

## 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:

<b>Date Released:</b>	10/4/2018
<b>Type Release:</b>	Produced Water
<b>Source of Contamination:</b>	Flowline
<b>Fluid Released:</b>	44.1 bbl water
<b>Fluids Recovered:</b>	10 bbls water

### Official Communication:

<b>Name:</b>	Ike Tavaréz		Mike Carmona
<b>Company:</b>	COG Operating, LLC		Tetra Tech
<b>Address:</b>	One Concho Center		901 West Wall Street
	600 W. Illinois Ave.		Suite 100
<b>City:</b>	Midland Texas, 79701		Midland, Texas
<b>Phone number:</b>	(432) 686-3023		(432) 687-8121
<b>Fax:</b>	(432) 684-7137		
<b>Email:</b>	<a href="mailto:itavarez@concho.com">itavarez@concho.com</a>		<a href="mailto:Mike.Carmona@tetrattech.com">Mike.Carmona@tetrattech.com</a>

### 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



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.tetrattech.com

**TETRA TECH**

## **Regulatory**

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the Site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. 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.

**TETRA TECH**

## 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 RRLs. 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 RRLs, with the exception of BottomHole-3, BottomHole-7, and BottomHole-15, which showed chloride concentrations 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 RRLs.

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

A handwritten signature in black ink, appearing to read 'Mike Carmona'.

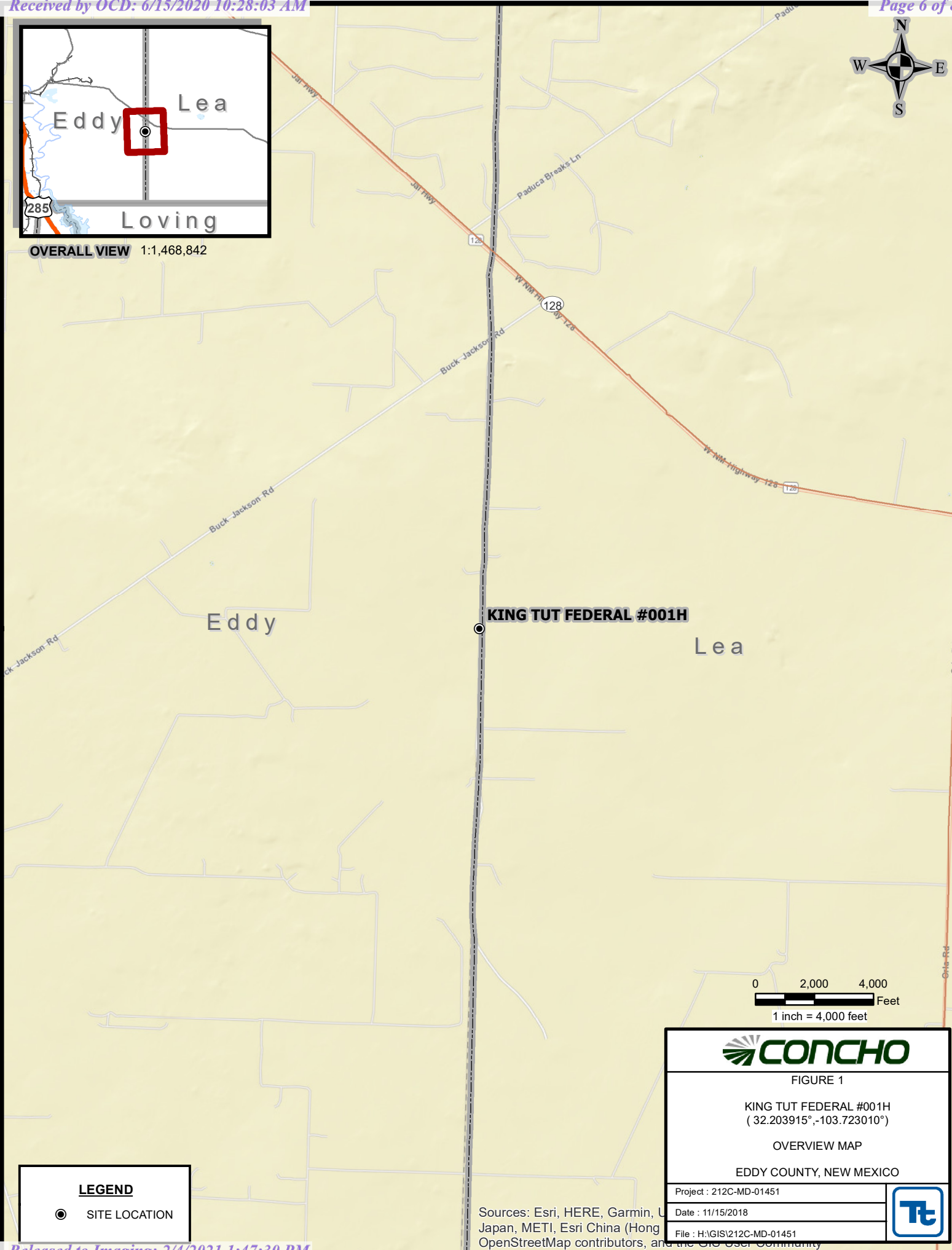
Mike Carmona,  
Geologist



## Figures



OVERALL VIEW 1:1,468,842



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

**LEGEND**

● SITE LOCATION



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

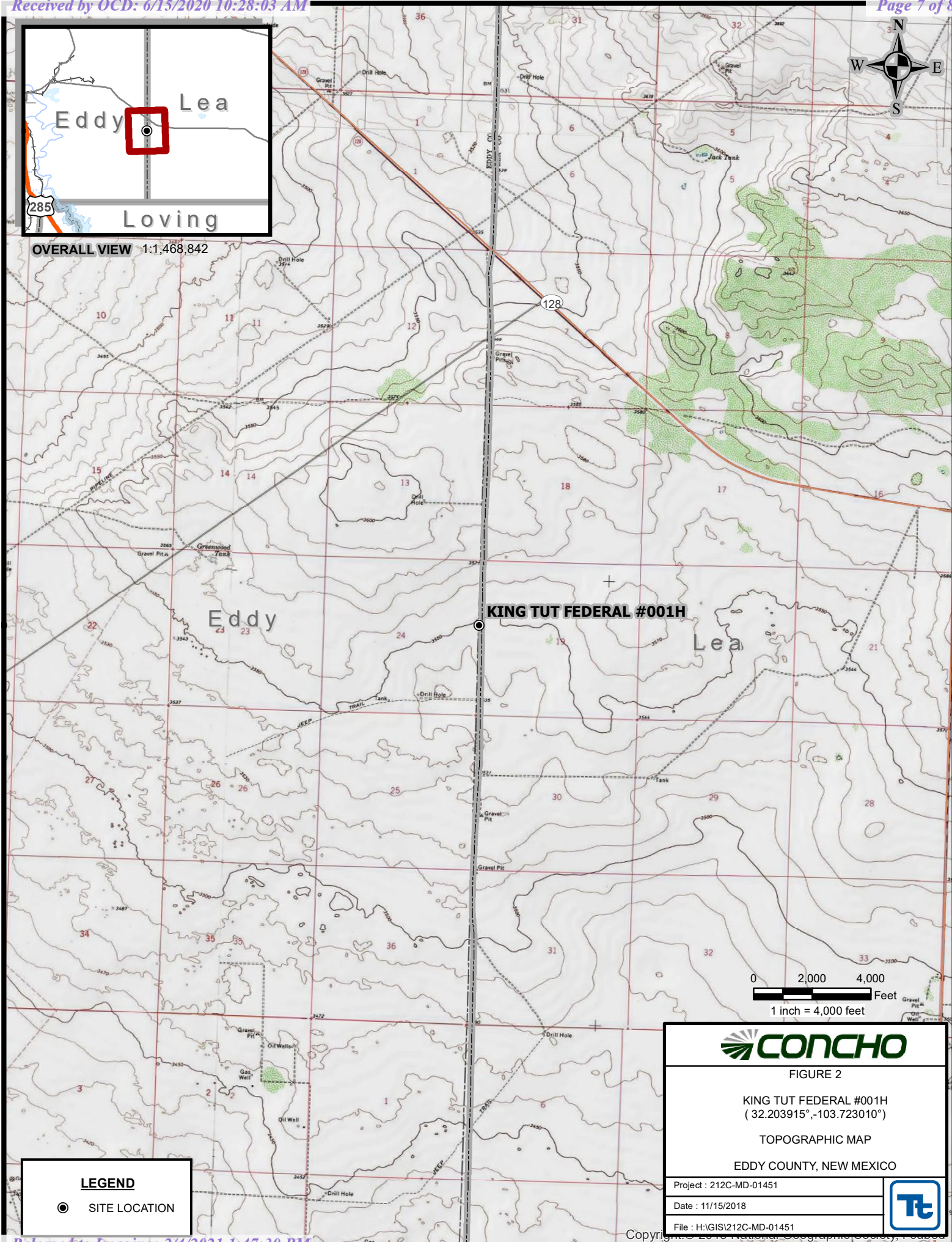


Sources: Esri, HERE, Garmin, U  
Japan, METI, Esri China (Hong  
OpenStreetMap contributors, and the GIS User Community





OVERALL VIEW 1:1,468,842



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



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



**LEGEND**

● SITE LOCATION



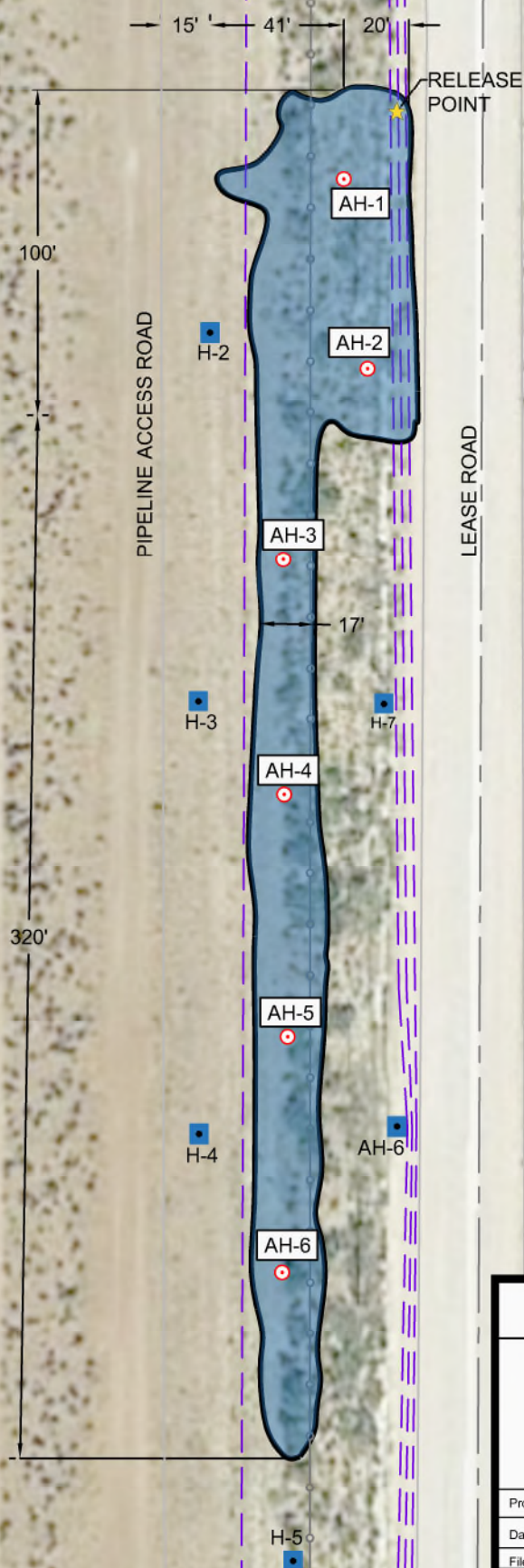
SAMPLE DESIGNATIONS	LATITUDE	LONGITUDE
AH-1	32.203918	-103.723007
AH-2	32.203761	-103.722984
AH-3	32.203608	-103.723067
AH-4	32.203412	-103.723066
AH-5	32.203209	-103.723063
AH-6	32.203013	-103.723068
H-1	32.204111	-103.723004
H-2	32.203793	-103.723168
H-3	32.20349	-103.723178
H-4	32.203129	-103.723178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

PASTURE

PIPELINE ACCESS ROAD

LEASE ROAD

PASTURE

EDDY COUNTY  
LEA COUNTY**LEGEND**

- AUGER HOLE SAMPLE LOCATIONS
- SAMPLE LOCATIONS
- SPILL AREA
- FLOWLINES

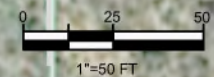
**ConocoPhillips**

FIGURE 3

KING TUT FEDERAL #001H  
( 32.203915°, -103.723010°)SPILL ASSESSMENT MAP  
EDDY COUNTY, NEW MEXICO

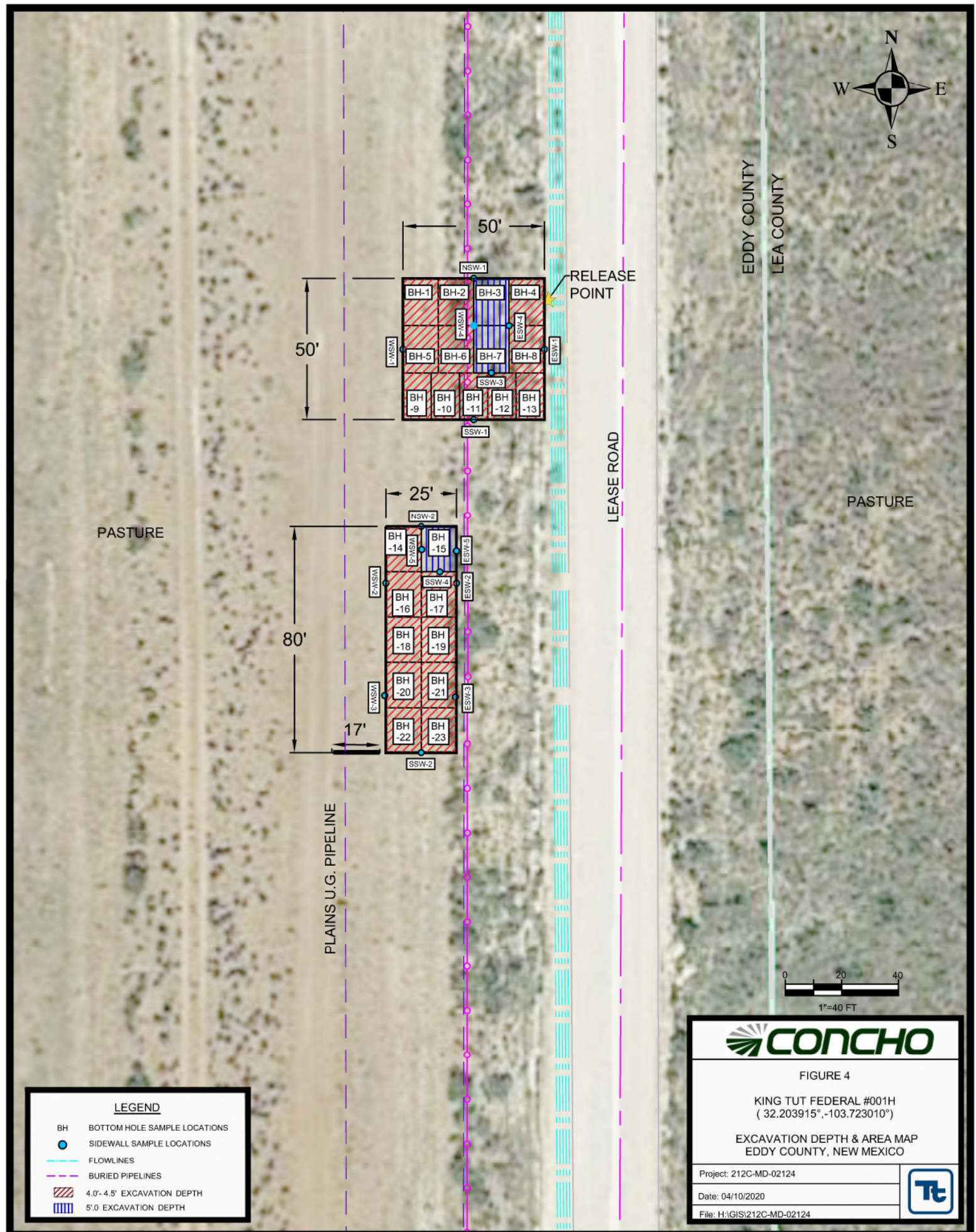
Project: 212C-MD-01451

Date: 11/26/2018

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







## 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



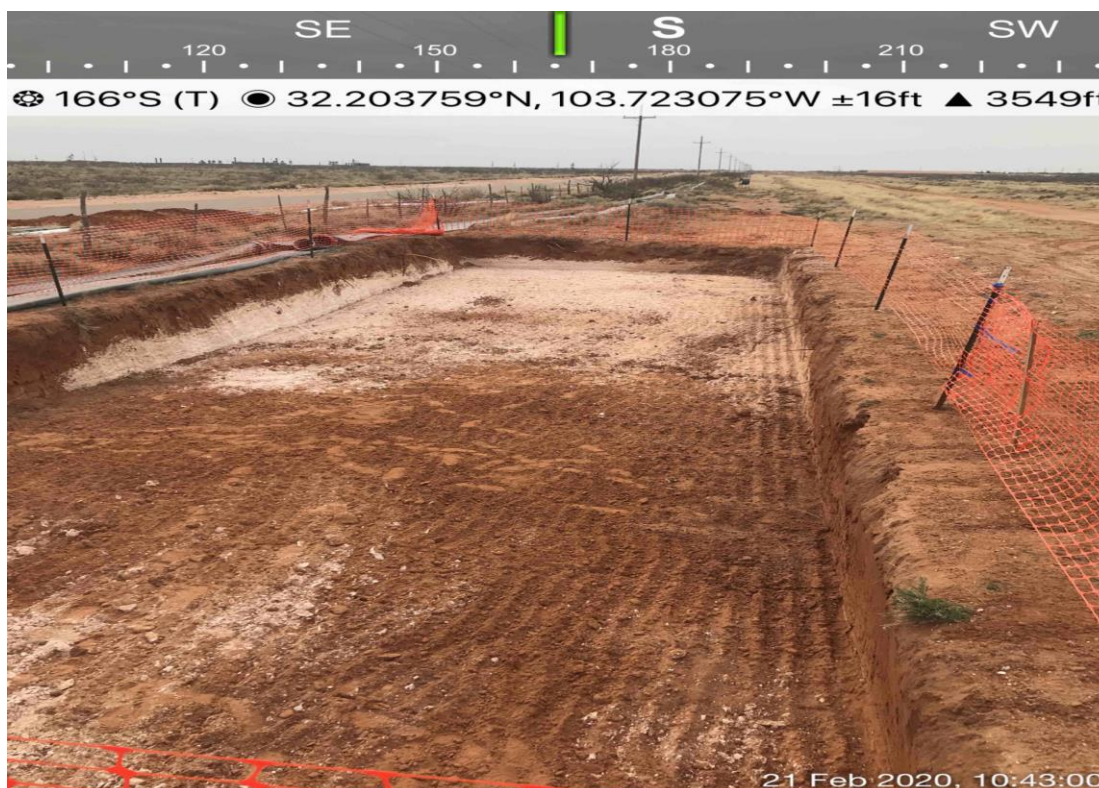
COG  
King Tut #1H  
Lea County, New Mexico



TETRA TECH



View South – Area of Bottom holes 1-13



View South – Areas of Bottom holes 14-23

**COG**  
**King Tut #1H**  
**Lea County, New Mexico**



**TETRA TECH**



View Northeast– Area of Bottom holes 3,4,7,8,12 & 13

## 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)

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input checked="" type="checkbox"/> 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?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<input type="checkbox"/> Condensate	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
<input type="checkbox"/> Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

#### Cause of Release

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.

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?  <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release? <b>The volume released was greater than 25 barrels.</b>
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? <b>Immediate notice was given by Dakota Neel via e-mail October 4, 2018 at 4:57 pm to Maria Pruetz and Shelly Tucker.</b>	

### Initial Response

*The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury*

<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.	
If all the actions described above have <u>not</u> been undertaken, explain why:          	
Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.	
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.	
Printed Name: <b>DeAnn Grant</b>	Title: <b>HSE Administrative Assistant</b>
Signature: 	Date: <b>10/8/2018</b>
email: <b>agrants@concho.com</b>	Telephone: <b>(432) 253-4513</b>
<b><u>OCD Only</u></b>	
Received by: 	Date: <b>10/11/18</b>

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?	<u>160</u> (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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

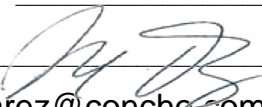
### **Characterization Report Checklist:** *Each of the following items must be included in the report.*

- ☒ 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.

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 Tavaréz Title: Senior HSE Supervisor  
Signature:  Date: \_\_\_\_\_  
email: itavarez@concho.com Telephone: (432) 686-3023

**OCD Only**

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

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.

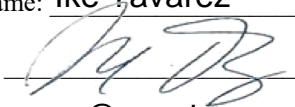
**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☒ 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 Tavaréz

Title: Senior HSE Supervisor

Signature: 

Date: 4-14-20

email: itavaréz@concho.com

Telephone: (432) 686-3023

### OCD Only

Received by: Cristina Eads

Date: 06/15/2020

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: 

Date: 02/04/2021

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

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			

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	22	23	24
		390			
30	29	28	27	26	25
		290			
31	32	33	34	35	36

23 South			32 East		
6	5	4	3	2	1
			480		
7	639	8	9	10	11
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

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

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

23 South			33 East		
6	5	4	3	2	1
7	475	8	9	10	11
					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			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			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	POD Code	Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	DepthWell	DepthWater	Water Column
<a href="#">C 02405</a>		CUB	ED	4	1	02	24S	31E		617690	3568631*	275	160	115
<a href="#">C 02440</a>		C	ED	2	3	10	24S	31E		616103	3566599*	350		
<a href="#">C 02460</a>		C	ED		3	02	24S	31E		617496	3568022*	320		
<a href="#">C 02460 POD2</a>		C	ED		3	02	24S	31E		617496	3568022*	320		
<a href="#">C 02464</a>		C	ED	3	4	1	02	24S	31E	617589	3568530*	320	205	115
<a href="#">C 02661</a>		CUB	ED	3	3	1	04	24S	31E	613969	3568485*	708		
<a href="#">C 02783</a>		CUB	ED	3	3	1	04	24S	31E	613911	3568461	708		
<a href="#">C 02783 POD2</a>		CUB	ED	3	3	1	04	24S	31E	613911	3568461	672		
<a href="#">C 02784</a>		C	ED	4	2	4	04	24S	31E	613911	3568461	584		
<a href="#">C 02785</a>		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

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

10/24/18 1:09 PM

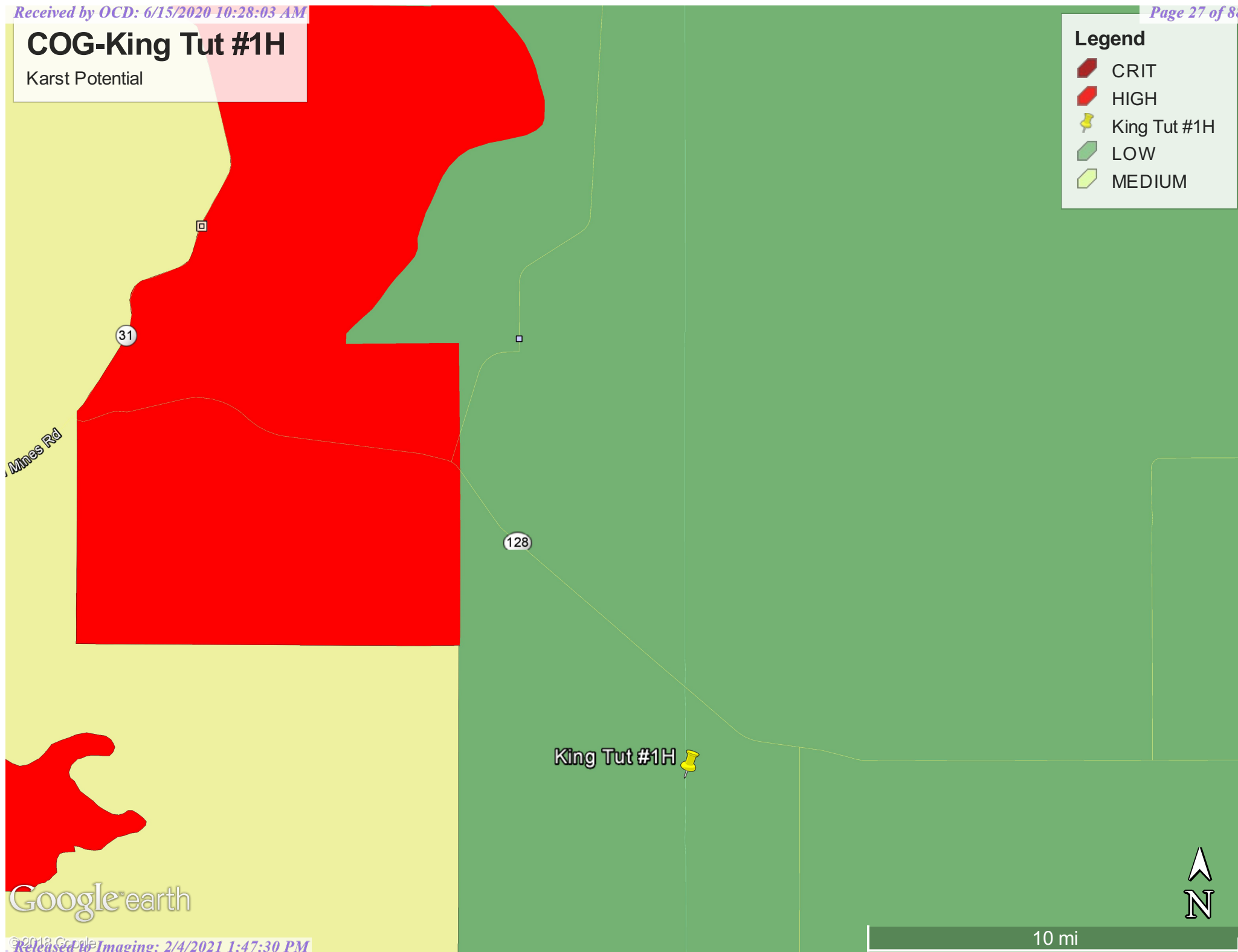
WATER COLUMN/ AVERAGE DEPTH TO WATER

# COG-King Tut #1H

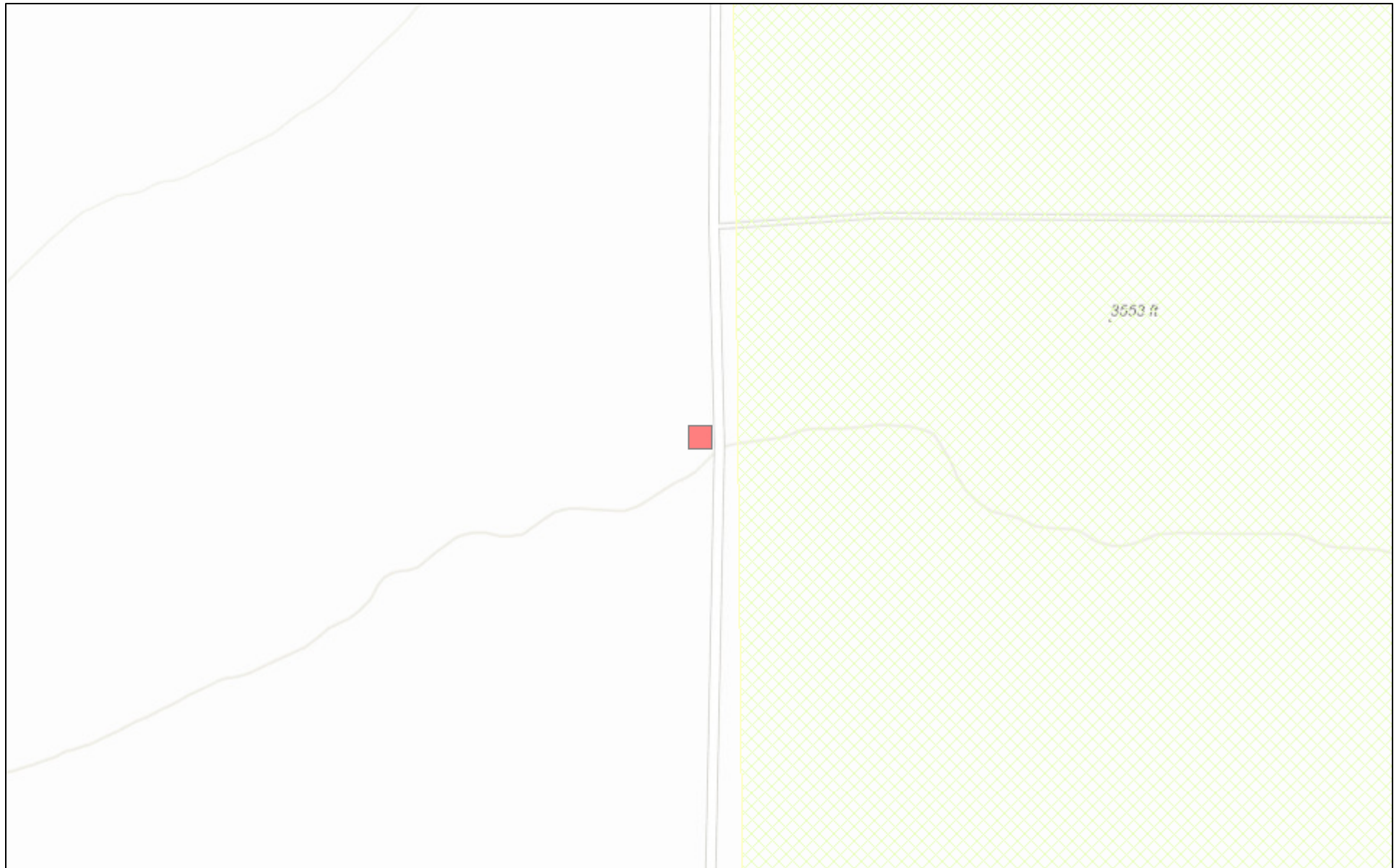
Karst Potential

## Legend

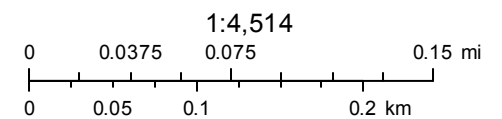
- CRIT
- HIGH
- King Tut #1H
- LOW
- MEDIUM



# New Mexico NFHL Data



October 26, 2018



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

## Appendix C



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

---

February 12, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: KING TUT #001H

Enclosed are the results of analyses for samples received by the laboratory on 02/11/20 14:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive, flowing style.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/11/2020  
 Reported: 02/12/2020  
 Project Name: KING TUT #001H  
 Project Number: 10-4-18  
 Project Location: COG - LEA CO NM

Sampling Date: 02/11/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: AH - 1 0-1' (H000408-01)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/12/2020	ND	432	108	400	0.00	

**Sample ID: AH - 1 1-1.5' (H000408-02)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	48.0	16.0	02/12/2020	ND	432	108	400	0.00	

**Sample ID: AH - 1 2-2.5' (H000408-03)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	880	16.0	02/12/2020	ND	432	108	400	0.00	

**Sample ID: AH - 1 3-3.5' (H000408-04)**

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	3440	16.0	02/12/2020	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/11/2020  
 Reported: 02/12/2020  
 Project Name: KING TUT #001H  
 Project Number: 10-4-18  
 Project Location: COG - LEA CO NM

Sampling Date: 02/11/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: AH - 1 4-4.5' (H000408-05)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3480	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 2 0-1' (H000408-06)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	16.0	16.0	02/12/2020	ND	432	108	400	0.00	

**Sample ID: AH - 2 1-1.5' (H000408-07)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 2 2-2.5' (H000408-08)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 2 3-3.5' (H000408-09)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	02/12/2020	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/11/2020  
 Reported: 02/12/2020  
 Project Name: KING TUT #001H  
 Project Number: 10-4-18  
 Project Location: COG - LEA CO NM

Sampling Date: 02/11/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: AH - 2 4-4.5' (H000408-10)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 3 0-1' (H000408-11)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 3 1-1.5' (H000408-12)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 3 2-2.5' (H000408-13)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	256	16.0	02/12/2020	ND	432	108	400	0.00		

**Sample ID: AH - 3 3-3.5' (H000408-14)**

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	624	16.0	02/12/2020	ND	432	108	400	0.00	

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



---

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

---

### Notes and Definitions

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene", written over a horizontal line.

---

Celey D. Keene, Lab Director/Quality Manager







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

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

[illegible]



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

February 24, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: KING TUT FEDERAL 1H

Enclosed are the results of analyses for samples received by the laboratory on 02/21/20 12:15.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene". The signature is written in a cursive style with a large, stylized 'C' and 'K'.

Celey D. Keene

Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 1 COMP 4'-4.5' (H000555-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99	
Total BTEX	<0.300	0.300	02/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	7860	16.0	02/24/2020	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 82.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 84.8 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 2 COMP 4'-4.5' (H000555-02)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	1260	16.0	02/24/2020	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 88.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.0 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 3 COMP 4'-4.5' (H000555-03)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTX	<0.300	0.300	02/21/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	29200	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 85.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.1 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 4 COMP 4'-4.5' (H000555-04)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	272	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 92.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 94.3 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 5 COMP 4'-4.5' (H000555-05)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3680	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 95.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 97.0 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 6 COMP 4'-4.5' (H000555-06)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2520	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	17.9	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 88.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.0 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 7 COMP 4'-4.5' (H000555-07)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.0 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	23600	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 87.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.4 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 8 COMP 4'-4.5' (H000555-08)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16200	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 87.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.9 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 9 COMP 4'-4.5' (H000555-09)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99	
Total BTX	<0.300	0.300	02/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.6 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	6800	16.0	02/24/2020	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 86.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.3 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 10 COMP 4'-4.5' (H000555-10)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99	
Total BTX	<0.300	0.300	02/21/2020	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4400	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 87.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.0 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 11 COMP 4'-4.5' (H000555-11)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99	
Total BTX	<0.300	0.300	02/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2800	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 84.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.7 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 12 COMP 4'-4.5' (H000555-12)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99	
Total BTX	<0.300	0.300	02/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 88.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 91.4 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 13 COMP 4'-4.5' (H000555-13)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99	
Total BTX	<0.300	0.300	02/21/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 85.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.5 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 14 COMP 4'-4.5' (H000555-14)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/21/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	720	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 90.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.2 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 15 COMP 4'-4.5' (H000555-15)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/22/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/22/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/22/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/22/2020	ND	5.89	98.1	6.00	2.99	
Total BTEx	<0.300	0.300	02/22/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	30000	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 85.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.7 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 16 COMP 4'-4.5' (H000555-16)**

BTEx 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/22/2020	ND	2.00	100	2.00	2.34	
Toluene*	<0.050	0.050	02/22/2020	ND	2.01	101	2.00	2.39	
Ethylbenzene*	<0.050	0.050	02/22/2020	ND	2.03	102	2.00	2.91	
Total Xylenes*	<0.150	0.150	02/22/2020	ND	5.89	98.1	6.00	2.99	
Total BTEx	<0.300	0.300	02/22/2020	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1070	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 88.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.3 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 17 COMP 4'-4.5' (H000555-17)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/22/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/22/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/22/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/22/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 88.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 91.2 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 18 COMP 4'-4.5' (H000555-18)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/22/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/22/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/22/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/22/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2360	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 86.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.4 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 19 COMP 4'-4.5' (H000555-19)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/22/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/22/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/22/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/22/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 83.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 86.1 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 20 COMP 4'-4.5' (H000555-20)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/22/2020	ND	2.00	100	2.00	2.34		
Toluene*	<0.050	0.050	02/22/2020	ND	2.01	101	2.00	2.39		
Ethylbenzene*	<0.050	0.050	02/22/2020	ND	2.03	102	2.00	2.91		
Total Xylenes*	<0.150	0.150	02/22/2020	ND	5.89	98.1	6.00	2.99		
Total BTEx	<0.300	0.300	02/22/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.3 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	8260	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	199	99.4	200	1.13	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	190	95.0	200	0.625	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 83.3 % 44.3-144

Surrogate: 1-Chlorooctadecane 86.6 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 21 COMP 4'-4.5' (H000555-21)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.2 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32.0	16.0	02/24/2020	ND	400	100	400	3.92		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 74.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 78.8 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 22 COMP 4'-4.5' (H000555-22)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3200	16.0	02/24/2020	ND	384	96.0	400	8.00	QM-07	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 78.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 81.8 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 23 COMP 4'-4.5' (H000555-23)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTEx	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 75.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 77.5 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received: 02/21/2020  
 Reported: 02/24/2020  
 Project Name: KING TUT FEDERAL 1H  
 Project Number: ( 10-04-18 )  
 Project Location: COG - LEA CO NM

Sampling Date: 02/21/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: NSW - 1 COMP 4'-4.5' (H000555-24)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 84.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 86.8 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: NSW - 2 COMP 4'-4.5' (H000555-25)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTEX	<0.300	0.300	02/21/2020	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 85.9 % 44.3-144

Surrogate: 1-Chlorooctadecane 89.5 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: WSW - 1 COMP 4'-4.5' (H000555-26)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	112	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 79.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 83.7 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: WSW - 2 COMP 4'-4.5' (H000555-27)**

BTEX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTEX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.7 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	144	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 89.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.9 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: WSW - 3 COMP 4'-4.5' (H000555-28)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTEX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 85.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.0 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: ESW - 1 COMP 4'-4.5' (H000555-29)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	64.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 78.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 83.4 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: ESW - 2 COMP 4'-4.5' (H000555-30)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTEx	<0.300	0.300	02/21/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 87.0 % 44.3-144

Surrogate: 1-Chlorooctadecane 90.1 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: ESW - 3 COMP 4'-4.5' (H000555-31)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	80.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 84.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.9 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received: 02/21/2020  
 Reported: 02/24/2020  
 Project Name: KING TUT FEDERAL 1H  
 Project Number: ( 10-04-18 )  
 Project Location: COG - LEA CO NM

Sampling Date: 02/21/2020  
 Sampling Type: Soil  
 Sampling Condition: Cool & Intact  
 Sample Received By: Tamara Oldaker

**Sample ID: SSW - 1 COMP 4'-4.5' (H000555-32)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 86.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.8 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/21/2020	Sampling Date:	02/21/2020
Reported:	02/24/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: SSW - 2 COMP 4'-4.5' (H000555-33)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/21/2020	ND	1.83	91.3	2.00	2.78		
Toluene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.43		
Ethylbenzene*	<0.050	0.050	02/21/2020	ND	1.79	89.7	2.00	3.65		
Total Xylenes*	<0.150	0.150	02/21/2020	ND	5.29	88.1	6.00	3.46		
Total BTX	<0.300	0.300	02/21/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/24/2020	ND	384	96.0	400	8.00		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/22/2020	ND	196	97.9	200	1.45	
DRO >C10-C28*	<10.0	10.0	02/22/2020	ND	208	104	200	0.601	
EXT DRO >C28-C36	<10.0	10.0	02/22/2020	ND					

Surrogate: 1-Chlorooctane 83.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 86.9 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





---

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

---

### Notes and Definitions

QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

---

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene".

---

Celey D. Keene, Lab Director/Quality Manager



66 jo LC egaD

## Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

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

Page 2 of 4

Client Name: Concho		Site Manager: Mike Carmona	
Project Name: King Tut Federal 1H (10-04-18)		Project #:	
Project Location: Lea County, New Mexico		Project #:	
Invoice to: Ike Tavaréz		Sampler Signature: Devin Dominguez	
Receiving Laboratory: Cardinal Lab		Comments:	

LAB # (LAB USE ONLY)	SAMPLE IDENTIFICATION	SAMPLING		MATRIX		PRESERVATIVE METHOD					# CONTAINERS	FILTERED (Y/N)	
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None				
										YEAR: 2020			
11	Bottomhole-11 Comp 4'-4.5'	2/21/2020		X				X				1	N
12	Bottomhole-12 Comp 4'-4.5'	2/21/2020		X				X				1	N
13	Bottomhole-13 Comp 4'-4.5'	2/21/2020		X				X				1	N
14	Bottomhole-14 Comp 4'-4.5'	2/21/2020		X				X				1	N
15	Bottomhole-15 Comp 4'-4.5'	2/21/2020		X				X				1	N
16	Bottomhole-16 Comp 4'-4.5'	2/21/2020		X				X				1	N
17	Bottomhole-17 Comp 4'-4.5'	2/21/2020		X				X				1	N
18	Bottomhole-18 Comp 4'-4.5'	2/21/2020		X				X				1	N
19	Bottomhole-19 Comp 4'-4.5'	2/21/2020		X				X				1	N
20	Bottomhole-20 Comp 4'-4.5'	2/21/2020		X				X				1	N

Relinquished by: <i>[Signature]</i>	Date: 2/21/20	Time: 12:15	Received by: <i>[Signature]</i>	Date: 2-21-20	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

LAB USE ONLY	REMARKS:	<input type="checkbox"/> STANDARD <input checked="" type="checkbox"/> RUSH: Same Day 24 hr 48 hr 72 hr <input type="checkbox"/> Rush Charges Authorized <input type="checkbox"/> Special Report Limits or TRRP Report
Sample Temperature #113 1.16		

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 TPH 8015R Hold
--	---

ORIGINAL COPY



66 jo 8c eba d

## Analysis Request of Chain of Custody Record



Tetra Tech, Inc.

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

Client Name:

Concho

Site Manager:

Mike Carmona

Project Name:

King Tut Federal 1H (10-04-18)

Project Location:

Lea County, New Mexico

Project #:

Invoice to:

Ike Tavaraz

Receiving Laboratory:

Cardinal Lab

Sampler Signature:

Devin Dominguez

Comments:

LAB #

LAB USE ONLY

## SAMPLE IDENTIFICATION

4000555	LAB #	SAMPLE IDENTIFICATION										SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS		FILTERED (Y/N)		REMARKS:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
LAB USE ONLY	DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>	ICE	None	1	N	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

Relinquished by:

Date: Time:

Received by:

Date: Time:

## ANALYSIS REQUEST

(Circle or Specify Method No.)

BTX 8021B	BTX 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	
TPH 8015R	
Hold	

REMARKS:

STANDARD

RUSH: Same Day 24 hr 48 hr 72 hr

Special Report Limits or TRRP Report

LAB USE ONLY

Sample Temperature

#113

1.12

1.12

1.12

1.12

1.12

1.12

1.12

1.12

1.12

1.12

1.12

1.12

ORIGINAL COPY

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

## Analysis Request of Chain of Custody Record

**Tetra Tech, Inc.**

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

Mike Carmona

**Project Location:** Los County, New Mexico

Project #:

Receiving Laboratory: Cardinal Lab

**Sampler Signature:**

Devin Dominguez

Comments:

**SAMPLE IDENTIFICATION**

LAB # H000555

[illegible]

Received by:

Date: 11/11 Time: 12:15

Received by:

Date: Time:

Received by:

Date: Time:

ANALYSIS REQUEST

(Circle or Specify Method No.)

8

TANDARD

Sample Temperature

#113

6.1.1

☒ **RUSH:** Same Day 24 hr 48 hr 72 hr

☐ Rush Charges Authorized

☐ Special Report Limits or TRRP Report

(Circle) HAND DELIVERED FEDEX UPS Tracking #:

ORIGINAL COPY



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

---

February 27, 2020

MIKE CARMONA

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: KING TUT FEDERAL 1H

Enclosed are the results of analyses for samples received by the laboratory on 02/26/20 11:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-19-12. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](http://www.tceq.texas.gov/field/qa/lab_accred_certif.html).

Cardinal Laboratories is accredited through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Celey D. Keene".

Celey D. Keene

Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 3 COMP 5' (H000616-01)**

BTEX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/26/2020	ND	1.88	94.2	2.00	3.07	
Toluene*	<0.050	0.050	02/26/2020	ND	1.89	94.5	2.00	3.02	
Ethylbenzene*	<0.050	0.050	02/26/2020	ND	1.91	95.5	2.00	3.87	
Total Xylenes*	<0.150	0.150	02/26/2020	ND	5.61	93.5	6.00	3.96	
Total BTEX	<0.300	0.300	02/26/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2360	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2020	ND	187	93.3	200	3.77	
DRO >C10-C28*	<10.0	10.0	02/26/2020	ND	213	107	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	02/26/2020	ND					

Surrogate: 1-Chlorooctane 91.8 % 44.3-144

Surrogate: 1-Chlorooctadecane 96.1 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 7 COMP 5' (H000616-02)**

BTX 8021B		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07	
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02	
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87	
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96	
Total BTX	<0.300	0.300	02/27/2020	ND					

Surrogate: 4-Bromofluorobenzene (PID) 102 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2920	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2020	ND	187	93.3	200	3.77	
DRO >C10-C28*	<10.0	10.0	02/26/2020	ND	213	107	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	02/26/2020	ND					

Surrogate: 1-Chlorooctane 88.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 92.2 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: BOTTOMHOLE - 15 COMP 5' (H000616-03)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07		
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02		
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87		
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96		
Total BTEx	<0.300	0.300	02/27/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1220	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/26/2020	ND	187	93.3	200	3.77	
DRO >C10-C28*	<10.0	10.0	02/26/2020	ND	213	107	200	7.76	
EXT DRO >C28-C36	<10.0	10.0	02/26/2020	ND					

Surrogate: 1-Chlorooctane 86.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 87.6 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: WSW - 4 COMP 5' (H000616-04)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07		
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02		
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87		
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96		
Total BTX	<0.300	0.300	02/27/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1120	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2020	ND	208	104	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/27/2020	ND	230	115	200	0.144	
EXT DRO >C28-C36	<10.0	10.0	02/27/2020	ND					

Surrogate: 1-Chlorooctane 92.4 % 44.3-144

Surrogate: 1-Chlorooctadecane 92.8 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: WSW - 5 COMP 5' (H000616-05)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07		
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02		
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87		
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96		
Total BTX	<0.300	0.300	02/27/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1140	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2020	ND	208	104	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/27/2020	ND	230	115	200	0.144	
EXT DRO >C28-C36	<10.0	10.0	02/27/2020	ND					

Surrogate: 1-Chlorooctane 88.2 % 44.3-144

Surrogate: 1-Chlorooctadecane 92.3 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: ESW - 4 COMP 5' (H000616-06)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07		
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02		
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87		
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96		
Total BTX	<0.300	0.300	02/27/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 101 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2600	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2020	ND	208	104	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/27/2020	ND	230	115	200	0.144	
EXT DRO >C28-C36	<10.0	10.0	02/27/2020	ND					

Surrogate: 1-Chlorooctane 90.7 % 44.3-144

Surrogate: 1-Chlorooctadecane 95.1 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager





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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: ESW - 5 COMP 5' (H000616-07)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07		
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02		
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87		
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96		
Total BTX	<0.300	0.300	02/27/2020	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	48.0	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2020	ND	208	104	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/27/2020	ND	230	115	200	0.144	
EXT DRO >C28-C36	<10.0	10.0	02/27/2020	ND					

Surrogate: 1-Chlorooctane 94.1 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.0 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: SSW - 3 COMP 5' (H000616-08)**

BTX 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/27/2020	ND	1.88	94.2	2.00	3.07		
Toluene*	<0.050	0.050	02/27/2020	ND	1.89	94.5	2.00	3.02		
Ethylbenzene*	<0.050	0.050	02/27/2020	ND	1.91	95.5	2.00	3.87		
Total Xylenes*	<0.150	0.150	02/27/2020	ND	5.61	93.5	6.00	3.96		
Total BTX	<0.300	0.300	02/27/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 100 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2440	16.0	02/27/2020	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2020	ND	208	104	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/27/2020	ND	230	115	200	0.144	
EXT DRO >C28-C36	<10.0	10.0	02/27/2020	ND					

Surrogate: 1-Chlorooctane 90.6 % 44.3-144

Surrogate: 1-Chlorooctadecane 93.3 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

**Analytical Results For:**

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

Received:	02/26/2020	Sampling Date:	02/26/2020
Reported:	02/27/2020	Sampling Type:	Soil
Project Name:	KING TUT FEDERAL 1H	Sampling Condition:	Cool & Intact
Project Number:	( 10-04-18 )	Sample Received By:	Tamara Oldaker
Project Location:	COG - LEA CO NM		

**Sample ID: SSW - 4 COMP 5' (H000616-09)**

BTEx 8021B		mg/kg		Analyzed By: CK						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/26/2020	ND	1.98	98.9	2.00	6.41		
Toluene*	<0.050	0.050	02/26/2020	ND	1.99	99.3	2.00	6.48		
Ethylbenzene*	<0.050	0.050	02/26/2020	ND	2.01	101	2.00	6.85		
Total Xylenes*	<0.150	0.150	02/26/2020	ND	5.84	97.3	6.00	7.09		
Total BTEx	<0.300	0.300	02/26/2020	ND						

Surrogate: 4-Bromofluorobenzene (PID) 98.7 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: GM						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	4320	16.0	02/27/2020	ND	416	104	400	3.77	QM-07	

TPH 8015M		mg/kg		Analyzed By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/27/2020	ND	208	104	200	1.43	
DRO >C10-C28*	<10.0	10.0	02/27/2020	ND	230	115	200	0.144	
EXT DRO >C28-C36	<10.0	10.0	02/27/2020	ND					

Surrogate: 1-Chlorooctane 86.5 % 44.3-144

Surrogate: 1-Chlorooctadecane 88.5 % 42.2-156

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

Celey D. Keene, Lab Director/Quality Manager



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

### Notes and Definitions

S-06	The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
QR-03	The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

Cardinal Laboratories

\*=Accredited Analyte

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of the services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise. Results relate only to the samples identified above. This report shall not be reproduced except in full with written approval of Cardinal Laboratories.

A handwritten signature in black ink, appearing to read "Celey D. Keene", written over a horizontal line.

Celey D. Keene, Lab Director/Quality Manager

## Analysis Request of Custody Record

Page 1 of 1



Tetra Tech, Inc.

 900 West Wall Street, Ste 100  
 Midland, Texas 79701  
 Tel (432) 692-4559  
 Fax (432) 692-3946

 Client Name: Concho  
 Site Manager: Mike Carmona

Project Name: King Tut Federal 1H (10-04-18)

Project Location: Lea County, New Mexico

Invoice to: Ike Tavaraz

Receiving Laboratory: Cardinal Lab

Sampler Signature: Devin Dominguez

Comments:

 LAB # H00616  
 LAB USE ONLY

## SAMPLE IDENTIFICATION

		SAMPLING		MATRIX		PRESERVATIVE METHOD		# CONTAINERS	FILTERED (Y/N)
		DATE	TIME	WATER	SOIL	HCL	HNO <sub>3</sub>		
1	Bottomhole-3 Comp 5'	2/26/2020		X		X		1	N
2	Bottomhole-7 Comp 5'	2/26/2020		X		X		1	N
3	Bottomhole-15 Comp 5'	2/26/2020		X		X		1	N
4	WSW-4 Comp 5'	2/26/2020		X		X		1	N
5	WSW-5 Comp 5'	2/26/2020		X		X		1	N
6	ESW-4 Comp 5'	2/26/2020		X		X		1	N
7	ESW-5 Comp 5'	2/26/2020		X		X		1	N
8	SSW-3 Comp 5'	2/26/2020		X		X		1	N
9	SSW-4 Comp 5'	2/26/2020		X		X		1	N

 Date: 2/26/2020 Time: 11:45  
 Received by: [Signature]

 Date: 2/26/2020 Time: 2:26:20  
 Received by: [Signature]

 Date: Time:  
 Received by:

 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	
TPH 8015R	
Hold	

## LAB USE ONLY

 REMARKS: ☐ STANDARD

 Sample Temperature  
 #113

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

(Circle) HAND DELIVERED FEDEX UPS Tracking #

ORIGINAL COPY

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720  
**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720  
**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170  
**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

**State of New Mexico**  
**Energy, Minerals and Natural Resources**  
**Oil Conservation Division**  
**1220 S. St Francis Dr.**  
**Santa Fe, NM 87505**

CONDITIONS  
  
Action 8708

CONDITIONS OF APPROVAL

Operator:	COG OPERATING LLC	600 W Illinois Ave	Midland, TX79701	OGRID:	229137	Action Number:	8708	Action Type:	C-141
OCD Reviewer	Condition								
ceads	None								