

Incident ID	
District RP	
Facility ID	
Application ID	

## Site Assessment/Characterization

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

What is the shallowest depth to groundwater beneath the area affected by the release?	> 50 Ft. (ft bgs)
Did this release impact groundwater or surface water?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within 300 feet of a wetland?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying a subsurface mine?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release overlying an unstable area such as karst geology?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Are the lateral extents of the release within a 100-year floodplain?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Did the release impact areas <b>not</b> on an exploration, development, production, or storage site?	<input 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><b>Characterization Report Checklist:</b> <i>Each of the following items must be included in the report.</i></p> <ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.</li> <li><input checked="" type="checkbox"/> Field data</li> <li><input checked="" type="checkbox"/> Data table of soil contaminant concentration data</li> <li><input checked="" type="checkbox"/> Depth to water determination</li> <li><input checked="" type="checkbox"/> Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release</li> <li><input checked="" type="checkbox"/> Boring or excavation logs</li> <li><input checked="" type="checkbox"/> Photographs including date and GIS information</li> <li><input checked="" type="checkbox"/> Topographic/Aerial maps</li> <li><input checked="" type="checkbox"/> Laboratory data including chain of custody</li> </ul>
---

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: Clyde Wilhoit Title: Maintenance Foreman

Signature: *Clyde Wilhoit* Date: 1-6-2020

email: cwilhoit@legacyreserves.com Telephone: 432-425-4137

**OCD Only**

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

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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: Clyde Wilhoit Title: Maintenance Foreman  
 Signature: *Clyde Wilhoit* Date: 1-6-2020  
 email: cwilhoit@legacyreserves.com Telephone: 432-425-4137

**OCD Only**

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

- Approved       Approved with Attached Conditions of Approval       Denied       Deferral Approved

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

# Site Assessment Report and Proposed Remediation Workplan

## Legacy Reserves Operating, LP Hamon Fed Com A #3H

Lea County, New Mexico

Unit Letter O, Section 6, Township 20 South, Range 34 East

Latitude 32.596216 North, Longitude 103.597601 West

NMOCD Reference No. 1RP-pending

Prepared By:

**Etech Environmental & Safety Solutions, Inc.**

3100 Plains Highway

Lovington, New Mexico 88260



Daniel Dominguez



Joel W. Lowry



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- Appendix B - Field Data and Soil Profile Logs
- Appendix C - Laboratory Analytical Reports
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### 1.0 PROJECT INFORMATION

Etech Environmental & Safety Solutions, Inc. (Etech), on behalf of Legacy Reserves Operating, LP, has prepared this Report for the Release Site known as the Hamon Fed Com A #3H. Details of the release are summarized below:

<b>Location of Release Source</b>				
Latitude: <u>32.596216</u>		Longitude: <u>-103.597601</u>		
Provided GPS are in WGS84 format.				
Site Name: <u>Hamon Fed Com A #3H</u>		Site Type: <u>Well Head</u>		
Date Release Discovered: <u>11/22/2019</u>		API # (if applicable): <u>30-025-41305</u>		
Unit Letter	Section	Township	Range	County
O	6	20S	34E	Lea
Surface Owner: <input type="checkbox"/> State <input type="checkbox"/> Federal <input type="checkbox"/> Tribal <input checked="" type="checkbox"/> Private (Name <u>Kenneth Smith Inc.</u> )				
<b>Nature and Volume of Release</b>				
<input checked="" type="checkbox"/> Crude Oil	Volume Released (bbls)	36	Volume Recovered (bbls)	20
<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"/> 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 the stuffing box on the pumping unit.				
<b>Initial Response</b>				
<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?	>50 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
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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
>50 Ft.	Chloride	EPA 300.0 or SM4500 Cl B	10000 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 **December 11, 2019**, Etech conducted an initial site assessment. During the initial site assessment, a series of hand-augered soil bores (SP1 through SP5) were advanced within the release margins in an effort to determine the vertical extent of soil impacts. In addition, hand-augered soil bores (NH1, NH2, EH1, SH1, SH2, WH1 and WH2) 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 Volatile Organic Compounds utilizing a Photoionization Detector (PID) 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, **nineteen (19)** delineation soil samples (**SP1 @ 1', SP2 @ 1', SP3 @ 1', SP4 @ 1', SP5 @ 1', NH1 @ Surf., NH1 @ 1', NH2 @ Surf., NH2 @ 1', EH1 @ Surf., EH1 @ 1', SH1 @ Surf., SH1 @ 1', SH2 @ Surf., SH2 @ 1', WH1 @ Surf., WH1 @ 1', WH2 @ Surf. and WH2 @ 1'**) 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 1 Ft. bgs in the areas characterized by sample points SP1 through SP5 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, Legacy Reserves Operating, LP 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 within the release margins in the areas characterized by sample points SP1 through SP5. The floor and sidewalls of the excavated area will be advanced until laboratory analytical results from confirmation soil samples indicates concentrations of BTEX, TPH and chloride are below the NMOCD Closure Criteria.
- Excavated soil will be temporarily stockpiled on-site, atop an impermeable liner, pending final disposition at an NMOCD-permitted surface waste facility.
- Upon receiving laboratory analytical results from excavation confirmation soil samples, backfill the excavated area with locally sourced, non-impacted "like" material.
- Upon completion of remediation activities, a Remediation Summary and Soil Closure Request will be prepared detailing field activities and laboratory analytical results from 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 **500 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 **800 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 graded to meet the needs of the well pad and compacted to achieve erosion control, stability and preservation of surface water flow to the extent practicable. The affected area is limited to an active well pad therefore reseeding will not be necessary.

## **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 Legacy Reserves Operating, LP. Use of the information contained in this report is prohibited within the consent of Etech and/or Legacy Reserves Operating, LP.

## **10.0 DISTRIBUTION**

***Legacy Reserves Operating, LP***

*303 W. Wall St.*

*Midland, TX 79701*

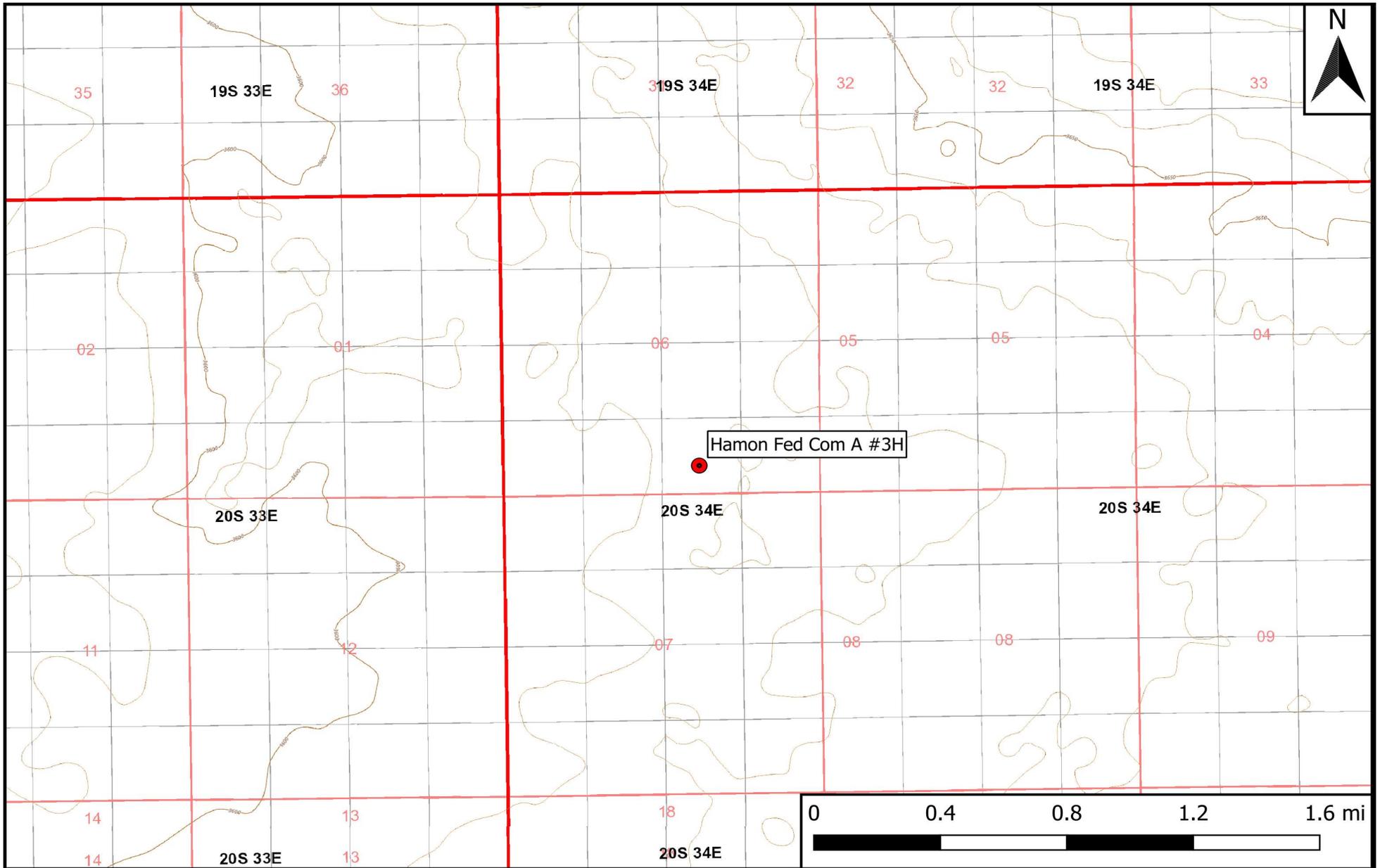
***New Mexico Energy, Minerals and Natural Resources Department***

*Oil Conservation Division, District 1*

*1220 South St. Francis Drive*

*Santa Fe, NM 87505*

# Figure 1 Topographic Map



**Legend**  
 ● Site Location

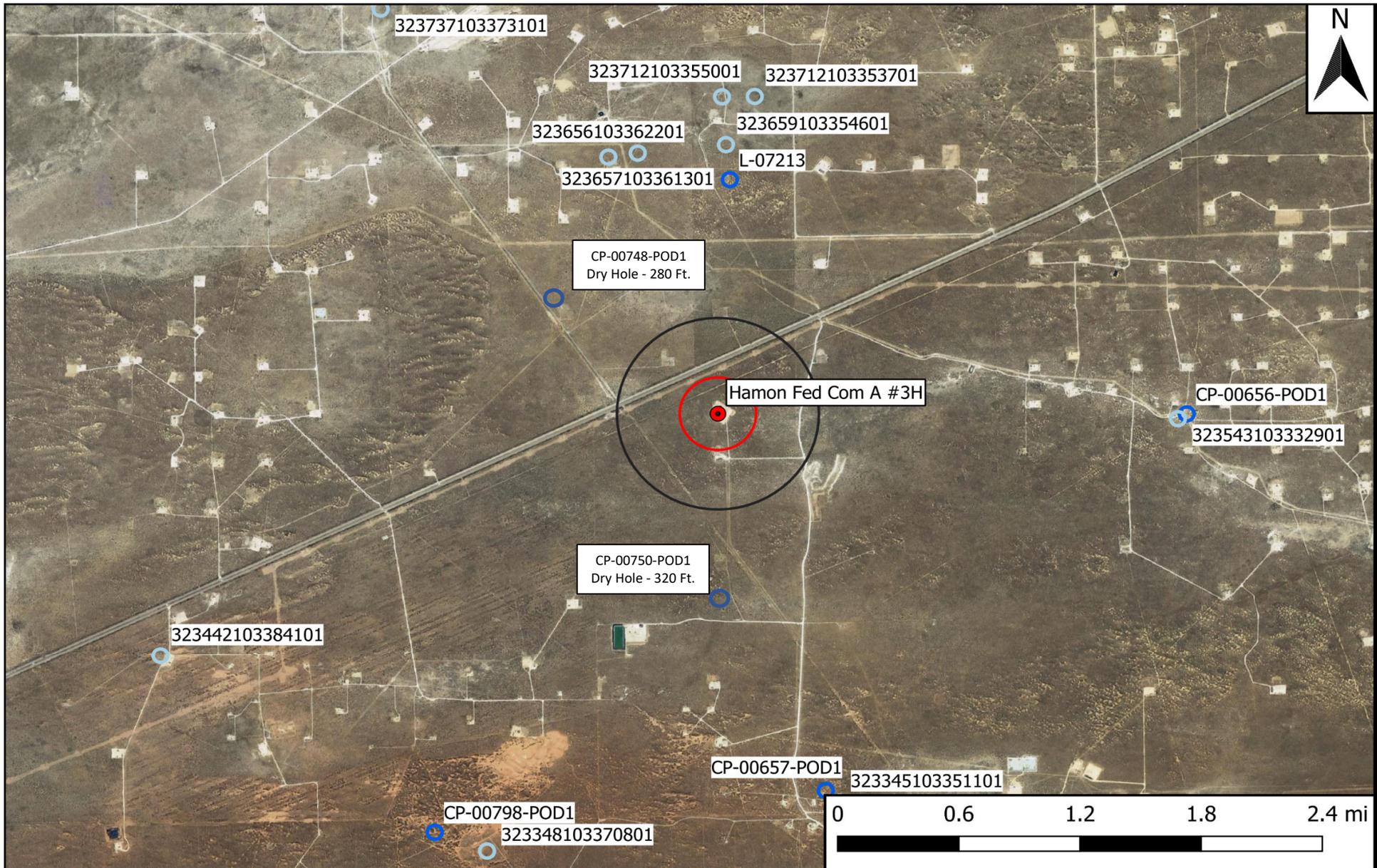
**Figure 1**  
 Topographic Map  
 Legacy Reserves Operating, LP  
 Hamon Fed Com A #3H  
 GPS: 32.596216, -103.597601  
 Lea County



Drafted: mag    Checked: jwl    Date: 12/2/19

## **Figure 2**

### **Aerial Proximity Map**



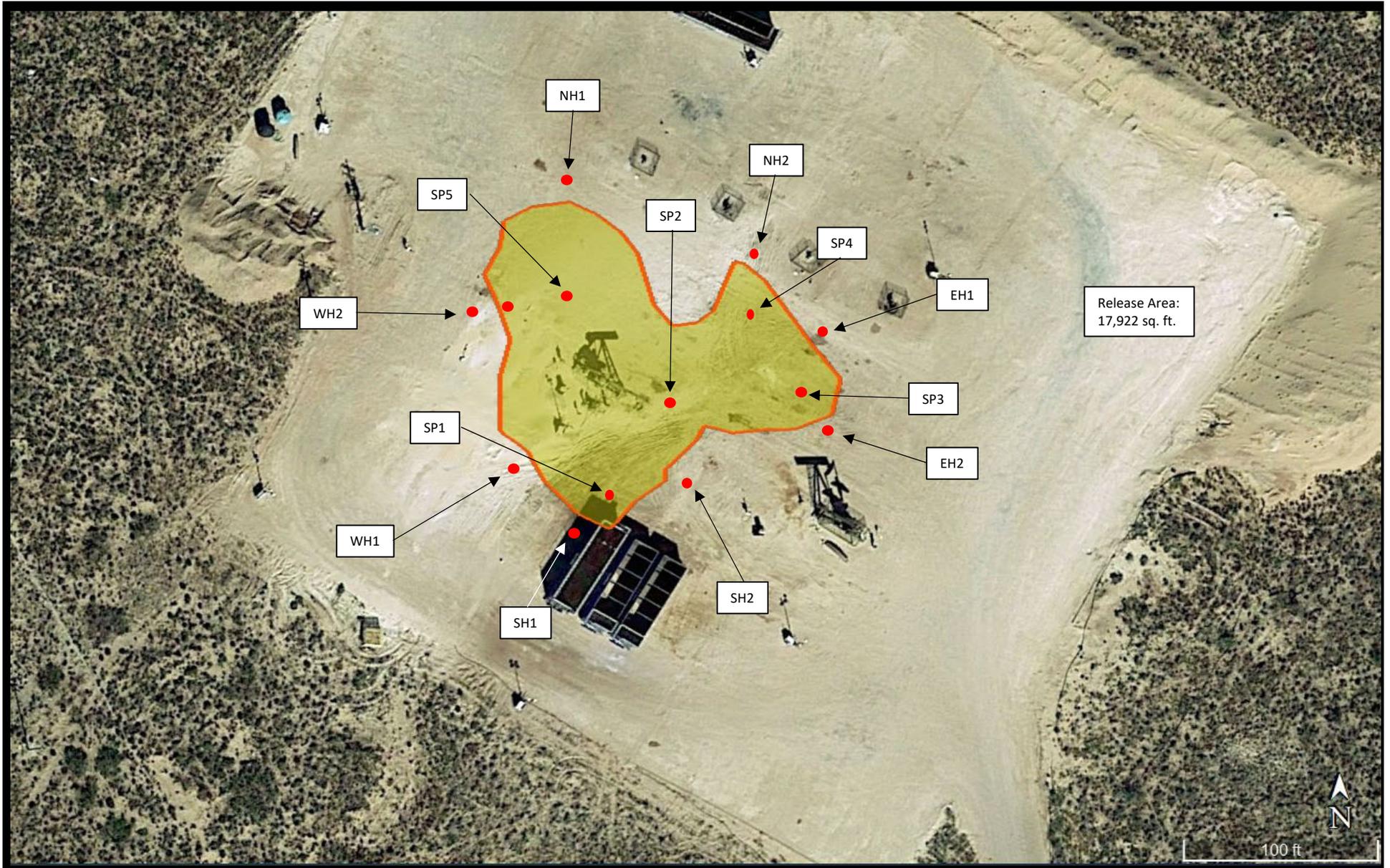
Legend	
	Site Location
	0.5 Mi Radius
	1000 Ft Radius
	1% Annual Flood Chance
	Surface Water
	Well - USGS
	Well - NMOSE
	High Karst
	Medium Karst
	Potash Mine Workings

**Figure 2**  
 Aerial Map  
 Legacy Reserves Operating, LP  
 Hamon Fed Com A #3H  
 GPS: 32.596216, -103.597601  
 Lea County

  
**ETECH**  
*Environmental & Safety Solutions, Inc.*

Drafted: mag      Checked: jwl      Date: 1/6/20

**Figure 3**  
**Site and Sample Location Map**



- Legend:
- Affected Area
  - Pipeline
  - Sample Point

**Figure 3**  
Site and Sample Location Map  
Legacy Reserves Operating, LP  
Hamon Fed Com A #3H  
GPS: 32.596216, -103.597601



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

**TABLE 1**  
**CONCENTRATIONS OF BENZENE, BTEX TPH AND CHLORIDE IN SOIL**  
**Legacy Reserves Operating, LP**  
**Hamon Fed Com A #3H**  
**NMOCD Ref. #: 1RP-pending**

Sample ID	Date	Depth	Soil Status	SW 846 8021B		SW 846 8015M Ext.					4500 Cl
				Benzene (mg/kg)	BTEX (mg/kg)	GRO C <sub>6</sub> -C <sub>10</sub> (mg/kg)	DRO C <sub>10</sub> -C <sub>28</sub> (mg/kg)	GRO + DRO C <sub>6</sub> -C <sub>28</sub> (mg/kg)	ORO C <sub>28</sub> -C <sub>36</sub> (mg/kg)	TPH C <sub>6</sub> -C <sub>36</sub> (mg/kg)	Chloride (mg/kg)
SP1 @ 1'	12/11/2019	1'	In-Situ	<0.00200	0.0155	<50.0	274	274	<50.0	274	434
SP2 @ 1'	12/11/2019	1'	In-Situ	<0.00199	0.00669	<50.0	457	457	<50.0	457	269
SP3 @ 1'	12/11/2019	1'	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	353
SP4 @ 1'	12/11/2019	1'	In-Situ	<0.00200	0.00296	<49.9	259	259	<49.9	259	279
SP5 @ 1'	12/11/2019	1'	In-Situ	<0.00199	<0.00199	<50.0	422	422	50.7	473	461
NH1 @ Surf	12/11/2019	0'	In-Situ	<0.00202	<0.00202	<49.8	73.1	73.1	<49.8	73.1	143
NH1 @ 1'	12/11/2019	1'	In-Situ	<0.00202	<0.00202	<49.9	<49.9	<49.9	<49.9	<49.9	131
NH2 @ Surf	12/11/2019	0'	In-Situ	<0.00199	<0.00199	<50.0	151	151	<50.0	151	1,460
NH2 @ 1'	12/11/2019	1'	In-Situ	<0.00201	<0.00201	<49.9	<49.9	<49.9	<49.9	<49.9	244
EH1 @ Surf	12/11/2019	0'	In-Situ	<0.00200	<0.00200	<50.0	51.1	51.1	<50.0	51.1	3,500
EH1 @ 1'	12/11/2019	1'	In-Situ	<0.00199	<0.00199	<49.8	<49.8	<49.8	<49.8	<49.8	520
SH1 @ Surf	12/11/2019	0'	In-Situ	<0.00200	<0.00200	<49.9	<49.9	<49.9	<49.9	<49.9	343
SH1 @ 1'	12/11/2019	1'	In-Situ	<0.00202	<0.00202	<50.0	<50.0	<50.0	<50.0	<50.0	51
SH2 @ Surf	12/11/2019	0'	In-Situ	<0.00200	<0.00200	<49.9	521	521	100	621	2,160
SH2 @ 1'	12/11/2019	1'	In-Situ	<0.00198	<0.00198	<50.0	99.3	99.3	<50.0	99.3	2,840
WH1 @ Surf	12/11/2019	0'	In-Situ	<0.00199	<0.00199	<49.9	<49.9	<49.9	<49.9	<49.9	23.8
WH1 @ 1'	12/11/2019	1'	In-Situ	<0.00200	<0.00200	<50.0	<50.0	<50.0	<50.0	<50.0	12.3
WH2 @ Surf	12/11/2019	0'	In-Situ	<0.00198	<0.00198	<49.9	1,000	1,000	196	1,200	592
WH2 @ 1'	12/11/2019	1'	In-Situ	<0.00201	<0.00201	<50.0	<50.0	<50.0	<50.0	<50.0	449
<b>Closure Criteria</b>				<b>10</b>	<b>50</b>	<b>-</b>	<b>-</b>	<b>1,000</b>	<b>-</b>	<b>2,500</b>	<b>10,000</b>

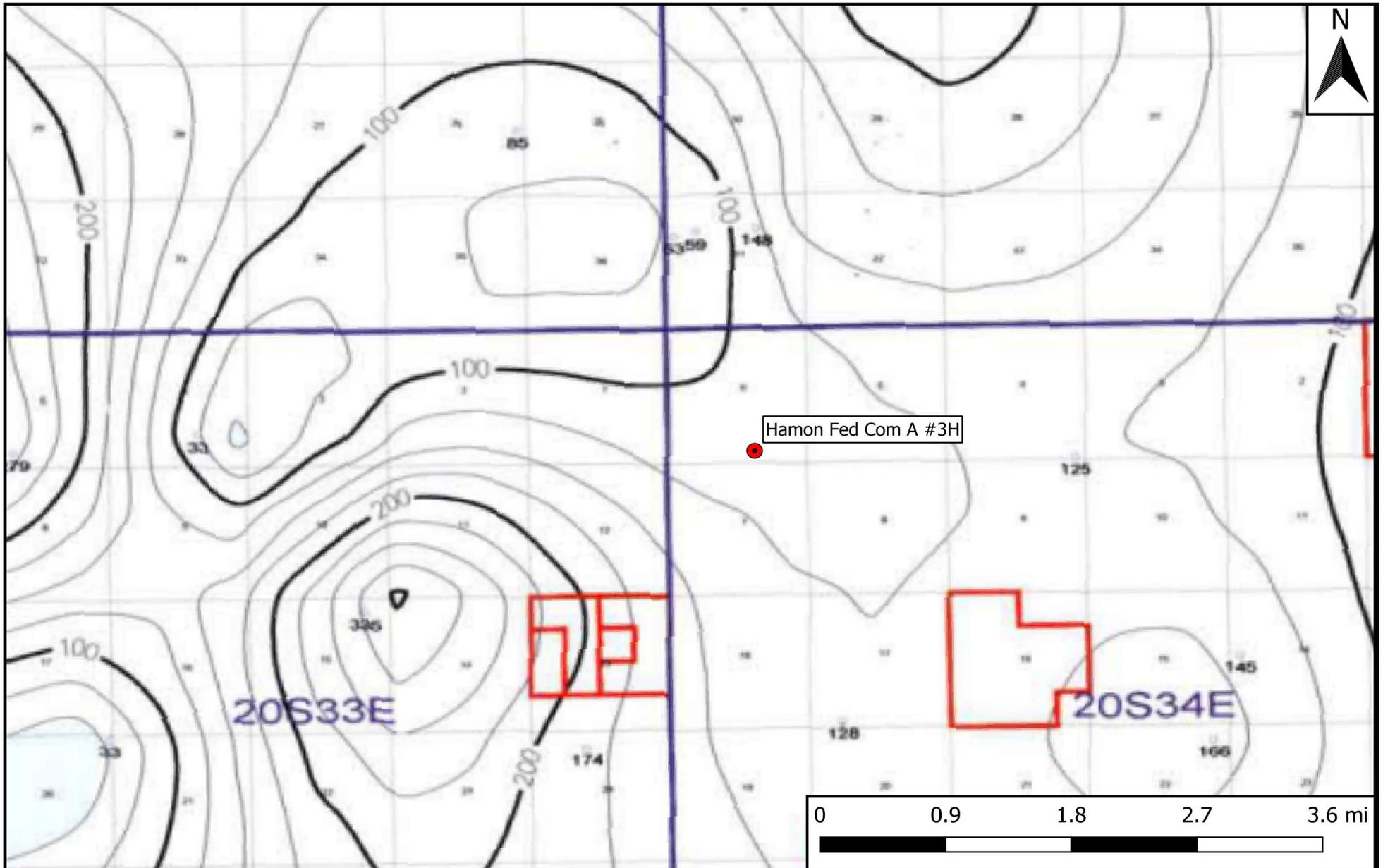
NOTES:

- =

**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  
Legacy Reserves Operating, LP  
Hamon Fed Com A #3H  
GPS: 32.596216, -103.597601  
Lea County



Drafted: mag    Checked: jwl    Date: 12/2/19



---

## New Mexico Office of the State Engineer

# Water Column/Average Depth to Water

---

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

No records found.

**UTMNAD83 Radius Search (in meters):**

**Easting (X):** 631605.3

**Northing (Y):** 3607392.63

**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.

---

12/2/19 11:57 AM

WATER COLUMN/ AVERAGE  
DEPTH TO WATER



## 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	Sub-basin	County	Q	Q	Q	Sec	Tws	Rng	X	Y	Distance	Depth	Well	Depth	Water Column
<a href="#">CP 00750 POD1</a>	CP	LE	64	3	4	07	20S	34E		631639	3605834*	1558	320			

Average Depth to Water: --

Minimum Depth: --

Maximum Depth: --

**Record Count:** 1

**UTM NAD83 Radius Search (in meters):**

**Easting (X):** 631605.3

**Northing (Y):** 3607392.63

**Radius:** 1610

\*UTM location was derived from PLSS - see Help

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

12/2/19 11:58 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)

<b>Well Tag</b>	<b>POD Number</b>	<b>Q64</b>	<b>Q16</b>	<b>Q4</b>	<b>Sec</b>	<b>Tws</b>	<b>Rng</b>	<b>X</b>	<b>Y</b>
	CP 00750 POD1	3	4	07	20S	34E		631639	3605834*

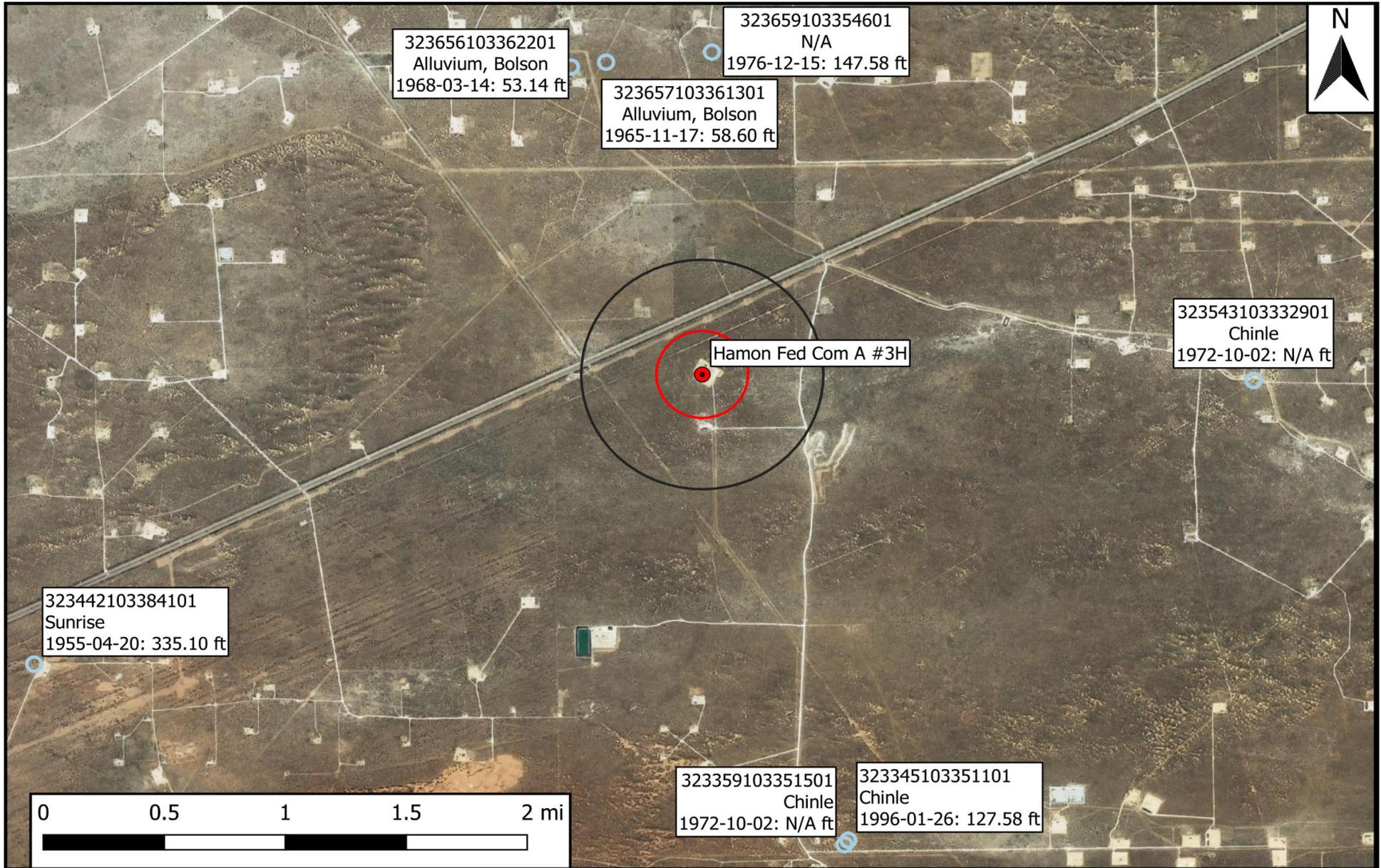
<b>Driller License:</b> 421	<b>Driller Company:</b> GLENN'S WATER WELL SERVICE	
<b>Driller Name:</b> GLENN, CLARK A. "CORKY" (LD)		
<b>Drill Start Date:</b> 06/20/1990	<b>Drill Finish Date:</b> 06/20/1990	<b>Plug Date:</b>
<b>Log File Date:</b> 07/26/1990	<b>PCW Rev Date:</b>	<b>Source:</b>
<b>Pump Type:</b>	<b>Pipe Discharge Size:</b>	<b>Estimated Yield:</b>
<b>Casing Size:</b>	<b>Depth Well:</b> 320 feet	<b>Depth Water:</b>

\*UTM location was derived from PLSS - see Help

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

12/2/19 11:58 AM

POINT OF DIVERSION SUMMARY



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

**Figure 5**  
 USGS Well Proximity Map  
 Legacy Reserves Operating, LP  
 Hamon Fed Com A #3H  
 GPS: 32.596216, -103.597601  
 Lea County



Revised June 1972

STATE ENGINEER OFFICE  
WELL RECORD

475940

Section 1. GENERAL INFORMATION

(A) Owner of well Grace Drilling Co. Owner's Well No. \_\_\_\_\_  
Street or Post Office Address P.O. Box 13480  
City and State Odessa, TX 79768 '91 JUN 5 AM 10 47

Well was drilled under Permit No. CP 748 and is located in the STATE ENGINEER OFFICE  
a. NE ¼ ¼ ¼ ¼ of Section 1 Township 20 SANTA FE NEW MEXICO Range 33E N.M.P.M.

b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_

c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
Subdivision, recorded in \_\_\_\_\_ County.

d. X= \_\_\_\_\_ feet, Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
the \_\_\_\_\_ Grant.

(B) Drilling Contractor West Texas Water Well Service License No. WK 1184  
Address 3432 W. University Odessa, TX 79764

Drilling Began 6-1-90 Completed 6-2-90 Type tools Air rotary Size of hole 8 3/4 in.

Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well \_\_\_\_\_ ft.

Completed well is  shallow  artesian. Depth to water upon completion of well \_\_\_\_\_ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To
NO CASING								

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor West Texas Water Well Service  
Address \_\_\_\_\_  
Plugging Method Pumped grout - neat cement  
Date Well Plugged 6-2-90  
Plugging approved by: \_\_\_\_\_

State Engineer Representative

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

FOR USE OF STATE ENGINEER ONLY

Date Received June 19, 1991

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

File No. CP-748

Use OWD

Location No. 20.33.1.24144



Revised June 1972

STATE ENGINEER OFFICE  
WELL RECORD

475954

Section 1. GENERAL INFORMATION

(A) Owner of well TXO Prod. Owner's Well No. \_\_\_\_\_  
Street or Post Office Address c/o Glenn's Water Well Service,  
City and State P.O. Box 692 Tatum, N.M. 88267

Well was drilled under Permit No. CP-750 and is located in the:

- a. 1/4 1/4 SW 1/4 SE 1/4 of Section 7 Township 20-S. Range 34-E. N.M.P.M.
- b. Tract No. \_\_\_\_\_ of Map No. \_\_\_\_\_ of the \_\_\_\_\_
- c. Lot No. \_\_\_\_\_ of Block No. \_\_\_\_\_ of the \_\_\_\_\_  
Subdivision, recorded in \_\_\_\_\_ County.
- d. X= \_\_\_\_\_ feet; Y= \_\_\_\_\_ feet, N.M. Coordinate System \_\_\_\_\_ Zone in  
the \_\_\_\_\_ Grant.

(B) Drilling Contractor Glenn's Water Well Service, Inc. License No. WD 421  
Address P.O. Box 692 Tatum, N.M. 88267

Drilling Began 6/20/90 Completed 6/20/90 Type tools rotary Size of hole 7 7/8 in.

Elevation of land surface or \_\_\_\_\_ at well is \_\_\_\_\_ ft. Total depth of well 320 ft.

Completed well is  shallow  artesian. Depth to water upon completion of well \_\_\_\_\_ ft.

Section 2. PRINCIPAL WATER-BEARING STRATA

Depth in Feet		Thickness in Feet	Description of Water-Bearing Formation	Estimated Yield (gallons per minute)
From	To			
			dry hole	26 AM 8 29

Section 3. RECORD OF CASING

Diameter (inches)	Pounds per foot	Threads per in.	Depth in Feet		Length (feet)	Type of Shoe	Perforations	
			Top	Bottom			From	To

Section 4. RECORD OF MUDDING AND CEMENTING

Depth in Feet		Hole Diameter	Sacks of Mud	Cubic Feet of Cement	Method of Placement
From	To				

Section 5. PLUGGING RECORD

Plugging Contractor \_\_\_\_\_  
Address \_\_\_\_\_  
Plugging Method well was plugged with dirt  
Date Well Plugged \_\_\_\_\_  
Plugging approved by: \_\_\_\_\_

No.	Depth in Feet		Cubic Feet of Cement
	Top	Bottom	
1			
2			
3			
4			

State Engineer Representative

FOR USE OF STATE ENGINEER ONLY

Date Received July 26, 1990

Quad \_\_\_\_\_ FWL \_\_\_\_\_ FSL \_\_\_\_\_

File No. CP-750 Use OWD Location No. 20.34.7.4300

STATE ENGINEER OFFICE  
SANTA FE NEW MEXICO  
90 SEP 7 AM 10 05





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### Search Results -- 1 sites found

Agency code = usgs  
 site\_no list = 

- 323656103362201

Minimum number of levels = 1

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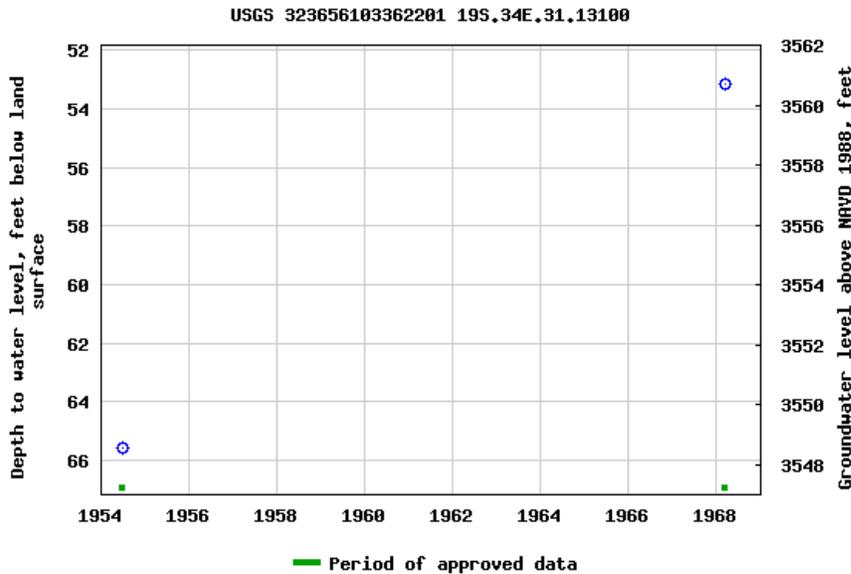
### USGS 323656103362201 19S.34E.31.13100

Available data for this site

Lea County, New Mexico  
 Hydrologic Unit Code 13060011  
 Latitude 32°36'56", Longitude 103°36'22" NAD27  
 Land-surface elevation 3,614 feet above NAVD88  
 This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
<a href="#">Reselect period</a>



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0.58 0.52 nadww01



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Agency code = usgs

site\_no list = 

- 323657103361301

Minimum number of levels = 1

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### USGS 323657103361301 19S.34E.31.13220

Available data for this site

Lea County, New Mexico

Hydrologic Unit Code 13060011

Latitude 32°36'57", Longitude 103°36'13" NAD27

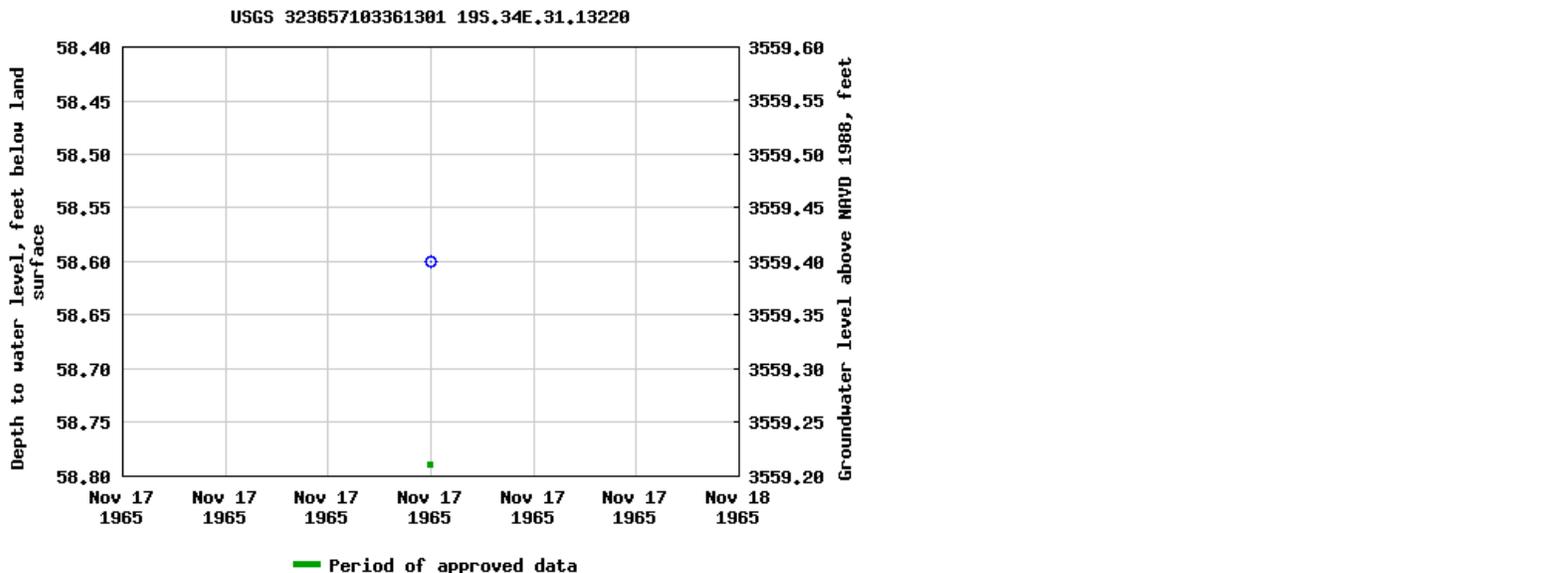
Land-surface elevation 3,618 feet above NAVD88

The depth of the well is 66 feet below land surface.

This well is completed in the Alluvium, Bolson Deposits and Other Surface Deposits (110AVMB) local aquifer.

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
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Agency code = usgs  
 site\_no list = 

- 323659103354601

Minimum number of levels = 1

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### USGS 323659103354601 19S.34E.31.232+DUP

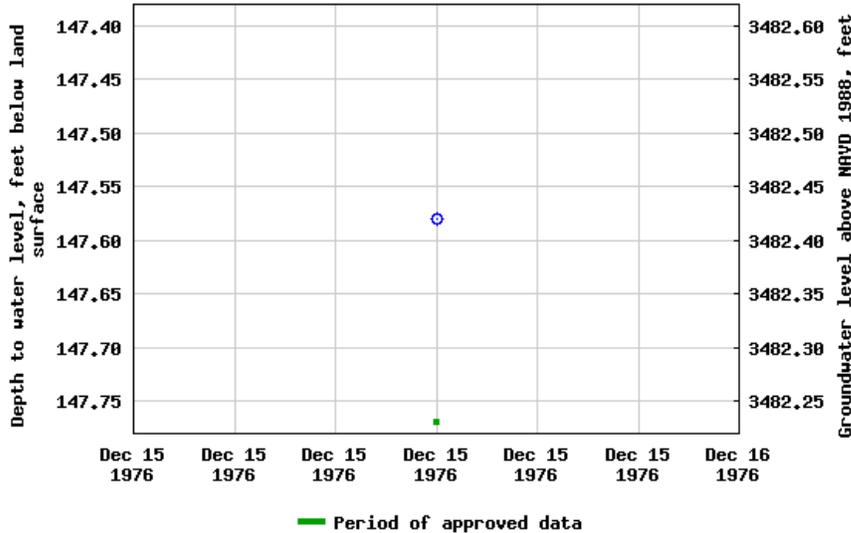
Available data for this site

Lea County, New Mexico  
 Hydrologic Unit Code 13060011  
 Latitude 32°36'59", Longitude 103°35'46" NAD27  
 Land-surface elevation 3,630 feet above NAVD88

#### Output formats

<a href="#">Table of data</a>
<a href="#">Tab-separated data</a>
<a href="#">Graph of data</a>
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USGS 323659103354601 19S.34E.31.232+DUP



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- 323345103351101

Minimum number of levels = 1

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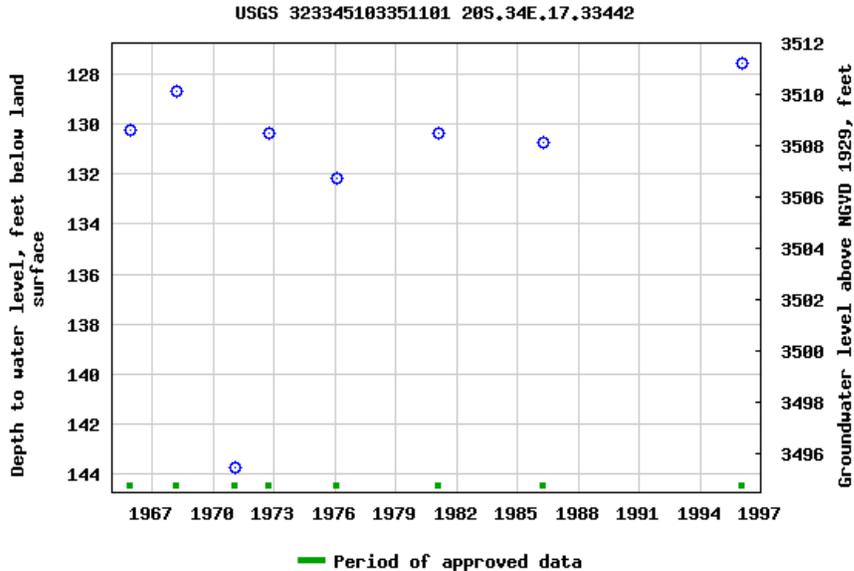
### USGS 323345103351101 20S.34E.17.33442

Available data for this site

Lea County, New Mexico  
 Hydrologic Unit Code 13060011  
 Latitude 32°34'00", Longitude 103°35'14" NAD27  
 Land-surface elevation 3,639.00 feet above NGVD29  
 The depth of the well is 160 feet below land surface.  
 This well is completed in the Chinle Formation (231CHNL) local aquifer.

#### Output formats

<a href="#">Table of data</a>
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- 323442103384101

Minimum number of levels = 1

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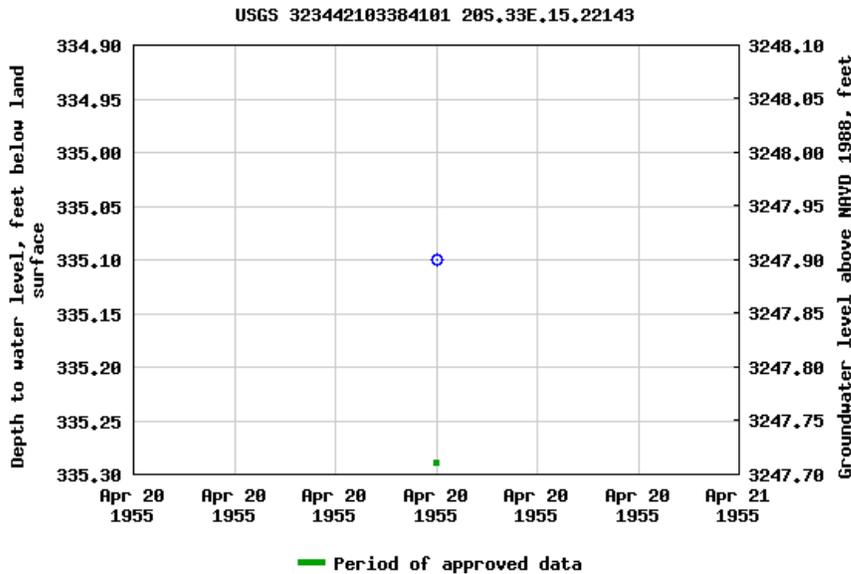
### USGS 323442103384101 20S.33E.15.22143

Available data for this site

Lea County, New Mexico  
 Hydrologic Unit Code 13060011  
 Latitude 32°34'42", Longitude 103°38'41" NAD27  
 Land-surface elevation 3,583 feet above NAVD88  
 This well is completed in the Sunrise Formation (231SNRS) local aquifer.

#### Output formats

<a href="#">Table of data</a>
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## **Appendix B**

### **Field Data and Soil Profile Logs**



# Soil Profile

Date: 12/11/2019

Project: Hamon Fed Com A #3H

Project Number: 11552 Latitude: 32.596216 Longitude: -103.597601

Depth (ft. bgs)

Description

1		0-8" Imported Fill / Caliche
2	TD	Tan sand
3		
4		
5		
6		
7		
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39		
40		



### Sample Log

Date: 12/11/2019

Project: Hamon Fed Com A #3H

Project Number: 11552 Latitude: 32.596216 Longitude: -103.597601

Sample ID	PID/Odor	Chloride Conc.	GPS
NH 1 @ surface	NONE	348	32.59654, -103.59763
NH 1 @ 1'	NONE	280	" "
* NH 2 @ surface	NONE	916	32.59641, -103.59731
* NH 2 @ 1'	NONE	464	
* EH 1 @ surface	NONE	2504	32.59670, -103.59719
* EH 1 @ 1'	NONE	<del>600</del> 664	
* EH 2 @ surface	NONE	2156	32.59614, -103.59719
* EH 2 @ 1'	NONE	1628	" "
SH 1 @ surface	NONE	312	32.59602, -103.59761
SH 1 @ 1'	NONE	248	" "
* SH 2 @ surface	NONE	1872	32.59606, -103.59743
* SH 2 @ 1'	NONE	508	" "
WH 1 @ surface	NONE	196	32.59612, -103.59771
WH 1 @ 1'	NONE	7124	" "
* WH 2 @ surface	NONE	720	32.59634, -103.59777
* WH 2 @ 1'	NONE	312	" "
SP 1 @ 1'	NONE	508	32.59605, -103.59755
SP 2 @ 1' light	<del>NONE</del>	312	32.59620, -103.59746
SP 3 @ 1'	NONE	508	32.59621, -103.59724
SP 4 @ 1'	NONE	424	32.596327, -103.597306
SP 5 @ 1'	NONE	464	32.596350, -103.59763
WH 2 b @ surface	NONE	328	
WH 2 b @ 1'	NONE	464	
* NH 2 b @ surface	NONE	1520	
* NH 2 b @ 1'	NONE	608	
* NH 2 c @ surface	NONE	2504	
* NH 2 c @ 1'	NONE	2504	
* EH 2 b @ surface	NONE	< 2514	
* EH 2 b @ 1'	NONE	2156	
* EH 1 b @ surface	NONE	1628	
* EH 1 b @ 1'	NONE	312	
SH 2 b @ surface	NONE	248	
SH 2 b @ 1'	NONE	> 124	
<del>WH 2 b @ surface</del>			
<del>WH 2 b @ 1'</del>			

Sample Point = SP #1 @ ## etc

Test Trench = TT #1 @ ##

Resamples = SP #1 @ 5b or SW #1b

Floor = FL #1 etc

Refusal = SP #1 @ 4'-R

Stockpile = Stockpile #1

Sidewall = SW #1 etc

Soil Intended to be Deferred = SP #1 @ 4' In-Situ

GPS Sample Points, Center of Comp Areas

## **Appendix C**

### **Laboratory Analytical Reports**

**Analytical Report 646599**  
**for**  
**Etech Environmental & Safety Solution, Inc**

**Project Manager: Joel Lowry**

**Hamon Fed Com #3H**

**11552**

**23-DEC-19**

Collected By: Client



**1211 W. Florida Ave**  
**Midland TX 79701**

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)



23-DEC-19

Project Manager: **Joel Lowry**  
**Etech Environmental & Safety Solution, Inc**  
P.O. Box 8469  
Midland, TX 79708

Reference: XENCO Report No(s): **646599**  
**Hamon Fed Com #3H**  
Project Address: Rural Lea

**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) 646599. 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. 646599 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



## Sample Cross Reference 646599



Etech Environmental &amp; Safety Solution, Inc, Midland, TX

Hamon Fed Com #3H

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP1 @ 1'	S	12-11-19 00:00	1 ft	646599-001
SP2 @ 1'	S	12-11-19 00:00	1 ft	646599-002
SP3 @ 1'	S	12-11-19 00:00	1 ft	646599-003
SP4 @ 1'	S	12-11-19 00:00	1 ft	646599-004
SP5 @ 1'	S	12-11-19 00:00	1 ft	646599-005
NH1 @ Surf	S	12-11-19 00:00		646599-006
NH1 @ 1'	S	12-11-19 00:00	1 ft	646599-007
NH2 @ Surf	S	12-11-19 00:00		646599-008
NH2 @ 1'	S	12-11-19 00:00	1 ft	646599-009
EH1 @ Surf	S	12-11-19 00:00		646599-010
EH1 @ 1'	S	12-11-19 00:00	1 ft	646599-011
SH1 @ Surf	S	12-11-19 00:00		646599-012
SH1 @ 1'	S	12-11-19 00:00	1 ft	646599-013
SH2 @ Surf	S	12-11-19 00:00		646599-014
SH2 @ 1'	S	12-11-19 00:00	1 ft	646599-015
WH1 @ Surf	S	12-11-19 00:00		646599-016
WH1 @ 1'	S	12-11-19 00:00	1 ft	646599-017
WH2 @ Surf	S	12-11-19 00:00		646599-018
WH2 @ 1'	S	12-11-19 00:00	1 ft	646599-019

**CASE NARRATIVE***Client Name: Etech Environmental & Safety Solution, Inc**Project Name: Hamon Fed Com #3H*Project ID: 11552  
Work Order Number(s): 646599Report Date: 23-DEC-19  
Date Received: 12/17/2019**Sample receipt non conformances and comments:**

None

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-3111044 Chloride by EPA 300

Lab Sample ID 646599-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646599-001, -002, -003, -004, -005, -006, -007, -008, -009, -010.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111086 Chloride by EPA 300

Lab Sample ID 646620-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646599-011, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3111382 BTEX by EPA 8021B

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

Lab Sample ID 646599-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). m,p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 646599-001, -002, -003, -004, -005, -006, -007, -008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019.

The Laboratory Control Sample for m,p-Xylenes is within laboratory Control Limits, therefore the data was accepted.



# Certificate of Analysis Summary 646599

## Etech Environmental & Safety Solution, Inc, Midland, TX



**Project Name: Hamon Fed Com #3H**

**Project Id:** 11552  
**Contact:** Joel Lowry  
**Project Location:** Rural Lea

**Date Received in Lab:** Tue Dec-17-19 12:45 pm  
**Report Date:** 23-DEC-19  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646599-001	646599-002	646599-003	646599-004	646599-005	646599-006
	<i>Field Id:</i>	SP1 @ 1'	SP2 @ 1'	SP3 @ 1'	SP4 @ 1'	SP5 @ 1'	NH1 @ Surf
	<i>Depth:</i>	1- ft					
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-11-19 00:00					
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-19-19 14:00					
	<i>Analyzed:</i>	Dec-21-19 16:15	Dec-21-19 16:35	Dec-21-19 16:56	Dec-21-19 17:16	Dec-21-19 17:36	Dec-21-19 17:57
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202
Toluene		0.00305 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202
Ethylbenzene		<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200	<0.00200 0.00200	<0.00199 0.00199	<0.00202 0.00202
m,p-Xylenes		0.00407 0.00400	<0.00398 0.00398	<0.00400 0.00400	<0.00401 0.00401	<0.00398 0.00398	<0.00403 0.00403
o-Xylene		0.00838 0.00200	0.00669 0.00199	<0.00200 0.00200	0.00296 0.00200	<0.00199 0.00199	<0.00202 0.00202
Total Xylenes		0.0125 0.00200	0.00669 0.00199	<0.00200 0.00200	0.00296 0.00200	<0.00199 0.00199	<0.00202 0.00202
Total BTEX		0.0155 0.00200	0.00669 0.00199	<0.00200 0.00200	0.00296 0.00200	<0.00199 0.00199	<0.00202 0.00202
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Dec-18-19 13:20					
	<i>Analyzed:</i>	Dec-18-19 19:04	Dec-18-19 19:24	Dec-18-19 19:31	Dec-18-19 19:51	Dec-18-19 19:58	Dec-18-19 20:04
	<i>Units/RL:</i>	mg/kg RL					
Chloride		434 4.99	269 5.03	353 4.98	279 5.00	461 5.01	143 4.97
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-18-19 08:00					
	<i>Analyzed:</i>	Dec-18-19 19:57	Dec-18-19 21:01	Dec-18-19 21:22	Dec-18-19 21:43	Dec-18-19 22:03	Dec-18-19 22:24
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	<50.0 50.0	<49.8 49.8
Diesel Range Organics (DRO)		274 50.0	457 50.0	<49.9 49.9	259 49.9	422 50.0	73.1 49.8
Motor Oil Range Hydrocarbons (MRO)		<50.0 50.0	<50.0 50.0	<49.9 49.9	<49.9 49.9	50.7 50.0	<49.8 49.8
Total TPH		274 50.0	457 50.0	<49.9 49.9	259 49.9	473 50.0	73.1 49.8

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 646599

## Etech Environmental & Safety Solution, Inc, Midland, TX



**Project Name: Hamon Fed Com #3H**

**Project Id:** 11552  
**Contact:** Joel Lowry  
**Project Location:** Rural Lea

**Date Received in Lab:** Tue Dec-17-19 12:45 pm  
**Report Date:** 23-DEC-19  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646599-007	646599-008	646599-009	646599-010	646599-011	646599-012
	<i>Field Id:</i>	NH1 @ 1'	NH2 @ Surf	NH2 @ 1'	EH1 @ Surf	EH1 @ 1'	SH1 @ Surf
	<i>Depth:</i>	1- ft		1- ft		1- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-11-19 00:00					
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-19-19 14:00					
	<i>Analyzed:</i>	Dec-21-19 18:17	Dec-21-19 18:38	Dec-21-19 18:58	Dec-21-19 19:19	Dec-21-19 20:58	Dec-21-19 21:18
	<i>Units/RL:</i>	mg/kg RL					
Benzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Toluene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Ethylbenzene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
m,p-Xylenes		<0.00403 0.00403	<0.00398 0.00398	<0.00402 0.00402	<0.00399 0.00399	<0.00398 0.00398	<0.00399 0.00399
o-Xylene		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total Xylenes		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
Total BTEX		<0.00202 0.00202	<0.00199 0.00199	<0.00201 0.00201	<0.00200 0.00200	<0.00199 0.00199	<0.00200 0.00200
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 13:20	Dec-18-19 16:30	Dec-18-19 16:30
	<i>Analyzed:</i>	Dec-18-19 20:11	Dec-18-19 20:17	Dec-18-19 20:24	Dec-18-19 20:31	Dec-18-19 18:01	Dec-18-19 18:17
	<i>Units/RL:</i>	mg/kg RL					
Chloride		131 5.00	1460 5.02	244 4.96	3500 25.0	520 4.96	343 4.99
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-18-19 08:00					
	<i>Analyzed:</i>	Dec-18-19 22:45	Dec-18-19 23:06	Dec-18-19 23:27	Dec-18-19 23:48	Dec-19-19 00:30	Dec-19-19 00:51
	<i>Units/RL:</i>	mg/kg RL					
Gasoline Range Hydrocarbons (GRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Diesel Range Organics (DRO)		<49.9 49.9	151 50.0	<49.9 49.9	51.1 50.0	<49.8 49.8	<49.9 49.9
Motor Oil Range Hydrocarbons (MRO)		<49.9 49.9	<50.0 50.0	<49.9 49.9	<50.0 50.0	<49.8 49.8	<49.9 49.9
Total TPH		<49.9 49.9	151 50.0	<49.9 49.9	51.1 50.0	<49.8 49.8	<49.9 49.9

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



# Certificate of Analysis Summary 646599

## Etech Environmental & Safety Solution, Inc, Midland, TX



**Project Name: Hamon Fed Com #3H**

**Project Id:** 11552  
**Contact:** Joel Lowry  
**Project Location:** Rural Lea

**Date Received in Lab:** Tue Dec-17-19 12:45 pm  
**Report Date:** 23-DEC-19  
**Project Manager:** Jessica Kramer

<i>Analysis Requested</i>	<i>Lab Id:</i>	646599-013	646599-014	646599-015	646599-016	646599-017	646599-018
	<i>Field Id:</i>	SH1 @ 1'	SH2 @ Surf	SH2 @ 1'	WH1 @ Surf	WH1 @ 1'	WH2 @ Surf
	<i>Depth:</i>	1- ft		1- ft		1- ft	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	<i>Sampled:</i>	Dec-11-19 00:00					
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-19-19 14:00					
	<i>Analyzed:</i>	Dec-21-19 21:39	Dec-21-19 21:59	Dec-21-19 22:20	Dec-21-19 22:40	Dec-21-19 23:00	Dec-21-19 23:21
	<i>Units/RL:</i>	mg/kg    RL					
Benzene		<0.00202    0.00202	<0.00200    0.00200	<0.00198    0.00198	<0.00199    0.00199	<0.00200    0.00200	<0.00198    0.00198
Toluene		<0.00202    0.00202	<0.00200    0.00200	<0.00198    0.00198	<0.00199    0.00199	<0.00200    0.00200	<0.00198    0.00198
Ethylbenzene		<0.00202    0.00202	<0.00200    0.00200	<0.00198    0.00198	<0.00199    0.00199	<0.00200    0.00200	<0.00198    0.00198
m,p-Xylenes		<0.00403    0.00403	<0.00401    0.00401	<0.00396    0.00396	<0.00398    0.00398	<0.00400    0.00400	<0.00397    0.00397
o-Xylene		<0.00202    0.00202	<0.00200    0.00200	<0.00198    0.00198	<0.00199    0.00199	<0.00200    0.00200	<0.00198    0.00198
Total Xylenes		<0.00202    0.00202	<0.00200    0.00200	<0.00198    0.00198	<0.00199    0.00199	<0.00200    0.00200	<0.00198    0.00198
Total BTEX		<0.00202    0.00202	<0.00200    0.00200	<0.00198    0.00198	<0.00199    0.00199	<0.00200    0.00200	<0.00198    0.00198
<b>Chloride by EPA 300</b>	<i>Extracted:</i>	Dec-18-19 16:30					
	<i>Analyzed:</i>	Dec-18-19 18:22	Dec-18-19 18:27	Dec-19-19 12:09	Dec-18-19 19:35	Dec-18-19 19:40	Dec-18-19 19:45
	<i>Units/RL:</i>	mg/kg    RL					
Chloride		51.0    4.98	2160    25.2	2840    25.2	23.8    4.96	12.3    5.03	592    5.00
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-18-19 08:00					
	<i>Analyzed:</i>	Dec-19-19 01:12	Dec-19-19 01:33	Dec-19-19 01:54	Dec-19-19 02:15	Dec-19-19 02:36	Dec-19-19 02:58
	<i>Units/RL:</i>	mg/kg    RL					
Gasoline Range Hydrocarbons (GRO)		<50.0    50.0	<49.9    49.9	<50.0    50.0	<49.9    49.9	<50.0    50.0	<49.9    49.9
Diesel Range Organics (DRO)		<50.0    50.0	521    49.9	99.3    50.0	<49.9    49.9	<50.0    50.0	1000    49.9
Motor Oil Range Hydrocarbons (MRO)		<50.0    50.0	100    49.9	<50.0    50.0	<49.9    49.9	<50.0    50.0	196    49.9
Total TPH		<50.0    50.0	621    49.9	99.3    50.0	<49.9    49.9	<50.0    50.0	1200    49.9

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



**Certificate of Analysis Summary 646599**  
**Etech Environmental & Safety Solution, Inc, Midland, TX**  
**Project Name: Hamon Fed Com #3H**



**Project Id:** 11552  
**Contact:** Joel Lowry  
**Project Location:** Rural Lea

**Date Received in Lab:** Tue Dec-17-19 12:45 pm  
**Report Date:** 23-DEC-19  
**Project Manager:** Jessica Kramer

<b>Analysis Requested</b>	<b>Lab Id:</b> 646599-019 <b>Field Id:</b> WH2 @ 1' <b>Depth:</b> 1- ft <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-11-19 00:00					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Dec-19-19 14:00 <b>Analyzed:</b> Dec-21-19 23:41 <b>Units/RL:</b> mg/kg RL					
Benzene	<0.00201 0.00201					
Toluene	<0.00201 0.00201					
Ethylbenzene	<0.00201 0.00201					
m,p-Xylenes	<0.00402 0.00402					
o-Xylene	<0.00201 0.00201					
Total Xylenes	<0.00201 0.00201					
Total BTEX	<0.00201 0.00201					
<b>Chloride by EPA 300</b>	<b>Extracted:</b> Dec-18-19 16:30 <b>Analyzed:</b> Dec-18-19 19:50 <b>Units/RL:</b> mg/kg RL					
Chloride	449 4.98					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-18-19 08:00 <b>Analyzed:</b> Dec-19-19 03:19 <b>Units/RL:</b> mg/kg RL					
Gasoline Range Hydrocarbons (GRO)	<50.0 50.0					
Diesel Range Organics (DRO)	<50.0 50.0					
Motor Oil Range Hydrocarbons (MRO)	<50.0 50.0					
Total TPH	<50.0 50.0					

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*Jessica Kramer*

Jessica Kramer  
Project Assistant



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>SP1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-001	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 12.18.19 13.20	Basis: Wet Weight
Seq Number: 3111044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
<b>Chloride</b>	16887-00-6	<b>434</b>	4.99	mg/kg	12.18.19 19.04		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 19.57	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>274</b>	50.0	mg/kg	12.18.19 19.57		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 19.57	U	1
<b>Total TPH</b>	PHC635	<b>274</b>	50.0	mg/kg	12.18.19 19.57		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	12.18.19 19.57	
o-Terphenyl	84-15-1	110	%	70-135	12.18.19 19.57	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SP1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-001	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 16.15	U	1
<b>Toluene</b>	108-88-3	<b>0.00305</b>	0.00200	mg/kg	12.21.19 16.15		1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 16.15	U	1
<b>m,p-Xylenes</b>	179601-23-1	<b>0.00407</b>	0.00400	mg/kg	12.21.19 16.15		1
<b>o-Xylene</b>	95-47-6	<b>0.00838</b>	0.00200	mg/kg	12.21.19 16.15		1
<b>Total Xylenes</b>	1330-20-7	<b>0.0125</b>	0.00200	mg/kg	12.21.19 16.15		1
<b>Total BTEX</b>		<b>0.0155</b>	0.00200	mg/kg	12.21.19 16.15		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	119	%	70-130	12.21.19 16.15		
4-Bromofluorobenzene	460-00-4	103	%	70-130	12.21.19 16.15		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>SP2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-002	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 12.18.19 13.20	Basis: Wet Weight
Seq Number: 3111044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	269	5.03	mg/kg	12.18.19 19.24		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 21.01	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>457</b>	50.0	mg/kg	12.18.19 21.01		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 21.01	U	1
<b>Total TPH</b>	PHC635	<b>457</b>	50.0	mg/kg	12.18.19 21.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	114	%	70-135	12.18.19 21.01	
o-Terphenyl	84-15-1	116	%	70-135	12.18.19 21.01	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SP2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-002	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 16.35	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 16.35	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 16.35	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 16.35	U	1
<b>o-Xylene</b>	95-47-6	<b>0.00669</b>	0.00199	mg/kg	12.21.19 16.35		1
<b>Total Xylenes</b>	1330-20-7	<b>0.00669</b>	0.00199	mg/kg	12.21.19 16.35		1
<b>Total BTEX</b>		<b>0.00669</b>	0.00199	mg/kg	12.21.19 16.35		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 16.35		
4-Bromofluorobenzene	460-00-4	107	%	70-130	12.21.19 16.35		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>SP3 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-003	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 12.18.19 13.20	Basis: Wet Weight
Seq Number: 3111044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	353	4.98	mg/kg	12.18.19 19.31		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 21.22	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 21.22	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.18.19 21.22	
o-Terphenyl	84-15-1	105	%	70-135	12.18.19 21.22	



## Certificate of Analytical Results 646599



### Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SP3 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-003	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.21.19 16.56	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 16.56	U	1
			%				
<b>Surrogate</b>	<b>Cas Number</b>	<b>Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 16.56		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 16.56		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **SP4 @ 1'** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-004 Date Collected: 12.11.19 00.00 Sample Depth: 1 ft  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 12.18.19 13.20 Basis: Wet Weight  
 Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	279	5.00	mg/kg	12.18.19 19.51		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 21.43	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>259</b>	49.9	mg/kg	12.18.19 21.43		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 21.43	U	1
<b>Total TPH</b>	PHC635	<b>259</b>	49.9	mg/kg	12.18.19 21.43		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.18.19 21.43	
o-Terphenyl	84-15-1	109	%	70-135	12.18.19 21.43	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SP4 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-004	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 17.16	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 17.16	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 17.16	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.21.19 17.16	U	1
<b>o-Xylene</b>	95-47-6	<b>0.00296</b>	0.00200	mg/kg	12.21.19 17.16		1
<b>Total Xylenes</b>	1330-20-7	<b>0.00296</b>	0.00200	mg/kg	12.21.19 17.16		1
<b>Total BTEX</b>		<b>0.00296</b>	0.00200	mg/kg	12.21.19 17.16		1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.21.19 17.16		
1,4-Difluorobenzene	540-36-3	109	%	70-130	12.21.19 17.16		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>SP5 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-005	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 12.18.19 13.20	Basis: Wet Weight
Seq Number: 3111044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
<b>Chloride</b>	16887-00-6	<b>461</b>	5.01	mg/kg	12.18.19 19.58		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 22.03	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>422</b>	50.0	mg/kg	12.18.19 22.03		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<b>50.7</b>	50.0	mg/kg	12.18.19 22.03		1
<b>Total TPH</b>	PHC635	<b>473</b>	50.0	mg/kg	12.18.19 22.03		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.18.19 22.03	
o-Terphenyl	84-15-1	106	%	70-135	12.18.19 22.03	



## Certificate of Analytical Results 646599



### Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SP5 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-005	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 17.36	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 17.36	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.21.19 17.36		
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 17.36		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **NH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-006 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 12.18.19 13.20 Basis: Wet Weight  
 Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	143	4.97	mg/kg	12.18.19 20.04		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.18.19 22.24	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>73.1</b>	49.8	mg/kg	12.18.19 22.24		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.18.19 22.24	U	1
<b>Total TPH</b>	PHC635	<b>73.1</b>	49.8	mg/kg	12.18.19 22.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.18.19 22.24	
o-Terphenyl	84-15-1	103	%	70-135	12.18.19 22.24	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **NH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-006 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.19 17.57	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.19 17.57	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 17.57		
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.21.19 17.57		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>NH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-007	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 12.18.19 13.20	Basis: Wet Weight
Seq Number: 3111044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	131	5.00	mg/kg	12.18.19 20.11		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 22.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 22.45	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 22.45	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 22.45	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	12.18.19 22.45	
o-Terphenyl	84-15-1	100	%	70-135	12.18.19 22.45	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>NH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-007	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.19 18.17	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.19 18.17	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	106	%	70-130	12.21.19 18.17		
1,4-Difluorobenzene	540-36-3	92	%	70-130	12.21.19 18.17		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **NH2 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-008 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 12.18.19 13.20 Basis: Wet Weight  
 Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	1460	5.02	mg/kg	12.18.19 20.17		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 23.06	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>151</b>	50.0	mg/kg	12.18.19 23.06		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 23.06	U	1
<b>Total TPH</b>	PHC635	<b>151</b>	50.0	mg/kg	12.18.19 23.06		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.18.19 23.06	
o-Terphenyl	84-15-1	105	%	70-135	12.18.19 23.06	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **NH2 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-008 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 18.38	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 18.38	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.21.19 18.38		
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 18.38		



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>NH2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-009	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: CHE		% Moisture:
Analyst: CHE	Date Prep: 12.18.19 13.20	Basis: Wet Weight
Seq Number: 3111044		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	244	4.96	mg/kg	12.18.19 20.24		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.18.19 23.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.18.19 23.27	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.18.19 23.27	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.18.19 23.27	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.18.19 23.27	
o-Terphenyl	84-15-1	105	%	70-135	12.18.19 23.27	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>NH2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-009	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.21.19 18.58	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.21.19 18.58	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 18.58		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.21.19 18.58		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **EH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-010 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: CHE % Moisture:  
 Analyst: CHE Date Prep: 12.18.19 13.20 Basis: Wet Weight  
 Seq Number: 3111044

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	3500	25.0	mg/kg	12.18.19 20.31		5

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.18.19 23.48	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>51.1</b>	50.0	mg/kg	12.18.19 23.48		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.18.19 23.48	U	1
<b>Total TPH</b>	PHC635	<b>51.1</b>	50.0	mg/kg	12.18.19 23.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	12.18.19 23.48	
o-Terphenyl	84-15-1	108	%	70-135	12.18.19 23.48	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **EH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-010 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.21.19 19.19	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 19.19	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	102	%	70-130	12.21.19 19.19		
1,4-Difluorobenzene	540-36-3	111	%	70-130	12.21.19 19.19		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>EH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-011	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 12.18.19 16.30	Basis: Wet Weight
Seq Number: 3111086		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	520	4.96	mg/kg	12.18.19 18.01		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.8	49.8	mg/kg	12.19.19 00.30	U	1
Total TPH	PHC635	<49.8	49.8	mg/kg	12.19.19 00.30	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	12.19.19 00.30	
o-Terphenyl	84-15-1	101	%	70-135	12.19.19 00.30	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>EH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-011	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 20.58	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 20.58	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.21.19 20.58		
4-Bromofluorobenzene	460-00-4	88	%	70-130	12.21.19 20.58		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **SH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-012 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SPC % Moisture:  
 Analyst: SPC Date Prep: 12.18.19 16.30 Basis: Wet Weight  
 Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	343	4.99	mg/kg	12.18.19 18.17		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.19.19 00.51	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.19.19 00.51	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	12.19.19 00.51	
o-Terphenyl	84-15-1	108	%	70-135	12.19.19 00.51	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **SH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-012 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
m,p-Xylenes	179601-23-1	<0.00399	0.00399	mg/kg	12.21.19 21.18	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 21.18	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.21.19 21.18		
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 21.18		



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-013	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 12.18.19 16.30	Basis: Wet Weight
Seq Number: 3111086		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	51.0	4.98	mg/kg	12.18.19 18.22		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 01.12	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.19 01.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	12.19.19 01.12	
o-Terphenyl	84-15-1	101	%	70-135	12.19.19 01.12	



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>SH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-013	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
m,p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	12.21.19 21.39	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Total Xylenes	1330-20-7	<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
Total BTEX		<0.00202	0.00202	mg/kg	12.21.19 21.39	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 21.39		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.21.19 21.39		



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **SH2 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-014 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SPC % Moisture:  
 Analyst: SPC Date Prep: 12.18.19 16.30 Basis: Wet Weight  
 Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2160	25.2	mg/kg	12.18.19 18.27		5

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 01.33	U	1
Diesel Range Organics (DRO)	C10C28DRO	521	49.9	mg/kg	12.19.19 01.33		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	100	49.9	mg/kg	12.19.19 01.33		1
Total TPH	PHC635	621	49.9	mg/kg	12.19.19 01.33		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 01.33	
o-Terphenyl	84-15-1	111	%	70-135	12.19.19 01.33	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **SH2 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-014 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
m,p-Xylenes	179601-23-1	<0.00401	0.00401	mg/kg	12.21.19 21.59	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 21.59	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.21.19 21.59		
4-Bromofluorobenzene	460-00-4	96	%	70-130	12.21.19 21.59		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>SH2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-015	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 12.18.19 16.30	Basis: Wet Weight
Seq Number: 3111086		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	2840	25.2	mg/kg	12.19.19 12.09		5

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 01.54	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>99.3</b>	50.0	mg/kg	12.19.19 01.54		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 01.54	U	1
<b>Total TPH</b>	PHC635	<b>99.3</b>	50.0	mg/kg	12.19.19 01.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	12.19.19 01.54	
o-Terphenyl	84-15-1	102	%	70-135	12.19.19 01.54	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>SH2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-015	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
m,p-Xylenes	179601-23-1	<0.00396	0.00396	mg/kg	12.21.19 22.20	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.21.19 22.20	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
4-Bromofluorobenzene	460-00-4	95	%	70-130	12.21.19 22.20		
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 22.20		



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **WH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-016 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SPC % Moisture:  
 Analyst: SPC Date Prep: 12.18.19 16.30 Basis: Wet Weight  
 Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	23.8	4.96	mg/kg	12.18.19 19.35		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<49.9	49.9	mg/kg	12.19.19 02.15	U	1
Total TPH	PHC635	<49.9	49.9	mg/kg	12.19.19 02.15	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 02.15	
o-Terphenyl	84-15-1	106	%	70-135	12.19.19 02.15	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **WH1 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-016 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	12.21.19 22.40	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Total Xylenes	1330-20-7	<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
Total BTEX		<0.00199	0.00199	mg/kg	12.21.19 22.40	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 22.40		
4-Bromofluorobenzene	460-00-4	101	%	70-130	12.21.19 22.40		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **WH1 @ 1'** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-017 Date Collected: 12.11.19 00.00 Sample Depth: 1 ft  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SPC % Moisture:  
 Analyst: SPC Date Prep: 12.18.19 16.30 Basis: Wet Weight  
 Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	12.3	5.03	mg/kg	12.18.19 19.40		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 02.36	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.19 02.36	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 02.36	
o-Terphenyl	84-15-1	105	%	70-135	12.19.19 02.36	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>WH1 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-017	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Toluene	108-88-3	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Ethylbenzene	100-41-4	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
m,p-Xylenes	179601-23-1	<0.00400	0.00400	mg/kg	12.21.19 23.00	U	1
o-Xylene	95-47-6	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Total Xylenes	1330-20-7	<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
Total BTEX		<0.00200	0.00200	mg/kg	12.21.19 23.00	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	113	%	70-130	12.21.19 23.00		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 23.00		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: **WH2 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-018 Date Collected: 12.11.19 00.00  
 Analytical Method: Chloride by EPA 300 Prep Method: E300P  
 Tech: SPC % Moisture:  
 Analyst: SPC Date Prep: 12.18.19 16.30 Basis: Wet Weight  
 Seq Number: 3111086

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	592	5.00	mg/kg	12.18.19 19.45		1

Analytical Method: TPH By SW8015 Mod Prep Method: SW8015P  
 Tech: DVM % Moisture:  
 Analyst: ARM Date Prep: 12.18.19 08.00 Basis: Wet Weight  
 Seq Number: 3111076

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<49.9	49.9	mg/kg	12.19.19 02.58	U	1
<b>Diesel Range Organics (DRO)</b>	C10C28DRO	<b>1000</b>	49.9	mg/kg	12.19.19 02.58		1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<b>196</b>	49.9	mg/kg	12.19.19 02.58		1
<b>Total TPH</b>	PHC635	<b>1200</b>	49.9	mg/kg	12.19.19 02.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	12.19.19 02.58	
o-Terphenyl	84-15-1	107	%	70-135	12.19.19 02.58	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: **WH2 @ Surf** Matrix: Soil Date Received: 12.17.19 12.45  
 Lab Sample Id: 646599-018 Date Collected: 12.11.19 00.00  
 Analytical Method: BTEX by EPA 8021B Prep Method: SW5030B  
 Tech: KTL % Moisture:  
 Analyst: KTL Date Prep: 12.19.19 14.00 Basis: Wet Weight  
 Seq Number: 3111382

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
m,p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	12.21.19 23.21	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Total Xylenes	1330-20-7	<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
Total BTEX		<0.00198	0.00198	mg/kg	12.21.19 23.21	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	110	%	70-130	12.21.19 23.21		
4-Bromofluorobenzene	460-00-4	100	%	70-130	12.21.19 23.21		



### Certificate of Analytical Results 646599



**Etech Environmental & Safety Solution, Inc, Midland, TX**  
 Hamon Fed Com #3H

Sample Id: <b>WH2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-019	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: Chloride by EPA 300		Prep Method: E300P
Tech: SPC		% Moisture:
Analyst: SPC	Date Prep: 12.18.19 16.30	Basis: Wet Weight
Seq Number: 3111086		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	449	4.98	mg/kg	12.18.19 19.50		1

Analytical Method: TPH By SW8015 Mod		Prep Method: SW8015P
Tech: DVM		% Moisture:
Analyst: ARM	Date Prep: 12.18.19 08.00	Basis: Wet Weight
Seq Number: 3111076		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Diesel Range Organics (DRO)	C10C28DRO	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Motor Oil Range Hydrocarbons (MRO)	PHCG2835	<50.0	50.0	mg/kg	12.19.19 03.19	U	1
Total TPH	PHC635	<50.0	50.0	mg/kg	12.19.19 03.19	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	117	%	70-135	12.19.19 03.19	
o-Terphenyl	84-15-1	118	%	70-135	12.19.19 03.19	



# Certificate of Analytical Results 646599



## Etech Environmental & Safety Solution, Inc, Midland, TX Hamon Fed Com #3H

Sample Id: <b>WH2 @ 1'</b>	Matrix: Soil	Date Received: 12.17.19 12.45
Lab Sample Id: 646599-019	Date Collected: 12.11.19 00.00	Sample Depth: 1 ft
Analytical Method: BTEX by EPA 8021B		Prep Method: SW5030B
Tech: KTL		% Moisture:
Analyst: KTL	Date Prep: 12.19.19 14.00	Basis: Wet Weight
Seq Number: 3111382		

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
m,p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	12.21.19 23.41	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Total Xylenes	1330-20-7	<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
Total BTEX		<0.00201	0.00201	mg/kg	12.21.19 23.41	U	1
<b>Surrogate</b>	<b>Cas Number</b>	<b>% Recovery</b>	<b>Units</b>	<b>Limits</b>	<b>Analysis Date</b>	<b>Flag</b>	
1,4-Difluorobenzene	540-36-3	107	%	70-130	12.21.19 23.41		
4-Bromofluorobenzene	460-00-4	92	%	70-130	12.21.19 23.41		





QC Summary 646599

Etech Environmental & Safety Solution, Inc  
Hamon Fed Com #3H

Analytical Method: Chloride by EPA 300

Seq Number: 3111044

MB Sample Id: 7692766-1-BLK

Matrix: Solid

LCS Sample Id: 7692766-1-BKS

Prep Method: E300P

Date Prep: 12.18.19

LCSD Sample Id: 7692766-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<0.858	250	251	100	254	102	90-110	1	20	mg/kg	12.18.19 17:18	

Analytical Method: Chloride by EPA 300

Seq Number: 3111086

MB Sample Id: 7692783-1-BLK

Matrix: Solid

LCS Sample Id: 7692783-1-BKS

Prep Method: E300P

Date Prep: 12.18.19

LCSD Sample Id: 7692783-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	261	104	252	101	90-110	4	20	mg/kg	12.18.19 17:51	

Analytical Method: Chloride by EPA 300

Seq Number: 3111044

Parent Sample Id: 646598-001

Matrix: Soil

MS Sample Id: 646598-001 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646598-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.03	252	262	104	261	104	90-110	0	20	mg/kg	12.18.19 17:38	

Analytical Method: Chloride by EPA 300

Seq Number: 3111044

Parent Sample Id: 646599-001

Matrix: Soil

MS Sample Id: 646599-001 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646599-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	434	250	661	91	645	84	90-110	2	20	mg/kg	12.19.19 08:16	X

Analytical Method: Chloride by EPA 300

Seq Number: 3111086

Parent Sample Id: 646599-011

Matrix: Soil

MS Sample Id: 646599-011 S

Prep Method: E300P

Date Prep: 12.18.19

MSD Sample Id: 646599-011 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	520	248	724	82	727	83	90-110	0	20	mg/kg	12.18.19 18:07	X

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



QC Summary 646599

Etech Environmental & Safety Solution, Inc  
Hamon Fed Com #3H

**Analytical Method: Chloride by EPA 300**

Seq Number: 3111086  
Parent Sample Id: 646620-002

Matrix: Soil  
MS Sample Id: 646620-002 S

Prep Method: E300P  
Date Prep: 12.18.19  
MSD Sample Id: 646620-002 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	44.1	251	280	94	274	92	90-110	2	20	mg/kg	12.18.19 20:06	

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3111076  
MB Sample Id: 7692691-1-BLK

Matrix: Solid  
LCS Sample Id: 7692691-1-BKS

Prep Method: SW8015P  
Date Prep: 12.18.19  
LCSD Sample Id: 7692691-1-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)	<15.0	1000	998	100	996	100	70-135	0	20	mg/kg	12.18.19 19:15	
Diesel Range Organics (DRO)	<15.0	1000	1050	105	1040	104	70-135	1	20	mg/kg	12.18.19 19:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		106		106		70-135	%	12.18.19 19:15
o-Terphenyl	106		104		103		70-135	%	12.18.19 19:15

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3111076

Matrix: Solid  
MB Sample Id: 7692691-1-BLK

Prep Method: SW8015P  
Date Prep: 12.18.19

Parameter	MB Result	Units	Analysis Date	Flag
Motor Oil Range Hydrocarbons (MRO)	<50.0	mg/kg	12.18.19 18:54	

**Analytical Method: TPH By SW8015 Mod**

Seq Number: 3111076  
Parent Sample Id: 646599-001

Matrix: Soil  
MS Sample Id: 646599-001 S

Prep Method: SW8015P  
Date Prep: 12.18.19  
MSD Sample Id: 646599-001 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)	41.2	998	1070	103	1030	99	70-135	4	20	mg/kg	12.18.19 20:18	
Diesel Range Organics (DRO)	274	998	1230	96	1210	94	70-135	2	20	mg/kg	12.18.19 20:18	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	112		109		70-135	%	12.18.19 20:18
o-Terphenyl	111		116		70-135	%	12.18.19 20:18

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



## QC Summary 646599

**Etech Environmental & Safety Solution, Inc**  
 Hamon Fed Com #3H
**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3111382

Matrix: Solid

Prep Method: SW5030B

MB Sample Id: 7692867-1-BLK

LCS Sample Id: 7692867-1-BKS

Date Prep: 12.19.19

LCSD Sample Id: 7692867-1-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	0.107	107	0.0987	99	70-130	8	35	mg/kg	12.21.19 14:04	
Toluene	<0.00200	0.100	0.101	101	0.0949	95	70-130	6	35	mg/kg	12.21.19 14:04	
Ethylbenzene	<0.00200	0.100	0.105	105	0.0986	99	70-130	6	35	mg/kg	12.21.19 14:04	
m,p-Xylenes	<0.00400	0.200	0.214	107	0.202	101	70-130	6	35	mg/kg	12.21.19 14:04	
o-Xylene	<0.00200	0.100	0.106	106	0.101	101	70-130	5	35	mg/kg	12.21.19 14:04	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	109		110		111		70-130	%	12.21.19 14:04
4-Bromofluorobenzene	100		99		106		70-130	%	12.21.19 14:04

**Analytical Method: BTEX by EPA 8021B**

Seq Number: 3111382

Matrix: Soil

Prep Method: SW5030B

Parent Sample Id: 646599-001

MS Sample Id: 646599-001 S

Date Prep: 12.19.19

MSD Sample Id: 646599-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	0.00157	0.101	0.0941	92	0.0964	96	70-130	2	35	mg/kg	12.21.19 14:45	
Toluene	0.00305	0.101	0.0819	78	0.0828	80	70-130	1	35	mg/kg	12.21.19 14:45	
Ethylbenzene	0.00102	0.101	0.0828	81	0.0787	78	70-130	5	35	mg/kg	12.21.19 14:45	
m,p-Xylenes	0.00407	0.202	0.144	69	0.122	60	70-130	17	35	mg/kg	12.21.19 14:45	X
o-Xylene	0.00838	0.101	0.0872	78	0.0852	77	70-130	2	35	mg/kg	12.21.19 14:45	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	113		114		70-130	%	12.21.19 14:45
4-Bromofluorobenzene	109		109		70-130	%	12.21.19 14:45

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







**XENCO Laboratories**  
**Prelogin/Nonconformance Report- Sample Log-In**



**Client:** Etech Environmental & Safety Solution, I

**Acceptable Temperature Range:** 0 - 6 degC  
**Air and Metal samples Acceptable Range:** Ambient

**Date/ Time Received:** 12/17/2019 12:45:00 PM

**Temperature Measuring device used :** R8

**Work Order #:** 646599

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6*Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Any missing/extra samples?	No
#9 Chain of Custody signed when relinquished/ received?	Yes
#10 Chain of Custody agrees with sample labels/matrix?	Yes
#11 Container label(s) legible and intact?	Yes
#12 Samples in proper container/ bottle?	Yes
#13 Samples properly preserved?	Yes
#14 Sample container(s) intact?	Yes
#15 Sufficient sample amount for indicated test(s)?	Yes
#16 All samples received within hold time?	Yes
#17 Subcontract of sample(s)?	N/A
#18 Water VOC samples have zero headspace?	N/A

**\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

**Checklist completed by:**

*Brianna Teel*

Brianna Teel

Date: 12/17/2019

**Checklist reviewed by:**

*Jessica Kramer*

Jessica Kramer

Date: 12/17/2019

## **Appendix D**

### **Photographic Log**

### Photographic Log

<b>Photo Number:</b> 1	 <p>21/11/2019 12:56 +32.596143,-103.597804</p>
<b>Photo Direction:</b> Northeast	
<b>Photo Description:</b> View of surface staining from the initial release.	

<b>Photo Number:</b> 2	 <p>21/11/2019 12:56 +32.596143,-103.597804</p>
<b>Photo Direction:</b> North	
<b>Photo Description:</b> View of surface staining from the initial release.	