

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

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major release as defined by 19.15.29.7(A) NMAC? <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>Delann Opent</u> Date: _____ email: _____ Telephone: _____
<u>OCD Only</u> Received by: _____ Date: _____

Incident ID	NRM1930839312
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?	75 (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production, or storage site?	<input type="checkbox"/> Yes <input checked="" 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.

State of New Mexico
Oil Conservation Division

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Incident ID	NRM1930839312
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: Dakota Neel Title: HSE Coordinator
Signature:  Date: 4/28/2020
email: dneel2@concho.com Telephone: 575-746-2010

OCD Only

Received by: Cristina Eads Date: 04/28/2020

Incident ID	NRM1930839312
District RP	
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Application ID	

Remediation Plan

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

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

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

- Contamination must be in areas immediately under or around production equipment where remediation could cause a major facility deconstruction.
- Extents of contamination must be fully delineated.
- Contamination does not cause an imminent risk to human health, the environment, or groundwater.

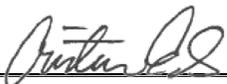
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public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

Printed Name: Dakota Neel Title: HSE Coordinator
 Signature:  Date: 4/28/2020
 email: dneel2@concho.com Telephone: 575-746-2010

OCD Only

Received by: Cristina Eads Date: 04/28/2020

- Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature:  Date: 07/02/2020

Remediation Summary and Deferral Request

COG Operating, LLC Red Raider BKS St. #001

Lea County, New Mexico
Unit Letter J, Section 25, Township 24S South, Range 33E West
Latitude 32.18675 North, Longitude 103.52391 West
NMOCD Reference No. 1RP-5776

Prepared By:

Etech Environmental & Safety Solutions, Inc.
3100 Plains Highway
Lovington, New Mexico 88260



Lance Crenshaw



Joel W. Lowry



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1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of COG Operating, LLC, has prepared this Remediation Summary and Soil Closure Request for the Release Site known as the Red Raider BKS St. #001. Details of the release are summarized below:

Location of Release Source				
Latitude: <u>32.18675</u>		Longitude: <u>-103.52391</u>		
Provided GPS are in WGS84 format.				
Site Name: <u>Red Raider BKS St. #001</u>		Site Type: <u>Tank Battery</u>		
Date Release Discovered: <u>8/30/2019</u>		API # (if applicable): <u>NA</u>		
Unit Letter	Section	Township	Range	County
J	25	24SS	33EW	Lea
Surface Owner: <input checked="" type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input type="checkbox"/> Private (Name _____)				
Nature and Volume of Release				
<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls)	5	Volume Recovered (bbls)	4
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls)	40	Volume Recovered (bbls)	35
	Is the concentration of total dissolved solids (TDS) in the produced water > 10,000 mg/L?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A		
<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		Volume/Weight Recovered	
Cause of Release: The release was attributed to the failure of a valve on the water dump. A majority of the release was confined to within a lined facility. Pressurized fluids from the release cut a small hole within the liner, allowing fluids to flow out affecting an area measuring approximately 2,000 sq. ft. on the caliche well pad.				
Initial Response				
<input checked="" type="checkbox"/> The source of the release has been stopped. <input checked="" type="checkbox"/> The impacted area has been secured to protect human health and the environment. <input checked="" type="checkbox"/> Release materials have been contained via the use of berms or dikes, absorbent pad, or other containment devices <input checked="" type="checkbox"/> All free liquids and recoverable materials have been removed and managed appropriately.				

Previously submitted portions of the NMOCD Form C-141 are available on the NMOCD Imaging System.

2.0 SITE CHARACTERIZATION

A search of groundwater databases maintained by the New Mexico Office of the State Engineer (NMOSE) and United States Geological Survey (USGS) was conducted in an effort to determine the horizontal distance to known water sources within a half mile radius of the Release Site. Probable groundwater depth was determined using data generated by numeric models based on available water well data and published information. Depth to groundwater information is provided as Appendix A.

What is the shallowest depth to groundwater beneath the area affected by the release?	>75 Ft.	
Did the release impact groundwater or surface water?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of any occupied permanent residence, school, hospital, institution or church?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within the incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Did the release impact areas not on an exploration, development, production or storage site?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

NMOCD Siting Criteria data was gathered from available resources including Bureau of Land Management (BLM) shapefiles; topographic maps; NMOSE and USGS databases; and aerial imagery. The results are depicted on Figures 1 & 2.

3.0 CLOSURE CRITERIA FOR SOILS IMPACTED BY A RELEASE

Based on the volume and nature of the release, inferred depth to groundwater and NMOCD Siting Criteria, the NMOCD Closure Criteria for the Site is as follows:

Closure Criteria for Soil Impacted by a Release			
Probable Depth to Groundwater	Constituent	Method	Limit
>75 Ft.	Chloride	EPA 300.0 or SM4500 Cl B	10000 mg/kg
	TPH (GRO + DRO + MRO)	EPA SW-846 Method 8015M Ext	100 mg/kg
	DRO + GRO	EPA SW-846 Method 8015M	1000 mg/kg
	BTEX	EPA SW-846 Methods 8021b or 8260b	50 mg/kg
	Benzene	EPA SW-846 Methods 8021b or 8260b	10 mg/kg

4.0 INITIAL SITE ASSESSMENT

On October 28, 2019, Etech conducted an initial site assessment. During the initial site assessment, a hand-augered soil bore (V2) was advanced within the release margins in an effort to determine the vertical extent of soil impacts. In addition, hand-augered soil bores were advanced at the inferred edges of the affected area in an effort to determine the horizontal extent of soil impacts. During the advancement of the hand-augered soil bores, field soil samples were collected and field-screened for the presence of TPH and/or concentrations of chloride utilizing a Hach Quantab® chloride test kit. A "Site & Sample Location Map" is provided as Figure 3. Field data and soil profile logs, if applicable, are provided as Appendix B.

Based on field observations and field test data, fourteen (14) delineation soil samples (V2 @ Surf., V2 @ 2.5, NH-1 @ Surf., NH-1 @ 1', EH-1 @ Surf., Eh-1 @ 1', EH-2 @ Surf., EH-2 @ 1', WH-1 @ Surf., SH-1 @ 1', SH1e @ Surf., SH1e @ 1', SH2d @ Surf. and SH2d @ 1') were submitted to the laboratory for analysis of BTEX, TPH and/or Chloride. Based on laboratory analytical results it was determined soil was not affected above the NMOCD Closure Criteria beyond 2.5 Ft. bgs in the area characterized by sample point V2 and the horizontal extent of affected soil impacted above the NMOCD Closure Criteria was adequately defined. A "Soil Chemistry Table" is provided as Table 1. Laboratory Analytical Reports are provided in Appendix C.

On December 3, 2019, Etech revisited the Site in an effort to further characterize impacts from the release. During the site visit, a series of soil bores (V1 and V2) were advanced in an effort to determine the vertical extent of soil impacts. Soil bore V1 was advanced within the lined containment, using the hole in the liner as a conduit. During the advancement of the soil bore, two (2) soil samples (V-1 @ 2' and V-1 @ 2.5') were collected and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated benzene, BTEX and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples; TPH concentrations exceeded the NMOCD Closure Criteria in each of the submitted soil samples. During the advancement of soil bore V1 refusal was met with the hand auger limiting the collection of additional soil samples. Soil bore V2 was advanced south of the lined containment area within an inferred pooling area. During the advancement of soil bore V2, three (3) soil samples (V2 @ 5', V2 @ 7' and V2 @ 10.5') were collected and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples.

On December 12, 2019, Etech revisited the Site in an effort to further characterize impacts in the area characterized by soil point V1. During the site visit, one (1) soil bore (VT1b) was advanced in an effort to determine the vertical extent of soil impacts in the area characterized by sample point V1. Soil bore VT1b was advanced outside and adjacent to the lined containment, proximate to sample point V1 and the hole in the lined containment. During the advancement of the soil bore, two (2) soil samples (VT1b @ 4.5' and VT1b @ 5'-R) was collected and submitted to the laboratory for analysis of TPH concentrations, which were determined to be below the NMOCD Closure Criteria.

5.0 REMEDIATION ACTIVITIES SUMMARY

On February 12, 2020, remediation activities commenced at the Site. Impacted soil affected above the NMOCD Closure Criteria on the caliche well pad was excavated and stockpiled on-site atop an impermeable liner pending final disposition at an NMOCD-approved surface waste disposal facility. The floor and sidewalls of the excavation were advanced until laboratory analytical results indicated BTEX, TPH and chloride concentrations were below the NMOCD Closure Criteria.

On February 13, 2020, Etech collected sixteen (16) excavation confirmation soil samples (FL-1 through FL-8, NW-1, NW-2, EW-1, EW-2, SW-1, SW-2, WW-1 and WW-2) from the floor and sidewalls of the excavated area. The collected soil samples were submitted to a certified commercial laboratory for analysis of BTEX, TPH and/or chloride. Laboratory analytical results indicated BTEX, TPH and chloride concentrations below the applicable NMOCD Closure Criteria in each of the submitted soil

A "Site & Sample Location Map" is provided as Figure 3. A "Soil Chemistry Table" is provided as Table 1. Laboratory Analytical Reports are provided in Appendix C. Field data and soil profile logs, if applicable, are provided as Appendix B.

The final dimensions of the excavated area were approximately 50 Ft. in length, 15 to 30 Ft. in width and 1.5 Ft. in depth. During the course of remediation activities approximately 80 cubic yards of impacted soil were transported to an NMOCD-approved surface waste facility for disposal.

6.0 RESTORATION, RECLAMATION AND RE-VEGETATION PLAN

Upon receiving laboratory analytical results from confirmation soil samples, excavated areas were backfilled with locally sourced, non-impacted "like" material placed at or near original relative positions. The affected area was graded and compacted to meet the needs of the facility. Since the affected area was on a production reseeding will not be required at this time.

7.0 DEFERRAL REQUEST

Remediation activities were conducted in accordance with the NMOCD. Laboratory analytical results from the collected soil samples indicate concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria in each of the submitted soil samples with the exception of soil samples V1 @ 2', V1 @ 2.5' and V2 @ Surf. Impacted soil affected above the NMOCD Closure Criteria in the area characterized by sample point V2 was excavated and transported to an NMOCD-approved disposal facility. Impacted soil affected above the NMOCD Closure Criteria beneath the lined tank battery facility in the area characterized by sample points V1 and VT1b will be remediated upon decommissioning the facility.

Based on laboratory analytical results and field activities conducted to date, Etech recommends COG Operating, LLC provide copies of this Remediation Summary and Deferral Request to the appropriate agencies and request partial closure be granted to the Red Raider BKS St. #001 Site.

8.0 LIMITATIONS

Etech Environmental & Safety Solutions, Inc., has prepared this Remediation Summary and Deferral Request to the best of its ability. No other warranty, expressed or implied, is made or intended. Etech has examined and relied upon documents reference in the report and on oral statements made by certain individuals. Etech has not conducted an independent examination of the facts contained in referenced materials and statements. Etech has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Etech has prepared the report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Etech notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of COG Operating, LLC. Use of the information contained in this report is prohibited within the consent of Etech and/or COG Operating, LLC.

9.0 DISTRIBUTION

COG Operating, LLC

*600 West Illinois Avenue
Midland, TX 79701*

New Mexico Energy, Minerals and Natural Resources Department

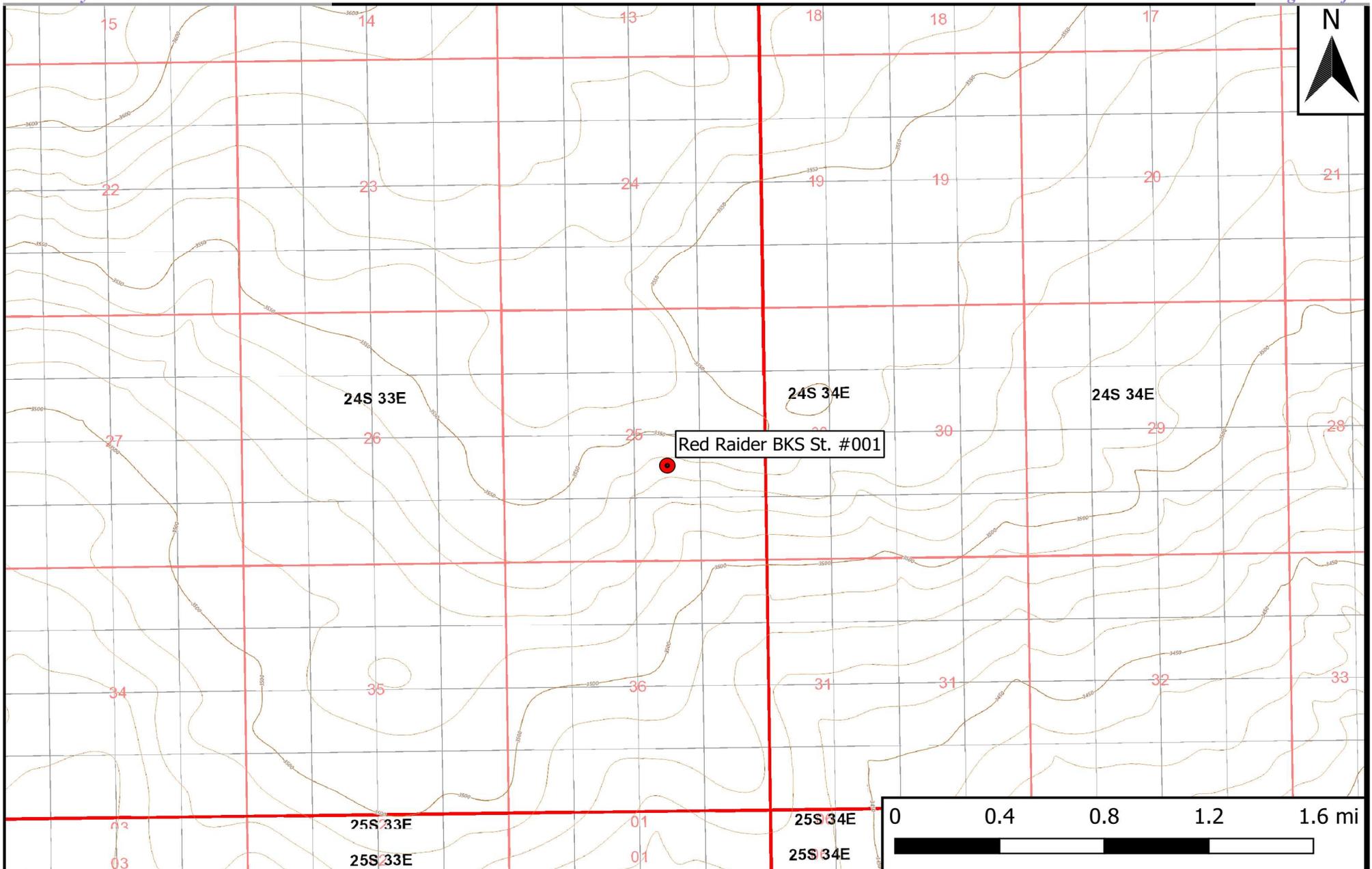
*Oil Conservation Division, District 1
1220 South St. Francis Drive
Santa Fe, NM 87505*

Hobbs Field Office

*New Mexico State Land Office
2827 North Dal Paso Street
Suite 117
Hobbs, NM 88240*

(Electronic Submission)

Figure 1 Topographic Map



Legend
 ● Site Location

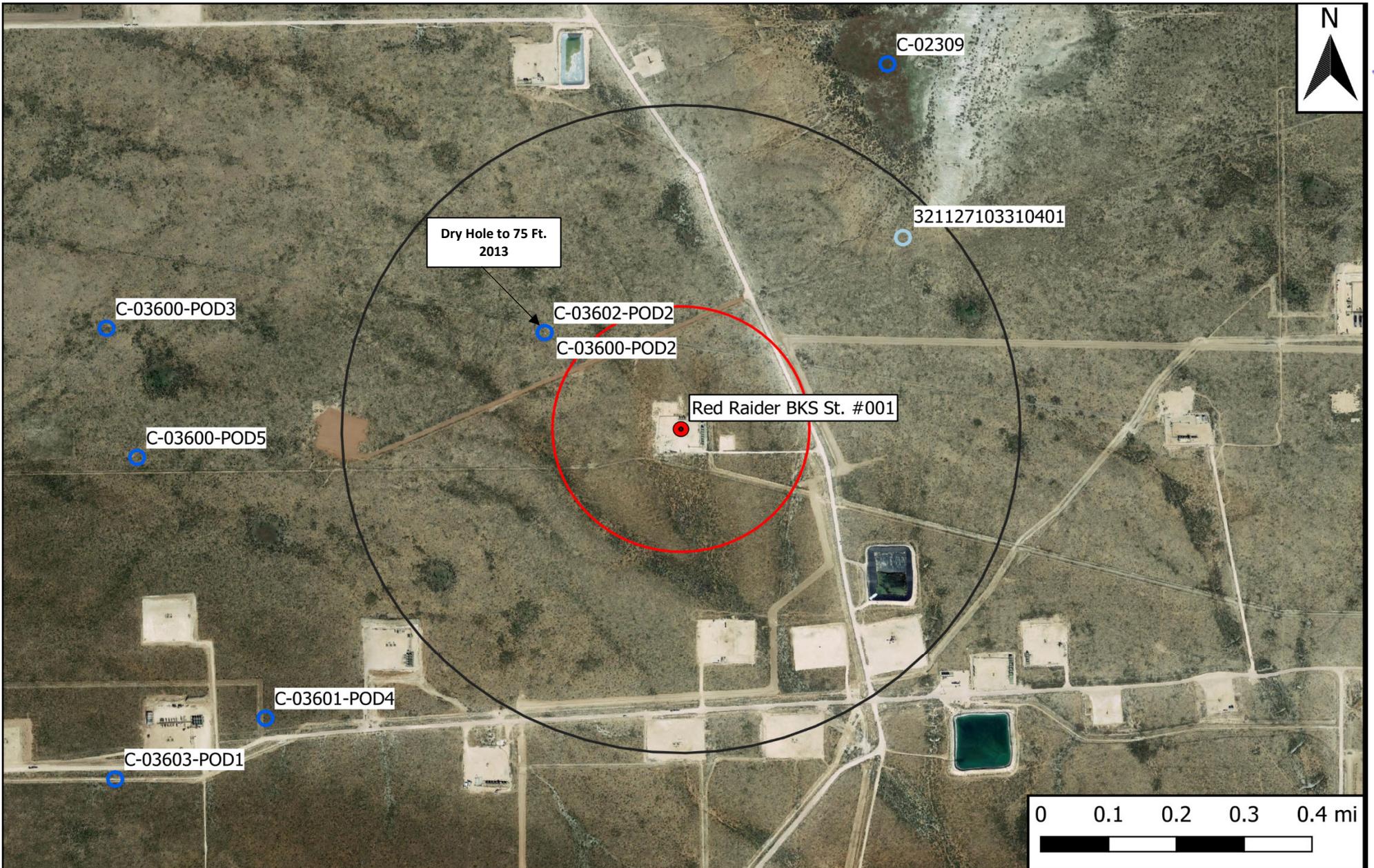
Figure 1
 Topographic Map
 COG Operating, LLC
 Red Raider BKS St. #001
 GPS: 32.18675, -103.52391
 Lea County

eTECH 
 Environmental & Safety Solutions, Inc.

Drafted: mag Checked: jwl Date: 11/15/19

Figure 2

Aerial Proximity Map



Legend	
	Site Location
	0.5 Mi Radius
	1000 Ft Radius
	1% Annual Flood Chance
	Surface Water
	Well - USGS
	Well - NMOSE
	High Karst
	Medium Karst
	Potash Mine Workings

Figure 2
 Aerial Map
 COG Operating, LLC
 Red Raider BKS St. #001
 GPS: 32.18675, -103.52391
 Lea County



Drafted: mag Checked: jwl Date: 1/7/20

Figure 3
Site and Sample Location Map



Legend:

- Delineation Sample Point
- SW-2 Confirmation Sample Location
- Excavated Area

Figure 3
 Site and Sample Location Map
 COG Operating, LLC
 Red Raider BKS St. #001
 GPS: 32.18675, -103.52391
 Lea County



Drafted: mag Checked: jwl Date: 3/4/20

Table 1
Concentrations of BTEX, TPH, and/or Chloride in Soil

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX, TPH AND CHLORIDE IN SOIL
COG Operating, LLC
Red Raider BKS St. #001
NMOCD Ref. #: 1RP-5776

Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C ₆ -C ₁₀ (mg/kg)	DRO C ₁₀ -C ₂₈ (mg/kg)	GRO + DRO C ₆ -C ₂₈ (mg/kg)	ORO C ₂₈ -C ₃₆ (mg/kg)	TPH C ₆ -C ₃₆ (mg/kg)	Chloride (mg/kg)
V1 @ 2'	12/3/2019	2'	In-Situ	<0.050	<0.300	57.90	4,150	4,207.9	1,090	5,297.9	64.0
V1 @ 2.5'	12/3/2019	2.5'	In-Situ	<0.050	<0.300	40.20	4,700	4,740.2	1,260	6,000.2	64.0
VT1b @ 4.5'	12/12/2019	4.5'	In-Situ	-	-	<10.0	410	410	75.5	486	-
VT1b @ 5'-R	12/12/2019	5'	In-Situ	-	-	<10.0	238	238	55.2	293.2	-
V2 @ Surf.	10/28/2019	0	Excavated	<0.050	<0.300	13.9	3,550	3,563.9	821	4,384.9	2,920
V2 @ 2.5'	10/28/2019	2.5'	In-Situ	<0.050	<0.300	<10.0	427	427	74.8	501.8	2,360
V2 @ 5'	12/3/2019	5'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	1,070
V2 @ 7'	12/3/2019	7'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	736
V2 @ 10.5'	12/3/2019	10.5'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	448
NH-1 @ Surf.	10/28/2019	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	<16.0
NH-1 @ 1'	10/28/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	16.0
EH-1 @ Surf.	10/28/2019	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
EH-1 @ 1'	10/28/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
EH-2 @ Surf.	10/28/2019	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	48.0
EH-2 @ 1'	10/28/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	32.0
WH-1 @ Surf.	10/28/2019	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	80.0
WH-1 @ 1'	10/28/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	304
SH1e @ Surf.	10/28/2019	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	432
SH1e @ 1'	10/28/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	240
SH2d @ Surf.	10/28/2019	0	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	512
SH2d @ 1'	10/28/2019	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<10.0	<10.0	<10.0	592
FL-1	2/13/2020	1.5'	In-Situ	<0.0019	<0.00199	<50.0	<50.0	<50.0	<50.0	<50.0	648
FL-2	2/13/2020	1.5'	In-Situ	<0.00198	<0.00198	<50.2	<50.2	<50.2	<50.2	<50.2	580
FL-3	2/13/2020	1.5'	In-Situ	<0.00200	<0.00200	<50.1	<50.1	<50.1	<50.1	<50.1	672
FL-4	2/13/2020	1.5'	In-Situ	<0.00201	<0.00201	<50.1	<50.1	<50.1	<50.1	<50.1	718
FL-5	2/13/2020	1.5'	In-Situ	<0.00200	<0.00200	<50.3	<50.3	<50.3	<50.3	<50.3	683
FL-6	2/13/2020	1.5'	In-Situ	<0.00199	<0.00199	<50.3	<50.3	<50.3	<50.3	<50.3	615
FL-7	2/13/2020	1.5'	In-Situ	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	740
FL-8	2/13/2020	1.5'	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	642
NW-1	2/13/2020	NA	In-Situ	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	605
NW-2	2/13/2020	NA	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	685
EW-1	2/13/2020	NA	In-Situ	<0.00200	<0.00200	<50.2	<50.2	<50.2	<50.2	<50.2	675
EW-2	2/13/2020	NA	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	624
SW-1	2/13/2020	NA	In-Situ	<0.00198	<0.00198	<50.3	<50.3	<50.3	<50.3	<50.3	697
SW-2	2/13/2020	NA	In-Situ	<0.00201	<0.00201	<50.2	<50.2	<50.2	<50.2	<50.2	860
WW-1	2/13/2020	NA	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	869
WW-2	2/13/2020	NA	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	666
Closure Criteria				10	50	-	-	1,000	-	2,500	10,000

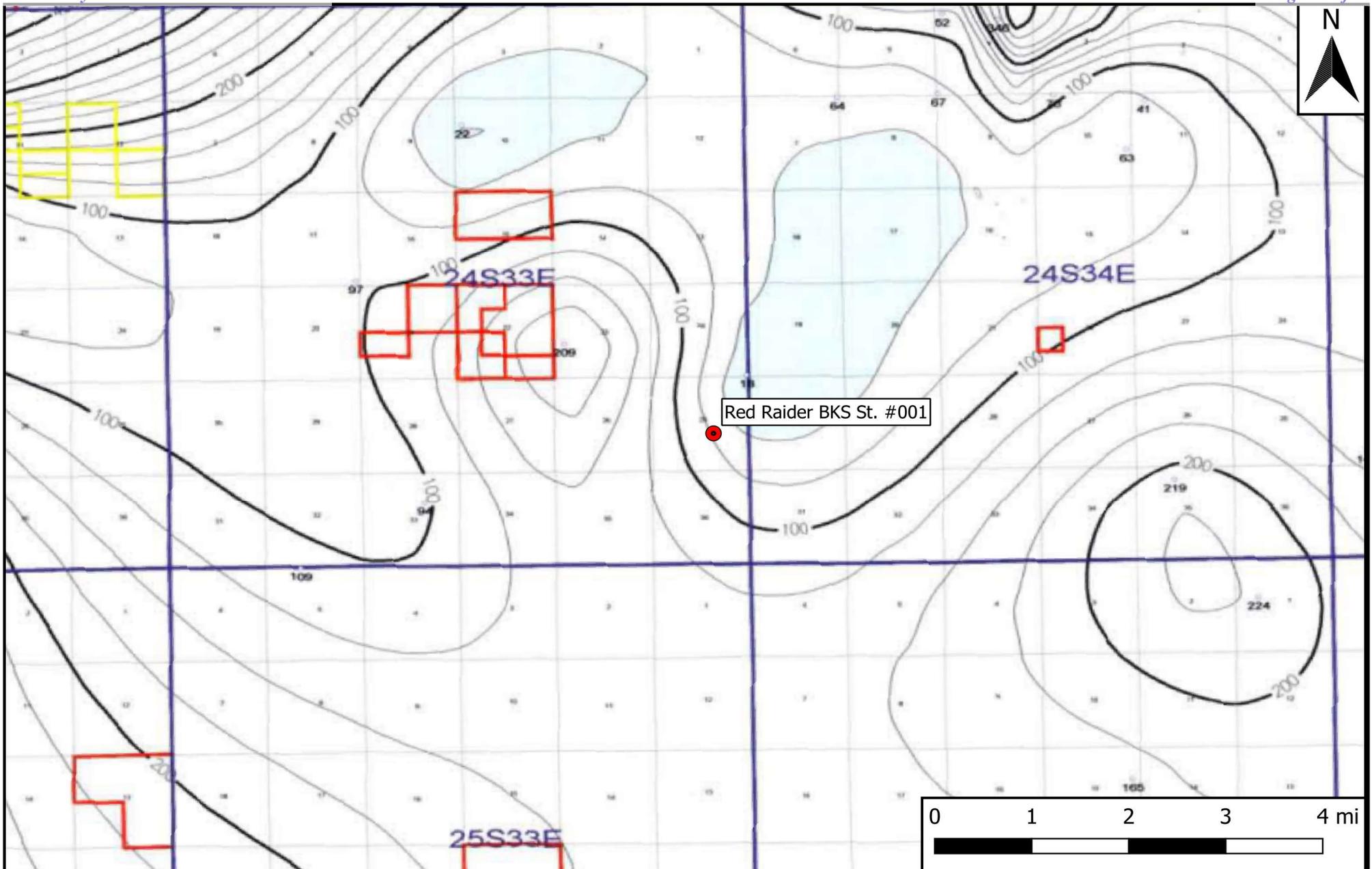
NOTES:

- =

Bold text denotes a concentration that exceeds the NMOCD Closure Criteria

Appendix A

Depth to Groundwater Information



Legend
● Site Location

Figure 4
Inferred Depth to Groundwater Trend Map
COG Operating, LLC
Red Raider BKS St. #001
GPS: 32.18675, -103.52391
Lea County

eTECH
Environmental & Safety Solutions, Inc.

Drafted: mag Checked: jwl Date: 11/15/19



WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION	OSE POD NUMBER (WELL NUMBER) BH 18			OSE FILE NUMBER(S) C3682; 518347				
	WELL OWNER NAME(S) INTERCONTINENTAL POTASH CORP			PHONE (OPTIONAL)				
	WELL OWNER MAILING ADDRESS 600 W. BENDER BLVD.			CITY HOBBS	STATE NM	ZIP 88240		
	WELL LOCATION (FROM GPS)	DEGREES LATITUDE 32	MINUTES 11	SECONDS 20.2	* ACCURACY REQUIRED: ONE TENTH OF A SECOND			
		LONGITUDE 103	31	38.3	* DATUM REQUIRED: WGS 84			
DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS - PLS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE T24S; R 33E; SECTION 25								
2. DRILLING & CASING INFORMATION	LICENSE NUMBER WD-1186	NAME OF LICENSED DRILLER RODNEY HAMMER			NAME OF WELL DRILLING COMPANY ENVIRO-DRILL, INC.			
	DRILLING STARTED 01-15-13	DRILLING ENDED 01-15-13	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT) 75'	DEPTH WATER FIRST ENCOUNTERED (FT) N/A			
	COMPLETED WELL IS: <input type="radio"/> ARTESIAN <input checked="" type="radio"/> DRY HOLE <input type="radio"/> SHALLOW (UNCONFINED)				STATIC WATER LEVEL IN COMPLETED WELL (FT)			
	DRILLING FLUID: <input type="radio"/> AIR <input type="radio"/> MUD ADDITIVES - SPECIFY:							
	DRILLING METHOD: <input type="radio"/> ROTARY <input type="radio"/> HAMMER <input type="radio"/> CABLE TOOL <input checked="" type="radio"/> OTHER - SPECIFY: AUGER							
	DEPTH (feet bgl)		BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
	FROM	TO						
	0	75	8"	N/A	N/A	N/A	N/A	N/A
3. ANNULAR MATERIAL	DEPTH (feet bgl)		BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT		
	FROM	TO						

STATE ENGINEER
ROSWELL OFFICE
2013 JAN 30 P 11:00

FOR OSE INTERNAL USE			WR-20 WELL RECORD & LOG (Version 06/08/2012)		
FILE NUMBER	C-3602	POD NUMBER	POD2	TRN NUMBER	518397
LOCATION	T24S - R33E - Sec 25.144				PAGE 1 OF 2

aka C-3600 POD2



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(quarters are smallest to largest) (NAD83 UTM in meters)

(In feet)

POD Number	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C_03600_POD2		CUB	LE	4	4	1	25	24S	33E	638824	3562329	402			
C_03602_POD2		CUB	LE	4	4	1	25	24S	33E	638824	3562329	402			

Average Depth to Water: --
Minimum Depth: --
Maximum Depth: --

Record Count: 2

UTM NAD83 Radius Search (in meters):

Easting (X): 639147.96 **Northing (Y):** 3562090.74 **Radius:** 804.67

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.

11/15/19 9:31 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
C	03600 POD2	4	4	1	25	24S	33E	638824	3562329

Driller License: 1186	Driller Company: ENVIRO-DRILL, INC.		
Driller Name: RODNEY HAMMER			
Drill Start Date: 01/07/2013	Drill Finish Date: 01/08/2013	Plug Date:	
Log File Date: 01/30/2013	PCW Rcv Date:	Source: Shallow	
Pump Type:	Pipe Discharge Size:	Estimated Yield:	
Casing Size:	Depth Well:	Depth Water:	

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.

11/15/19 9:32 AM

POINT OF DIVERSION SUMMARY



New Mexico Office of the State Engineer

Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
 (quarters are smallest to largest) (NAD83 UTM in meters)

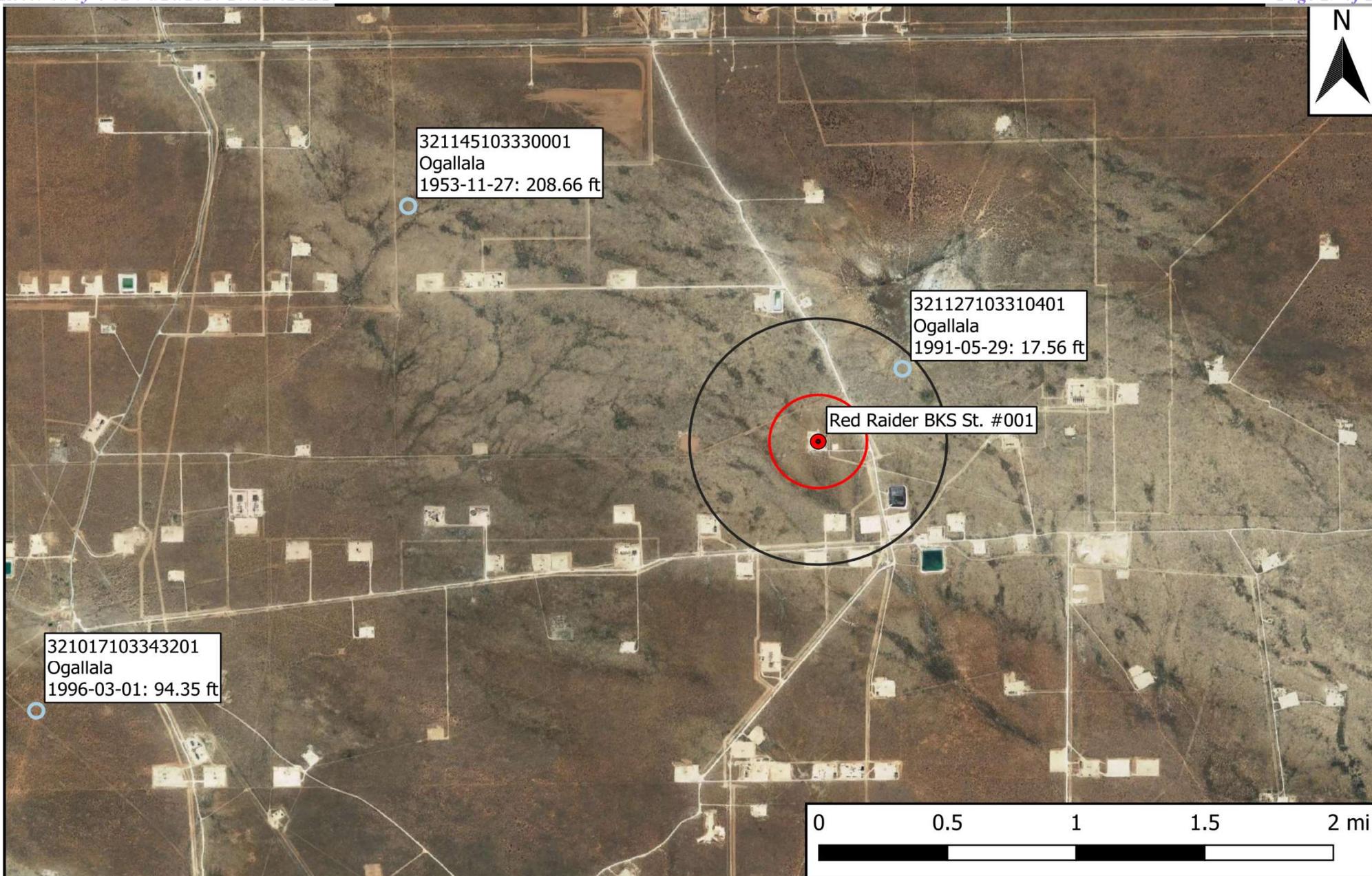
Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
C	03602 POD2	4	4	1	25	24S	33E	638824	3562329

Driller License: 1186	Driller Company: ENVIRO-DRILL, INC.		
Driller Name: RODNEY HAMMER			
Drill Start Date: 01/15/2013	Drill Finish Date: 01/15/2013	Plug Date:	
Log File Date: 01/30/2013	PCW Rcv Date:	Source: Shallow	
Pump Type:	Pipe Discharge Size:	Estimated Yield:	
Casing Size:	Depth Well:	Depth Water:	

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.

11/15/19 9:32 AM

POINT OF DIVERSION SUMMARY



- Legend
- Site Location
 - Well - USGS
 - 0.5 Mi Radius
 - 1000 Ft Radius

Figure 5
 USGS Well Proximity Map
 COG Operating, LLC
 Red Raider BKS St. #001
 GPS: 32.18675, -103.52391
 Lea County





National Water Information System: Web Interface

USGS Water Resources

Data Category:

Groundwater

Geographic Area:

United States

GO

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Click to hide News Bulletins

- [Introducing The Next Generation of USGS Water Data for the Nation](#)
- [Full News](#)

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 321017103343201

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321017103343201 24S.33E.33.23231

Available data for this site

Groundwater: Field measurements

GO

Lea County, New Mexico

Hydrologic Unit Code 13070007

Latitude 32°10'17", Longitude 103°34'32" NAD27

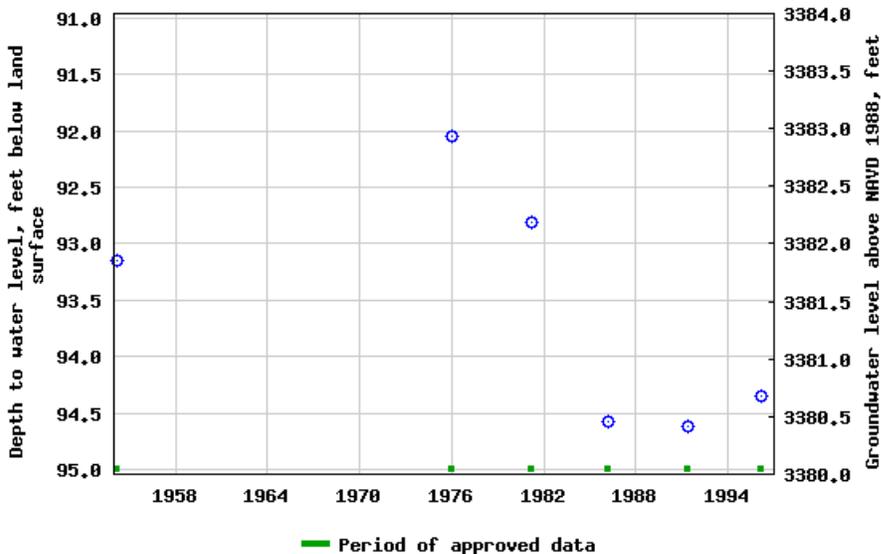
Land-surface elevation 3,475 feet above NAVD88

This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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

USGS 321017103343201 24S.33E.33.23231



Breaks in the plot represent a gap of at least one year between field measurements.

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Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



Page Contact Information: [USGS Water Data Support Team](#)

Page Last Modified: 2019-11-15 11:25:45 EST

0.49 0.45 nadww02



National Water Information System: Web Interface

USGS Water Resources

Data Category: Geographic Area:

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Groundwater levels for the Nation

Search Results -- 1 sites found

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Minimum number of levels = 1

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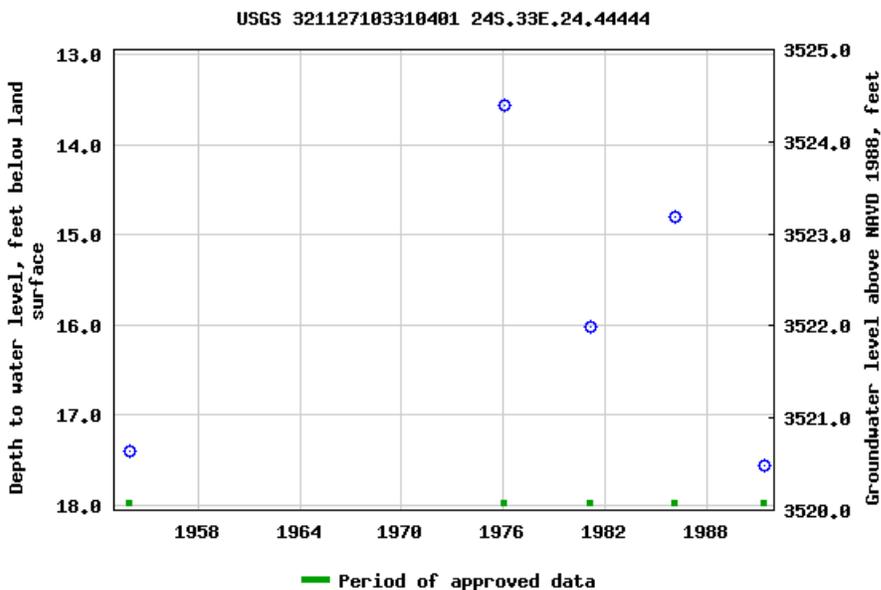
USGS 321127103310401 24S.33E.24.44444

Available data for this site

Lea County, New Mexico
 Hydrologic Unit Code 13070007
 Latitude 32°11'27", Longitude 103°31'04" NAD27
 Land-surface elevation 3,538 feet above NAVD88
 This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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



Breaks in the plot represent a gap of at least one year between field measurements.

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Title: Groundwater for USA: Water Levels

URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



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0.49 0.44 nadww02



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USGS Water Resources

Data Category: Geographic Area:

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Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs
 site_no list =
 • 321145103330001

Minimum number of levels = 1

[Save file of selected sites](#) to local disk for future upload

USGS 321145103330001 24S.33E.23.31322

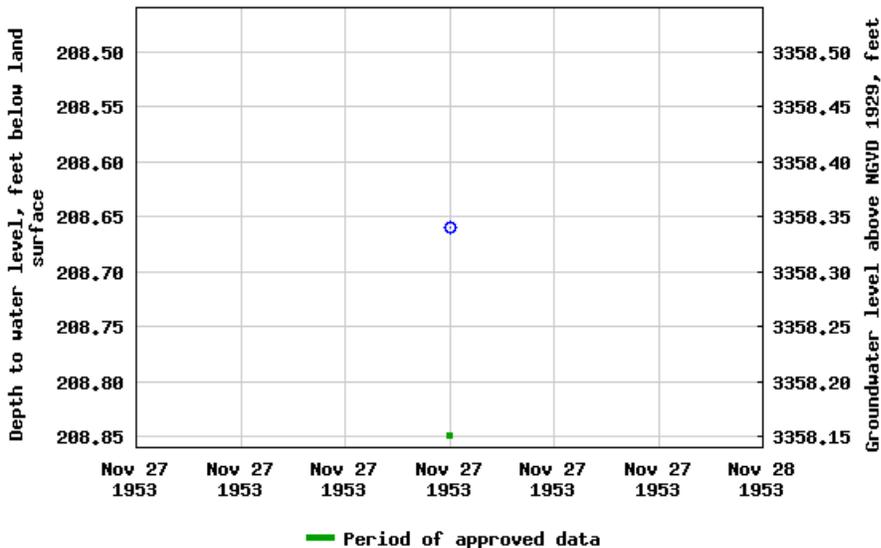
Available data for this site

Lea County, New Mexico
 Hydrologic Unit Code 13070007
 Latitude 32°12'03.2", Longitude 103°33'03.20" NAD83
 Land-surface elevation 3,567.00 feet above NGVD29
 The depth of the well is 232 feet below land surface.
 This well is completed in the Ogallala Formation (121OGLL) local aquifer.

Output formats

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

USGS 321145103330001 24S.33E.23.31322



Breaks in the plot represent a gap of at least one year between field measurements.

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URL: <https://nwis.waterdata.usgs.gov/nwis/gwlevels?>



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0.57 0.44 nadww02

Appendix B

Field Data and Soil Profile Logs

Soil Profile

Date: 12/3/2019

Project: Red Raider BKS St. #001

Project Number: 11420 Latitude: 32.18675 Longitude: -103.52391

Depth (ft. bgs)

Description

1		Imported Fill/Caliche
2		
3		Brown Sand w/Clay
4		
5		Caliche w/ Sand
6		
7		
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Appendix C

Laboratory Analytical Reports



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

November 04, 2019

JOEL LOWRY

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: RED RAIDER BKS ST. #001

Enclosed are the results of analyses for samples received by the laboratory on 10/30/19 14:30.

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

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.

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: NH 1 @ SURFACE (H903707-01)

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	10/31/2019	ND	1.92	95.8	2.00	4.21		
Toluene*	<0.050	0.050	10/31/2019	ND	1.92	95.8	2.00	3.85		
Ethylbenzene*	<0.050	0.050	10/31/2019	ND	1.95	97.4	2.00	3.06		
Total Xylenes*	<0.150	0.150	10/31/2019	ND	5.81	96.8	6.00	2.72		
Total BTEX	<0.300	0.300	10/31/2019	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	
Chloride	<16.0	16.0	11/01/2019	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	10/31/2019	ND	220	110	200	1.67		
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89		
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 118 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: NH 1 @ 1' (H903707-02)

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	10/31/2019	ND	1.92	95.8	2.00	4.21	
Toluene*	<0.050	0.050	10/31/2019	ND	1.92	95.8	2.00	3.85	
Ethylbenzene*	<0.050	0.050	10/31/2019	ND	1.95	97.4	2.00	3.06	
Total Xylenes*	<0.150	0.150	10/31/2019	ND	5.81	96.8	6.00	2.72	
Total BTEX	<0.300	0.300	10/31/2019	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
Chloride	16.0	16.0	11/01/2019	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	10/31/2019	ND	220	110	200	1.67	
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 113 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: EH 1 @ SURFACE (H903707-03)

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	10/31/2019	ND	1.92	95.8	2.00	4.21		
Toluene*	<0.050	0.050	10/31/2019	ND	1.92	95.8	2.00	3.85		
Ethylbenzene*	<0.050	0.050	10/31/2019	ND	1.95	97.4	2.00	3.06		
Total Xylenes*	<0.150	0.150	10/31/2019	ND	5.81	96.8	6.00	2.72		
Total BTEX	<0.300	0.300	10/31/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.4 % 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	11/01/2019	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	10/31/2019	ND	220	110	200	1.67		
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89		
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 110 % 41-142

Surrogate: 1-Chlorooctadecane 114 % 37.6-147

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Analytical Results For:

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 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: EH 1 @ 1' (H903707-04)

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	10/31/2019	ND	1.92	95.8	2.00	4.21	
Toluene*	<0.050	0.050	10/31/2019	ND	1.92	95.8	2.00	3.85	
Ethylbenzene*	<0.050	0.050	10/31/2019	ND	1.95	97.4	2.00	3.06	
Total Xylenes*	<0.150	0.150	10/31/2019	ND	5.81	96.8	6.00	2.72	
Total BTEX	<0.300	0.300	10/31/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/01/2019	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	10/31/2019	ND	220	110	200	1.67	
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 114 % 41-142

Surrogate: 1-Chlorooctadecane 119 % 37.6-147

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Analytical Results For:

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 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: EH 2 @ SURFACE (H903707-05)

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	10/31/2019	ND	1.92	95.8	2.00	4.21	
Toluene*	<0.050	0.050	10/31/2019	ND	1.92	95.8	2.00	3.85	
Ethylbenzene*	<0.050	0.050	10/31/2019	ND	1.95	97.4	2.00	3.06	
Total Xylenes*	<0.150	0.150	10/31/2019	ND	5.81	96.8	6.00	2.72	
Total BTEX	<0.300	0.300	10/31/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 100 % 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	48.0	16.0	11/01/2019	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	10/31/2019	ND	220	110	200	1.67	
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 111 % 41-142

Surrogate: 1-Chlorooctadecane 117 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: EH 2 @ 1' (H903707-06)

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	11/01/2019	ND	1.59	79.5	2.00	6.17	
Toluene*	<0.050	0.050	11/01/2019	ND	1.49	74.6	2.00	2.15	
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.50	75.2	2.00	2.50	
Total Xylenes*	<0.150	0.150	11/01/2019	ND	4.60	76.7	6.00	1.29	
Total BTEX	<0.300	0.300	11/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 97.9 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	32.0	16.0	11/01/2019	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	10/31/2019	ND	220	110	200	1.67	
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 108 % 41-142

Surrogate: 1-Chlorooctadecane 113 % 37.6-147

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 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: WH 1 @ SURFACE (H903707-07)

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	11/01/2019	ND	1.59	79.5	2.00	6.17	
Toluene*	<0.050	0.050	11/01/2019	ND	1.49	74.6	2.00	2.15	
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.50	75.2	2.00	2.50	
Total Xylenes*	<0.150	0.150	11/01/2019	ND	4.60	76.7	6.00	1.29	
Total BTEX	<0.300	0.300	11/01/2019	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
Chloride	80.0	16.0	11/01/2019	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	10/31/2019	ND	220	110	200	1.67	
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	221	111	200	1.89	
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 116 % 41-142

Surrogate: 1-Chlorooctadecane 123 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
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 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: WH 1 @ 1' (H903707-08)

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	11/01/2019	ND	1.59	79.5	2.00	6.17	
Toluene*	<0.050	0.050	11/01/2019	ND	1.49	74.6	2.00	2.15	
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.50	75.2	2.00	2.50	
Total Xylenes*	<0.150	0.150	11/01/2019	ND	4.60	76.7	6.00	1.29	
Total BTEX	<0.300	0.300	11/01/2019	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
Chloride	304	16.0	11/01/2019	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	10/31/2019	ND	215	108	200	1.46	
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	203	102	200	5.41	
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 101 % 41-142

Surrogate: 1-Chlorooctadecane 101 % 37.6-147

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Analytical Results For:

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 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: V 2 @ SURFACE (H903707-09)

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	11/01/2019	ND	1.59	79.5	2.00	6.17	
Toluene*	<0.050	0.050	11/01/2019	ND	1.49	74.6	2.00	2.15	
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.50	75.2	2.00	2.50	
Total Xylenes*	<0.150	0.150	11/01/2019	ND	4.60	76.7	6.00	1.29	
Total BTEX	<0.300	0.300	11/01/2019	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
Chloride	2920	16.0	11/01/2019	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	
GRO C6-C10*	13.9	10.0	10/31/2019	ND	215	108	200	1.46		
DRO >C10-C28*	3550	10.0	10/31/2019	ND	203	102	200	5.41		
EXT DRO >C28-C36	821	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 97.1 % 41-142

Surrogate: 1-Chlorooctadecane 199 % 37.6-147

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Analytical Results For:

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 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: V 2 @ 2.5' (H903707-10)

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	11/01/2019	ND	1.59	79.5	2.00	6.17	
Toluene*	<0.050	0.050	11/01/2019	ND	1.49	74.6	2.00	2.15	
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.50	75.2	2.00	2.50	
Total Xylenes*	<0.150	0.150	11/01/2019	ND	4.60	76.7	6.00	1.29	
Total BTEX	<0.300	0.300	11/01/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 98.1 % 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	2360	16.0	11/01/2019	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	10/31/2019	ND	215	108	200	1.46	
DRO >C10-C28*	427	10.0	10/31/2019	ND	203	102	200	5.41	
EXT DRO >C28-C36	74.8	10.0	10/31/2019	ND					

Surrogate: 1-Chlorooctane 98.3 % 41-142

Surrogate: 1-Chlorooctadecane 115 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: SH 1e @ SURFACE (H903707-11)

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	11/01/2019	ND	1.59	79.5	2.00	6.17		
Toluene*	<0.050	0.050	11/01/2019	ND	1.49	74.6	2.00	2.15		
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.50	75.2	2.00	2.50		
Total Xylenes*	<0.150	0.150	11/01/2019	ND	4.60	76.7	6.00	1.29		
Total BTEX	<0.300	0.300	11/01/2019	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	
Chloride	432	16.0	11/01/2019	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	10/31/2019	ND	215	108	200	1.46		
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	203	102	200	5.41		
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 82.4 % 41-142

Surrogate: 1-Chlorooctadecane 84.2 % 37.6-147

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*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: SH 1e @ 1' (H903707-12)

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	11/01/2019	ND	1.91	95.6	2.00	3.05		
Toluene*	<0.050	0.050	11/01/2019	ND	1.91	95.4	2.00	2.45		
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.95	97.5	2.00	2.26		
Total Xylenes*	<0.150	0.150	11/01/2019	ND	5.83	97.2	6.00	2.37		
Total BTEX	<0.300	0.300	11/01/2019	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	
Chloride	240	16.0	11/01/2019	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	10/31/2019	ND	215	108	200	1.46		
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	203	102	200	5.41		
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 91.1 % 41-142

Surrogate: 1-Chlorooctadecane 93.5 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: SH 2d @ SURFACE (H903707-13)

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	11/01/2019	ND	1.91	95.6	2.00	3.05		
Toluene*	<0.050	0.050	11/01/2019	ND	1.91	95.4	2.00	2.45		
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.95	97.5	2.00	2.26		
Total Xylenes*	<0.150	0.150	11/01/2019	ND	5.83	97.2	6.00	2.37		
Total BTEX	<0.300	0.300	11/01/2019	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	
Chloride	512	16.0	11/01/2019	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	10/31/2019	ND	215	108	200	1.46		
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	203	102	200	5.41		
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 85.7 % 41-142

Surrogate: 1-Chlorooctadecane 88.0 % 37.6-147

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Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	10/30/2019	Sampling Date:	10/28/2019
Reported:	11/04/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: SH 2d @ 1' (H903707-14)

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	11/01/2019	ND	1.91	95.6	2.00	3.05		
Toluene*	<0.050	0.050	11/01/2019	ND	1.91	95.4	2.00	2.45		
Ethylbenzene*	<0.050	0.050	11/01/2019	ND	1.95	97.5	2.00	2.26		
Total Xylenes*	<0.150	0.150	11/01/2019	ND	5.83	97.2	6.00	2.37		
Total BTEX	<0.300	0.300	11/01/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 99.6 % 73.3-129

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	592	16.0	11/01/2019	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	10/31/2019	ND	215	108	200	1.46		
DRO >C10-C28*	<10.0	10.0	10/31/2019	ND	203	102	200	5.41		
EXT DRO >C28-C36	<10.0	10.0	10/31/2019	ND						

Surrogate: 1-Chlorooctane 98.2 % 41-142

Surrogate: 1-Chlorooctadecane 100 % 37.6-147

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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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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.	P.O. #:	BILL TO	ANALYSIS REQUEST
Project Manager: Joel Lowry	Company: Concho		
Address: P.O. Box 301	Attn:		
City: Lovington	Address:		
State: NM	City:		
Zip: 88260	State:		
Phone #: (575) 396-2378	Fax #: (575) 396-1429		
Project #: 11420	Project Owner: Concho		
Project Name: Red Raider BKS St. #001	Zip:		
Project Location: Rural Lea	Phone #:		
Sampler Name: Hayden Scott	Fax #:		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			DATE	TIME	Chloride	TPH (8015M)	BTEX (8021B)
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :	ACID/BASE:	ICE / COOL	OTHER :					
#1903707																	
1	NH1 @ Surface	g	1	X									10/28/19	10:12	X	X	X
2	NH1 @ 1'	g	1	X									10/28/19	10:15	X	X	X
3	EH1 @ Surface	g	1	X									10/28/19	10:21	X	X	X
4	EH1 @ 1'	g	1	X									10/28/19	10:24	X	X	X
5	EH2 @ Surface	g	1	X									10/28/19	10:45	X	X	X
6	EH2 @ 1'	g	1	X									10/28/19	10:51	X	X	X
7	WH1 @ Surface	g	1	X									10/28/19	10:34	X	X	X
8	WH1 @ 1'	g	1	X									10/28/19	10:36	X	X	X
9	V2 @ Surface	g	1	X									10/28/19	11:20	X	X	X
10	V2 @ 2.5' NT	g	1	X									10/28/19	13:25	X	X	X

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Relinquished By: <i>[Signature]</i>	Date: 10-30-19	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #:
Relinquished By: <i>[Signature]</i>	Time: 14:30	Received By: <i>[Signature]</i>	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #:
Date:	Time:	Date:	REMARKS:	

Delivered By: (Circle One) <i>0.42</i>	#97	CHECKED BY: <i>[Signature]</i>
Sampler - UPS - Bus - Other: <i>Consent 10/28/19</i>	Sample Condition	
	<input type="checkbox"/> Cool <input type="checkbox"/> Intact	
	<input type="checkbox"/> Yes <input type="checkbox"/> No	

FORM-006
 Revision 1.0
 † Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476
 Please email results to joel@etechnv.com

81 jo 81 egaD



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: Etech Environmental & Safety Solutions, Inc.	P.O. #:	BILL TO
Project Manager: Joel Lowry	Company: Concho	ANALYSIS REQUEST
Address: P.O. Box 301	Attn:	
City: Lovington	Address:	
Phone #: (575) 396-2378	City:	
Fax #: (575) 396-1429	State:	
Project #: 11420	Zip:	
Project Name: Red Raider BKS St. #001		
Project Location: Rural Lea		
Sampler Name: Hayden Scott		

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Chloride	TPH (8015M)	BTEX (8021B)
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
#903707	11 SH1e @ Surface		1			X				10/28/19	13:31	X	X	X
	12 SH1e @ 1'		1			X				10/28/19	13:40	X	X	X
	13 SH2d @ Surface		1			X				10/28/19	12:50	X	X	X
	14 SH2d @ 1'		1			X				10/28/19	13:05	X	X	X

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Relinquished By: [Signature]	Date: 10-30-19	Received By: [Signature]	Date: 10-30-19
Relinquished By: [Signature]	Date: 10-30-19	Received By: [Signature]	Date: 10-30-19

Delivered By: (Circle One) <u>D.42</u>	Sample Condition	CHECKED BY:
Sampler - UPS - Bus - Other: <u>Estimated 0.82</u>	Cool <input checked="" type="checkbox"/> Intact <input checked="" type="checkbox"/>	(Initials) <u>YS</u>
	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	

FORM-006
 Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

Please email results to joel@etechnv.com

Phone Result: Yes No **Add'l Phone #:**

Fax Result: Yes No **Add'l Fax #:**

REMARKS:



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

December 09, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: RED RAIDER BKS ST. #001

Enclosed are the results of analyses for samples received by the laboratory on 12/04/19 16:45.

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

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

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

Cardinal Laboratories is accredited through the State of New Mexico Environment Department for:

Method SM 9223-B	Total Coliform and E. coli (Colilert MMO-MUG)
Method EPA 524.2	Regulated VOCs and Total Trihalomethanes (TTHM)
Method EPA 552.2	Total Haloacetic Acids (HAA-5)

Accreditation applies to public drinking water matrices for State of Colorado and New Mexico.

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



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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RED RAIDER BKS ST. #001
Project Number: 11420
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
09-Dec-19 14:15

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
V2 @ 10.5'	H904066-01	Soil	03-Dec-19 10:30	04-Dec-19 16:45
V2 @ 7'	H904066-02	Soil	03-Dec-19 10:45	04-Dec-19 16:45
V2 @ 5'	H904066-03	Soil	03-Dec-19 11:00	04-Dec-19 16:45

Joel revised the sample ID for -01. This is the revised report and will replace the one sent on 12/06/19.

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Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RED RAIDER BKS ST. #001
Project Number: 11420
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
09-Dec-19 14:15

V2 @ 10.5'
H904066-01 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	448		16.0	mg/kg	4	9120504	AC	05-Dec-19	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9120508	MS	06-Dec-19	8021B	

Surrogate: 4-Bromofluorobenzene (PID)			106 %		73.3-129	9120508	MS	06-Dec-19	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	

Surrogate: 1-Chlorooctane			101 %		41-142	9120507	MS	06-Dec-19	8015B	
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Surrogate: 1-Chlorooctadecane			106 %		37.6-147	9120507	MS	06-Dec-19	8015B	
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* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RED RAIDER BKS ST. #001 Project Number: 11420 Project Manager: SHELDON HITCHCOCK Fax To: NONE	Reported: 09-Dec-19 14:15
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V2 @ 7'

H904066-02 (Soil)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories

Inorganic Compounds

Chloride	736		16.0	mg/kg	4	9120504	AC	05-Dec-19	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9120508	MS	06-Dec-19	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			102 %	73.3-129		9120508	MS	06-Dec-19	8021B	
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Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	

<i>Surrogate: 1-Chlorooctane</i>			103 %	41-142		9120507	MS	06-Dec-19	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			108 %	37.6-147		9120507	MS	06-Dec-19	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RED RAIDER BKS ST. #001
Project Number: 11420
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
09-Dec-19 14:15

V2 @ 5'**H904066-03 (Soil)**

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Batch	Analyst	Analyzed	Method	Notes
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Cardinal Laboratories**Inorganic Compounds**

Chloride	1070		16.0	mg/kg	4	9120504	AC	05-Dec-19	4500-Cl-B	
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Volatile Organic Compounds by EPA Method 8021

Benzene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Toluene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Ethylbenzene*	<0.050		0.050	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Total Xylenes*	<0.150		0.150	mg/kg	50	9120508	MS	06-Dec-19	8021B	
Total BTEX	<0.300		0.300	mg/kg	50	9120508	MS	06-Dec-19	8021B	

<i>Surrogate: 4-Bromofluorobenzene (PID)</i>			100 %	73.3-129		9120508	MS	06-Dec-19	8021B	
--	--	--	-------	----------	--	---------	----	-----------	-------	--

Petroleum Hydrocarbons by GC FID

GRO C6-C10*	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	
DRO >C10-C28*	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	
EXT DRO >C28-C36	<10.0		10.0	mg/kg	1	9120507	MS	06-Dec-19	8015B	

<i>Surrogate: 1-Chlorooctane</i>			99.0 %	41-142		9120507	MS	06-Dec-19	8015B	
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<i>Surrogate: 1-Chlorooctadecane</i>			103 %	37.6-147		9120507	MS	06-Dec-19	8015B	
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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING P. O. BOX 1630 ARTESIA NM, 88210	Project: RED RAIDER BKS ST. #001 Project Number: 11420 Project Manager: SHELDON HITCHCOCK Fax To: NONE	Reported: 09-Dec-19 14:15
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Inorganic Compounds - Quality Control

Cardinal Laboratories

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 9120504 - 1:4 DI Water										
Blank (9120504-BLK1)										
Prepared & Analyzed: 05-Dec-19										
Chloride	ND	16.0	mg/kg							
LCS (9120504-BS1)										
Prepared & Analyzed: 05-Dec-19										
Chloride	416	16.0	mg/kg	400		104	80-120			
LCS Dup (9120504-BSD1)										
Prepared & Analyzed: 05-Dec-19										
Chloride	416	16.0	mg/kg	400		104	80-120	0.00	20	

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Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RED RAIDER BKS ST. #001
Project Number: 11420
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
09-Dec-19 14:15

Volatile Organic Compounds by EPA Method 8021 - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9120508 - Volatiles**Blank (9120508-BLK1)**

Prepared & Analyzed: 05-Dec-19

Benzene	ND	0.050	mg/kg							
Toluene	ND	0.050	mg/kg							
Ethylbenzene	ND	0.050	mg/kg							
Total Xylenes	ND	0.150	mg/kg							
Total BTEX	ND	0.300	mg/kg							
Surrogate: 4-Bromofluorobenzene (PID)	ND		mg/kg	0.0500		99.8	73.3-129			

LCS (9120508-BS1)

Prepared & Analyzed: 05-Dec-19

Benzene	1.92	0.050	mg/kg	2.00		95.9	72.2-131			
Toluene	1.85	0.050	mg/kg	2.00		92.3	71.7-126			
Ethylbenzene	1.88	0.050	mg/kg	2.00		93.9	68.9-126			
Total Xylenes	5.67	0.150	mg/kg	6.00		94.5	71.4-125			
Surrogate: 4-Bromofluorobenzene (PID)	0.0503		mg/kg	0.0500		101	73.3-129			

LCS Dup (9120508-BSD1)

Prepared & Analyzed: 05-Dec-19

Benzene	1.97	0.050	mg/kg	2.00		98.5	72.2-131	2.67	14.6	
Toluene	1.91	0.050	mg/kg	2.00		95.4	71.7-126	3.27	17.4	
Ethylbenzene	1.93	0.050	mg/kg	2.00		96.6	68.9-126	2.89	18.9	
Total Xylenes	5.84	0.150	mg/kg	6.00		97.4	71.4-125	3.06	18.5	
Surrogate: 4-Bromofluorobenzene (PID)	0.0507		mg/kg	0.0500		101	73.3-129			

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Celey D. Keene, Lab Director/Quality Manager



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Analytical Results For:

COG OPERATING
P. O. BOX 1630
ARTESIA NM, 88210

Project: RED RAIDER BKS ST. #001
Project Number: 11420
Project Manager: SHELDON HITCHCOCK
Fax To: NONE

Reported:
09-Dec-19 14:15

Petroleum Hydrocarbons by GC FID - Quality Control**Cardinal Laboratories**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 9120507 - General Prep - Organics**Blank (9120507-BLK1)**

Prepared: 05-Dec-19 Analyzed: 06-Dec-19

GRO C6-C10	ND	10.0	mg/kg							
DRO >C10-C28	ND	10.0	mg/kg							
EXT DRO >C28-C36	ND	10.0	mg/kg							
Surrogate: 1-Chlorooctane	61.1		mg/kg	50.0		122	41-142			
Surrogate: 1-Chlorooctadecane	65.1		mg/kg	50.0		130	37.6-147			

LCS (9120507-BS1)

Prepared & Analyzed: 05-Dec-19

GRO C6-C10	202	10.0	mg/kg	200		101	76.5-133			
DRO >C10-C28	209	10.0	mg/kg	200		104	72.9-138			
Total TPH C6-C28	410	10.0	mg/kg	400		103	78-132			
Surrogate: 1-Chlorooctane	67.6		mg/kg	50.0		135	41-142			
Surrogate: 1-Chlorooctadecane	69.0		mg/kg	50.0		138	37.6-147			

LCS Dup (9120507-BSD1)

Prepared & Analyzed: 05-Dec-19

GRO C6-C10	206	10.0	mg/kg	200		103	76.5-133	2.35	20.6	
DRO >C10-C28	203	10.0	mg/kg	200		102	72.9-138	2.66	20.6	
Total TPH C6-C28	409	10.0	mg/kg	400		102	78-132	0.163	18	
Surrogate: 1-Chlorooctane	68.0		mg/kg	50.0		136	41-142			
Surrogate: 1-Chlorooctadecane	71.1		mg/kg	50.0		142	37.6-147			

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Notes and Definitions

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

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Celey D. Keene

Celey D. Keene, Lab Director/Quality Manager



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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

BILL TO

ANALYSIS REQUEST

Company Name: COG Operating, LLC
 Project Manager: 0
 Address: 3100 Plains Hwy
 City: Lovington State: NM Zip: 88260
 Phone #: 575-396-2378 Fax #: 575-396-1429
 Project #: 11420 Project Owner: COG Operating, LLC
 Project Name: Red Raider BKS St. #001
 Project Location: UL / Sec TS - RE
 P.O. #: Company: COG
 Attn: CO Sheldon Hitchcock
 Address: City: State: Zip:
 Phone #: Fax #:

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	Chloride	TPH	BTEX 8021
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :					
HQ04066	V20 #54 10.5' *	A	1			X				10-19	16:30	X	X	X
	2 U2 @ 7'	A	1			X				10-19	10:45	X	X	X
	3 U2 @ 5'	A	1			X				10-19	11:00	X	X	X

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Relinquished By: [Signature] Date: 10/19/19 Time: 16:43
 Received By: [Signature] Date: 10/19/19 Time: 16:43
 Delivered By: (Circle One) 1.7? #197 Sample Condition: Intact
 Sampler - UPS - Bus - Other: Corrected 2.3? Yes No
 CHECKED BY: [Signature]
 REMARKS: Email results to #N/A
 * Sample ID revised as per Soel. 12/19/19



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

December 09, 2019

SHELDON HITCHCOCK

COG OPERATING

P. O. BOX 1630

ARTESIA, NM 88210

RE: RED RAIDER BKS ST. #001

Enclosed are the results of analyses for samples received by the laboratory on 12/04/19 16:45.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/03/2019
Reported:	12/09/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

Sample ID: V1 @ 2.5' (H904067-01)

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	12/06/2019	ND	1.92	95.9	2.00	2.67	
Toluene*	<0.050	0.050	12/06/2019	ND	1.85	92.3	2.00	3.27	
Ethylbenzene*	0.106	0.050	12/06/2019	ND	1.88	93.9	2.00	2.89	
Total Xylenes*	<0.150	0.150	12/06/2019	ND	5.67	94.5	6.00	3.06	GC-NC
Total BTEX	<0.300	0.300	12/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 123 % 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	64.0	16.0	12/05/2019	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	
GRO C6-C10*	40.2	10.0	12/06/2019	ND	202	101	200	2.35		
DRO >C10-C28*	4700	10.0	12/06/2019	ND	209	104	200	2.66		
EXT DRO >C28-C36	1260	10.0	12/06/2019	ND						

Surrogate: 1-Chlorooctane 103 % 41-142

Surrogate: 1-Chlorooctadecane 257 % 37.6-147

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Analytical Results For:

COG OPERATING
SHELDON HITCHCOCK
P. O. BOX 1630
ARTESIA NM, 88210
Fax To: NONE

Received:	12/04/2019	Sampling Date:	12/03/2019
Reported:	12/09/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

Sample ID: V1 @ 2' (H904067-02)

BTEX 8021B		mg/kg		Analyzed By: MS				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Benzene*	<0.050	0.050	12/06/2019	ND	1.92	95.9	2.00	2.67	
Toluene*	<0.050	0.050	12/06/2019	ND	1.85	92.3	2.00	3.27	
Ethylbenzene*	0.298	0.050	12/06/2019	ND	1.88	93.9	2.00	2.89	
Total Xylenes*	<0.150	0.150	12/06/2019	ND	5.67	94.5	6.00	3.06	GC-NC
Total BTEX	<0.300	0.300	12/06/2019	ND					

Surrogate: 4-Bromofluorobenzene (PID) 159 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC				S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
Chloride	64.0	16.0	12/05/2019	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
GRO C6-C10*	57.9	10.0	12/09/2019	ND	202	101	200	8.83	
DRO >C10-C28*	4150	10.0	12/09/2019	ND	217	109	200	1.54	
EXT DRO >C28-C36	1090	10.0	12/09/2019	ND					

Surrogate: 1-Chlorooctane 93.7 % 41-142

Surrogate: 1-Chlorooctadecane 202 % 37.6-147

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Notes and Definitions

- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
GC-NC 8260 confirmation analysis was performed; initial GC results were not supported by GC/MS analysis and are reported as ND.
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

Celey D. Keene, Lab Director/Quality Manager



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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Company Name: COG Operating, LLC Project Manager: 0 Address: 3100 Plains Hwy City: Lovington State: NM Zip: 88260 Phone #: 575-396-2378 Fax #: 575-396-1429 Project #: 11420 Project Owner: COG Operating, LLC Project Name: Red Raider BKS St. #001 Project Location: UL / Sec TS - RE Sampler Name:		P.O. #: _____ Company: COG Attn: CO Sheldon Hitchcock Address: _____ City: _____ State: _____ Zip: _____ Phone #: _____ Fax #: _____	
BILL TO		ANALYSIS REQUEST	
Lab I.D. #904057	Sample I.D. 2-VI@ 21	(G)RAB OR (C)OMP. # CONTAINERS GROUNDWATER WASTEWATER SOIL OIL SLUDGE OTHER : ACID/BASE: ICE / COOL OTHER :	DATE 12/3/19 12/3/19 TIME 10:00 10:45
Matrix: <input checked="" type="checkbox"/> GROUNDWATER <input type="checkbox"/> WASTEWATER <input type="checkbox"/> SOIL <input type="checkbox"/> OIL <input type="checkbox"/> SLUDGE Other: _____ Acid/Base: _____ Ice / Cool: _____ Other: _____		Chloride <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No TPH <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No BTEX 8021 <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: _____ Add'l Fax #: _____
Relinquished By: _____ Date: 12/11/19 Received By: _____ Date: 12/19/19 Time: 12:45 Remarks: Email results to #N/A			
Delivered By: (Circle One) 1.72 #477 Sampler - UPS - Bus - Other: <u>Conserved 2.32</u> Sample Condition: <input checked="" type="checkbox"/> Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Checked By: _____ (Initials)			

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† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



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

December 18, 2019

JOEL LOWRY

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: RED RAIDER BKS ST. #001

Enclosed are the results of analyses for samples received by the laboratory on 12/13/19 15:25.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	12/13/2019	Sampling Date:	12/12/2019
Reported:	12/18/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: VT1B @ 4.5' (H904183-01)

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	12/16/2019	ND	215	107	200	2.02	
DRO >C10-C28*	410	10.0	12/16/2019	ND	217	108	200	0.514	
EXT DRO >C28-C36	75.5	10.0	12/16/2019	ND					
<i>Surrogate: 1-Chlorooctane</i>	<i>99.7 %</i>	<i>41-142</i>							
<i>Surrogate: 1-Chlorooctadecane</i>	<i>119 %</i>	<i>37.6-147</i>							

Cardinal Laboratories

* = Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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

Celey D. Keene, Lab Director/Quality Manager



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

December 18, 2019

JOEL LOWRY

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: RED RAIDER BKS ST. #001

Enclosed are the results of analyses for samples received by the laboratory on 12/13/19 15:25.

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

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Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V1, V2, V3)

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

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

Etech Environmental & Safety Solutions
 JOEL LOWRY
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	12/13/2019	Sampling Date:	12/12/2019
Reported:	12/18/2019	Sampling Type:	Soil
Project Name:	RED RAIDER BKS ST. #001	Sampling Condition:	Cool & Intact
Project Number:	11420	Sample Received By:	Tamara Oldaker
Project Location:	CONCHO - LEA CO NM		

Sample ID: VT1B @ 5' R (H904182-01)

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	12/16/2019	ND	215	107	200	2.02	
DRO >C10-C28*	238	10.0	12/16/2019	ND	217	108	200	0.514	
EXT DRO >C28-C36	55.2	10.0	12/16/2019	ND					
<hr/>									
Surrogate: 1-Chlorooctane	97.6 %	41-142							
Surrogate: 1-Chlorooctadecane	121 %	37.6-147							

Cardinal Laboratories

*=Accredited Analyte

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Celey D. Keene, Lab Director/Quality Manager



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

Notes and Definitions

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

Cardinal Laboratories

*=Accredited Analyte

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A handwritten signature in cursive script, appearing to read "Celey D. Keene".

Celey D. Keene, Lab Director/Quality Manager



Certificate of Analysis Summary 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Project Name: Red Raider BKS ST#1 RP 5776

Project Id: 11420
Contact: Joel Lowry
Project Location: Rurla Lee

Date Received in Lab: Fri Feb-14-20 10:00 am
Report Date: 17-FEB-20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	652422-001	652422-002	652422-003	652422-004	652422-005	652422-006
	<i>Field Id:</i>	FL-1	FL-2	FL-3	FL-4	FL-5	FL-6
	<i>Depth:</i>	1.5- ft					
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-13-20 08:00	Feb-13-20 08:15	Feb-13-20 08:30	Feb-13-20 08:45	Feb-13-20 09:00	Feb-13-20 09:15
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-14-20 11:30					
	<i>Analyzed:</i>	Feb-14-20 15:22	Feb-14-20 15:43	Feb-14-20 16:03	Feb-14-20 16:23	Feb-14-20 16:44	Feb-14-20 17:04
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
Toluene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
Ethylbenzene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
m,p-Xylenes		<0.00398 0.00398	<0.00396 0.00396	<0.00401 0.00401	<0.00402 0.00402	<0.00401 0.00401	<0.00398 0.00398
o-Xylene		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
Total Xylenes		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
Total BTEX		<0.00199 0.00199	<0.00198 0.00198	<0.00200 0.00200	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199
Chloride by EPA 300	<i>Extracted:</i>	Feb-14-20 12:30					
	<i>Analyzed:</i>	Feb-14-20 13:31	Feb-14-20 13:47	Feb-14-20 13:53	Feb-14-20 13:58	Feb-14-20 14:04	Feb-14-20 14:20
	<i>Units/RL:</i>	mg/kg RL					
Chloride		648 9.96	580 9.96	672 9.94	718 9.88	683 9.96	615 9.94
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-14-20 11:00					
	<i>Analyzed:</i>	Feb-14-20 11:13	Feb-14-20 11:32	Feb-14-20 12:03	Feb-14-20 12:03	Feb-14-20 12:23	Feb-14-20 12:23
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.3 50.3
Diesel Range Organics (DRO)		<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.3 50.3
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.3 50.3
Total TPH		<50.0 50.0	<50.2 50.2	<50.1 50.1	<50.1 50.1	<50.3 50.3	<50.3 50.3

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Project Name: Red Raider BKS ST#1 RP 5776

Project Id: 11420
Contact: Joel Lowry
Project Location: Rurla Lee

Date Received in Lab: Fri Feb-14-20 10:00 am
Report Date: 17-FEB-20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	652422-007	652422-008	652422-009	652422-010	652422-011	652422-012
	<i>Field Id:</i>	FL-7	FL-8	NW-1	NW-2	EW-1	EW-2
	<i>Depth:</i>	1.5- ft					
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Feb-13-20 09:30	Feb-13-20 09:45	Feb-13-20 10:00	Feb-13-20 11:15	Feb-13-20 10:20	Feb-13-20 10:45
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-14-20 11:30					
	<i>Analyzed:</i>	Feb-14-20 17:25	Feb-14-20 17:45	Feb-14-20 18:05	Feb-14-20 18:26	Feb-14-20 19:27	Feb-14-20 19:47
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Toluene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Ethylbenzene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
m,p-Xylenes		<0.00402 0.00402	<0.00402 0.00402	<0.00402 0.00402	<0.00401 0.00401	<0.00401 0.00401	<0.00401 0.00401
o-Xylene		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total Xylenes		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Total BTEX		<0.00201 0.00201	<0.00201 0.00201	<0.00201 0.00201	<0.00200 0.00200	<0.00200 0.00200	<0.00200 0.00200
Chloride by EPA 300	<i>Extracted:</i>	Feb-14-20 12:30					
	<i>Analyzed:</i>	Feb-14-20 14:26	Feb-14-20 14:31	Feb-14-20 14:37	Feb-14-20 14:42	Feb-14-20 14:47	Feb-14-20 15:04
	<i>Units/RL:</i>	mg/kg RL					
Chloride		740 9.92	642 9.92	605 9.88	685 9.98	675 9.92	624 10.0
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-14-20 11:00					
	<i>Analyzed:</i>	Feb-14-20 12:43	Feb-14-20 12:43	Feb-14-20 17:41	Feb-14-20 17:41	Feb-14-20 18:41	Feb-14-20 13:42
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9
Diesel Range Organics (DRO)		<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9
Total TPH		<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9	<50.2 50.2	<49.9 49.9

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

Jessica Kramer
Project Assistant



Certificate of Analysis Summary 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Project Name: Red Raider BKS ST#1 RP 5776

Project Id: 11420
Contact: Joel Lowry
Project Location: Rurla Lee

Date Received in Lab: Fri Feb-14-20 10:00 am
Report Date: 17-FEB-20
Project Manager: Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	652422-013	652422-014	652422-015	652422-016		
	<i>Field Id:</i>	SW-1	SW-2	WW-1	WW-2		
	<i>Depth:</i>	1.5- ft	1.5- ft	1.5- ft	1.5- ft		
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Feb-13-20 11:00	Feb-13-20 11:15	Feb-13-20 11:20	Feb-13-20 11:45		
BTEX by EPA 8021B	<i>Extracted:</i>	Feb-14-20 11:30	Feb-14-20 11:30	Feb-14-20 11:30	Feb-14-20 11:30		
	<i>Analyzed:</i>	Feb-14-20 20:08	Feb-14-20 20:28	Feb-14-20 20:48	Feb-14-20 21:09		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201		
Toluene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201		
Ethylbenzene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201		
m,p-Xylenes		<0.00397 0.00397	<0.00402 0.00402	<0.00398 0.00398	<0.00402 0.00402		
o-Xylene		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201		
Total Xylenes		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201		
Total BTEX		<0.00198 0.00198	<0.00201 0.00201	<0.00199 0.00199	<0.00201 0.00201		
Chloride by EPA 300	<i>Extracted:</i>	Feb-14-20 12:30	Feb-14-20 12:30	Feb-14-20 12:30	Feb-14-20 12:30		
	<i>Analyzed:</i>	Feb-14-20 15:20	Feb-14-20 15:26	Feb-14-20 15:31	Feb-14-20 15:37		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		697 10.0	860 9.98	869 9.92	666 9.98		
TPH by SW8015 Mod	<i>Extracted:</i>	Feb-14-20 11:00	Feb-14-20 11:00	Feb-14-20 11:00	Feb-14-20 11:00		
	<i>Analyzed:</i>	Feb-14-20 13:42	Feb-14-20 14:02	Feb-14-20 14:02	Feb-14-20 14:21		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Gasoline Range Hydrocarbons (GRO)		<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9		
Diesel Range Organics (DRO)		<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9		
Motor Oil Range Hydrocarbons (MRO)		<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9		
Total TPH		<50.3 50.3	<50.2 50.2	<49.9 49.9	<49.9 49.9		

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Jessica Kramer
Project Assistant

Analytical Report 652422
for
Etech Environmental & Safety Solution, Inc

Project Manager: Joel Lowry

Red Raider BKS ST#1 RP 5776

11420

17-FEB-20

Collected By: Client



1089 N Canal Street
Carlsbad, NM 88220

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-19-30), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2019-058), North Carolina (681), Arkansas (19-037-0)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (TX104704295-19-22), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-19-16)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-19-21)
Xenco-Midland (EPA Lab Code: TX00158): Texas (T104704400-19-19)
Xenco-Carlsbad (LELAP): Louisiana (05092)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-19-5)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Tampa: Florida (E87429), North Carolina (483)



17-FEB-20

Project Manager: **Joel Lowry**
Etech Environmental & Safety Solution, Inc
P.O. Box 62228
Midland, TX 79711

Reference: XENCO Report No(s): **652422**
Red Raider BKS ST#1 RP 5776
Project Address: Rurla Lee

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 652422. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 652422 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Jessica Kramer
Project Assistant

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**Sample Cross Reference 652422****Etech Environmental & Safety Solution, Inc, Midland, TX**

Red Raider BKS ST#1 RP 5776

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
FL-1	S	02-13-20 08:00	1.5 ft	652422-001
FL-2	S	02-13-20 08:15	1.5 ft	652422-002
FL-3	S	02-13-20 08:30	1.5 ft	652422-003
FL-4	S	02-13-20 08:45	1.5 ft	652422-004
FL-5	S	02-13-20 09:00	1.5 ft	652422-005
FL-6	S	02-13-20 09:15	1.5 ft	652422-006
FL-7	S	02-13-20 09:30	1.5 ft	652422-007
FL-8	S	02-13-20 09:45	1.5 ft	652422-008
NW-1	S	02-13-20 10:00	1.5 ft	652422-009
NW-2	S	02-13-20 11:15	1.5 ft	652422-010
EW-1	S	02-13-20 10:20	1.5 ft	652422-011
EW-2	S	02-13-20 10:45	1.5 ft	652422-012
SW-1	S	02-13-20 11:00	1.5 ft	652422-013
SW-2	S	02-13-20 11:15	1.5 ft	652422-014
WW-1	S	02-13-20 11:20	1.5 ft	652422-015
WW-2	S	02-13-20 11:45	1.5 ft	652422-016



CASE NARRATIVE

Client Name: Etech Environmental & Safety Solution, Inc

Project Name: Red Raider BKS ST#1 RP 5776

Project ID: 11420
Work Order Number(s): 652422

Report Date: 17-FEB-20
Date Received: 02/14/2020

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3116659 BTEX by EPA 8021B

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



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-001	Date Collected: 02.13.20 08.00	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	648	9.96	mg/kg	02.14.20 13.31		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	02.14.20 11.13	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	02.14.20 11.13	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	02.14.20 11.13	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	02.14.20 11.13	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	94	%	70-135	02.14.20 11.13	
o-Terphenyl	84-15-1	107	%	70-135	02.14.20 11.13	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-001	Date Collected: 02.13.20 08.00	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.14.20 15.22	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.14.20 15.22	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.14.20 15.22	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.14.20 15.22	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.14.20 15.22	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.14.20 15.22	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.14.20 15.22	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	123		%	70-130	02.14.20 15.22	
1,4-Difluorobenzene	540-36-3	103		%	70-130	02.14.20 15.22	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-002	Date Collected: 02.13.20 08.15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	580	9.96	mg/kg	02.14.20 13.47		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.14.20 11.32	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.14.20 11.32	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.14.20 11.32	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.14.20 11.32	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.14.20 11.32	
o-Terphenyl	84-15-1	106	%	70-135	02.14.20 11.32	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-002	Date Collected: 02.13.20 08.15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.14.20 15.43	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.14.20 15.43	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.14.20 15.43	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	02.14.20 15.43	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.14.20 15.43	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.14.20 15.43	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.14.20 15.43	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96		%	70-130	02.14.20 15.43	
1,4-Difluorobenzene	540-36-3	105		%	70-130	02.14.20 15.43	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-3	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-003	Date Collected: 02.13.20 08.30	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	672	9.94	mg/kg	02.14.20 13.53		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.14.20 12.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.14.20 12.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.14.20 12.03	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.14.20 12.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.14.20 12.03	
o-Terphenyl	84-15-1	105	%	70-135	02.14.20 12.03	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-3	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-003	Date Collected: 02.13.20 08.30	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.14.20 16.03	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.14.20 16.03	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.14.20 16.03	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.14.20 16.03	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.14.20 16.03	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.14.20 16.03	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.14.20 16.03	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.14.20 16.03		
4-Bromofluorobenzene	460-00-4	95	%	70-130	02.14.20 16.03		



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-4	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-004	Date Collected: 02.13.20 08.45	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	718	9.88	mg/kg	02.14.20 13.58		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.1	50.1	mg/kg	02.14.20 12.03	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.1	50.1	mg/kg	02.14.20 12.03	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.1	50.1	mg/kg	02.14.20 12.03	U	1
Total TPH	PHC635	<50.1	50.1	mg/kg	02.14.20 12.03	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.14.20 12.03	
o-Terphenyl	84-15-1	103	%	70-135	02.14.20 12.03	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-4	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-004	Date Collected: 02.13.20 08.45	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.14.20 16.23	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.14.20 16.23	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.14.20 16.23	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.14.20 16.23	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.14.20 16.23	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.14.20 16.23	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.14.20 16.23	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96		%	70-130	02.14.20 16.23	
1,4-Difluorobenzene	540-36-3	105		%	70-130	02.14.20 16.23	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-5	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-005	Date Collected: 02.13.20 09.00	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	683	9.96	mg/kg	02.14.20 14.04		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.14.20 12.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.14.20 12.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.14.20 12.23	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.14.20 12.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.14.20 12.23	
o-Terphenyl	84-15-1	101	%	70-135	02.14.20 12.23	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-5	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-005	Date Collected: 02.13.20 09.00	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.14.20 16.44	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.14.20 16.44	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.14.20 16.44	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.14.20 16.44	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.14.20 16.44	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.14.20 16.44	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.14.20 16.44	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.14.20 16.44		
4-Bromofluorobenzene	460-00-4	98	%	70-130	02.14.20 16.44		



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-6	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-006	Date Collected: 02.13.20 09.15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	615	9.94	mg/kg	02.14.20 14.20		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.14.20 12.23	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.14.20 12.23	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.14.20 12.23	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.14.20 12.23	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.14.20 12.23	
o-Terphenyl	84-15-1	103	%	70-135	02.14.20 12.23	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-6	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-006	Date Collected: 02.13.20 09.15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.14.20 17.04	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.14.20 17.04	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.14.20 17.04	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.14.20 17.04	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.14.20 17.04	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.14.20 17.04	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.14.20 17.04	U	1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.14.20 17.04		
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.14.20 17.04		



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-7	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-007	Date Collected: 02.13.20 09.30	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	740	9.92	mg/kg	02.14.20 14.26		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.14.20 12.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.14.20 12.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.14.20 12.43	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.14.20 12.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.14.20 12.43	
o-Terphenyl	84-15-1	103	%	70-135	02.14.20 12.43	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-7	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-007	Date Collected: 02.13.20 09.30	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.14.20 17.25	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.14.20 17.25	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.14.20 17.25	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.14.20 17.25	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.14.20 17.25	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.14.20 17.25	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.14.20 17.25	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	104		%	70-130	02.14.20 17.25	
4-Bromofluorobenzene	460-00-4	94		%	70-130	02.14.20 17.25	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-8	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-008	Date Collected: 02.13.20 09.45	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	642	9.92	mg/kg	02.14.20 14.31		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.14.20 12.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.14.20 12.43	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.14.20 12.43	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.14.20 12.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	02.14.20 12.43	
o-Terphenyl	84-15-1	102	%	70-135	02.14.20 12.43	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: FL-8	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-008	Date Collected: 02.13.20 09.45	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.14.20 17.45	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.14.20 17.45	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.14.20 17.45	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.14.20 17.45	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.14.20 17.45	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.14.20 17.45	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.14.20 17.45	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.14.20 17.45		
4-Bromofluorobenzene	460-00-4	94	%	70-130	02.14.20 17.45		



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: NW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-009	Date Collected: 02.13.20 10.00	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	605	9.88	mg/kg	02.14.20 14.37		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.14.20 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.14.20 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.14.20 17.41	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.14.20 17.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.14.20 17.41	
o-Terphenyl	84-15-1	114	%	70-135	02.14.20 17.41	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: NW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-009	Date Collected: 02.13.20 10.00	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.14.20 18.05	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.14.20 18.05	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.14.20 18.05	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.14.20 18.05	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.14.20 18.05	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.14.20 18.05	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.14.20 18.05	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	98		%	70-130	02.14.20 18.05	
1,4-Difluorobenzene	540-36-3	105		%	70-130	02.14.20 18.05	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: NW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-010	Date Collected: 02.13.20 11.15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	685	9.98	mg/kg	02.14.20 14.42		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.14.20 17.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.14.20 17.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.14.20 17.41	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.14.20 17.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	02.14.20 17.41	
o-Terphenyl	84-15-1	111	%	70-135	02.14.20 17.41	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: NW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-010	Date Collected: 02.13.20 11.15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.14.20 18.26	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.14.20 18.26	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.14.20 18.26	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.14.20 18.26	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.14.20 18.26	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.14.20 18.26	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.14.20 18.26	U	1
Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	105	%	70-130	02.14.20 18.26		
4-Bromofluorobenzene	460-00-4	97	%	70-130	02.14.20 18.26		



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: EW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-011	Date Collected: 02.13.20 10.20	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	675	9.92	mg/kg	02.14.20 14.47		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.14.20 18.41	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.14.20 18.41	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.14.20 18.41	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.14.20 18.41	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.14.20 18.41	
o-Terphenyl	84-15-1	118	%	70-135	02.14.20 18.41	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: EW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-011	Date Collected: 02.13.20 10.20	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.14.20 19.27	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.14.20 19.27	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.14.20 19.27	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.14.20 19.27	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.14.20 19.27	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.14.20 19.27	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.14.20 19.27	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	94		%	70-130	02.14.20 19.27	
1,4-Difluorobenzene	540-36-3	105		%	70-130	02.14.20 19.27	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: EW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-012	Date Collected: 02.13.20 10.45	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	624	10.0	mg/kg	02.14.20 15.04		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.14.20 13.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.14.20 13.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.14.20 13.42	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.14.20 13.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	91	%	70-135	02.14.20 13.42	
o-Terphenyl	84-15-1	101	%	70-135	02.14.20 13.42	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: EW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-012	Date Collected: 02.13.20 10.45	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	02.14.20 19.47	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	02.14.20 19.47	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	02.14.20 19.47	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	02.14.20 19.47	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	02.14.20 19.47	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	02.14.20 19.47	U	1
Total BTEX		<0.00200	0.00200	mg/kg	02.14.20 19.47	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99		%	70-130	02.14.20 19.47	
1,4-Difluorobenzene	540-36-3	106		%	70-130	02.14.20 19.47	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: SW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-013	Date Collected: 02.13.20 11.00	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	697	10.0	mg/kg	02.14.20 15.20		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.3	50.3	mg/kg	02.14.20 13.42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.3	50.3	mg/kg	02.14.20 13.42	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.3	50.3	mg/kg	02.14.20 13.42	U	1
Total TPH	PHC635	<50.3	50.3	mg/kg	02.14.20 13.42	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.14.20 13.42	
o-Terphenyl	84-15-1	101	%	70-135	02.14.20 13.42	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: SW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-013	Date Collected: 02.13.20 11.00	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	02.14.20 20.08	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	02.14.20 20.08	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	02.14.20 20.08	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	02.14.20 20.08	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	02.14.20 20.08	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	02.14.20 20.08	U	1
Total BTEX		<0.00198	0.00198	mg/kg	02.14.20 20.08	U	1
			%				
Surrogate	Cas Number	Recovery	Units	Limits	Analysis Date	Flag	
1,4-Difluorobenzene	540-36-3	104	%	70-130	02.14.20 20.08		
4-Bromofluorobenzene	460-00-4	96	%	70-130	02.14.20 20.08		



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: SW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-014	Date Collected: 02.13.20 11.15	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	860	9.98	mg/kg	02.14.20 15.26		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.2	50.2	mg/kg	02.14.20 14.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.2	50.2	mg/kg	02.14.20 14.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.2	50.2	mg/kg	02.14.20 14.02	U	1
Total TPH	PHC635	<50.2	50.2	mg/kg	02.14.20 14.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.14.20 14.02	
o-Terphenyl	84-15-1	106	%	70-135	02.14.20 14.02	



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Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: SW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-014	Date Collected: 02.13.20 11.15	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.14.20 20.28	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.14.20 20.28	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.14.20 20.28	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.14.20 20.28	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.14.20 20.28	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.14.20 20.28	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.14.20 20.28	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99		%	70-130	02.14.20 20.28	
1,4-Difluorobenzene	540-36-3	104		%	70-130	02.14.20 20.28	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: WW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-015	Date Collected: 02.13.20 11.20	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	869	9.92	mg/kg	02.14.20 15.31		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.14.20 14.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.14.20 14.02	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.14.20 14.02	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.14.20 14.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.14.20 14.02	
o-Terphenyl	84-15-1	101	%	70-135	02.14.20 14.02	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: WW-1	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-015	Date Collected: 02.13.20 11.20	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.14.20 20.48	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.14.20 20.48	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.14.20 20.48	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.14.20 20.48	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.14.20 20.48	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	02.14.20 20.48	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.14.20 20.48	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	96		%	70-130	02.14.20 20.48	
1,4-Difluorobenzene	540-36-3	105		%	70-130	02.14.20 20.48	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: WW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-016	Date Collected: 02.13.20 11.45	Sample Depth: 1.5 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 12.30	Basis: Wet Weight
Seq Number: 3116671		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	666	9.98	mg/kg	02.14.20 15.37		1

Analytical Method: TPH by SW8015 Mod		Prep Method: SW8015P
Tech: DTH		% Moisture:
Analyst: DTH	Date Prep: 02.14.20 11.00	Basis: Wet Weight
Seq Number: 3116625		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	02.14.20 14.21	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	02.14.20 14.21	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	02.14.20 14.21	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	02.14.20 14.21	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	93	%	70-135	02.14.20 14.21	
o-Terphenyl	84-15-1	101	%	70-135	02.14.20 14.21	



Certificate of Analytical Results 652422

Etech Environmental & Safety Solution, Inc, Midland, TX

Red Raider BKS ST#1 RP 5776

Sample Id: WW-2	Matrix: Soil	Date Received: 02.14.20 10.00
Lab Sample Id: 652422-016	Date Collected: 02.13.20 11.45	Sample Depth: 1.5 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: MAB		% Moisture:
Analyst: MAB	Date Prep: 02.14.20 11.30	Basis: Wet Weight
Seq Number: 3116659		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.14.20 21.09	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.14.20 21.09	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.14.20 21.09	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	02.14.20 21.09	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	02.14.20 21.09	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	02.14.20 21.09	U	1
Total BTEX		<0.00201	0.00201	mg/kg	02.14.20 21.09	U	1
Surrogate	Cas Number	% Recovery		Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	106		%	70-130	02.14.20 21.09	
4-Bromofluorobenzene	460-00-4	98		%	70-130	02.14.20 21.09	



Etech Environmental & Safety Solution, Inc

Red Raider BKS ST#1 RP 5776

Analytical Method: Chloride by EPA 300

Seq Number: 3116671

MB Sample Id: 7696715-1-BLK

Matrix: Solid

LCS Sample Id: 7696715-1-BKS

Prep Method: E300P

Date Prep: 02.14.20

LCSD Sample Id: 7696715-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<10.0	250	258	103	259	104	90-110	0	20	mg/kg	02.14.20 13:20	

Analytical Method: Chloride by EPA 300

Seq Number: 3116671

Parent Sample Id: 652422-001

Matrix: Soil

MS Sample Id: 652422-001 S

Prep Method: E300P

Date Prep: 02.14.20

MSD Sample Id: 652422-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	648	199	850	102	863	108	90-110	2	20	mg/kg	02.14.20 13:36	

Analytical Method: Chloride by EPA 300

Seq Number: 3116671

Parent Sample Id: 652422-011

Matrix: Soil

MS Sample Id: 652422-011 S

Prep Method: E300P

Date Prep: 02.14.20

MSD Sample Id: 652422-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	675	199	881	104	862	94	90-110	2	20	mg/kg	02.14.20 14:53	

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116625

MB Sample Id: 7696686-1-BLK

Matrix: Solid

LCS Sample Id: 7696686-1-BKS

Prep Method: SW8015P

Date Prep: 02.14.20

LCSD Sample Id: 7696686-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<50.0	1000	862	86	828	83	70-135	4	35	mg/kg	02.14.20 10:46	
Diesel Range Organics (DRO)	<50.0	1000	798	80	745	75	70-135	7	35	mg/kg	02.14.20 10:46	

Surrogate

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	99		107		105		70-135	%	02.14.20 10:46
o-Terphenyl	101		109		93		70-135	%	02.14.20 10:46

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116625

MB Sample Id: 7696686-1-BLK

Matrix: Solid

Prep Method: SW8015P

Date Prep: 02.14.20

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	02.14.20 10:27	

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* |(C-E) / (C+E)|
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



Etech Environmental & Safety Solution, Inc

Red Raider BKS ST#1 RP 5776

Analytical Method: TPH by SW8015 Mod

Seq Number: 3116625

Parent Sample Id: 652422-001

Matrix: Soil

MS Sample Id: 652422-001 S

Prep Method: SW8015P

Date Prep: 02.14.20

MSD Sample Id: 652422-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<49.9	997	832	83	782	78	70-135	6	35	mg/kg	02.14.20 11:13	
Diesel Range Organics (DRO)	<49.9	997	749	75	717	72	70-135	4	35	mg/kg	02.14.20 11:13	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	87		79		70-135	%	02.14.20 11:13
o-Terphenyl	80		82		70-135	%	02.14.20 11:13

Analytical Method: BTEX by EPA 8021B

Seq Number: 3116659

MB Sample Id: 7696729-1-BLK

Matrix: Solid

LCS Sample Id: 7696729-1-BKS

Prep Method: SW5030B

Date Prep: 02.14.20

LCSD Sample Id: 7696729-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.110	110	0.107	107	70-130	3	35	mg/kg	02.14.20 13:40	
Toluene	<0.00200	0.100	0.106	106	0.104	104	70-130	2	35	mg/kg	02.14.20 13:40	
Ethylbenzene	<0.00200	0.100	0.103	103	0.101	101	71-129	2	35	mg/kg	02.14.20 13:40	
m,p-Xylenes	<0.00400	0.200	0.212	106	0.208	104	70-135	2	35	mg/kg	02.14.20 13:40	
o-Xylene	<0.00200	0.100	0.105	105	0.103	103	71-133	2	35	mg/kg	02.14.20 13:40	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	104		104		104		70-130	%	02.14.20 13:40
4-Bromofluorobenzene	94		93		93		70-130	%	02.14.20 13:40

Analytical Method: BTEX by EPA 8021B

Seq Number: 3116659

Parent Sample Id: 652422-001

Matrix: Soil

MS Sample Id: 652422-001 S

Prep Method: SW5030B

Date Prep: 02.14.20

MSD Sample Id: 652422-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.108	108	0.0923	93	70-130	16	35	mg/kg	02.14.20 14:21	
Toluene	<0.00200	0.0998	0.105	105	0.0902	91	70-130	15	35	mg/kg	02.14.20 14:21	
Ethylbenzene	<0.00200	0.0998	0.101	101	0.0866	87	71-129	15	35	mg/kg	02.14.20 14:21	
m,p-Xylenes	<0.00399	0.200	0.208	104	0.178	89	70-135	16	35	mg/kg	02.14.20 14:21	
o-Xylene	<0.00200	0.0998	0.103	103	0.0873	88	71-133	17	35	mg/kg	02.14.20 14:21	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	105		104		70-130	%	02.14.20 14:21
4-Bromofluorobenzene	96		93		70-130	%	02.14.20 14:21

MS/MSD Percent Recovery
Relative Percent Difference
LCS/LCSD Recovery
Log Difference

[D] = 100*(C-A) / B
RPD = 200* |(C-E) / (C+E)|
[D] = 100 * (C) / [B]
Log Diff. = Log(Sample Duplicate) - Log(Original Sample)

LCS = Laboratory Control Sample
A = Parent Result
C = MS/LCS Result
E = MSD/LCSD Result

MS = Matrix Spike
B = Spike Added
D = MSD/LCSD % Rec



Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
 Tampa, FL (813) 620-2000, Tallahassee, FL (904) 756-0747, Delray Beach, FL (561) 899-6701
 Atlanta, GA (770) 449-8800

Work Order No: 652422

www.xenco.com Page 1 of 2

Project Manager: Joel Lowry
 Company Name: Etech Environmental & Safety
 Address: 3100 Plains Highway
 City, State ZIP: Lovington, NM, 88260
 Phone: 575-396-2378
 Email: Email Results to PM@etechnv.com + Client

Bill to: (if different)
 Company Name: Etech
 Address: 616 Sheldon Hitchcock
 City, State ZIP: [blank]

Project Name: Red River BRS #4 Re-sink
 Project Number: 11420
 Project Location: Rural Lee
 Sampler's Name: Hector Villa
 PO #: [blank]

Turn Around
 Routine:
 Rush:
 Due Date: [blank]

ANALYSIS REQUEST

Program: UST/PST PRP Brownfields RRC Superfund
 State of Project: [blank]
 Reporting Level: Level PST/UST TRR Level
 Deliverables: EDD ADAPT Other: [blank]

SAMPLE RECEIPT

Temperature (°C): 1.0
 Received Inact: Yes No
 Cooler Custody Seals: Yes No
 Sample Custody Seals: Yes No
 Thermometer ID: TMM007
 Correction Factor: -0.2
 Total Containers: 16

Temp Blank: Yes No
 Wet Ice: Yes No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers/Preservative Code	Chloride E300	BTEX 8021	TPH Modified Ext	TPH TX1005	Preservative Codes	Sample Comments
PL-1		1-13-20	8:10	1.5							
PL-2		1-13-20	8:15	1.5							
PL-3		1-13-20	8:30	1.5							
PL-4		1-13-20	8:45	1.5							
PL-5		1-13-20	9:00	1.5							
PL-6		1-13-20	9:15	1.5							
PL-7		1-13-20	9:30	1.5							
PL-8		1-13-20	9:45	1.5							
PL-9		1-13-20	10:00	1.5							
PL-10		1-13-20	10:15	1.5							

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 Al Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SiO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed: TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag Ti U
 1631 / 245.1 / 7470 / 7471 : Hg

Note: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.

Relinquished by: (Signature) [Signature]
 Received by: (Signature) [Signature]
 Date/Time: 2-11-20-10:00
 Relinquished by: (Signature) [Signature]
 Received by: (Signature) [Signature]
 Date/Time: 2-11-20



Chain of Custody

Houston, TX (281) 240-4200, Dallas, TX (214) 902-0300, San Antonio, TX (210) 509-3334
 Midland, TX (432) 704-5440, El Paso, TX (915) 585-3443, Lubbock, TX (806) 794-1296
 Hobbs, NM (575) 392-7550, Carlsbad, NM (575) 988-3199, Phoenix, AZ (480) 355-0900
 Tampa, FL (813) 620-2000, Tallahassee, FL (850) 756-0747, Delray Beach, FL (561) 689-6701
 Atlanta, GA (770) 449-9800

Work Order No: 652422

Project Manager: Joel Lowry
 Company Name: Etch Environmental & Safety
 Address: 3100 Plains Highway
 City, State ZIP: Lovington, NM, 88260
 Phone: 575-396-2378
 Email: Email Results to PM@etechny.com + Client

Bill to: (if different)
 Company Name: C/O Sheldon Hitchcock
 Address:
 City, State ZIP:

Program: UST/PST PRP Brownfields RRC Superfund
 State of Project:
 Reporting Level Level II PST/UST TRR Level I
 Deliverables: EDD ADAPT Other:

Project Name: Red Raider Bks #4 RE-5716
 Project Number: 11420
 Project Location: Rural Lee
 Sampler's Name: Hector Villa
 PO #:
 Turn Around:
 Routine:
 Rush:
 Due Date:
 SAMPLE RECEIPT
 Temperature (°C): 22.0
 Received Intact: Yes No
 Cooler Custody Seals: Yes No
 Sample Custody Seals: Yes No

Sample Identification	Matrix	Date Sampled	Time Sampled	Depth	Number of Containers/Preservative Code				Sample Comments
					Chloride E300	BTEX 8021	TPH Modified Ext	TPH TX1005	
EW-1		1-8-20	10:20	1.5					
EW-2		1-8-20	10:45	1.5					
SW-1		1-8-20	11:00	1.5					
SW-2		1-8-20	11:15	1.5					
WU-1		1-8-20	11:30	1.5					
WU-2		1-8-20	11:45	1.5					

Total 200.7 / 6010 200.8 / 6020: 8RCRA 13PPM Texas 11 A Sb As Ba Be B Cd Ca Cr Co Cu Fe Pb Mg Mn Mo Ni K Se Ag SIO2 Na Sr Ti Sn U V Zn
 Circle Method(s) and Metal(s) to be analyzed TCLP / SPLP 6010: 8RCRA Sb As Ba Be Cd Cr Co Cu Pb Mn Mo Ni Se Ag TI U
 1631 / 245.1 / 7470 / 7471 : Hg

Relinquished by: (Signature) [Signature]
 Received by: (Signature) [Signature]
 Date/Time: 2-14-20 10:00
 Relinquished by: (Signature) [Signature]
 Received by: (Signature) [Signature]
 Date/Time: []

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the client if such losses are due to circumstances beyond the control of Xenco. A minimum charge of \$75.00 will be applied to each project and a charge of \$5 for each sample submitted to Xenco, but not analyzed. These terms will be enforced unless previously negotiated.
 Revised Date 10/14/19 Rev. 2019.1

Appendix D

Photographic Log

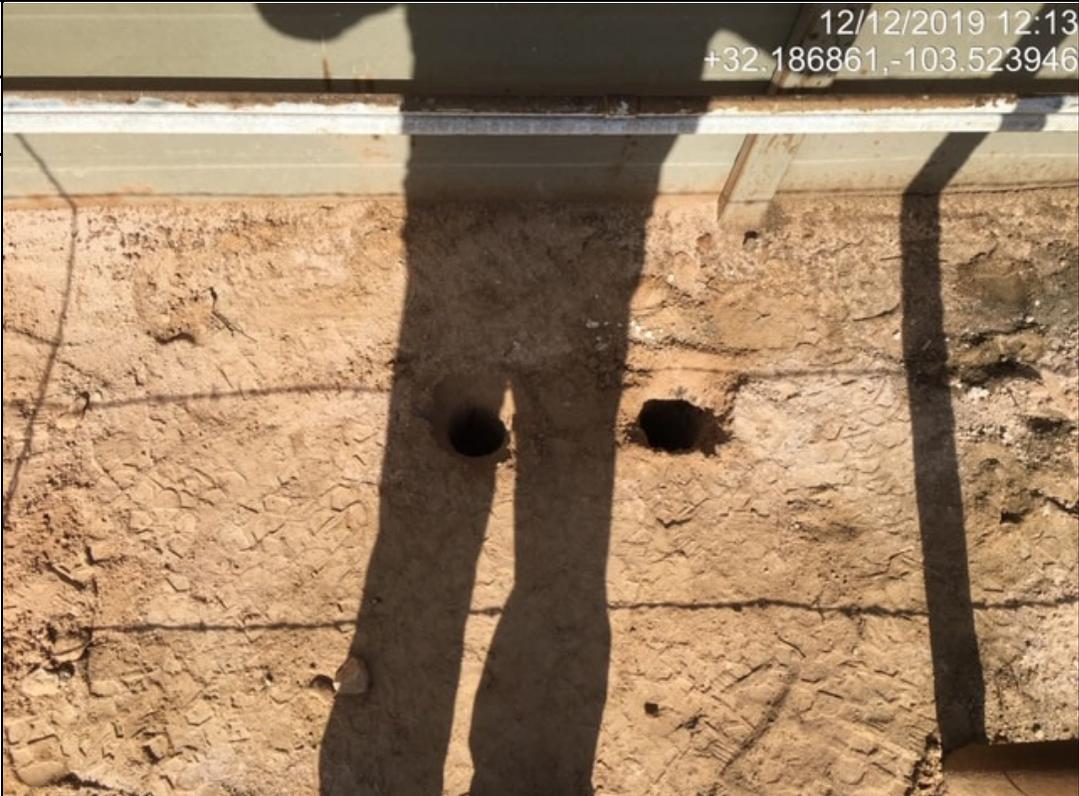
Photographic Log

Photo Number: 1	
Photo Direction: NA	
Photo Description: View of the hole cut into the lined containment.	

Photo Number: 2	
Photo Direction: Northeast	
Photo Description: View of portion of the affected area.	

Photographic Log

Photo Number: 3	
Photo Direction: North	
Photo Description: View of portion of the affected area and sample locations.	

Photo Number: 4	
Photo Direction: NA	
Photo Description: View of portion of the affected area and sample locations.	

Photographic Log

Photo Number: 5	
Photo Direction: North	
Photo Description: View of the affected area after remediation activities.	

Photo Number: 6	
Photo Direction: West	
Photo Description: View of the affected area after remediation activities.	