

Incident ID	
District RP	1RP5260
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?	_>100_ (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.

<p>Characterization Report Checklist: <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells. <input checked="" type="checkbox"/> Field data <input checked="" type="checkbox"/> Data table of soil contaminant concentration data <input checked="" type="checkbox"/> Depth to water determination <input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release <input checked="" type="checkbox"/> Boring or excavation logs <input checked="" type="checkbox"/> Photographs including date and GIS information <input checked="" type="checkbox"/> Topographic/Aerial maps <input checked="" type="checkbox"/> Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141

State of New Mexico
Oil Conservation Division

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

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Form C-141

State of New Mexico
Oil Conservation Division

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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: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: _____ Date: _____

Approved Approved with Attached Conditions of Approval Denied Deferral Approved

Signature: _____ Date: _____

Site Assessment Report and Proposed Remediation Workplan

Chisholm Energy Operating, LLC Outland 14-23 State Com

Lea County, New Mexico

Unit Letter "C/D", Section 14, Township 21 South, Range 34 West

Latitude 32.48571 North, Longitude 103.44495 West

NMOCD Reference No. 1RP-5260

Prepared By:

Etech Environmental & Safety Solutions, Inc.

3100 Plains Highway

Lovington, New Mexico 88260



Daniel Dominguez



Joel W. Lowry



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- Appendix D - Photographic Log

1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of Chisholm Energy Operating, LLC, has prepared this Report for the Release Site known as the Outland 14-23 State Com. Details of the release are summarized below:

Location of Release Source				
Latitude:	32.48571	Longitude:	-103.44495	
Provided GPS are in WGS84 format.				
Site Name:	Outland 14-23 State Com	Site Type:	Tank Battery	
Date Release Discovered:	10/21/2018	API # (if applicable):	30-025-44157	
Unit Letter	Section	Township	Range	County
"C/D"	14	21S	34W	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 type="checkbox"/> Crude Oil	Volume Released (bbls)		Volume Recovered (bbls)	
<input checked="" type="checkbox"/> Produced Water	Volume Released (bbls)	20-30	Volume Recovered (bbls)	10
	Is the concentration of dissolved chloride in the produced water > 10,000 mg/L?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> 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: While filling Frac tanks to prepare for completion operations for the 2H and 3H wells, a valve on the back of the tank was open which allowed water to escape from the tank.				
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?	>100		
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
>100	Chloride	EPA 300.0 or SM4500 Cl B	20000 mg/kg
	TPH (GRO + DRO + MRO)	EPA SW-846 Method 8015M Ext	2500 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 **February 12, 2019**, Etech conducted an initial site assessment. During the initial site assessment, four (4) surface samples (SP1 through SP4) were collected from within the release margins. The collected soil samples were submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples. Analytical results indicated chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples with the exception of soil sample SP1, which exhibited a chloride concentration of 32,400 mg/kg. Analytical results indicated TPH concentrations exceeded the NMOCD Closure Criteria in soil samples SP1, SP3 and SP4. A "Site & Sample Location Map" is provided as Figure 3. Field data and soil profile logs, if applicable, are provided as Appendix B.

On **August 2, 2019**, Etech revisited the Site in an effort to further characterize the Site. During the site visit, fourteen (14) soil samples (SP-1R, SP3-#, SP4-R, EH-1 @ Surf., EH-1 @ 1', SH1 @ Surf., SH1 @ 1', SH2 @ Surf., SH2 @ 1', WH1 @ Surf., SH1 @ 1', NH1 @ Surf., NH1 @ 1', NH2 @ Surf. and NH2 @ 1') were collected and submitted to the laboratory for analysis of BTEX, TPH and chloride concentrations. Laboratory analytical results indicated BTEX concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples. Analytical results indicated chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples with the exception of soil samples SH2 @ Surf., which exhibited a chloride concentration of 22,800 mg/kg. Analytical results indicated TPH concentrations exceeded the NMOCD Closure Criteria in soil samples SP3-R, EH 1 @ Surf., SH1 @ Surf., SH2 @ Surf., WH1 @ Surf., NH1 @ Surf., and NH2 @ Surf. Based on laboratory analytical results, further delineation was required in the areas characterized by soil samples SP3-R, EH 1 @ Surf., SH1 @ Surf., SH2 @ Surf., WH1 @ Surf., NH1 @ Surf., and NH2 @ Surf.

On **September 16, 2019**, Etech revisited the Site in an effort to further delineate the affected areas characterized by soil samples SP3-R, EH 1 @ Surf., SH1 @ Surf., SH2 @ Surf., WH1 @ Surf., NH1 @ Surf., and NH2 @ Surf. During the site visit, twelve (12) soil samples (SP3b @ 2', SP3b @ 4', SP3b @ 6', SP3b @ 8', SP3b @ 10', SP3b @ 11', SH-1b @ Surf., SH-2b @ Surf.,) were collected and submitted to the laboratory for analysis of TPH and/or chloride concentrations. Laboratory analytical results indicated TPH and chloride concentrations were below the NMOCD Closure Criteria in each of the submitted soil samples with the exception of soil samples SP3b @ 2', SP3b @ 4', and SP3b @ 6', which exhibited TPH concentrations of 43,650, 18,170 and 2,500 mg/kg, respectively.

Based on field observations and field test data, **thirty-one (31)** delineation soil samples were submitted to the laboratory for analysis of BTEX, TPH and/or Chloride. Based on laboratory analytical results, soil was not affected above the NMOCD Closure Criteria beyond 8 ft. bgs 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.

5.0 PROPOSED REMEDIATION PLAN

Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment, Chisholm Energy Operating, LLC proposes the following remediation activities designed to advance the Site toward an approved closure:

- Utilizing mechanical equipment, excavate impacted soil affected above the NMOCD Closure Criteria in the areas characterized by sample points SP1 and SP4 to a depth of approximately 1 ft. bgs and sample point SP3/SP3b to a depth of approximately 8 ft. bgs.
- The floor and sidewalls of the excavated area will be advanced until laboratory analytical results indicated impacted soil affected above the NMOCD Closure Criteria has been removed.
- Excavated material will be temporarily stockpiled on-site, then transported to an NMOCD-approved disposal facility.
- Upon excavating impacted soil affected above the NMOCD Closure Criteria, collect the requisite excavation confirmation soil samples.
- Upon receiving laboratory analytical results from excavation confirmation soil samples, backfill the excavated area with locally sourced, non-impacted "like" material.
- Excavation backfill will be contoured to match the surrounding topography.
- Upon completion of remediation activities, prepare a Remediation Summary and Site Closure Request detailing remediation activities and the results of confirmation soil samples.

6.0 SAMPLING PLAN

Upon completion of excavation activities, representative five-point composite excavation confirmation soil samples will be collected from the excavation sidewalls in each cardinal direction, representing no more than 50 linear ft. A minimum of **one (1)** representative five-point composite excavation confirmation soil sample will be collected from the base of the excavated area representing every **300 square feet**. Additional, discrete grab samples will be collected from wet or visibly stained areas inferred to have been affected by the release, as necessary.

7.0 TIMELINE AND ESTIMATED VOLUME OF SOIL TO BE REMEDIATED

Remediation activities are expected to be completed **within 90 days** of receiving necessary approval(s) of the Site Assessment Summary and Proposed Remediation Plan. Based on laboratory analytical results, site characteristics and field observations made during the initial site assessment it is estimated that approximately **400 cubic yards** is in need of removal.

8.0 RESTORATION, RECLAMATION AND RE-VEGETATION PLAN

Areas affected by remediation and closure activities will be substantially restored to the condition that existed prior to the release, to the extent practicable. Excavated areas will be backfilled with locally sourced, non-impacted "like" material placed at or near original relative positions. The affected area will be contoured and/or compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable.

9.0 LIMITATIONS

Etech Environmental & Safety Solutions, Inc., has prepared this Site Assessment Report and Proposed Remediation Plan 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. Basis 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 Chisholm Energy Operating, LLC. Use of the information contained in this report is prohibited within the consent of Etech and/or Chisholm Energy Operating, LLC.

10.0 DISTRIBUTION

Chisholm Energy Operating, LLC

*801 Cherry St.
Suite 1200
FT Worth, TX 76102*

New Mexico Energy, Minerals and Natural Resources Department

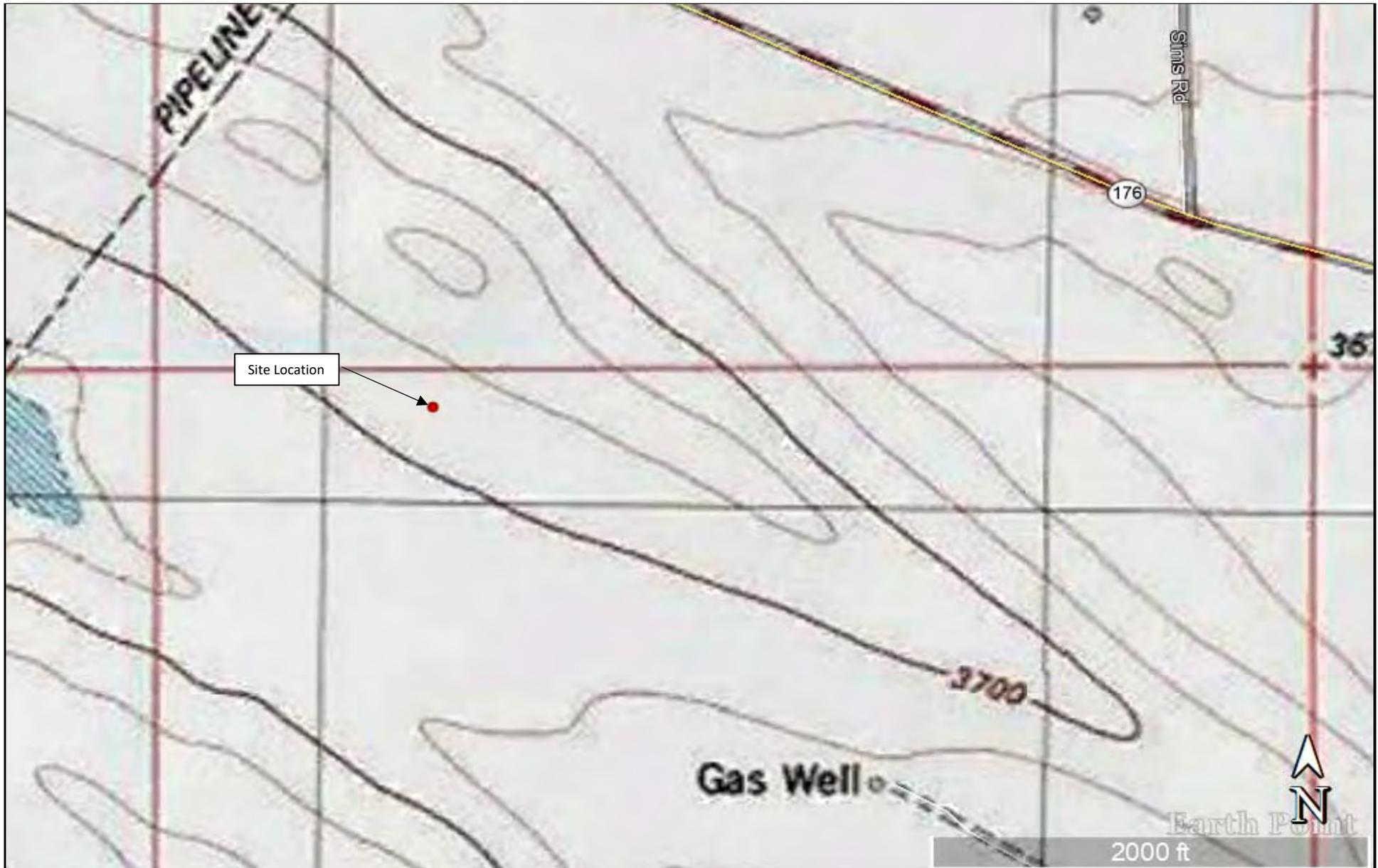
*Oil Conservation Division, District 1
1625 N. French Drive
Hobbs, NM 88240*

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:

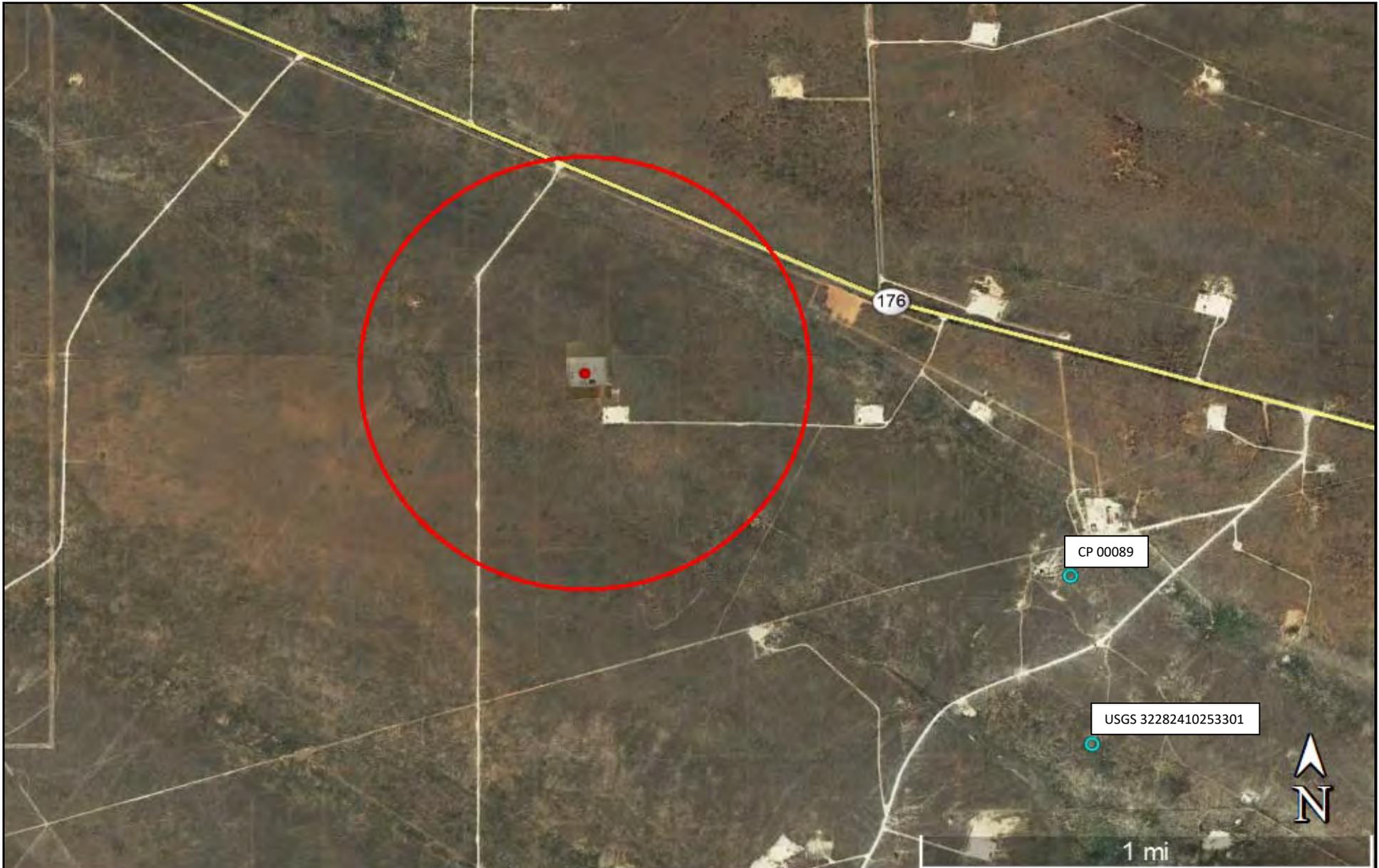
●	Site Location
---	---------------

Figure 1
Topographic Map
Chisholm Energy Operating, LLC
Outland 14-23 State Com
GPS: 32.48571, -103.44495
Lea County

ETECH 
Environmental & Safety Solutions, Inc.

Drafted: Checked: jwl Date: 9/17/19

Figure 2
Aerial Proximity Map



Legend:

●	Site Location
○	Fresh Water Well
○	Half Mile Radius

Figure 2
Aerial Map
Chisholm Energy Operating, LLC
Outland 14-23 State Com
GPS: 32.48571, -103.44495
Lea County

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Environmental & Safety Solutions, Inc.

Drafted: Checked: jwl Date: 9/17/19

Figure 3
Site and Sample Location Map



Legend:

- Sample Point
- ▭ Affected Area
- - - Test Trench

Figure 3
Site and Sample Location Map
Chisholm Energy Operating, LLC
Outland 14-23 State Com
GPS: 32.48571, -103.44495
Lea County

ETECH
Environmental & Safety Solutions, Inc.

Drafted: Checked: jwl Date: 9/17/19

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

TABLE 1
CONCENTRATIONS OF BENZENE, BTEX TPH AND CHLORIDE IN SOIL
Chisholm Energy Operating, LLC
Outland 14-23 State Com
NMOCD Ref. #: 1RP-5260

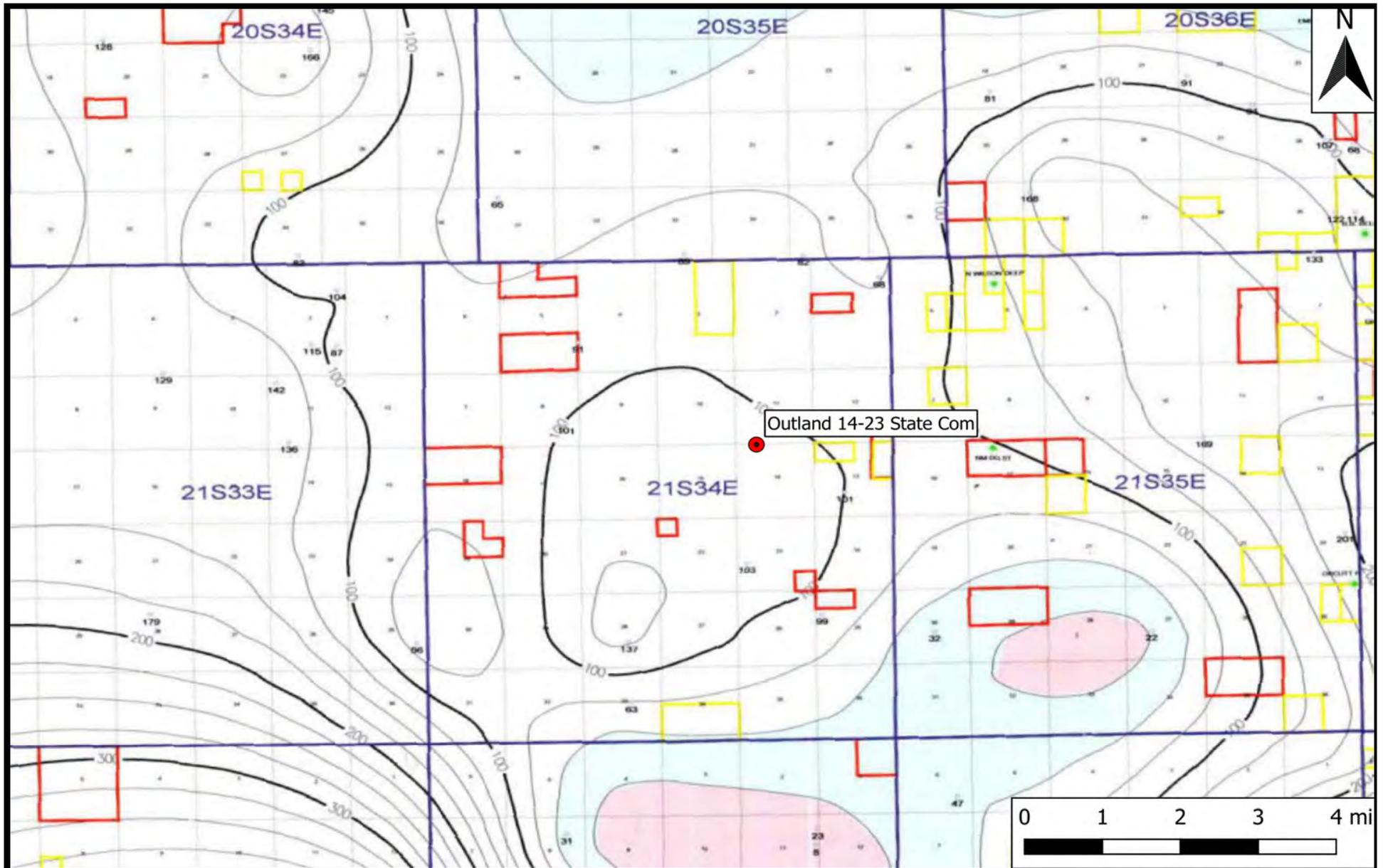
Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C ₆ -C ₁₀ (mg/kg)	DRO C ₁₀ -C ₂₈ (mg/kg)	GRO + DRO C ₆ -C ₂₈ (mg/kg)	ORO C ₂₈ -C ₃₆ (mg/kg)	TPH C ₆ -C ₃₆ (mg/kg)	Chloride (mg/kg)
SP1	2/12/19	Surface	In-Situ	<0.050	0.35	<100	19,400	19,400	677	20,077	32,400
SP2	2/12/19	Surface	In-Situ	<0.050	<0.300	<10.0	682	682	441	1,123	2,080
SP3	2/12/19	Surface	In-Situ	<0.050	<0.300	<10.0	1,600	1,600	768	2,368	6,560
SP4	2/12/19	Surface	In-Situ	<0.050	<0.300	<50.0	12,300	12,300	8,840	21,140	8,130
SP1-R	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	201	201	16.6	217.6	3,720
SP3-R	8/2/19	1'	In-Situ	<0.050	8.78	355	17800	18,155	1,080	19,235	3,680
SP4-R	8/2/19	1'	In-Situ	<0.050	0.487	<10.0	45.1	45.1	16.3	61.4	592
EH1	8/2/19	Surface	In-Situ	<0.050	<0.300	<10.0	4120	4,120	2,120	6,240	2,080
EH1	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	10.9	10.9	160
SH1	8/2/19	Surface	In-Situ	<0.050	<0.300	<10.0	2,910	2,910	756	3,666	1,250
SH1	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	224
SH2	8/2/19	Surface	In-Situ	<0.050	<0.300	<10.0	3,660	3,660	1,190	4,850	22,800
SH2	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	1,640
WH1	8/2/19	Surface	In-Situ	<0.050	<0.300	<10.0	2,390	2,390	597	2,987	19,600
WH1	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	2,200
NH1	8/2/19	Surface	In-Situ	<0.050	<0.300	<10.0	6,180	6,180	427	6,607	5,520
NH1	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	672
NH2	8/2/19	Surface	In-Situ	<0.050	<0.300	<10.0	1,770	1,770	883	2,653	3,640
NH2	8/2/19	1'	In-Situ	<0.050	<0.300	<10.0	<10.0	<20.0	<10.0	<30.0	192
SP3b@2'	9/16/19	2'	In-Situ	--	--	250	38,000	38,250	5,400	43,650	--
SP3b@4'	9/16/19	4'	In-Situ	--	--	170	18,000	18,170	<4,600 ^D	18,170	3,200
SP3b@6'	9/16/19	6'	In-Situ	--	--	<4.8	2,500	2,500	<480 ^D	2,500	--
SP3b@8'	9/16/19	8'	In-Situ	--	--	<4.9	430	430	62	492	--
SP3b@10'	9/16/19	10'	In-Situ	--	--	<4.9	320	320	190	510	--
SP3b@11'	9/16/19	11'	In-Situ	--	--	<4.9	<9.3	<14.2	<47	<61.2	190
SH-1b@surf	9/16/19	Surface	In-Situ	--	--	<4.8	11	11	<47	11	--
SH-2b@surf	9/16/19	Surface	In-Situ	--	--	<4.7	33	33	<50	33	500
NH-1b@surf	9/16/19	Surface	In-Situ	--	--	<5.0	28	28	<48	28	--
NH-2b@surf	9/16/19	Surface	In-Situ	--	--	<4.9	24	24	<49	24	--
EH-1b@surf	9/16/19	Surface	In-Situ	--	--	<4.7	12	12	<47	12	--
WH-1b@surf	9/16/19	Surface	In-Situ	--	--	<4.8	18	18	<49	18	490
Closure Criteria				10	50	-	-	1,000	-	2,500	20,000

NOTES:

-- = Sample not analyzed for constituent

^D = Sample diluted due to matrix**Bold** text denotes a concentration that exceeds the NMOCD Closure Criteria

Appendix A
Depth to Groundwater Information



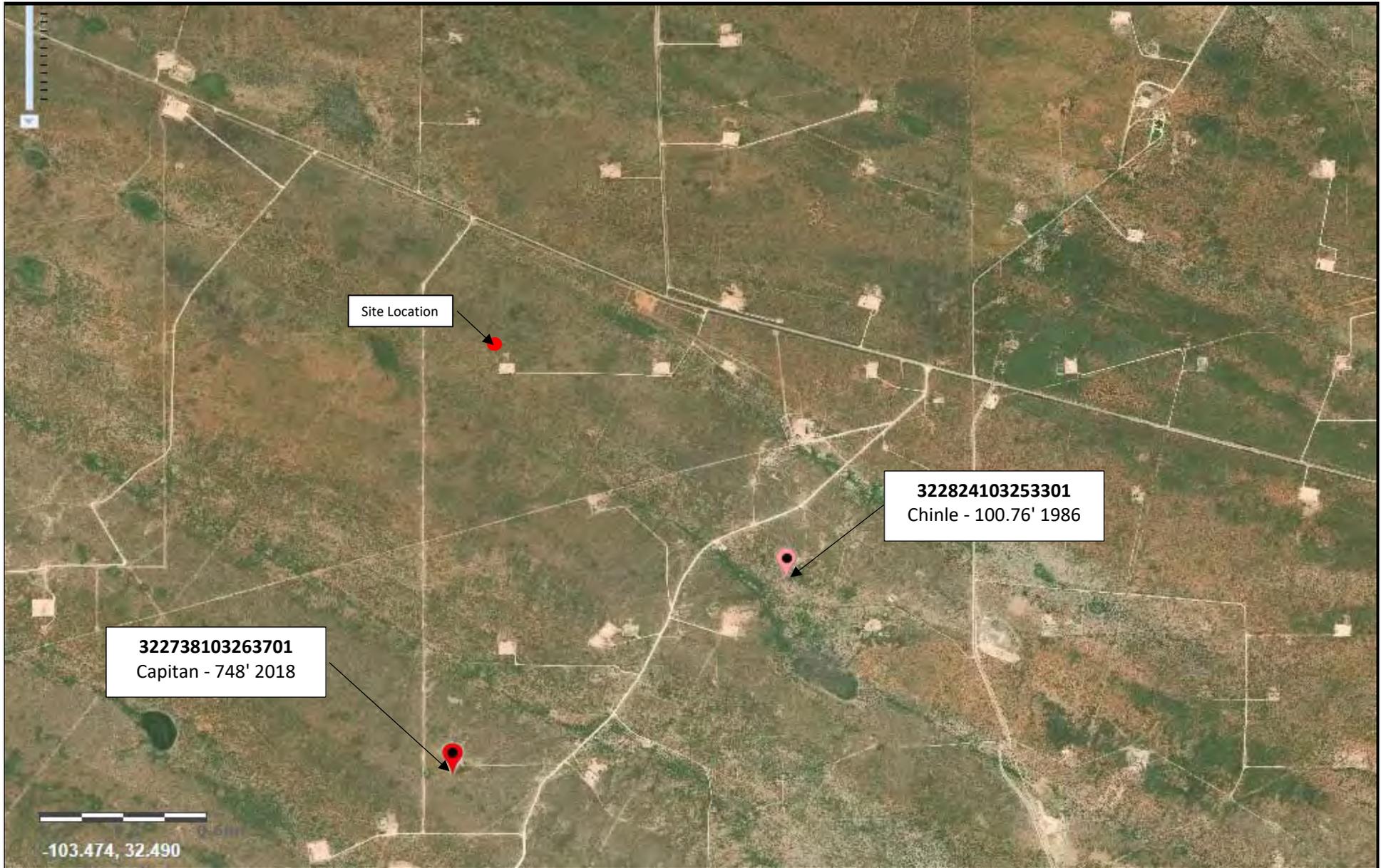
Legend
● Site Location

Figure 4
Inferred Depth to Groundwater Trend Map
Chisholm Energy Operating, LLC
Outland 14-23 State Com
GPS: 32.48571, -103.44495
Lea County

E-TECH
Environmental & Safety Solutions, Inc.



Drafted: mag Checked: jwl Date: 10/1/19



Legend:

- Site Location
- USGS Water Well

Figure 5
USGS Well Proximity Map
Chisholm Energy Operating, LLC
Outland 14-23 State Com
GPS: 32.48571, -103.44495
Lea County

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Environmental & Safety Solutions, Inc.

Drafted: Checked: jwl Date: 9/17/19



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

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

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

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

(NAD83 UTM in meters) (In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
CP 00089	O CP	LE		2	1	13	21S	34E		647840	3594615	1876	235		

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

Record Count: 1

UTMNAD83 Radius Search (in meters):

Easting (X): 646109

Northing (Y): 3595340

Radius: 2000

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.



New Mexico Office of the State Engineer

Point of Diversion Summary

		<small>(quarters are 1=NW 2=NE 3=SW 4=SE)</small>				<small>(quarters are smallest to largest)</small>	<small>(NAD83 UTM in meters)</small>
Well Tag	POD Number	Q64 Q16 Q4	Sec	Tws	Rng	X	Y
	CP 00089	2 1 13	21S	34E	647840	3594615	

Driller License:	Driller Company:	
Driller Name: BUCK THERIAE		
Drill Start Date: 08/28/1943	Drill Finish Date:	Plug Date:
Log File Date:	PCW Rev Date:	Source: Shallow
Pump Type:	Pipe Discharge Size:	Estimated Yield:
Casing Size: 7.00	Depth Well: 235 feet	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.

9/17/19 8:40 AM

POINT OF DIVERSION SUMMARY

Appendix B

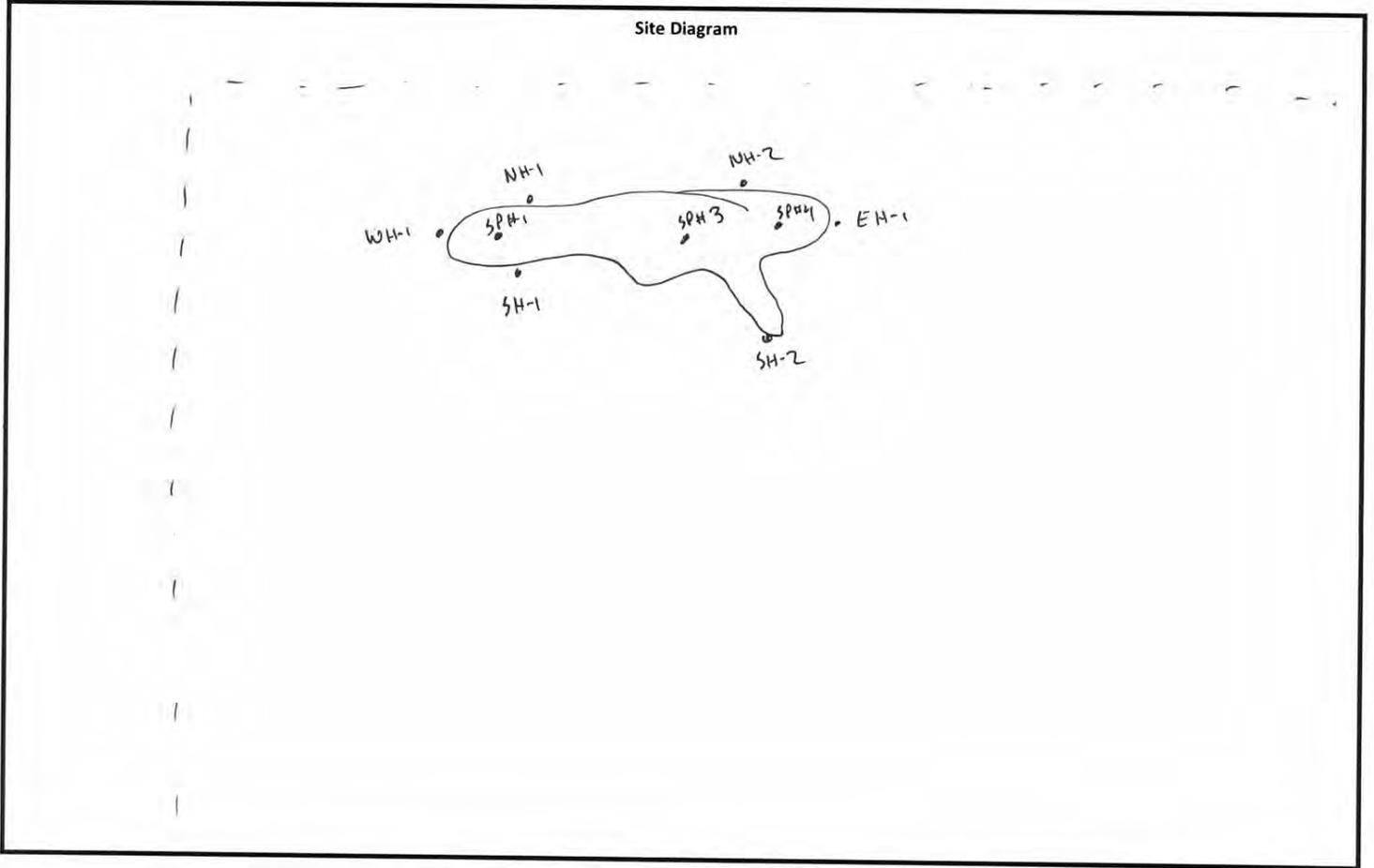
Field Data and Soil Profile Logs



Initial Release Assessment Form

Project: 10035 Clean Up Level: 600 mg/kg Cl-, 100 mg/kg TPH
 Project Number: Outland 14-23 State Com Latitude: 32.48571 Longitude: -103.44495

Date: _____



Notes: Revisit Release Site
 Conduct initial release assessment
 Collect Horizontal & Vertical Samples
 Field Screen for Peroxide

~Length:	~Width:	~Area:	~Depth:	Yes	No
3-4 Representative Pictures of the Affected Area including sample locations?				<input type="checkbox"/>	<input type="checkbox"/>
Necessary Samples Field Screened and on Ice?				<input type="checkbox"/>	<input type="checkbox"/>
Sample and Field Screen Data Entered on Sample Log?				<input type="checkbox"/>	<input type="checkbox"/>
Was horizontal and vertical delineation achieved?				<input type="checkbox"/>	<input type="checkbox"/>



Soil Profile

Date: 9-16-19

Project: Outland 14-23 State Com

Project Number: 10035 Latitude: 32.48571 Longitude: -103.44495

Depth (ft. bgs)

Description

1	Imported Fill / Caliche
2	Brown Topsoil
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4	Caliche w/ Sand
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Appendix C

Laboratory Analytical Reports



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

February 18, 2019

LANCE CRENSHAW

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: OUTLAND 14-23 STATE COM PAD

Enclosed are the results of analyses for samples received by the laboratory on 02/12/19 14:10.

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

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

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

Accreditation applies to public drinking water matrices.

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

Sincerely,

Celey D. Keene

Lab Director/Quality Manager



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

Analytical Results For:

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

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/18/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE COM PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY		

Sample ID: SP 1 @ SURFACE (H900545-01)

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	02/16/2019	ND	1.96	98.0	2.00	5.05		
Toluene*	<0.050	0.050	02/16/2019	ND	1.83	91.3	2.00	5.12		
Ethylbenzene*	0.052	0.050	02/16/2019	ND	1.79	89.5	2.00	4.53		
Total Xylenes*	0.302	0.150	02/16/2019	ND	5.36	89.3	6.00	5.05		
Total BTEX	0.354	0.300	02/16/2019	ND						

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

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	32400	16.0	02/16/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<100	100	02/15/2019	ND	167	83.5	200	5.10			
DRO >C10-C28*	19400	100	02/15/2019	ND	182	91.0	200	7.29			
EXT DRO >C28-C36	677	100	02/15/2019	ND							

Surrogate: 1-Chlorooctane 92.4 % 41-142

Surrogate: 1-Chlorooctadecane 1450 % 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
 LANCE CRENSHAW
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/18/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE COM PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY		

Sample ID: SP 2 @ SURFACE (H900545-02)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/16/2019	ND	1.96	98.0	2.00	5.05		
Toluene*	<0.050	0.050	02/16/2019	ND	1.83	91.3	2.00	5.12		
Ethylbenzene*	<0.050	0.050	02/16/2019	ND	1.79	89.5	2.00	4.53		
Total Xylenes*	<0.150	0.150	02/16/2019	ND	5.36	89.3	6.00	5.05		
Total BTEX	<0.300	0.300	02/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 93.9 % 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	2080	16.0	02/16/2019	ND	400	100	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	<10.0	10.0	02/15/2019	ND	167	83.5	200	5.10		
DRO >C10-C28*	682	10.0	02/15/2019	ND	182	91.0	200	7.29		
EXT DRO >C28-C36	441	10.0	02/15/2019	ND						

Surrogate: 1-Chlorooctane 86.3 % 41-142

Surrogate: 1-Chlorooctadecane 122 % 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
 LANCE CRENSHAW
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/18/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE COM PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY		

Sample ID: SP 3 @ SURFACE (H900545-03)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/16/2019	ND	1.96	98.0	2.00	5.05		
Toluene*	0.066	0.050	02/16/2019	ND	1.83	91.3	2.00	5.12		
Ethylbenzene*	<0.050	0.050	02/16/2019	ND	1.79	89.5	2.00	4.53		
Total Xylenes*	<0.150	0.150	02/16/2019	ND	5.36	89.3	6.00	5.05		
Total BTEX	<0.300	0.300	02/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 92.7 % 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	6560	16.0	02/16/2019	ND	416	104	400	0.00	QM-07	

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*	<10.0	10.0	02/15/2019	ND	167	83.5	200	5.10			
DRO >C10-C28*	1600	10.0	02/15/2019	ND	182	91.0	200	7.29			
EXT DRO >C28-C36	768	10.0	02/15/2019	ND							

Surrogate: 1-Chlorooctane 88.3 % 41-142

Surrogate: 1-Chlorooctadecane 154 % 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
 LANCE CRENSHAW
 P.O. Box 301
 Lovington NM, 88260
 Fax To: (575) 396-1429

Received:	02/12/2019	Sampling Date:	02/12/2019
Reported:	02/18/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE COM PAD	Sampling Condition:	Cool & Intact
Project Number:	NONE GIVEN	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY		

Sample ID: SP 4 @ SURFACE (H900545-04)

BTEX 8021B		mg/kg		Analyzed By: ms						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Benzene*	<0.050	0.050	02/16/2019	ND	1.96	98.0	2.00	5.05		
Toluene*	<0.050	0.050	02/16/2019	ND	1.83	91.3	2.00	5.12		
Ethylbenzene*	<0.050	0.050	02/16/2019	ND	1.79	89.5	2.00	4.53		
Total Xylenes*	<0.150	0.150	02/16/2019	ND	5.36	89.3	6.00	5.05		
Total BTEX	<0.300	0.300	02/16/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 87.9 % 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	8130	16.0	02/16/2019	ND	416	104	400	0.00		

TPH 8015M		mg/kg		Analyzed By: MS							S-06
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier		
GRO C6-C10*	<50.0	50.0	02/15/2019	ND	167	83.5	200	5.10			
DRO >C10-C28*	12300	50.0	02/15/2019	ND	182	91.0	200	7.29			
EXT DRO >C28-C36	8840	50.0	02/15/2019	ND							

Surrogate: 1-Chlorooctane 84.7 % 41-142

Surrogate: 1-Chlorooctadecane 329 % 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

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- ND Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- ** Samples not received at proper temperature of 6°C or below.
- *** Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C
Samples reported on an as received basis (wet) unless otherwise noted on report

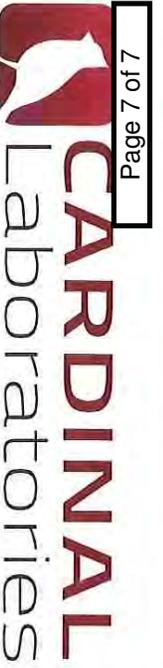
Cardinal Laboratories

*=Accredited Analyte

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Coley D. Keene

Coley 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: Christoph Energy
 Project Manager: Lance Clemshaw
 Address: _____
 City: _____ State: _____ ZIP: _____
 Phone #: _____ Fax #: _____
 Project #: _____ Project Owner: _____
 Project Name: _____
 Project Location: Otland 14-23 State corn pad
 Sampler Name: Lance Clemshaw
 P.O. #: _____
 Company: STECH
 Attn: John Walters
 Address: _____
 City: _____ State: _____ ZIP: _____
 Phone #: _____ Fax #: _____

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX							ACID/BASE:	ICE / COOL	OTHER :	DATE	TIME	C1	TPH	BTEX
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER :									
<u>H900345</u>	<u>1 SPIES SURFACE</u>	<u>G</u>	<u>1</u>	<u>X</u>									<u>2-12</u>	<u>12:03 PM</u>	<u>1</u>	<u>1</u>	<u>1</u>	
	<u>2 SP20 SURFACE</u>	<u>G</u>	<u>1</u>	<u>X</u>									<u>2-12</u>	<u>2:00 PM</u>	<u>1</u>	<u>1</u>	<u>1</u>	
	<u>3 SP30 SURFACE</u>	<u>G</u>	<u>1</u>	<u>X</u>									<u>2-12</u>	<u>1:00 PM</u>	<u>1</u>	<u>1</u>	<u>1</u>	
	<u>4 SP40 SURFACE</u>	<u>G</u>	<u>1</u>	<u>X</u>									<u>2-12</u>	<u>1:16 PM</u>	<u>1</u>	<u>1</u>	<u>1</u>	

PLEASE NOTE: Liability and Damages. Cardinal's liability and clients exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Relinquished By: [Signature] Date: 2-10-19
 Received By: [Signature] Date: 2-10-19
 Reexamined By: [Signature]

Delivered By: (Circle One) UPS
 Sampler - UPS - Bus - Other: 4.7c #97
 Sample Condition: Cool Intact
 Checked By: [Signature]

REMARKS: pm@stechenv.com
lance@stechenv.com
 Phone Result: Yes No Add'l Phone #: _____
 Fax Result: Yes No Add'l Fax #: _____



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

August 08, 2019

JOEL LOWRY

Etech Environmental & Safety Solutions

P.O. Box 301

Lovington, NM 88260

RE: OUTLAND 14-23 STATE

Enclosed are the results of analyses for samples received by the laboratory on 08/02/19 14:15.

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

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,

Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SP 1 @ 1' - R (H902656-01)

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	08/06/2019	ND	1.47	73.4	2.00	3.59		
Toluene*	<0.050	0.050	08/06/2019	ND	1.84	91.9	2.00	10.4		
Ethylbenzene*	<0.050	0.050	08/06/2019	ND	1.89	94.3	2.00	0.650		
Total Xylenes*	<0.150	0.150	08/06/2019	ND	5.80	96.6	6.00	1.34		
Total BTEX	<0.300	0.300	08/06/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 118 % 73.3-129

Chloride, SM4500CI-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	3720	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	201	10.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	16.6	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 79.6 % 41-142

Surrogate: 1-Chlorooctadecane 92.6 % 37.6-147

Cardinal Laboratories

* = Accredited Analyte

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Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SP 3 @ 1' - R (H902656-02)

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	08/06/2019	ND	1.47	73.4	2.00	3.59	GC-NC	
Toluene*	1.03	0.050	08/06/2019	ND	1.84	91.9	2.00	10.4		
Ethylbenzene*	1.24	0.050	08/06/2019	ND	1.89	94.3	2.00	0.650		
Total Xylenes*	6.52	0.150	08/06/2019	ND	5.80	96.6	6.00	1.34		
Total BTEX	8.78	0.300	08/06/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 153 % 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	3680	16.0	08/07/2019	ND	416	104	400	3.77		

TPH 8015M		mg/kg		Analyzed By: MS					S-06	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10*	355	50.0	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	17800	50.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	1080	50.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 288 % 41-142

Surrogate: 1-Chlorooctadecane 605 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SP 4 @ 1' - R (H902656-03)

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	08/06/2019	ND	1.47	73.4	2.00	3.59		
Toluene*	0.095	0.050	08/06/2019	ND	1.84	91.9	2.00	10.4		
Ethylbenzene*	0.204	0.050	08/06/2019	ND	1.89	94.3	2.00	0.650		
Total Xylenes*	0.188	0.150	08/06/2019	ND	5.80	96.6	6.00	1.34		
Total BTEX	0.487	0.300	08/06/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 117 % 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	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	45.1	10.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	16.3	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 85.9 % 41-142

Surrogate: 1-Chlorooctadecane 92.1 % 37.6-147

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Analytical Results For:

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 Fax To: (575) 396-1429

Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: EH 1 @ SURFACE (H902656-04)

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	08/06/2019	ND	1.98	98.9	2.00	0.851		
Toluene*	<0.050	0.050	08/06/2019	ND	2.05	102	2.00	0.652		
Ethylbenzene*	<0.050	0.050	08/06/2019	ND	1.94	96.8	2.00	0.429		
Total Xylenes*	<0.150	0.150	08/06/2019	ND	5.90	98.3	6.00	0.117		
Total BTEX	<0.300	0.300	08/06/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2080	16.0	08/07/2019	ND	416	104	400	3.77		

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*	<10.0	10.0	08/05/2019	ND	205	103	200	2.42			
DRO >C10-C28*	4120	10.0	08/05/2019	ND	216	108	200	0.400			
EXT DRO >C28-C36	2120	10.0	08/05/2019	ND							

Surrogate: 1-Chlorooctane 86.8 % 41-142

Surrogate: 1-Chlorooctadecane 227 % 37.6-147

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Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: EH 1 @ 1' (H902656-05)

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	08/06/2019	ND	1.98	98.9	2.00	0.851		
Toluene*	<0.050	0.050	08/06/2019	ND	2.05	102	2.00	0.652		
Ethylbenzene*	<0.050	0.050	08/06/2019	ND	1.94	96.8	2.00	0.429		
Total Xylenes*	<0.150	0.150	08/06/2019	ND	5.90	98.3	6.00	0.117		
Total BTEX	<0.300	0.300	08/06/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	160	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	10.9	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 81.4 % 41-142

Surrogate: 1-Chlorooctadecane 84.2 % 37.6-147

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Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SH 1 @ SURFACE (H902656-06)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	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	1250	16.0	08/07/2019	ND	416	104	400	3.77		

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*	<10.0	10.0	08/05/2019	ND	205	103	200	2.42			
DRO >C10-C28*	2910	10.0	08/05/2019	ND	216	108	200	0.400			
EXT DRO >C28-C36	756	10.0	08/05/2019	ND							

Surrogate: 1-Chlorooctane 77.8 % 41-142

Surrogate: 1-Chlorooctadecane 214 % 37.6-147

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Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SH 1 @ 1' (H902656-07)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	224	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 82.8 % 41-142

Surrogate: 1-Chlorooctadecane 88.7 % 37.6-147

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Analytical Results For:

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Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SH 2 @ SURFACE (H902656-08)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	22800	16.0	08/07/2019	ND	416	104	400	3.77		

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*	<10.0	10.0	08/05/2019	ND	205	103	200	2.42			
DRO >C10-C28*	3660	10.0	08/05/2019	ND	216	108	200	0.400			
EXT DRO >C28-C36	1190	10.0	08/05/2019	ND							

Surrogate: 1-Chlorooctane 74.6 % 41-142

Surrogate: 1-Chlorooctadecane 250 % 37.6-147

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Analytical Results For:

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Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: SH 2 @ 1' (H902656-09)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	1640	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 90.3 % 41-142

Surrogate: 1-Chlorooctadecane 99.0 % 37.6-147

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Analytical Results For:

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Received:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: WH 1 @ SURFACE (H902656-10)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	19600	16.0	08/07/2019	ND	416	104	400	3.77		

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*	<10.0	10.0	08/05/2019	ND	205	103	200	2.42			
DRO >C10-C28*	2390	10.0	08/05/2019	ND	216	108	200	0.400			
EXT DRO >C28-C36	597	10.0	08/05/2019	ND							

Surrogate: 1-Chlorooctane 77.3 % 41-142

Surrogate: 1-Chlorooctadecane 281 % 37.6-147

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* = Accredited Analyte

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Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: WH 1 @ 1' (H902656-11)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	2200	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.42		
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	216	108	200	0.400		
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 79.0 % 41-142

Surrogate: 1-Chlorooctadecane 84.0 % 37.6-147

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Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: NH 1 @ SURFACE (H902656-12)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	5520	16.0	08/07/2019	ND	416	104	400	3.77		

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*	<10.0	10.0	08/05/2019	ND	205	103	200	2.05			
DRO >C10-C28*	6180	10.0	08/05/2019	ND	205	102	200	3.94			
EXT DRO >C28-C36	427	10.0	08/05/2019	ND							

Surrogate: 1-Chlorooctane 61.7 % 41-142

Surrogate: 1-Chlorooctadecane 428 % 37.6-147

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Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: NH 1 @ 1' (H902656-13)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

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

Chloride, SM4500Cl-B		mg/kg		Analyzed By: AC						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
Chloride	672	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.05		
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94		
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 65.5 % 41-142

Surrogate: 1-Chlorooctadecane 67.3 % 37.6-147

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Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: NH 2 @ SURFACE (H902656-14)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	3640	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.05		
DRO >C10-C28*	1770	10.0	08/05/2019	ND	205	102	200	3.94		
EXT DRO >C28-C36	883	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 54.4 % 41-142

Surrogate: 1-Chlorooctadecane 141 % 37.6-147

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Mike Snyder For 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:	08/02/2019	Sampling Date:	08/01/2019
Reported:	08/08/2019	Sampling Type:	Soil
Project Name:	OUTLAND 14-23 STATE	Sampling Condition:	Cool & Intact
Project Number:	10035	Sample Received By:	Tamara Oldaker
Project Location:	CHISHOLM ENERGY - LEA CO NM		

Sample ID: NH 2 @ 1' (H902656-15)

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	08/07/2019	ND	1.97	98.6	2.00	0.0670		
Toluene*	<0.050	0.050	08/07/2019	ND	2.00	100	2.00	0.0988		
Ethylbenzene*	<0.050	0.050	08/07/2019	ND	1.96	97.9	2.00	1.29		
Total Xylenes*	<0.150	0.150	08/07/2019	ND	5.99	99.8	6.00	1.39		
Total BTEX	<0.300	0.300	08/07/2019	ND						

Surrogate: 4-Bromofluorobenzene (PID) 106 % 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	192	16.0	08/07/2019	ND	416	104	400	3.77		

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	08/05/2019	ND	205	103	200	2.05		
DRO >C10-C28*	<10.0	10.0	08/05/2019	ND	205	102	200	3.94		
EXT DRO >C28-C36	<10.0	10.0	08/05/2019	ND						

Surrogate: 1-Chlorooctane 53.3 % 41-142

Surrogate: 1-Chlorooctadecane 58.1 % 37.6-147

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



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Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.
- S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.
- 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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*=Accredited Analyte

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61 jo 81 e6d



ARDINAL LABORATORIES
 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: Etech Environmental & Safety Solutions, Inc.		P.O. #:	
Project Manager: Joel Lowry		Company:	Etech
Address: P.O. Box 301		Attn:	
City: Lovington	State: NM Zip: 88260	Address:	
Phone #: (575) 396-2378	Fax #: (575) 396-1429	City:	
Project #: 10035	Project Owner: Chisholm	State:	Zip:
Project Name: Outland 14-23 State		Phone #:	
Project Location: Lea		Fax #:	
Sampler Name: Jimmy Hand			

Lab I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						DATE	TIME	ANALYSIS REQUEST						
				GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:			ACID/BASE:	ICE / COOL	OTHER:	Chloride	TPH (8015M)	BTEX (8021B)	
1	SP 1 @ 1'-R	g	1															
2	SP 3 @ 1'-R	g	1															
3	SP 4 @ 1'-R	g	1															
4	EH 1 @ Surface	g	1															
5	EH 1 @ 1'	g	1															
6	SH 1 @ Surface	g	1															
7	SH 1 @ 1'	g	1															
8	SH 2 @ Surface	g	1															
9	SH 2 @ 1'	g	1															
10	WH 1 @ Surface	g	1															

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Relinquished By: <i>[Signature]</i>	Date: 8/2/19	Received By: <i>[Signature]</i>	Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Phone #: _____
Relinquished By: _____	Date: _____	Received By: _____	Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	Add'l Fax #: _____
Time: 14:15	Time: _____	Time: _____	REMARKS: _____	
Delivered By: (Circle One) <u>3.4°</u>	Sample Condition	CHECKED BY: _____	Please email results to pm@etechnv.com and joel@etechnv.com.	
Sampler - UPS - Bus - Other: <u>3.8°</u>	Cool <input type="checkbox"/> Intact <input type="checkbox"/>	(Initials)		
	Yes <input type="checkbox"/> No <input type="checkbox"/>	Yes <input type="checkbox"/> No <input type="checkbox"/>		

61 jo 61 ebgd



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 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: Etch Environmental & Safety Solutions, Inc.	P.O. #:
Project Manager: Joel Lowry	Company: Etch
Address: P.O. Box 301	Attn:
City: Lovington	Address:
State: NM	City:
Zip: 88260	State:
Phone #: (575) 396-2378	Address:
Fax #: (575) 396-1429	City:
Project #: 10035	State:
Project Name: Outland 14-23 State	Zip:
Project Location: Lea	Phone #:
Sampler Name: Jimmy Hand	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					
11	WH 1 @ 1'	g	1									8/1/19	13:00	x	x	x
12	NH 1 @ Surface	g	1									8/1/19	10:20	x	x	x
13	NH 1 @ 1'	g	1									8/1/19	13:20	x	x	x
14	NH 2 @ Surface	g	1									8/1/19	10:25	x	x	x
15	NH 2 @ 1'	g	1									8/1/19	13:40	x	x	x

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Relinquished By: *W. H. Carter* **Date:** 8/2/19 **Received By:** *Jamara Reddy* **Date:** 8/2/19

Relinquished By: *W. H. Carter* **Date:** 8/2/19 **Received By:** *Jamara Reddy* **Date:** 8/2/19

Delivered By: (Circle One) *3.42* **#497** **CHECKED BY:** *STC*

Sampler - UPS - Bus - Other: *Consolidated 3.82* **Sample Condition:** Cool Yes No Intact Yes No

FORM-006
Revision 1.0

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

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SP3b@2'

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 10:00:00 AM

Lab ID: 1909918-001

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	38000	480		mg/Kg	50	9/19/2019 10:22:58 PM
Motor Oil Range Organics (MRO)	5400	2400		mg/Kg	50	9/19/2019 10:22:58 PM
Surr: DNOP	0	70-130	S	%Rec	50	9/19/2019 10:22:58 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	250	4.7		mg/Kg	1	9/19/2019 12:42:37 PM
Surr: BFB	1190	77.4-118	S	%Rec	1	9/19/2019 12:42:37 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SP3b@4'

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 10:12:00 AM

Lab ID: 1909918-002

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	18000	930		mg/Kg	100	9/20/2019 3:59:07 PM
Motor Oil Range Organics (MRO)	ND	4600	D	mg/Kg	100	9/20/2019 3:59:07 PM
Surr: DNOP	0	70-130	S	%Rec	100	9/20/2019 3:59:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	170	5.0		mg/Kg	1	9/19/2019 1:28:17 PM
Surr: BFB	1090	77.4-118	S	%Rec	1	9/19/2019 1:28:17 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	3200	150		mg/Kg	50	9/25/2019 9:30:26 AM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SP3b@6'

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 10:27:00 AM

Lab ID: 1909918-003

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	2500	96		mg/Kg	10	9/20/2019 4:21:32 PM
Motor Oil Range Organics (MRO)	ND	480	D	mg/Kg	10	9/20/2019 4:21:32 PM
Surr: DNOP	0	70-130	S	%Rec	10	9/20/2019 4:21:32 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/19/2019 2:13:57 PM
Surr: BFB	128	77.4-118	S	%Rec	1	9/19/2019 2:13:57 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SP3b@8'

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 10:40:00 AM

Lab ID: 1909918-004

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	430	9.7		mg/Kg	1	9/19/2019 12:37:48 PM
Motor Oil Range Organics (MRO)	62	48		mg/Kg	1	9/19/2019 12:37:48 PM
Surr: DNOP	103	70-130		%Rec	1	9/19/2019 12:37:48 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/19/2019 2:36:47 PM
Surr: BFB	119	77.4-118	S	%Rec	1	9/19/2019 2:36:47 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SP3b@10'

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 11:12:00 AM

Lab ID: 1909918-005

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	320	9.5		mg/Kg	1	9/19/2019 12:59:53 PM
Motor Oil Range Organics (MRO)	190	48		mg/Kg	1	9/19/2019 12:59:53 PM
Surr: DNOP	109	70-130		%Rec	1	9/19/2019 12:59:53 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/19/2019 2:59:37 PM
Surr: BFB	103	77.4-118		%Rec	1	9/19/2019 2:59:37 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SP3b@11'

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 11:30:00 AM

Lab ID: 1909918-006

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	9/19/2019 1:22:07 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/19/2019 1:22:07 PM
Surr: DNOP	94.4	70-130		%Rec	1	9/19/2019 1:22:07 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/19/2019 4:31:05 PM
Surr: BFB	96.7	77.4-118		%Rec	1	9/19/2019 4:31:05 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	190	60		mg/Kg	20	9/23/2019 2:11:13 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SH-1b@surf

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 1:00:00 PM

Lab ID: 1909918-007

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	11	9.5		mg/Kg	1	9/19/2019 2:12:31 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/19/2019 2:12:31 PM
Surr: DNOP	89.7	70-130		%Rec	1	9/19/2019 2:12:31 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/19/2019 4:53:59 PM
Surr: BFB	97.3	77.4-118		%Rec	1	9/19/2019 4:53:59 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: SH-2b@surf

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 1:15:00 PM

Lab ID: 1909918-008

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	33	9.9		mg/Kg	1	9/19/2019 2:34:34 PM
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/19/2019 2:34:34 PM
Surr: DNOP	96.4	70-130		%Rec	1	9/19/2019 2:34:34 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/19/2019 5:16:48 PM
Surr: BFB	97.0	77.4-118		%Rec	1	9/19/2019 5:16:48 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	500	60		mg/Kg	20	9/23/2019 2:23:38 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: NH-1b@surf

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 1:20:00 PM

Lab ID: 1909918-009

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	28	9.6		mg/Kg	1	9/19/2019 2:56:50 PM
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/19/2019 2:56:50 PM
Surr: DNOP	92.0	70-130		%Rec	1	9/19/2019 2:56:50 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/19/2019 5:39:36 PM
Surr: BFB	97.6	77.4-118		%Rec	1	9/19/2019 5:39:36 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: NH-2b@surf

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 1:23:00 PM

Lab ID: 1909918-010

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	24	9.8		mg/Kg	1	9/19/2019 3:19:02 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/19/2019 3:19:02 PM
Surr: DNOP	96.3	70-130		%Rec	1	9/19/2019 3:19:02 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/19/2019 6:02:24 PM
Surr: BFB	98.9	77.4-118		%Rec	1	9/19/2019 6:02:24 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: EH-1b@surf

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 1:45:00 PM

Lab ID: 1909918-011

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	12	9.4		mg/Kg	1	9/19/2019 3:41:15 PM
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/19/2019 3:41:15 PM
Surr: DNOP	86.9	70-130		%Rec	1	9/19/2019 3:41:15 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/19/2019 6:25:15 PM
Surr: BFB	99.6	77.4-118		%Rec	1	9/19/2019 6:25:15 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Analytical Report

Lab Order **1909918**

Date Reported:

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Chisholm Energy Operating

Client Sample ID: WH-1b@surf

Project: Outland 14 32 State Com

Collection Date: 9/16/2019 2:00:00 PM

Lab ID: 1909918-012

Matrix: SOIL

Received Date: 9/18/2019 9:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: BRM
Diesel Range Organics (DRO)	18	9.9		mg/Kg	1	9/19/2019 4:03:25 PM
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/19/2019 4:03:25 PM
Surr: DNOP	88.1	70-130		%Rec	1	9/19/2019 4:03:25 PM
EPA METHOD 8015D: GASOLINE RANGE						Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/19/2019 6:48:01 PM
Surr: BFB	100	77.4-118		%Rec	1	9/19/2019 6:48:01 PM
EPA METHOD 300.0: ANIONS						Analyst: MRA
Chloride	490	60		mg/Kg	20	9/23/2019 2:36:02 PM

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix		

Appendix D Photographic Log

Photographic Log

Photo Number: 1	 <p>Feb 12, 2019 at 12:32:33 PM Hobbs NM 88240 United States</p>
Photo Direction: Northwest	
Photo Description: View of the Affected Area.	

Photo Number: 2	 <p>Feb 12, 2019 at 12:33:09 PM Hobbs NM 88240 United States</p>
Photo Direction: South	
Photo Description: View of the Affected Area.	

Photographic Log

Photo Number: 3	<p>Feb 12, 2019 at 12:33:37 PM Hobbs NM 88240 United States</p> 
Photo Direction: Northwest	
Photo Description: View of the Affected Area.	

Photo Number: 4	<p>Feb 12, 2019 at 12:33:34 PM Hobbs NM 88240 United States</p> 
Photo Direction: West	
Photo Description: View of the Affected Area.	