SITE INFORMATION

Report Type: Work Plan 2RP-4303

General Site Information:						
Site:	**Jenkins B Federal Tank Battery**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit N**	**Sec. 17**	**T 17S**	**R 30E**		
County:	**Eddy County**					
GPS:	**32.829856° N**			**103.994967° W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of Hwy 82 and Hagerman Cuttoff Rd in Loco Hills, travel north on Hagerman Cuttoff for 0.65 mi, turn west onto lease rd for 0.60 mi, turn north for 0.10 mi to location.					

Release Data:	
Date Released:	7/11/2017
Type Release:	Oil
Source of Contamination:	Pipe Fitting
Fluid Released:	20 bbls
Fluids Recovered:	18 bbls

Official Communication:			
Name:	Robert McNeil		Ike Tavarez
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		4000 N. Big Spring
	600 W. Illinois Ave.		Ste 401
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 687-8110
Fax:	(432) 684-7137		
Email:	rmcneil@conchoresources.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	*250' - 275'*
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	*0*
Total Ranking Score:	***0***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

February 13, 2018

Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Work Plan for the COG Operating LLC., Jenkins B Federal Tank Battery, Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico. 2RP-4303.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC., (COG) to assess and evaluate a release that occurred at Jenkins B Federal Tank Battery, Unit N, Section 17, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.829856º, W 103.994967º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 11, 2017, and released approximately twenty (20) barrels of oil due to a failed pipe fitting at the header. A vacuum truck was used to remove all freestanding fluids, recovering approximately eighteen (18) barrels of oil. The release was contained inside the bermed facility and impacted an area measuring approximately 30' x 90'. The initial C-141 Form is included in Appendix A.

Groundwater

No wells are listed within Section 17 in the New Mexico Office of the State Engineers database or on the USGS National Water Information System. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 250' and 275' below surface. The groundwater data is shown in Appendix B.

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, dated August 13, 1993. The guidelines require a risk-based evaluation of the site

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

Hand Auger Installation

On August 23, 2017, Tetra Tech personnel were onsite to evaluate and sample the release area. Three (3) hand augers were installed in the release area to total depths ranging from 1-1.5' and 4-4.5' below surface. Deeper samples were not collected due to a dense formation in the area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, none of the samples analyzed showed benzene or total BTEX concentrations above the laboratory reporting limits. Additionally, the areas of auger holes (AH-1, AH-2, and AH-3) showed TPH concentrations below the RRALs with concentrations ranging from 99.9 mg/kg (AH-1) to 252 mg/kg (AH-2) at 0-1' below surface.

The areas of auger holes (AH-1, AH-2, and AH-3) showed elevated chloride concentrations in the shallow soils. The area of auger holes (AH-1 and AH-2) showed chloride concentrations that increased with depth to chloride highs of 14,900 mg/kg (4-4.5') and 878 mg/kg (1-1.5'), respectively. The area of auger hole (AH-3) showed chloride concentrations of 2,840 mg/kg at 0-1' and 1,400 mg/kg at 1-1.5' below surface.

Borehole Installation

Based on the laboratory results, Tetra Tech personnel returned to the site on December 14, 2017 in order to vertically delineate the chloride concentrations. Two (2) boreholes (BH-1 and BH-2) were installed in the areas of auger holes (AH-1 and AH-2) using a truck mounted air rotary rig. A borehole was not installed in the area of auger hole (AH-3) due to access to the area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B, and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The borehole locations are shown on Figure 3.

Referring to Table 1, none of the samples analyzed showed benzene, total BTEX, or TPH concentrations above the RRALs. However, elevated chlorides were detected in the areas of boreholes (BH-1 and BH-2).

The area of borehole (BH-1) showed chloride concentrations lower than detected in AH-1. Borehole (BH-1) chloride concentrations spiked at 4-5' (3,140 mg/kg) and 6-7' (3,390 mg/kg) and ten declined with depth a bottom hole concentration of 144 mg/kg at 14-15' below surface. The area of borehole (BH-2) showed a chloride high of 2,380 mg/kg at 6-7' below surface, which then declined with depth to a bottom hole concentration of 443 mg/kg at 24-25' below surface.

Work Plan

Based on the laboratory results, COG will make an attempt to remove the chloride impacted soils as shown on Figure 4 and highlighted (green) on Table 1. Due to the active equipment onsite and access issues, the impacted areas around the heaters, header and flowline east of the heaters cannot be excavated and will be deferred until abandonment. The area of auger holes (AH-1, AH-2, and AH-3) will be excavated to approximately 3.0' to 4.0' below surface and capped with a 20 mil plastic liner in order to prevent vertical migration of the impact. The excavated areas will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

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 safely concerns for onsite personnel. As such, COG will excavate the impacted soils to the maximum extent practicable.

Conclusion

Upon completion, a final report detailing the remediation activities will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call at (432) 682-4559.

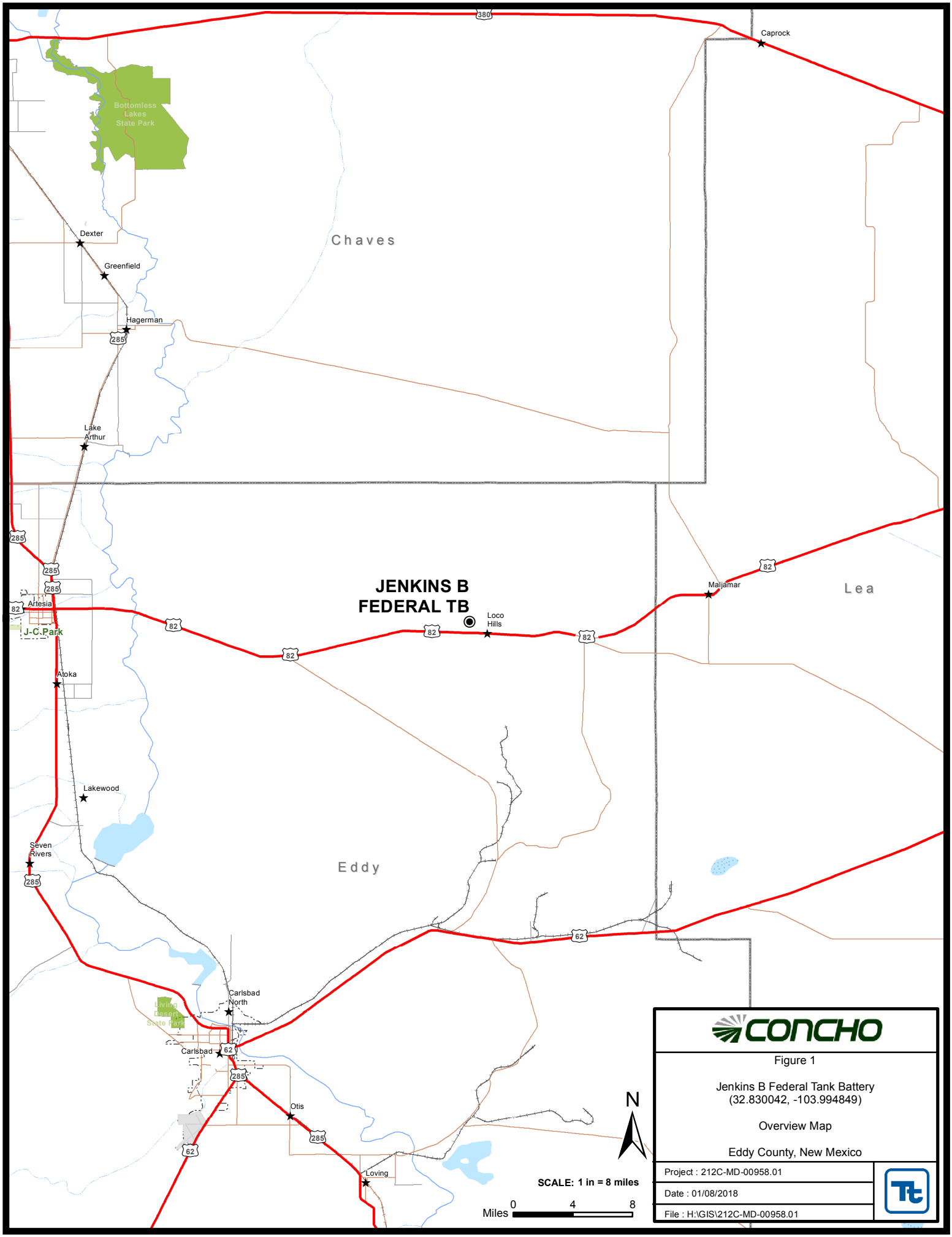
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist I

Ike Tavarez,
Senior Project Manager, P.G.

cc: Robert McNeill – COG
Dakota Neel – COG
Rebecca Haskell – COG
Crystal Weaver - NMOCD
Shelly Tucker - BLM

Figures



CONCHO

Figure 1

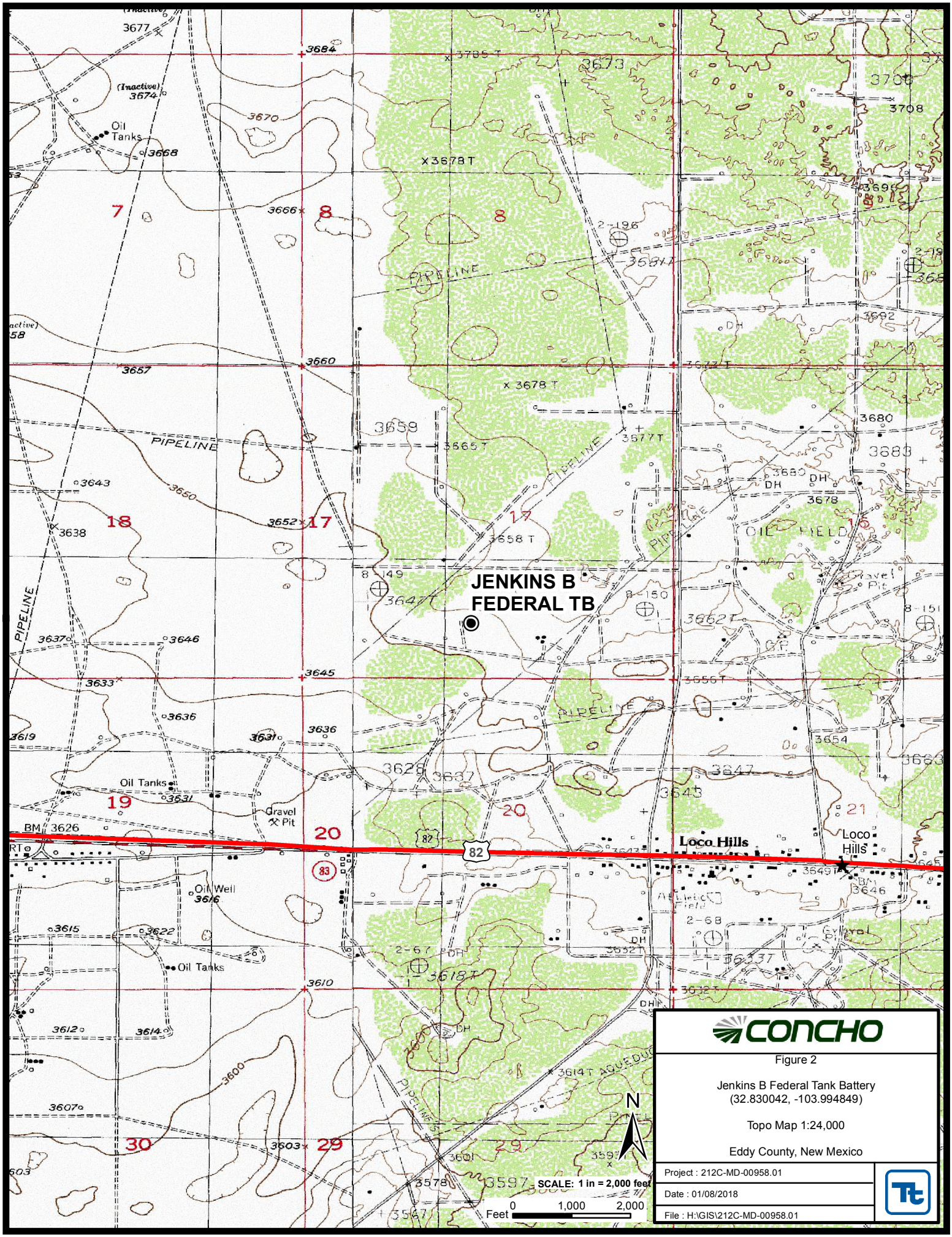
Jenkins B Federal Tank Battery
(32.830042, -103.994849)

Overview Map

Eddy County, New Mexico

Project : 212C-MD-00958.01	
Date : 01/08/2018	
File : H:\GIS\212C-MD-00958.01	

Mapped By: Isabel Marmolejo



CONCHO

Figure 2

Jenkins B Federal Tank Battery
(32.830042, -103.994849)

Topo Map 1:24,000

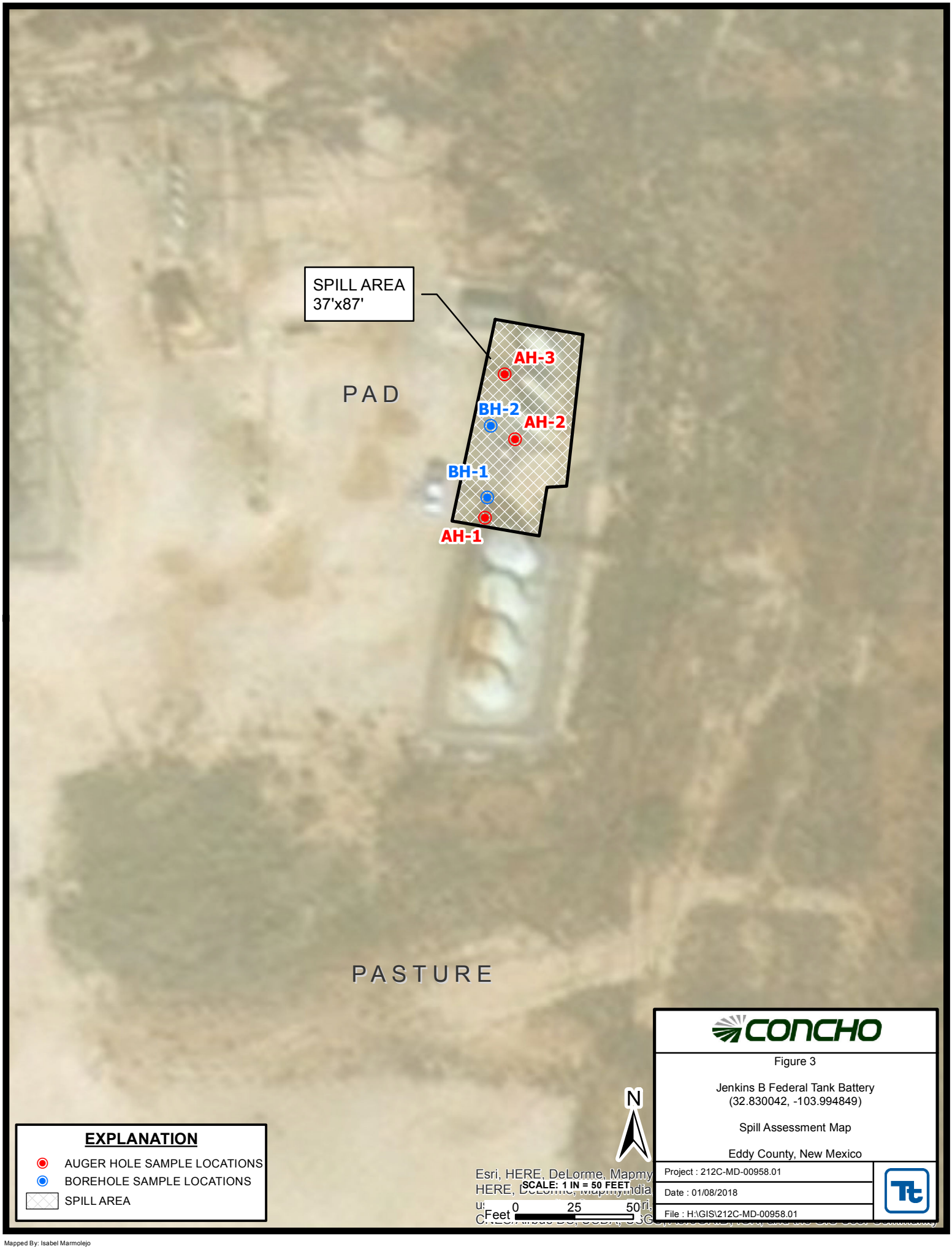
Eddy County, New Mexico

Project : 212C-MD-00958.01

Date : 01/08/2018

File : H:\GIS\212C-MD-00958.01

Mapped By: Isabel Marmolejo


SPILL AREA
37'x87'
AH-3
PAD
BH-2
AH-2
BH-1
AH-1
PASTURE
N
SCALE: 1 IN = 50 FEET
0
25
50
Feet
EXPLANATION
AUGER HOLE SAMPLE LOCATIONS
BOREHOLE SAMPLE LOCATIONS
SPILL AREA
Esri, HERE, DeLorme, Mapmy
HERE, DeLorme, MapmyIndia
CONCHO
Figure 3
Jenkins B Federal Tank Battery
(32.830042, -103.994849)
Spill Assessment Map
Eddy County, New Mexico
Project : 212C-MD-00958.01
Date : 01/08/2018
File : H:\GIS\212C-MD-00958.01
Mapped By: Isabel Marmolejo

CONCHO

Figure 4

Jenkins B Federal Tank Battery
(32.830042, -103.994849)

Proposed Excavation Area & Depths Map

Eddy County, New Mexico

Project : 212C-MD-00958.01	
Date : 01/08/2018	
File : H:\GIS\212C-MD-00958.01	

Mapped By: Isabel Marmolejo

Tables

Table 1
COG Operating LLC.
Jenkins B Federal Tank Battery
Eddy County, New Mexico

Sample ID	Sample Date	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	C6-C10	C10-C28	C28-C35	Total						
AH-1	8/23/2017	0-1	X		<15.0	99.9	<15.0	99.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	78.6
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	**673**
	"	2-2.5	X		-	-	-	-	-	-	-	-	-	**3,480**
	"	3-3.5	X		-	-	-	-	-	-	-	-	-	**8,780**
	"	4-4.5	X		-	-	-	-	-	-	-	-	-	**14,900**
BH-1	12/14/2017	0-1	X		<14.9	215	36.5	252	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	73.3
	"	2-3	X		-	-	-	-	-	-	-	-	-	110
	"	4-5	X		-	-	-	-	-	-	-	-	-	**3,140**
	"	6-7	X		-	-	-	-	-	-	-	-	-	**3,390**
	"	9-10	X		-	-	-	-	-	-	-	-	-	453
	"	14-15	X		-	-	-	-	-	-	-	-	-	144
AH-2	8/23/2017	0-1	X		<14.9	215	36.5	252	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**701**
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	**878**
BH-2	12/14/2017	0-1	X		<14.9	215	36.5	252	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**1,250**
	"	2-3	X		-	-	-	-	-	-	-	-	-	166
	"	4-5	X		-	-	-	-	-	-	-	-	-	**1,200**
	"	6-7	X		-	-	-	-	-	-	-	-	-	**2,380**
	"	9-10	X		-	-	-	-	-	-	-	-	-	**1,270**
	"	14-15	X		-	-	-	-	-	-	-	-	-	**823**
	"	19-20	X		-	-	-	-	-	-	-	-	-	338
	"	24-25	X		-	-	-	-	-	-	-	-	-	443
AH-3	8/23/2017	0-1	X		<15.0	104	<15.0	104	<0.00377	<0.00377	<0.00377	<0.00377	<0.00377	**2,840**
	"	1-1.5	X		-	-	-	-	-	-	-	-	-	**1,400**

(-) Not Analyzed

Proposed Excavation Depths

Proposed Liner Depths

Photos

COG Operating LLC
Jenkins B Federal Tank Battery
Eddy County, New Mexico

View North – Area of BH-1

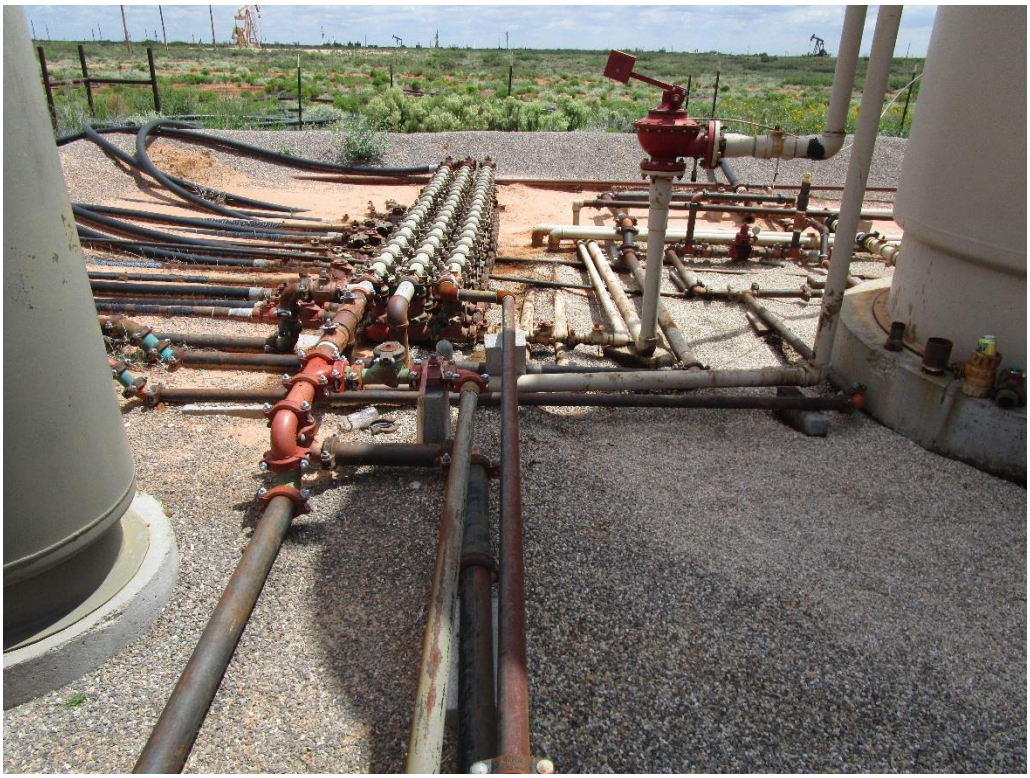
View South – Area of BH-2

COG Operating LLC
Jenkins B Federal Tank Battery
Eddy County, New Mexico

View North – Area of heaters and flowlines

View North – Area of west of heaters

COG Operating LLC
Jenkins B Federal Tank Battery
Eddy County, New Mexico



View North – Area of header and flowlines

View South – Area of heaters

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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: COG Operating LLC OGRID # 229137	Contact: Robert McNeill
Address: 600 West Illinois Avenue, Midland TX 79701	Telephone No. 432-683-7443
Facility Name: Jenkins B Federal Tank Battery	Facility Type: Tank Battery

Surface Owner: Federal	Mineral Owner: Federal	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	17	17S	30E					Eddy

Latitude 32.829856° **Longitude** -103.994967°

NATURE OF RELEASE

Type of Release: Oil	Volume of Release: 20 bbls Oil	Volume Recovered: 18 bbls Oil
Source of Release: Pipe Fitting	Date and Hour of Occurrence: July 11, 2017 6:30 am	Date and Hour of Discovery: July 11, 2017 6:30 am
Was Immediate Notice Given? ☐ Yes ☒ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

This release was due to the failure of a pipe tee at the header. The tee was removed and replaced.

Describe Area Affected and Cleanup Action Taken.*

The release occurred on location within the unlined berm. A vacuum truck was dispatched to remove all freestanding fluids. Concho will have the spill area evaluated for 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.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD 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 NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD 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.

Signature: Dakota Neel	OIL CONSERVATION DIVISION
Printed Name: Dakota Neel	Approved by Environmental Specialist:
Title: HSE Coordinator	Approval Date: / Expiration Date:
E-mail Address: dneel2@concho.com	Conditions of Approval: / Attached ☐
Date: July 16, 2017 Phone: 575-746-2010	

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - Jenkins B Federal Tank Battery
Eddy County, New Mexico

16 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19 110	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South 30 East

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

16 South 31 East

6	5	4	3	2 290	1
7	8	9	10	11	12 288
18	17	16	15	14 113 314	13 299
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

17 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 76 80	23	24
30	29 210 208	28	27	26	25
31	32	33	34	35 153	36

17 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 80	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34 271	35	36

18 South 29 East

6	5	4	3	2	1
7	8	9	10 95	11	12
18	17	16	15	14	13
19	20	21	22	23	24 158
30	29	28	27	26	25
31	32	33	34	35	36

18 South 30 East

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

18 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15 98	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twp	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 11914 POD1			ED	2	4	2	20	17S	30E	594801	3632002	85	80	5

Average Depth to Water: **80 feet**

Minimum Depth: **80 feet**

Maximum Depth: **80 feet**

Record Count: 1

PLSS Search:

Township: 17S **Range:** 30E

12/28/17 10:24 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER

Appendix C

Analytical Report 561389

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

COG- Jenkins B Federal

212C-MD-00958

01-SEP-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

01-SEP-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **561389**
COG- Jenkins B Federal
Project Address: Eddy County, New Mexico

Ike Tavarez:

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) 561389. 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. 561389 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 561389

Tetra Tech- Midland, Midland, TX

COG- Jenkins B Federal

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
AH#1 (0-1')	S	08-23-17 00:00		561389-001
AH#1 (1-1.5')	S	08-23-17 00:00		561389-002
AH#1 (2-2.5')	S	08-23-17 00:00		561389-003
AH#1 (3-3.5')	S	08-23-17 00:00		561389-004
AH#1 (4-4.5')	S	08-23-17 00:00		561389-005
AH#2 (0-1')	S	08-23-17 00:00		561389-006
AH#2 (1-1.5')	S	08-23-17 00:00		561389-007
AH#3 (0-1')	S	08-23-17 00:00		561389-008
AH#3 (1-1.5')	S	08-23-17 00:00		561389-009

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3026250 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3026349 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 561389

Tetra Tech- Midland, Midland, TX

Project Name: COG- Jenkins B Federal

Project Id: 212C-MD-00958
Contact: Ike Tavarez
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Aug-25-17 12:30 pm
Report Date: 01-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested	*Lab Id:*	561389-001		561389-002		561389-003		561389-004		561389-005		561389-006	
	Field Id:	AH#1 (0-1')		AH#1 (1-1.5')		AH#1 (2-2.5')		AH#1 (3-3.5')		AH#1 (4-4.5')		AH#2 (0-1')	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-23-17 00:00		Aug-23-17 00:00		Aug-23-17 00:00		Aug-23-17 00:00		Aug-23-17 00:00		Aug-23-17 00:00	
BTEX by EPA 8021B	*Extracted:*	Aug-30-17 08:00										Aug-30-17 08:00	
	Analyzed:	Aug-30-17 16:49										Aug-30-17 17:27	
	Units/RL:	mg/kg	RL									mg/kg	RL
Benzene		<0.00202	0.00202									<0.00202	0.00202
Toluene		<0.00202	0.00202									<0.00202	0.00202
Ethylbenzene		<0.00202	0.00202									<0.00202	0.00202
m,p-Xylenes		<0.00403	0.00403									<0.00404	0.00404
o-Xylene		<0.00202	0.00202									<0.00202	0.00202
Total Xylenes		<0.00202	0.00202									<0.00202	0.00202
Total BTEX		<0.00202	0.00202									<0.00202	0.00202
Inorganic Anions by EPA 300/300.1	*Extracted:*	Aug-29-17 16:15		Aug-30-17 08:30		Aug-30-17 08:30		Aug-30-17 08:30		Aug-30-17 08:30		Aug-30-17 08:30	
	Analyzed:	Aug-30-17 00:59		Aug-30-17 11:49		Aug-30-17 11:59		Aug-30-17 12:09		Aug-30-17 12:20		Aug-30-17 12:30	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		78.6	5.00	673	4.95	3480	24.7	8780	49.5	14900	99.2	701	4.96
TPH By SW8015 Mod	*Extracted:*	Aug-28-17 16:00										Aug-28-17 16:00	
	Analyzed:	Aug-29-17 02:53										Aug-29-17 03:56	
	Units/RL:	mg/kg	RL									mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0									<14.9	14.9
Diesel Range Organics (DRO)		99.9	15.0									215	14.9
Oil Range Hydrocarbons (ORO)		<15.0	15.0									36.5	14.9
Total TPH		99.9	15.0									252	14.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 561389

Tetra Tech- Midland, Midland, TX

Project Name: COG- Jenkins B Federal

Project Id: 212C-MD-00958
Contact: Ike Tavarez
Project Location: Eddy County, New Mexico

Date Received in Lab: Fri Aug-25-17 12:30 pm
Report Date: 01-SEP-17
Project Manager: Kelsey Brooks

Analysis Requested											
	Lab Id:	561389-007		561389-008		561389-009					
	Field Id:	AH#2 (1-1.5')		AH#3 (0-1')		AH#3 (1-1.5')					
	Depth:										
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Aug-23-17 00:00		Aug-23-17 00:00		Aug-23-17 00:00					
BTEX by EPA 8021B	***Extracted:***			Aug-30-17 16:50							
	Analyzed:			Aug-31-17 14:27							
	Units/RL:			mg/kg	RL						
Benzene				<0.00377	0.00377						
Toluene				<0.00377	0.00377						
Ethylbenzene				<0.00377	0.00377						
m,p-Xylenes				<0.00755	0.00755						
o-Xylene				<0.00377	0.00377						
Total Xylenes				<0.00377	0.00377						
Total BTEX				<0.00377	0.00377						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-30-17 08:30		Aug-30-17 08:30		Aug-30-17 08:30					
	Analyzed:	Aug-30-17 12:40		Aug-30-17 13:11		Aug-30-17 13:22					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		878	4.97	2840	24.5	1400	4.98				
TPH By SW8015 Mod	***Extracted:***			Aug-28-17 16:00							
	Analyzed:			Aug-29-17 04:18							
	Units/RL:			mg/kg	RL						
Gasoline Range Hydrocarbons (GRO)				<15.0	15.0						
Diesel Range Organics (DRO)				104	15.0						
Oil Range Hydrocarbons (ORO)				<15.0	15.0						
Total TPH				104	15.0						

Kelsey Brooks
Project Manager

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

+ NELAC certification not offered for this compound.

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

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: COG- Jenkins B Federal

Work Orders : 561389,

Project ID: 212C-MD-00958

Lab Batch #: 3026146 **Sample:** 561389-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/17 02:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.9	94	70-135	
o-Terphenyl	48.0	50.0	96	70-135	

Lab Batch #: 3026146 **Sample:** 561389-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/17 03:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.1	99.6	90	70-135	
o-Terphenyl	46.5	49.8	93	70-135	

Lab Batch #: 3026146 **Sample:** 561389-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/17 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	109	99.7	109	70-135	
o-Terphenyl	52.8	49.9	106	70-135	

Lab Batch #: 3026250 **Sample:** 561389-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/30/17 16:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0255	0.0300	85	80-120	

Lab Batch #: 3026250 **Sample:** 561389-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/30/17 17:27

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	80-120	
4-Bromofluorobenzene	0.0251	0.0300	84	80-120	

* 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: COG- Jenkins B Federal

Work Orders : 561389,

Project ID: 212C-MD-00958

Lab Batch #: 3026349 **Sample:** 561389-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/17 14:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0276	0.0300	92	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

Lab Batch #: 3026146 **Sample:** 730045-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/17 01:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.4	100	93	70-135	
o-Terphenyl	47.5	50.0	95	70-135	

Lab Batch #: 3026250 **Sample:** 730108-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/30/17 11:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 3026349 **Sample:** 730163-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/30/17 11:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 3026146 **Sample:** 730045-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/17 02:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	100	92	70-135	
o-Terphenyl	44.5	50.0	89	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: COG- Jenkins B Federal

Work Orders : 561389,

Project ID: 212C-MD-00958

Lab Batch #: 3026250 **Sample:** 730108-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/30/17 10:00

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	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3026349 **Sample:** 730163-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/30/17 10:00

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	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 3026146 **Sample:** 730045-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/17 02:33

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	100	100	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 3026250 **Sample:** 730108-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/30/17 10:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

Lab Batch #: 3026349 **Sample:** 730163-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/30/17 10:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

* 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: COG- Jenkins B Federal

Work Orders : 561389,

Project ID: 212C-MD-00958

Lab Batch #: 3026146 **Sample:** 561389-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/17 03:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.8	111	70-135	
o-Terphenyl	49.3	49.9	99	70-135	

Lab Batch #: 3026250 **Sample:** 561411-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/30/17 10:38

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 3026349 **Sample:** 561417-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/30/17 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	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 3026146 **Sample:** 561389-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/17 03:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	99.8	89	70-135	
o-Terphenyl	41.0	49.9	82	70-135	

Lab Batch #: 3026250 **Sample:** 561411-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/30/17 10:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

* 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: COG- Jenkins B Federal

Work Orders : 561389, **Project ID:** 212C-MD-00958

Lab Batch #: 3026349 **Sample:** 561417-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/30/17 21:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

* 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: COG- Jenkins B Federal

Work Order #: 561389 **Project ID:** 212C-MD-00958

Analyst: ALJ **Date Prepared:** 08/30/2017 **Date Analyzed:** 08/30/2017

Lab Batch ID: 3026250 **Sample:** 730108-1-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	<0.00200	0.0998	0.116	116	0.100	0.114	114	2	70-130	35	
Toluene	<0.00200	0.0998	0.114	114	0.100	0.112	112	2	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.115	115	0.100	0.113	113	2	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.225	113	0.201	0.221	110	2	70-135	35	
o-Xylene	<0.00200	0.0998	0.109	109	0.100	0.107	107	2	71-133	35	

Analyst: ALJ **Date Prepared:** 08/30/2017 **Date Analyzed:** 08/30/2017

Lab Batch ID: 3026349 **Sample:** 730163-1-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	<0.00200	0.0998	0.116	116	0.100	0.114	114	2	70-130	35	
Toluene	<0.00200	0.0998	0.114	114	0.100	0.112	112	2	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.115	115	0.100	0.113	113	2	71-129	35	
m,p-Xylenes	<0.00399	0.200	0.225	113	0.201	0.221	110	2	70-135	35	
o-Xylene	<0.00200	0.0998	0.109	109	0.100	0.107	107	2	71-133	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: COG- Jenkins B Federal

Work Order #: 561389 **Project ID:** 212C-MD-00958

Analyst: MNV **Date Prepared:** 08/29/2017 **Date Analyzed:** 08/29/2017

Lab Batch ID: 3026248 **Sample:** 730075-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	247	99	250	247	99	0	90-110	20	

Analyst: MNV **Date Prepared:** 08/30/2017 **Date Analyzed:** 08/30/2017

Lab Batch ID: 3026319 **Sample:** 730078-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	244	98	250	244	98	0	90-110	20	

Analyst: ARM **Date Prepared:** 08/28/2017 **Date Analyzed:** 08/29/2017

Lab Batch ID: 3026146 **Sample:** 730045-1-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	898	90	1000	952	95	6	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	967	97	1000	1020	102	5	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: COG- Jenkins B Federal

Work Order # : 561389 **Project ID:** 212C-MD-00958

Lab Batch ID: 3026250 **QC- Sample ID:** 561411-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/30/2017 **Date Prepared:** 08/30/2017 **Analyst:** ALJ

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	0.0803	80	0.101	0.0761	75	5	70-130	35	
Toluene	<0.00202	0.101	0.0760	75	0.101	0.0710	70	7	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0732	72	0.101	0.0662	66	10	71-129	35	X
m,p-Xylenes	<0.00403	0.202	0.143	71	0.202	0.128	63	11	70-135	35	X
o-Xylene	<0.00202	0.101	0.0724	72	0.101	0.0685	68	6	71-133	35	X

Lab Batch ID: 3026349 **QC- Sample ID:** 561417-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/30/2017 **Date Prepared:** 08/30/2017 **Analyst:** ALJ

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	0.0991	98	0.100	0.0908	91	9	70-130	35	
Toluene	<0.00202	0.101	0.0940	93	0.100	0.0842	84	11	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0858	85	0.100	0.0740	74	15	71-129	35	
m,p-Xylenes	<0.00404	0.202	0.166	82	0.201	0.142	71	16	70-135	35	
o-Xylene	<0.00202	0.101	0.0831	82	0.100	0.0719	72	14	71-133	35	

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.

Form 3 - MS / MSD Recoveries

Project Name: COG- Jenkins B Federal

Work Order # : 561389 **Project ID:** 212C-MD-00958

Lab Batch ID: 3026248 **QC- Sample ID:** 560863-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/29/2017 **Date Prepared:** 08/29/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	998	247	1220	90	247	1200	82	2	90-110	20	X

Lab Batch ID: 3026248 **QC- Sample ID:** 561383-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/29/2017 **Date Prepared:** 08/29/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1290	245	1560	110	245	1560	110	0	90-110	20	

Lab Batch ID: 3026319 **QC- Sample ID:** 560888-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/30/2017 **Date Prepared:** 08/30/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	558	249	806	100	249	810	101	0	90-110	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.

Form 3 - MS / MSD Recoveries

Project Name: COG- Jenkins B Federal

Work Order # : 561389 **Project ID:** 212C-MD-00958

Lab Batch ID: 3026319 **QC- Sample ID:** 561389-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/30/2017 **Date Prepared:** 08/30/2017 **Analyst:** MNV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	878	249	1110	93	249	1110	93	0	90-110	20	

Lab Batch ID: 3026146 **QC- Sample ID:** 561389-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/29/2017 **Date Prepared:** 08/28/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	1050	105	998	893	89	16	70-135	35	
Diesel Range Organics (DRO)	99.9	998	1120	102	998	988	89	13	70-135	35	

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

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

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

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

561389

Client Name: COG	**Site Manager:** Ike Tavarez
Project Name: Jenkins B Federal	
Project Location: (county, state) Eddy County, New Mexico	**Project #:** 212C-MD-00958
Invoice to: COG	
Receiving Laboratory: Xenco Midland Tx	**Sampler Signature:**

Comments: If TPH exceeds 5,000mg/kg run deeper samples. If Benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg run deeper samples

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING DATE (YEAR: 2017)	SAMPLING TIME	MATRIX: WATER	MATRIX: SOIL	MATRIX:	PRESERVATIVE METHOD: HCL	PRESERVATIVE METHOD: HNO_3	PRESERVATIVE METHOD: ICE	PRESERVATIVE METHOD: None	PRESERVATIVE METHOD:	# CONTAINERS	FILTERED (Y/N)	BTEX 8021B BTEX 8260B	TPH TX1005 (Ext to C35)	TPH 8015M (GRO - DRO - ORO - MRO)	PAH 8270C	Total Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	NORM	PLM (Asbestos)	Chloride	Chloride Sulfate TDS	General Water Chemistry (see attached list)	Anion/Cation Balance				Hold
	AH#1 (0-1')	8/23/2017			X							1	N	X		X												X							
	AH#1 (1-1.5')	8/23/2017			X							1	N															X							
	AH#1 (2-2.5')	8/23/2017			X							1	N															X							
	AH#1 (3-3.5')	8/23/2017			X							1	N															X							
	AH#1 (4-4.5')	8/23/2017			X							1	N															X							
	AH#2 (0-1')	8/23/2017			X							1	N	X		X												X							
	AH#2 (1-1.5')	8/23/2017			X							1	N															X							
	AH#3 (0-1')	8/23/2017			X							1	N	X		X												X							
	AH#3 (1-1.5)	8/23/2017			X							1	N															X							
																												X							

Final 1.000

Page 18 of 19

Relinquished by:	Date: 8-25-17	Time: 1230	Received by: Date: 8/25/17 Time: 12:30
Relinquished by:	Date:	Time:	Received by: Date: Time:
Relinquished by:	Date:	Time:	Received by: Date: Time:

LAB USE ONLY

Sample Temperature

(Circle) HAND D

REMARKS:

STANDARD

☐ RUSH: Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

Temp: 3.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 3.6

ORIGINAL COPY

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 08/25/2017 12:30:00 PM

Work Order #: 561389

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**No**
#21 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: Shawnee Smith Date: 08/28/2017

Shawnee Smith

Checklist reviewed by: Kelsey Brooks Date: 08/29/2017

Kelsey Brooks

Analytical Report 571336

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

Jenkins B Tank Battery

212C-MD-00958.01

22-DEC-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

22-DEC-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **571336**
Jenkins B Tank Battery
Project Address: Eddy Co, NM

Ike Tavarez:

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) 571336. 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. 571336 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 571336

Tetra Tech- Midland, Midland, TX

Jenkins B Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 0-1	S	12-14-17 00:00		571336-001
BH-1 2-3	S	12-14-17 00:00		571336-002
BH-1 4-5	S	12-14-17 00:00		571336-003
BH-1 6-7	S	12-14-17 00:00		571336-004
BH-1 9-10	S	12-14-17 00:00		571336-005
BH-1 14-15	S	12-14-17 00:00		571336-006
BH-2 0-1	S	12-14-17 00:00		571336-008
BH-2 2-3	S	12-14-17 00:00		571336-009
BH-2 4-5	S	12-14-17 00:00		571336-010
BH-2 6-7	S	12-14-17 00:00		571336-011
BH-2 9-10	S	12-14-17 00:00		571336-012
BH-2 14-15	S	12-14-17 00:00		571336-013
BH-2 19-20	S	12-14-17 00:00		571336-014
BH-2 24-25	S	12-14-17 00:00		571336-015
BH-1 19-20	S	12-14-17 00:00		Not Analyzed
BH-2 29-30	S	12-14-17 00:00		Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3036587 Inorganic Anions by EPA 300/300.1

Lab Sample ID 571336-010 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: 571336-001, -002, -003, -004, -005, -006, -008, -009, -010, -011, -012, -013, -014, -015.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 571336

Tetra Tech- Midland, Midland, TX

Project Name: Jenkins B Tank Battery

Project Id: 212C-MD-00958.01
Contact: Ike Tavarez
Project Location: Eddy Co, NM

Date Received in Lab: Fri Dec-15-17 01:00 pm
Report Date: 22-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571336-001		571336-002		571336-003		571336-004		571336-005		571336-006	
	Field Id:	BH-1 0-1		BH-1 2-3		BH-1 4-5		BH-1 6-7		BH-1 9-10		BH-1 14-15	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20	
	Analyzed:	Dec-20-17 15:14		Dec-20-17 15:21		Dec-20-17 15:28		Dec-20-17 15:49		Dec-20-17 15:56		Dec-20-17 16:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		73.3	4.96	110	4.96	3140	24.8	3390	24.8	453	4.91	144	4.99

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 571336

Tetra Tech- Midland, Midland, TX

Project Name: Jenkins B Tank Battery

Project Id: 212C-MD-00958.01
Contact: Ike Tavarez
Project Location: Eddy Co, NM

Date Received in Lab: Fri Dec-15-17 01:00 pm
Report Date: 22-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	571336-008		571336-009		571336-010		571336-011		571336-012		571336-013	
	Field Id:	BH-2 0-1		BH-2 2-3		BH-2 4-5		BH-2 6-7		BH-2 9-10		BH-2 14-15	
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00		Dec-14-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20		Dec-20-17 11:20	
	Analyzed:	Dec-20-17 16:10		Dec-20-17 16:17		Dec-20-17 16:24		Dec-20-17 16:45		Dec-20-17 17:06		Dec-20-17 17:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1250	4.96	166	4.91	1200	4.95	2380	25.0	1270	24.8	823	4.97

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 571336

Tetra Tech- Midland, Midland, TX

Project Name: Jenkins B Tank Battery

Project Id: 212C-MD-00958.01
Contact: Ike Tavarez
Project Location: Eddy Co, NM

Date Received in Lab: Fri Dec-15-17 01:00 pm
Report Date: 22-DEC-17
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	571336-014		571336-015					
	Field Id:	BH-2 19-20		BH-2 24-25					
	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-14-17 00:00		Dec-14-17 00:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-20-17 11:20		Dec-20-17 11:20					
	Analyzed:	Dec-20-17 17:20		Dec-20-17 17:27					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		338	4.95	443	4.98				

Kelsey Brooks
Project Manager

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

+ 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: Jenkins B Tank Battery

Work Order #: 571336 **Project ID:** 212C-MD-00958.01

Analyst: LRI **Date Prepared:** 12/20/2017 **Date Analyzed:** 12/20/2017

Lab Batch ID: 3036587 **Sample:** 7636292-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	267	107	250	264	106	1	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: Jenkins B Tank Battery

Work Order # : 571336 **Project ID:** 212C-MD-00958.01

Lab Batch ID: 3036587 **QC- Sample ID:** 571335-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/20/2017 **Date Prepared:** 12/20/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	28.4	245	295	109	245	289	106	2	90-110	20	

Lab Batch ID: 3036587 **QC- Sample ID:** 571336-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/20/2017 **Date Prepared:** 12/20/2017 **Analyst:** LRI

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1200	248	1400	81	248	1390	77	1	90-110	20	X

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

571336

Client Name: COG

Site Manager: Ike Tavarez

Project Name: Jenkins B Tank Battery

Project Location: (county, state) Eddy Co. NM

Project #: 212C-MD-00958.01

Invoice to: COG

Receiving Laboratory: Xenco

Sampler Signature: Dan Gonzales

Comments:

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING YEAR: 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)
	BH-1 0-1	12/14/17			V				X				
	" 2-3				V				X				
	" 4-5				X				X				
	" 6-7				X				X				
	" 9-10				X				X				
	" 14-15				X				X				
	" 19-20				X				X				
	BH-2 0-1				X				X				
	" 2-3				X				X				
	" 4-5				X				X				

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							
												HOLD									
														X							
														X							
														X							

Relinquished by: Dan Gonzales Date: 12/15/17 Time: 100

Received by: Bill Date: 12-15-17 Time: 1:00

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

Temp: 0.3°c IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 0.1°c

(Circle) HAND DELIVERED FEDEX UPS Tracking #: _____

ORIGINAL COPY

Final 1.000

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

571336

Client Name: COG

Site Manager: Ike Tavarez

Project Name: Jenkins B Tank Battery

Project Location: (county, state) Eddy Co. NM

Project #: 212C-MD-00958.01

Invoice to: COG

Receiving Laboratory: Xenco

Sampler Signature: Alan Cerrigales

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	PRESERVATIVE METHOD	# CONTAINERS	FILTERED (Y/N)
	BH-2 6-7	12/14/17			X				X				
	" 9-10				X				X				
	" 14-15				X				X				
	" 19-20				X				X				
	" 24-25				X				X				
	" 29-30	↓			X				X				

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

Relinquished by: Date: 12/15/17 Time: 100

Received by: Date: 12/15/17 Time: 1:00

Relinquished by: Date: Time:

Received by: Date: Time:

Relinquished by: Date: Time:

Received by: Date: Time:

LAB USE ONLY

Sample Temperature

REMARKS:

Temp: 0.3°C IR ID:R-8

CF:(0-6: -0.2°C)
(6-23: +0.2°C)

Corrected Temp: 0.1 °C

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 12/15/2017 01:00:00 PM

Work Order #: 571336

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: Connie Hernandez Date: 12/15/2017

Checklist reviewed by: Kelsey Brooks Date: 12/20/2017