

## SITE INFORMATION

**Report Type: Closure 2RP-5109**

### General Site Information:

<b>Site:</b>	McIntyre A West #16				
<b>Company:</b>	COG Operating LLC				
<b>Section, Township and Range</b>	Unit O	Sec. 20	T 17S	R 30E	
<b>Lease Number:</b>	API No. 30-015-31855				
<b>County:</b>	Eddy County				
<b>GPS:</b>	32.815367			-103.99379	
<b>Surface Owner:</b>	Federal				
<b>Directions:</b>	From the intersection of Hagerman Cutoff Rd and US 82, travel west on US 82 for 0.20 miles, turn south onto lease road for 0.25 miles, turn west onto lease road for 0.15 miles to the location.				

### Release Data:

<b>Date Released:</b>	12/3/2018
<b>Type Release:</b>	Crude Oil
<b>Source of Contamination:</b>	Flowline
<b>Fluid Released:</b>	35 bbls
<b>Fluids Recovered:</b>	30 bbls

### Official Communication:

<b>Name:</b>	Ike Tavaréz		Clair Gonzales
<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) 687-8110
<b>Fax:</b>	(432) 684-7137		
<b>Email:</b>	<a href="mailto:itavarez@concho.com">itavarez@concho.com</a>		<a href="mailto:Clair.Gonzales@tetrattech.com">Clair.Gonzales@tetrattech.com</a>

### Site Characterization

<b>Depth to Groundwater:</b>	80'
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### Recommended Remedial Action Levels (RRALs)

Benzene	Total BTEX	TPH (GRO+DRO)	TPH (GRO+DRO+MRO)	Chlorides
10 mg/kg	50 mg/kg	1,000 mg/kg	2,500 mg/kg	10,000 mg/kg



May 31, 2019

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

**Re: Closure Request for the COG Operating, LLC, McIntyre A West #16, Unit O, Section 20, Township 17 South, Range 30 East, Eddy County, New Mexico. 2RP-5109.**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating, LLC (COG) to remediate a release that occurred at the McIntyre A West #16, Unit O, Section 20, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are 32.815367°, -103.99379°. 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 December 3, 2018, and released approximately 35 barrels of crude oil due to a flowline rupture. A vacuum truck was dispatched to remove all freestanding fluids and approximately 30 barrels of oil was recovered. The release occurred in the pasture and impacted an area measuring approximately 65'x100'. The C-141 Form is included in Appendix A.

## **Site Characterization**

A site characterization was performed for the site and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. Additionally, the site is located in a low karst potential area. One water well is listed in Section 20 on the New Mexico Office of the State Engineer's (NMOSE) database, approximately 0.60 miles to the northeast of the site, and has a reported depth to groundwater of 80' below ground surface. No other wells are listed in Township 17 South, Range 30 East on the NMOSE database, USGS National Water Information database, or the Geology and Groundwater Resources of Eddy County (Report 3). According to the Chevron Texaco Groundwater Trend map, the average depth to ground water in the area greater than 200' below surface. The groundwater data is shown in Appendix B.

Tetra Tech

901 West Wall, Suite 100, Midland, TX 79701

Tel 432.682.4559 Fax 432.682.3946 [www.tetratech.com](http://www.tetratech.com)



## Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, updated August 14, 2018. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the site characterization the proposed RRAL for TPH is 1,000 mg/kg (GRO+DRO) or 2,500 mg/kg (GRO+DRO+MRO). Additionally, the proposed RRAL for chlorides is 10,000 mg/kg.

## Soil Assessment and Analytical Results

Tetra Tech personnel were onsite between February 11<sup>th</sup>, 2019 and April 8<sup>th</sup>, 2019 to supervise the remediation activities at the site. A total of eleven (11) bottom hole confirmation samples (BTTM-1 through BTTM-11) were collected every 400 square feet, as approved by the NMOCD. Additionally, seven (7) sidewall confirmation samples (NSW-1, NSW-2, NSW-3, SSW-1, SSW-2, WSW-,1 and ESW-1) were collected. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The bore locations are shown on Figure 3.

Based on the laboratory data, the excavation was expanded to ensure proper removal of the impacted soils. The area of BTTM-9, which initially showed TPH and total BTEX concentrations above the RRAL's, was resampled with BTTM-5 at 8.0' below surface based on excavation dimensions and field observations. Referring to Table 1, all final confirmation samples showed benzene, total BTEX, TPH, and chloride concentrations below the RRALs.

## Conclusion

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

Respectfully submitted,  
TETRA TECH

A handwritten signature in blue ink that reads "Clair Gonzales".

Clair Gonzales,  
Project

cc: Ike Tavarez - COG  
Dakota Neel - COG  
Rebecca Haskell - COG  
Sheldon Hitchcock - COG  
DeAnn Grant - COG

## Figures



Chaves

249

Chaves  
Eddy

249

Loco Hills

Majamar

**MCINTYRE A WEST #16, UNIT O**

82

82

360

529

Lea

Eddy

360

0 20,833 41,666  
Feet  
1 inch = 20,833 feet

**LEGEND**

● SITE LOCATION



FIGURE 1

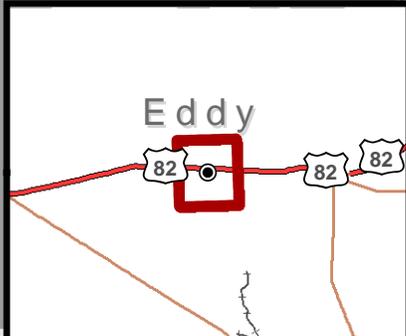
McINTYRE WEST #16 UNIT O  
(32.815367°,-103.993790°)

OVERVIEW MAP

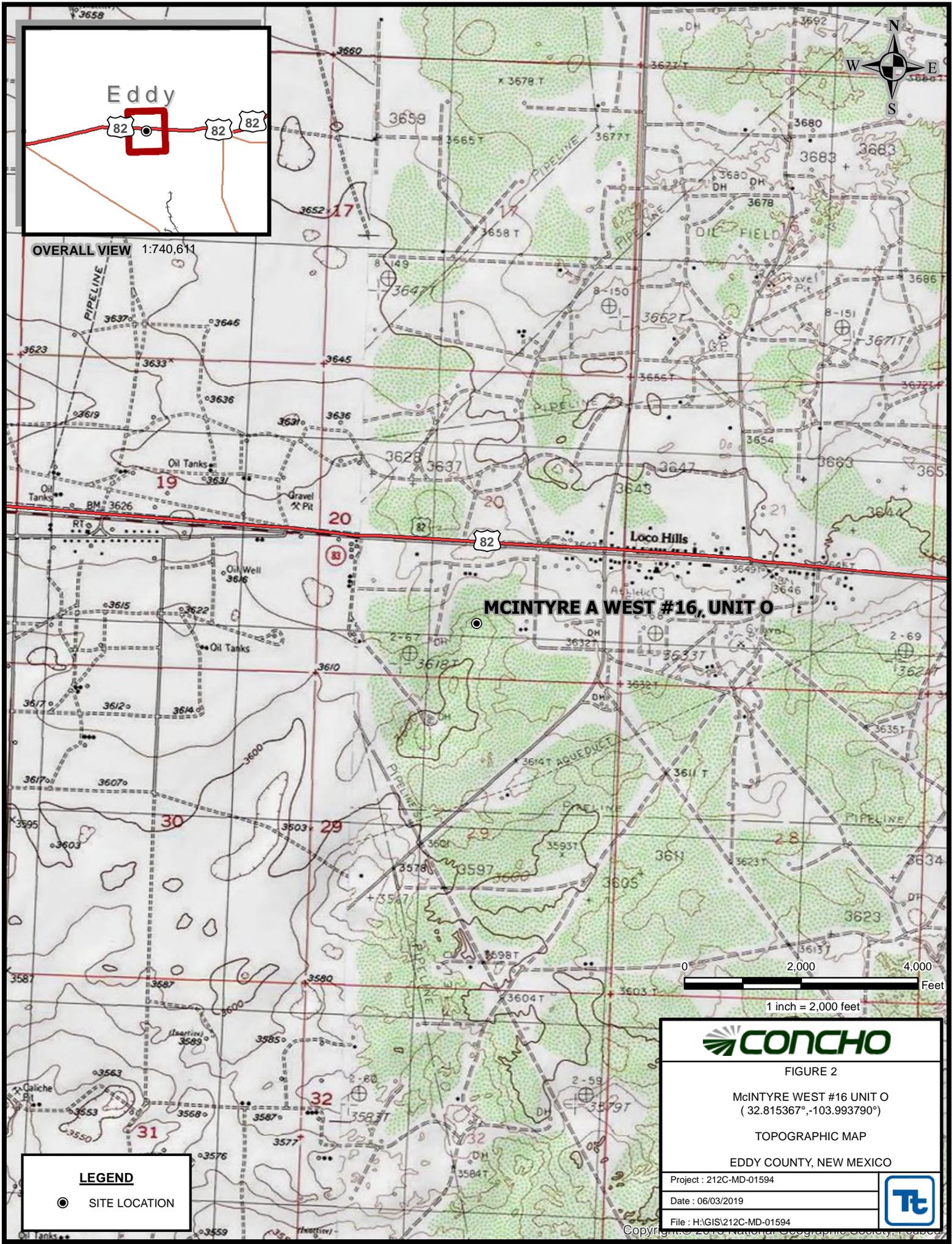
EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01594	
Date : 06/03/2019	
File : H:\GIS\212C-MD-01594	

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



OVERALL VIEW 1:740,611



**MCINTYRE A WEST #16, UNIT O**



FIGURE 2

McINTYRE WEST #16 UNIT O  
(32.815367°,-103.993790°)

TOPOGRAPHIC MAP

EDDY COUNTY, NEW MEXICO

Project : 212C-MD-01594

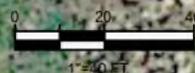
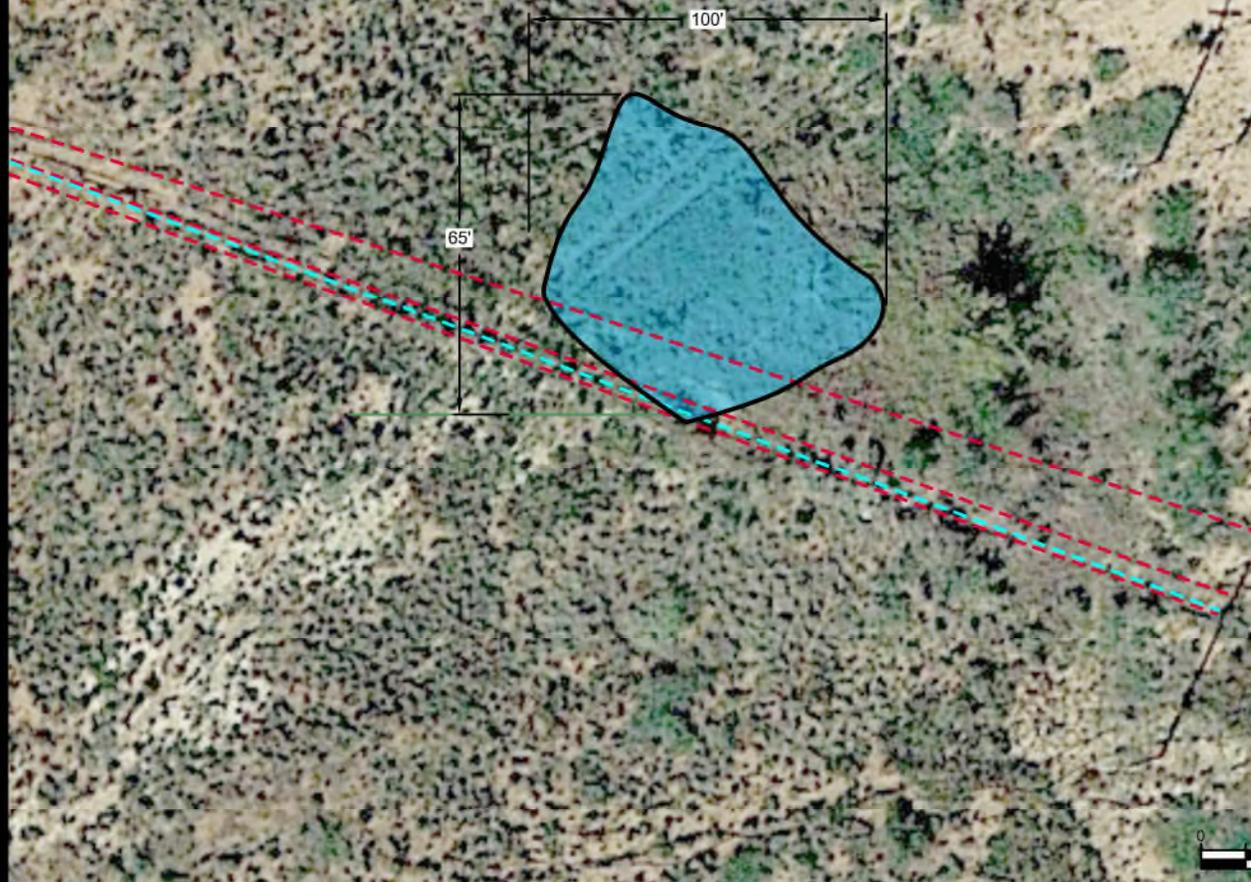
Date : 06/03/2019

File : H:\GIS\212C-MD-01594



**LEGEND**

● SITE LOCATION



LEGEND	
	SPILL AREA
	COG LINE
	HOLLY LINE

	
FIGURE 3	
McINTYRE A WEST 16, UNIT O (32.815367°, -103.993790°)	
SPILL ASSESSMENT MAP EDDY COUNTY, NEW MEXICO	
Project: 212C-MD-01594	
Date: 06/03/2019	
File: H:\GIS\212C-MD-01594	



LEGEND	
BTM	BOTTOMHOLE SAMPLE LOCATIONS
	2.0' EXCAVATED DEPTH AREA
	3.0' EXCAVATED DEPTH AREA
	8.0' EXCAVATED DEPTH AREA
	EQUIPMENT
	COG LINE
	HOLLY LINE
	SIDEWALL DESIGNATIONS

FIGURE 4	
McINTYRE A WEST 16, UNIT O (32.815367°, -103.993790°)	
EXCAVATED AREA & DEPTH MAP EDDY COUNTY, NEW MEXICO	
Project: 212C-MD-01594	
Date: 06/03/2019	
File: H:\GIS\212C-MD-01594	

# Tables

**Table 1**  
**COG**  
**McIntyre A West #16 (12/3/18)**  
**Eddy County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	GRO+DRO	MRO	Total						
BTTM-1	2/11/2019	5		X	767	2,050	<b>2,817</b>	63.3	<b>2,880</b>	1.48	19.0	36.1	37.3	93.8	80.0
	2/12/2019	6		X	1,200	3,020	<b>4,220</b>	313	<b>4,533</b>	4.84	28.0	36.1	33.6	<b>103</b>	48.0
	4/4/2019	8		X	121	707	828	116	944	<0.200	3.6	11.1	12.1	26.8	80.0
	4/8/2019	10	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
BTTM-2	2/12/2019	6		X	6,090	11,400	<b>17,490</b>	1,200	<b>18,690</b>	<b>61.3</b>	291	279	233	<b>864</b>	32.0
	4/8/2019	8		X	15.0	222	237	17.0	254	<0.050	<0.050	0.155	0.198	0.353	<16.0
	4/4/2019	10	X		98.1	890	988	160	1,148	<0.200	0.93	2.81	3.68	7.42	48.0
BTTM-3	2/12/2019	6		X	<50.0	125	125	<50.0	125	0.0680	0.181	0.141	<0.150	0.390	32.0
	4/8/2019	8		X	18.8	208	227	28.9	256	<0.050	0.287	0.970	1.50	2.76	48.0
	4/8/2019	10	X		<10.0	14.2	14.2	<10.0	14.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
BTTM-4	2/11/2019	2		X	16.0	659	675	74.9	750	<0.050	<0.050	0.197	0.264	0.461	16.0
	4/8/2019	10	X		38.3	383	421	55.5	477	<0.050	0.467	1.44	1.83	3.73	64.0
BTTM-5	2/12/2019	6		X	1,920	5,430	<b>7,350</b>	519	<b>7,869</b>	<b>10.90</b>	97.3	127	114	<b>349</b>	80.0
	4/8/2019	8	X		60.7	768	829	90.4	919	<0.050	0.054	0.342	0.495	0.891	96.0
BTTM-9	2/12/2019	6		X	1,700	4,540	<b>6,240</b>	454	<b>6,694</b>	5.52	50.2	635	56.5	<b>176</b>	160
BTTM-6	2/12/2019	6		X	620	2,020	<b>2,640</b>	237	<b>2,877</b>	5.58	45.2	55.9	50.5	<b>157</b>	48.0
	4/8/2019	8	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
BTTM-7	2/12/2019	6		X	1,200	3,390	<b>4,590</b>	339	<b>4,929</b>	9.07	67.3	78.0	68.4	<b>223</b>	96.0
	4/8/2019	10	X		<10.0	62.6	62.6	<10.0	62.6	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
BTTM-8	2/11/2019	2	X		22.4	441	463	30.2	494	<0.050	0.176	0.771	0.934	1.880	48.0
BTTM-10	2/12/2019	2		X	2,450	6,510	<b>8,960</b>	681	<b>9,641</b>	<b>10.4</b>	51.0	56.9	49.7	<b>168</b>	80.0
	2/12/2019	3		X	1,840	3,470	<b>5,310</b>	275	<b>5,585</b>	<b>15.1</b>	93.3	97.8	84.1	<b>290</b>	160
	4/8/2019	8	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	400
BTTM-11	2/12/2019	2		X	3,860	10,500	<b>14,360</b>	1,130	<b>15,490</b>	<b>22.7</b>	126	153	140	<b>442</b>	48.0
	4/8/2019	10	X		<10.0	149	149	<10.0	149	<0.050	<0.050	<0.050	<0.150	<0.300	16.0

**Table 1**  
**COG**  
**McIntyre A West #16 (12/3/18)**  
**Eddy County, New Mexico**

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)					Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	GRO+DRO	MRO	Total						
NSW-1	2/11/2019	-	X		<10.0	13.0	13.0	<10.0	13.0	<0.050	<0.050	<0.050	<0.150	<0.300	16.0
NSW-2	2/11/2019	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	<16.0
NSW-3 (2')	2/12/2019	-		X	3,040	6,000	<b>9,040</b>	514	<b>9,554</b>	<b>41.5</b>	189	200	181	<b>611</b>	32.0
	4/4/2019	-		X	320	1,400	<b>1,720</b>	85.8	1,806	0.403	6.0	11.1	11.2	28.7	32.0
	4/8/2019	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	80.0
SSW-1	2/12/2019	-		X	766	2,090	<b>2,856</b>	255	<b>3,111</b>	4.11	52.4	72.4	66.6	<b>195</b>	32.0
	4/4/2019	-		X	38	336	374	65.1	439	0.064	0.59	1.42	1.68	3.76	96.0
	4/8/2019	-	X		<10.0	<10.0	<10.0	<10.0	<10.0	<0.050	<0.050	<0.050	<0.150	<0.300	32.0
SSW-2	2/12/2019	-		X	440	2,630	<b>3,070</b>	225	<b>3,295</b>	0.662	12.5	38.6	38.2	<b>90.0</b>	96.0
	4/4/2019	-	X		38.3	336	374	65.1	494	0.0640	0.587	1.42	1.68	3.76	96.0
WSW-1	2/12/2019	-	X		248	741	989	<50.0	989	1.97	17.3	26.3	25.2	70.7	48.0
WSW-1 (1')	2/12/2019	-	X		<10.0	15.7	15.7	<10.0	15.7	0.0790	0.321	0.445	0.476	1.32	32.0
ESW-1	2/12/2019	-	X		<50.0	325	325	<50.0	325	0.067	0.466	1.54	1.74	3.81	32.0

(-) Not Analyzed

 Excavation Depths

Photos

COG Operating LLC  
McIntyre A West #16  
Eddy County, New Mexico



TETRA TECH



View North – Excavated Area



View West – Excavated Area

COG Operating LLC  
McIntyre A West #16  
Eddy County, New Mexico



TETRA TECH



View East – Excavated Area



View South East – Excavated Area

COG Operating LLC  
McIntyre A West #16  
Eddy County, New Mexico



TETRA TECH



View Southeast – Excavated Area

# 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

Form C-141  
Revised August 24, 2018  
Submit to appropriate OCD District office

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

Incident ID	
District RP	
Facility ID	
Application ID	

## Release Notification

### Responsible Party

Responsible Party	OGRID
Contact Name	Contact Telephone
Contact email	Incident # (assigned by OCD)
Contact mailing address	

### Location of Release Source

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_  
(NAD 83 in decimal degrees to 5 decimal places)

Site Name	Site Type
Date Release Discovered	API# (if applicable)

Unit Letter	Section	Township	Range	County

Surface Owner:  State  Federal  Tribal  Private (Name: \_\_\_\_\_)

### Nature and Volume of Release

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

<input type="checkbox"/> Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
<input type="checkbox"/> Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	<input 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

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC?  <input type="checkbox"/> Yes <input type="checkbox"/> No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

### Initial Response

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

<input type="checkbox"/> The source of the release has been stopped. <input type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input type="checkbox"/> Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices. <input 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: _____ Title: _____ Signature: <u>Delynn Opreant</u> Date: _____ email: _____ Telephone: _____
<b><u>OCD Only</u></b> Received by: <u>Amelia B. Santamante</u> Date: _____

Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

*This information must be provided to the appropriate district office no later than 90 days after the release discovery date.*

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input 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 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 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 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 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 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 type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input 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	
District RP	
Facility ID	
Application ID	

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

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: \_\_\_\_\_

email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

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



# Appendix B

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG - McIntyre A West #16**  
**Eddy County, New Mexico**

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

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

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

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

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

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

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

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

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

- 88** New Mexico State Engineers Well Reports
- 105** USGS Well Reports
- 90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)  
 Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34** NMOCD - Groundwater Data
- 123** Tetra Tech installed temporary wells and field water level
- 143** NMOCD Groundwater map well location



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

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

(R=POD has been replaced,  
 O=orphaned,  
 C=the file is closed) (quarters are 1=NW 2=NE 3=SW 4=SE)  
 (quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
<a href="#">RA 11914 POD1</a>	RA	ED		2	4	2	20	17S	30E	594801	3632002	85	80	5

Average Depth to Water: **80 feet**  
 Minimum Depth: **80 feet**  
 Maximum Depth: **80 feet**

**Record Count:** 1

**PLSS Search:**

**Section(s):** 20      **Township:** 17S      **Range:** 30E

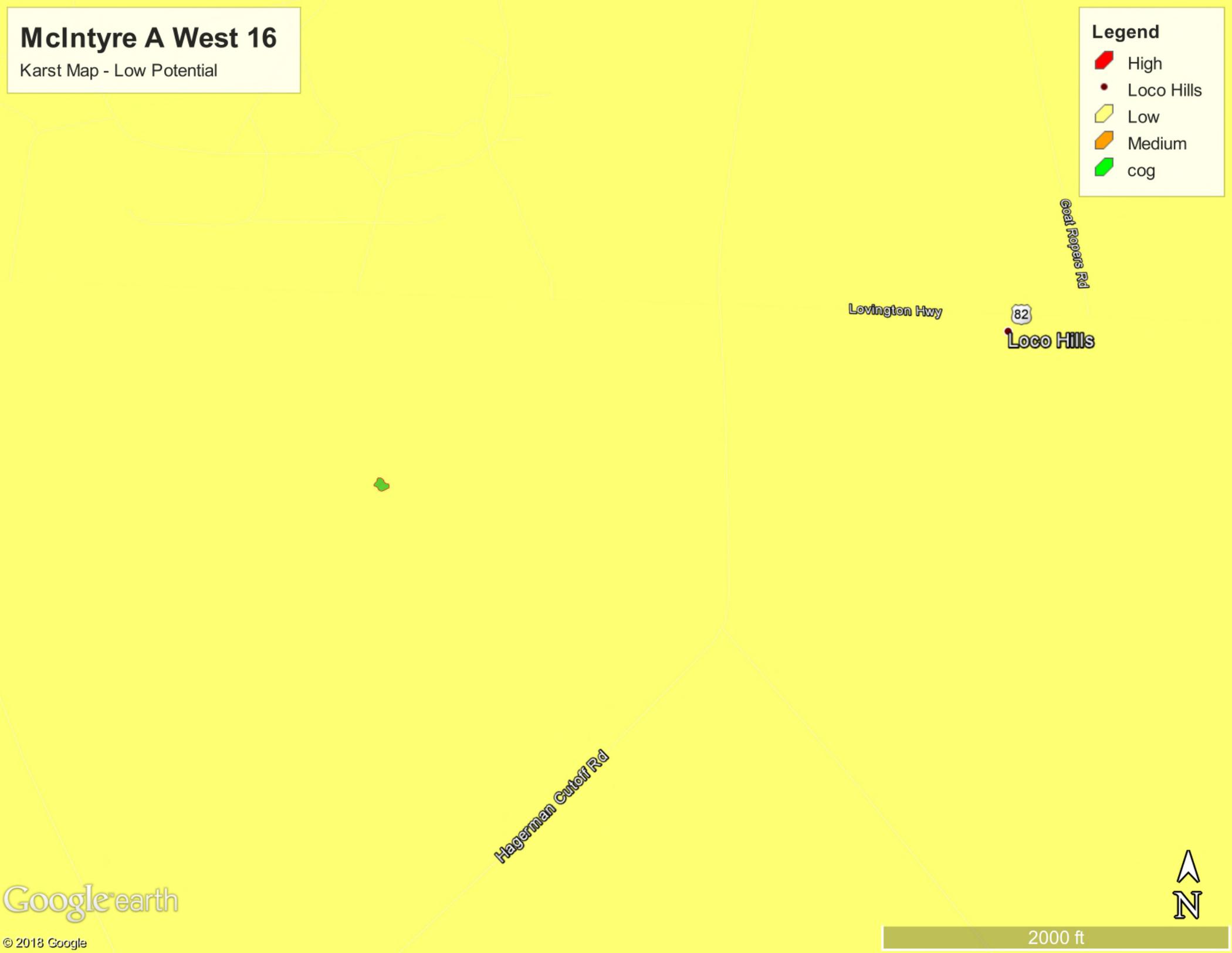
The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

# McIntyre A West 16

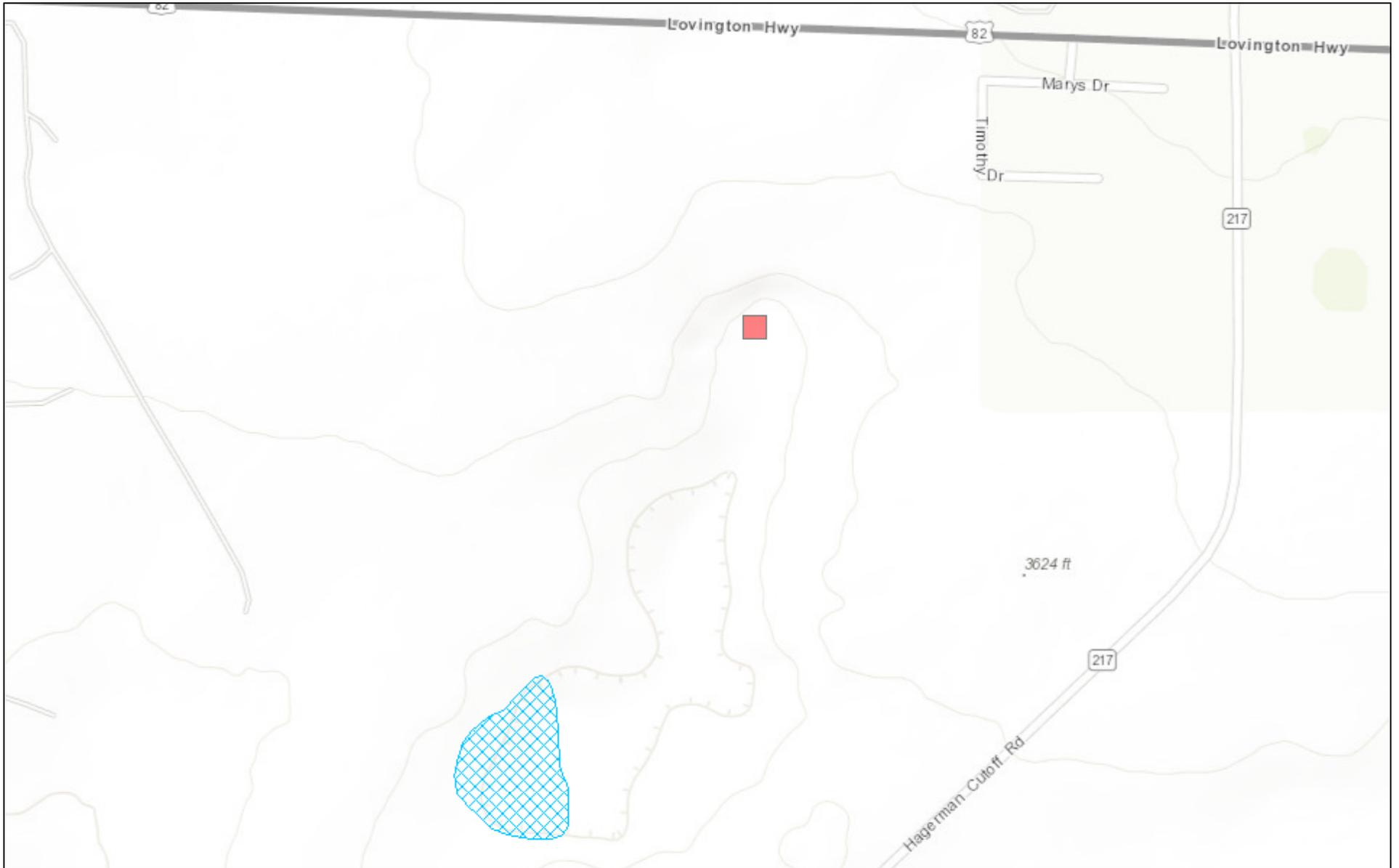
Karst Map - Low Potential

**Legend**

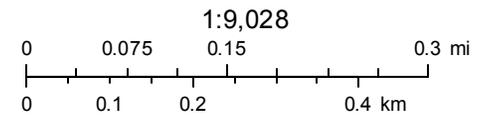
-  High
-  Loco Hills
-  Low
-  Medium
-  cog



# New Mexico NFHL Data



January 30, 2019



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

nmfood.org is made possible through a collaboration with NMDHSEM, EDAC, and FEMA  
This is a non-regulatory product for informational use only. Please consult your local floodplain administrator for further information.

# Appendix C

February 12, 2019

KAYLA LOVELY TAYLOR

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: MCINTYRE WEST #16

Enclosed are the results of analyses for samples received by the laboratory on 02/11/19 16:45.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](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,



Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/11/2019	Sampling Date:	02/11/2019
Reported:	02/12/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-0	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -1 ( 5' ) (H900533-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>1.48</b>	1.00	02/11/2019	ND	1.97	98.7	2.00	7.12	
<b>Toluene*</b>	<b>19.0</b>	2.00	02/11/2019	ND	1.99	99.5	2.00	4.77	
<b>Ethylbenzene*</b>	<b>36.1</b>	2.00	02/11/2019	ND	1.95	97.4	2.00	4.35	
<b>Total Xylenes*</b>	<b>37.3</b>	6.00	02/11/2019	ND	5.78	96.3	6.00	6.81	
<b>Total BTEX</b>	<b>93.8</b>	11.0	02/11/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	02/12/2019	ND	432	108	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>767</b>	50.0	02/12/2019	ND	187	93.6	200	2.12		
<b>DRO &gt;C10-C28*</b>	<b>2050</b>	50.0	02/12/2019	ND	170	84.8	200	2.13		
<b>EXT DRO &gt;C28-C36</b>	<b>63.3</b>	50.0	02/12/2019	ND						

Surrogate: 1-Chlorooctane 130 % 41-142

Surrogate: 1-Chlorooctadecane 164 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/11/2019	Sampling Date:	02/11/2019
Reported:	02/12/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-0	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW -1 (H900533-02)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/11/2019	ND	1.97	98.7	2.00	7.12		
Toluene*	<0.050	0.050	02/11/2019	ND	1.99	99.5	2.00	4.77		
Ethylbenzene*	<0.050	0.050	02/11/2019	ND	1.95	97.4	2.00	4.35		
Total Xylenes*	<0.150	0.150	02/11/2019	ND	5.78	96.3	6.00	6.81		
Total BTEX	<0.300	0.300	02/11/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>32.0</b>	16.0	02/12/2019	ND	432	108	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/12/2019	ND	187	93.6	200	2.12		
<b>DRO &gt;C10-C28*</b>	<b>13.0</b>	10.0	02/12/2019	ND	170	84.8	200	2.13		
EXT DRO >C28-C36	<10.0	10.0	02/12/2019	ND						

Surrogate: 1-Chlorooctane 86.1 % 41-142

Surrogate: 1-Chlorooctadecane 87.5 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/11/2019	Sampling Date:	02/11/2019
Reported:	02/12/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-0	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW - 2 (H900533-03)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/12/2019	ND	1.97	98.7	2.00	7.12		
Toluene*	<0.050	0.050	02/12/2019	ND	1.99	99.5	2.00	4.77		
Ethylbenzene*	<0.050	0.050	02/12/2019	ND	1.95	97.4	2.00	4.35		
Total Xylenes*	<0.150	0.150	02/12/2019	ND	5.78	96.3	6.00	6.81		
Total BTEX	<0.300	0.300	02/12/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 94.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	<16.0	16.0	02/12/2019	ND	400	100	400	3.92	QM-07	

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/12/2019	ND	187	93.6	200	2.12		
DRO >C10-C28*	<10.0	10.0	02/12/2019	ND	170	84.8	200	2.13		
EXT DRO >C28-C36	<10.0	10.0	02/12/2019	ND						

Surrogate: 1-Chlorooctane 89.6 % 41-142

Surrogate: 1-Chlorooctadecane 95.2 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/11/2019	Sampling Date:	02/11/2019
Reported:	02/12/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-0	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BTTM -4 ( 2' ) (H900533-04)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2019	ND	1.97	98.7	2.00	7.12	
Toluene*	<0.050	0.050	02/12/2019	ND	1.99	99.5	2.00	4.77	
<b>Ethylbenzene*</b>	<b>0.197</b>	0.050	02/12/2019	ND	1.95	97.4	2.00	4.35	
<b>Total Xylenes*</b>	<b>0.264</b>	0.150	02/12/2019	ND	5.78	96.3	6.00	6.81	
<b>Total BTEX</b>	<b>0.461</b>	0.300	02/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	02/12/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>16.0</b>	10.0	02/12/2019	ND	187	93.6	200	2.12	
<b>DRO &gt;C10-C28*</b>	<b>659</b>	10.0	02/12/2019	ND	170	84.8	200	2.13	
<b>EXT DRO &gt;C28-C36</b>	<b>74.9</b>	10.0	02/12/2019	ND					

Surrogate: 1-Chlorooctane 98.2 % 41-142

Surrogate: 1-Chlorooctadecane 118 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/11/2019	Sampling Date:	02/11/2019
Reported:	02/12/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-0	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BTTM -8 ( 2' ) (H900533-05)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	02/12/2019	ND	1.97	98.7	2.00	7.12	
<b>Toluene*</b>	<b>0.176</b>	0.050	02/12/2019	ND	1.99	99.5	2.00	4.77	
<b>Ethylbenzene*</b>	<b>0.771</b>	0.050	02/12/2019	ND	1.95	97.4	2.00	4.35	
<b>Total Xylenes*</b>	<b>0.934</b>	0.150	02/12/2019	ND	5.78	96.3	6.00	6.81	
<b>Total BTEX</b>	<b>1.88</b>	0.300	02/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	02/12/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>22.4</b>	10.0	02/12/2019	ND	187	93.6	200	2.12	
<b>DRO &gt;C10-C28*</b>	<b>441</b>	10.0	02/12/2019	ND	170	84.8	200	2.13	
<b>EXT DRO &gt;C28-C36</b>	<b>30.2</b>	10.0	02/12/2019	ND					

Surrogate: 1-Chlorooctane 86.9 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/11/2019	Sampling Date:	02/11/2019
Reported:	02/12/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-0	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW - 3 (H900533-06)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>4.05</b>	2.00	02/12/2019	ND	1.97	98.7	2.00	7.12	
<b>Toluene*</b>	<b>37.0</b>	2.00	02/12/2019	ND	1.99	99.5	2.00	4.77	
<b>Ethylbenzene*</b>	<b>55.1</b>	2.00	02/12/2019	ND	1.95	97.4	2.00	4.35	
<b>Total Xylenes*</b>	<b>52.1</b>	6.00	02/12/2019	ND	5.78	96.3	6.00	6.81	
<b>Total BTEX</b>	<b>148</b>	12.0	02/12/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/12/2019	ND	400	100	400	3.92	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>559</b>	50.0	02/12/2019	ND	187	93.6	200	2.12		
<b>DRO &gt;C10-C28*</b>	<b>1780</b>	50.0	02/12/2019	ND	170	84.8	200	2.13		
<b>EXT DRO &gt;C28-C36</b>	<b>88.7</b>	50.0	02/12/2019	ND						

Surrogate: 1-Chlorooctane 127 % 41-142

Surrogate: 1-Chlorooctadecane 153 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**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-04	The RPD for the BS/BSD was outside of historical limits.
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



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Celey D. Keene, Lab Director/Quality Manager





February 13, 2019

KAYLA LOVELY TAYLOR

TETRA TECH

901 WEST WALL STREET , STE 100

MIDLAND, TX 79701

RE: MCINTYRE WEST #16

Enclosed are the results of analyses for samples received by the laboratory on 02/12/19 16:55.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](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, flowing "C" and "K".

Celey D. Keene

Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -10 ( 2' ) (H900558-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>10.4</b>	1.00	02/13/2019	ND	2.03	102	2.00	4.25	
<b>Toluene*</b>	<b>51.0</b>	1.00	02/13/2019	ND	2.07	104	2.00	3.36	
<b>Ethylbenzene*</b>	<b>56.9</b>	1.00	02/13/2019	ND	1.99	99.5	2.00	0.930	
<b>Total Xylenes*</b>	<b>49.7</b>	3.00	02/13/2019	ND	5.78	96.3	6.00	2.53	
<b>Total BTEX</b>	<b>168</b>	6.00	02/13/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>2450</b>	100	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>6510</b>	100	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>681</b>	100	02/13/2019	ND						

Surrogate: 1-Chlorooctane 183 % 41-142

Surrogate: 1-Chlorooctadecane 224 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -11 ( 2' ) (H900558-02)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>22.7</b>	2.00	02/13/2019	ND	2.03	102	2.00	4.25	
<b>Toluene*</b>	<b>126</b>	2.00	02/13/2019	ND	2.07	104	2.00	3.36	
<b>Ethylbenzene*</b>	<b>153</b>	2.00	02/13/2019	ND	1.99	99.5	2.00	0.930	
<b>Total Xylenes*</b>	<b>140</b>	6.00	02/13/2019	ND	5.78	96.3	6.00	2.53	
<b>Total BTEX</b>	<b>442</b>	12.0	02/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>3860</b>	100	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>10500</b>	100	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>1130</b>	100	02/13/2019	ND						

Surrogate: 1-Chlorooctane 237 % 41-142

Surrogate: 1-Chlorooctadecane 302 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: SSW - 1 (H900558-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>4.11</b>	0.500	02/13/2019	ND	2.03	102	2.00	4.25	
<b>Toluene*</b>	<b>52.4</b>	0.500	02/13/2019	ND	2.07	104	2.00	3.36	
<b>Ethylbenzene*</b>	<b>72.4</b>	0.500	02/13/2019	ND	1.99	99.5	2.00	0.930	
<b>Total Xylenes*</b>	<b>66.6</b>	1.50	02/13/2019	ND	5.78	96.3	6.00	2.53	
<b>Total BTEX</b>	<b>195</b>	3.00	02/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 124 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>766</b>	50.0	02/13/2019	ND	192	96.0	200	1.40	
<b>DRO &gt;C10-C28*</b>	<b>2090</b>	50.0	02/13/2019	ND	206	103	200	4.41	
<b>EXT DRO &gt;C28-C36</b>	<b>255</b>	50.0	02/13/2019	ND					

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 126 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: SSW -2 (H900558-04)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>0.662</b>	0.200	02/13/2019	ND	2.03	102	2.00	4.25		
<b>Toluene*</b>	<b>12.5</b>	0.200	02/13/2019	ND	2.07	104	2.00	3.36		
<b>Ethylbenzene*</b>	<b>38.6</b>	0.200	02/13/2019	ND	1.99	99.5	2.00	0.930		
<b>Total Xylenes*</b>	<b>38.2</b>	0.600	02/13/2019	ND	5.78	96.3	6.00	2.53		
<b>Total BTEX</b>	<b>90.0</b>	1.20	02/13/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 151 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>96.0</b>	16.0	02/13/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS				S-06		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>440</b>	100	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>2630</b>	100	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>225</b>	100	02/13/2019	ND						

Surrogate: 1-Chlorooctane 132 % 41-142

Surrogate: 1-Chlorooctadecane 178 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW - 3 (2') (H900558-05)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>41.5</b>	1.00	02/13/2019	ND	2.03	102	2.00	4.25	
<b>Toluene*</b>	<b>189</b>	1.00	02/13/2019	ND	2.07	104	2.00	3.36	
<b>Ethylbenzene*</b>	<b>200</b>	1.00	02/13/2019	ND	1.99	99.5	2.00	0.930	
<b>Total Xylenes*</b>	<b>181</b>	3.00	02/13/2019	ND	5.78	96.3	6.00	2.53	
<b>Total BTEX</b>	<b>611</b>	6.00	02/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 130 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS				S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>3040</b>	100	02/13/2019	ND	192	96.0	200	1.40	
<b>DRO &gt;C10-C28*</b>	<b>6000</b>	100	02/13/2019	ND	206	103	200	4.41	
<b>EXT DRO &gt;C28-C36</b>	<b>514</b>	100	02/13/2019	ND					

Surrogate: 1-Chlorooctane 193 % 41-142

Surrogate: 1-Chlorooctadecane 216 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: WSW - 1 (H900558-06)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>1.97</b>	0.500	02/13/2019	ND	2.03	102	2.00	4.25		
<b>Toluene*</b>	<b>17.3</b>	0.500	02/13/2019	ND	2.07	104	2.00	3.36		
<b>Ethylbenzene*</b>	<b>26.3</b>	0.500	02/13/2019	ND	1.99	99.5	2.00	0.930		
<b>Total Xylenes*</b>	<b>25.2</b>	1.50	02/13/2019	ND	5.78	96.3	6.00	2.53		
<b>Total BTEX</b>	<b>70.7</b>	3.00	02/13/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 114 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>48.0</b>	16.0	02/13/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>248</b>	50.0	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>741</b>	50.0	02/13/2019	ND	206	103	200	4.41		
EXT DRO >C28-C36	<50.0	50.0	02/13/2019	ND						

Surrogate: 1-Chlorooctane 88.0 % 41-142

Surrogate: 1-Chlorooctadecane 96.1 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTTM -1 ( 6' ) (H900558-07)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>4.84</b>	0.500	02/13/2019	ND	2.03	102	2.00	4.25	
<b>Toluene*</b>	<b>28.0</b>	0.500	02/13/2019	ND	2.07	104	2.00	3.36	
<b>Ethylbenzene*</b>	<b>36.1</b>	0.500	02/13/2019	ND	1.99	99.5	2.00	0.930	
<b>Total Xylenes*</b>	<b>33.6</b>	1.50	02/13/2019	ND	5.78	96.3	6.00	2.53	
<b>Total BTEX</b>	<b>103</b>	3.00	02/13/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>1200</b>	50.0	02/13/2019	ND	192	96.0	200	1.40	
<b>DRO &gt;C10-C28*</b>	<b>3020</b>	50.0	02/13/2019	ND	206	103	200	4.41	
<b>EXT DRO &gt;C28-C36</b>	<b>313</b>	50.0	02/13/2019	ND					

Surrogate: 1-Chlorooctane 131 % 41-142

Surrogate: 1-Chlorooctadecane 144 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -2 ( 6' ) (H900558-08)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>61.3</b>	2.00	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>291</b>	2.00	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>279</b>	2.00	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>233</b>	6.00	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>864</b>	12.0	02/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>6090</b>	100	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>11400</b>	100	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>1200</b>	100	02/13/2019	ND						

Surrogate: 1-Chlorooctane 261 % 41-142

Surrogate: 1-Chlorooctadecane 308 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTTM -3 ( 6' ) (H900558-09)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.068</b>	0.050	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>0.181</b>	0.050	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>0.141</b>	0.050	02/13/2019	ND	2.04	102	2.00	1.57	
Total Xylenes*	<0.150	0.150	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>0.390</b>	0.300	02/13/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	02/13/2019	ND	192	96.0	200	1.40	
<b>DRO &gt;C10-C28*</b>	<b>125</b>	50.0	02/13/2019	ND	206	103	200	4.41	
EXT DRO >C28-C36	<50.0	50.0	02/13/2019	ND					

Surrogate: 1-Chlorooctane 92.8 % 41-142

Surrogate: 1-Chlorooctadecane 99.6 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -5 ( 6' ) (H900558-10)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>10.9</b>	1.00	02/13/2019	ND	2.16	108	2.00	0.104		
<b>Toluene*</b>	<b>97.3</b>	1.00	02/13/2019	ND	2.06	103	2.00	0.354		
<b>Ethylbenzene*</b>	<b>127</b>	1.00	02/13/2019	ND	2.04	102	2.00	1.57		
<b>Total Xylenes*</b>	<b>114</b>	3.00	02/13/2019	ND	6.05	101	6.00	0.280		
<b>Total BTEX</b>	<b>349</b>	6.00	02/13/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>80.0</b>	16.0	02/13/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
<b>GRO C6-C10*</b>	<b>1920</b>	50.0	02/13/2019	ND	192	96.0	200	1.40			
<b>DRO &gt;C10-C28*</b>	<b>5430</b>	50.0	02/13/2019	ND	206	103	200	4.41			
<b>EXT DRO &gt;C28-C36</b>	<b>519</b>	50.0	02/13/2019	ND							

Surrogate: 1-Chlorooctane 164 % 41-142

Surrogate: 1-Chlorooctadecane 193 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTTM -6 ( 6' ) (H900558-11)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Benzene*</b>	<b>5.58</b>	0.500	02/13/2019	ND	2.16	108	2.00	0.104		
<b>Toluene*</b>	<b>45.2</b>	0.500	02/13/2019	ND	2.06	103	2.00	0.354		
<b>Ethylbenzene*</b>	<b>55.9</b>	0.500	02/13/2019	ND	2.04	102	2.00	1.57		
<b>Total Xylenes*</b>	<b>50.5</b>	1.50	02/13/2019	ND	6.05	101	6.00	0.280		
<b>Total BTEX</b>	<b>157</b>	3.00	02/13/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>48.0</b>	16.0	02/13/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>620</b>	50.0	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>2020</b>	50.0	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>237</b>	50.0	02/13/2019	ND						

Surrogate: 1-Chlorooctane 112 % 41-142

Surrogate: 1-Chlorooctadecane 124 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -7 ( 6' ) (H900558-12)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>9.07</b>	0.500	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>67.3</b>	0.500	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>78.0</b>	0.500	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>68.4</b>	1.50	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>223</b>	3.00	02/13/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>1200</b>	50.0	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>3390</b>	50.0	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>339</b>	50.0	02/13/2019	ND						

Surrogate: 1-Chlorooctane 134 % 41-142

Surrogate: 1-Chlorooctadecane 151 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: ESW - 2 (H900558-13)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.067</b>	0.050	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>0.466</b>	0.050	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>1.54</b>	0.050	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>1.74</b>	0.150	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>3.81</b>	0.300	02/13/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 104 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<50.0	50.0	02/13/2019	ND	192	96.0	200	1.40	
<b>DRO &gt;C10-C28*</b>	<b>325</b>	50.0	02/13/2019	ND	206	103	200	4.41	
EXT DRO >C28-C36	<50.0	50.0	02/13/2019	ND					

Surrogate: 1-Chlorooctane 89.7 % 41-142

Surrogate: 1-Chlorooctadecane 92.9 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTTM -9 ( 6' ) (H900558-14)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>5.52</b>	0.500	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>50.2</b>	0.500	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>63.5</b>	0.500	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>56.5</b>	1.50	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>176</b>	3.00	02/13/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>160</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>1700</b>	50.0	02/13/2019	ND	192	96.0	200	1.40		
<b>DRO &gt;C10-C28*</b>	<b>4540</b>	50.0	02/13/2019	ND	206	103	200	4.41		
<b>EXT DRO &gt;C28-C36</b>	<b>454</b>	50.0	02/13/2019	ND						

Surrogate: 1-Chlorooctane 152 % 41-142

Surrogate: 1-Chlorooctadecane 174 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW - 3 ( 4' ) (H900558-15)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.403</b>	0.100	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>6.03</b>	0.100	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>11.1</b>	0.100	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>11.2</b>	0.300	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>28.7</b>	0.600	02/13/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>320</b>	50.0	02/13/2019	ND	192	96.0	200	1.40	
<b>DRO &gt;C10-C28*</b>	<b>1400</b>	50.0	02/13/2019	ND	206	103	200	4.41	
<b>EXT DRO &gt;C28-C36</b>	<b>85.8</b>	50.0	02/13/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: BTM -10 ( 3' ) (H900558-16)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>15.1</b>	1.00	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>93.3</b>	1.00	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>97.8</b>	1.00	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>84.1</b>	3.00	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>290</b>	6.00	02/13/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>160</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>1840</b>	100	02/13/2019	ND	181	90.6	200	8.12		
<b>DRO &gt;C10-C28*</b>	<b>3470</b>	100	02/13/2019	ND	181	90.3	200	8.31		
<b>EXT DRO &gt;C28-C36</b>	<b>275</b>	100	02/13/2019	ND						

Surrogate: 1-Chlorooctane 134 % 41-142

Surrogate: 1-Chlorooctadecane 149 % 37.6-147

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/13/2019	Sampling Type:	Soil
Project Name:	MCINTYRE WEST #16	Sampling Condition:	Cool & Intact
Project Number:	212C-MD-01594 ( 12/3/18 )	Sample Received By:	Jodi Henson
Project Location:	COG - EDDY CO NM		

**Sample ID: WSW-1 ( 1' ) (H900558-17)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.079</b>	0.050	02/13/2019	ND	2.16	108	2.00	0.104	
<b>Toluene*</b>	<b>0.321</b>	0.050	02/13/2019	ND	2.06	103	2.00	0.354	
<b>Ethylbenzene*</b>	<b>0.445</b>	0.050	02/13/2019	ND	2.04	102	2.00	1.57	
<b>Total Xylenes*</b>	<b>0.476</b>	0.150	02/13/2019	ND	6.05	101	6.00	0.280	
<b>Total BTEX</b>	<b>1.32</b>	0.300	02/13/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>32.0</b>	16.0	02/13/2019	ND	400	100	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	02/13/2019	ND	181	90.6	200	8.12	
<b>DRO &gt;C10-C28*</b>	<b>15.7</b>	10.0	02/13/2019	ND	181	90.3	200	8.31	
EXT DRO >C28-C36	<10.0	10.0	02/13/2019	ND					

Surrogate: 1-Chlorooctane 69.9 % 41-142

Surrogate: 1-Chlorooctadecane 69.0 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**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.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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



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Celey D. Keene, Lab Director/Quality Manager



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

*2/12/18*

*1/2*

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Vetra Tech P.O. #: \_\_\_\_\_  
 Project Manager: Kayla Taylor Company: COG  
 Address: \_\_\_\_\_ Attn: Jke Turrez  
 City: Midland State: Tx Zip: 79701 Address: \_\_\_\_\_  
 Phone #: \_\_\_\_\_ Fax #: \_\_\_\_\_ City: Midland  
 Project #: 212C-ND-01594 Project Owner: COG State: Tx Zip: 79701  
 Project Name: Melntyre West #16 (12/3/18) Phone #: \_\_\_\_\_  
 Project Location: Eddy Co NM Fax #: \_\_\_\_\_  
 Sampler Name: Clint Hewitt

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Chlorides	TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H900558	B-TM-10 (2')	C	1	X						2/12	9:00	X	X	X
	B-TM-11 (2')	C	1	X							9:05	X	X	X
	SSW-1	C	1	X							9:15	X	X	X
	SSW-2	C	1	X							9:20	X	X	X
	USW-3 (2')	C	1	X							10:00	X	X	X
	USW-1	C	1	X							10:05	X	X	X
	B-TM-11 (1')	C	1	X							10:36	X	X	X
	B-TM-2 (1')	C	1	X							10:35	X	X	X
	B-TM-3 (1')	C	1	X							10:40	X	X	X
	B-TM-5 (1')	C	1	X							10:45	X	X	X

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Reinquished By: Clint Hewitt Date: 2/12 Received By: Sheli Shunder  
 Reinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Received By: \_\_\_\_\_  
 Delivered By: (Circle One)  UPS  Bus  Other: 4.99 #97  
 Sample Condition: Cool / Intact  Yes  No  
 CHECKED BY: [Signature]  
 Phone Result:  Yes  No Add'l Phone #: \_\_\_\_\_  
 Fax Result:  Yes  No Add'l Fax #: \_\_\_\_\_  
 REMARKS: 24hr turn around





April 05, 2019

KAYLA LOVELY TAYLOR  
TETRA TECH  
901 WEST WALL STREET , STE 100  
MIDLAND, TX 79701

RE: MCINTYRE A 16 WEST

Enclosed are the results of analyses for samples received by the laboratory on 04/04/19 16:22.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](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

**Analytical Results For:**

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

Received:	04/04/2019	Sampling Date:	04/04/2019
Reported:	04/05/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 1 ( COMP 8' ) (H901254-01)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/05/2019	ND	2.06	103	2.00	2.24	
<b>Toluene*</b>	<b>3.62</b>	0.200	04/05/2019	ND	1.89	94.7	2.00	0.117	
<b>Ethylbenzene*</b>	<b>11.1</b>	0.200	04/05/2019	ND	1.99	99.4	2.00	2.43	
<b>Total Xylenes*</b>	<b>12.1</b>	0.600	04/05/2019	ND	6.07	101	6.00	2.78	
<b>Total BTEX</b>	<b>26.8</b>	1.20	04/05/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>80.0</b>	16.0	04/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>121</b>	10.0	04/05/2019	ND	203	101	200	10.9	
<b>DRO &gt;C10-C28*</b>	<b>707</b>	10.0	04/05/2019	ND	210	105	200	9.40	
<b>EXT DRO &gt;C28-C36</b>	<b>116</b>	10.0	04/05/2019	ND					

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 96.9 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/04/2019	Sampling Date:	04/04/2019
Reported:	04/05/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 2 ( COMP 10' ) (H901254-02)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.200	0.200	04/05/2019	ND	2.06	103	2.00	2.24	
<b>Toluene*</b>	<b>0.931</b>	0.200	04/05/2019	ND	1.89	94.7	2.00	0.117	
<b>Ethylbenzene*</b>	<b>2.81</b>	0.200	04/05/2019	ND	1.99	99.4	2.00	2.43	
<b>Total Xylenes*</b>	<b>3.68</b>	0.600	04/05/2019	ND	6.07	101	6.00	2.78	
<b>Total BTEX</b>	<b>7.42</b>	1.20	04/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	04/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>98.1</b>	10.0	04/05/2019	ND	203	101	200	10.9	
<b>DRO &gt;C10-C28*</b>	<b>890</b>	10.0	04/05/2019	ND	210	105	200	9.40	
<b>EXT DRO &gt;C28-C36</b>	<b>160</b>	10.0	04/05/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 103 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/04/2019	Sampling Date:	04/04/2019
Reported:	04/05/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 3 ( COMP 8' ) (H901254-03)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2019	ND	2.06	103	2.00	2.24	
<b>Toluene*</b>	<b>0.287</b>	0.050	04/05/2019	ND	1.89	94.7	2.00	0.117	
<b>Ethylbenzene*</b>	<b>0.970</b>	0.050	04/05/2019	ND	1.99	99.4	2.00	2.43	
<b>Total Xylenes*</b>	<b>1.50</b>	0.150	04/05/2019	ND	6.07	101	6.00	2.78	
<b>Total BTEX</b>	<b>2.76</b>	0.300	04/05/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>48.0</b>	16.0	04/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>18.8</b>	10.0	04/05/2019	ND	203	101	200	10.9	
<b>DRO &gt;C10-C28*</b>	<b>208</b>	10.0	04/05/2019	ND	210	105	200	9.40	
<b>EXT DRO &gt;C28-C36</b>	<b>28.9</b>	10.0	04/05/2019	ND					

Surrogate: 1-Chlorooctane 90.9 % 41-142

Surrogate: 1-Chlorooctadecane 88.5 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/04/2019	Sampling Date:	04/04/2019
Reported:	04/05/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 4 ( COMP 10' ) (H901254-04)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/05/2019	ND	2.06	103	2.00	2.24	
<b>Toluene*</b>	<b>0.467</b>	0.050	04/05/2019	ND	1.89	94.7	2.00	0.117	
<b>Ethylbenzene*</b>	<b>1.44</b>	0.050	04/05/2019	ND	1.99	99.4	2.00	2.43	
<b>Total Xylenes*</b>	<b>1.83</b>	0.150	04/05/2019	ND	6.07	101	6.00	2.78	
<b>Total BTEX</b>	<b>3.73</b>	0.300	04/05/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>64.0</b>	16.0	04/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>38.3</b>	10.0	04/05/2019	ND	203	101	200	10.9	
<b>DRO &gt;C10-C28*</b>	<b>383</b>	10.0	04/05/2019	ND	210	105	200	9.40	
<b>EXT DRO &gt;C28-C36</b>	<b>55.5</b>	10.0	04/05/2019	ND					

Surrogate: 1-Chlorooctane 102 % 41-142

Surrogate: 1-Chlorooctadecane 94.8 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/04/2019	Sampling Date:	04/04/2019
Reported:	04/05/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW - 1 ( COMP 10' ) (H901254-05)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.345</b>	0.200	04/05/2019	ND	2.11	105	2.00	5.74	
<b>Toluene*</b>	<b>8.12</b>	0.200	04/05/2019	ND	2.13	106	2.00	2.84	
<b>Ethylbenzene*</b>	<b>18.4</b>	0.200	04/05/2019	ND	2.14	107	2.00	2.07	
<b>Total Xylenes*</b>	<b>19.4</b>	0.600	04/05/2019	ND	6.37	106	6.00	2.81	
<b>Total BTEX</b>	<b>46.3</b>	1.20	04/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 142 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	04/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>257</b>	10.0	04/05/2019	ND	203	101	200	10.9	
<b>DRO &gt;C10-C28*</b>	<b>1150</b>	10.0	04/05/2019	ND	210	105	200	9.40	
<b>EXT DRO &gt;C28-C36</b>	<b>212</b>	10.0	04/05/2019	ND					

Surrogate: 1-Chlorooctane 135 % 41-142

Surrogate: 1-Chlorooctadecane 110 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/04/2019	Sampling Date:	04/04/2019
Reported:	04/05/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: SSW - 1 ( COMP 7' ) (H901254-06)**

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Benzene*</b>	<b>0.064</b>	0.050	04/05/2019	ND	2.11	105	2.00	5.74	
<b>Toluene*</b>	<b>0.587</b>	0.050	04/05/2019	ND	2.13	106	2.00	2.84	
<b>Ethylbenzene*</b>	<b>1.42</b>	0.050	04/05/2019	ND	2.14	107	2.00	2.07	
<b>Total Xylenes*</b>	<b>1.68</b>	0.150	04/05/2019	ND	6.37	106	6.00	2.81	
<b>Total BTEX</b>	<b>3.76</b>	0.300	04/05/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 132 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	04/05/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>38.3</b>	10.0	04/05/2019	ND	203	101	200	10.9	
<b>DRO &gt;C10-C28*</b>	<b>336</b>	10.0	04/05/2019	ND	210	105	200	9.40	
<b>EXT DRO &gt;C28-C36</b>	<b>65.1</b>	10.0	04/05/2019	ND					

Surrogate: 1-Chlorooctane 95.3 % 41-142

Surrogate: 1-Chlorooctadecane 92.3 % 37.6-147

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\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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

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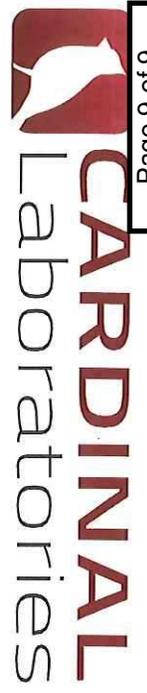
\*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



**CHAIN-OF-CUSTODY AND ANALYSIS REQUEST**

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

**BILL TO**

**ANALYSIS REQUEST**

Company Name: Tetra Tech  
 Project Manager: Kayla Taylor  
 Address: 901 W Wall  
 City: Midland State: TX Zip: 79701  
 Phone #: 432-210-5443 Fax #: \_\_\_\_\_  
 Project #: \_\_\_\_\_ Project Owner: \_\_\_\_\_  
 Project Name: Mcintyre A 16 West  
 Project Location: Eddy, NM  
 Sampler Name: Devin Dominguez  
 P.O. #: \_\_\_\_\_ Company: Concho  
 Attn: Ike Tavares  
 Address: 600 W Illinois  
 City: Midland State: TX Zip: 79701  
 Phone #: 432-701-8630 Fax #: \_\_\_\_\_

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	TPH	BTEX	Chlorides
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
H901254	Bottomhole-1 (Comp 8')	C 1	1	X						4/4/19	1000	X	X	X
	Bottomhole-2 (Comp 10')	C 1	1	X						4/4/19	1002	X	X	X
	Bottomhole-3 (Comp 8')	C 1	1	X						4/4/19	1004	X	X	X
	Bottomhole-4 (Comp 10')	C 1	1	X						4/4/19	1006	X	X	X
	NSGUS-1 (Comp 10')	C 1	1	X						4/4/19	1008	X	X	X
	GSU-1 (Comp 7')	C 1	1	X						4/4/19	1400	X	X	X

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Relinquished By: \_\_\_\_\_ Date: 4/4/19  
 Time: 4:32  
 Received By: [Signature]  
 Date: \_\_\_\_\_ Time: \_\_\_\_\_

Phone Result:  Yes  No  Add'l Phone #:  
 Fax Result:  Yes  No  Add'l Fax #:  
 REMARKS: Request to attach devin.dominguez@tetratech.com to Results email

Delivered By: (Circle One)  
 Sampler - UPS - Bus - Other: 38c #97  
 Sample Condition  
 Cool  Intact   
 Yes  No   
 Yes  No   
 CHECKED BY: [Signature] (Initials) TS

Rusk!



April 09, 2019

KAYLA LOVELY TAYLOR  
TETRA TECH  
901 WEST WALL STREET , STE 100  
MIDLAND, TX 79701

RE: MCINTYRE A 16 WEST

Enclosed are the results of analyses for samples received by the laboratory on 04/08/19 17:05.

Cardinal Laboratories is accredited through Texas NELAP under certificate number T104704398-18-11. Accreditation applies to drinking water, non-potable water and solid and chemical materials. All accredited analytes are denoted by an asterisk (\*). For a complete list of accredited analytes and matrices visit the TCEQ website at [www.tceq.texas.gov/field/qa/lab\\_accred\\_certif.html](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 "Mike Snyder". The signature is fluid and cursive.

Mike Snyder For Celey D. Keene  
Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: NSW - 3 ( COMP 10' ) (H901282-01)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2019	ND	1.69	84.3	2.00	1.34	
Toluene*	<0.050	0.050	04/09/2019	ND	1.74	86.8	2.00	0.924	
Ethylbenzene*	<0.050	0.050	04/09/2019	ND	1.74	87.1	2.00	0.579	
Total Xylenes*	<0.150	0.150	04/09/2019	ND	5.11	85.2	6.00	0.977	
Total BTEX	<0.300	0.300	04/09/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 103 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	80.0	16.0	04/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104	
DRO >C10-C28*	<10.0	10.0	04/09/2019	ND	213	107	200	0.111	
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND					

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 1 ( COMP 10' ) (H901282-02)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2019	ND	1.69	84.3	2.00	1.34		
Toluene*	<0.050	0.050	04/09/2019	ND	1.74	86.8	2.00	0.924		
Ethylbenzene*	<0.050	0.050	04/09/2019	ND	1.74	87.1	2.00	0.579		
Total Xylenes*	<0.150	0.150	04/09/2019	ND	5.11	85.2	6.00	0.977		
Total BTEX	<0.300	0.300	04/09/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 97.1 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	16.0	16.0	04/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104		
DRO >C10-C28*	<10.0	10.0	04/09/2019	ND	213	107	200	0.111		
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND						

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 116 % 37.6-147

Cardinal Laboratories

\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 2 ( COMP 8' ) (H901282-03)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2019	ND	1.69	84.3	2.00	1.34	
Toluene*	<0.050	0.050	04/09/2019	ND	1.74	86.8	2.00	0.924	
<b>Ethylbenzene*</b>	<b>0.155</b>	0.050	04/09/2019	ND	1.74	87.1	2.00	0.579	
<b>Total Xylenes*</b>	<b>0.198</b>	0.150	04/09/2019	ND	5.11	85.2	6.00	0.977	
<b>Total BTEX</b>	<b>0.353</b>	0.300	04/09/2019	ND					

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	<16.0	16.0	04/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>GRO C6-C10*</b>	<b>15.3</b>	10.0	04/09/2019	ND	209	104	200	0.104	
<b>DRO &gt;C10-C28*</b>	<b>222</b>	10.0	04/09/2019	ND	213	107	200	0.111	
<b>EXT DRO &gt;C28-C36</b>	<b>17.4</b>	10.0	04/09/2019	ND					

Surrogate: 1-Chlorooctane 122 % 41-142

Surrogate: 1-Chlorooctadecane 131 % 37.6-147

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 3 ( COMP 10' ) (H901282-04)**

BTEX 8021B		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2019	ND	1.69	84.3	2.00	1.34		
Toluene*	<0.050	0.050	04/09/2019	ND	1.74	86.8	2.00	0.924		
Ethylbenzene*	<0.050	0.050	04/09/2019	ND	1.74	87.1	2.00	0.579		
Total Xylenes*	<0.150	0.150	04/09/2019	ND	5.11	85.2	6.00	0.977		
Total BTEX	<0.300	0.300	04/09/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>16.0</b>	16.0	04/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104		
<b>DRO &gt;C10-C28*</b>	<b>14.2</b>	10.0	04/09/2019	ND	213	107	200	0.111		
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND						

Surrogate: 1-Chlorooctane 106 % 41-142

Surrogate: 1-Chlorooctadecane 111 % 37.6-147

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 5 ( COMP 8' ) (H901282-05)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2019	ND	1.80	89.9	2.00	0.879	
<b>Toluene*</b>	<b>0.054</b>	0.050	04/09/2019	ND	1.68	84.2	2.00	0.693	
<b>Ethylbenzene*</b>	<b>0.342</b>	0.050	04/09/2019	ND	1.74	87.1	2.00	1.77	
<b>Total Xylenes*</b>	<b>0.495</b>	0.150	04/09/2019	ND	5.27	87.8	6.00	2.01	
<b>Total BTEX</b>	<b>0.891</b>	0.300	04/09/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 94.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>96.0</b>	16.0	04/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS						S-04
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>GRO C6-C10*</b>	<b>60.7</b>	10.0	04/09/2019	ND	209	104	200	0.104		
<b>DRO &gt;C10-C28*</b>	<b>768</b>	10.0	04/09/2019	ND	213	107	200	0.111		
<b>EXT DRO &gt;C28-C36</b>	<b>90.4</b>	10.0	04/09/2019	ND						

Surrogate: 1-Chlorooctane 130 % 41-142

Surrogate: 1-Chlorooctadecane 148 % 37.6-147

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 6 ( COMP 8' ) (H901282-06)**

BTEX 8021B		mg/kg		Analyzed By: ms					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2019	ND	1.80	89.9	2.00	0.879	
Toluene*	<0.050	0.050	04/09/2019	ND	1.68	84.2	2.00	0.693	
Ethylbenzene*	<0.050	0.050	04/09/2019	ND	1.74	87.1	2.00	1.77	
Total Xylenes*	<0.150	0.150	04/09/2019	ND	5.27	87.8	6.00	2.01	
Total BTEX	<0.300	0.300	04/09/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 92.1 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	04/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104	
DRO >C10-C28*	<10.0	10.0	04/09/2019	ND	213	107	200	0.111	
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND					

Surrogate: 1-Chlorooctane 109 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 7 ( COMP 10' ) (H901282-07)**

BTEX 8021B		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2019	ND	1.69	84.3	2.00	1.34	
Toluene*	<0.050	0.050	04/09/2019	ND	1.74	86.8	2.00	0.924	
Ethylbenzene*	<0.050	0.050	04/09/2019	ND	1.74	87.1	2.00	0.579	
Total Xylenes*	<0.150	0.150	04/09/2019	ND	5.11	85.2	6.00	0.977	
Total BTEX	<0.300	0.300	04/09/2019	ND					

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	04/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg		Analyzed By: MS					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104	
<b>DRO &gt;C10-C28*</b>	<b>62.6</b>	10.0	04/09/2019	ND	213	107	200	0.111	
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND					

Surrogate: 1-Chlorooctane 107 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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\*=Accredited Analyte

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: SSW - 1 ( COMP 8' ) (H901282-08)**

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2019							
Toluene*	<0.050	0.050	04/09/2019							
Ethylbenzene*	<0.050	0.050	04/09/2019							
Total Xylenes*	<0.150	0.150	04/09/2019							
Total BTEX	<0.300	0.300	04/09/2019							

Surrogate: 4-Bromofluorobenzene (PID) 93.0 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>32.0</b>	16.0	04/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104		
DRO >C10-C28*	<10.0	10.0	04/09/2019	ND	213	107	200	0.111		
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND						

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 10 ( COMP 8' ) (H901282-09)**

BTEX 8021B		mg/kg	Analyzed By: ms							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	04/09/2019							
Toluene*	<0.050	0.050	04/09/2019							
Ethylbenzene*	<0.050	0.050	04/09/2019							
Total Xylenes*	<0.150	0.150	04/09/2019							
Total BTEX	<0.300	0.300	04/09/2019							

Surrogate: 4-Bromofluorobenzene (PID) 91.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
<b>Chloride</b>	<b>400</b>	16.0	04/09/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg	Analyzed By: MS							
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104		
DRO >C10-C28*	<10.0	10.0	04/09/2019	ND	213	107	200	0.111		
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND						

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 112 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Analytical Results For:**

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

Received:	04/08/2019	Sampling Date:	04/08/2019
Reported:	04/09/2019	Sampling Type:	Soil
Project Name:	MCINTYRE A 16 WEST	Sampling Condition:	** (See Notes)
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	COG - EDDY CO NM		

**Sample ID: BOTTOM HOLE - 11 ( COMP 10' ) (H901282-10)**

BTEX 8021B		mg/kg	Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	04/09/2019						
Toluene*	<0.050	0.050	04/09/2019						
<b>Ethylbenzene*</b>	<b>0.088</b>	0.050	04/09/2019						
Total Xylenes*	<0.150	0.150	04/09/2019						
Total BTEX	<0.300	0.300	04/09/2019						

Surrogate: 4-Bromofluorobenzene (PID) 92.2 % 73.3-129

Chloride, SM4500Cl-B		mg/kg	Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
<b>Chloride</b>	<b>16.0</b>	16.0	04/09/2019	ND	416	104	400	0.00	

TPH 8015M		mg/kg	Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10*	<10.0	10.0	04/09/2019	ND	209	104	200	0.104	
<b>DRO &gt;C10-C28*</b>	<b>149</b>	10.0	04/09/2019	ND	213	107	200	0.111	
EXT DRO >C28-C36	<10.0	10.0	04/09/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 123 % 37.6-147

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Mike Snyder For Celey D. Keene, Lab Director/Quality Manager

**Notes and Definitions**

- S-04            The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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 SM450Cl-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

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