SITE INFORMATION

Report Type: Work Plan 2RP-5238

General Site Information:						
Site:	**JR's Horz Federal #2**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit D**	**Sec. 10**	**T 26S**	**R 29E**		
County:	**Eddy County**					
GPS:	**32.0641**			**-103.9789**		
Surface Owner:	**Federal**					
Directions:	From the intersection of HWY 285 and Longhorn Rd Head east on Longhorn Rd and go 3.95 miles and turn left Northeast and go 1.20 miles and arrive on Location					

Release Data:	
Date Released:	2/04/2019
Type Release:	Produced Water
Source of Contamination:	Flowline
Fluid Released:	37 bbl water
Fluids Recovered:	20 bbls water

Official Communication:			
Name:	Ike Tavarez		Mike Carmona
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) 687-8121
Fax:	(432) 684-7137		
Email:	itavarez@concho.com		Mike.carmona@tetratech.com

Site Characterization	
Depth to Groundwater:	*78' bgs*
Karst	*Medium*

Recommended Remedial Action Levels (RRALs)			
Benzene	***Total BTEX***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*100 mg/kg*	*600*

TETRA TECH

April 3, 2020

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

Re: Work Plan for the COG Operating, LLC, JR's Horz Federal #002, Unit D, Section 10, Township 26 South, Range 29 East, Eddy County, New Mexico (2RP 5238).

Mr Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess a release that occurred at the JR's Horz Federal #002, Unit D, Section 04, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.0641°, -103.9789°. The site location is shown on Figures 1 and 2.

BACKGROUND INFORMATION

According to the State of New Mexico C-141 Initial Report, the release was discovered on February 04, 2019, and released approximately 37 barrels of produced water due to a pinhole leak on the flowline. A total of 20 barrels of produced water was recovered. The release occurred in the pasture and migrated into the wash/draw. The release in the pasture impacted an area measuring approximately 182' x 362'. The wash/draw area impacted areas measuring 470' x 60', 80' x 12', and 75 x 10'. The C-141 form is included in Appendix A.

SITE CHARACTERIZATION

A Site characterization was performed for the site, and no lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. However, the site is in a medium karst potential area and migrated into a draw. Also, a watercourse is located within 300' of the site, according to the USGS topographic map.

The nearest water well is listed on USGS database, approximately 1.60 miles southeast of the site, and has a reported depth to groundwater of 120'.However, there is a well in the New Mexico State Engineer's (NMOSE) database, approximately 2.05 miles west of the site, and has a reported depth to groundwater of 78' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is approximately 125' below surface. The site characterization data is shown in Appendix B.

Tetra Tech
901 West Wall St, Suite 100, Midland, TX 79701
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

TETRA TECH

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 on the site characterization, the proposed RRAL for TPH is 100 mg/kg (GRO + DRO + MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 600 mg/kg.

SOIL ASSESSMENT AND ANALYTICAL RESULTS

On May 2 through May 15, 2019, and June 16, 2019, Tetra Tech personnel were onsite to evaluate and sample the release area. To summarize the assessment activities, the areas of concern were divided into two (2) areas, which include the pasture area and the wash area. Samples collected selected were Selected soil samples were collected and submitted to the laboratory for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1 and Table 2. The sample locations are shown on Figures 3 and Figure 3A.

Pasture Area

In the pasture area, a total of seven (7) hand auger holes (AH-1 through AH-7) were installed to total depths ranging from surface to 4.5’ below surface. Referring to Table 1, none of the samples analyzed showed benzene, TPH, or total BTEX concentrations above the laboratory reporting limits,

The area of AH-4 showed no chloride impact, with a concentration of 341 mg/kg. The area of AH-5 showed a chloride concentration of 3,820 mg/kg at surface to 1.0’, then decreased with depth. The remaining auger holes (AH-1, AH-2, AH-3, AH-6, and AH-7) showed chloride concentrations of 919 mg/kg, 931 mg/kg, 1,470 mg/kg, 1,540 mg/kg, and 3,960 mg/kg respectively. Deeper samples were not collected due to the dense formation, and backhoe trenches were installed to defined extents.

Trenches and Borehole Installation

Prior to trenching, the Kinder Morgan and Energy Transfer Pipelines lines were hydro-vacced to clear area and safety concerns. During the scheduling, there were issues with Kinder Morgan and Energy Transfer to have a company representative onsite during the assessment activities and caused delays to the sampling activities. As shown on Figure 3, the impacted area in the pasture are congested with underground pipelines operated by Kinder Morgan and Energy Transfer.

TETRA TECH

On August 20, 2019, Tetra Tech personnel were onsite to evaluate and trench the areas of auger holes AH-1, AH-2, AH-3, AH-5, and AH-6 and define the spill extent vertically. Referring to Table 1, the areas of Trench-1, 3, 5, and 6 were all vertically define and showed concentrations ranging from 272 mg/kg to 5,920 mg/kg. The area of Trench-2 showed elevated chloride concentrations of 9,00 mg/kg at surface and 4,120 mg/kg at 12' below surface. Deeper samples were not collected due to the dense formation.

On October 17, 2019, one (1) borehole was installed in the area of AH-2 to define the extent vertically. Referring to Table 1, the chloride concentrions decreased with depth, showing a concentration of 35 mg/kg at 14'-15' below surface.

Wash/Draw Area

Prior to evaluating the wash area, COG had removed some impacted soil from the area to a depth of 3.0' below surface. The impacted soil was accessible with a backhoe to remove majority of the impact from the area. Tetra Tech installed a total of nine (9) hand auger holes (AH-1 through AH-9) in the draw area to total depths ranging from surface to 4.0' below excavation bottom and collected a total of sixteen (16) sidewall samples.

Referring to Table 2, none of the samples analyzed showed benzene, TPH, or total BTEX concentrations above the laboratory reporting limits.

The area of AH-1 through AH-4 showed elevated chloride concentrations ranging from 1,250 mg/kg to 12,100 mg/kg deeper samples were not collected due to the dense formation. The remaining auger holes (AH-5 through AH-9) showed chloride concentrations below the RRALs, with concentrations ranging from 8.09 mg/kg to 504 mg/kg. The sidewall samples of (SSW-1, WSW-1, ESW-1, and WSW-2) showed high chloride concentrations ranging from 964 mg/kg to 1,780 mg/kg. The sidewall samples of (ESW-2, NSW-1, ESW-3, WSW-3, NSW-2,SSW-2,ESW-4,WSW-4, SSW-3 ESW-5, WSW-5, and NSW-3) all showed chloride concentrations below the RRALs.

On June 16, 2019, after a heavy rainfall event, Tetra Tech returned to site re-evaluate the areas that exceeded the threshold of 600 mg/kg. Referring to table 2, the areas of AH-1 through AH-4 were re-sampled and showed chloride concentrations ranging from 72.6 mg/kg to 11,300 mg/kg. The sidewall samples of (SSW-1, WSW-1, ESW-1, and WSW-2) also showed concentrations ranging from 230mg/kg to 4,210 mg/kg. Due to the limited access in the area, COG was not able to remediate the spill horizontally any further.

<u>Sloping of Wash/Draw Area</u>

After the BLM reviewed the data and inspected the site, the BLM (James Amos) requested no additional excavation from the wash area, which may cause more damage to the surrounding areas and alter the course of the wash area. In addition, the BLM requested the area be sloped and to add erosional controls. On December 16, 2019, Tetra Tech personnel returned to the area to slope and install erosion controls every 50.0'. The area was sloped in the natural course of the draw and would help direct the flow of the water for any future rain events. The ersosion control placement is shown on Figures 3B.

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PROPOSED WORK PLAN

Based on the laboratory results and the chloride concentrations detected, COG proposes to excavate the areas as shown on Figure 4 and highlighted (green) on Table 1. Due to the proximity of the Kinder Morgan and Energy Transfer Pipelines, a company representative is required to be onsite during any activities at the site. The assessment or remediation activities will depend on the pipeline representative schedule, and they may also limit the excavation around their pipelines due to safety concerns.

- The area of AH-1 will be excavated to 3.0' below surface and backfilled with clean material to grade.
- The areas of AH-2, AH-3 and AH-6, will be excavated to a depth of 4.0' below surface and capped with a 20 mil liner and backfilled with clean material to grade.
- The area of AH-5 will be excavated to 1.0' below surface and backfilled with clean material to grade.
- The area of AH-7 will be re-evaluated to confirm and define extents. Based on the results, the area will be excavated to the appropriate depth. If deeper impact is encountered, the area will be excavated to a depth of 4.0' and capped with a 20 mil liner and backfilled with clean material to grade.

Safety Concerns

The proposed excavation depths may not be reached due to wall cave-ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safety concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

Liner Variance

Per rule 19.15.29.14, COG requests a variance to install a 20-mil liner at 4.0' below surface in to prevent vertical migration of the deeper chloride concentrations detected. Prior to the liner installation, composite sidewall samples will be collected every 200 square feet and analyzed for chlorides by EPA method 300.0, to be representative of the release area, for documentation purposes.

Once the excavation is complete, the areas will be backfilled with clean material to surface grade and the remediation to be implemented 90 days after the work plan is approved.

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Conclusion

Once the remediation activities have been completed, a final report will be submitted. 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

Mike Carmona
Geologist

Figures

SITE LOCATION

N
W E
S

0 10,416.5 20,833

Approximate Scale in Feet

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

STATE LOCATOR MAP

OVERVIEW MAP
JRS HORZ FEDERAL #2
Property Located at coordinates 32.0641°,-103.9789°
EDDY COUNTY, NEW MEXICO

CONCHO

Project #:
212C-MD-01739
Date:11-05-2019

FIGURE
1

Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01739 JRS HORZ FEDERAL #2\MXD\212C-MD-01739 JRS HORZ FEDERAL #2 FIG 1.mxd

SITE LOCATION

N
W E
S

Approximate Scale in Feet

0 1,000 2,000

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

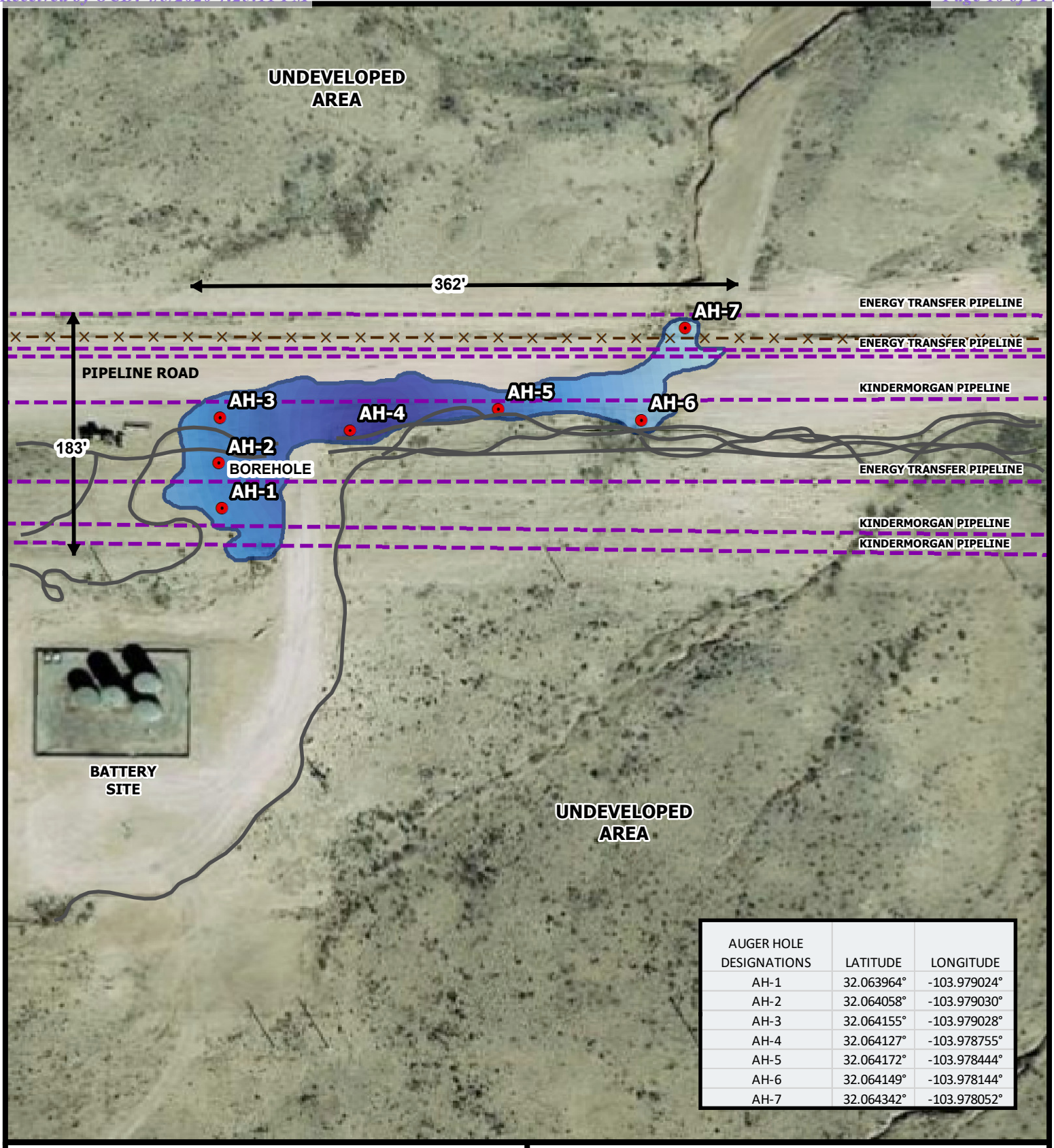
TOPOGRAPHIC MAP
JRS HORZ FEDERAL #2
Property Located at coordinates 32.0641°,-103.9789°
EDDY COUNTY, NEW MEXICO

CONCHO

Project #:
212C-MD-01739
Date:11-05-2019

FIGURE
2

Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01739 JRS HORZ FEDERAL #2\MXD\212C-MD-01739 JRS HORZ FEDERAL #2 FIG. 2.mxd



AUGER HOLE DESIGNATIONS	LATITUDE	LONGITUDE
AH-1	32.063964°	-103.979024°
AH-2	32.064058°	-103.979030°
AH-3	32.064155°	-103.979028°
AH-4	32.064127°	-103.978755°
AH-5	32.064172°	-103.978444°
AH-6	32.064149°	-103.978144°
AH-7	32.064342°	-103.978052°

AUGERHOLE SAMPLE LOCATIONS
EXPOSED PIPELINE
UNDERGROUND/BURIED PIPELINE
FENCELINE
AFFECTED SPILL AREA

N
W E
S

0 50 100
Approximate Scale in Feet

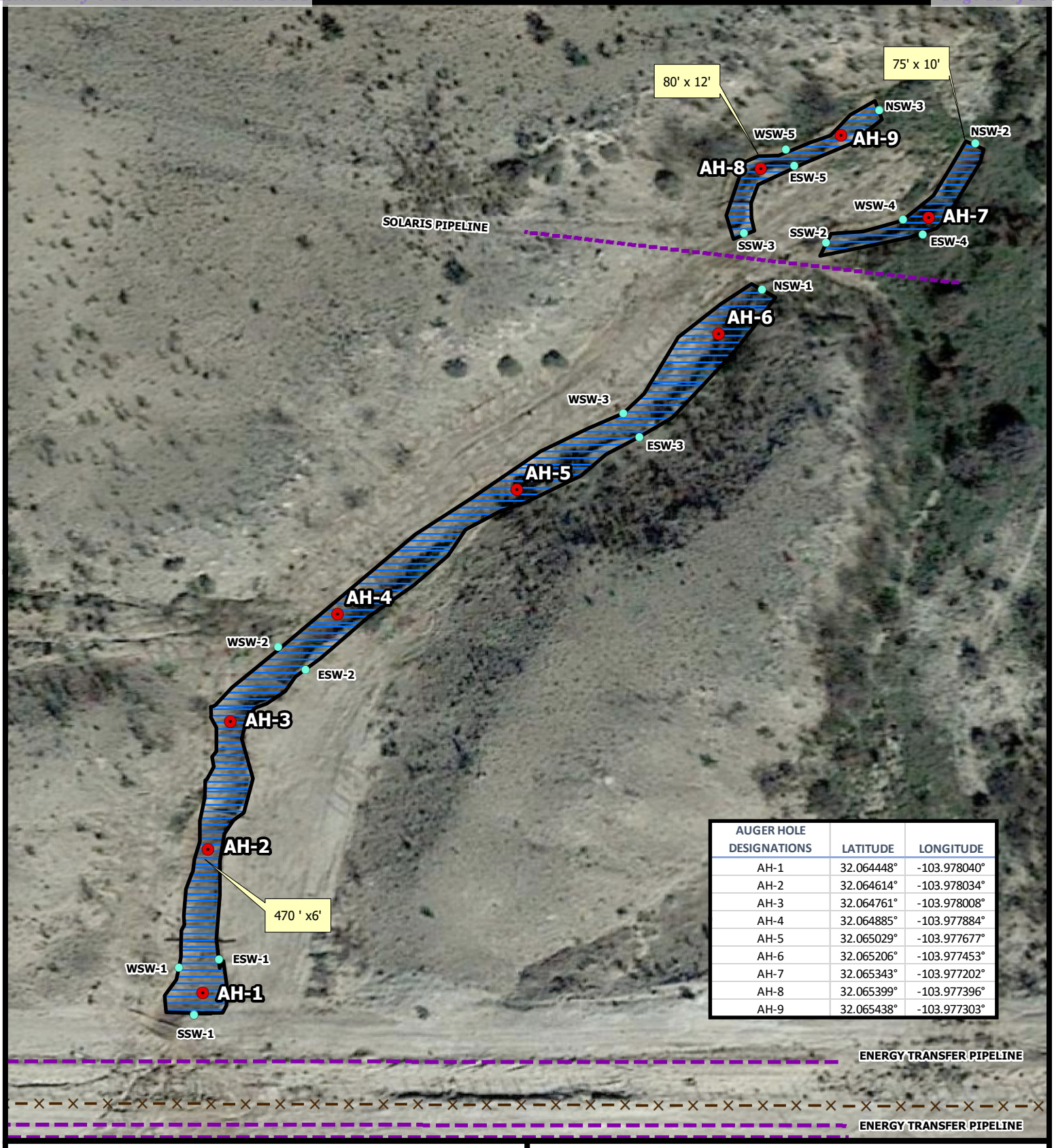
SPILL ASSESSMENT MAP
JRS HORZ FEDERAL #2
Property Located at coordinates 32.0641°,-103.9789°
EDDY COUNTY, NEW MEXICO

CONCHO

Project #: 212C-MD-01739
Date:11-05-2019

FIGURE 3

Date: 4/3/2020 Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01739 JRS HORZ FEDERAL #2\MXD\212C-MD-01739 JRS HORZ FEDERAL #2 FIG. 3. mxd



AUGER HOLE DESIGNATIONS	LATITUDE	LONGITUDE
AH-1	32.064448°	-103.978040°
AH-2	32.064614°	-103.978034°
AH-3	32.064761°	-103.978008°
AH-4	32.064885°	-103.977884°
AH-5	32.065029°	-103.977677°
AH-6	32.065206°	-103.977453°
AH-7	32.065343°	-103.977202°
AH-8	32.065399°	-103.977396°
AH-9	32.065438°	-103.977303°

AUGERHOLE SAMPLE LOCATIONS
SIDEWALL SAMPLE LOCATIONS
UNDERGROUND/BURIED PIPELINE
FENCELINE
2.0' EXCAVATED DEPTH

N
W E
S

0 27.5 55
Approximate Scale in Feet

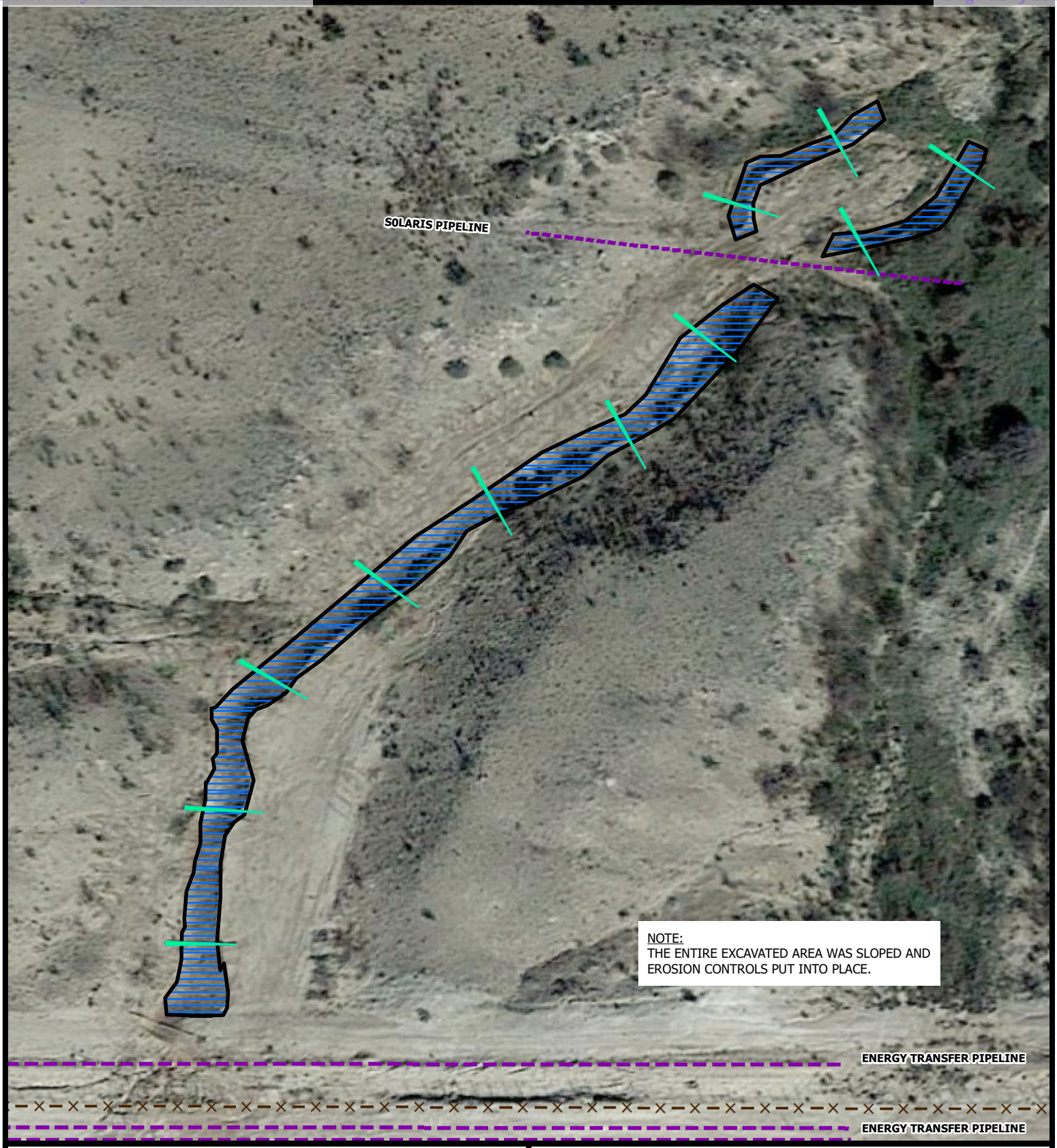
EXCAVATED PASTURE MAP
JR'S HORZ. FEDERAL #2
PROPERTY LOCATED AT COORDINATES 32.0641°,-103.9789°
EDDY COUNTY, NEW MEXICO

CONCHO

Project #:
212C-MD-01739
Date:11-05-2019

FIGURE 3A

Date: 4/2/2020 Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01739 JRS HORZ FEDERAL #2\MXD\212C-MD-01739 JRS HORZ FEDERAL #2 FIG. 3A.mxd



UNDERGROUND/BURIED PIPELINE

FENCELINE

EROSION CONTROLS 50' APART

EXCAVATED AREA

N

W E

S

0 27.5 55

Approximate Scale in Feet

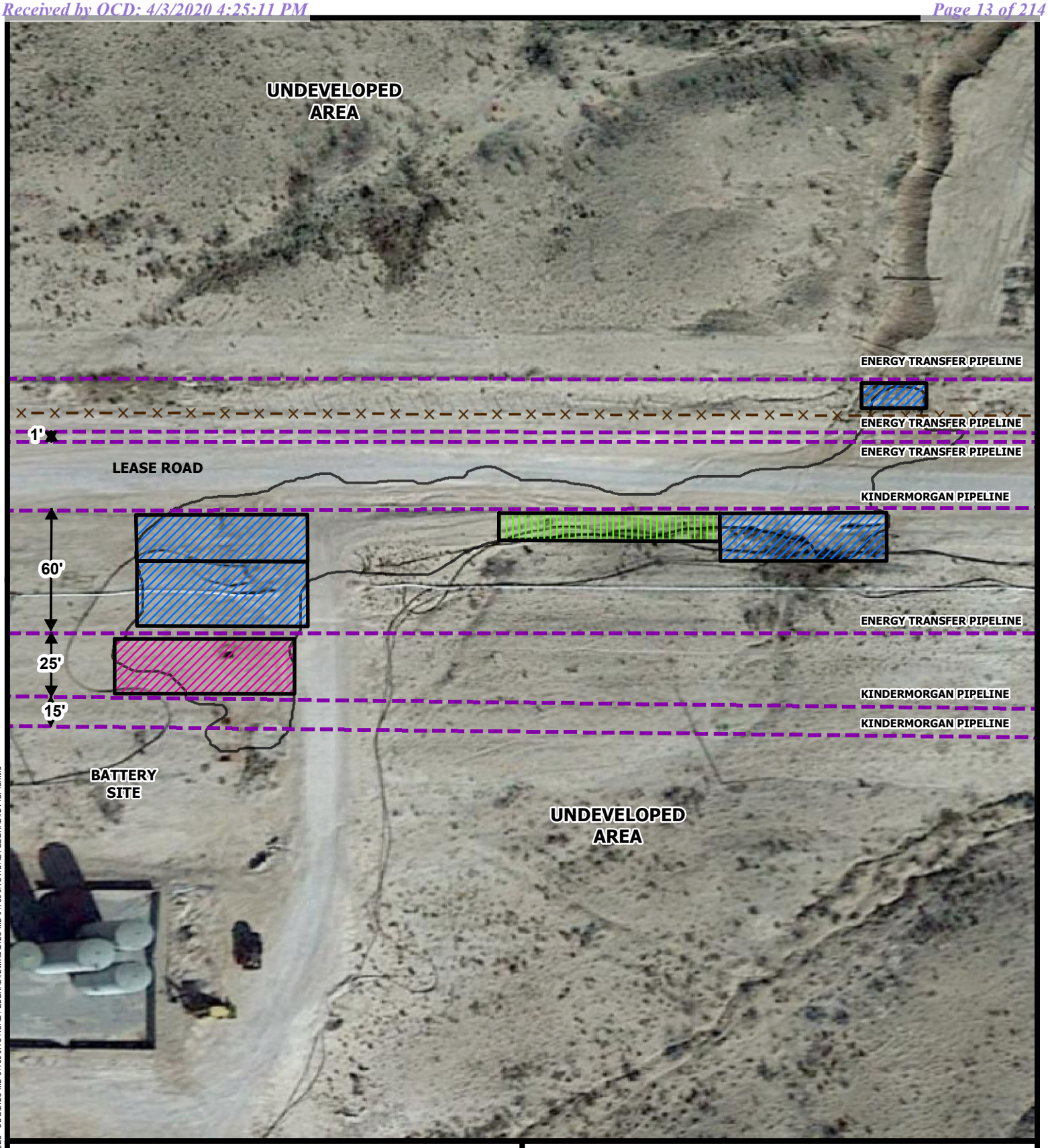
EROSION CONTROL MAP
JR'S HORZ. FEDERAL #2
PROPERTY LOCATED AT COORDINATES 32.0641°,-103.9789°
EDDY COUNTY, NEW MEXICO

CONCHO

Project #:
212C-MD-01739
Date:11-05-2019

FIGURE
3B

Date: 4/2/2020 Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01739 JRS HORZ FEDERAL #2\MXD\212C-MD-01739 JRS HORZ FEDERAL #2 FIG. 3B.mxd



UNDERGROUND/BURIED PIPELINE
FENCELINE
1.0' PROPOSED EXCAVATION DEPTH
3.0' PROPOSED EXCAVATION DEPTH
4.0' PROPOSED EXCAVATION DEPTH w/LINER
AFFECTED SPILL AREA

N
W E
S

0 32.5 65
Approximate Scale in Feet

PROPOSED EXCAVATION AREA & DEPTH MAP
JR'S HORZ. FEDERAL #2
PROPERTY LOCATED AT COORDINATES 32.0641°,-103.9789°
EDDY COUNTY, NEW MEXICO

CONCHO

Project #:
212C-MD-01739
Date:03-31-2020

FIGURE 4

Date: 4/3/2020 Document Path: H:\GIS\CONCHO RESOURCES - COG\212C-MD-01739 JRS HORZ FEDERAL #2\MXD\212C-MD-01739 JRS HORZ FEDERAL #2 FIG. 4a.mxd

Tables

Table 1
COG
JR Horz Federal #2
Eddy County, NM

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	MRO	Total						
Pasture Area															
AH-1	6/19/2019	0-1		X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**3,740**
	"	1-1.5		X		-	-	-	-	-	-	-	-	-	**1,300**
	"	2-2.5		X		-	-	-	-	-	-	-	-	-	**919**
Trench-1	8/20/2019	2		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	272
	"	3		X		-	-	-	-	-	-	-	-	-	208
	"	4		X		-	-	-	-	-	-	-	-	-	336
	"	6		X		-	-	-	-	-	-	-	-	-	480
AH-2	6/19/2019	0-1		X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**931**
Trench-2	8/20/2019	1		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**9,000**
	"	2		X		-	-	-	-	-	-	-	-	-	**14,800**
	"	3		X		-	-	-	-	-	-	-	-	-	**2,120**
	"	4		X		-	-	-	-	-	-	-	-	-	**3,720**
	"	5		X		-	-	-	-	-	-	-	-	-	**2,280**
	"	6		X		-	-	-	-	-	-	-	-	-	**3,600**
	"	7		X		-	-	-	-	-	-	-	-	-	**5,600**
	"	8		X		-	-	-	-	-	-	-	-	-	**4,640**
	"	10		X		-	-	-	-	-	-	-	-	-	**1,730**
	"	12		X		-	-	-	-	-	-	-	-	-	**4,120**
Borehole-2	10/17/2019	0-1		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**1,600**
	"	2-3		X		-	-	-	-	-	-	-	-	-	**3,490**
	"	4-5		X		-	-	-	-	-	-	-	-	-	273
	"	6-7		X		-	-	-	-	-	-	-	-	-	147
	"	9-10		X		-	-	-	-	-	-	-	-	-	218
	"	14-15		X		-	-	-	-	-	-	-	-	-	135
AH-3	5/15/2019	0-1		X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**3,020**
	"	1-1.5		X		-	-	-	-	-	-	-	-	-	**1,310**
	"	1.5-2		X		-	-	-	-	-	-	-	-	-	**1,470**
Trench-3	8/20/2019	1		X		<0.10	<0.10	<0.10	<0.10	<0.050	<0.050	<0.050	<0.150	<0.300	**800**
	"	2		X		-	-	-	-	-	-	-	-	-	**992**
	"	3		X		-	-	-	-	-	-	-	-	-	**736**
	"	4		X		-	-	-	-	-	-	-	-	-	**1,180**
	"	6		X		-	-	-	-	-	-	-	-	-	**992**
	"	8		X		-	-	-	-	-	-	-	-	-	432
	"	10		X		-	-	-	-	-	-	-	-	-	432
	"	12		X		-	-	-	-	-	-	-	-	-	272

Table 1
COG
JR Horz Federal #2
Eddy County, NM

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	MRO	Total						
AH-4	5/15/2019	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	341
AH-5	5/15/2019	0-1		X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**3,820**
	"	1-1.5		X		-	-	-	-	-	-	-	-	-	281
	"	2-2.5		X		-	-	-	-	-	-	-	-	-	26.1
	"	3-3.5		X		-	-	-	-	-	-	-	-	-	68.0
	"	4-4.5		X		-	-	-	-	-	-	-	-	-	58.3
Trench-5	8/20/2019	1		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**1940**
	"	2		X		-	-	-	-	-	-	-	-	-	528.0
	"	3		X		-	-	-	-	-	-	-	-	-	16.0
AH-6	5/15/2019	0-1		X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**8,160**
	"	1-1.5		X		-	-	-	-	-	-	-	-	-	**6,080**
	"	2-2.5		X		-	-	-	-	-	-	-	-	-	**13,300**
	"	3-3.5		X		-	-	-	-	-	-	-	-	-	**7,950**
	"	4-4.5		X		-	-	-	-	-	-	-	-	-	**1,540**
Trench-6	8/20/2019	1		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**2,200**
	"	2		X		-	-	-	-	-	-	-	-	-	**4,480**
	"	3		X		-	-	-	-	-	-	-	-	-	**5,920**
	"	4		X		-	-	-	-	-	-	-	-	-	**1,920**
	"	5		X		-	-	-	-	-	-	-	-	-	160
	"	8		X		-	-	-	-	-	-	-	-	-	32.0
	"	10		X		-	-	-	-	-	-	-	-	-	**1,410**
	"	12		X		-	-	-	-	-	-	-	-	-	144
AH-7	6/19/2019	0-1		X		<15.0	26.2	<15.0	26.2	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**2,960**
	"	1-1.5		X		-	-	-	-	-	-	-	-	-	**5,190**
	"	2-2.5		X		-	-	-	-	-	-	-	-	-	**12,200**
	"	3-3.5		X		-	-	-	-	-	-	-	-	-	595
	8/22/2019	0-1		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**2,520**
	"	1-1.5		X		-	-	-	-	-	-	-	-	-	**5,280**
	"	2-2.5		X		-	-	-	-	-	-	-	-	-	**7,280**
	"	3-3.5		X		-	-	-	-	-	-	-	-	-	**5,760**
	"	4-4.5		X		-	-	-	-	-	-	-	-	-	**3,960**
Background 1	8/20/2019	1		X		<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
	"	2		X		-	-	-	-	-	-	-	-	-	32.0
	"	3		X		-	-	-	-	-	-	-	-	-	16.0
	"	4		X		-	-	-	-	-	-	-	-	-	176

(-) **Not Analyzed**

Proposed Excavation

Proposed Liner

Table 2
COG
JR Horz Federal #2
Eddy County, NM

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	MRO	Total						
Wash Area															
AH-1	5/15/2019	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	502
	"	2	"	X		-	-	-	-	-	-	-	-	-	**1,260**
	"	3	"	X		-	-	-	-	-	-	-	-	-	**4,320**
	"	4	"	X		-	-	-	-	-	-	-	-	-	**3,240**
Re-sampled	6/19/2019	0-1	"	X		-	-	-	-	-	-	-	-	-	72.6
	"	2	"	X		-	-	-	-	-	-	-	-	-	177
	"	3	"	X		-	-	-	-	-	-	-	-	-	403
	"	4	"	X		-	-	-	-	-	-	-	-	-	**1,150**
SSW-1	5/15/2019	-	-	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**964**
Re-sampled	6/19/2019					-	-	-	-	-	-	-	-	-	346
WSW-1	5/15/2019	-	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**1,410**
Re-sampled	6/19/2019					-	-	-	-	-	-	-	-	-	230
ESW-1	5/15/2019	-	-	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	**1,160**
Re-sampled	6/19/2019					-	-	-	-	-	-	-	-	-	339
AH-2	5/2/2019	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	191
	"	2	"	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	**1,250**
	"	3	"	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**6,110**
	"	4	"	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	159
Re-sampled	6/19/2019	0-1	3			-	-	-	-	-	-	-	-	-	58.6
	"	2	"			-	-	-	-	-	-	-	-	-	130
	"	3	"			-	-	-	-	-	-	-	-	-	**1,190**
	"	4	"			-	-	-	-	-	-	-	-	-	**633**
AH-3	5/15/2019	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**9,050**
	"	2	"	X		-	-	-	-	-	-	-	-	-	**12,100**
	"	3	"	X		-	-	-	-	-	-	-	-	-	**4,350**
Re-sampled	6/19/2019	0-1	3	X		-	-	-	-	-	-	-	-	-	**1,160**
	"	2	"	X		-	-	-	-	-	-	-	-	-	**11,300**
	"	3	"	X		-	-	-	-	-	-	-	-	-	**10,600**
ESW-2	5/15/2015	-	-	X		-	-	-	-	-	-	-	-	-	236
WSW-2	5/15/2015	-	-	X		-	-	-	-	-	-	-	-	-	**1,780**
Re-sampled	6/19/2019	-	-	X		-	-	-	-	-	-	-	-	-	**4,210**
AH-4	5/2/2019	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**4,960**
	"	2	"	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**2,950**
	"	3	"	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	286
	"	4	"	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	10.2
Re-sampled	6/19/2019	0-1	3	X		-	-	-	-	-	-	-	-	-	94.9
		2	"	X		-	-	-	-	-	-	-	-	-	**1,450**
		3	"	X		-	-	-	-	-	-	-	-	-	**809**
AH-5	5/15/2019	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	504
	"	2	"	X		-	-	-	-	-	-	-	-	-	409
	"	3	"	X		-	-	-	-	-	-	-	-	-	473

Table 2
COG
JR Horz Federal #2
Eddy County, NM

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	MRO	Total						
AH-6	5/15/2019	0-1	3	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	212
	"	2	"	X		-	-	-	-	-	-	-	-	-	95.2
Re-sampled	6/19/2019	0-1	"	X		-	-	-	-	-	-	-	-	-	31.5
	"	2	"	X		-	-	-	-	-	-	-	-	-	55.9
NSW-1	5/15/2019	-	-	X		<14.9	24.6	<14.9	24.6	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	98.1
ESW-3	"	-	-	X		-	-	-	-	-	-	-	-	-	352
WSW-3	"	-	-	X		-	-	-	-	-	-	-	-	-	324
AH-7	5/15/2019	0-1	3	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	13.5
	"	2	"	X		-	-	-	-	-	-	-	-	-	8.09
	"	3	"	X		-	-	-	-	-	-	-	-	-	12.4
NSW-2	"	-	-	X		-	-	-	-	-	-	-	-	-	66.8
SSW-2	"	-	-	X		-	-	-	-	-	-	-	-	-	102
ESW-4	"	-	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	29.4
WSW-4	"	-	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	136
AH-8	5/15/2019	0-1	3-3.5	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	318
	"	2	"	X		-	-	-	-	-	-	-	-	-	175
	"	3	"	X		-	-	-	-	-	-	-	-	-	343
SSW-3	"	-	-	X		<15.0	15.3	<15.0	15.3	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	261
ESW-5	"	-	-	X		-	-	-	-	-	-	-	-	-	66.3
WSW-5	"	-	-	X		-	-	-	-	-	-	-	-	-	261
AH-9	5/15/2019	0-1	3-3.5	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	137
	"	2	"	X		-	-	-	-	-	-	-	-	-	168
	"	3	"	X		-	-	-	-	-	-	-	-	-	425
NSW-3	"	-	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	80.4

(-) Not Analyzed

Photos

COG
JRs Horz
Eddy County, New Mexico

View East – Area of AH-1

View North – Area of AH-2

COG
JRs Horz
Eddy County, New Mexico

TETRA TECH

View East – Area of AH-3

View East– Area of AH-4 & AH-5

COG
JRs Horz
Eddy County, New Mexico

TETRA TECH

View East – Area of AH-6

View North – Area of AH-7

COG
JRs Horz Wash/Draw
Eddy County, New Mexico

TETRA TECH

View South – Area of AH-1 and AH-2

View South – Area of AH-3 and AH-4

COG
JRs Horz Wash/Draw
Eddy County, New Mexico

TETRA TECH

View South – Area of AH-4

View South – Area of AH-5 and AH-6

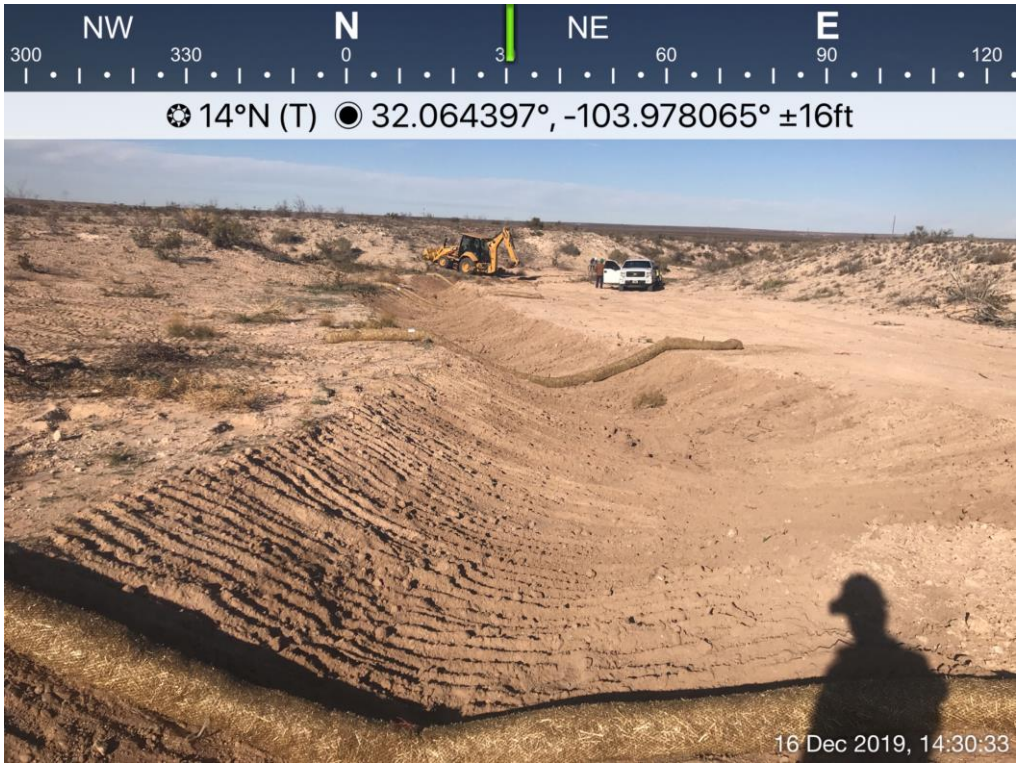
COG
JRs Horz Wash/Draw
Eddy County, New Mexico

TETRA TECH

View South – Area of AH-7

View South – Area of AH-8 and AH-9

COG
JRs Horz
Eddy County, New Mexico



View North

View North

COG
JRs Horz
Eddy County, New Mexico

View North

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	COG Operating, LLC	OGRID	229137
Contact Name	Jennifer Knowlton	Contact Telephone	(575) 748-1570
Contact email	JKnowlton@concho.com	Incident # *(assigned by OCD)*	
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.0641 Longitude -103.9789
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	JR's Horz Federal #002	Site Type	Flowline
Date Release Discovered	February 4, 2019	API# *(if applicable)*	

Unit Letter	Section	Township	Range	County
D	10	26S	29E	Eddy

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

Nature and Volume of Release

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

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 37	Volume Recovered (bbls) 20
	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

The release was caused by a hole in the flowline. A fitting is being installed where the hole was.
The release was on the lease road and in the pasture. A vacuum truck was dispatched to remove all freestanding fluids. Concho will evaluate the site to determine if we may commence remediation immediately or delineate any possible impact from the release and we will present a remediation work plan to the NMOCD for approval prior to any significant remediation activities.

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? The volume released was greater than 25 barrels.

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?

Immediate notice was given by DeAnn Grant via e-mail February 4, 2019 at 3:37 pm to Mike Bratcher and Jim Amos.

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: DeAnn Grant Title: HSE Administrative Assistant

Signature: DeAnn Grant Date: 2/7/2019

email: agrant@concho.com Telephone: (432) 253-4513

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

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

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

- ☑ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☑ Data table of soil contaminant concentration data
- ☑ Depth to water determination
- ☑ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☑ Photographs including date and GIS information
- ☑ Topographic/Aerial maps
- ☑ Laboratory data including chain of custody

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

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: Date: 4/03/2020

email: itavarez@concho.com Telephone: 432-701-8630

OCD Only

Received by: Date: _____

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Remediation Plan

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

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

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

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

☐ Extents of contamination must be fully delineated.

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

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature:  Date: 4/03/2020

email: itavarez@concho.com Telephone: 432-701-8630

OCD Only

Received by: _____ Date: _____

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

Signature: _____ Date: _____

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - JR's Horz Federal #2
Eddy County, New Mexico

25 South 28 East

6	5 Maljamar 59	4 35	3 32	2	1 Site
7	8	9	10	11	12
18 67	17	16	15 48 49	14	13
19	20 96	21	22	23	24
30	29 15	28 90	27	26 40	25
31	32	33	34	35	36 40

25 South 29 East

6 40	5	4	3	2	1
7	8	9	10 40	11	12
18	17	16	15 60	14	13
19	20	21	22	23	24
30 30	29	28	27	26	25
31	32 115	33	34	35	36

25 South 30 East

6	5	4	3	2 295	1
7 264	8	9 295	10	11	12 390
18	17	16	15	14	13
19	20	21 265 268	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 28 East

6	5	4	3	2 120 21	1
7	8	9	10	11	12 100
18	17	16	15	14 120	13 56
19	20	21	22 120	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 29 East

6	5 78	4	3	2	1
7	8	9	10	11	12
18	17	16 120 125	15	14	13
19	20	21	22 57 69	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 30 East

6	5 179 180	4	3	2	1
7	8 172	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 180
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	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 01354 X-3	CUB	ED	2	1	3	23	26S	29E	598323	3543837	170		
C 02038	C	ED	3	2	4	26	26S	29E	599204	3541992*	200		
C 03507 POD1	C	ED	1	3	3	05	26S	29E	593064	3548313	140	78	62
C 03508 POD1	C	ED	1	3	3	05	26S	29E	593063	3548361	140	75	65
C 03605 POD1	CUB	ED	4	2	3	27	26S	29E	596990	3541983	45	0	45

Average Depth to Water: **51 feet**

Minimum Depth: **0 feet**

Maximum Depth: **78 feet**

Record Count: 5

PLSS Search:

Township: 26S **Range:** 29E

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

National Water Information System: Web Interface

Click to hideNews Bulletins

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

site_no list =

- 320301103572201

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

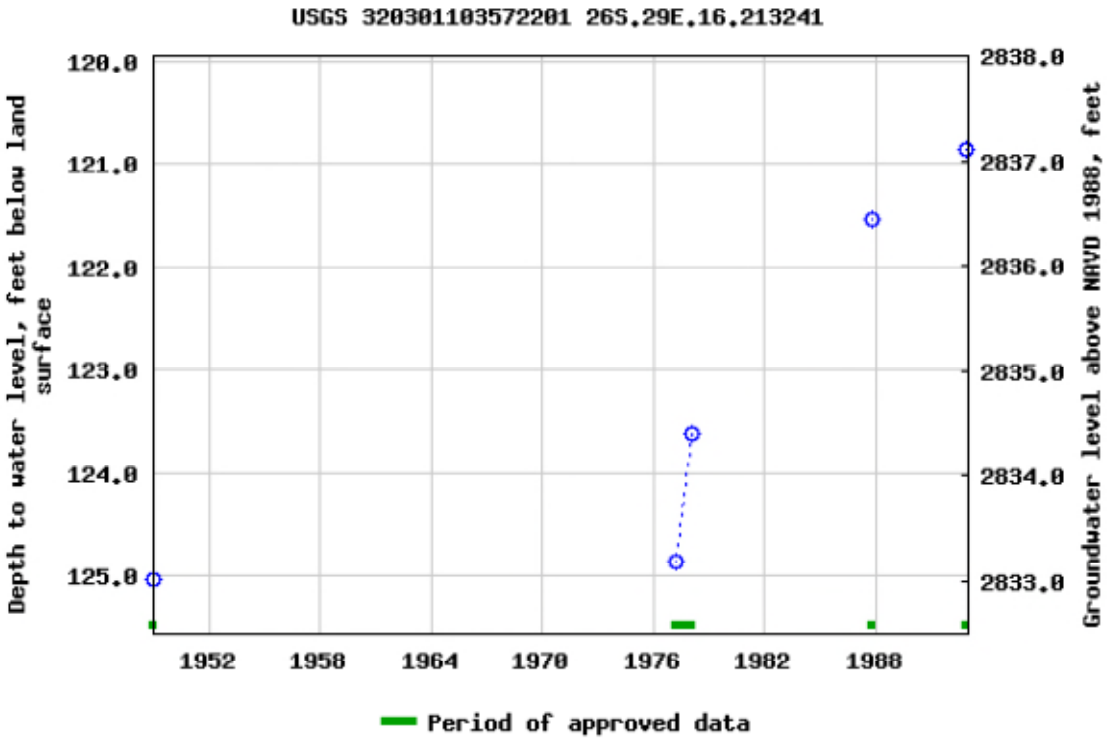
USGS 320301103572201 26S.29E.16.213241

Available data for this site Groundwater: Field measurements | GO

Eddy County, New Mexico
Hydrologic Unit Code 13070001
Latitude 32°03'01", Longitude 103°57'22" NAD27
Land-surface elevation 2,958 feet above NAVD88
The depth of the well is 335 feet below land surface.
This well is completed in the Rustler Formation (312RSLR) local aquifer.

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

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

Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2019-10-31 14:59:25 EDT
0.62 0.53 nadww01

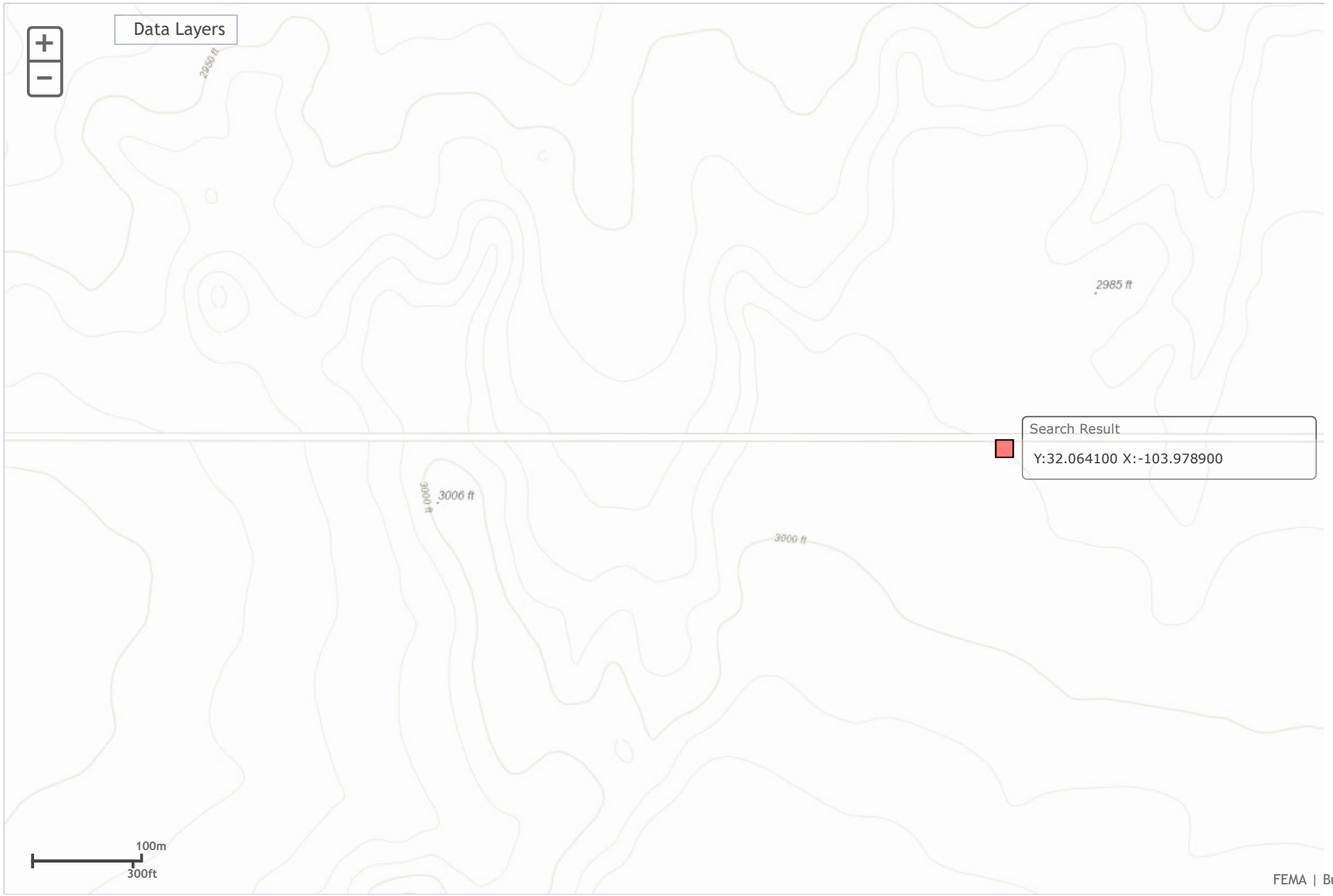
USGS science for a changing world

National Water Information System: Mapper

Site Information


COG JR's Horz Federal #2
Karst Potential Map
Legend
High
Low
Medium
Site
32.0641, -103.9789
Google Earth
©2018 Google
N
2 mi

NFHL Web Mapping Application



Appendix C

Analytical Report 624554

for

Tetra Tech- Midland

Project Manager: Mike Carmona

JR's Horz Federal #2 Area 1 (2/4/19)

212C-MD-01739

20-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

20-MAY-19

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

Reference: XENCO Report No(s): **624554**
JR's Horz Federal #2 Area 1 (2/4/19)
Project Address: Eddy County, 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) 624554. 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. 624554 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 624554

Tetra Tech- Midland, Midland, TX

JR's Horz Federal #2 Area 1 (2/4/19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-3 (0-1')	S	05-15-19 00:00		624554-001
AH-3 (1-1.5')	S	05-15-19 00:00		624554-002
AH-3 (1.5-2')	S	05-15-19 00:00		624554-003
AH-4 (0-1')	S	05-15-19 00:00		624554-004
AH-5 (0-1')	S	05-15-19 00:00		624554-005
AH-5 (1-1.5')	S	05-15-19 00:00		624554-006
AH-5 (2-2.5')	S	05-15-19 00:00		624554-007
AH-5 (3-3.5')	S	05-15-19 00:00		624554-008
AH-5 (4-4.5')	S	05-15-19 00:00		624554-009
AH-6 (0-1')	S	05-15-19 00:00		624554-010
AH-6 (1-1.5')	S	05-15-19 00:00		624554-011
AH-6 (2-2.5')	S	05-15-19 00:00		624554-012
AH-6 (3-3.5')	S	05-15-19 00:00		624554-013
AH-6 (4-4.5')	S	05-15-19 00:00		624554-014

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: JR's Horz Federal #2 Area 1 (2/4/19)

Project ID: *212C-MD-01739*
Work Order Number(s): *624554*

Report Date: *20-MAY-19*
Date Received: *05/16/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3089307 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 624554-005,624554-004.

Certificate of Analysis Summary 624554

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Area 1 (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624554-001		624554-002		624554-003		624554-004		624554-005		624554-006	
	Field Id:	AH-3 (0-1')		AH-3 (1-1.5')		AH-3 (1.5-2')		AH-4 (0-1')		AH-5 (0-1')		AH-5 (1-1.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	***Extracted:***	May-16-19 17:00						May-16-19 17:00		May-16-19 17:00			
	Analyzed:	May-17-19 02:54						May-17-19 03:13		May-17-19 03:32			
	Units/RL:	mg/kg	RL					mg/kg	RL	mg/kg	RL		
Benzene		<0.00199	0.00199					<0.00202	0.00202	<0.00199	0.00199		
Toluene		<0.00199	0.00199					<0.00202	0.00202	<0.00199	0.00199		
Ethylbenzene		<0.00199	0.00199					<0.00202	0.00202	<0.00199	0.00199		
m,p-Xylenes		<0.00398	0.00398					<0.00403	0.00403	<0.00398	0.00398		
o-Xylene		<0.00199	0.00199					<0.00202	0.00202	<0.00199	0.00199		
Total Xylenes		<0.00199	0.00199					<0.00202	0.00202	<0.00199	0.00199		
Total BTEX		<0.00199	0.00199					<0.00202	0.00202	<0.00199	0.00199		
Chloride by EPA 300	***Extracted:***	May-17-19 10:30		May-17-19 10:30		May-17-19 10:30		May-17-19 10:30		May-17-19 10:30		May-17-19 10:30	
	Analyzed:	May-17-19 23:00		May-17-19 23:07		May-17-19 23:15		May-17-19 23:22		May-17-19 23:29		May-17-19 23:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3020	25.1	1310	4.96	1470	5.01	341	5.01	3820	50.1	281	5.01
TPH by SW8015 Mod	***Extracted:***	May-17-19 14:00						May-17-19 14:00		May-17-19 14:00			
	Analyzed:	May-18-19 01:36						May-18-19 01:56		May-18-19 02:16			
	Units/RL:	mg/kg	RL					mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0					<15.0	15.0	<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0					<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0					<15.0	15.0	<15.0	15.0		

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624554

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Area 1 (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624554-007		624554-008		624554-009		624554-010		624554-011		624554-012	
	Field Id:	AH-5 (2-2.5')		AH-5 (3-3.5')		AH-5 (4-4.5')		AH-6 (0-1')		AH-6 (1-1.5')		AH-6 (2-2.5')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	***Extracted:***							May-16-19 17:00					
	Analyzed:							May-17-19 03:51					
	Units/RL:							mg/kg	RL				
Benzene								<0.00200	0.00200				
Toluene								<0.00200	0.00200				
Ethylbenzene								<0.00200	0.00200				
m,p-Xylenes								<0.00401	0.00401				
o-Xylene								<0.00200	0.00200				
Total Xylenes								<0.00200	0.00200				
Total BTEX								<0.00200	0.00200				
Chloride by EPA 300	***Extracted:***	May-17-19 10:30		May-17-19 10:30		May-17-19 10:30		May-17-19 10:30		May-17-19 10:30		May-17-19 10:30	
	Analyzed:	May-17-19 23:36		May-18-19 00:05		May-18-19 00:27		May-18-19 00:34		May-18-19 00:42		May-18-19 00:49	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		26.1	4.99	68.0	50.2	58.3	5.03	8160	50.3	6080	49.7	13300	100
TPH by SW8015 Mod	***Extracted:***							May-17-19 14:00					
	Analyzed:							May-18-19 03:17					
	Units/RL:							mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)								<15.0	15.0				
Diesel Range Organics (DRO)								<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)								<15.0	15.0				
Total TPH								<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624554

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Area 1 (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624554-013		624554-014									
	Field Id:	AH-6 (3-3.5')		AH-6 (4-4.5')									
	Depth:												
	Matrix:	SOIL		SOIL									
	Sampled:	May-15-19 00:00		May-15-19 00:00									
Chloride by EPA 300	***Extracted:***	May-17-19 10:30		May-17-19 10:30									
	Analyzed:	May-18-19 00:56		May-18-19 01:14									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		7950	49.7	1540	24.9								

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: JR's Horz Federal #2 Area 1 (2/4/19)

Work Orders : 624554,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 624554-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 02:54

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0377	0.0300	126	70-130	

Lab Batch #: 3089307 **Sample:** 624554-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 03:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0410	0.0300	137	70-130	**

Lab Batch #: 3089307 **Sample:** 624554-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 03:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0438	0.0300	146	70-130	**

Lab Batch #: 3089307 **Sample:** 624554-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 03:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	70-130	
4-Bromofluorobenzene	0.0368	0.0300	123	70-130	

Lab Batch #: 3089544 **Sample:** 624554-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 01:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	49.8	49.9	100	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: JR's Horz Federal #2 Area 1 (2/4/19)

Work Orders : 624554,

Project ID: 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624554-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 01:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	50.0	49.9	100	70-135	

Lab Batch #: 3089544 **Sample:** 624554-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 02:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3089544 **Sample:** 624554-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 03:17

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	50.3	49.9	101	70-135	

Lab Batch #: 3089307 **Sample:** 7678055-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 00:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 21:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.0	50.0	108	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: JR's Horz Federal #2 Area 1 (2/4/19)

Work Orders : 624554,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 7678055-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 21:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	61.1	50.0	122	70-135	

Lab Batch #: 3089307 **Sample:** 7678055-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 22:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.9	50.0	130	70-135	

Lab Batch #: 3089307 **Sample:** 624486-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/16/19 23:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: JR's Horz Federal #2 Area 1 (2/4/19)

Work Orders : 624554,

Project ID: 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624551-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 22:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	58.5	49.9	117	70-135	

Lab Batch #: 3089307 **Sample:** 624486-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 00:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	70-130	

Lab Batch #: 3089544 **Sample:** 624551-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 23:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.9	125	70-135	
o-Terphenyl	56.4	50.0	113	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: JR's Horz Federal #2 Area 1 (2/4/19)

Work Order #: 624554 **Project ID:** 212C-MD-01739

Analyst: SCM **Date Prepared:** 05/16/2019 **Date Analyzed:** 05/16/2019

Lab Batch ID: 3089307 **Sample:** 7678055-1-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	<0.00201	0.100	0.100	100	0.0998	0.103	103	3	70-130	35	
Toluene	<0.00201	0.100	0.0984	98	0.0998	0.0997	100	1	70-130	35	
Ethylbenzene	<0.00201	0.100	0.106	106	0.0998	0.107	107	1	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.224	111	0.200	0.225	113	0	70-130	35	
o-Xylene	<0.00201	0.100	0.111	111	0.0998	0.112	112	1	70-130	35	

Analyst: SPC **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089480 **Sample:** 7678108-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	260	104	250	261	104	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: JR's Horz Federal #2 Area 1 (2/4/19)

Work Order #: 624554 **Project ID:** 212C-MD-01739

Analyst: ARM **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089544 **Sample:** 7678170-1-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)	<8.00	1000	1080	108	1000	1090	109	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1120	112	1000	1120	112	0	70-135	20	

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

Form 3 - MS / MSD Recoveries

Project Name: JR's Horz Federal #2 Area 1 (2/4/19)

Work Order # : 624554 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089307 **QC- Sample ID:** 624486-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/16/2019 **Date Prepared:** 05/16/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0847	84	0.0996	0.0951	95	12	70-130	35	
Toluene	<0.00202	0.101	0.0868	86	0.0996	0.0940	94	8	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0942	93	0.0996	0.102	102	8	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.199	99	0.199	0.215	108	8	70-130	35	
o-Xylene	<0.00202	0.101	0.0993	98	0.0996	0.106	106	7	70-130	35	

Lab Batch ID: 3089480 **QC- Sample ID:** 624551-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	175	248	421	99	248	420	99	0	90-110	20	

Lab Batch ID: 3089480 **QC- Sample ID:** 624554-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	26.1	250	296	108	250	298	109	1	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: JR's Horz Federal #2 Area 1 (2/4/19)

Work Order # : 624554 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089544 **QC- Sample ID:** 624551-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	8.20	997	1130	113	999	1150	114	2	70-135	20	
Diesel Range Organics (DRO)	8.48	997	1090	108	999	1120	111	3	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.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

024554

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Area 1 (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/gk. 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	# 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-3 (0-1')	5/15/2019			X				X		1	N	X		X												X								
	AH-3 (1-1.5')	5/15/2019			X				X		1	N															X								
	AH-3 (1.5-2')	5/15/2019			X				X		1	N															X								
	AH-4 (0-1')	5/15/2019			X				X		1	N	X		X												X								
	AH-5 (0-1')	5/15/2019			X				X		1	N	X		X												X								
	AH-5 (1-1.5')	5/15/2019			X				X		1	N															X								
	AH-5 (2-2.5')	5/15/2019			X				X		1	N															X								
	AH-5 (3-3.5')	5/15/2019			X				X		1	N															X								
	AH-5 (4-4.5')	5/15/2019			X				X		1	N															X								

Relinquished by:	Date: 5/16/19	Time: 13:47	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 5/16/19 Time: 1347
Received by: Date: Time:
Received by: Date: Time:

LAB USE ONLY
Sample Temperature 1.1/1.0
R8 -0.1

REMARKS:
- ☐ 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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

024554

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Area 1 (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/gk. 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	# 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-6 (0-1')	5/15/2019			X				X		1	N	X		X												X							
	AH-6 (1-1.5')	5/15/2019			X				X		1	N															X							
	AH-6 (2-2.5')	5/15/2019			X				X		1	N															X							
	AH-6 (3-3.5')	5/15/2019			X				X		1	N															X							
	AH-6 (4-4.5')	5/15/2019			X				X		1	N															X							

Relinquished by: Cole Tomlinson	Date: 5/16/19	Time: 13:47	Received by: [signature] Date: 5/16/19 Time: 1347
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature 1.1/1.0

R8-01

REMARKS:

- ☐ 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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/16/2019 01:47:00 PM

Work Order #: 624554

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 05/16/2019

Checklist reviewed by: Jessica Kramer Date: 05/17/2019

Jessica Kramer

Analytical Report 624555

for

Tetra Tech- Midland

Project Manager: Mike Carmona

JRs Horz Federal #2 Washout Area (2/4/19)

212C-MD-01739

20-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

20-MAY-19

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

Reference: XENCO Report No(s): **624555**
JRs Horz Federal #2 Washout Area (2/4/19)
Project Address: Eddy County, 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) 624555. 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. 624555 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 624555

Tetra Tech- Midland, Midland, TX

JRs Horz Federal #2 Washout Area (2/4/19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
NSW-1	S	05-15-19 00:00		624555-001
NSW-2	S	05-15-19 00:00		624555-002
NSW-3	S	05-15-19 00:00		624555-003
SSW-1	S	05-15-19 00:00		624555-004
SSW-2	S	05-15-19 00:00		624555-005
SSW-3	S	05-15-19 00:00		624555-006
ESW-1	S	05-15-19 00:00		624555-007
ESW-2	S	05-15-19 00:00		624555-008
ESW-3	S	05-15-19 00:00		624555-009
ESW-4	S	05-15-19 00:00		624555-010
ESW-5	S	05-15-19 00:00		624555-011
WSW-1	S	05-15-19 00:00		624555-012
WSW-2	S	05-15-19 00:00		624555-013
WSW-3	S	05-15-19 00:00		624555-014
WSW-4	S	05-15-19 00:00		624555-015
WSW-5	S	05-15-19 00:00		624555-016

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Project ID: *212C-MD-01739*
Work Order Number(s): *624555*

Report Date: *20-MAY-19*
Date Received: *05/16/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3089307 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 624555-001.

Certificate of Analysis Summary 624555

Tetra Tech- Midland, Midland, TX

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624555-001		624555-002		624555-003		624555-004		624555-005		624555-006	
	Field Id:	NSW-1		NSW-2		NSW-3		SSW-1		SSW-2		SSW-3	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	*Extracted:*	May-16-19 17:00				May-16-19 17:00		May-16-19 17:00				May-16-19 17:00	
	Analyzed:	May-17-19 05:05				May-17-19 05:24		May-17-19 05:43				May-17-19 06:02	
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Benzene		<0.00200	0.00200			<0.00201	0.00201	<0.00202	0.00202			<0.00199	0.00199
Toluene		<0.00200	0.00200			<0.00201	0.00201	<0.00202	0.00202			<0.00199	0.00199
Ethylbenzene		<0.00200	0.00200			<0.00201	0.00201	<0.00202	0.00202			<0.00199	0.00199
m,p-Xylenes		<0.00400	0.00400			<0.00402	0.00402	<0.00404	0.00404			<0.00398	0.00398
o-Xylene		<0.00200	0.00200			<0.00201	0.00201	<0.00202	0.00202			<0.00199	0.00199
Total Xylenes		<0.00200	0.00200			<0.00201	0.00201	<0.00202	0.00202			<0.00199	0.00199
Total BTEX		<0.00200	0.00200			<0.00201	0.00201	<0.00202	0.00202			<0.00199	0.00199
Chloride by EPA 300	*Extracted:*	May-17-19 10:30		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15	
	Analyzed:	May-18-19 01:21		May-18-19 04:21		May-18-19 04:43		May-18-19 04:50		May-18-19 04:58		May-18-19 05:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		98.1	4.97	66.8	5.00	80.4	4.98	964	5.00	102	5.02	261	4.98
TPH by SW8015 Mod	*Extracted:*	May-17-19 14:00				May-17-19 14:00		May-17-19 14:00				May-17-19 14:00	
	Analyzed:	May-18-19 03:37				May-18-19 03:58		May-18-19 04:18				May-18-19 04:38	
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9			<15.0	15.0	<14.9	14.9			<15.0	15.0
Diesel Range Organics (DRO)		24.6	14.9			<15.0	15.0	<14.9	14.9			15.3	15.0
Motor Oil Range Hydrocarbons (MRO)		<14.9	14.9			<15.0	15.0	<14.9	14.9			<15.0	15.0
Total TPH		24.6	14.9			<15.0	15.0	<14.9	14.9			15.3	15.0

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624555

Tetra Tech- Midland, Midland, TX

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624555-007		624555-008		624555-009		624555-010		624555-011		624555-012	
	Field Id:	ESW-1		ESW-2		ESW-3		ESW-4		ESW-5		WSW-1	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	***Extracted:***	May-16-19 17:00						May-16-19 17:00				May-16-19 17:00	
	Analyzed:	May-17-19 06:21						May-17-19 06:40				May-17-19 06:59	
	Units/RL:	mg/kg	RL					mg/kg	RL			mg/kg	RL
Benzene		<0.00198	0.00198					<0.00201	0.00201			<0.00199	0.00199
Toluene		<0.00198	0.00198					<0.00201	0.00201			<0.00199	0.00199
Ethylbenzene		<0.00198	0.00198					<0.00201	0.00201			<0.00199	0.00199
m,p-Xylenes		<0.00397	0.00397					<0.00402	0.00402			<0.00398	0.00398
o-Xylene		<0.00198	0.00198					<0.00201	0.00201			<0.00199	0.00199
Total Xylenes		<0.00198	0.00198					<0.00201	0.00201			<0.00199	0.00199
Total BTEX		<0.00198	0.00198					<0.00201	0.00201			<0.00199	0.00199
Chloride by EPA 300	***Extracted:***	May-17-19 16:15		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15	
	Analyzed:	May-18-19 05:27		May-18-19 05:34		May-18-19 05:41		May-18-19 05:48		May-18-19 06:03		May-18-19 05:56	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1160	5.03	236	5.03	352	5.05	29.4	4.98	66.3	4.99	1410	4.98
TPH by SW8015 Mod	***Extracted:***	May-17-19 14:00						May-17-19 14:00				May-17-19 14:00	
	Analyzed:	May-18-19 04:59						May-18-19 05:19				May-18-19 05:39	
	Units/RL:	mg/kg	RL					mg/kg	RL			mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					<15.0	15.0			<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0					<15.0	15.0			<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0					<15.0	15.0			<15.0	15.0
Total TPH		<15.0	15.0					<15.0	15.0			<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624555

Tetra Tech- Midland, Midland, TX

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624555-013		624555-014		624555-015		624555-016					
	Field Id:	WSW-2		WSW-3		WSW-4		WSW-5					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00					
BTEX by EPA 8021B	***Extracted:***					May-16-19 17:00							
	Analyzed:					May-17-19 07:18							
	Units/RL:					mg/kg	RL						
Benzene						<0.00200	0.00200						
Toluene						<0.00200	0.00200						
Ethylbenzene						<0.00200	0.00200						
m,p-Xylenes						<0.00400	0.00400						
o-Xylene						<0.00200	0.00200						
Total Xylenes						<0.00200	0.00200						
Total BTEX						<0.00200	0.00200						
Chloride by EPA 300	***Extracted:***	May-17-19 16:15		May-17-19 16:15		May-17-19 16:15		May-17-19 16:15					
	Analyzed:	May-18-19 06:25		May-18-19 06:32		May-18-19 06:54		May-18-19 07:01					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		1780	25.1	324	5.03	136	4.99	261	4.96				
TPH by SW8015 Mod	***Extracted:***					May-17-19 14:00							
	Analyzed:					May-18-19 05:59							
	Units/RL:					mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)						<15.0	15.0						
Diesel Range Organics (DRO)						<15.0	15.0						
Motor Oil Range Hydrocarbons (MRO)						<15.0	15.0						
Total TPH						<15.0	15.0						

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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624555,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 624555-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 05:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	70-130	
4-Bromofluorobenzene	0.0400	0.0300	133	70-130	**

Lab Batch #: 3089307 **Sample:** 624555-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 05:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0383	0.0300	128	70-130	

Lab Batch #: 3089307 **Sample:** 624555-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 05:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	70-130	
4-Bromofluorobenzene	0.0368	0.0300	123	70-130	

Lab Batch #: 3089307 **Sample:** 624555-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 06:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3089307 **Sample:** 624555-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 06:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0375	0.0300	125	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624555,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 624555-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 06:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0360	0.0300	120	70-130	

Lab Batch #: 3089307 **Sample:** 624555-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 06:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0370	0.0300	123	70-130	

Lab Batch #: 3089307 **Sample:** 624555-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 07:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	70-130	
4-Bromofluorobenzene	0.0366	0.0300	122	70-130	

Lab Batch #: 3089544 **Sample:** 624555-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 03:37

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	99.6	98	70-135	
o-Terphenyl	49.6	49.8	100	70-135	

Lab Batch #: 3089544 **Sample:** 624555-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 03:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	50.6	49.9	101	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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624555,

Project ID: 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624555-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 04:18

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.6	101	70-135	
o-Terphenyl	50.1	49.8	101	70-135	

Lab Batch #: 3089544 **Sample:** 624555-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 04:38

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 3089544 **Sample:** 624555-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 04:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	50.3	49.9	101	70-135	

Lab Batch #: 3089544 **Sample:** 624555-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 05:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.7	50.0	101	70-135	

Lab Batch #: 3089544 **Sample:** 624555-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 05:39

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	50.1	50.0	100	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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624555,

Project ID: 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624555-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 05:59

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	99.9	100	70-135	
o-Terphenyl	49.3	50.0	99	70-135	

Lab Batch #: 3089307 **Sample:** 7678055-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 00:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 21:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 3089307 **Sample:** 7678055-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 21:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	61.1	50.0	122	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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624555,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 7678055-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 22:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.9	50.0	130	70-135	

Lab Batch #: 3089307 **Sample:** 624486-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/16/19 23:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	70-130	

Lab Batch #: 3089544 **Sample:** 624551-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 22:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	58.5	49.9	117	70-135	

Lab Batch #: 3089307 **Sample:** 624486-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 00:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624555, **Project ID:** 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624551-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 23:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.9	125	70-135	
o-Terphenyl	56.4	50.0	113	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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Order #: 624555 **Project ID:** 212C-MD-01739

Analyst: SCM **Date Prepared:** 05/16/2019 **Date Analyzed:** 05/16/2019

Lab Batch ID: 3089307 **Sample:** 7678055-1-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	<0.00201	0.100	0.100	100	0.0998	0.103	103	3	70-130	35	
Toluene	<0.00201	0.100	0.0984	98	0.0998	0.0997	100	1	70-130	35	
Ethylbenzene	<0.00201	0.100	0.106	106	0.0998	0.107	107	1	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.224	111	0.200	0.225	113	0	70-130	35	
o-Xylene	<0.00201	0.100	0.111	111	0.0998	0.112	112	1	70-130	35	

Analyst: SPC **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089480 **Sample:** 7678108-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	260	104	250	261	104	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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Order #: 624555 **Project ID:** 212C-MD-01739

Analyst: CHE **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/18/2019

Lab Batch ID: 3089461 **Sample:** 7678111-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	2.82	250	254	102	250	254	102	0	90-110	20	

Analyst: ARM **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089544 **Sample:** 7678170-1-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)	<8.00	1000	1080	108	1000	1090	109	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1120	112	1000	1120	112	0	70-135	20	

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

Form 3 - MS / MSD Recoveries

Project Name: JRs Horz Federal #2 Washout Area (2/4/19)

Work Order # : 624555 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089307 **QC- Sample ID:** 624486-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/16/2019 **Date Prepared:** 05/16/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0847	84	0.0996	0.0951	95	12	70-130	35	
Toluene	<0.00202	0.101	0.0868	86	0.0996	0.0940	94	8	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0942	93	0.0996	0.102	102	8	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.199	99	0.199	0.215	108	8	70-130	35	
o-Xylene	<0.00202	0.101	0.0993	98	0.0996	0.106	106	7	70-130	35	

Lab Batch ID: 3089461 **QC- Sample ID:** 624555-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/18/2019 **Date Prepared:** 05/17/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	66.8	250	327	104	250	321	102	2	90-110	20	

Lab Batch ID: 3089461 **QC- Sample ID:** 624555-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/18/2019 **Date Prepared:** 05/17/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	66.3	250	328	105	250	325	103	1	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: JRs Horz Federal #2 Washout Area (2/4/19)

Work Order # : 624555 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089480 **QC- Sample ID:** 624551-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	175	248	421	99	248	420	99	0	90-110	20	

Lab Batch ID: 3089480 **QC- Sample ID:** 624554-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	26.1	250	296	108	250	298	109	1	90-110	20	

Lab Batch ID: 3089544 **QC- Sample ID:** 624551-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	8.20	997	1130	113	999	1150	114	2	70-135	20	
Diesel Range Organics (DRO)	8.48	997	1090	108	999	1120	111	3	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.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

102455

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Washout Area (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona
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	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
	NSW-1	5/15/2019			X				X			1	N	X		X												X							
	NSW-2	5/15/2019			X				X			1	N															X							
	NSW-3	5/15/2019			X				X			1	N	X		X												X							
	SSW-1	5/15/2019			X				X			1	N	X		X												X							
	SSW-2	5/15/2019			X				X			1	N															X							
	SSW-3	5/15/2019			X				X			1	N	X		X												X							

Relinquished by: Cole Tavarez	Date: 5/16/19	Time: 13:47	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 5/16/19 Time: 1347

LAB USE ONLY

Sample Temperature 1.1/1.0 RE-01

REMARKS:

- ☐ 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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

624555

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Washout Area (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona
Comments:	

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	# CONTAINERS	FILTERED (Y/N)
	ESW-1	5/15/2019			X				X		1	N
	ESW-2	5/15/2019			X				X		1	N
	ESW-3	5/15/2019			X				X		1	N
	ESW-4	5/15/2019			X				X		1	N
	ESW-5	5/15/2019			X				X		1	N
	WSW-1	5/15/2019			X				X		1	N
	WSW-2	5/15/2019			X				X		1	N
	WSW-3	5/15/2019			X				X		1	N
	WSW-4	5/15/2019			X				X		1	N
	WSW-5	5/15/2019			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			X												X						
																X						
	X			X												X						
																X						
																X						
	X			X												X						
																X						

Relinquished by: Date: 5/16/19 Time: 13:47
Received by: Date: 5/16/19 Time: 1347

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

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

LAB USE ONLY
Sample Temperature
1.1 / 1.0
RE-0.1

REMARKS:
- ☐ 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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/16/2019 01:47:00 PM

Work Order #: 624555

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 05/16/2019

Checklist reviewed by: Jessica Kramer Date: 05/17/2019

Jessica Kramer

Analytical Report 624551

for

Tetra Tech- Midland

Project Manager: Mike Carmona

JR's Horz Federal #2 Washout Area (2/4/19)

212C-MD-01739

20-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

20-MAY-19

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

Reference: XENCO Report No(s): **624551**
JR's Horz Federal #2 Washout Area (2/4/19)
Project Address: Eddy County, 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) 624551. 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. 624551 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 624551

Tetra Tech- Midland, Midland, TX

JR's Horz Federal #2 Washout Area (2/4/19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1 (0-1')	S	05-15-19 00:00		624551-001
AH-1 (2')	S	05-15-19 00:00		624551-002
AH-1 (3')	S	05-15-19 00:00		624551-003
AH-1 (4')	S	05-15-19 00:00		624551-004
AH-3 (0-1')	S	05-15-19 00:00		624551-005
AH-3 (2')	S	05-15-19 00:00		624551-006
AH-3 (3')	S	05-15-19 00:00		624551-007
AH-5 (0-1')	S	05-15-19 00:00		624551-008
AH-5 (2')	S	05-15-19 00:00		624551-009
AH-5 (3')	S	05-15-19 00:00		624551-010
AH-6 (0-1')	S	05-15-19 00:00		624551-011
AH-6 (2')	S	05-15-19 00:00		624551-012
AH-7 (0-1')	S	05-15-19 00:00		624551-013
AH-7 (2')	S	05-15-19 00:00		624551-014
AH-7 (3')	S	05-15-19 00:00		624551-015
AH-8 (0-1')	S	05-15-19 00:00		624551-016
AH-8 (2')	S	05-15-19 00:00		624551-017
AH-8 (3')	S	05-15-19 00:00		624551-018
AH-9 (0-1')	S	05-15-19 00:00		624551-019
AH-9 (2')	S	05-15-19 00:00		624551-020
AH-9 (3')	S	05-15-19 00:00		624551-021

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Project ID: *212C-MD-01739*
Work Order Number(s): *624551*

Report Date: *20-MAY-19*
Date Received: *05/16/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3089300 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3089307 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3089463 Inorganic Anions by EPA 300
Lab Sample ID 624551-011 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: 624551-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 624551

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624551-001		624551-002		624551-003		624551-004		624551-005		624551-006	
	Field Id:	AH-1 (0-1')		AH-1 (2')		AH-1 (3')		AH-1 (4')		AH-3 (0-1')		AH-3 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	***Extracted:***	May-16-19 15:00								May-16-19 15:00			
	Analyzed:	May-17-19 07:30								May-17-19 07:49			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Benzene		<0.00200	0.00200							<0.00200	0.00200		
Toluene		<0.00200	0.00200							<0.00200	0.00200		
Ethylbenzene		<0.00200	0.00200							<0.00200	0.00200		
m,p-Xylenes		<0.00399	0.00399							<0.00401	0.00401		
o-Xylene		<0.00200	0.00200							<0.00200	0.00200		
Total Xylenes		<0.00200	0.00200							<0.00200	0.00200		
Total BTEX		<0.00200	0.00200							<0.00200	0.00200		
Chloride by EPA 300	***Extracted:***	May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30	
	Analyzed:	May-17-19 17:55		May-17-19 18:17		May-17-19 18:24		May-17-19 18:32		May-17-19 18:39		May-17-19 19:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		502	5.01	1260	25.0	4320	25.1	3240	25.0	9050	49.9	12100	100
TPH by SW8015 Mod	***Extracted:***	May-17-19 14:00								May-17-19 14:00			
	Analyzed:	May-17-19 22:35								May-17-19 23:35			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0							<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0							<15.0	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0							<15.0	15.0		
Total TPH		<15.0	15.0							<15.0	15.0		

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624551

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624551-007		624551-008		624551-009		624551-010		624551-011		624551-012	
	Field Id:	AH-3 (3')		AH-5 (0-1')		AH-5 (2')		AH-5 (3')		AH-6 (0-1')		AH-6 (2')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	Extracted:			May-16-19 15:00						May-16-19 17:00			
	Analyzed:			May-17-19 08:08						May-17-19 01:38			
	Units/RL:			mg/kg	RL					mg/kg	RL		
Benzene				<0.00199	0.00199					<0.00200	0.00200		
Toluene				<0.00199	0.00199					<0.00200	0.00200		
Ethylbenzene				<0.00199	0.00199					<0.00200	0.00200		
m,p-Xylenes				<0.00398	0.00398					<0.00399	0.00399		
o-Xylene				<0.00199	0.00199					<0.00200	0.00200		
Total Xylenes				<0.00199	0.00199					<0.00200	0.00200		
Total BTEX				<0.00199	0.00199					<0.00200	0.00200		
Chloride by EPA 300	Extracted:	May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30	
	Analyzed:	May-17-19 19:08		May-17-19 19:15		May-17-19 19:22		May-17-19 19:30		May-17-19 19:37		May-17-19 19:59	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4350	25.2	504	5.04	409	5.00	473	5.03	212	5.02	95.2	5.04
TPH by SW8015 Mod	Extracted:			May-17-19 14:00						May-17-19 14:00			
	Analyzed:			May-17-19 23:55						May-18-19 00:16			
	Units/RL:			mg/kg	RL					mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0					<14.9	14.9		
Diesel Range Organics (DRO)				<15.0	15.0					<14.9	14.9		
Motor Oil Range Hydrocarbons (MRO)				<15.0	15.0					<14.9	14.9		
Total TPH				<15.0	15.0					<14.9	14.9		

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624551

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	624551-013		624551-014		624551-015		624551-016		624551-017		624551-018	
	Field Id:	AH-7 (0-1')		AH-7 (2')		AH-7 (3')		AH-8 (0-1')		AH-8 (2')		AH-8 (3')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00		May-15-19 00:00	
BTEX by EPA 8021B	*Extracted:*	May-16-19 17:00						May-16-19 17:00					
	Analyzed:	May-17-19 01:57						May-17-19 02:16					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Benzene		<0.00200	0.00200					<0.00200	0.00200				
Toluene		<0.00200	0.00200					<0.00200	0.00200				
Ethylbenzene		<0.00200	0.00200					<0.00200	0.00200				
m,p-Xylenes		<0.00399	0.00399					<0.00400	0.00400				
o-Xylene		<0.00200	0.00200					<0.00200	0.00200				
Total Xylenes		<0.00200	0.00200					<0.00200	0.00200				
Total BTEX		<0.00200	0.00200					<0.00200	0.00200				
Chloride by EPA 300	*Extracted:*	May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-16-19 16:30		May-17-19 10:30		May-17-19 10:30	
	Analyzed:	May-17-19 20:06		May-17-19 20:28		May-17-19 20:35		May-17-19 20:42		May-17-19 21:55		May-17-19 22:17	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		13.5	5.02	8.09	4.98	12.4	5.00	318	5.04	175	4.96	343	4.95
TPH by SW8015 Mod	*Extracted:*	May-17-19 14:00						May-17-19 14:00					
	Analyzed:	May-18-19 00:36						May-18-19 00:56					
	Units/RL:	mg/kg	RL					mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0					<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0					<15.0	15.0				
Total TPH		<15.0	15.0					<15.0	15.0				

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 624551

Tetra Tech- Midland, Midland, TX

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy County, NM

Date Received in Lab: Thu May-16-19 01:47 pm
Report Date: 20-MAY-19
Project Manager: Jessica Kramer

Analysis Requested												
	Lab Id:	624551-019		624551-020		624551-021						
	Field Id:	AH-9 (0-1')		AH-9 (2')		AH-9 (3')						
	Depth:											
	Matrix:	SOIL		SOIL		SOIL						
	Sampled:	May-15-19 00:00		May-15-19 00:00		May-15-19 00:00						
BTEX by EPA 8021B	***Extracted:***	May-16-19 17:00										
	Analyzed:	May-17-19 02:35										
	Units/RL:	mg/kg	RL									
Benzene		<0.00200	0.00200									
Toluene		<0.00200	0.00200									
Ethylbenzene		<0.00200	0.00200									
m,p-Xylenes		<0.00401	0.00401									
o-Xylene		<0.00200	0.00200									
Total Xylenes		<0.00200	0.00200									
Total BTEX		<0.00200	0.00200									
Chloride by EPA 300	***Extracted:***	May-17-19 10:30		May-17-19 10:30		May-17-19 10:30						
	Analyzed:	May-17-19 22:24		May-17-19 22:31		May-17-19 22:38						
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL					
Chloride		137	5.03	168	5.02	425	5.02					
TPH by SW8015 Mod	***Extracted:***	May-17-19 14:00										
	Analyzed:	May-18-19 01:16										
	Units/RL:	mg/kg	RL									
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0									
Diesel Range Organics (DRO)		<15.0	15.0									
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0									
Total TPH		<15.0	15.0									

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: JR's Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624551,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 624551-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 01:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0366	0.0300	122	70-130	

Lab Batch #: 3089307 **Sample:** 624551-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 01:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0375	0.0300	125	70-130	

Lab Batch #: 3089307 **Sample:** 624551-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 02:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0370	0.0300	123	70-130	

Lab Batch #: 3089307 **Sample:** 624551-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 02:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	70-130	
4-Bromofluorobenzene	0.0369	0.0300	123	70-130	

Lab Batch #: 3089300 **Sample:** 624551-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 07:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0323	0.0300	108	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624551,

Project ID: 212C-MD-01739

Lab Batch #: 3089300 **Sample:** 624551-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 07:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0310	0.0300	103	70-130	

Lab Batch #: 3089300 **Sample:** 624551-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 08:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	70-130	
4-Bromofluorobenzene	0.0313	0.0300	104	70-130	

Lab Batch #: 3089544 **Sample:** 624551-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 22:35

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.7	100	70-135	
o-Terphenyl	50.0	49.9	100	70-135	

Lab Batch #: 3089544 **Sample:** 624551-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 23:35

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	51.0	49.9	102	70-135	

Lab Batch #: 3089544 **Sample:** 624551-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 23:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	50.7	50.0	101	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: JR's Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624551,

Project ID: 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624551-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 00:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	51.9	49.8	104	70-135	

Lab Batch #: 3089544 **Sample:** 624551-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 00:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.7	102	70-135	
o-Terphenyl	51.2	49.9	103	70-135	

Lab Batch #: 3089544 **Sample:** 624551-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 00:56

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3089544 **Sample:** 624551-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/18/19 01:16

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	50.9	50.0	102	70-135	

Lab Batch #: 3089307 **Sample:** 7678055-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 00:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0317	0.0300	106	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624551,

Project ID: 212C-MD-01739

Lab Batch #: 3089300 **Sample:** 7678051-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 00:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	70-130	
4-Bromofluorobenzene	0.0240	0.0300	80	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 21:36

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 3089307 **Sample:** 7678055-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3089300 **Sample:** 7678051-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0289	0.0300	96	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 21:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	61.1	50.0	122	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: JR's Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624551,

Project ID: 212C-MD-01739

Lab Batch #: 3089307 **Sample:** 7678055-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0326	0.0300	109	70-130	

Lab Batch #: 3089300 **Sample:** 7678051-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/16/19 23:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	70-130	
4-Bromofluorobenzene	0.0307	0.0300	102	70-130	

Lab Batch #: 3089544 **Sample:** 7678170-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/17/19 22:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.9	50.0	130	70-135	

Lab Batch #: 3089307 **Sample:** 624486-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/16/19 23:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0346	0.0300	115	70-130	

Lab Batch #: 3089300 **Sample:** 624489-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/16/19 23:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0299	0.0300	100	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Work Orders : 624551,

Project ID: 212C-MD-01739

Lab Batch #: 3089544 **Sample:** 624551-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 22:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	58.5	49.9	117	70-135	

Lab Batch #: 3089307 **Sample:** 624486-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 00:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	70-130	
4-Bromofluorobenzene	0.0342	0.0300	114	70-130	

Lab Batch #: 3089300 **Sample:** 624489-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 00:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0312	0.0300	104	70-130	

Lab Batch #: 3089544 **Sample:** 624551-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/17/19 23:15

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	99.9	125	70-135	
o-Terphenyl	56.4	50.0	113	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: JR's Horz Federal #2 Washout Area (2/4/19)

Work Order #: 624551 **Project ID:** 212C-MD-01739

Analyst: SCM **Date Prepared:** 05/16/2019 **Date Analyzed:** 05/16/2019

Lab Batch ID: 3089300 **Sample:** 7678051-1-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	<0.000386	0.100	0.105	105	0.0998	0.112	112	6	70-130	35	
Toluene	<0.000457	0.100	0.0978	98	0.0998	0.103	103	5	70-130	35	
Ethylbenzene	<0.000567	0.100	0.0998	100	0.0998	0.106	106	6	70-130	35	
m,p-Xylenes	<0.00102	0.201	0.206	102	0.200	0.219	110	6	70-130	35	
o-Xylene	<0.000346	0.100	0.105	105	0.0998	0.110	110	5	70-130	35	

Analyst: SCM **Date Prepared:** 05/16/2019 **Date Analyzed:** 05/16/2019

Lab Batch ID: 3089307 **Sample:** 7678055-1-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	<0.00201	0.100	0.100	100	0.0998	0.103	103	3	70-130	35	
Toluene	<0.00201	0.100	0.0984	98	0.0998	0.0997	100	1	70-130	35	
Ethylbenzene	<0.00201	0.100	0.106	106	0.0998	0.107	107	1	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.224	111	0.200	0.225	113	0	70-130	35	
o-Xylene	<0.00201	0.100	0.111	111	0.0998	0.112	112	1	70-130	35	

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

BS / BSD Recoveries

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Work Order #: 624551 **Project ID:** 212C-MD-01739

Analyst: CHE **Date Prepared:** 05/16/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089463 **Sample:** 7678026-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	254	102	250	254	102	0	90-110	20	

Analyst: SPC **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089480 **Sample:** 7678108-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	260	104	250	261	104	0	90-110	20	

Analyst: ARM **Date Prepared:** 05/17/2019 **Date Analyzed:** 05/17/2019

Lab Batch ID: 3089544 **Sample:** 7678170-1-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)	<8.00	1000	1080	108	1000	1090	109	1	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1120	112	1000	1120	112	0	70-135	20	

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

Form 3 - MS / MSD Recoveries

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Work Order # : 624551 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089300 **QC- Sample ID:** 624489-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/16/2019 **Date Prepared:** 05/16/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	0.000403	0.101	0.0950	94	0.0992	0.0955	96	1	70-130	35	
Toluene	0.000494	0.101	0.0840	83	0.0992	0.0847	85	1	70-130	35	
Ethylbenzene	<0.000568	0.101	0.0739	73	0.0992	0.0745	75	1	70-130	35	
m,p-Xylenes	<0.00102	0.201	0.141	70	0.198	0.140	71	1	70-130	35	
o-Xylene	<0.000346	0.101	0.0731	72	0.0992	0.0740	74	1	70-130	35	

Lab Batch ID: 3089307 **QC- Sample ID:** 624486-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/16/2019 **Date Prepared:** 05/16/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00202	0.101	0.0847	84	0.0996	0.0951	95	12	70-130	35	
Toluene	<0.00202	0.101	0.0868	86	0.0996	0.0940	94	8	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0942	93	0.0996	0.102	102	8	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.199	99	0.199	0.215	108	8	70-130	35	
o-Xylene	<0.00202	0.101	0.0993	98	0.0996	0.106	106	7	70-130	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: JR's Horz Federal #2 Washout Area (2/4/19)

Work Order # : 624551 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089463 **QC- Sample ID:** 624551-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/18/2019 **Date Prepared:** 05/16/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	502	251	719	86	251	720	87	0	90-110	20	X

Lab Batch ID: 3089463 **QC- Sample ID:** 624551-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/16/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	212	251	474	104	251	468	102	1	90-110	20	

Lab Batch ID: 3089480 **QC- Sample ID:** 624551-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	175	248	421	99	248	420	99	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: JR's Horz Federal #2 Washout Area (2/4/19)

Work Order # : 624551 **Project ID:** 212C-MD-01739

Lab Batch ID: 3089480 **QC- Sample ID:** 624554-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	26.1	250	296	108	250	298	109	1	90-110	20	

Lab Batch ID: 3089544 **QC- Sample ID:** 624551-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/17/2019 **Date Prepared:** 05/17/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	8.20	997	1130	113	999	1150	114	2	70-135	20	
Diesel Range Organics (DRO)	8.48	997	1090	108	999	1120	111	3	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.

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

624551

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Washout Area (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/gk. 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	# 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')	5/15/2019			X				X		1	N	X			X												X								
	AH-1 (2')	5/15/2019			X				X		1	N																X								
	AH-1 (3')	5/15/2019			X				X		1	N																X								
	AH-1 (4')	5/15/2019			X				X		1	N																X								
	AH-3 (0-1')	5/15/2019			X				X		1	N	X			X												X								
	AH-3 (2')	5/15/2019			X				X		1	N																X								
	AH-3 (3')	5/15/2019			X				X		1	N																X								
	AH-5 (0-1')	5/15/2019			X				X		1	N	X			X												X								
	AH-5 (2')	5/15/2019			X				X		1	N																X								
	AH-5 (3')	5/15/2019			X				X		1	N																X								

Relinquished by:	Date: 5/16/19	Time: 13:47	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 5/16/19 Time: 1347

Received by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature 1.1/1.0

R8 -0.1

REMARKS:

☐ 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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

602455

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Washout Area (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/gk. 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:	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-6 (0-1')	5/15/2019			X				X			1	N	X		X												X							
	AH-6 (2')	5/15/2019			X				X			1	N															X							
	AH-7 (0-1')	5/15/2019			X				X			1	N	X		X												X							
	AH-7 (2')	5/15/2019			X				X			1	N															X							
	AH-7 (3')	5/15/2019			X				X			1	N															X							
	AH-8 (0-1')	5/15/2019			X				X			1	N	X		X												X							
	AH-8 (2')	5/15/2019			X				X			1	N															X							
	AH-8 (3')	5/15/2019			X				X			1	N															X							

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	5/16/19	1347		5/16/19	1347
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature
1.1 | 1.0
R8 - 0.1

REMARKS:

- 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

Analysis Request of Chain of Custody Record

Tetra Tech, Inc.

4000 N. Big Spring Street, Ste
401 Midland,Texas 79705
Tel (432) 682-4559
Fax (432) 682-3946

602455.1

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2 Washout Area (2/4/19)	
Project Location: (county, state) Eddy County, NM	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona

Comments: Run deeper samples if TPH (GRO + DRO + MRO) exceeds 1,000 mg/gk. 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	# 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-9 (0-1')	5/15/2019			X				X		1	N	X		X												X							
	AH-9 (2')	5/15/2019			X				X		1	N															X							
	AH-9 (3')	5/15/2019			X				X		1	N															X							

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
	5/16/19	13:47		5/16/19	1347
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature
1-1.1-1.0
R8-0-1

REMARKS:

- ☐ 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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/16/2019 01:47:00 PM

Work Order #: 624551

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 05/16/2019

Checklist reviewed by: Jessica Kramer Date: 05/17/2019

Jessica Kramer

Analytical Report 623130

for

Tetra Tech- Midland

Project Manager: Mike Carmona

JRs Horz Federal #2 (4-4-19)

212CMD-01739

08-MAY-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

08-MAY-19

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

Reference: XENCO Report No(s): **623130**
JRs Horz Federal #2 (4-4-19)
Project Address: Eddy County, New Mexico

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) 623130. 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. 623130 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 623130

Tetra Tech- Midland, Midland, TX

JRs Horz Federal #2 (4-4-19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-2 (0-1') 3'BEB	S	05-02-19 00:00		623130-001
AH-2 (2') 3'BEB	S	05-02-19 00:00		623130-002
AH-2 (3') 3'BEB	S	05-02-19 00:00		623130-003
AH-2 (4') 3'BEB	S	05-02-19 00:00		623130-004
AH-4 (0-1') 3'BEB	S	05-02-19 00:00		623130-005
AH-4 (2') 3'BEB	S	05-02-19 00:00		623130-006
AH-4 (3') 3'BEB	S	05-02-19 00:00		623130-007
AH-4 (4') 3'BEB	S	05-02-19 00:00		623130-008

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: JRs Horz Federal #2 (4-4-19)

Project ID: *212CMD-01739*
Work Order Number(s): *623130*

Report Date: *08-MAY-19*
Date Received: *05/03/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3088027 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 623130-004.

Batch: LBA-3088033 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected.
Samples affected are: 623130-008.

Certificate of Analysis Summary 623130

Tetra Tech- Midland, Midland, TX

Project Name: JRs Horz Federal #2 (4-4-19)

Project Id: 212CMD-01739
Contact: Mike Carmona
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri May-03-19 09:45 am
Report Date: 08-MAY-19
Project Manager: Jessica Kramer

Analysis Requested	*Lab Id:*	623130-001		623130-002		623130-003		623130-004		623130-005		623130-006	
	Field Id:	AH-2 (0-1') 3'BEB		AH-2 (2') 3'BEB		AH-2 (3') 3'BEB		AH-2 (4') 3'BEB		AH-4 (0-1') 3'BEB		AH-4 (2') 3'BEB	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	May-02-19 00:00		May-02-19 00:00		May-02-19 00:00		May-02-19 00:00		May-02-19 00:00		May-02-19 00:00	
BTEX by EPA 8021B	*Extracted:*	May-03-19 11:30		May-03-19 11:30		May-03-19 11:30		May-03-19 11:30		May-03-19 11:30		May-03-19 13:00	
	Analyzed:	May-03-19 19:27		May-03-19 19:46		May-03-19 20:05		May-03-19 20:24		May-03-19 20:43		May-03-19 23:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200
Toluene		<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200
Ethylbenzene		<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200
m,p-Xylenes		<0.00398	0.00398	<0.00402	0.00402	<0.00399	0.00399	<0.00403	0.00403	<0.00398	0.00398	<0.00399	0.00399
o-Xylene		<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200
Total Xylenes		<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200
Total BTEX		<0.00199	0.00199	<0.00201	0.00201	<0.00200	0.00200	<0.00202	0.00202	<0.00199	0.00199	<0.00200	0.00200
Chloride by EPA 300	*Extracted:*	May-03-19 17:00		May-03-19 17:00		May-03-19 17:00		May-03-19 17:00		May-03-19 17:00		May-03-19 17:00	
	Analyzed:	May-03-19 19:30		May-03-19 19:35		May-03-19 19:53		May-03-19 19:58		May-03-19 20:04		May-03-19 20:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		191	5.02	1250	25.1	6110	49.5	159	4.95	4960	24.8	2950	24.8
TPH by SW8015 Mod	*Extracted:*	May-04-19 10:00		May-04-19 10:00		May-04-19 10:00		May-04-19 10:00		May-04-19 10:00		May-04-19 10:00	
	Analyzed:	May-05-19 02:07		May-05-19 02:27		May-05-19 02:48		May-05-19 03:50		May-05-19 04:10		May-05-19 04:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0

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

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 623130

Tetra Tech- Midland, Midland, TX

Project Name: JRs Horz Federal #2 (4-4-19)

Project Id: 212CMD-01739
Contact: Mike Carmona
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri May-03-19 09:45 am
Report Date: 08-MAY-19
Project Manager: Jessica Kramer

Analysis Requested									
	Lab Id:	623130-007		623130-008					
	Field Id:	AH-4 (3') 3'BEB		AH-4 (4') 3'BEB					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	May-02-19 00:00		May-02-19 00:00					
BTEX by EPA 8021B	***Extracted:***	May-03-19 13:00		May-03-19 13:00					
	Analyzed:	May-03-19 23:50		May-04-19 00:10					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		<0.00201	0.00201	<0.00198	0.00198				
Toluene		<0.00201	0.00201	<0.00198	0.00198				
Ethylbenzene		<0.00201	0.00201	<0.00198	0.00198				
m,p-Xylenes		<0.00402	0.00402	<0.00397	0.00397				
o-Xylene		<0.00201	0.00201	<0.00198	0.00198				
Total Xylenes		<0.00201	0.00201	<0.00198	0.00198				
Total BTEX		<0.00201	0.00201	<0.00198	0.00198				
Chloride by EPA 300	***Extracted:***	May-03-19 17:00		May-03-19 17:00					
	Analyzed:	May-03-19 20:16		May-03-19 20:21					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		286	5.00	10.2	5.03				
TPH by SW8015 Mod	***Extracted:***	May-04-19 10:00		May-04-19 10:00					
	Analyzed:	May-05-19 04:50		May-05-19 05:11					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0				
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0	<15.0	15.0				
Total TPH		<15.0	15.0	<15.0	15.0				

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

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: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088027 **Sample:** 623130-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 19:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	70-130	
4-Bromofluorobenzene	0.0371	0.0300	124	70-130	

Lab Batch #: 3088027 **Sample:** 623130-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 19:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	70-130	
4-Bromofluorobenzene	0.0372	0.0300	124	70-130	

Lab Batch #: 3088027 **Sample:** 623130-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 20:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	70-130	
4-Bromofluorobenzene	0.0362	0.0300	121	70-130	

Lab Batch #: 3088027 **Sample:** 623130-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 20:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0416	0.0300	139	70-130	**

Lab Batch #: 3088027 **Sample:** 623130-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 20:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	70-130	
4-Bromofluorobenzene	0.0382	0.0300	127	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088033 **Sample:** 623130-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 23:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	70-130	
4-Bromofluorobenzene	0.0358	0.0300	119	70-130	

Lab Batch #: 3088033 **Sample:** 623130-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 23:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

Lab Batch #: 3088033 **Sample:** 623130-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/04/19 00:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	70-130	
4-Bromofluorobenzene	0.0396	0.0300	132	70-130	**

Lab Batch #: 3088044 **Sample:** 623130-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 02:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	51.6	49.9	103	70-135	

Lab Batch #: 3088044 **Sample:** 623130-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 02:27

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	50.4	49.9	101	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: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088044 **Sample:** 623130-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 02:48

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	100	99	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3088044 **Sample:** 623130-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 03:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.8	100	70-135	
o-Terphenyl	50.4	49.9	101	70-135	

Lab Batch #: 3088044 **Sample:** 623130-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 04:10

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 3088044 **Sample:** 623130-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 04:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	50.1	49.9	100	70-135	

Lab Batch #: 3088044 **Sample:** 623130-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 04:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	50.1	50.0	100	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: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088044 **Sample:** 623130-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/05/19 05:11

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.7	101	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

Lab Batch #: 3088027 **Sample:** 7677215-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/03/19 13:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	70-130	
4-Bromofluorobenzene	0.0302	0.0300	101	70-130	

Lab Batch #: 3088033 **Sample:** 7677221-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/03/19 23:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	70-130	
4-Bromofluorobenzene	0.0310	0.0300	103	70-130	

Lab Batch #: 3088044 **Sample:** 7677204-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/04/19 22:02

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	55.4	50.0	111	70-135	

Lab Batch #: 3088027 **Sample:** 7677215-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/03/19 11:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0315	0.0300	105	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088033 **Sample:** 7677221-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/03/19 21:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	70-130	
4-Bromofluorobenzene	0.0321	0.0300	107	70-130	

Lab Batch #: 3088044 **Sample:** 7677204-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/04/19 22:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	61.1	50.0	122	70-135	

Lab Batch #: 3088027 **Sample:** 7677215-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/03/19 12:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	70-130	
4-Bromofluorobenzene	0.0316	0.0300	105	70-130	

Lab Batch #: 3088033 **Sample:** 7677221-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/03/19 21:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	70-130	
4-Bromofluorobenzene	0.0320	0.0300	107	70-130	

Lab Batch #: 3088044 **Sample:** 7677204-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 05/05/19 09:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	56.3	50.0	113	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: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088027 **Sample:** 623115-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 12:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	70-130	
4-Bromofluorobenzene	0.0331	0.0300	110	70-130	

Lab Batch #: 3088033 **Sample:** 623130-006 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 22:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	70-130	
4-Bromofluorobenzene	0.0337	0.0300	112	70-130	

Lab Batch #: 3088044 **Sample:** 623115-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/04/19 23:24

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.8	122	70-135	
o-Terphenyl	53.9	49.9	108	70-135	

Lab Batch #: 3088027 **Sample:** 623115-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 12:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

Lab Batch #: 3088033 **Sample:** 623130-006 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/03/19 22:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	70-130	
4-Bromofluorobenzene	0.0325	0.0300	108	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: JRs Horz Federal #2 (4-4-19)

Work Orders : 623130, 623130 **Project ID:** 212CMD-01739

Lab Batch #: 3088044 **Sample:** 623115-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 05/04/19 23:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	63.5	50.0	127	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: JRs Horz Federal #2 (4-4-19)

Work Order #: 623130, 623130 **Project ID:** 212CMD-01739

Analyst: SCM **Date Prepared:** 05/03/2019 **Date Analyzed:** 05/03/2019

Lab Batch ID: 3088027 **Sample:** 7677215-1-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	<0.00198	0.0992	0.0973	98	0.101	0.104	103	7	70-130	35	
Toluene	<0.00198	0.0992	0.0935	94	0.101	0.0999	99	7	70-130	35	
Ethylbenzene	<0.00198	0.0992	0.102	103	0.101	0.108	107	6	70-130	35	
m,p-Xylenes	<0.00397	0.198	0.211	107	0.202	0.225	111	6	70-130	35	
o-Xylene	<0.00198	0.0992	0.104	105	0.101	0.110	109	6	70-130	35	

Analyst: SCM **Date Prepared:** 05/03/2019 **Date Analyzed:** 05/03/2019

Lab Batch ID: 3088033 **Sample:** 7677221-1-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	<0.00202	0.101	0.0983	97	0.100	0.101	101	3	70-130	35	
Toluene	<0.00202	0.101	0.0970	96	0.100	0.0994	99	2	70-130	35	
Ethylbenzene	<0.00202	0.101	0.105	104	0.100	0.108	108	3	70-130	35	
m,p-Xylenes	<0.00403	0.202	0.219	108	0.200	0.224	112	2	70-130	35	
o-Xylene	<0.00202	0.101	0.109	108	0.100	0.111	111	2	70-130	35	

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

BS / BSD Recoveries

Project Name: JRs Horz Federal #2 (4-4-19)

Work Order #: 623130, 623130 **Project ID:** 212CMD-01739

Analyst: CHE **Date Prepared:** 05/03/2019 **Date Analyzed:** 05/03/2019

Lab Batch ID: 3087995 **Sample:** 7677141-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	261	104	250	261	104	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

Form 3 - MS / MSD Recoveries

Project Name: JRs Horz Federal #2 (4-4-19)

Work Order # : 623130 **Project ID:** 212CMD-01739

Lab Batch ID: 3088027 **QC- Sample ID:** 623115-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/03/2019 **Date Prepared:** 05/03/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0996	0.0826	83	0.100	0.0785	79	5	70-130	35	
Toluene	<0.00199	0.0996	0.0703	71	0.100	0.0682	68	3	70-130	35	X
Ethylbenzene	<0.00199	0.0996	0.0640	64	0.100	0.0641	64	0	70-130	35	X
m,p-Xylenes	<0.00398	0.199	0.132	66	0.200	0.134	67	2	70-130	35	X
o-Xylene	<0.00199	0.0996	0.0666	67	0.100	0.0670	67	1	70-130	35	X

Lab Batch ID: 3088033 **QC- Sample ID:** 623130-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/03/2019 **Date Prepared:** 05/03/2019 **Analyst:** SCM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00201	0.100	0.103	103	0.100	0.0979	98	5	70-130	35	
Toluene	<0.00201	0.100	0.0995	100	0.100	0.0935	94	6	70-130	35	
Ethylbenzene	<0.00201	0.100	0.106	106	0.100	0.0994	99	6	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.221	110	0.200	0.206	103	7	70-130	35	
o-Xylene	<0.00201	0.100	0.109	109	0.100	0.102	102	7	70-130	35	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: JRs Horz Federal #2 (4-4-19)

Work Order # : 623130 **Project ID:** 212CMD-01739

Lab Batch ID: 3087995 **QC- Sample ID:** 623108-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/03/2019 **Date Prepared:** 05/03/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	927	252	2230	517	252	2220	513	0	90-110	20	X

Lab Batch ID: 3087995 **QC- Sample ID:** 623108-020 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/03/2019 **Date Prepared:** 05/03/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	303	250	546	97	250	533	92	2	90-110	20	

Lab Batch ID: 3088044 **QC- Sample ID:** 623115-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 05/04/2019 **Date Prepared:** 05/04/2019 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<7.99	998	978	98	999	1160	116	17	70-135	20	
Diesel Range Organics (DRO)	406	998	1250	85	999	1530	113	20	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.

Analysis Request of Chain of Custody Record

L023130

Page 1 of 1

Tetra Tech, Inc.

901 West Wall, Suite 100
Midland,Texas 79701
Tel (432) 682-4559
Fax (432) 682-3946

Client Name: COG	**Site Manager:** Mike Carmona
Project Name: JRs Horz Federal #2	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-01739
Invoice to: COG Ike Tavarez	
Receiving Laboratory: Xenco	**Sampler Signature:** Mike Carmona
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				
	AH-2 (0-1') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-2 (2') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-2 (3') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-2 (4') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-4 (0-1') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-4 (2') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-4 (3') 3'BEB	5/2/2019			X				X		1	N	X		X												X						
	AH-4 (4') 3'BEB	5/2/2019			X				X		1	N	X		X												X						

1.001

Page 19 of 20

Hold

Relinquished by:	Date: 5-3-19	Time: 0945	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Date: 5/3/19 Time: 0945

LAB USE ONLY

Sample Temperature 2.1 °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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 05/03/2019 09:45:00 AM

Work Order #: 623130

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.1
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 05/03/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 05/03/2019

Jessica Kramer

Analytical Report 628467

for

Tetra Tech- Midland

Project Manager: Mike Carmona

COG JRS Horz Federal #2 (Job number :212C-MD-01739)

28-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

28-JUN-19

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

Reference: XENCO Report No(s): **628467**
COG JRS Horz Federal #2 (Job number :212C-MD-01739)
Project Address:

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) 628467. 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. 628467 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 628467

Tetra Tech- Midland, Midland, TX

COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1	S	06-19-19 00:00	0 - 1 ft	628467-001
AH-1	S	06-19-19 00:00	1 - 1.5 ft	628467-002
AH-1	S	06-19-19 00:00	2 - 2.5 ft	628467-003
AH-2	S	06-19-19 00:00	0 - 1 ft	628467-004
AH-7	S	06-19-19 00:00	0 - 1 ft	628467-005
AH-7	S	06-19-19 00:00	1 - 1.5 ft	628467-006
AH-7	S	06-19-19 00:00	2 - 2.5 ft	628467-007
AH-7	S	06-19-19 00:00	3 - 3.5 ft	628467-008

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Project ID:
Work Order Number(s): *628467*

Report Date: *28-JUN-19*
Date Received: *06/20/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3093834 BTEX by EPA 8021B

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

Certificate of Analysis Summary 628467

Tetra Tech- Midland, Midland, TX

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Project Id:
Contact: Mike Carmona
Project Location:

Date Received in Lab: Thu Jun-20-19 11:13 am
Report Date: 28-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628467-001		628467-002		628467-003		628467-004		628467-005		628467-006	
	Field Id:	AH-1		AH-1		AH-1		AH-2		AH-7		AH-7	
	Depth:	0-1 ft		1-1.5 ft		2-2.5 ft		0-1 ft		0-1 ft		1-1.5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00	
BTEX by EPA 8021B	***Extracted:***	Jun-27-19 05:00						Jun-27-19 05:00		Jun-27-19 05:00			
	Analyzed:	Jun-27-19 18:18						Jun-27-19 18:42		Jun-27-19 19:05			
	Units/RL:	mg/kg	RL					mg/kg	RL	mg/kg	RL		
Benzene		<0.00200	0.00200					<0.00199	0.00199	<0.00199	0.00199		
Toluene		<0.00200	0.00200					<0.00199	0.00199	<0.00199	0.00199		
Ethylbenzene		<0.00200	0.00200					<0.00199	0.00199	<0.00199	0.00199		
m,p-Xylenes		<0.00399	0.00399					<0.00398	0.00398	<0.00398	0.00398		
o-Xylene		<0.00200	0.00200					<0.00199	0.00199	<0.00199	0.00199		
Total Xylenes		<0.00200	0.00200					<0.00199	0.00199	<0.00199	0.00199		
Total BTEX		<0.00200	0.00200					<0.00199	0.00199	<0.00199	0.00199		
Chloride by EPA 300	***Extracted:***	Jun-21-19 11:45		Jun-21-19 11:45		Jun-21-19 11:45		Jun-21-19 11:45		Jun-21-19 11:45		Jun-21-19 11:45	
	Analyzed:	Jun-21-19 15:06		Jun-21-19 15:12		Jun-21-19 15:17		Jun-21-19 15:23		Jun-21-19 15:28		Jun-21-19 15:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		3740	25.2	1300	4.97	919	50.1	931	5.00	2960	50.2	5190	49.7
TPH by SW8015 Mod	***Extracted:***	Jun-23-19 09:00						Jun-23-19 09:00		Jun-23-19 09:00			
	Analyzed:	Jun-23-19 20:08						Jun-23-19 20:33		Jun-23-19 20:57			
	Units/RL:	mg/kg	RL					mg/kg	RL	mg/kg	RL		
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0					<15.0	15.0	<15.0	15.0		
Diesel Range Organics (DRO)		<15.0	15.0					<15.0	15.0	26.2	15.0		
Motor Oil Range Hydrocarbons (MRO)		<15.0	15.0					<15.0	15.0	<15.0	15.0		
Total TPH		<15.0	15.0					<15.0	15.0	26.2	15.0		

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

Version: 1.%

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628467

Tetra Tech- Midland, Midland, TX

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Project Id:

Contact: Mike Carmona

Project Location:

Date Received in Lab: Thu Jun-20-19 11:13 am

Report Date: 28-JUN-19

Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	628467-007		628467-008			
	Field Id:	AH-7		AH-7			
	Depth:	2-2.5 ft		3-3.5 ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Jun-19-19 00:00		Jun-19-19 00:00			
Chloride by EPA 300	***Extracted:***	Jun-21-19 11:45		Jun-21-19 12:15			
	Analyzed:	Jun-21-19 15:39		Jun-21-19 18:41			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		12200	100	595	5.00		

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

Version: 1.%

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: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Work Orders : 628467,

Project ID:

Lab Batch #: 3093433 **Sample:** 628467-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/23/19 20:08

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.0	99.9	75	70-135	
o-Terphenyl	39.3	50.0	79	70-135	

Lab Batch #: 3093433 **Sample:** 628467-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/23/19 20:33

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.9	99.9	78	70-135	
o-Terphenyl	43.5	50.0	87	70-135	

Lab Batch #: 3093433 **Sample:** 628467-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/23/19 20:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.3	99.7	83	70-135	
o-Terphenyl	46.7	49.9	94	70-135	

Lab Batch #: 3093834 **Sample:** 628467-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/27/19 18:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	70-130	
4-Bromofluorobenzene	0.0340	0.0300	113	70-130	

Lab Batch #: 3093834 **Sample:** 628467-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/27/19 18:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Work Orders : 628467,

Project ID:

Lab Batch #: 3093834 **Sample:** 628467-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/27/19 19:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	70-130	
4-Bromofluorobenzene	0.0324	0.0300	108	70-130	

Lab Batch #: 3093433 **Sample:** 7680670-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/23/19 12:39

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	59.7	50.0	119	70-135	

Lab Batch #: 3093834 **Sample:** 7680951-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/27/19 08:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

Lab Batch #: 3093433 **Sample:** 7680670-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/23/19 13:04

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.2	100	82	70-135	
o-Terphenyl	51.1	50.0	102	70-135	

Lab Batch #: 3093834 **Sample:** 7680951-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/27/19 05:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	70-130	
4-Bromofluorobenzene	0.0354	0.0300	118	70-130	

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

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Work Orders : 628467,

Project ID:

Lab Batch #: 3093433 **Sample:** 7680670-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 06/23/19 13:29

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	100	91	70-135	
o-Terphenyl	52.7	50.0	105	70-135	

Lab Batch #: 3093834 **Sample:** 7680951-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0348	0.0300	116	70-130	

Lab Batch #: 3093433 **Sample:** 628256-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/23/19 14:19

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.2	99.9	78	70-135	
o-Terphenyl	47.7	50.0	95	70-135	

Lab Batch #: 3093834 **Sample:** 627832-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/27/19 06:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	70-130	
4-Bromofluorobenzene	0.0350	0.0300	117	70-130	

Lab Batch #: 3093433 **Sample:** 628256-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/23/19 14:44

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.4	99.7	84	70-135	
o-Terphenyl	45.3	49.9	91	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.

Version: 1.%

Form 2 - Surrogate Recoveries

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Work Orders : 628467,

Project ID:

Lab Batch #: 3093834 **Sample:** 627832-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 06/27/19 06:56

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	70-130	
4-Bromofluorobenzene	0.0343	0.0300	114	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Version: 1.%

BS / BSD Recoveries

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Work Order #: 628467 **Project ID:**

Analyst: DVM **Date Prepared:** 06/27/2019 **Date Analyzed:** 06/27/2019

Lab Batch ID: 3093834 **Sample:** 7680951-1-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	<0.00199	0.0994	0.0837	84	0.100	0.0862	86	3	70-130	35	
Toluene	<0.000453	0.0994	0.102	103	0.100	0.102	102	0	70-130	35	
Ethylbenzene	<0.00199	0.0994	0.116	117	0.100	0.116	116	0	70-130	35	
m,p-Xylenes	<0.00101	0.199	0.234	118	0.200	0.232	116	1	70-130	35	
o-Xylene	0.000349	0.0994	0.112	113	0.100	0.111	111	1	70-130	35	

Analyst: SPC **Date Prepared:** 06/21/2019 **Date Analyzed:** 06/21/2019

Lab Batch ID: 3093266 **Sample:** 7680449-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	233	93	250	234	94	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

Version: 1.%

BS / BSD Recoveries

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-01739)

Work Order #: 628467 **Project ID:**

Analyst: SPC **Date Prepared:** 06/21/2019 **Date Analyzed:** 06/21/2019

Lab Batch ID: 3093268 **Sample:** 7680450-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	235	94	250	235	94	0	90-110	20	

Analyst: ARM **Date Prepared:** 06/23/2019 **Date Analyzed:** 06/23/2019

Lab Batch ID: 3093433 **Sample:** 7680670-1-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	1020	102	1000	1080	108	6	70-135	20	
Diesel Range Organics (DRO)	<8.13	1000	1160	116	1000	1170	117	1	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

Version: 1.%

Form 3 - MS / MSD Recoveries

Project Name: COG JRS Horz Federal #2 (Job number :212C-MD-017[illegible]

Work Order # : 628467 **Project ID:**

Lab Batch ID: 3093834 **QC- Sample ID:** 627832-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/27/2019 **Date Prepared:** 06/27/2019 **Analyst:** DVM

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	<0.00201	0.101	0.0777	77	0.100	0.0748	75	4	70-130	35	
Toluene	<0.000458	0.101	0.0806	80	0.100	0.0747	75	8	70-130	35	
Ethylbenzene	<0.00201	0.101	0.0815	81	0.100	0.0756	76	8	70-130	35	
m,p-Xylenes	<0.00402	0.201	0.154	77	0.200	0.142	71	8	70-130	35	
o-Xylene	<0.00201	0.101	0.0777	77	0.100	0.0723	72	7	70-130	35	

Lab Batch ID: 3093266 **QC- Sample ID:** 628028-012 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	21.7	252	260	95	252	260	95	0	90-110	20	

Lab Batch ID: 3093266 **QC- Sample ID:** 628028-022 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4.87	250	258	101	250	257	101	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: COG JRS Horz Federal #2 (Job number :212C-MD-017[illegible]

Work Order # : 628467 **Project ID:**

Lab Batch ID: 3093268 **QC- Sample ID:** 627846-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	121	251	369	99	251	367	98	1	90-110	20	

Lab Batch ID: 3093268 **QC- Sample ID:** 628468-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	633	251	879	98	251	883	100	0	90-110	20	

Lab Batch ID: 3093433 **QC- Sample ID:** 628256-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/23/2019 **Date Prepared:** 06/23/2019 **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)	11.6	999	871	86	997	854	84	2	70-135	20	
Diesel Range Organics (DRO)	11.8	999	966	96	997	993	98	3	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.

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Phoenix, Arizona (480-355-0900)

Xenco Quote # | **Xenco Job #** 628467

Client / Reporting Information

Company Name / Branch: Tetra Tech, Inc. on behalf of COG Operating, LLC.
Company Address: 901 W. Wall St., Ste. 100, Midland, TX 79705
Email: mike.carmona@tetratech.com **Phone No:** (432) 682-4559
Project Contact: Mike Carmona
Samplers's Name: Mike Carmona & Devin Brown

Project Information

Project Name/Number: COG JRS Horz Federal #2 (job number: 212C-MD-01739)
Date June 20th, 2019
Invoice To: Ike Tavarez, P.G. Senior HSE Supervisor - COG Operating, LLC.
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	None/On Ice	Chlorides	BTEX 8021B	BTEX 8260B	TPH 8015M (GRO - DRO - ORO - MRO)	Field Comments
1	AH-1	0-1'	6/19/19		S	1								✓	✓	✓	✓	✓	
2	AH-1	1-1.5'	6/19/19		S	1								✓	✓				
3	AH-1	2-2.5'	6/19/19		S	1								✓	✓				
4	AH-2	0-1'	6/19/19		S	1								✓	✓	✓	✓	✓	
5	AH-7	0-1'	6/19/19		S	1								✓	✓	✓	✓	✓	
6	AH-7	1-1.5'	6/19/19		S	1								✓	✓				
7	AH-7	2-2.5'	6/19/19		S	1								✓	✓				
8	AH-7	3-3.5'	6/19/19		S	1								✓	✓				
9																			
10																			

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☑ 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- ☐ Level II Std QC
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ Level III Std QC+ Forms
- ☐ TRRP Level IV
- ☐ Level 3 (CLP Forms)
- ☐ UST / RG -411
- ☐ TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1	Devin Brown	6/20/19 1113		2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. 0.6/0.4 Thermo. Corr. Factor
			5			

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 06/20/2019 11:13:00 AM

Work Order #: 628467

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 06/20/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/20/2019

Jessica Kramer

Analytical Report 628468

for

Tetra Tech- Midland

Project Manager: Mike Carmona

COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

25-JUN-19

Collected By: Client

1211 W. Florida Ave
Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-29), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-19-19), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-18-14)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-20)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-18-18)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-18-4)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429), North Carolina (483)

25-JUN-19

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

Reference: XENCO Report No(s): **628468**
COG Jrs Horz Federal #2 (Job number:212C-MD-01739)
Project Address:

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) 628468. 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. 628468 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 628468

Tetra Tech- Midland, Midland, TX

COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH-1	S	06-19-19 00:00	0 - 1 ft	628468-001
AH-1	S	06-19-19 00:00	2 - 1 ft	628468-002
AH-1	S	06-19-19 00:00	3 - 1 ft	628468-003
AH-1	S	06-19-19 00:00	4 - 1 ft	628468-004
AH-2	S	06-19-19 00:00	0 - 1 ft	628468-005
AH-2	S	06-19-19 00:00	2 - 1 ft	628468-006
AH-2	S	06-19-19 00:00	3 - 1 ft	628468-007
AH-2	S	06-19-19 00:00	4 - 1 ft	628468-008
AH-3	S	06-19-19 00:00	0 - 1 ft	628468-009
AH-3	S	06-19-19 00:00	2 - 1 ft	628468-010
AH-3	S	06-19-19 00:00	3 - 1 ft	628468-011
AH-3	S	06-19-19 00:00	0 - 1 ft	628468-012
AH-4	S	06-19-19 00:00	2 - 1 ft	628468-013
AH-4	S	06-19-19 00:00	3 - 1 ft	628468-014
AH-6	S	06-19-19 00:00	0 - 1 ft	628468-015
AH-6	S	06-19-19 00:00	2 - 1 ft	628468-016
ESW-1	S	06-19-19 00:00	ft	628468-017
SSW-1	S	06-19-19 00:00	ft	628468-018
WSW-1	S	06-19-19 00:00	ft	628468-019
WSW-2	S	06-19-19 00:00	ft	628468-020

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Project ID:
Work Order Number(s): *628468*

Report Date: *25-JUN-19*
Date Received: *06/20/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 628468

Tetra Tech- Midland, Midland, TX

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Project Id:
Contact: Mike Carmona
Project Location:

Date Received in Lab: Thu Jun-20-19 11:13 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628468-001		628468-002		628468-003		628468-004		628468-005		628468-006	
	Field Id:	AH-1		AH-1		AH-1		AH-1		AH-2		AH-2	
	Depth:	0-1 ft		2-1 ft		3-1 ft		4-1 ft		0-1 ft		2-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15	
	Analyzed:	Jun-21-19 16:29		Jun-21-19 16:34		Jun-21-19 16:40		Jun-21-19 16:45		Jun-21-19 17:02		Jun-21-19 17:07	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		72.6	5.00	177	4.95	403	5.02	1150	5.00	58.6	5.01	130	5.00

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628468

Tetra Tech- Midland, Midland, TX

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Project Id:
Contact: Mike Carmona
Project Location:

Date Received in Lab: Thu Jun-20-19 11:13 am
Report Date: 25-JUN-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628468-007		628468-008		628468-009		628468-010		628468-011		628468-012	
	Field Id:	AH-2		AH-2		AH-3		AH-3		AH-3		AH-3	
	Depth:	3-1 ft		4-1 ft		0-1 ft		2-1 ft		3-1 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15	
	Analyzed:	Jun-21-19 17:13		Jun-21-19 17:29		Jun-21-19 17:18		Jun-21-19 17:24		Jun-21-19 17:46		Jun-21-19 17:51	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1190	5.03	633	5.02	1160	25.1	11300	100	10600	49.6	94.9	4.96

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628468

Tetra Tech- Midland, Midland, TX

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Project Id:

Contact: Mike Carmona

Project Location:

Date Received in Lab: Thu Jun-20-19 11:13 am

Report Date: 25-JUN-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628468-013		628468-014		628468-015		628468-016		628468-017		628468-018	
	Field Id:	AH-4		AH-4		AH-6		AH-6		ESW-1		SSW-1	
	Depth:	2-1 ft		3-1 ft		0-1 ft		2-1 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00		Jun-19-19 00:00	
Chloride by EPA 300	***Extracted:***	Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15		Jun-21-19 12:15	
	Analyzed:	Jun-21-19 18:08		Jun-21-19 18:14		Jun-21-19 18:19		Jun-21-19 18:25		Jun-21-19 18:30		Jun-21-19 18:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1450	25.2	809	4.97	31.5	4.98	55.9	4.96	339	5.02	346	5.01

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 628468

Tetra Tech- Midland, Midland, TX

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Project Id:

Contact: Mike Carmona

Project Location:

Date Received in Lab: Thu Jun-20-19 11:13 am

Report Date: 25-JUN-19

Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	628468-019		628468-020									
	Field Id:	WSW-1		WSW-2									
	Depth:												
	Matrix:	SOIL		SOIL									
	Sampled:	Jun-19-19 00:00		Jun-19-19 00:00									
Chloride by EPA 300	***Extracted:***	Jun-22-19 10:50		Jun-22-19 10:50									
	Analyzed:	Jun-22-19 11:52		Jun-22-19 11:56									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		230	5.00	4210	25.1								

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

BS / BSD Recoveries

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739)

Work Order #: 628468 **Project ID:**

Analyst: SPC **Date Prepared:** 06/21/2019 **Date Analyzed:** 06/21/2019

Lab Batch ID: 3093268 **Sample:** 7680450-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	235	94	250	235	94	0	90-110	20	

Analyst: CHE **Date Prepared:** 06/22/2019 **Date Analyzed:** 06/22/2019

Lab Batch ID: 3093318 **Sample:** 7680530-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 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	239	96	250	239	96	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

Form 3 - MS / MSD Recoveries

Project Name: COG Jrs Horz Federal #2 (Job number:212C-MD-01739,

Work Order # : 628468 **Project ID:**

Lab Batch ID: 3093268 **QC- Sample ID:** 627846-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	121	251	369	99	251	367	98	1	90-110	20	

Lab Batch ID: 3093268 **QC- Sample ID:** 628468-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/21/2019 **Date Prepared:** 06/21/2019 **Analyst:** SPC

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	633	251	879	98	251	883	100	0	90-110	20	

Lab Batch ID: 3093318 **QC- Sample ID:** 626604-080 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 06/22/2019 **Date Prepared:** 06/22/2019 **Analyst:** CHE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.03	252	244	97	252	244	97	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.

XENCO LABORATORIES
Setting the Standard since 1990
Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

CHAIN OF CUSTODY

Page 1 Of 2

Xenco Quote #:
Xenco Job #: [illegible]

Client / Reporting Information

Company Name / Branch: Tetra Tech, Inc. on behalf of COG Operating, LLC.
Company Address: 901 W. Wall St., Ste. 100, Midland, TX 79705
Email: mike.carmona@tetratech.com
Phone No: (432) 682-4559
Project Contact: Mike Carmona
Samplers's Name: Mike Carmona & Devin Brown

Project Information

Project Name/Number: COG JRS Horz Federal #2 (job number: 212C-MD-01739)
Date: June 20th, 2019
Invoice To: Ike Tavarez, P.G., Senior HSE Supervisor - COG Operating, LLC.
PO Number:

Matrix Codes
W = Water
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GW =Ground Water
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SW = Surface water
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OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Sample Depth (Collection)	Date (Collection)	Time (Collection)	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Chlorides	Field Comments
1	AH-1	0-1'	6/19/19		S	1								✓	✓	
2	AH-1	2'	6/19/19		S	1								✓	✓	
3	AH-1	3'	6/19/19		S	1								✓	✓	
4	AH-1	4'	6/19/19		S	1								✓	✓	
5	AH-2	0-1'	6/19/19		S	1								✓	✓	
6	AH-2	2'	6/19/19		S	1								✓	✓	
7	AH-2	3'	6/19/19		S	1								✓	✓	
8	AH-2	4'	6/19/19		S	1								✓	✓	
9	AH-3	0-1'	6/19/19		S	1								✓	✓	
10	AH-3	2'	6/19/19		S	1								✓	✓	

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☑ 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- ☐ Level II Std QC
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ Level III Std QC+ Forms
- ☐ TRRP Level IV
- ☐ Level 3 (CLP Forms)
- ☐ UST / RG -411
- ☐ TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1 Relinquished by Sampler: [signature]	6/20/19 1113	1 [signature]	2		2
3		3	4		4
5		5	Custody Seal #	Preserved where applicable	On Ice ☑ / Cooler Temp. / Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO LABORATORIES

Setting the Standard since 1990

CHAIN OF CUSTODY

Page 2 Of 2

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
www.xenco.com
Phoenix, Arizona (480-355-0900)

Xenco Quote # | **Xenco Job #** 602408

Client / Reporting Information

Company Name / Branch: Tetra Tech, Inc. on behalf of COG Operating, LLC.
Company Address: 901 W. Wall St., Ste. 100, Midland, TX 79705
Email: mike.carmona@tetratech.com **Phone No:** (432) 682-4559
Project Contact: Mike Carmona
Samplers's Name: Mike Carmona & Devin Brown

Project Information

Project Name/Number: COG JRS Horz Federal #2 (job number: 212C-MD-01739)
Date June 20th, 2019
Invoice To: Ike Tavarez, P.G. Senior HSE Supervisor - COG Operating, LLC.
PO Number:

Analytical Information

Matrix Codes

W = Water
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
OW =Ocean/Sea Water
WI = Wipe
O = Oil
WW= Waste Water
A = Air

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	None/On Ice	Chlorides									Field Comments
1	AH-3	3'	6/19/19		S	1								✓	✓									
2	AH-4	0-1'	6/19/19		S	1								✓	✓									
3	AH-4	2'	6/19/19		S	1								✓	✓									
4	AH-4	3'	6/19/19		S	1								✓	✓									
5	AH-6	0-1'	6/19/19		S	1								✓	✓									
6	AH-6	2'	6/19/19		S	1								✓	✓									
7	ESW-1	N/A	6/19/19		S	1								✓	✓									
8	SSW-1	N/A	6/19/19		S	1								✓	✓									
9	WSW-1	N/A	6/19/19		S	1								✓	✓									
10	WSW-2	N/A	6/19/19		S	1								✓	✓									

Turnaround Time (Business days)

- ☐ Same Day TAT
- ☐ 5 Day TAT
- ☐ Next Day EMERGENCY
- ☐ 7 Day TAT
- ☐ 2 Day EMERGENCY
- ☐ Contract TAT
- ☑ 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

- ☐ Level II Std QC
- ☐ Level IV (Full Data Pkg /raw data)
- ☐ Level III Std QC+ Forms
- ☐ TRRP Level IV
- ☐ Level 3 (CLP Forms)
- ☐ UST / RG -411
- ☐ TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

Relinquished by Sampler: 1	Date Time: 6/19/19 1113	Received By: 1	Relinquished By: 2	Date Time:	Received By: 2
Relinquished by: 3	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
Relinquished by: 5	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable ☐	On Ice ☑ Cooler Temp. 0.4/0.4 Thermo. Corr. Factor

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 06/20/2019 11:13:00 AM

Work Order #: 628468

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

Temperature Measuring device used : R8

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

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

Analyst: PH Device/Lot#:

Checklist completed by: Brianna Teel Date: 06/20/2019

Brianna Teel

Checklist reviewed by: Jessica Kramer Date: 06/20/2019

Jessica Kramer

CARDINAL Laboratories

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

August 27, 2019

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: JRS HORS FED 2 (2.4.19)

Enclosed are the results of analyses for samples received by the laboratory on 08/22/19 15:25.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. 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:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 1 (2') (H902893-01)

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	08/23/2019	ND	1.69	84.6	2.00	7.56	
Toluene*	<0.050	0.050	08/23/2019	ND	1.83	91.3	2.00	8.61	
Ethylbenzene*	<0.050	0.050	08/23/2019	ND	1.94	97.0	2.00	8.57	
Total Xylenes*	<0.150	0.150	08/23/2019	ND	5.84	97.4	6.00	8.47	
Total BTEX	<0.300	0.300	08/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.7 %* *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	08/26/2019	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	08/24/2019	ND	191	95.6	200	3.67	
DRO >C10-C28*	<10.0	10.0	08/24/2019	ND	189	94.4	200	6.47	
EXT DRO >C28-C36	<10.0	10.0	08/24/2019	ND					

Surrogate: 1-Chlorooctane *86.3 %* *41-142*

Surrogate: 1-Chlorooctadecane *91.8 %* *37.6-147*

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 1 (3') (H902893-02)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**208**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 1 (4') (H902893-03)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**336**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 1 (6') (H902893-04)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**480**	16.0	08/26/2019	ND	432	108	400	3.77	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 2 (1') (H902893-05)

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	08/23/2019	ND	1.69	84.6	2.00	7.56	
Toluene*	<0.050	0.050	08/23/2019	ND	1.83	91.3	2.00	8.61	
Ethylbenzene*	<0.050	0.050	08/23/2019	ND	1.94	97.0	2.00	8.57	
Total Xylenes*	<0.150	0.150	08/23/2019	ND	5.84	97.4	6.00	8.47	
Total BTEX	<0.300	0.300	08/23/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *92.5 %* *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	**9000**	16.0	08/26/2019	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	08/24/2019	ND	191	95.6	200	3.67	
DRO >C10-C28*	<10.0	10.0	08/24/2019	ND	189	94.4	200	6.47	
EXT DRO >C28-C36	<10.0	10.0	08/24/2019	ND					

Surrogate: 1-Chlorooctane *106 %* *41-142*

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

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 2 (2') (H902893-06)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**14800**	16.0	08/26/2019	ND	400	100	400	0.00	QM-07

Sample ID: TRENCH # 2 (3') (H902893-07)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2120**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 2 (4') (H902893-08)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3720**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 2 (5') (H902893-09)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**2280**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 2 (6') (H902893-10)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3600**	16.0	08/26/2019	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 2 (7') (H902893-11)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5600**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 2 (8') (H902893-12)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4640**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 2 (10') (H902893-13)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1730**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 2 (12') (H902893-14)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4120**	16.0	08/26/2019	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 3 (1') (H902893-15)

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	08/24/2019	ND	1.68	83.8	2.00	3.40	
Toluene*	<0.050	0.050	08/24/2019	ND	1.84	92.2	2.00	1.47	
Ethylbenzene*	<0.050	0.050	08/24/2019	ND	1.98	98.8	2.00	1.53	
Total Xylenes*	<0.150	0.150	08/24/2019	ND	5.90	98.3	6.00	1.11	
Total BTEX	<0.300	0.300	08/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *92.9 %* *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	**800**	16.0	08/26/2019	ND	400	100	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	08/24/2019	ND	191	95.6	200	3.67	
DRO >C10-C28*	<10.0	10.0	08/24/2019	ND	189	94.4	200	6.47	
EXT DRO >C28-C36	<10.0	10.0	08/24/2019	ND					

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

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

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 3 (2') (H902893-16)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**992**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 3 (3') (H902893-17)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**736**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 3 (4') (H902893-18)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1180**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 3 (6') (H902893-19)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**992**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 3 (8') (H902893-20)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**432**	16.0	08/26/2019	ND	400	100	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 3 (10') (H902893-21)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**432**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 3 (12') (H902893-22)

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	08/26/2019	ND	400	100	400	0.00	

Cardinal Laboratories *=Accredited Analyte

Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 5 (1') (H902893-23)

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	08/24/2019	ND	1.68	83.8	2.00	3.40	
Toluene*	<0.050	0.050	08/24/2019	ND	1.84	92.2	2.00	1.47	
Ethylbenzene*	<0.050	0.050	08/24/2019	ND	1.98	98.8	2.00	1.53	
Total Xylenes*	<0.150	0.150	08/24/2019	ND	5.90	98.3	6.00	1.11	
Total BTEX	<0.300	0.300	08/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.8 %* *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	**1940**	16.0	08/26/2019	ND	400	100	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	08/24/2019	ND	191	95.6	200	3.67	
DRO >C10-C28*	<10.0	10.0	08/24/2019	ND	189	94.4	200	6.47	
EXT DRO >C28-C36	<10.0	10.0	08/24/2019	ND					

Surrogate: 1-Chlorooctane *110 %* *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:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 5 (2') (H902893-24)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**528**	16.0	08/26/2019	ND	400	100	400	0.00	

Sample ID: TRENCH # 5 (3') (H902893-25)

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	08/26/2019	ND	400	100	400	0.00	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 6 (1') (H902893-26)

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	08/24/2019	ND	1.68	83.8	2.00	3.40	
Toluene*	<0.050	0.050	08/24/2019	ND	1.84	92.2	2.00	1.47	
Ethylbenzene*	<0.050	0.050	08/24/2019	ND	1.98	98.8	2.00	1.53	
Total Xylenes*	<0.150	0.150	08/24/2019	ND	5.90	98.3	6.00	1.11	
Total BTEX	<0.300	0.300	08/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *91.9 %* *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	**2200**	16.0	08/26/2019	ND	432	108	400	3.77	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	08/24/2019	ND	191	95.6	200	3.67	
DRO >C10-C28*	<10.0	10.0	08/24/2019	ND	189	94.4	200	6.47	
EXT DRO >C28-C36	<10.0	10.0	08/24/2019	ND					

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

Surrogate: 1-Chlorooctadecane *116 %* *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:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 6 (2') (H902893-27)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**4480**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 6 (3') (H902893-28)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5920**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 6 (4') (H902893-29)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1920**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 6 (5') (H902893-30)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**160**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 6 (8') (H902893-31)

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	08/26/2019	ND	432	108	400	3.77	

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CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: TRENCH # 6 (10') (H902893-32)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**1410**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: TRENCH # 6 (12') (H902893-33)

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	08/26/2019	ND	432	108	400	3.77	

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CARDINAL Laboratories

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Analytical Results For:

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

Received:	08/22/2019	Sampling Date:	08/22/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: AUGER HOLE # 7 (0-1') (H902893-34)

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	08/24/2019	ND	1.68	83.8	2.00	3.40	
Toluene*	<0.050	0.050	08/24/2019	ND	1.84	92.2	2.00	1.47	
Ethylbenzene*	<0.050	0.050	08/24/2019	ND	1.98	98.8	2.00	1.53	
Total Xylenes*	<0.150	0.150	08/24/2019	ND	5.90	98.3	6.00	1.11	
Total BTEX	<0.300	0.300	08/24/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *90.8 %* *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	**2520**	16.0	08/26/2019	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	08/26/2019	ND	192	95.8	200	0.189	
DRO >C10-C28*	<10.0	10.0	08/26/2019	ND	190	95.0	200	4.12	
EXT DRO >C28-C36	<10.0	10.0	08/26/2019	ND					

Surrogate: 1-Chlorooctane *80.4 %* *41-142*

Surrogate: 1-Chlorooctadecane *87.6 %* *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:	08/22/2019	Sampling Date:	08/22/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: AUGER HOLE # 7 (1-1.5') (H902893-35)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5280**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: AUGER HOLE # 7 (2-2.5') (H902893-36)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**7280**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: AUGER HOLE # 7 (3-3.5') (H902893-37)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**5760**	16.0	08/26/2019	ND	432	108	400	3.77	

Sample ID: AUGER HOLE # 7 (4-4.5') (H902893-38)

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

Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	**3960**	16.0	08/26/2019	ND	432	108	400	3.77	

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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:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BACKGROUND (1') (H902893-39)

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	08/26/2019	ND	1.67	83.6	2.00	1.03	QR-03
Toluene*	<0.050	0.050	08/26/2019	ND	1.87	93.4	2.00	0.837	
Ethylbenzene*	<0.050	0.050	08/26/2019	ND	1.97	98.5	2.00	3.20	
Total Xylenes*	<0.150	0.150	08/26/2019	ND	6.13	102	6.00	2.59	
Total BTEX	<0.300	0.300	08/26/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID *93.6 %* *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	**16.0**	16.0	08/26/2019	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	08/26/2019	ND	192	95.8	200	0.189	
DRO >C10-C28*	<10.0	10.0	08/26/2019	ND	190	95.0	200	4.12	
EXT DRO >C28-C36	<10.0	10.0	08/26/2019	ND					

Surrogate: 1-Chlorooctane *72.9 %* *41-142*

Surrogate: 1-Chlorooctadecane *78.0 %* *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:	08/22/2019	Sampling Date:	08/20/2019
Reported:	08/27/2019	Sampling Type:	Soil
Project Name:	JRS HORS FED 2 (2.4.19)	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01739	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

Sample ID: BACKGROUND (2') (H902893-40)

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	08/26/2019	ND	432	108	400	3.77	

Sample ID: BACKGROUND (3') (H902893-41)

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	08/26/2019	ND	432	108	400	3.77	

Sample ID: BACKGROUND (4') (H902893-42)

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	08/26/2019	ND	432	108	400	3.77	

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Celey D. Keene, Lab Director/Quality Manager

CARDINAL Laboratories

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

Notes and Definitions

QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
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.
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

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: JRS Hors Fed 2 (2.4.19)	
Project Location: (county, state) Eddy Co, NM	Project #: 212C-MD-01739
Invoice to: COG - Ike Tavarez	
Receiving Laboratory: Cardinal	Sampler Signature: Conner Moehring
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
H902893 1	TRENCH #1 (2')	8/20/19			X			X		1	N	X		X												X							
2	(3')				X			X		1	N															X							
3	(4')				X			X		1	N															X							
4	(6')				X			X		1	N															X							
5	TRENCH #2 (1')				X			X		1	N	X		X												X							
6	2'				X			X		1	N															X							
7	3'				X			X		1	N															X							
8	4'				X			X		1	N															X							
9	5'				X			X		1	N															X							
10	6'				X			X		1	N															X							

Relinquished by: Conner Moehring	Date: 8/22/19	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 8-22-19 Time: 15:25

LAB USE ONLY

Sample Temperature 3.3° #97
Corrected 3.7°

REMARKS:

- [x] 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 #: _____

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Analysis Request of Chain of Custody Record

Page 2 of 5

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: JRS Hors Fed 2 (2.4.19)	
Project Location: (county, state) Eddy Co, NM	Project #: 212C-MD-01739
Invoice to: COG - Ike Tavarez	
Receiving Laboratory: Cardinal	Sampler Signature: Conner Moehring
Comments:	

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	TIME	MATRIX WATER	SOIL		PRESERVATIVE METHOD HCL	HNO_3	ICE	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	Sulfate	TDS	General Water Chemistry (see attached list)	Anion/Cation Balance					Hold
H902893																																						
11	TRENCH 2 1'	8/20/19			X				X			1	2	X			X												X									
12	8'				X				X			1	2																X									
13	10'				X				X			1	2																X									
14	12'				X				X			1	2																X									
15	TRENCH 3 1'				X				X			1	2	X			X												X									
16	2'				X				X			1	2																X									
17	3'				X				X			1	2																X									
18	4'				X				X			1	2																X									
19	6'				X				X			1	2																X									
20	8'				X				X			1	2																X									

Relinquished by: Conner Moehring	Date: 8/22/19	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Received by: Tamara Oldaker 8-22-19 15:25

LAB USE ONLY

Sample Temperature 3.3° #97 corrected 3.7°

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 #: _____

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Analysis Request of Chain of Custody Record

Page 3 of 5

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: JRS Hors Fed 2 (2.4.19)	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-01739
Invoice to: COG - Ike Tavarez	
Receiving Laboratory: Cardinal	**Sampler Signature:** Conner Moehring
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
H902893																																		
21	TRENCH # 3 (10')	8/20/19			X				X			1	N															X						
22	(2')				X				X			1	N															X						
23	TRENCH #5 (1')				X				X			1	N	X		X												X						
24	(2')				X				X			1	N															X						
25	(3')				X				X			1	N															X						
26	TRENCH #6 (1')				X				X			1	N	X		X												X						
27	(2')				X				X			1	N															X						
28	(3')				X				X			1	N															X						
29	(4')				X				X			1	N															X						
30	(5')				X				X			1	N															X						

Relinquished by: Conner Moehring	Date: 8/22/19	Time:	Received by: Tamara Oldaker
Relinquished by:	Date:	Time:	Received by:
Relinquished by:	Date:	Time:	Received by:

Date: 8-22-19 Time: 15:35

LAB USE ONLY

Sample Temperature
3.3°C #97
Corrected
5.7°C

REMARKS:

- [X] 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 #: _____

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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:	JRS Hors Fed 2 (2.4.19)		
Project Location: (county, state)	Eddy Co, NM	**Project #:**	212C-MD-01739
Invoice to:	COG - Ike Tavarez		
Receiving Laboratory:	Cardinal	**Sampler Signature:**	Conner Moehring
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
H902893	~~TRENCH # 6 (6')~~	8/20/19			X			X		1																X							
31	Trench 6 (8')				X			X		1	2															X							
32	(10')				X			X		1	2															X							
33	(12')				X			X		1	2															X							
34	Auger Hole # 7 (0-1')	8/22/19			X			X		1	2	X		X												X							
35	(1-1.5')	8/22/19			X			X		1	2															X							
36	(2-2.5')	8/22/19			X			X		1	2															X							
37	(3-3.5')	8/22/19			X			X		1	2															X							
38	(4-4.5')	8/22/19			X			X		1	2															X							
39	Background (1')	8/20/19			X			X		1	2	X		X												X							

Relinquished by: Conner Moehring	Date: 8/22/19	Time:	Received by: Tamara Oldaker	Date: 8-22-19	Time: 15:25
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature
3.3° #97
Corrected
3.7°

REMARKS:

- [X] 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 #: _____

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Analysis Request of Chain of Custody Record

Page 5 of 5

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: JRS Hors Fed 2 (2.4.19)	
Project Location: (county, state) Eddy Co, NM	**Project #:** 212C-MD-01739
Invoice to: COG - Ike Tavarez	
Receiving Laboratory: Cardinal	**Sampler Signature:** Conner Moehring
Comments:	

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)
H902893		YEAR: 2019											
40	Background (2')	8/20/19			X				X			1	N
41	(3')	"			X				X			1	N
42	(4')	"			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					4	
														X						
														X						

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Conner Moehring	8/22/19		Tamara Oldaker	8-22-19	15:25
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY

Sample Temperature
3.3c #97
Corrected
3.7c

REMARKS:

- [x] 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 #: _____

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Analytical Report 640369

for

Tetra Tech- Midland

Project Manager: Mike Carmona

JRS HORZ FED 2H (2.4.19)

212C-MD-01739

22-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)

22-OCT-19

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

Reference: XENCO Report No(s): **640369**
JRS HORZ FED 2H (2.4.19)
Project Address: Eddy 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) 640369. 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. 640369 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 640369

Tetra Tech- Midland, Midland, TX

JRS HORZ FED 2H (2.4.19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH#7 (0-1')	S	10-17-19 00:00	0 - 1 ft	640369-001
AH#7 (1-1.5')	S	10-17-19 00:00	1 - 1.5 ft	640369-002
AH#7 (2-2.5')	S	10-17-19 00:00	2 - 2.5 ft	640369-003
AH#7 (3-3.5')	S	10-17-19 00:00	3 - 3.5 ft	640369-004

Certificate of Analysis Summary 640369

Tetra Tech- Midland, Midland, TX

Project Name: JRS HORZ FED 2H (2.4.19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Thu Oct-17-19 04:35 pm
Report Date: 22-OCT-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	640369-001		640369-002		640369-003		640369-004					
	Field Id:	AH#7 (0-1')		AH#7 (1-1.5')		AH#7 (2-2.5')		AH#7 (3-3.5')					
	Depth:	0-1 ft		1-1.5 ft		2-2.5 ft		3-3.5 ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Oct-17-19 00:00		Oct-17-19 00:00		Oct-17-19 00:00		Oct-17-19 00:00					
BTEX by EPA 8021B	***Extracted:***	Oct-17-19 17:10											
	Analyzed:	Oct-18-19 12:56											
	Units/RL:	mg/kg	RL										
Benzene		<0.00100	0.00100										
Toluene		<0.00100	0.00100										
Ethylbenzene		<0.00100	0.00100										
m,p-Xylenes		<0.00200	0.00200										
o-Xylene		<0.00100	0.00100										
Total Xylenes		<0.00100	0.00100										
Total BTEX		<0.00100	0.00100										
Chloride by EPA 300	***Extracted:***	Oct-18-19 17:10		Oct-18-19 17:10		Oct-18-19 17:10		Oct-18-19 17:10					
	Analyzed:	Oct-18-19 20:18		Oct-18-19 20:25		Oct-18-19 20:46		Oct-18-19 20:52					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		895	99.8	1160	99.4	7310	501	11100	503				
TPH by SW8015 Mod	***Extracted:***	** ** ** **											
	Analyzed:	Oct-18-19 07:25											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<50.1	50.1										
Diesel Range Organics (DRO)		<50.1	50.1										
Motor Oil Range Hydrocarbons (MRO)		<50.1	50.1										
Total TPH		<50.1	50.1										

Jessica Kramer
Project Assistant

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: JRS HORZ FED 2H (2.4.19)

Project ID: *212C-MD-01739*
Work Order Number(s): *640369*

Report Date: *22-OCT-19*
Date Received: *10/17/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104782 BTEX by EPA 8021B

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

Certificate of Analytical Results 640369

Tetra Tech- Midland, Midland, TX

JRS HORZ FED 2H (2.4.19)

Sample Id:	**AH#7 (0-1')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640369-001	Date Collected:	10.17.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**895**	99.8	mg/kg	10.18.19 20.18		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	10.17.19 16.30	Basis:	Wet Weight
Seq Number:	3104747				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	10.18.19 07.25	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	10.18.19 07.25	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	10.18.19 07.25	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	10.18.19 07.25	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	10.18.19 07.25	
o-Terphenyl	84-15-1	105	%	70-135	10.18.19 07.25	

Certificate of Analytical Results 640369

Tetra Tech- Midland, Midland, TX

JRS HORZ FED 2H (2.4.19)

Sample Id:	**AH#7 (0-1')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640369-001	Date Collected:	10.17.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.17.19 17.10	Basis:	Wet Weight
Seq Number:	3104782				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00100	0.00100	mg/kg	10.18.19 12.56	U	1
Toluene	108-88-3	<0.00100	0.00100	mg/kg	10.18.19 12.56	U	1
Ethylbenzene	100-41-4	<0.00100	0.00100	mg/kg	10.18.19 12.56	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.18.19 12.56	U	1
o-Xylene	95-47-6	<0.00100	0.00100	mg/kg	10.18.19 12.56	U	1
Total Xylenes	1330-20-7	<0.00100	0.00100	mg/kg	10.18.19 12.56	U	1
Total BTEX		<0.00100	0.00100	mg/kg	10.18.19 12.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	108	%	70-130	10.18.19 12.56	
4-Bromofluorobenzene	460-00-4	123	%	70-130	10.18.19 12.56	

Certificate of Analytical Results 640369

Tetra Tech- Midland, Midland, TX

JRS HORZ FED 2H (2.4.19)

Sample Id:	**AH#7 (1-1.5')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640369-002	Date Collected:	10.17.19 00.00	Sample Depth:	1 - 1.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1160**	99.4	mg/kg	10.18.19 20.25		10

Certificate of Analytical Results 640369

Tetra Tech- Midland, Midland, TX

JRS HORZ FED 2H (2.4.19)

Sample Id:	**AH#7 (2-2.5')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640369-003	Date Collected:	10.17.19 00.00	Sample Depth:	2 - 2.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**7310**	501	mg/kg	10.18.19 20.46		50

Certificate of Analytical Results 640369

Tetra Tech- Midland, Midland, TX

JRS HORZ FED 2H (2.4.19)

Sample Id:	**AH#7 (3-3.5')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640369-004	Date Collected:	10.17.19 00.00	Sample Depth:	3 - 3.5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**11100**	503	mg/kg	10.18.19 20.52		50

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

QC Summary 640369

Tetra Tech- Midland

JRS HORZ FED 2H (2.4.19)

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104897 — Matrix: Solid — Date Prep: 10.18.19
MB Sample Id: 7688482-1-BLK — LCS Sample Id: 7688482-1-BKS — LCSD Sample Id: 7688482-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	245	98	90-110	2	20	mg/kg	10.18.19 18:30	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104897 — Matrix: Soil — Date Prep: 10.18.19
Parent Sample Id: 640368-020 — MS Sample Id: 640368-020 S — MSD Sample Id: 640368-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7340	4020	12400	126	12300	124	90-110	1	20	mg/kg	10.18.19 18:50	X

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104897 — Matrix: Solid — Date Prep: 10.18.19
Parent Sample Id: 640369-002 — MS Sample Id: 640369-002 S — MSD Sample Id: 640369-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1160	1990	3350	110	3280	107	90-110	2	20	mg/kg	10.18.19 20:32	

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104747 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688441-1-BLK — LCS Sample Id: 7688441-1-BKS — LCSD Sample Id: 7688441-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1010	101	970	97	70-135	4	35	mg/kg	10.18.19 02:11	
Diesel Range Organics (DRO)	<50.0	1000	920	92	861	86	70-135	7	35	mg/kg	10.18.19 02:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		117		109		70-135	%	10.18.19 02:11
o-Terphenyl	101		112		109		70-135	%	10.18.19 02:11

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104747 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688441-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.18.19 01:52	

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

QC Summary 640369

Tetra Tech- Midland

JRS HORZ FED 2H (2.4.19)

Analytical Method: TPH by SW8015 Mod — Prep Method: SW8015P
Seq Number: 3104747 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640361-016 — MS Sample Id: 640361-016 S — MSD Sample Id: 640361-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	894	89	882	89	70-135	1	35	mg/kg	10.18.19 03:10	
Diesel Range Organics (DRO)	<50.1	1000	817	82	811	82	70-135	1	35	mg/kg	10.18.19 03:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		113		70-135	%	10.18.19 03:10
o-Terphenyl	107		116		70-135	%	10.18.19 03:10

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104782 — Matrix: Solid — Date Prep: 10.17.19
MB Sample Id: 7688433-1-BLK — LCS Sample Id: 7688433-1-BKS — LCSD Sample Id: 7688433-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0939	94	0.0966	97	70-130	3	35	mg/kg	10.18.19 06:37	
Toluene	<0.00100	0.100	0.0927	93	0.0955	96	70-130	3	35	mg/kg	10.18.19 06:37	
Ethylbenzene	<0.00100	0.100	0.0930	93	0.0960	96	71-129	3	35	mg/kg	10.18.19 06:37	
m,p-Xylenes	<0.00200	0.200	0.202	101	0.209	105	70-135	3	35	mg/kg	10.18.19 06:37	
o-Xylene	<0.00100	0.100	0.102	102	0.106	106	71-133	4	35	mg/kg	10.18.19 06:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		105		105		70-130	%	10.18.19 06:37
4-Bromofluorobenzene	120		123		123		70-130	%	10.18.19 06:37

Analytical Method: BTEX by EPA 8021B — Prep Method: SW5030B
Seq Number: 3104782 — Matrix: Soil — Date Prep: 10.17.19
Parent Sample Id: 640361-021 — MS Sample Id: 640361-021 S — MSD Sample Id: 640361-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000982	0.0982	0.0837	85	0.0880	89	70-130	5	35	mg/kg	10.18.19 07:15	
Toluene	<0.000982	0.0982	0.0799	81	0.0841	85	70-130	5	35	mg/kg	10.18.19 07:15	
Ethylbenzene	<0.000982	0.0982	0.0775	79	0.0831	84	71-129	7	35	mg/kg	10.18.19 07:15	
m,p-Xylenes	<0.00196	0.196	0.162	83	0.176	89	70-135	8	35	mg/kg	10.18.19 07:15	
o-Xylene	<0.000982	0.0982	0.0845	86	0.0945	96	71-133	11	35	mg/kg	10.18.19 07:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	10.18.19 07:15
4-Bromofluorobenzene	123		125		70-130	%	10.18.19 07:15

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

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

Page 1 of 1

Client Name: CONCHO

Site Manager: MIKE CARMONA

Project Name: JRS HORZ FED 2H (2.4.19)

Project Location (county, state): Eddy CO, NM

Project #: 212C-MD-01739

Invoice to: COG - IKE TAVAREZ

Receiving Laboratory: Xenco

Sampler Signature: CONNER MOEHRING

Comments: RUN DEEPER SAMPLES IF GRO + DRO exceeds 100 mg/kg. Run deeper samples if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING 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)
	AH #7 (0-1')	10/17/19			X			X		1	N
	AH #7 (1-1.5')	10/17/19			X			X		1	N
	AH #7 (2-2.5')	10/17/19			X			X		1	N
	AH #7 (3-3.5')	10/17/19			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								
															X								

Relinquished by: Conner Moehring Date: 10/17/19 Time: 16:35

Received by: [signature] Date: 10/17/19 Time: 16:35

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature: 0.2

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

Analytical Report 640370

for

Tetra Tech- Midland

Project Manager: Mike Carmona

JRS (2.4.19)

212C-MD-01739

22-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)

22-OCT-19

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

Reference: XENCO Report No(s): **640370**
JRS (2.4.19)
Project Address: Eddy 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) 640370. 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. 640370 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer

Jessica Kramer
Project Assistant

Sample Cross Reference 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Bore Hole#2 (0-1')	S	10-17-19 00:00	0 - 1 ft	640370-001
Bore Hole#2 (2-3')	S	10-17-19 00:00	2 - 3 ft	640370-002
Bore Hole#2 (4-5')	S	10-17-19 00:00	4 - 5 ft	640370-003
Bore Hole#2 (6-7')	S	10-17-19 00:00	6 - 7 ft	640370-004
Bore Hole#2 (9-10')	S	10-17-19 00:00	9 - 10 ft	640370-005
Bore Hole#2 (14-15')	S	10-17-19 00:00	14 - 15 ft	640370-006
Bore Hole#2 (19-20')	S	10-17-19 00:00	19 - 20 ft	640370-007

Certificate of Analysis Summary 640370

Tetra Tech- Midland, Midland, TX

Project Name: JRS (2.4.19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Thu Oct-17-19 04:35 pm
Report Date: 22-OCT-19
Project Manager: Jessica Kramer

Analysis Requested													
	Lab Id:	640370-001		640370-002		640370-003		640370-004		640370-005		640370-006	
	Field Id:	Bore Hole#2 (0-1')		Bore Hole#2 (2-3')		Bore Hole#2 (4-5')		Bore Hole#2 (6-7')		Bore Hole#2 (9-10')		Bore Hole#2 (14-15')	
	Depth:	0-1 ft		2-3 ft		4-5 ft		6-7 ft		9-10 ft		14-15 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-17-19 00:00		Oct-17-19 00:00		Oct-17-19 00:00		Oct-17-19 00:00		Oct-17-19 00:00		Oct-17-19 00:00	
BTEX by EPA 8021B	***Extracted:***	Oct-17-19 17:10											
	Analyzed:	Oct-18-19 12:37											
	Units/RL:	mg/kg	RL										
Benzene		<0.000998	0.000998										
Toluene		<0.000998	0.000998										
Ethylbenzene		<0.000998	0.000998										
m,p-Xylenes		<0.00200	0.00200										
o-Xylene		<0.000998	0.000998										
Total Xylenes		<0.000998	0.000998										
Total BTEX		<0.000998	0.000998										
Chloride by EPA 300	***Extracted:***	Oct-18-19 17:10		Oct-18-19 17:10		Oct-18-19 17:10		Oct-18-19 17:10		Oct-18-19 17:10		Oct-18-19 17:10	
	Analyzed:	Oct-18-19 21:13		Oct-18-19 21:19		Oct-18-19 21:26		Oct-18-19 21:33		Oct-18-19 21:40		Oct-18-19 21:46	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1600	101	3490 D	202	273 D	50.1	147 D	50.1	218	202	135	50.1
TPH by SW8015 Mod	***Extracted:***	** ** ** **											
	Analyzed:	Oct-18-19 07:45											
	Units/RL:	mg/kg	RL										
Gasoline Range Hydrocarbons (GRO)		<50.2	50.2										
Diesel Range Organics (DRO)		<50.2	50.2										
Motor Oil Range Hydrocarbons (MRO)		<50.2	50.2										
Total TPH		<50.2	50.2										

Jessica Kramer
Project Assistant

Certificate of Analysis Summary 640370

Tetra Tech- Midland, Midland, TX

Project Name: JRS (2.4.19)

Project Id: 212C-MD-01739
Contact: Mike Carmona
Project Location: Eddy Co, NM

Date Received in Lab: Thu Oct-17-19 04:35 pm
Report Date: 22-OCT-19
Project Manager: Jessica Kramer

Analysis Requested							
	Lab Id:	640370-007					
	Field Id:	Bore Hole#2 (19-20')					
	Depth:	19-20 ft					
	Matrix:	SOIL					
	Sampled:	Oct-17-19 00:00					
Chloride by EPA 300	***Extracted:***	Oct-18-19 14:10					
	Analyzed:	Oct-18-19 18:04					
	Units/RL:	mg/kg	RL				
Chloride		141	49.9				

Jessica Kramer
Project Assistant

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: JRS (2.4.19)

Project ID: *212C-MD-01739*
Work Order Number(s): *640370*

Report Date: *22-OCT-19*
Date Received: *10/17/2019*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3104782 BTEX by EPA 8021B

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

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (0-1')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-001	Date Collected:	10.17.19 00.00	Sample Depth:	0 - 1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**1600**	101	mg/kg	10.18.19 21.13		10

Analytical Method:	TPH by SW8015 Mod			Prep Method:	SW8015P
Tech:	DTH			% Moisture:	
Analyst:	DTH	Date Prep:	10.17.19 16.30	Basis:	Wet Weight
Seq Number:	3104747				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	10.18.19 07.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	10.18.19 07.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	10.18.19 07.45	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	10.18.19 07.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	10.18.19 07.45	
o-Terphenyl	84-15-1	106	%	70-135	10.18.19 07.45	

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (0-1')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-001	Date Collected:	10.17.19 00.00	Sample Depth:	0 - 1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.17.19 17.10	Basis:	Wet Weight
Seq Number:	3104782				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.000998	0.000998	mg/kg	10.18.19 12.37	U	1
Toluene	108-88-3	<0.000998	0.000998	mg/kg	10.18.19 12.37	U	1
Ethylbenzene	100-41-4	<0.000998	0.000998	mg/kg	10.18.19 12.37	U	1
m,p-Xylenes	179601-23-1	<0.00200	0.00200	mg/kg	10.18.19 12.37	U	1
o-Xylene	95-47-6	<0.000998	0.000998	mg/kg	10.18.19 12.37	U	1
Total Xylenes	1330-20-7	<0.000998	0.000998	mg/kg	10.18.19 12.37	U	1
Total BTEX		<0.000998	0.000998	mg/kg	10.18.19 12.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	107	%	70-130	10.18.19 12.37	
1,4-Difluorobenzene	540-36-3	93	%	70-130	10.18.19 12.37	

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (2-3')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-002	Date Collected:	10.17.19 00.00	Sample Depth:	2 - 3 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**3490**	202	mg/kg	10.21.19 16.15	D	20

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (4-5')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-003	Date Collected:	10.17.19 00.00	Sample Depth:	4 - 5 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**273**	50.1	mg/kg	10.21.19 12.11	D	5

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (6-7')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-004	Date Collected:	10.17.19 00.00	Sample Depth:	6 - 7 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**147**	50.1	mg/kg	10.21.19 12.17	D	5

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (9-10')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-005	Date Collected:	10.17.19 00.00	Sample Depth:	9 - 10 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**218**	202	mg/kg	10.18.19 21.40		20

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (14-15')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-006	Date Collected:	10.17.19 00.00	Sample Depth:	14 - 15 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 17.10	Basis:	Wet Weight
Seq Number:	3104897				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**135**	50.1	mg/kg	10.18.19 21.46		5

Certificate of Analytical Results 640370

Tetra Tech- Midland, Midland, TX

JRS (2.4.19)

Sample Id:	**Bore Hole#2 (19-20')**	Matrix:	Soil	Date Received:	10.17.19 16.35
Lab Sample Id:	640370-007	Date Collected:	10.17.19 00.00	Sample Depth:	19 - 20 ft
Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	MAB			% Moisture:	
Analyst:	MAB	Date Prep:	10.18.19 14.10	Basis:	Wet Weight
Seq Number:	3104896				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**141**	49.9	mg/kg	10.18.19 18.04		5

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

QC Summary 640370

Tetra Tech- Midland

JRS (2.4.19)

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104896 — Matrix: Solid — Date Prep: 10.18.19
MB Sample Id: 7688478-1-BLK — LCS Sample Id: 7688478-1-BKS — LCSD Sample Id: 7688478-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	253	101	253	101	90-110	0	20	mg/kg	10.18.19 13:14	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104897 — Matrix: Solid — Date Prep: 10.18.19
MB Sample Id: 7688482-1-BLK — LCS Sample Id: 7688482-1-BKS — LCSD Sample Id: 7688482-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	249	100	245	98	90-110	2	20	mg/kg	10.18.19 18:30	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104896 — Matrix: Soil — Date Prep: 10.18.19
Parent Sample Id: 640368-001 — MS Sample Id: 640368-001 S — MSD Sample Id: 640368-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	26.5	200	224	99	225	99	90-110	0	20	mg/kg	10.18.19 15:22	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104896 — Matrix: Soil — Date Prep: 10.18.19
Parent Sample Id: 640368-011 — MS Sample Id: 640368-011 S — MSD Sample Id: 640368-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	32.2	994	985	96	996	97	90-110	1	20	mg/kg	10.18.19 16:49	

Analytical Method: Chloride by EPA 300 — Prep Method: E300P
Seq Number: 3104897 — Matrix: Soil — Date Prep: 10.18.19
Parent Sample Id: 640368-020 — MS Sample Id: 640368-020 S — MSD Sample Id: 640368-020 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	7340	4020	12400	126	12300	124	90-110	1	20	mg/kg	10.18.19 18:50	X

MS/MSD Percent Recovery — [D] = 100*(C-A) / B — LCS = Laboratory Control Sample — MS = Matrix Spike
Relative Percent Difference — RPD = 200* | (C-E) / (C+E) | — A = Parent Result — B = Spike Added
LCS/LCSD Recovery — [D] = 100 * (C) / [B] — C = MS/LCS Result — D = MSD/LCSD % Rec
Log Difference — Log Diff. = Log(Sample Duplicate) - Log(Original Sample) — E = MSD/LCSD Result

QC Summary 640370

Tetra Tech- Midland

JRS (2.4.19)

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3104897 Matrix: Solid Date Prep: 10.18.19
Parent Sample Id: 640369-002 MS Sample Id: 640369-002 S MSD Sample Id: 640369-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	1160	1990	3350	110	3280	107	90-110	2	20	mg/kg	10.18.19 20:32	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3104747 Matrix: Solid Date Prep: 10.17.19
MB Sample Id: 7688441-1-BLK LCS Sample Id: 7688441-1-BKS LCSD Sample Id: 7688441-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	1010	101	970	97	70-135	4	35	mg/kg	10.18.19 02:11	
Diesel Range Organics (DRO)	<50.0	1000	920	92	861	86	70-135	7	35	mg/kg	10.18.19 02:11	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	98		117		109		70-135	%	10.18.19 02:11
o-Terphenyl	101		112		109		70-135	%	10.18.19 02:11

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3104747 Matrix: Solid Date Prep: 10.17.19
MB Sample Id: 7688441-1-BLK

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	10.18.19 01:52	

Analytical Method: **TPH by SW8015 Mod** Prep Method: SW8015P
Seq Number: 3104747 Matrix: Soil Date Prep: 10.17.19
Parent Sample Id: 640361-016 MS Sample Id: 640361-016 S MSD Sample Id: 640361-016 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.1	1000	894	89	882	89	70-135	1	35	mg/kg	10.18.19 03:10	
Diesel Range Organics (DRO)	<50.1	1000	817	82	811	82	70-135	1	35	mg/kg	10.18.19 03:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	108		113		70-135	%	10.18.19 03:10
o-Terphenyl	107		116		70-135	%	10.18.19 03:10

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

QC Summary 640370

Tetra Tech- Midland

JRS (2.4.19)

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3104782 Matrix: Solid Date Prep: 10.17.19

MB Sample Id: 7688433-1-BLK LCS Sample Id: 7688433-1-BKS LCSD Sample Id: 7688433-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00100	0.100	0.0939	94	0.0966	97	70-130	3	35	mg/kg	10.18.19 06:37	
Toluene	<0.00100	0.100	0.0927	93	0.0955	96	70-130	3	35	mg/kg	10.18.19 06:37	
Ethylbenzene	<0.00100	0.100	0.0930	93	0.0960	96	71-129	3	35	mg/kg	10.18.19 06:37	
m,p-Xylenes	<0.00200	0.200	0.202	101	0.209	105	70-135	3	35	mg/kg	10.18.19 06:37	
o-Xylene	<0.00100	0.100	0.102	102	0.106	106	71-133	4	35	mg/kg	10.18.19 06:37	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	100		105		105		70-130	%	10.18.19 06:37
4-Bromofluorobenzene	120		123		123		70-130	%	10.18.19 06:37

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3104782 Matrix: Soil Date Prep: 10.17.19

Parent Sample Id: 640361-021 MS Sample Id: 640361-021 S MSD Sample Id: 640361-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.000982	0.0982	0.0837	85	0.0880	89	70-130	5	35	mg/kg	10.18.19 07:15	
Toluene	<0.000982	0.0982	0.0799	81	0.0841	85	70-130	5	35	mg/kg	10.18.19 07:15	
Ethylbenzene	<0.000982	0.0982	0.0775	79	0.0831	84	71-129	7	35	mg/kg	10.18.19 07:15	
m,p-Xylenes	<0.00196	0.196	0.162	83	0.176	89	70-135	8	35	mg/kg	10.18.19 07:15	
o-Xylene	<0.000982	0.0982	0.0845	86	0.0945	96	71-133	11	35	mg/kg	10.18.19 07:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	108		107		70-130	%	10.18.19 07:15
4-Bromofluorobenzene	123		125		70-130	%	10.18.19 07:15

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike

Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added

LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec

Log Difference Log Diff. = Log(Sample Duplicate) - Log(Original Sample) E = MSD/LCSD Result

Analysis Request of Chain of Custody Record

640370

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: JRS HORZ (2.4.19)

Project Location (county, state): Eddy Co, NM

Project #: 212C-MD-01739

Invoice to: COG - IKE TAVAREZ

Receiving Laboratory: Xenco

Sampler Signature: CONNER MOEHRING

Comments: RUN DEEPER SAMPLE IF GRO+DRO exceeds 100 mg/kg. Run deeper sample if benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg.

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 2019 DATE	SAMPLING TIME	MATRIX WATER	MATRIX SOIL	PRESERVATIVE METHOD HCL	PRESERVATIVE METHOD HNO_3	PRESERVATIVE METHOD ICE	PRESERVATIVE METHOD None	# CONTAINERS	FILTERED (Y/N)
	BORE HOLE #2 (0-1')	10/17/19			X			X		1	N
	(2-3')	10/17/19			X			X		1	N
	(4-5')	10/17/19			X			X		1	N
	(6-7')	10/17/19			X			X		1	N
	(9-10')	10/17/19			X			X		1	N
	(14-15')	10/17/19			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								
														X								
														X								
														X								
														X								

Relinquished by: Conner Moehring Date: 10/17/19 Time: 16:35

Received by: [signature] Date: 10/17/19 Time: 16:35

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

ORIGINAL COPY

LAB USE ONLY

Sample Temperature 0.2

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 #: _____