SITE INFORMATION

Report Type: Closure Report 2RP-5010

General Site Information:						
Site:	**King Tut Federal #001H Battery**					
Company:	**COG Operating LLC**					
Section, Township and Range	**Unit E**	**Sec. 19**	**T 24S**	**R 32E**		
Lease Number:	**API No. FMAP1828468531**					
County:	**Eddy County**					
GPS:	**32.203915**			**-103.72301**		
Surface Owner:	**Federal**					
Mineral Owner:						
Directions:	From the intersection of 128 and Buck Johnson Rd., go southwest on Buck Johnson Rd. for 0.43 mi., turn south onto unnamed lease Rd. and go 1.85 miles to location.					

Release Data:	
Date Released:	10/4/2018
Type Release:	Produced Water
Source of Contamination:	Flowline
Fluid Released:	44.1 bbl water
Fluids Recovered:	10 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:	*160' below surface*

Recommended Remedial Action Levels (RRALs)				
Benzene	***Total BTEX***	***TPH (GRO+DRO)***	***TPH (GRO+DRO+MRO)***	***Chlorides***
10 mg/kg	*50 mg/kg*	*1,000 mg/kg*	*2,500 mg/kg*	*20,000 mg/kg*

TETRA TECH

April 13, 2020

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

Re: Closure Report for the COG Operating, LLC, King Tut Federal #001H Battery, Unit E, Section 19, Township 24 South, Range 32 East, Eddy County, New Mexico. 2RP-5010

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to assess and remediate a release that occurred at the King Tut #1H, Unit E, Section 19, Township 24 South, Range 32 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.203915°, -103.723010°. 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 October 4, 2018, and released approximately 44.1 barrels of produced water due to a ruptured flowline. Vacuum trucks were used to remove all freestanding fluids, recovering approximately 10 barrels of produced water. The release impacted an area adjacent to the lease road measuring approximately 40' x 100' and then migrated to the south impacting an area measuring approximately 17' x 320'. The initial C-141 Form is included in Appendix A.

Site Characterization

No water wells were listed within Section 19 on the New Mexico Office of the State Engineer's (NMOSE) database, the Geology and Groundwater Resources of Eddy County (Report 3), or the USGS National Water Information Database. The nearest well is listed in Township 24 South, Range 31 East, Section 02, on the NMOSE website, approximately 3.45 miles Northwest of the Site, and has a reported depth to groundwater of 160' below surface. According to the Chevron Texaco Groundwater Trend map, the average depth to groundwater in the area is between 300' and 325' below surface. The groundwater 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

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Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the Site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. A site characterization was performed for the Site and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. Additionally, the Site is located in a low karst potential area. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization, the proposed RRAL for TPH is 2,500 mg/kg (GRO + DRO + MRO). Additionally, based on the site characterization, the proposed RRAL for chlorides is 20,000 mg/kg.

Soil Assessment and Analytical Results

On October 15, 2018, Tetra Tech personnel were on Site to evaluate and sample the release area. A total of six (6) auger holes (AH-1 through AH-6) were installed in the release area to total depths ranging from 2-2.5' to 4-4.5' below surface. A total of eight (8) horizontal delineation samples (H-1 through H-8) were collected around the perimeter of the spill to total depths of 0-1' below surface. 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. The sample locations are shown on Figure 3.

Auger Holes

Referring to Table 1, all analyzed samples showed benzene, total BTEX, and TPH concentrations below the laboratory reporting limits. Additionally, none of the samples collected showed any chloride concentrations above the RRAL, with concentrations ranging from below the laboratory reporting limits to 16,600 mg/kg.

Horizontals

Referring to Table 1, none of the samples collected showed benzene, total BTEX, or TPH concentrations above the laboratory reporting limits. Additionally, none of the samples showed any significant chloride concentrations, with concentrations ranging from below the laboratory reporting limits to 188 mg/kg.

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Remediation Activities

Tetra Tech personnel were onsite February 11, 2020, before remediation activities occurred to re-sample the areas of auger holes (AH-1, AH-2, and AH-3). The three (3) auger holes were installed in the release range from surface to 4.0'-4.5' below surface.

Referring to Table 1, the area of auger hole (AH-2) showed chloride concentrations below the RRALs. It appears that the previous chloride concentrations detected in the area may have been affected by the heavy recent rains. The area of auger hole (AH-1) showed high chloride concentrations of 880 mg/kg at 2.0-2.5', 3,440 mg/kg at 3.0'-3.5', and 3,480 mg/kg at 4.0'-4.5' below surface. The area of auger hole (AH-3) showed high chloride concentrations of 624 mg/kg at 3.0'-3.5' below surface.

Tetra Tech personnel were onsite February 20-26, 2020, to supervise the remediation activities. The areas of auger holes (AH-1 and AH-3) were excavated to depths of 4.0'-5.0' below surface.

A total of twenty-three (23) bottom hole samples were collected (BottomHole-1 through BottomHole 23) and sixteen (16) sidewall samples (NSW-1, NSW-2, ESW-1 through ESW-5, WSW-1 through WSW-5, and SSW-1 through SSW-4) were collected every 200 square feet for documentation purposes. All collected 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 results of the sampling are summarized in Table 2. The excavation depths and confirmation sample locations are shown on Figure 4.

Referring to Table 2, none of the samples collected showed TPH, benzene, total BTEX and chloride above the RRALs, with the exception of BottomHole-3, BottomHole-7, and BottomHole-15, which showed chloride concentraions of 29,200 mg/kg, 23,600 mg/kg and 30,000 mg/kg, respectively. These areas were excavated to a depth of 5.0' below surface and re-sampled. All confirmation samples showed concentrations below RRALs.

Approximately 640 cubic yards of material were excavated and transported offsite for proper disposal. The area was then backfilled with clean material to surface grade.

Conclusion

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

Respectfully submitted,
TETRA TECH

Mike Carmona,
Geologist

Figures

OVERALL VIEW 1:1,468,842

Jal Hwy
Paduca Breaks Ln
128
W NM Highway 128
Buck Jackson Rd
Buck Jackson Rd
Buck Jackson Rd
Eddy
Lea
KING TUT FEDERAL #001H
Orla Rd

0 2,000 4,000
Feet
1 inch = 4,000 feet

CONCHO

FIGURE 1

KING TUT FEDERAL #001H
(32.203915°,-103.723010°)

OVERVIEW MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01451	
Date : 11/15/2018	
File : H:\GIS\212C-MD-01451	

LEGEND

◉ SITE LOCATION

Sources: Esri, HERE, Garmin, U
Japan, METI, Esri China (Hong
OpenStreetMap contributors, and the GIS User Community

MAPPED BY: MISTI MORGAN

OVERALL VIEW 1:1,468,842

KING TUT FEDERAL #001H

Eddy

Lea

128

N
W
E
S

0 2,000 4,000 Feet

1 inch = 4,000 feet

LEGEND

SITE LOCATION

CONCHO

FIGURE 2

KING TUT FEDERAL #001H
(32.203915°,-103.723010°)

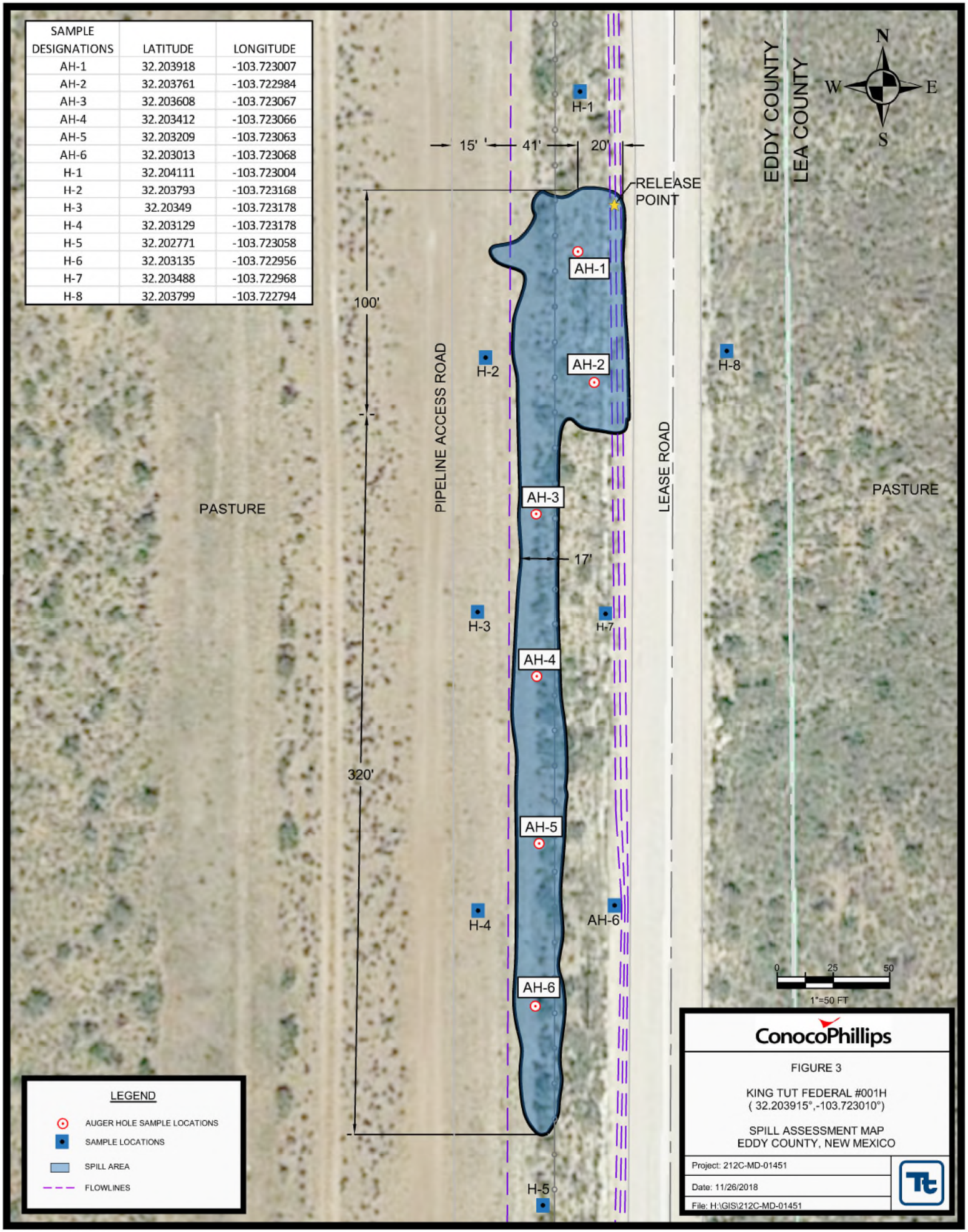
TOPOGRAPHIC MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01451	
Date : 11/15/2018	
File : H:\GIS\212C-MD-01451	

MAPPED BY: MISTI MORGAN

SAMPLE DESIGNATIONS	LATITUDE	LONGITUDE
AH-1	32.203918	-103.723007
AH-2	32.203761	-103.722984
AH-3	32.203608	-103.723067
AH-4	32.203412	-103.723066
AH-5	32.203209	-103.723063
AH-6	32.203013	-103.723068
H-1	32.204111	-103.723004
H-2	32.203793	-103.723168
H-3	32.20349	-103.723178
H-4	32.203129	-103.723178
H-5	32.202771	-103.723058
H-6	32.203135	-103.722956
H-7	32.203488	-103.722968
H-8	32.203799	-103.722794



ConocoPhillips

FIGURE 3

KING TUT FEDERAL #001H
(32.203915°,-103.723010°)

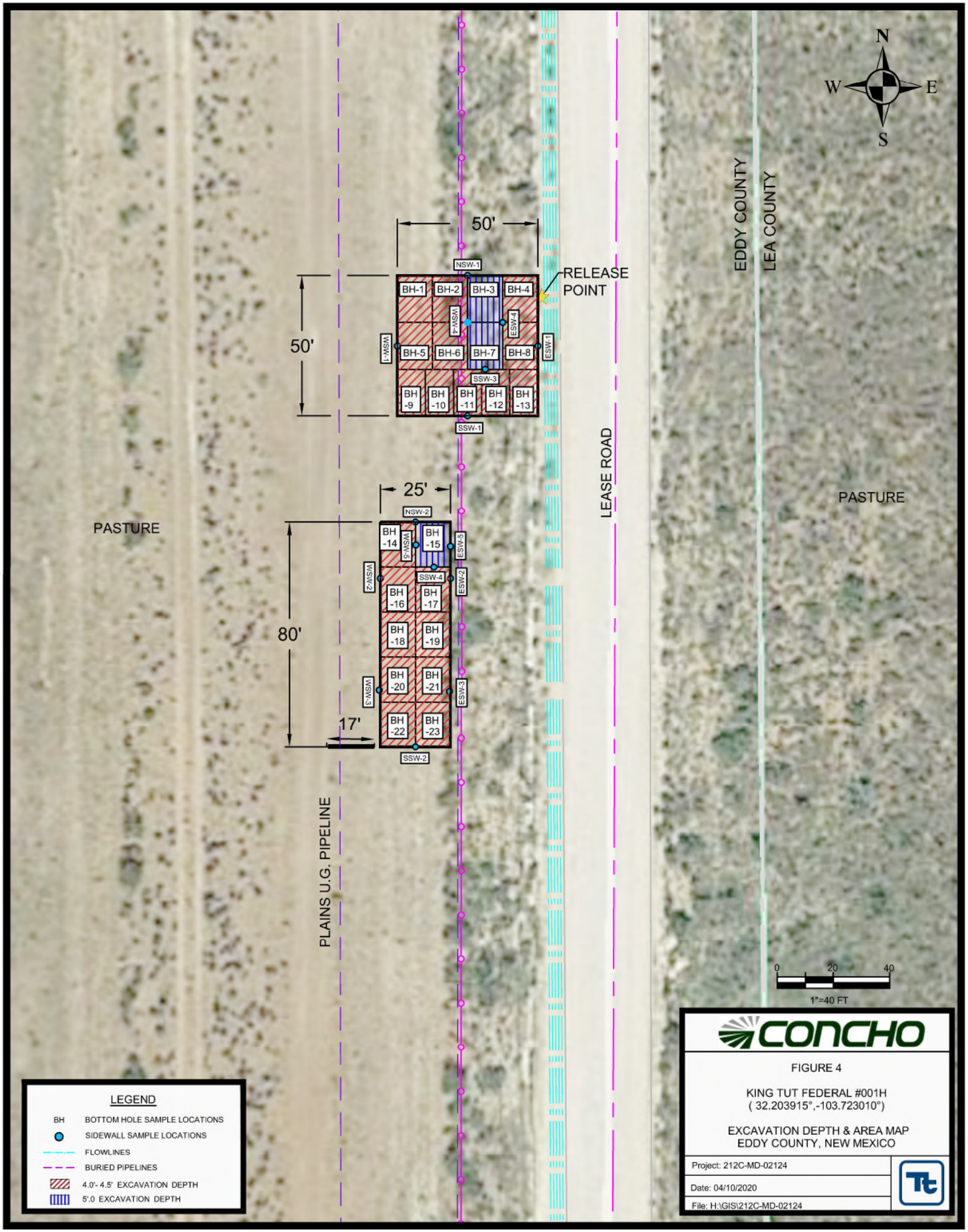
SPILL ASSESSMENT MAP
EDDY COUNTY, NEW MEXICO

Project: 212C-MD-01451

Date: 11/26/2018

File: H:\GIS\212C-MD-01451

Drawn By: MISTI MORGAN


N
W
E
S
EDDY COUNTY
LEA COUNTY
50'
50'
NSW-1
RELEASE POINT
BH-1
BH-2
BH-3
BH-4
WSW-4
ESW-4
WSW-1
BH-5
BH-6
BH-7
BH-8
ESW-1
SSW-3
BH -9
BH -10
BH -11
BH -12
BH -13
SSW-1
LEASE ROAD
25'
NSW-2
PASTURE
PASTURE
BH -14
BH -15
WSW-5
ESW-5
WSW-2
SSW-4
ESW-2
BH -16
BH -17
80'
BH -18
BH -19
BH -20
BH -21
WSW-3
ESW-3
17'
BH -22
BH -23
SSW-2
PLAINS U.G. PIPELINE
0
20
40
1"=40 FT
LEGEND
BH BOTTOM HOLE SAMPLE LOCATIONS
SIDEWALL SAMPLE LOCATIONS
FLOWLINES
BURIED PIPELINES
4.0'- 4.5' EXCAVATION DEPTH
5'.0 EXCAVATION DEPTH
CONCHO
FIGURE 4
KING TUT FEDERAL #001H
(32.203915°,-103.723010°)
EXCAVATION DEPTH & AREA MAP
EDDY COUNTY, NEW MEXICO
Project: 212C-MD-02124
Date: 04/10/2020
File: H:\GIS\212C-MD-02124
Drawn By: MISTI MORGAN

Tables

Table 1
Concho
King Tut #1H (10-04-18)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
AH-1	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**2,930**
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**9,310**
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	**11,400**
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	**17,000**
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	**16,000**
Re-sampled	2/11/2020	0-1	-	X		-	-	-	-	-	-	-	-	-	16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	-	48.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	**880**
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	**3,440**
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	3,480
AH-2	10/15/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	**8,170**
	"	1-1.5	-	X		<14.9	<14.9	<14.9	<14.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	**9,690**
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	**10,100**
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	**11,100**
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	**3,240**
Re-sampled	2/11/2020	0-1	-	X											16.0
	"	1-1.5	-	X											16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	<16.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	64.0
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	64.0
AH-3	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	**1,900**
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	**6,320**
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	**16,600**
	"	2.5-3	-	X		-	-	-	-	-	-	-	-	-	**13,000**
Re-sampled	2/11/2020	0-1	-	X		-	-	-	-	-	-	-	-	-	<16.0
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	-	<16.0
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	256
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	**624**
AH-4	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.99
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<5.00
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	<5.00

Table 1
Concho
King Tut #1H (10-04-18)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (in)	Soil Status		TPH (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	ORO	Total						
AH-5	10/15/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	32.3
	"	1-1.5	-	X		<15.0	<15.0	<15.0	<15.0	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	110
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	55.0
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	42.5
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	22.8
AH-6	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.95
	"	1-1.5	-	X		<14.9	<14.9	<14.9	<14.9	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<4.98
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	-	9.92
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	-	<4.98
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	-	<4.95
H-1	10/15/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<4.95
H-2	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
H-3	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.98
H-4	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<4.98
H-5	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.97
H-6	10/15/2018	0-1	-	X		<15.0	<15.0	<15.0	<15.0	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	188
H-7	10/15/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<4.95
H-8	10/15/2018	0-1	-	X		<14.9	<14.9	<14.9	<14.9	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<4.98

(-) Not Analyzed

Excavated

Table 2
Concho
King Tut Fed #1H (10-4-2018)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth	Excavation 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	ORO	Total						
Bottomhole-1	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	7,860
Bottomhole-2	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,260
Bottomhole-3	2/21/2020		4-4.5		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**29,200**
	2/26/2020		5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	2,360
Bottomhole-4	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	272
Bottomhole-5	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	3,680
Bottomhole-6	2/21/2020		4-4.5	X	-	<10.0	17.9	<10.0	17.9	<0.050	<0.050	<0.050	<0.150	<0.300	2,520
Bottomhole-7	2/21/2020		4-4.5		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**23,600**
	2/26/2020		5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	2,920
Bottomhole-8	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16,200
Bottomhole-9	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	6,800
Bottomhole-10	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	4,400
Bottomhole-11	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	2,800
Bottomhole-12	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32
Bottomhole-13	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32
Bottomhole-14	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	720
Bottomhole-15	2/21/2020		4-4.5		X	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	**30,000**
	2/26/2020		5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,220
Bottomhole-16	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,070
Bottomhole-17	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48
Bottomhole-18	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	2,360
Bottomhole-19	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32
Bottomhole-20	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	8,260
Bottomhole-21	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32
Bottomhole-22	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	3,200
Bottomhole-23	2/21/2020		4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80

Table 2
Concho
King Tut Fed #1H (10-4-2018)
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth	Excavation 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	ORO	Total						
NSW-1	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80
NSW-2	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	160
WSW-1	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	112
WSW-2	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	144
WSW-3	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	160
WSW-4	2/26/2020	4.5-5	5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,120
WSW-5	2/26/2020	4.5-5	5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	1,120
ESW-1	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	64
ESW-2	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48
ESW-3	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80
ESW-4	2/26/2020	4.5-5	5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	2,600
ESW-5	2/26/2020	0-4.5	5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48.0
SSW-1	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48
SSW-2	2/21/2020	0-4.5	4-4.5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	48
SSW-3	2/26/2020	4.5-5	5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	2,440
SSW-4	2/26/2020	4.5-5	5	X	-	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	4,320

(-) Not Analyzed

Excavated Areas

Concentrations detected below site reclamation/restoration depth of 4.0' below surface

Photos

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	NMAP1828469051
District RP	2RP-5010
Facility ID	fMAP1828468531
Application ID	pMAP1828468856

Release Notification

Responsible Party

Responsible Party	COG Operating, LLC	OGRID	229137
Contact Name	Robert McNeill	Contact Telephone	(432) 683-7443
Contact email	RMcNeill@conhco.com	Incident # *(assigned by OCD)*	NMAP1828469051
Contact mailing address	600 West Illinois Avenue, Midland, Texas 79701		

Location of Release Source

Latitude 32.20391 Longitude -103.72288
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	King Tut Federal #001H Battery	Site Type	Flowline
Date Release Discovered	October 4, 2018	API# *(if applicable)*	fMAP1828468531

Unit Letter	Section	Township	Range	County
E	19	24S	32E	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) 44.1	Volume Recovered (bbls) 10
	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 ruptured flowline. The flowline is being replaced.
The release was 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	NMAP1828469051
District RP	2RP-5010
Facility ID	fMAP1828468531
Application ID	pMAP1828468856

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 Dakota Neel via e-mail October 4, 2018 at 4:57 pm to Maria Pruett and Shelly Tucker.

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: 10/8/2018

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

OCD Only

Received by: Date: 10/11/18

Incident ID	NMAP1828469051
District RP	2RP-5010
Facility ID	fMAP1828468531
Application ID	pMAP1828468531

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?	160 (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	NMAP1828469051
District RP	2RP-5010
Facility ID	fMAP1828468531
Application ID	pMAP1828468531

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:

email: itavarez@concho.com Telephone: (432) 686-3023

OCD Only

Received by: Cristina Eads Date: 04/15/2020

Incident ID	NMAP1828469051
District RP	2RP-5010
Facility ID	fMAP1828468531
Application ID	pMAP1828468531

Closure

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

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

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

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

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

☑ Description of remediation activities

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

Printed Name: Ike Tavarez Title: Senior HSE Supervisor

Signature: Date: 4-14-20

email: itavarez@concho.com Telephone: (432) 686-3023

OCD Only

Received by: Cristina Eads Date: 04/15/2020

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

Closure Approved by: Denied Date: 05/29/2020

Printed Name: Cristina Eads Title: Environmental Specialist

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG - King Tut Federal #001H Battery

23 South 31 East

6	5	4	3	2	1
85	354	168			
7	8	9	10	11	12
140					
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

23 South 32 East

6	5	4	3	2	1
			480		
7 639	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
	713	400			
30	29	28	27	26	25
31	32	33	34	35	36

23 South 33 East

6	5	4	3	2	1
7 475	8	9	10	11	12
					325
18	17	16	15	14	13
19	20	21	22	23	24
400	400				
30	29	28	27	26	25
		400		225	225
31	32	33	34	35	36

24 South 31 East

6	5	4	3	2	1
		436		160	
7	8	9	10	11	12
18	17	16	15	14	13
	74				
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36
		474			

24 South 32 East

6	5	4	3	2	1
	380				
7	8	9	10	11	12
			20		
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

24 South 33 East

6	5	4	3	2	1
7	8	9	10	11	12
			24.6		
18	17	16	15	14	13
19	20	21	22	23	24
				208	16.9
30	29	28	27	26	25
31	32	33	34	35	36
		93.2			

25 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 390	22	23	24
		290			
30	29	28	27	26	25
31	32	33	34	35	36

25 South 32 East

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

25 South 33 East

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

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

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

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

34 NMOCD - Groundwater Data

121 Abandoned Waterwell (recently measured)

New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Twn	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02405		CUB	ED		4	1	02	24S	31E	617690	3568631*	275	160	115
C 02440		C	ED		2	3	10	24S	31E	616103	3566599*	350		
C 02460		C	ED			3	02	24S	31E	617496	3568022*	320		
C 02460 POD2		C	ED			3	02	24S	31E	617496	3568022*	320		
C 02464		C	ED	3	4	1	02	24S	31E	617589	3568530*	320	205	115
C 02661		CUB	ED	3	3	1	04	24S	31E	613969	3568485*	708		
C 02783		CUB	ED	3	3	1	04	24S	31E	613911	3568461	708		
C 02783 POD2		CUB	ED	3	3	1	04	24S	31E	613911	3568461	672		
C 02784		C	ED	4	2	4	04	24S	31E	613911	3568461	584		
C 02785		CUB	ED	3	3	1	04	24S	31E	613969	3568485*	692		

Average Depth to Water: **182 feet**
Minimum Depth: **160 feet**
Maximum Depth: **205 feet**

Record Count: 10

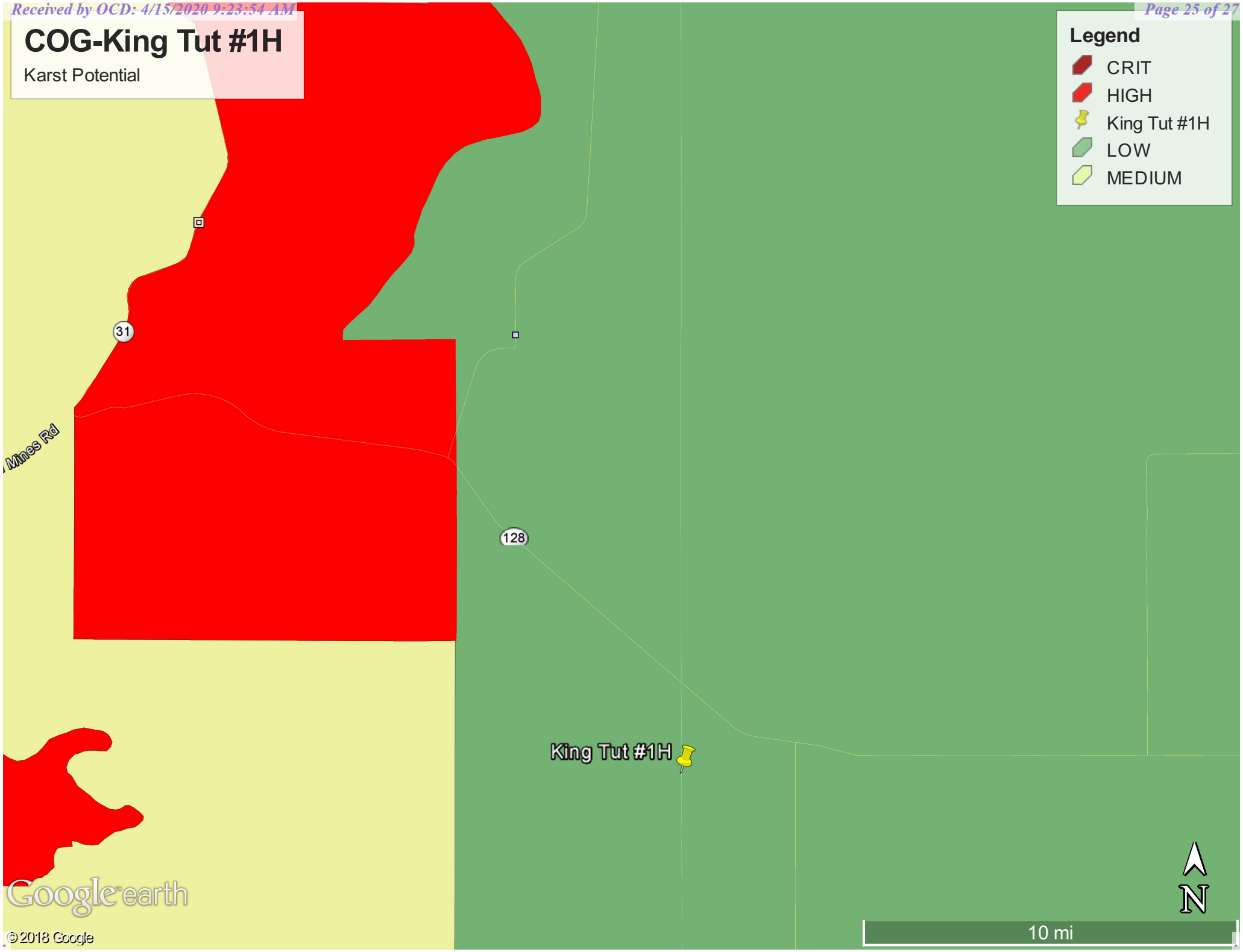
PLSS Search:

Township: 24S **Range:** 31E

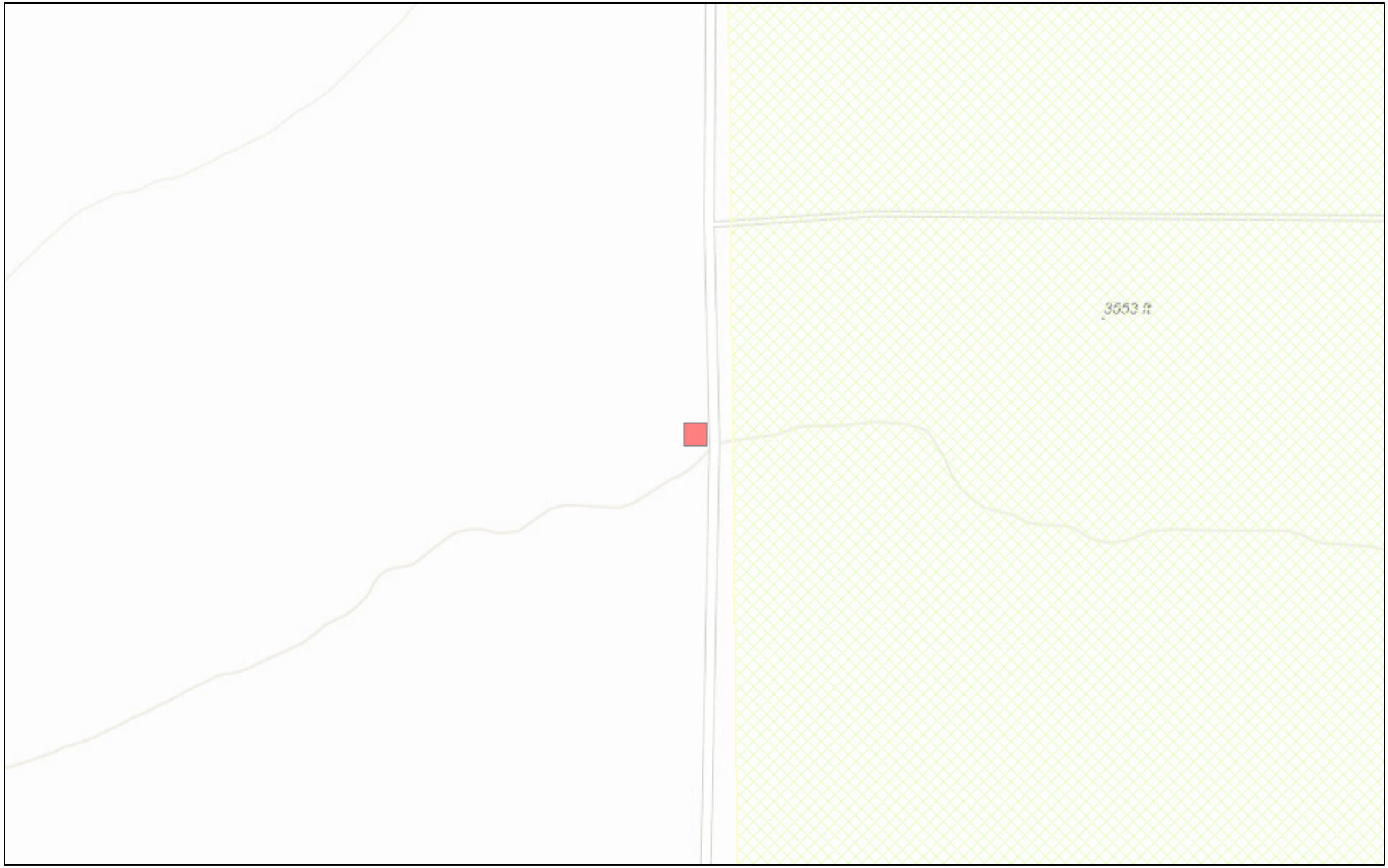
***UTM location was derived from PLSS - see Help**

COG-King Tut #1H

Karst Potential



New Mexico NFHL Data



October 26, 2018

1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

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

Appendix C