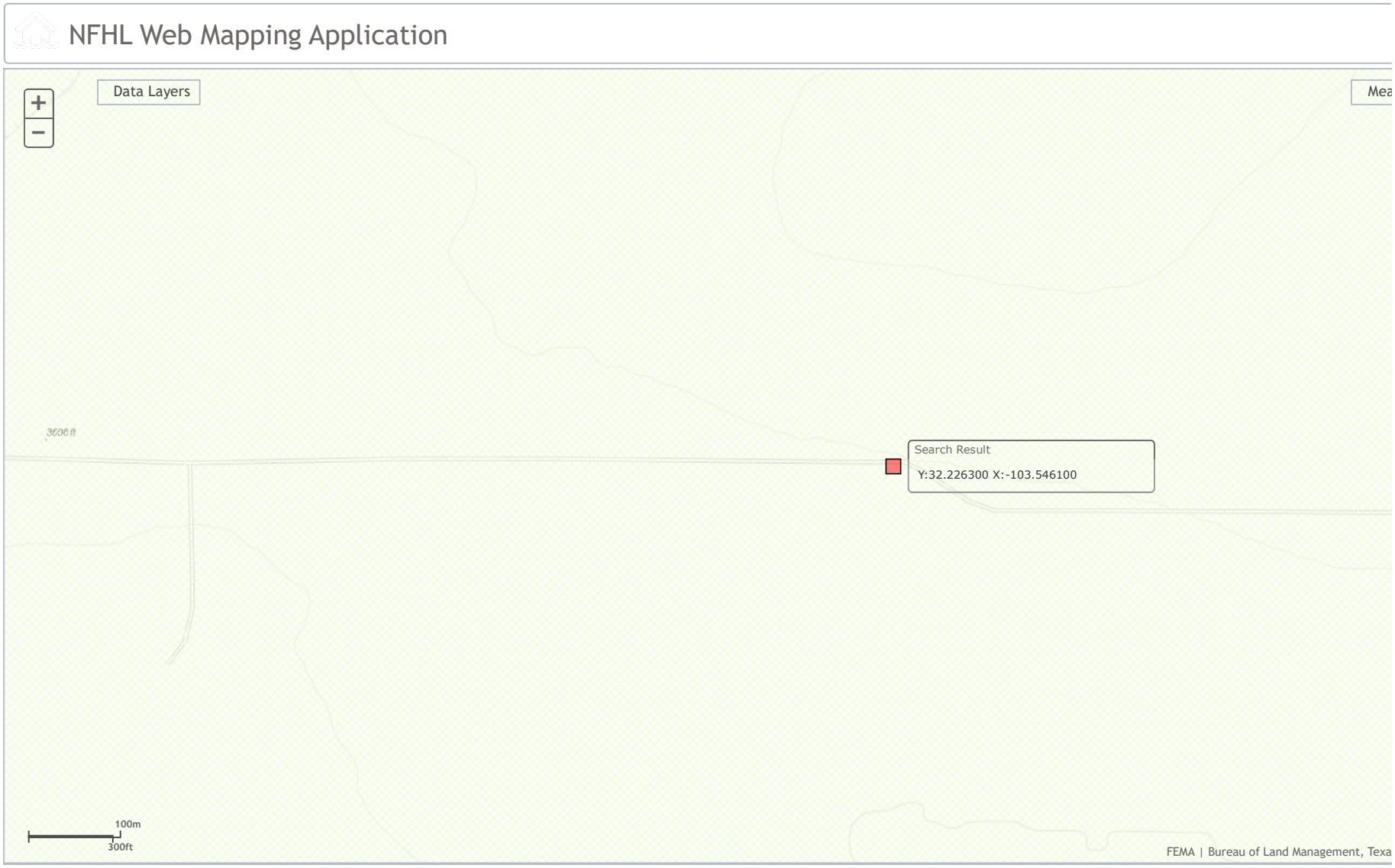
128

21

Vaca Ln

N

5000 ft


NFHL Web Mapping Application
Data Layers
Mea
3606 ft
Search Result
Y:32.226300 X:-103.546100
100m
300ft
FEMA | Bureau of Land Management, Texa

Appendix C

Analytical Report 639515

for

Tetra Tech- Midland

Project Manager: Mike Carmona

Roy Batty

14-OCT-19

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 (2017-142), North Carolina (681)

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-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)

14-OCT-19

Project Manager: **Mike Carmona**
Tetra Tech- Midland
901 West Wall ST
Midland, TX 79701

Reference: XENCO Report No(s): **639515**
Roy Batty
Project Address: Lea Co, NM

Mike Carmona:

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) 639515. 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. 639515 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

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

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America

Sample Cross Reference 639515

Tetra Tech- Midland, Midland, TX

Roy Batty

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH #1 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-001
AH #1 (1-1.5')	S	10-09-19 00:00	1 - 1.5 ft	639515-002
AH #1 (2-2.5')	S	10-09-19 00:00	2 - 2.5 ft	639515-003
AH #1 (3-3.5')	S	10-09-19 00:00	3 - 3.5 ft	639515-004
AH #1 (3.5-4')	S	10-09-19 00:00	3.5 - 4 ft	639515-005
AH #2 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-006
AH #2 (1-1.5')	S	10-09-19 00:00	1 - 1.5 ft	639515-007
AH #2 (2-2.5')	S	10-09-19 00:00	2 - 2.5 ft	639515-008
AH #2 (3-3.5')	S	10-09-19 00:00	3 - 3.5 ft	639515-009
AH #2 (4-4.5')	S	10-09-19 00:00	4 - 4.5 ft	639515-010
AH #2 (5-5.5')	S	10-09-19 00:00	5 - 5.5 ft	639515-011
AH #2 (6-6.5')	S	10-09-19 00:00	6 - 6.5 ft	639515-012
AH #2 (7-7.5')	S	10-09-19 00:00	7 - 7.5 ft	639515-013
AH #3 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-014
AH #4 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-015
AH #5 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-016
AH #6 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-017
AH #6 (1-1.5')	S	10-09-19 00:00	1 - 1.5 ft	639515-018
AH #7 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-019
AH #8 (0-1')	S	10-09-19 00:00	0 - 1 ft	639515-020
AH #8 (1-1.5')	S	10-09-19 00:00	1 - 1.5 ft	639515-021

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: Roy Batty

Project ID:
Work Order Number(s): *639515*

Report Date: *14-OCT-19*
Date Received: *10/09/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104132 BTEX by EPA 8021B
Samples 639515-001, 639515-002, 639515-006, 639515-007, 639515-014, 639515-015, 639515-019, and 639515-020 were diluted due to surfactants.

Batch: LBA-3104147 Inorganic Anions by EPA 300/300.1
Lab Sample ID 639515-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 639515-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 639515

Tetra Tech- Midland, Midland, TX

Project Name: Roy Batty

Project Id:
Contact: Mike Carmona
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-09-19 03:46 pm
Report Date: 14-OCT-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	639515-001		639515-002		639515-003		639515-004		639515-005		639515-006	
	Field Id:	AH #1 (0-1')		AH #1 (1-1.5')		AH #1 (2-2.5')		AH #1 (3-3.5')		AH #1 (3.5-4')		AH #2 (0-1')	
	Depth:	0-1 ft		1-1.5 ft		2-2.5 ft		3-3.5 ft		3.5-4 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00	
BTEX by EPA 8021B SUB: T104704219-19-21	***Extracted:***	Oct-11-19 10:40		Oct-11-19 10:40								Oct-11-19 10:40	
	Analyzed:	Oct-12-19 06:27		Oct-12-19 06:51								Oct-12-19 07:15	
	Units/RL:	mg/kg	RL	mg/kg	RL							mg/kg	RL
Benzene		<0.0400	0.0400	<0.0400	0.0400							<0.0400	0.0400
Toluene		<0.0400	0.0400	<0.0400	0.0400							<0.0400	0.0400
Ethylbenzene		<0.0400	0.0400	<0.0400	0.0400							<0.0400	0.0400
m,p-Xylenes		<0.0800	0.0800	<0.0800	0.0800							<0.0800	0.0800
o-Xylene		<0.0400	0.0400	<0.0400	0.0400							<0.0400	0.0400
Total Xylenes		<0.0400	0.0400	<0.0400	0.0400							<0.0400	0.0400
Total BTEX		<0.0400	0.0400	<0.0400	0.0400							<0.0400	0.0400
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	***Extracted:***	Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30	
	Analyzed:	Oct-11-19 19:24		Oct-11-19 19:40		Oct-11-19 19:45		Oct-11-19 19:50		Oct-11-19 19:56		Oct-11-19 20:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		18.7	5.00	33.8	4.98	90.5	4.99	1440	4.96	5390	50.0	19.3	4.95
TPH By SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-11-19 11:00		Oct-11-19 11:00								Oct-11-19 11:00	
	Analyzed:	Oct-11-19 18:52		Oct-11-19 19:13								Oct-11-19 19:34	
	Units/RL:	mg/kg	RL	mg/kg	RL							mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9	<49.9	49.9							<50.0	50.0
Diesel Range Organics (DRO)		<49.9	49.9	<49.9	49.9							<50.0	50.0
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9	<49.9	49.9							<50.0	50.0
Total TPH		<49.9	49.9	<49.9	49.9							<50.0	50.0

Houston - Dallas - Midland - Tampa - Phoenix - Lubbock - San Antonio - El Paso - Atlanta - New Mexico

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 639515

Tetra Tech- Midland, Midland, TX

Project Name: Roy Batty

Project Id:
Contact: Mike Carmona
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-09-19 03:46 pm
Report Date: 14-OCT-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	639515-007		639515-008		639515-009		639515-010		639515-011		639515-012	
	Field Id:	AH #2 (1-1.5')		AH #2 (2-2.5')		AH #2 (3-3.5')		AH #2 (4-4.5')		AH #2 (5-5.5')		AH #2 (6-6.5')	
	Depth:	1-1.5 ft		2-2.5 ft		3-3.5 ft		4-4.5 ft		5-5.5 ft		6-6.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00	
BTEX by EPA 8021B SUB: T104704219-19-21	***Extracted:***	Oct-11-19 10:40											
	Analyzed:	Oct-12-19 07:38											
	Units/RL:	mg/kg	RL										
Benzene		<0.0400	0.0400										
Toluene		<0.0400	0.0400										
Ethylbenzene		<0.0400	0.0400										
m,p-Xylenes		<0.0800	0.0800										
o-Xylene		<0.0400	0.0400										
Total Xylenes		<0.0400	0.0400										
Total BTEX		<0.0400	0.0400										
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	***Extracted:***	Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30	
	Analyzed:	Oct-11-19 20:17		Oct-11-19 20:22		Oct-11-19 20:27		Oct-11-19 20:33		Oct-11-19 20:38		Oct-11-19 20:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		17.2	5.02	56.5	4.96	1420	5.00	319	4.97	635	5.04	1570	25.0
TPH By SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-11-19 11:00											
	Analyzed:	Oct-11-19 19:55											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<49.9	49.9										
Diesel Range Organics (DRO)		<49.9	49.9										
Motor Oil Range Hydrocarbons (MRO)		<49.9	49.9										
Total TPH		<49.9	49.9										

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 639515

Tetra Tech- Midland, Midland, TX

Project Name: Roy Batty

Project Id:
Contact: Mike Carmona
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-09-19 03:46 pm
Report Date: 14-OCT-19
Project Manager: Jessica Kramer

Analysis Requested																			
	Lab Id:	639515-013		639515-014		639515-015		639515-016		639515-017		639515-018	
	Field Id:	AH #2 (7-7.5')		AH #3 (0-1')		AH #4 (0-1')		AH #5 (0-1')		AH #6 (0-1')		AH #6 (1-1.5')	
	Depth:	7-7.5 ft		0-1 ft		0-1 ft		0-1 ft		0-1 ft		1-1.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00	
BTEX by EPA 8021B SUB: T104704219-19-21	***Extracted:***			Oct-11-19 10:40		Oct-11-19 10:40		Oct-11-19 10:40		Oct-11-19 10:40			
	Analyzed:			Oct-12-19 08:02		Oct-12-19 08:25		Oct-12-19 08:50		Oct-12-19 09:13			
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene				<0.0400	0.0400	<0.0400	0.0400	<0.0200	0.0200	<0.0200	0.0200		
Toluene				<0.0400	0.0400	<0.0400	0.0400	<0.0200	0.0200	<0.0200	0.0200		
Ethylbenzene				<0.0400	0.0400	<0.0400	0.0400	<0.0200	0.0200	<0.0200	0.0200		
m,p-Xylenes				<0.0800	0.0800	<0.0800	0.0800	<0.0400	0.0400	<0.0400	0.0400		
o-Xylene				<0.0400	0.0400	<0.0400	0.0400	<0.0200	0.0200	<0.0200	0.0200		
Total Xylenes				<0.0400	0.0400	<0.0400	0.0400	<0.0200	0.0200	<0.0200	0.0200		
Total BTEX				<0.0400	0.0400	<0.0400	0.0400	<0.0200	0.0200	<0.0200	0.0200		
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	***Extracted:***	Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30		Oct-11-19 17:30	
	Analyzed:	Oct-11-19 20:59		Oct-11-19 21:15		Oct-11-19 21:20		Oct-11-19 21:25		Oct-11-19 21:31		Oct-11-19 21:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		184	4.98	13.3	5.02	23.2	5.00	80.9	5.00	146	5.00	1850	25.2
TPH By SW8015 Mod SUB: T104704400-19-19	***Extracted:***			Oct-11-19 11:00		Oct-11-19 11:00		Oct-13-19 12:00		Oct-13-19 12:00			
	Analyzed:			Oct-11-19 20:16		Oct-11-19 20:37		Oct-14-19 03:20		Oct-14-19 03:41			
	Units/RL:			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)				<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0		
Diesel Range Organics (DRO)				<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0		
Motor Oil Range Hydrocarbons (MRO)				<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0		
Total TPH				<49.8	49.8	<50.0	50.0	<50.0	50.0	<50.0	50.0		

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 639515

Tetra Tech- Midland, Midland, TX

Project Name: Roy Batty

Project Id:
Contact: Mike Carmona
Project Location: Lea Co, NM

Date Received in Lab: Wed Oct-09-19 03:46 pm
Report Date: 14-OCT-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	639515-019		639515-020		639515-021							
	Field Id:	AH #7 (0-1')		AH #8 (0-1')		AH #8 (1-1.5')							
	Depth:	0-1 ft		0-1 ft		1-1.5 ft							
	Matrix:	SOIL		SOIL		SOIL							
	Sampled:	Oct-09-19 00:00		Oct-09-19 00:00		Oct-09-19 00:00							
BTEX by EPA 8021B SUB: T104704219-19-21	***Extracted:***	Oct-11-19 10:40		Oct-11-19 10:40									
	Analyzed:	Oct-12-19 09:37		Oct-12-19 10:01									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Benzene		<0.0400	0.0400	<0.0400	0.0400								
Toluene		<0.0400	0.0400	<0.0400	0.0400								
Ethylbenzene		<0.0400	0.0400	<0.0400	0.0400								
m,p-Xylenes		<0.0800	0.0800	<0.0800	0.0800								
o-Xylene		<0.0400	0.0400	<0.0400	0.0400								
Total Xylenes		<0.0400	0.0400	<0.0400	0.0400								
Total BTEX		<0.0400	0.0400	<0.0400	0.0400								
Inorganic Anions by EPA 300/300.1 SUB: T104704400-19-19	***Extracted:***	Oct-11-19 17:30		Oct-11-19 16:30		Oct-11-19 16:30							
	Analyzed:	Oct-11-19 21:47		Oct-11-19 20:07		Oct-11-19 20:13							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		16.1	4.96	7.78	5.03	20.8	4.96						
TPH By SW8015 Mod SUB: T104704400-19-19	***Extracted:***	Oct-13-19 12:00		Oct-13-19 12:00									
	Analyzed:	Oct-14-19 04:02		Oct-14-19 04:23									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Gasoline Range Hydrocarbons (GRO)		<50.0	50.0	<49.8	49.8								
Diesel Range Organics (DRO)		<50.0	50.0	<49.8	49.8								
Motor Oil Range Hydrocarbons (MRO)		<50.0	50.0	<49.8	49.8								
Total TPH		<50.0	50.0	<49.8	49.8								

Jessica Kramer
Project Assistant

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

Form 2 - Surrogate Recoveries

Project Name: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104204 **Sample:** 639515-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 18:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.8	99.8	93	70-135	
o-Terphenyl	50.5	49.9	101	70-135	

Lab Batch #: 3104204 **Sample:** 639515-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 19:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.7	91	70-135	
o-Terphenyl	50.2	49.9	101	70-135	

Lab Batch #: 3104204 **Sample:** 639515-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 19:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.9	92	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 3104204 **Sample:** 639515-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 19:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.7	99.7	91	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

Lab Batch #: 3104204 **Sample:** 639515-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 20:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.9	99.6	99	70-135	
o-Terphenyl	52.0	49.8	104	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: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104204 **Sample:** 639515-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 20:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.5	99.9	96	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 3104132 **Sample:** 639515-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 06:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0877	0.100	88	68-120	
a,a,a-Trifluorotoluene	3.77	4.00	94	71-121	

Lab Batch #: 3104132 **Sample:** 639515-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 06:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0832	0.100	83	68-120	
a,a,a-Trifluorotoluene	3.61	4.00	90	71-121	

Lab Batch #: 3104132 **Sample:** 639515-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 07:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0787	0.100	79	68-120	
a,a,a-Trifluorotoluene	3.54	4.00	89	71-121	

Lab Batch #: 3104132 **Sample:** 639515-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 07:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0762	0.100	76	68-120	
a,a,a-Trifluorotoluene	3.33	4.00	83	71-121	

* 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: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104132 **Sample:** 639515-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 08:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0755	0.100	76	68-120	
a,a,a-Trifluorotoluene	3.48	4.00	87	71-121	

Lab Batch #: 3104132 **Sample:** 639515-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 08:25

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0905	0.100	91	68-120	
a,a,a-Trifluorotoluene	3.78	4.00	95	71-121	

Lab Batch #: 3104132 **Sample:** 639515-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 08:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0715	0.100	72	68-120	
a,a,a-Trifluorotoluene	1.67	2.00	84	71-121	

Lab Batch #: 3104132 **Sample:** 639515-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 09:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0821	0.100	82	68-120	
a,a,a-Trifluorotoluene	1.88	2.00	94	71-121	

Lab Batch #: 3104132 **Sample:** 639515-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 09:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0886	0.100	89	68-120	
a,a,a-Trifluorotoluene	3.89	4.00	97	71-121	

* 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: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104132 **Sample:** 639515-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 10:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0754	0.100	75	68-120	
a,a,a-Trifluorotoluene	3.33	4.00	83	71-121	

Lab Batch #: 3104226 **Sample:** 639515-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/14/19 03:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.4	99.9	72	70-135	
o-Terphenyl	35.4	50.0	71	70-135	

Lab Batch #: 3104226 **Sample:** 639515-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/14/19 03:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.6	100	71	70-135	
o-Terphenyl	35.4	50.0	71	70-135	

Lab Batch #: 3104226 **Sample:** 639515-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/14/19 04:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	99.9	71	70-135	
o-Terphenyl	35.9	50.0	72	70-135	

Lab Batch #: 3104226 **Sample:** 639515-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/14/19 04:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.8	99.6	71	70-135	
o-Terphenyl	35.6	49.8	71	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: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104204 **Sample:** 7687940-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/11/19 12:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	59.0	50.0	118	70-135	

Lab Batch #: 3104132 **Sample:** 7687946-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/12/19 01:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0827	0.100	83	68-120	
a,a,a-Trifluorotoluene	1.81	2.00	91	71-121	

Lab Batch #: 3104226 **Sample:** 7688030-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/13/19 21:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.5	100	73	70-135	
o-Terphenyl	40.9	50.0	82	70-135	

Lab Batch #: 3104204 **Sample:** 7687940-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/11/19 12:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	55.9	50.0	112	70-135	

Lab Batch #: 3104132 **Sample:** 7687946-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/11/19 23:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0776	0.100	78	68-120	
a,a,a-Trifluorotoluene	1.68	2.00	84	71-121	

* 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: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104226 **Sample:** 7688030-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/13/19 22:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.8	100	81	70-135	
o-Terphenyl	39.3	50.0	79	70-135	

Lab Batch #: 3104204 **Sample:** 7687940-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/11/19 12:57

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	48.6	50.0	97	70-135	

Lab Batch #: 3104132 **Sample:** 7687946-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/12/19 00:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0793	0.100	79	68-120	
a,a,a-Trifluorotoluene	1.68	2.00	84	71-121	

Lab Batch #: 3104226 **Sample:** 7688030-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 10/13/19 22:27

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.3	100	90	70-135	
o-Terphenyl	45.5	50.0	91	70-135	

Lab Batch #: 3104204 **Sample:** 639399-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 13:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	44.2	50.0	88	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: Roy Batty

Work Orders : 639515,

Project ID:

Lab Batch #: 3104132 **Sample:** 639685-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 02:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0788	0.100	79	68-120	
a,a,a-Trifluorotoluene	1.83	2.00	92	71-121	

Lab Batch #: 3104226 **Sample:** 639592-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/13/19 23:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.9	93	70-135	
o-Terphenyl	44.1	50.0	88	70-135	

Lab Batch #: 3104204 **Sample:** 639399-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/11/19 14:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.8	121	70-135	
o-Terphenyl	51.5	49.9	103	70-135	

Lab Batch #: 3104132 **Sample:** 639685-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/12/19 02:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0950	0.100	95	68-120	
a,a,a-Trifluorotoluene	2.06	2.00	103	71-121	

Lab Batch #: 3104226 **Sample:** 639592-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 10/13/19 23:30

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.4	99.6	77	70-135	
o-Terphenyl	35.8	49.8	72	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: Roy Batty

Work Order #: 639515 **Project ID:**

Analyst: MIT **Date Prepared:** 10/11/2019 **Date Analyzed:** 10/11/2019

Lab Batch ID: 3104132 **Sample:** 7687946-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B 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
Benzene	<0.0200	2.00	1.76	88	2.00	1.74	87	1	55-120	20	
Toluene	<0.0200	2.00	1.78	89	2.00	1.71	86	4	77-120	20	
Ethylbenzene	<0.0200	2.00	1.89	95	2.00	1.83	92	3	77-120	20	
m,p-Xylenes	<0.0400	4.00	3.68	92	4.00	3.57	89	3	78-120	20	
o-Xylene	<0.0200	2.00	1.86	93	2.00	1.81	91	3	78-120	20	

Analyst: CHE **Date Prepared:** 10/11/2019 **Date Analyzed:** 10/11/2019

Lab Batch ID: 3104138 **Sample:** 7687992-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Chloride	<0.858	250	247	99	250	247	99	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

BS / BSD Recoveries

Project Name: Roy Batty

Work Order #: 639515 **Project ID:**

Analyst: CHE **Date Prepared:** 10/11/2019 **Date Analyzed:** 10/11/2019

Lab Batch ID: 3104147 **Sample:** 7687993-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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
Chloride	<5.00	250	247	99	250	246	98	0	90-110	20	

Analyst: ARM **Date Prepared:** 10/11/2019 **Date Analyzed:** 10/11/2019

Lab Batch ID: 3104204 **Sample:** 7687940-1-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)	<15.0	1000	1190	119	1000	1180	118	1	70-135	20	
Diesel Range Organics (DRO)	<50.0	1000	1150	115	1000	1200	120	4	70-135	20	

Analyst: ARM **Date Prepared:** 10/13/2019 **Date Analyzed:** 10/13/2019

Lab Batch ID: 3104226 **Sample:** 7688030-1-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)	<50.0	1000	899	90	1000	983	98	9	70-135	20	
Diesel Range Organics (DRO)	<15.0	1000	937	94	1000	889	89	5	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: Roy Batty

Work Order # : 639515 **Project ID:**

Lab Batch ID: 3104132 **QC- Sample ID:** 639685-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/12/2019 **Date Prepared:** 10/11/2019 **Analyst:** MIT

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	<0.0200	2.00	1.79	90	2.00	1.76	88	2	54-120	25	
Toluene	0.00600	2.00	1.78	89	2.00	1.79	89	1	57-120	25	
Ethylbenzene	<0.0200	2.00	1.78	89	2.00	1.91	96	7	58-131	25	
m,p-Xylenes	<0.0400	4.00	3.49	87	4.00	3.72	93	6	62-124	25	
o-Xylene	<0.0200	2.00	1.70	85	2.00	1.80	90	6	62-124	25	

Lab Batch ID: 3104138 **QC- Sample ID:** 639650-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2019 **Date Prepared:** 10/11/2019 **Analyst:** CHE

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	335	248	567	94	248	567	94	0	90-110	20	

Lab Batch ID: 3104138 **QC- Sample ID:** 639662-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2019 **Date Prepared:** 10/11/2019 **Analyst:** CHE

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	8.73	248	264	103	248	264	103	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: Roy Batty

Work Order # : 639515 **Project ID:**

Lab Batch ID: 3104147 **QC- Sample ID:** 639515-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2019 **Date Prepared:** 10/11/2019 **Analyst:** CHE

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	18.7	250	270	101	250	274	102	1	90-110	20	

Lab Batch ID: 3104147 **QC- Sample ID:** 639515-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2019 **Date Prepared:** 10/11/2019 **Analyst:** CHE

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	635	252	859	89	252	857	88	0	90-110	20	X

Lab Batch ID: 3104204 **QC- Sample ID:** 639399-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/11/2019 **Date Prepared:** 10/11/2019 **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)	<15.0	999	1190	119	998	1180	118	1	70-135	20	
Diesel Range Organics (DRO)	28.8	999	1160	113	998	1140	111	2	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: Roy Batty

Work Order # : 639515 **Project ID:**

Lab Batch ID: 3104226 **QC- Sample ID:** 639592-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 10/13/2019 **Date Prepared:** 10/13/2019 **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)	16.9	999	1010	99	996	853	84	17	70-135	20	
Diesel Range Organics (DRO)	<15.0	999	1000	100	996	878	88	13	70-135	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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.

639519

Page 1 of 3

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: Roy Batty	
Project Location: (county, state) Lea Co, NM	**Project #:** Pending
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring

Comments: Run deeper sample if GRO + DRO exceeds 1000 mg/Kg. Run deeper samples if benzene exceeds 10 mg/Kg or total BTEX exceeds 50 mg/Kg.

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #1 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #1 (1-1.5')	10/9/2019			X				X			1	N	X		X												X								
	AH #1 (2-2.5')	10/9/2019			X				X			1	N															X								
	AH #1 (3-3.5')	10/9/2019			X				X			1	N															X								
	AH #1 (3.5-4')	10/9/2019			X				X			1	N															X								
	AH #2 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #2 (1-1.5')	10/9/2019			X				X			1	N	X		X												X								
	AH #2 (2-2.5')	10/9/2019			X				X			1	N															X								
	AH #2 (3-3.5')	10/9/2019			X				X			1	N															X								
	AH #2 (4-4.5')	10/9/2019			X				X			1	N															X								

Relinquished by: Conner Moehring	Date: 10/9/19	Time: 1546	Received by:	Date: 10/9/19	Time: 15:46
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature 4.4

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

639515

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: Roy Batty	
Project Location: (county, state) Lea Co, NM	**Project #:** Pending
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring

Comments: Run deeper sample if GRO + DRO exceeds 1000 mg/Kg. Run deeper samples if benzene exceeds 10 mg/Kg or total BTEX exceeds 50 mg/Kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #2 (5-5.5')	10/9/2019			X				X			1	N															X								
	AH #2 (6-6.5')	10/9/2019			X				X			1	N															X								
	AH #2 (7-7.5')	10/9/2019			X				X			1	N															X								
	AH #3 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #4 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #5 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #6 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #6 (1-1.5')	10/9/2019			X				X			1	N															X								
	AH #7 (0-1')	10/9/2019			X				X			1	N	X		X												X								
	AH #8 (0-1')	10/9/2019			X				X			1	N	X		X												X								

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Conner Moehring	10/9/19	1546		10/9/19	19:46
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY
Sample Temperature
4.4

REMARKS:
- ☐ STANDARD
- ☒ **RUSH:** Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

639515

Page 3 of 3

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: Roy Batty	
Project Location: (county, state) Lea Co, NM	**Project #:** Pending
Invoice to: COG - Ike Taverez	
Receiving Laboratory: Xenco	**Sampler Signature:** Conner Moehring

Comments: Run deeper sample if GRO + DRO exceeds 1000 mg/Kg. Run deeper samples if benzene exceeds 10 mg/Kg or total BTEX exceeds 50 mg/Kg.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
	AH #8 (1-1.5')	10/9/2019			X				X			1	N															X								

Relinquished by: Conner Moehring Date: 10/9/19 Time: 1546
Received by: Date: 10/9/19 Time: 15:46

Relinquished by: Date: Time:
Received by: Date: Time:

Relinquished by: Date: Time:
Received by: Date: Time:

ORIGINAL COPY

LAB USE ONLY
Sample Temperature
4.4

REMARKS:
- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr (72 hr)
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

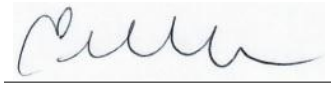
Inter-Office Shipment

IOS Number : 49791

Date/Time:	10.09.2019	Created by:	Elizabeth Mcclellan	Please send report to:	Jessica Kramer
Lab# From:	**Carlsbad**	Delivery Priority:		Address:	1089 N Canal Street
Lab# To:	**Lubbock**	Air Bill No.:		E-Mail:	jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639515-001	S	AH #1 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-002	S	AH #1 (1-1.5')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-006	S	AH #2 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-007	S	AH #2 (1-1.5')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-014	S	AH #3 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-015	S	AH #4 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-016	S	AH #5 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-017	S	AH #6 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-019	S	AH #7 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	
639515-020	S	AH #8 (0-1')	10.09.2019 00:00	SW8021B	BTEX by EPA 8021B	**10.11.2019**	10.23.2019	JKR	BR4FBZ BZ BZME EBZ	

Inter Office Shipment or Sample Comments:

Relinquished By: 

Elizabeth McClellan

Date Relinquished: 10.09.2019

Received By: _____

Date Received: _____

Cooler Temperature: _____

Inter-Office Shipment

IOS Number **49840**

Date/Time: 10/10/19 10:19
Lab# From: **Carlsbad**
Lab# To: **Lubbock**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.: FEDEX

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639515-001	S	AH #1 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-002	S	AH #1 (1-1.5')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-006	S	AH #2 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-007	S	AH #2 (1-1.5')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-014	S	AH #3 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-015	S	AH #4 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-016	S	AH #5 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-017	S	AH #6 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-019	S	AH #7 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	
639515-020	S	AH #8 (0-1')	10/09/19 00:00	SW8021B	BTEX by EPA 8021B	10/11/19	10/23/19	JKR	BR4FBZ BZ BZME EBZ X	

Inter Office Shipment or Sample Comments:

Relinquished By: Elizabeth McClellan

Date Relinquished: 10/10/2019

Received By: Ashley Derstine

Date Received: 10/11/2019 09:30

Cooler Temperature: 1.9

Inter-Office Shipment

IOS Number **49841**

Date/Time: 10/10/19 10:19
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639515-001	S	AH #1 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-001	S	AH #1 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-002	S	AH #1 (1-1.5')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-002	S	AH #1 (1-1.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-003	S	AH #1 (2-2.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-004	S	AH #1 (3-3.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-005	S	AH #1 (3.5-4')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-006	S	AH #2 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-006	S	AH #2 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-007	S	AH #2 (1-1.5')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-007	S	AH #2 (1-1.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-008	S	AH #2 (2-2.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-009	S	AH #2 (3-3.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-010	S	AH #2 (4-4.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-011	S	AH #2 (5-5.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-012	S	AH #2 (6-6.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-013	S	AH #2 (7-7.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-014	S	AH #3 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-014	S	AH #3 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-015	S	AH #4 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-015	S	AH #4 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-016	S	AH #5 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-016	S	AH #5 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-017	S	AH #6 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-017	S	AH #6 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	

Inter-Office Shipment

IOS Number **49841**

Date/Time: 10/10/19 10:19
Lab# From: **Carlsbad**
Lab# To: **Midland**

Created by: Elizabeth Mcclellan
Delivery Priority:
Air Bill No.:

Please send report to: Jessica Kramer
Address: 1089 N Canal Street
E-Mail: jessica.kramer@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
639515-018	S	AH #6 (1-1.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-019	S	AH #7 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-019	S	AH #7 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-020	S	AH #8 (0-1')	10/09/19 00:00	SW8015MOD_NM	TPH By SW8015 Mod	10/11/19	10/23/19	JKR	PHCC10C28 PHCC28C35	
639515-020	S	AH #8 (0-1')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	
639515-021	S	AH #8 (1-1.5')	10/09/19 00:00	E300	Inorganic Anions by EPA 300/300.1	10/11/19	11/06/19	JKR	CL	

Inter Office Shipment or Sample Comments:

Relinquished By: 
Elizabeth McClellan

Date Relinquished: 10/10/2019

Received By:

Date Received:

Cooler Temperature:

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Lubbock

IOS #: 49840

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

Sent By: Elizabeth McClellan **Date Sent:** 10/10/2019 10:19 AM

Received By: Ashley Derstine **Date Received:** 10/11/2019 09:30 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	1.9	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**	
#5 *Custody Seals Signed and dated for Containers/coolers	**Yes**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: _____ Date: 10/11/2019

Ashley Derstine

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Midland

IOS #: 49841

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : R8

Sent By: Elizabeth McClellan **Date Sent:** 10/10/2019 10:19 AM

Received By: **Date Received:**

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		
#2 *Shipping container in good condition?	___	
#3 *Samples received with appropriate temperature?	___	
#4 *Custody Seals intact on shipping container/ cooler?	___	
#5 *Custody Seals Signed and dated for Containers/coolers	___	
#6 *IOS present?	___	
#7 Any missing/extra samples?	___	
#8 IOS agrees with sample label(s)/matrix?	___	
#9 Sample matrix/ properties agree with IOS?	___	
#10 Samples in proper container/ bottle?	___	
#11 Samples properly preserved?	___	
#12 Sample container(s) intact?	___	
#13 Sufficient sample amount for indicated test(s)?	___	
#14 All samples received within hold time?	___	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

_____

Checklist reviewed by:

Date: _____

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 10/09/2019 03:46:00 PM

Work Order #: 639515

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)?	4.4	
#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)?	**Yes**	BTEX samples subbed to Lubbock. TPH and CL subbed to Midland.
#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: 10/09/2019

Checklist reviewed by: Jessica Kramer Date: 10/09/2019

Jessica Kramer

CARDINAL Laboratories

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

December 20, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ROY BATTY FEDERAL COM 3H

Enclosed are the results of analyses for samples received by the laboratory on 12/19/19 16:50.

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #1 (4' BEB) (H904253-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1760**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *105 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #2 (4' BEB) (H904253-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *109 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**592**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *95.2 %* *41-142*

Surrogate: 1-Chlorooctadecane *101 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: EAST 1 SIDEWALL (H904253-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *107 %* *41-142*

Surrogate: 1-Chlorooctadecane *113 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: WEST 1 SIDEWALL (H904253-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**384**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *107 %* *41-142*

Surrogate: 1-Chlorooctadecane *112 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #3 (4' BEB) (H904253-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *107 %* *41-142*

Surrogate: 1-Chlorooctadecane *113 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #4 (4' BEB) (H904253-06)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *106 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *108 %* *41-142*

Surrogate: 1-Chlorooctadecane *114 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #5 (4' BEB) (H904253-07)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**512**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *105 %* *41-142*

Surrogate: 1-Chlorooctadecane *110 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 2 SIDEWALL (H904253-08)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *105 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**288**	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *107 %* *41-142*

Surrogate: 1-Chlorooctadecane *113 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/19/2019	Sampling Date:	12/19/2019
Reported:	12/20/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Jodi Henson
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 3 SIDEWALL (H904253-09)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/20/2019	ND	2.02	101	2.00	4.82	
Toluene*	<0.050	0.050	12/20/2019	ND	2.00	100	2.00	6.43	
Ethylbenzene*	<0.050	0.050	12/20/2019	ND	2.07	104	2.00	2.60	
Total Xylenes*	<0.150	0.150	12/20/2019	ND	6.12	102	6.00	2.52	
Total BTEX	<0.300	0.300	12/20/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	12/20/2019	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/20/2019	ND	215	108	200	1.64	
DRO >C10-C28*	<10.0	10.0	12/20/2019	ND	216	108	200	0.0223	
EXT DRO >C28-C36	<10.0	10.0	12/20/2019	ND					

Surrogate: 1-Chlorooctane *108 %* *41-142*

Surrogate: 1-Chlorooctadecane *114 %* *37.6-147*

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Page 1 of

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland, Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	Site Manager: Mike Carmona
Project Name: Roy Batty Federal Com 3H (8.29.19)	
Project Location: (county, state) Lea Co, NM	Project #: 212C-MD-01962
Invoice to: COG - Ike Tavrez	
Receiving Laboratory: Cardinal	Sampler Signature: Conner Moehring / Justin Flores
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2019)	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
H904253																														
1	Bottom Hole #1 (4' BEB)	12-19-19			X			X		1	N	X		X												X				
2	Bottom Hole #2 (4' BEB)				X			X		1	N	X		X												X				
3	East 1 side Wall				X			X		1	N	X		X												X				
4	West 1 side Wall				X			X		1	N	X		X												X				
5	Bottom Hole #3 (4' BEB)																													
6	Bottom Hole #4 (4' BEB)																													
7	Bottom Hole #5 (4' BEB)																													
8	South 2 sidewall																													
9	North 3 sidewall																													

	Date:	Time:		Date:	Time:
Relinquished by: Justin Flores	12-19-19	16:50	Received by: Jodi Henson	12/19/19	16:50
Relinquished by:			Received by:		
Relinquished by:			Received by:		

LAB USE ONLY

Sample Temperature
4.7°C
5.1°C
#97

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day (24 hr) 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

CARDINAL Laboratories

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

December 23, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ROY BATTY FEDERAL COM 3H

Enclosed are the results of analyses for samples received by the laboratory on 12/20/19 15:20.

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #6 (4' BEB) (H904264-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *113 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1120**	16.0	12/23/2019	ND	400	100	400	3.92	QM-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	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *115 %* *41-142*

Surrogate: 1-Chlorooctadecane *124 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #7 (4' BEB) (H904264-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**240**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *109 %* *41-142*

Surrogate: 1-Chlorooctadecane *116 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #8 (4' BEB) (H904264-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**6000**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *120 %* *41-142*

Surrogate: 1-Chlorooctadecane *128 %* *37.6-147*

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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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #9 (4' BEB) (H904264-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *111 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5680**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *119 %* *41-142*

Surrogate: 1-Chlorooctadecane *130 %* *37.6-147*

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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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 1 SIDEWALL (H904264-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *110 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *120 %* *41-142*

Surrogate: 1-Chlorooctadecane *128 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 4 SIDEWALL (H904264-06)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *118 %* *41-142*

Surrogate: 1-Chlorooctadecane *127 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: WEST 2 SIDEWALL (H904264-07)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *107 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *118 %* *41-142*

Surrogate: 1-Chlorooctadecane *125 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	12/20/2019	Sampling Date:	12/20/2019
Reported:	12/23/2019	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: EAST 2 SIDEWALL (H904264-08)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.02	
Toluene*	<0.050	0.050	12/21/2019	ND	1.92	96.0	2.00	9.46	
Ethylbenzene*	<0.050	0.050	12/21/2019	ND	1.91	95.6	2.00	9.93	
Total Xylenes*	<0.150	0.150	12/21/2019	ND	5.67	94.5	6.00	9.73	
Total BTEX	<0.300	0.300	12/21/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *108 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	12/23/2019	ND	400	100	400	3.92	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	12/21/2019	ND	225	112	200	1.87	
DRO >C10-C28*	<10.0	10.0	12/21/2019	ND	219	109	200	1.16	
EXT DRO >C28-C36	<10.0	10.0	12/21/2019	ND					

Surrogate: 1-Chlorooctane *96.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *102 %* *37.6-147*

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

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

Page 1 of 1

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	Site Manager: Mike Carmona
Project Name: Roy Batty Federal Com 3H (8.29.19)	
Project Location: (county, state) Lea Co, NM	Project #: 212C-MD-01962
Invoice to: COG - Ike Tavrez	
Receiving Laboratory: Cardinal	Sampler Signature: Conner Moehring / Justin Flores
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
H904264																																			
1	Bottom Hole #6 (4' BEB)	12/20/19			X				X			1	N	X		X												X							
2	Bottom Hole #7 (4' BEB)																																		
3	Bottom Hole #8 (4' BEB)																																		
4	Bottom Hole #9 (4' BEB)																																		
5	South 1 Sidewall																																		
6	NORTH 4 Sidewall																																		
7	WEST 2 Sidewall																																		
8	EAST 2 Sidewall																																		

Relinquished by: Conner Moehring	Date: 12/20/19	Time:	Received by: Samara Oldaker
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 12-20-19 Time: 15:20

LAB USE ONLY

Sample Temperature 4.2c #97 Corrected 4.6c

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day 24 hr 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

CARDINAL Laboratories

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

January 03, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ROY BATTY FEDERAL COM 3H

Enclosed are the results of analyses for samples received by the laboratory on 01/02/20 16:35.

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 3 SIDEWALL (H000010-01)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *117 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	01/03/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *102 %* *41-142*

Surrogate: 1-Chlorooctadecane *114 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 4 SIDEWALL (H000010-02)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	01/03/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *105 %* *41-142*

Surrogate: 1-Chlorooctadecane *118 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #10 (4' -4.5' BEB) (H000010-03)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *115 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *104 %* *41-142*

Surrogate: 1-Chlorooctadecane *119 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 5 SIDEWALL (H000010-04)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *118 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *108 %* *41-142*

Surrogate: 1-Chlorooctadecane *121 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 6 SIDEWALL (H000010-05)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *118 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**272**	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *112 %* *41-142*

Surrogate: 1-Chlorooctadecane *125 %* *37.6-147*

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Analytical Results For:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 5 SIDEWALL (H000010-06)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**32.0**	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *104 %* *41-142*

Surrogate: 1-Chlorooctadecane *119 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 6 SIDEWALL (H000010-07)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *118 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**16.0**	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *104 %* *41-142*

Surrogate: 1-Chlorooctadecane *117 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: EAST 3 SIDEWALL (H000010-08)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *119 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *105 %* *41-142*

Surrogate: 1-Chlorooctadecane *120 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/02/2020	Sampling Date:	01/02/2020
Reported:	01/03/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: WEST 3 SIDEWALL (H000010-09)

BTEX 8021B mg/kg Analyzed By: ms

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/03/2020	ND	1.94	97.0	2.00	2.82	
Toluene*	<0.050	0.050	01/03/2020	ND	1.98	99.0	2.00	1.69	
Ethylbenzene*	<0.050	0.050	01/03/2020	ND	2.00	100	2.00	2.09	
Total Xylenes*	<0.150	0.150	01/03/2020	ND	5.99	99.8	6.00	1.65	
Total BTEX	<0.300	0.300	01/03/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *116 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**48.0**	16.0	01/03/2020	ND	432	108	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/03/2020	ND	216	108	200	0.935	
DRO >C10-C28*	<10.0	10.0	01/03/2020	ND	232	116	200	0.240	
EXT DRO >C28-C36	<10.0	10.0	01/03/2020	ND					

Surrogate: 1-Chlorooctane *77.1 %* *41-142*

Surrogate: 1-Chlorooctadecane *79.6 %* *37.6-147*

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

Page 1 of 1

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	**Site Manager:** Mike Carmona
Project Name: Roy Batty Federal Com 3H (8.29.19)	
Project Location: (county, state) Lea Co, NM	**Project #:** 212C-MD-01962
Invoice to: COG - Ike Tavrez	
Receiving Laboratory: Cardinal	**Sampler Signature:** Conner Moehring / Justin Flores
Comments:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance	Hold
H000010		YEAR: 2019																											
1	South 3 Sidewall	1/2/20			X			X		1	N	X		X												X			
2	South 4 Sidewall																												
3	Bottom Hole #10 (4-4.5' BEB)																												
4	NORTH 5 Sidewall																												
5	NORTH 6 Sidewall																												
6	South 5 Sidewall																												
7	South 6 Sidewall																												
8	East 3 Sidewall																												
9	West 4 Sidewall TD: 1-2-20																												

Relinquished by: Tom Mally	Date: 1/2/20	Time: 1635	Received by: Tamara Oldaker 1-2-20 1635
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature
#113
0.7°C
TO

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day (24 hr) 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

CARDINAL Laboratories

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

January 06, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ROY BATTY FEDERAL COM 3H

Enclosed are the results of analyses for samples received by the laboratory on 01/03/20 14:45.

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/03/2020	Sampling Date:	01/03/2020
Reported:	01/06/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #11 (6" BEB) (H000020-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/04/2020	ND	1.82	90.8	2.00	6.28	
Toluene*	<0.050	0.050	01/04/2020	ND	1.84	91.8	2.00	5.76	
Ethylbenzene*	<0.050	0.050	01/04/2020	ND	1.90	95.0	2.00	5.84	
Total Xylenes*	<0.150	0.150	01/04/2020	ND	5.55	92.4	6.00	5.92	
Total BTEX	<0.300	0.300	01/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.2 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	01/06/2020	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/04/2020	ND	201	101	200	3.64	
DRO >C10-C28*	<10.0	10.0	01/04/2020	ND	207	104	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	01/04/2020	ND					

Surrogate: 1-Chlorooctane *85.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.4 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/03/2020	Sampling Date:	01/03/2020
Reported:	01/06/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 7 SIDEWALL (H000020-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/04/2020	ND	1.82	90.8	2.00	6.28	
Toluene*	<0.050	0.050	01/04/2020	ND	1.84	91.8	2.00	5.76	
Ethylbenzene*	<0.050	0.050	01/04/2020	ND	1.90	95.0	2.00	5.84	
Total Xylenes*	<0.150	0.150	01/04/2020	ND	5.55	92.4	6.00	5.92	
Total BTEX	<0.300	0.300	01/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**192**	16.0	01/06/2020	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/04/2020	ND	201	101	200	3.64	
DRO >C10-C28*	<10.0	10.0	01/04/2020	ND	207	104	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	01/04/2020	ND					

Surrogate: 1-Chlorooctane *86.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.2 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/03/2020	Sampling Date:	01/03/2020
Reported:	01/06/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: SOUTH 7 SIDEWALL (H000020-03)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/04/2020	ND	1.82	90.8	2.00	6.28	
Toluene*	<0.050	0.050	01/04/2020	ND	1.84	91.8	2.00	5.76	
Ethylbenzene*	<0.050	0.050	01/04/2020	ND	1.90	95.0	2.00	5.84	
Total Xylenes*	<0.150	0.150	01/04/2020	ND	5.55	92.4	6.00	5.92	
Total BTEX	<0.300	0.300	01/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *97.6 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**176**	16.0	01/06/2020	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/04/2020	ND	201	101	200	3.64	
DRO >C10-C28*	<10.0	10.0	01/04/2020	ND	207	104	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	01/04/2020	ND					

Surrogate: 1-Chlorooctane *84.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *89.3 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/03/2020	Sampling Date:	01/03/2020
Reported:	01/06/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: WEST 4 SIDEWALL (H000020-04)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/04/2020	ND	1.82	90.8	2.00	6.28	
Toluene*	<0.050	0.050	01/04/2020	ND	1.84	91.8	2.00	5.76	
Ethylbenzene*	<0.050	0.050	01/04/2020	ND	1.90	95.0	2.00	5.84	
Total Xylenes*	<0.150	0.150	01/04/2020	ND	5.55	92.4	6.00	5.92	
Total BTEX	<0.300	0.300	01/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**112**	16.0	01/06/2020	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/04/2020	ND	201	101	200	3.64	
DRO >C10-C28*	<10.0	10.0	01/04/2020	ND	207	104	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	01/04/2020	ND					

Surrogate: 1-Chlorooctane *90.8 %* *41-142*

Surrogate: 1-Chlorooctadecane *94.2 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/03/2020	Sampling Date:	01/03/2020
Reported:	01/06/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: EAST 4 SIDEWALL (H000020-05)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/04/2020	ND	1.82	90.8	2.00	6.28	
Toluene*	<0.050	0.050	01/04/2020	ND	1.84	91.8	2.00	5.76	
Ethylbenzene*	<0.050	0.050	01/04/2020	ND	1.90	95.0	2.00	5.84	
Total Xylenes*	<0.150	0.150	01/04/2020	ND	5.55	92.4	6.00	5.92	
Total BTEX	<0.300	0.300	01/04/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**144**	16.0	01/06/2020	ND	416	104	400	3.77	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/04/2020	ND	201	101	200	3.64	
DRO >C10-C28*	<10.0	10.0	01/04/2020	ND	207	104	200	1.08	
EXT DRO >C28-C36	<10.0	10.0	01/04/2020	ND					

Surrogate: 1-Chlorooctane *86.7 %* *41-142*

Surrogate: 1-Chlorooctadecane *88.8 %* *37.6-147*

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

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

Page 1 of 1

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: Concho	Site Manager: Mike Carmona
Project Name: Roy Batty Federal Com 3H (8.29.19)	
Project Location: (county, state) Lea Co, NM	Project #: 212C-MD-01962
Invoice to: COG - Ike Tavrez	
Receiving Laboratory: Cardinal	Sampler Signature: Conner Moehring / Justin Flores
Comments:	

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	MATRIX	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None		# CONTAINERS	FILTERED (Y/N)	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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
H000020																																				
1	Bottom Hole # 11 (6" BEB)	1/3/20			X				X			1	N	X		X												X								
2	NORTH 7 SIDEWALL	1/3/20			X				X			1	N	X		X												X								
3	SOUTH 7 SIDEWALL	1/3/20			X				X			1	N	X		X												X								
4	WEST 4 SIDEWALL	1/3/20			X				X			1	N	X		X												X								
5	EAST 4 SIDEWALL	1/3/20			X				X			1	N	X		X												X								

Relinquished by: Conner Moehring	Date: 1/3/20	Time:	Received by: Samara Platt
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 1-3-20 Time: 1445

LAB USE ONLY

Sample Temperature #113 0.5°C

REMARKS:

- ☐ STANDARD
- ☒ RUSH: Same Day (24 hr) 48 hr 72 hr
- ☐ Rush Charges Authorized
- ☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

CARDINAL Laboratories

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

January 08, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ROY BATTY FEDERAL COM 3H

Enclosed are the results of analyses for samples received by the laboratory on 01/06/20 16:40.

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/06/2020	Sampling Date:	01/03/2020
Reported:	01/08/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 1 SIDEWALL (H000035-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/08/2020	ND	1.93	96.7	2.00	10.9	
Toluene*	<0.050	0.050	01/08/2020	ND	1.96	98.0	2.00	11.0	
Ethylbenzene*	<0.050	0.050	01/08/2020	ND	2.02	101	2.00	11.0	
Total Xylenes*	<0.150	0.150	01/08/2020	ND	5.91	98.5	6.00	11.2	
Total BTEX	<0.300	0.300	01/08/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *98.5 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1640**	16.0	01/08/2020	ND	432	108	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/08/2020	ND	191	95.4	200	6.89	
DRO >C10-C28*	<10.0	10.0	01/08/2020	ND	220	110	200	2.66	
EXT DRO >C28-C36	<10.0	10.0	01/08/2020	ND					

Surrogate: 1-Chlorooctane *74.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *76.8 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/06/2020	Sampling Date:	01/03/2020
Reported:	01/08/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: NORTH 2 SIDEWALL (H000035-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/08/2020	ND	1.93	96.7	2.00	10.9	
Toluene*	<0.050	0.050	01/08/2020	ND	1.96	98.0	2.00	11.0	
Ethylbenzene*	<0.050	0.050	01/08/2020	ND	2.02	101	2.00	11.0	
Total Xylenes*	<0.150	0.150	01/08/2020	ND	5.91	98.5	6.00	11.2	
Total BTEX	<0.300	0.300	01/08/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.1 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3640**	16.0	01/08/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/08/2020	ND	191	95.4	200	6.89	
DRO >C10-C28*	<10.0	10.0	01/08/2020	ND	220	110	200	2.66	
EXT DRO >C28-C36	<10.0	10.0	01/08/2020	ND					

Surrogate: 1-Chlorooctane *71.5 %* *41-142*

Surrogate: 1-Chlorooctadecane *73.1 %* *37.6-147*

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

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name:	Tetra Tech
Project Manager:	MIKE CARMONA
Address:	901 W. WALL ST.
City:	MIDLAND
State:	TX
Zip:	79701
Phone #:	
Fax #:	
Project #:	212C-MD-01962
Project Owner:	
Project Name:	ROY BATTY FED COM 3H (8.29.19)
Project Location:	LEA CO, NM
Sampler Name:	CONNER MOEHRING

BILL TO

P.O. #:	
Company:	COG
Attn:	IKE TAVAREZ
Address:	
City:	
State:	Zip:
Phone #:	
Fax #:	

ANALYSIS REQUEST

FOR LAB USE ONLY Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	PRESERV.: ACID/BASE:	ICE / COOL	OTHER :	SAMPLING: DATE	TIME	Chloride	BTEX	TPH
H000035																	
1	NORTH 1 SIDEWALL	C	-			X					X		1/3/20		X	X	X
2	NORTH 2 SIDEWALL	C	1			X					X		1/3/20		X	X	X

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 consequental 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: 1/6/20	Received By:	
	Time: 1640		
Relinquished By:	Date:	Received By:	
	Time:		

Verbal Result: ☐ Yes ☐ No Add'l Phone #:

All Results are emailed. Please provide Email address:

REMARKS: email result MIKE CARMONA ONLY

Delivered By: (Circle One)	Observed Temp. °C 4.8	Sample Condition Cool: ☑ Yes ☐ No	Intact: ☑ Yes ☐ No	CHECKED BY: (Initials) TCO
Sampler - UPS - Bus - Other:	Corrected Temp. °C			

Turnaround Time: Standard ☐ Rush ☑ 2 Day

Thermometer ID #97
Correction Factor +0.4 °C

Bacteria (only) Sample Condition
Cool: ☐ Yes ☐ No Intact: ☐ Yes ☐ No
Observed Temp. °C
Corrected Temp. °C

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

FORM-006 R 3.0

CARDINAL Laboratories

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

January 16, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: ROY BATTY FEDERAL COM 3H

Enclosed are the results of analyses for samples received by the laboratory on 01/15/20 16:10.

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/15/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #12 (4-4.5' BEB) (H000144-01)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/16/2020	ND	1.72	86.0	2.00	16.1	
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4	
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8	
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9	
Total BTEX	<0.300	0.300	01/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.9 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**64.0**	16.0	01/16/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/16/2020	ND	219	110	200	18.0	
DRO >C10-C28*	<10.0	10.0	01/16/2020	ND	239	119	200	8.99	
EXT DRO >C28-C36	<10.0	10.0	01/16/2020	ND					

Surrogate: 1-Chlorooctane *103 %* *41-142*

Surrogate: 1-Chlorooctadecane *114 %* *37.6-147*

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:

TETRA TECH
MIKE CARMONA
901 WEST WALL STREET , STE 100
MIDLAND TX, 79701
Fax To: (432) 682-3946

Received:	01/15/2020	Sampling Date:	01/13/2020
Reported:	01/16/2020	Sampling Type:	Soil
Project Name:	ROY BATTY FEDERAL COM 3H	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01962 (8.29.19)	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

Sample ID: BOTTOMHOLE #13 (4-4.5' BEB) (H000144-02)

BTEX 8021B mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	01/16/2020	ND	1.72	86.0	2.00	16.1	
Toluene*	<0.050	0.050	01/16/2020	ND	1.75	87.7	2.00	15.4	
Ethylbenzene*	<0.050	0.050	01/16/2020	ND	1.77	88.3	2.00	16.8	
Total Xylenes*	<0.150	0.150	01/16/2020	ND	5.15	85.9	6.00	16.9	
Total BTEX	<0.300	0.300	01/16/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID *99.8 %* *73.3-129*

Chloride, SM4500Cl-B mg/kg Analyzed By: AC

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**752**	16.0	01/16/2020	ND	416	104	400	0.00	

TPH 8015M mg/kg Analyzed By: MS

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	01/16/2020	ND	219	110	200	18.0	
DRO >C10-C28*	<10.0	10.0	01/16/2020	ND	239	119	200	8.99	
EXT DRO >C28-C36	<10.0	10.0	01/16/2020	ND					

Surrogate: 1-Chlorooctane *104 %* *41-142*

Surrogate: 1-Chlorooctadecane *115 %* *37.6-147*

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

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

901W Wall Street, Ste 100
Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: [redacted] CONCHO

Site Manager: Mike Carmona

Project Name: [redacted] ROY BATTY FED COM 3H (8.29.19)

Project Location: (county, state) [redacted], TX LEA CO, NM

Project #: 212C-MD-[redacted] 01962

Invoice to: [redacted] COG - IKE TAVAREZ

Receiving Laboratory: [redacted] CARDINAL

Sampler Signature: Conner Moehring

Comments: * Results to MIKE only *

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)
H000144 1	Bottom Hole # 12 (4-4.5' BEB)	1/13/20			X				X			1	N
2	Bottom Hole # 13 (4-4.5' BEB)	1/13/20			X				X			1	N

ANALYSIS REQUEST (Circle or Specify Method No.)

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	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
X		X												X							
X		X												X							

Relinquished by: Conner Moehring Date: 1/15/2020 Time: 17

Received by: Tamara Latta 1-15-20 16:10 Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature #113 4.0°C

REMARKS:

- [ ] STANDARD
- [X] RUSH: Same Day (24 hr) 48 hr 72 hr
- [ ] Rush Charges Authorized
- [ ] Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

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