911 Regional Park Drive
Houston, Texas 77060
Tel. 281.872.9300
www.ntglobal.com

PRELIMINARY RESULTS

January 12, 2017

Jim Brown
Americo Energy Resources, LLC
7575 San Felipe Street, Suite 200A
Houston, Texas 77063

Re: Site Assessment Report and Remedial Action Plan
Americo Energy Resources, LLC
New Mexico State B Lease Tank Battery
Lea County, New Mexico

Dear Mr. Brown:

On behalf of Americo Energy Resources, LLC (Americo), NTG Environmental, LLC (NTGE) has prepared this letter to document soil assessment activities conducted at the New Mexico State B Lease Tank Battery (Site) and to present a remedial action plan (RAP) to address identified impacts. Site assessment activities entailed installing soil borings from potential source areas and collecting soil samples to assess constituent of concern (COC) concentrations at the Site.

Site Description

The Site is located in Lea County approximately 12.2 miles northeast of Lovington, New Mexico (Figures 1 and 2). The surrounding land is rural and is primarily used for crop production, ranching, and oil & gas exploration and production. According the NRCS Web Soil Survey, Site soils are characterized as poorly graded loam with silt and clay components.

Regulatory Limits

Regulatory oversight of site remediation associated with oil and gas exploration and production (E&P) activities are under the jurisdiction of the New Mexico – Oil Conservation Division (NMOCD). The NMOCD has established "recommended remediation action levels" for soils impacted by petroleum and produced water constituents in the *Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993* (NMOCD Guideline). The NMOCD Guideline utilizes a risk based ranking system to determine cleanup limits required for a site.

The NMOCD guidelines establish a ranking system to determine a site's potential to threaten public health, fresh waters, and the environment. Sites receive a score from each category and the individual scores are summed to reach a total ranking score. The total ranking score determines the recommended remediation action levels for the site. The NMOCD ranking system and the total ranking score for the Site is shown in Table 1. The recommended remediation action levels are shown in Table 2.

Table 1. NMOCD Ranking System

Category	Distance to Resource (ft)	Score	Site
Depth to groundwater	< 50	20	---
	50 to 99	10	10*
	> 100	0	---
Wellhead protection	< 200	20	---
	> 200	0	0
Surface water protection	< 200	20	---
	200 to 1,000	10	---
	> 1,000	0	0
Total Ranking Score for Site			**10**

* - based on documented environmental drilling activities onsite

Table 2. NMOCD Recommended Remediation Action Levels

Constituent	Total Ranking Score		
	> 19	**10-19**	**0-9**
Benzene (mg/kg	10	**10**	10
Total BTEX (mg/kg)	50	**50**	50
TPH (mg/kg)	100	**1,000**	5,000
Chlorides (mg/kg)	250	**500**	1,000

BTEX – benzene, toluene, ethylbenzene and xylenes
TPH – total petroleum hydrocarbons
mg/kg – milligrams per kilograms

Site Investigation and Sample Collection

On August 10, 2016, NTGE conducted assessment activities at the Site. Soil borings were installed across the Site in potential source areaa to determine the presence or absence of potential soil impacts. A total of 27 soil samples were collected from 17 soil borings installed using a sharpshooter shovel and/or air rotary drilling rig to terminal depths ranging from 1 to 50 feet below ground surface (ft bgs). Soils were continuously field screened for volatile organic compounds (VOCs) using a photoionization detector (PID) and salinity using a Field Scout Direct Soil Electrical Conductivity meter. Soil boring locations are shown in Figure 3 (attached).

Sampling equipment was decontaminated with Alconox® and deionized water to prevent cross-contamination between samples. All samples were placed directly into laboratory-provided sample containers, labeled, stored on ice, and transported under proper chain-of-custody protocol to Xenco Laboratories in Midland, Texas for chemical analysis. Soil samples were analyzed for the following COC: benzene, toluene, ethylbenzene, and xylene (BTEX), total petroleum hydrocarbons (TPH), and chlorides. Following sample collection, all borings were plugged to ground surface with bentonite.

Analytical Results

Analytical results of the soil samples are presented in Table 1, below. Analytical reports and chain-of-custody documents are attached.

Table 1. Soil Analytical Results

Soil Boring	Depth Interval (ft bgs)	Petroleum Hydrocarbons (mg/kg)						Chloride (mg/kg)
		Benzene	Toluene	Ethylbenzene	Xylenes	Total BTEX	TPH	
SB1	0-1	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	31.8	865
SB2	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	29.8	2,000
SB3	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	40.3	15,100
SB4	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	1,120	5,500
SB5	0-1	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	282	1,770
SB6	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	138	1,740
SB7	0-1	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	43.9	14,900
	5	--	--	--	--	--	--	600
	15	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	<25.0	54.7
SB8	0-1	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	70.1	14,800
SB9	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	146	14,100
SB10	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	89.3	1,820
SB11	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	198	6,960
SB12	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	<24.9	141
SB13	0-1	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	<25.0	25.3
SB14	0-1	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	<25.0	13.2
SB15	0-1	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	35.5	8,300
	5	0.0168	0.00412	0.111	0.157	0.289	894	343
	10	<0.00150	<0.00200	<0.00200	0.00327	0.00327	91.1	851
	15	--	--	--	--	--	--	115
SB16	5	1.27	1.26	3.94	8.45	14.9	4,250	1,960
	10	--	--	--	--	--	<25.0	--
	20	--	--	--	--	--	<25.0	--
	30	--	--	--	--	--	426 K	--
	45	<0.00149	<0.00199	0.00418	0.0243	0.0285	285	325
	50	--	--	--	--	--	--	1,450
SB17	5	0.0279	0.0049	0.0471	0.0629	0.143	95.2	1,290
Regulatory Limit		**10**	**--**	**--**	**--**	**50**	**1,000**	**500**

ft bgs – feet below ground surface
mg/kg – milligram per kilogram
TPH – total petroleum hydrocarbons
– indicates COC concentration exceeding regulatory limit

Conclusions

Based on the analytical results and the regulatory limits, the following is concluded:

- TPH concentrations exceed regulatory limits in one sample (i.e., SB16) at the 5 ft bgs depth interval. Impacts are confined to the upper 10 ft bgs.
- Chloride concentrations exceed regulatory limits in 17 samples at depth intervals ranging from 1 to 50 ft bgs.
- All other COC concentrations are below regulatory limits in all samples.
- The affected area is not horizontally or vertically delineated. However, based on observations during assessment activities, NTGE is confident horizontal delineation can be achieved during remedial action activities.

Remedial Action Plan

Due to the presence of elevated TPH and chloride concentrations at the Site, additional remedial actions are necessary to bring the Site into compliance with the regulatory limits. NTGE recommends a combination of in-situ remedial strategies to bring the Site into compliance with the NMOCD regulatory limits. Detailed regarding the proposed remedial action plan are presented below.

Soil Excavation and Base Liner Installation

To address the chloride impacted soils at the Site, NTGE recommends the installation of a French drain and leachate collection system. Due to the extent of impacts, two separate French drain systems will be installed to aide in system management. The French drain systems will be underlain by a 20 mil HDPE liner to facilitate leachate recovery and limit the further vertical migration of chloride in underlying chloride impacts soils.

Chloride impacted soils exceeding the regulatory limit will be excavated to a depth of 1.5 ft bgs (typical root-zone) and stockpiled adjacent to the location to facilitate liner installation. Additionally, hydrocarbon impacted soils in the area of SB16 will be excavated to a depth of 5-10 feet and stockpiled adjacent to the locations. Confirmation samples will be collected for the base and sidewall of the hydrocarbon excavation to confirm the removal of all TPH impacted soil exceeding the regulatory limits. Following receipt of analytical results, the deeper TPH excavation will be backfilled with clean material in order to bring the grade up the remainder of the excavation.

Following soil excavation, the base of each French drain system will be graded to the center and to the east and south for French drain systems 1 and 2, respectively. Once graded, the base of the excavation will be lined with a 20 mil HDPE liner that will be keyed into berms pushed up around the perimeter of the excavations. The HDPE liner will serve as a base to the French drain system and reduce the potential for the further migration of any remaining subsurface impacts. The proposed excavation areas and French drain systems are illustrated on Figure 4.

French Drain and Sump Installation

Following liner installation, a French drain system will be installed along the entire length of each lined excavation and piped into a sump for leachate collection. The French drain will be constructed by placing six (6) inch socked perforated corrugated plastic drain pipe along the center line of the excavation and piping into a sump installed east and south for French drain systems 1 and 2, respectively. Following drainage pipe and sump installations, washed pea gravel or similar aggregate material will be placed in the base of the excavations to facilitate leachate collection. The aggregate will be laid at a thickness sufficient to cover the drain pipes and be extended to the horizontal extent of the excavations. Additionally, a submersible pump will be placed within the collection sumps in order to facilitate leachate collection. A representative drainage pipe, sump, and aggregate installation drawing is shown on Figure 5.

Excavation Backfilling

Once the French drains systems are installed, excavated material will be used to backfill the lined excavations. Following backfill activities, the TPH impacted soils will be treated with a high nitrogen fertilizer to facilitate petroleum hydrocarbon degradation and organic matter (i.e., mulch, hay, etc.) will be incorporated across the entire treatment area to facilitate even water infiltration.

System Operation and Control

The systems will be equipped with submersible pumps installed within the sumps. Americo personal will regularly monitor water levels within the sumps. When an adequate volume of water has accumulated within the sumps, the water will be pumped from the sump and re-applied across the treatment areas. Water will be field screened with chloride strips and allowed to be circulated through the system a total of three times or at which time it is believed to have reached its loading potential. At this time, the leachate water will be transported to a permitted disposal facility for final disposition.

System Monitoring and Reporting

NTGE will collect soil samples from the treatment systems semi-annually to monitor chloride concentrations in the soils and gauge treatment effectiveness. Additionally, the TPH impacted soils will also be monitored until which time sample results indicate the soils have been successfully remediated. NTGE will prepare semi-annual monitoring reports documenting soil monitoring activities for submittal to the NMOCD.

Conclusion

Once soil monitoring indicates that the chloride concentrations have been successfully reduced to below NMOCD regulatory standards, the containment berms will be levelled and the Site will be returned to neat natural grade. The liner and French drain system will be left in place to serve as a cap in limiting potential future migration of remaining underlying impacts.

If you have any questions regarding this letter or need further assistance with this project, please contact us at (281) 872-9300.

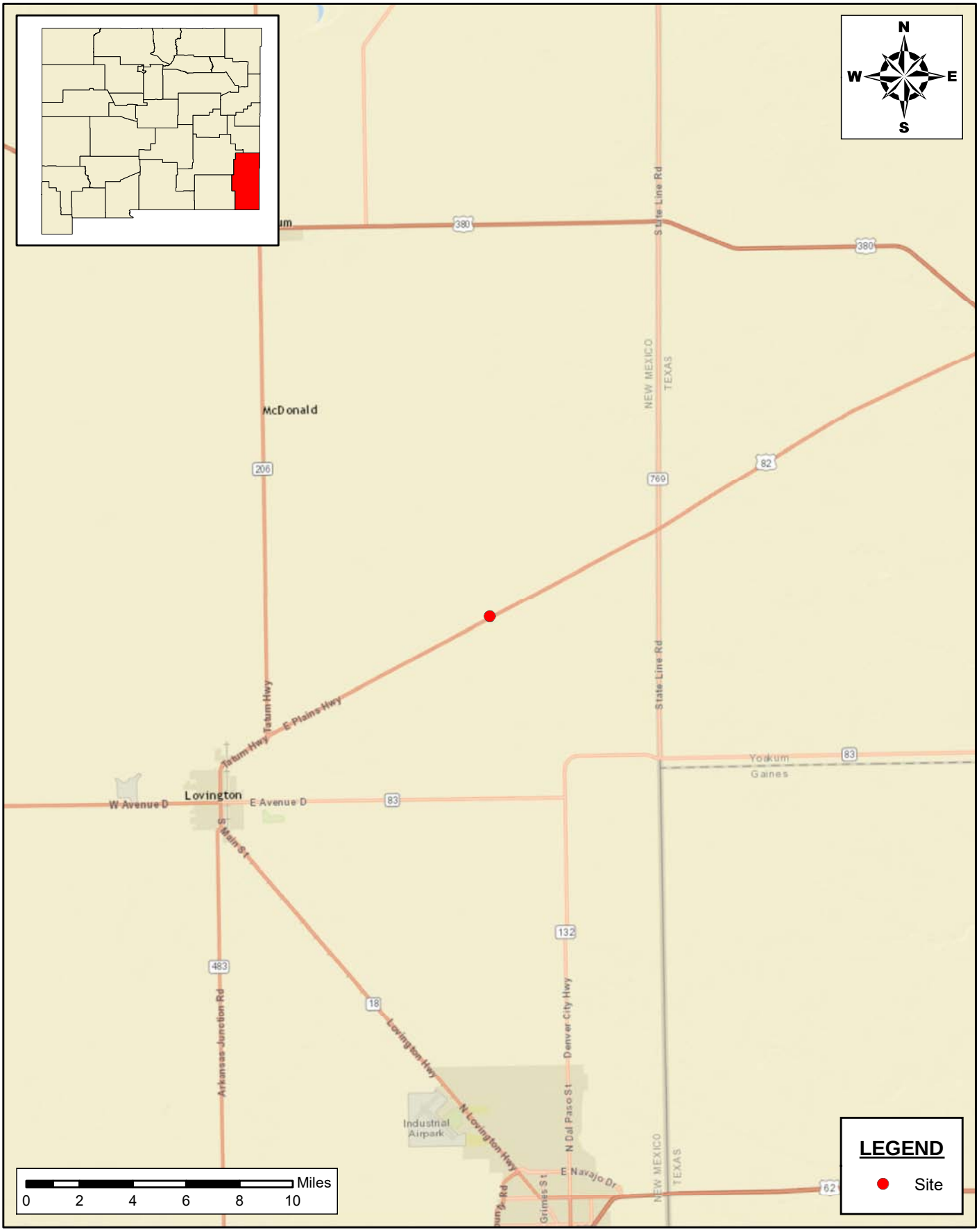
Sincerely,
NTG Environmental

Preston Kocian
Project Scientist

Gordon Banks, REM, CSEM, CESCO
Senior Project Manager

Attachments: Figures
Laboratory Reports and Chain-of-Custody Documents

FIGURES



Document Path: P:\2016 PROJECTS\AMERICO ENERGY RESOURCES (AERE)\RSC\AERE-R1603395\7- GIS\Geodatabase\AERE-R1603395_SAR_FIG 1_SLMap_2016_11_17.mxd

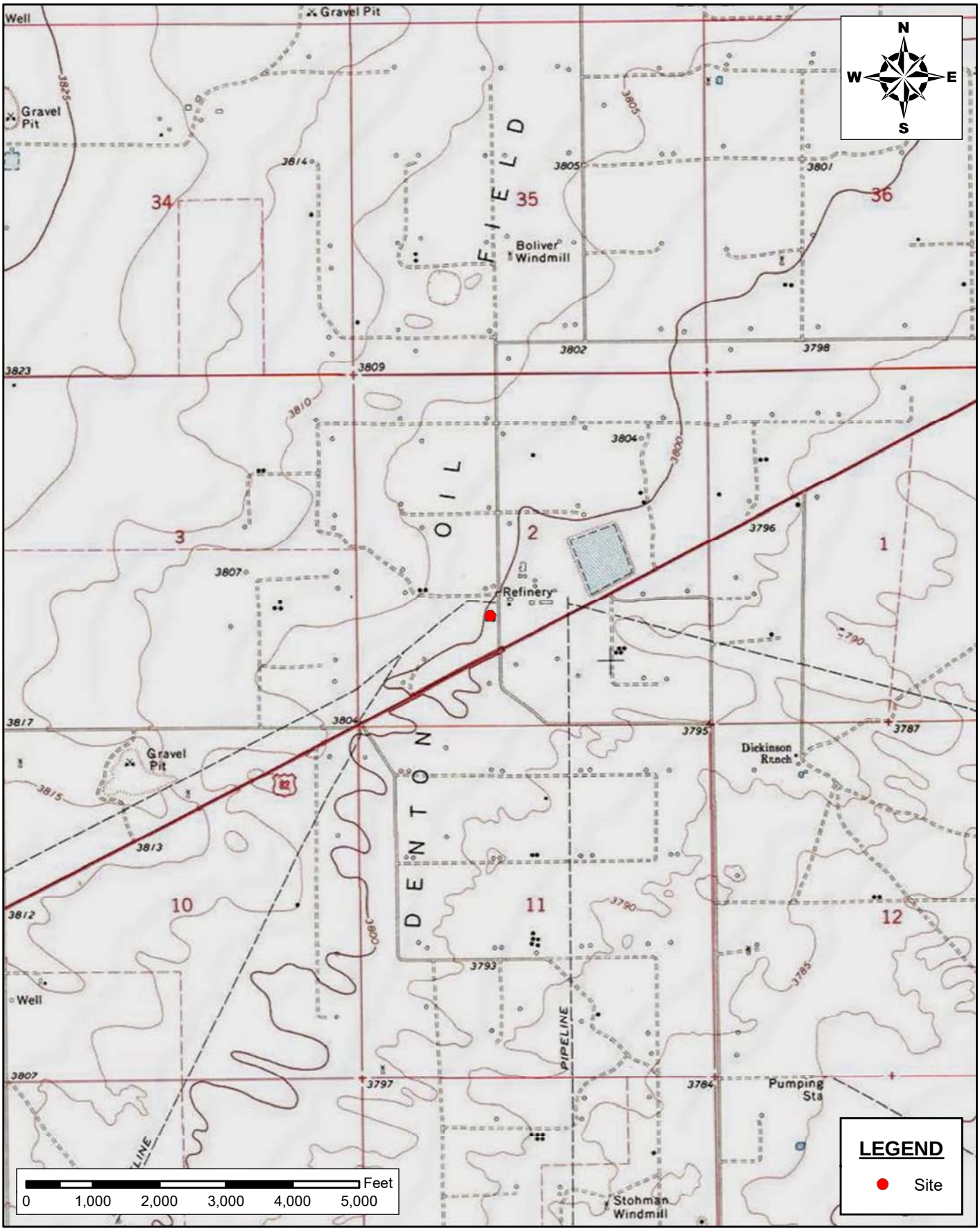
SITE LOCATION MAP
SITE ASSESSMENT REPORT AND REMEDIAL ACTION PLAN
AMERICO ENERGY RESOURCES, LLC
NEW MEXICO STATE B LEASE TANK BATTERY
LEA COUNTY, NEW MEXICO

SCALE: AS SHOWN	DATE: 01/12/2017	PROJECT #: AERE-R1603395

New Tech Global Environmental, LLC
911 Regional Park Drive
Houston, Texas 77060
T - 281.872.9300
F - 281.872.4521
Web: www.ntglobal.com

NOTES:
1. Base Image: ESRI Maps & Data 2016
2. Map Projection: NAD 1983 UTM Zone 13N

DRAWING NUMBER:
FIGURE 1
SHEET NUMBER:
1 of 1



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AREA MAP
SITE ASSESSMENT REPORT AND REMEDIAL ACTION PLAN
AMERICO ENERGY RESOURCES, LLC
NEW MEXICO STATE B LEASE TANK BATTERY
LEA COUNTY, NEW MEXICO

SCALE: AS SHOWN	DATE: 01/12/2017	PROJECT #: AERE-R1603395

New Tech Global Environmental, LLC
911 Regional Park Drive
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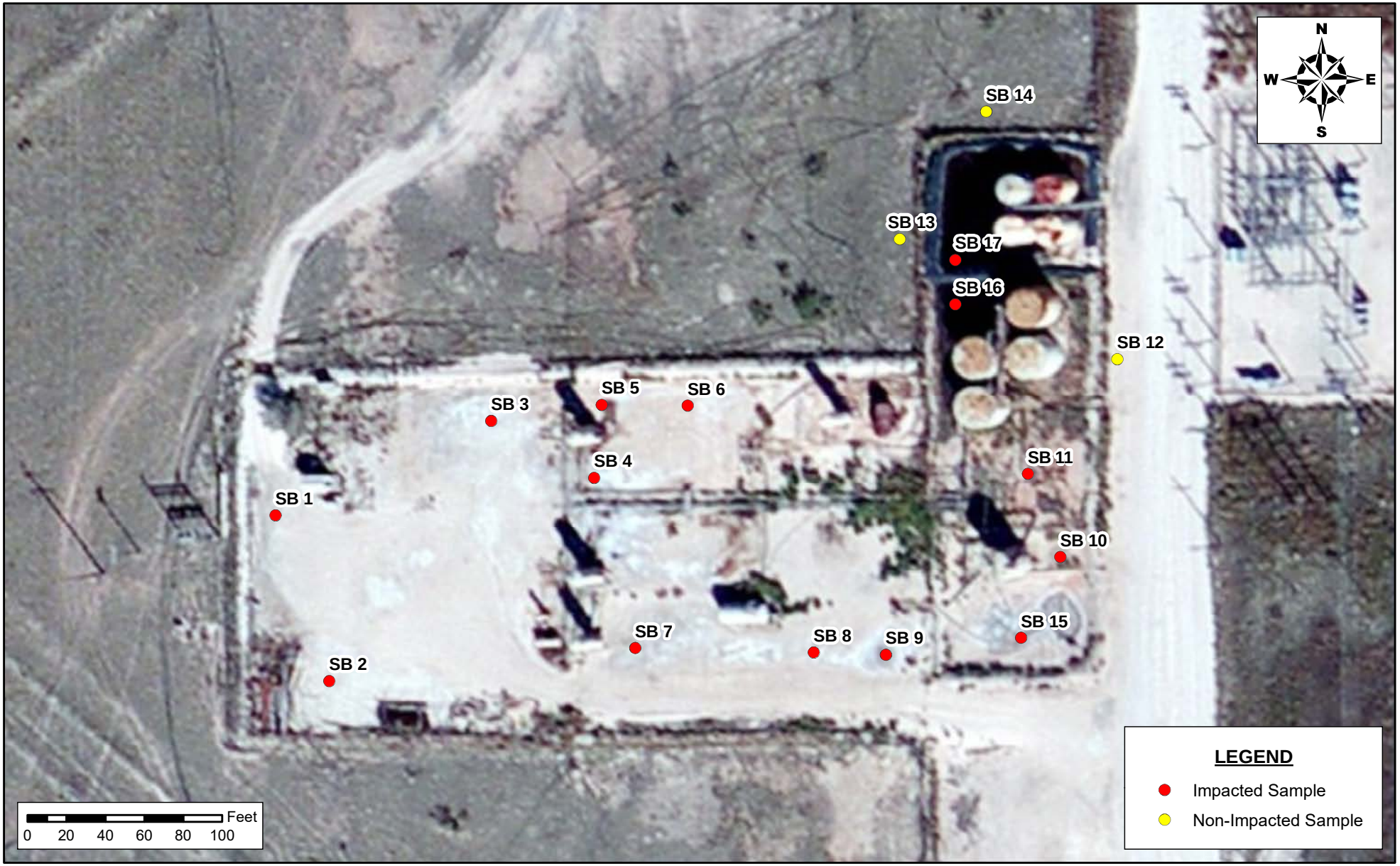
NOTES:

1. Base Image: USDA, NRCS-NCGC 2013
2. Map Projection: NAD 1983 State Plane New Mexico East Zone, US Feet

DRAWING NUMBER:
FIGURE 2
SHEET NUMBER:
1 of 1



1 of 1	SHEET NUMBER:	FIGURE 3	DRAWING NUMBER:

SAMPLE LOCATION MAP
SITE ASSESSMENT REPORT AND REMEDIAL ACTION PLAN
AMERICO ENERGY RESOURCES, LLC
NEW MEXICO STATE B LEASE TANK BATTERY
LEA COUNTY, NEW MEXICO

SCALE: AS SHOWN	DATE: 01/12/2017	PROJECT #: AERE-R1603395

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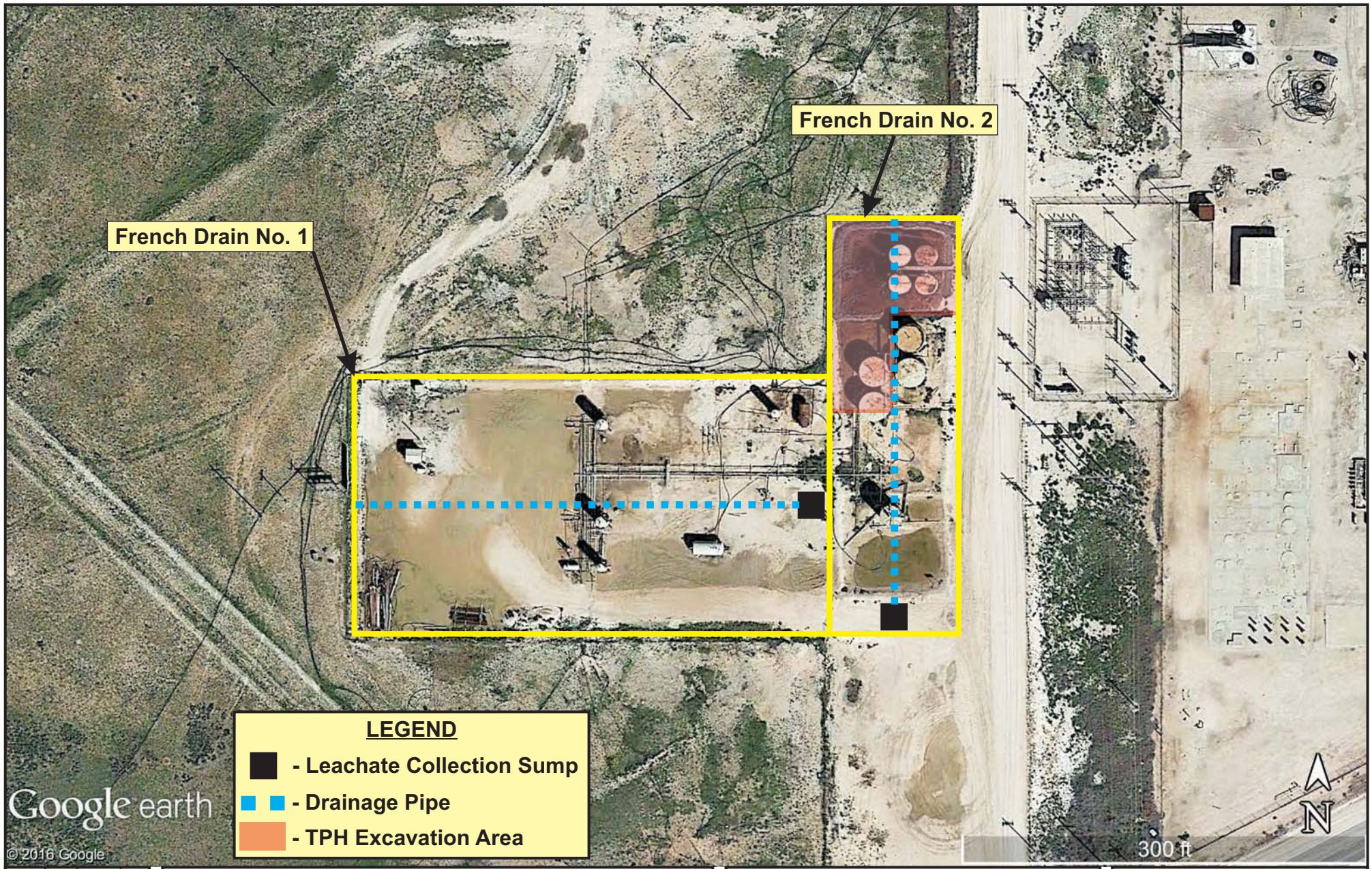
NOTES:

1. Base Image: Microsoft 10/26/2010
2. Map Projection: NAD 1983 State Plane New Mexico East Zone, US Feet



1 of 1	SHEET NUMBER:	FIGURE 4	DRAWING NUMBER:

EXCAVATION AND FRENCH DRAIN MAP
SITE ASSESSMENT REPORT AND REMEDIAL ACTION PLAN
AMERICO ENERGY RESOURCES, LLC
NEW MEXICO STATE B LEASE TANK BATTERY
LEA COUNTY, NEW MEXICO

SCALE: AS SHOWN	DATE: 01/12/2017	PROJECT #: AERE-R1603395

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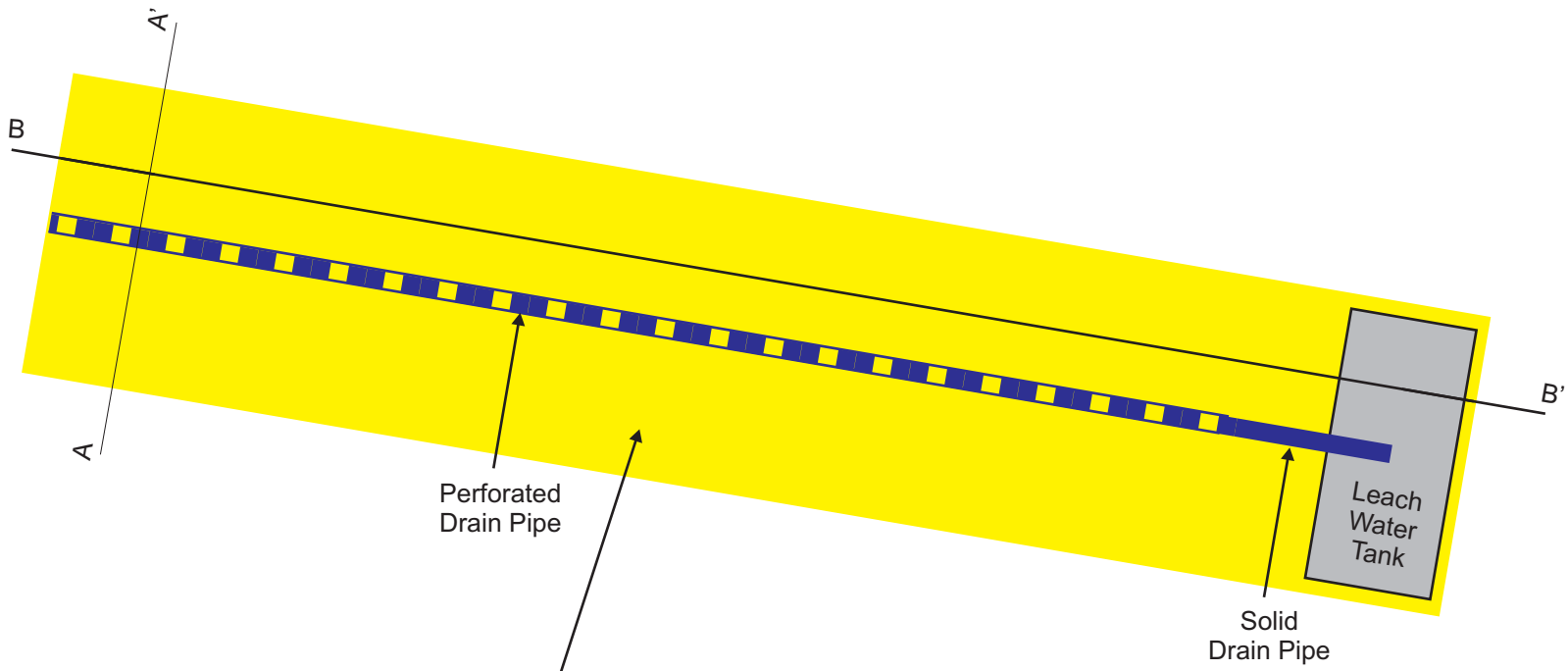
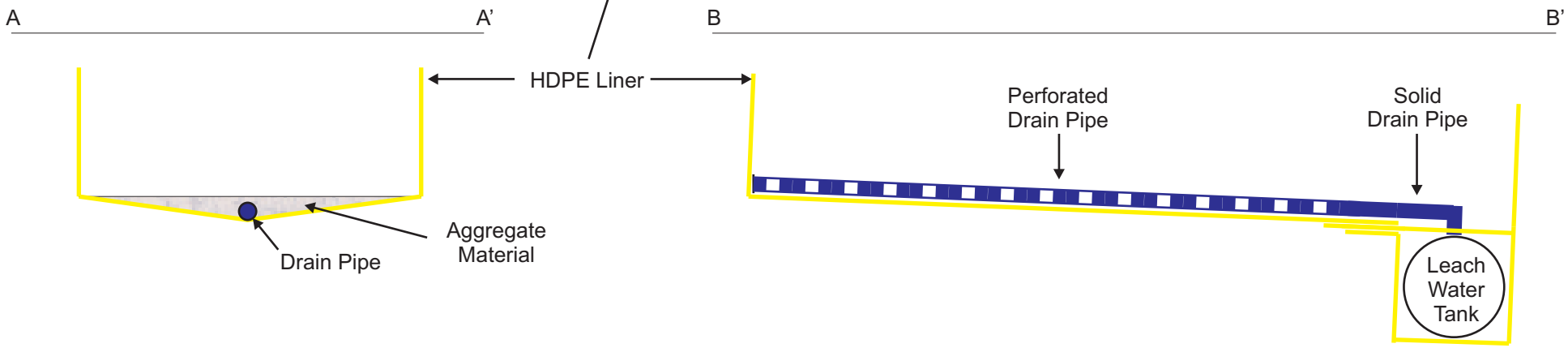
NOTES:





1 of 1

SHEET NUMBER:

FIGURE 5

DRAWING NUMBER:

EXCAVATION AND FRENCH DRAIN MAP
SITE ASSESSMENT REPORT AND REMEDIAL ACTION PLAN
AMERICO ENERGY RESOURCES, LLC
NEW MEXICO STATE B LEASE TANK BATTERY
LEA COUNTY, NEW MEXICO

SCALE: NOT TO SCALE | DATE: 01/12/2017 | PROJECT #: AERE-R1603395

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NOTES:

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTS

Analytical Report 534921

for

New Tech Global Environmental Group

Project Manager: Gordon Banks

AERE-R1603395

01-SEP-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

01-SEP-16

Project Manager: **Gordon Banks**
New Tech Global Environmental Group
911 Regional Park Dr.
Houston, TX 77060

Reference: XENCO Report No(s): **534921**
AERE-R1603395
Project Address: Lea County, NM

Gordon Banks:

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) 534921. 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. 534921 will be filed for 60 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,

Kelsey Brooks
Project Manager

Sample Cross Reference 534921

New Tech Global Environmental Group, Houston, TX

AERE-R1603395

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB1	S	08-10-16 09:07	0 - 1 ft	534921-001
SB2	S	08-10-16 09:26	0 - 1 ft	534921-002
SB3	S	08-10-16 09:32	0 - 1 ft	534921-003
SB4	S	08-10-16 09:38	0 - 1 ft	534921-004
SB5	S	08-10-16 09:42	0 - 1 ft	534921-005
SB6	S	08-10-16 09:50	0 - 1 ft	534921-006
SB7	S	08-10-16 10:00	0 - 1 ft	534921-007
SB7	S	08-10-16 17:20	- 5 ft	534921-008
SB7	S	08-10-16 17:28	- 15 ft	534921-009
SB8	S	08-10-16 10:11	0 - 1 ft	534921-013
SB9	S	08-10-16 10:19	0 - 1 ft	534921-014
SB10	S	08-10-16 17:44	0 - 1 ft	534921-015
SB11	S	08-10-16 17:50	0 - 1 ft	534921-016
SB12	S	08-10-16 17:56	0 - 1 ft	534921-017
SB13	S	08-10-16 14:02	0 - 1 ft	534921-018
SB14	S	08-10-16 13:56	0 - 1 ft	534921-019
SB15	S	08-10-16 11:48	0 - 1 ft	534921-020
SB15	S	08-10-16 11:10	- 5 ft	534921-021
SB15	S	08-10-16 11:19	- 10 ft	534921-022
SB15	S	08-10-16 11:24	- 15 ft	534921-023
SB16	S	08-10-16 12:45	- 5 ft	534921-026
SB16	S	08-10-16 12:54	- 10 ft	534921-027
SB16	S	08-10-16 13:11	- 20 ft	534921-029
SB16	S	08-10-16 13:45	- 30 ft	534921-031
SB16	S	08-10-16 14:53	- 45 ft	534921-034
SB16	S	08-10-16 15:00	- 50 ft	534921-035
SB17	S	08-10-16 16:21	- 5 ft	534921-042
SB7	S	08-10-16 17:30	- 20 ft	Not Analyzed
SB7	S	08-10-16 17:39	- 25 ft	Not Analyzed
SB7	S	08-10-16 17:41	- 30 ft	Not Analyzed
SB15	S	08-10-16 11:30	- 20 ft	Not Analyzed
SB15	S	08-10-16 11:35	- 25 ft	Not Analyzed
SB16	S	08-10-16 12:58	- 15 ft	Not Analyzed
SB16	S	08-10-16 13:23	- 25 ft	Not Analyzed
SB16	S	08-10-16 14:42	- 35 ft	Not Analyzed
SB16	S	08-10-16 14:46	- 40 ft	Not Analyzed
SB16	S	08-10-16 15:02	- 55 ft	Not Analyzed
SB16	S	08-10-16 15:04	- 60 ft	Not Analyzed
SB16	S	08-10-16 15:16	- 65 ft	Not Analyzed
SB16	S	08-10-16 15:20	- 70 ft	Not Analyzed
SB16	S	08-10-16 15:23	- 75 ft	Not Analyzed
SB16	S	08-10-16 15:30	- 80 ft	Not Analyzed
SB17	S	08-10-16 16:26	- 10 ft	Not Analyzed

SB17	S	08-10-16 16:30	- 15 ft	Not Analyzed
SB17	S	08-10-16 16:32	- 20 ft	Not Analyzed
SB17	S	08-10-16 16:37	- 25 ft	Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-999837 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-999859 Inorganic Anions by EPA 300/300.1
Lab Sample ID 534921-015 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: 534921-001, -002, -003, -004, -005, -006, -007, -008, -013, -014, -015, -016, -017, -018, -019, -020, -021, -026, -034, -042.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-999943 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 534921

New Tech Global Environmental Group, Houston, TX

Project Name: AERE-R1603395

Project Id:
Contact: Gordon Banks
Project Location: Lea County, NM

Date Received in Lab: Thu Aug-11-16 04:30 pm
Report Date: 01-SEP-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	534921-001		534921-002		534921-003		534921-004		534921-005		534921-006	
	Field Id:	SB1		SB2		SB3		SB4		SB5		SB6	
	Depth:	0-1 ft		0-1 ft		0-1 ft		0-1 ft		0-1 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-10-16 09:07		Aug-10-16 09:26		Aug-10-16 09:32		Aug-10-16 09:38		Aug-10-16 09:42		Aug-10-16 09:50	
BTEX by EPA 8021B	***Extracted:***	Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30	
	Analyzed:	Aug-13-16 16:51		Aug-15-16 19:49		Aug-15-16 20:06		Aug-13-16 17:55		Aug-13-16 18:44		Aug-15-16 16:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00149	ND	0.00150	ND	0.00150	ND	0.00150	ND	0.00149	ND	0.00150
Toluene		ND	0.00198	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00199	ND	0.00200
Ethylbenzene		ND	0.00198	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00199	ND	0.00200
m_p-Xylenes		ND	0.00198	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00199	ND	0.00200
o-Xylene		ND	0.00298	ND	0.00299	ND	0.00299	ND	0.00300	ND	0.00299	ND	0.00299
Total Xylenes		ND	0.00198	ND	0.00200	ND	0.00200	ND	0.00200	ND	0.00199	ND	0.00200
Total BTEX		ND	0.00149	ND	0.00150	ND	0.00150	ND	0.00150	ND	0.00149	ND	0.00150
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00	
	Analyzed:	Aug-15-16 13:54		Aug-15-16 14:17		Aug-15-16 14:25		Aug-15-16 14:33		Aug-15-16 14:41		Aug-15-16 15:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		865	10.0	2000	10.0	15100	200	5500	100	1770	10.0	1740	50.0
TPH by Texas1005	***Extracted:***	Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00	
	Analyzed:	Aug-12-16 19:31		Aug-12-16 20:51		Aug-12-16 21:16		Aug-12-16 21:41		Aug-12-16 22:09		Aug-12-16 22:34	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	24.9	ND	24.9	ND	25.0	55.8	24.9	ND	25.0	ND	25.0
C12-C28 Diesel Range Hydrocarbons		31.8	24.9	29.8	24.9	40.3	25.0	1060	24.9	282	25.0	138	25.0
C28-C35 Oil Range Hydrocarbons		ND	24.9	ND	24.9	ND	25.0	ND	24.9	ND	25.0	ND	25.0
Total TPH 1005		31.8	24.9	29.8	24.9	40.3	25.0	1120	24.9	282	25.0	138	25.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 534921

New Tech Global Environmental Group, Houston, TX

Project Name: AERE-R1603395

Project Id:

Contact: Gordon Banks

Project Location: Lea County, NM

Date Received in Lab: Thu Aug-11-16 04:30 pm

Report Date: 01-SEP-16

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	534921-007		534921-008		534921-009		534921-013		534921-014		534921-015	
	Field Id:	SB7		SB7		SB7		SB8		SB9		SB10	
	Depth:	0-1 ft		5 ft		15 ft		0-1 ft		0-1 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-10-16 10:00		Aug-10-16 17:20		Aug-10-16 17:28		Aug-10-16 10:11		Aug-10-16 10:19		Aug-10-16 17:44	
BTEX by EPA 8021B	***Extracted:***	Aug-12-16 18:30				Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30	
	Analyzed:	Aug-13-16 19:17				Aug-15-16 16:47		Aug-15-16 17:04		Aug-15-16 17:20		Aug-13-16 21:10	
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00149			ND	0.00150	ND	0.00149	ND	0.00150	ND	0.00150
Toluene		ND	0.00198			ND	0.00200	ND	0.00199	ND	0.00200	ND	0.00200
Ethylbenzene		ND	0.00198			ND	0.00200	ND	0.00199	ND	0.00200	ND	0.00200
m_p-Xylenes		ND	0.00198			ND	0.00200	ND	0.00199	ND	0.00200	ND	0.00200
o-Xylene		ND	0.00298			ND	0.00299	ND	0.00298	ND	0.00299	ND	0.00299
Total Xylenes		ND	0.00198			ND	0.00200	ND	0.00199	ND	0.00200	ND	0.00200
Total BTEX		ND	0.00149			ND	0.00150	ND	0.00149	ND	0.00150	ND	0.00150
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-15-16 10:00		Aug-15-16 10:00		Aug-31-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00	
	Analyzed:	Aug-15-16 15:12		Aug-15-16 15:20		Aug-31-16 12:46		Aug-15-16 15:27		Aug-15-16 15:35		Aug-15-16 17:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		14900	200	600	10.0	54.7	10.0	14800	200	14100	200	1820	50.0
TPH by Texas1005	***Extracted:***	Aug-12-16 16:00				Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00	
	Analyzed:	Aug-12-16 23:00				Aug-13-16 00:19		Aug-13-16 00:44		Aug-13-16 01:10		Aug-13-16 01:36	
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	24.9			ND	25.0	ND	25.0	ND	25.0	ND	24.9
C12-C28 Diesel Range Hydrocarbons		43.9	24.9			ND	25.0	70.1	25.0	146	25.0	89.3	24.9
C28-C35 Oil Range Hydrocarbons		ND	24.9			ND	25.0	ND	25.0	ND	25.0	ND	24.9
Total TPH 1005		43.9	24.9			ND	25.0	70.1	25.0	146	25.0	89.3	24.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 534921

New Tech Global Environmental Group, Houston, TX

Project Name: AERE-R1603395

Project Id:

Contact: Gordon Banks

Project Location: Lea County, NM

Date Received in Lab: Thu Aug-11-16 04:30 pm

Report Date: 01-SEP-16

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	534921-016		534921-017		534921-018		534921-019		534921-020		534921-021	
	Field Id:	SB11		SB12		SB13		SB14		SB15		SB15	
	Depth:	0-1 ft		0-1 ft		0-1 ft		0-1 ft		0-1 ft		5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-10-16 17:50		Aug-10-16 17:56		Aug-10-16 14:02		Aug-10-16 13:56		Aug-10-16 11:48		Aug-10-16 11:10	
BTEX by EPA 8021B	***Extracted:***	Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30		Aug-12-16 18:30	
	Analyzed:	Aug-15-16 17:37		Aug-15-16 17:53		Aug-13-16 23:36		Aug-14-16 01:47		Aug-14-16 01:30		Aug-15-16 18:10	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00150	ND	0.00150	ND	0.00149	ND	0.00149	ND	0.00150	0.0168	0.00150
Toluene		ND	0.00200	ND	0.00200	ND	0.00198	ND	0.00199	ND	0.00200	0.00412	0.00200
Ethylbenzene		ND	0.00200	ND	0.00200	ND	0.00198	ND	0.00199	ND	0.00200	0.111	0.00200
m_p-Xylenes		ND	0.00200	ND	0.00200	ND	0.00198	ND	0.00199	ND	0.00200	0.138	0.00200
o-Xylene		ND	0.00300	ND	0.00299	ND	0.00298	ND	0.00298	ND	0.00300	0.0186	0.00299
Total Xylenes		ND	0.00200	ND	0.00200	ND	0.00198	ND	0.00199	ND	0.00200	0.157	0.00200
Total BTEX		ND	0.00150	ND	0.00150	ND	0.00149	ND	0.00149	ND	0.00150	0.289	0.00150
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00		Aug-15-16 10:00	
	Analyzed:	Aug-15-16 16:06		Aug-15-16 16:14		Aug-15-16 16:37		Aug-15-16 16:45		Aug-15-16 16:53		Aug-15-16 17:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		6960	100	141	10.0	25.3	10.0	13.2	10.0	8300	200	343	10.0
TPH by Texas1005	***Extracted:***	Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00		Aug-12-16 16:00	
	Analyzed:	Aug-13-16 02:02		Aug-13-16 02:29		Aug-13-16 02:55		Aug-13-16 03:21		Aug-13-16 03:48		Aug-13-16 04:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	25.0	ND	24.9	ND	25.0	ND	25.0	ND	25.0	200	24.9
C12-C28 Diesel Range Hydrocarbons		198	25.0	ND	24.9	ND	25.0	ND	25.0	35.5	25.0	694	24.9
C28-C35 Oil Range Hydrocarbons		ND	25.0	ND	24.9	ND	25.0	ND	25.0	ND	25.0	ND	24.9
Total TPH 1005		198	25.0	ND	24.9	ND	25.0	ND	25.0	35.5	25.0	894	24.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 534921

New Tech Global Environmental Group, Houston, TX

Project Name: AERE-R1603395

Project Id:
Contact: Gordon Banks
Project Location: Lea County, NM

Date Received in Lab: Thu Aug-11-16 04:30 pm
Report Date: 01-SEP-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	534921-022		534921-023		534921-026		534921-027		534921-029		534921-031	
	Field Id:	SB15		SB15		SB16		SB16		SB16		SB16	
	Depth:	10 ft		15 ft		5 ft		10 ft		20 ft		30 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-10-16 11:19		Aug-10-16 11:24		Aug-10-16 12:45		Aug-10-16 12:54		Aug-10-16 13:11		Aug-10-16 13:45	
BTEX by EPA 8021B	***Extracted:***	Aug-12-16 18:30				Aug-12-16 18:30							
	Analyzed:	Aug-15-16 20:23				Aug-15-16 18:59							
	Units/RL:	mg/kg	RL			mg/kg	RL						
Benzene		ND	0.00150			1.27	0.0149						
Toluene		ND	0.00200			1.26	0.0199						
Ethylbenzene		ND	0.00200			3.94	0.0199						
m_p-Xylenes		0.00327	0.00200			6.52	0.0199						
o-Xylene		ND	0.00300			1.93	0.0299						
Total Xylenes		0.00327	0.00200			8.45	0.0199						
Total BTEX		0.00327	0.00150			14.9	0.0149						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-15-16 17:00		Aug-31-16 10:00		Aug-15-16 10:00							
	Analyzed:	Aug-15-16 21:34		Aug-31-16 13:09		Aug-15-16 17:09							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		851	10.0	115	10.0	1960	10.0						
TPH by Texas1005	***Extracted:***	Aug-12-16 16:00				Aug-12-16 16:00		Aug-29-16 14:00		Aug-29-16 14:00		Aug-29-16 14:00	
	Analyzed:	Aug-13-16 05:06				Aug-13-16 05:31		Aug-29-16 19:57		Aug-29-16 20:21		Aug-29-16 20:44	
	Units/RL:	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	25.0			745	25.0	ND	25.0	ND	25.0	44.6 K	25.0
C12-C28 Diesel Range Hydrocarbons		91.1	25.0			3500	25.0	ND	25.0	ND	25.0	381 K	25.0
C28-C35 Oil Range Hydrocarbons		ND	25.0			ND	25.0	ND	25.0	ND	25.0	ND	25.0
Total TPH 1005		91.1	25.0			4250	25.0	ND	25.0	ND	25.0	426 K	25.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 534921

New Tech Global Environmental Group, Houston, TX

Project Name: AERE-R1603395

Project Id:
Contact: Gordon Banks
Project Location: Lea County, NM

Date Received in Lab: Thu Aug-11-16 04:30 pm
Report Date: 01-SEP-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	534921-034		534921-035		534921-042							
	Field Id:	SB16		SB16		SB17							
	Depth:	45 ft		50 ft		5 ft							
	Matrix:	SOIL		SOIL		SOIL							
	Sampled:	Aug-10-16 14:53		Aug-10-16 15:00		Aug-10-16 16:21							
BTEX by EPA 8021B	***Extracted:***	Aug-12-16 18:30				Aug-12-16 18:30							
	Analyzed:	Aug-15-16 18:43				Aug-14-16 00:09							
	Units/RL:	mg/kg	RL			mg/kg	RL						
Benzene		ND	0.00149			0.0279	0.00150						
Toluene		ND	0.00199			0.00490	0.00200						
Ethylbenzene		0.00418	0.00199			0.0471	0.00200						
m_p-Xylenes		0.0205	0.00199			0.0536	0.00200						
o-Xylene		0.00378	0.00298			0.00931	0.00299						
Total Xylenes		0.0243	0.00199			0.0629	0.00200						
Total BTEX		0.0285	0.00149			0.143	0.00150						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-15-16 10:00		Aug-31-16 10:00		Aug-15-16 10:00							
	Analyzed:	Aug-15-16 17:16		Aug-31-16 13:17		Aug-15-16 17:24							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		325	10.0	1450	50.0	1290	10.0						
TPH by Texas1005	***Extracted:***	Aug-12-16 16:00				Aug-12-16 16:00							
	Analyzed:	Aug-13-16 07:44				Aug-13-16 09:03							
	Units/RL:	mg/kg	RL			mg/kg	RL						
C6-C12 Gasoline Range Hydrocarbons		39.3	25.0			ND	24.9						
C12-C28 Diesel Range Hydrocarbons		246	25.0			95.2	24.9						
C28-C35 Oil Range Hydrocarbons		ND	25.0			ND	24.9						
Total TPH 1005		285	25.0			95.2	24.9						

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 534921-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 19:31

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.3	99.7	91	70-135	
o-Terphenyl	45.0	49.9	90	70-130	

Lab Batch #: 999792 **Sample:** 534921-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 20:51

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.6	99.7	93	70-135	
o-Terphenyl	45.6	49.9	91	70-130	

Lab Batch #: 999792 **Sample:** 534921-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 21:16

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.2	99.8	90	70-135	
o-Terphenyl	44.8	49.9	90	70-130	

Lab Batch #: 999792 **Sample:** 534921-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 21:41

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.7	99.7	89	70-135	
o-Terphenyl	48.3	49.9	97	70-130	

Lab Batch #: 999792 **Sample:** 534921-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 22:09

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	45.2	50.0	90	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 534921-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 22:34

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	99.9	90	70-135	
o-Terphenyl	44.5	50.0	89	70-130	

Lab Batch #: 999792 **Sample:** 534921-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 23:00

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.0	99.6	91	70-135	
o-Terphenyl	45.0	49.8	90	70-130	

Lab Batch #: 999792 **Sample:** 534921-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 00:19

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.4	99.8	97	70-135	
o-Terphenyl	47.9	49.9	96	70-130	

Lab Batch #: 999792 **Sample:** 534921-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 00:44

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.0	99.8	89	70-135	
o-Terphenyl	43.7	49.9	88	70-130	

Lab Batch #: 999792 **Sample:** 534921-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 01:10

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.2	99.8	92	70-135	
o-Terphenyl	45.4	49.9	91	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 534921-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 01:36

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.7	99.7	89	70-135	
o-Terphenyl	43.5	49.9	87	70-130	

Lab Batch #: 999792 **Sample:** 534921-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 02:02

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	49.7	49.9	100	70-130	

Lab Batch #: 999792 **Sample:** 534921-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 02:29

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.6	101	70-135	
o-Terphenyl	48.7	49.8	98	70-130	

Lab Batch #: 999792 **Sample:** 534921-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 02:55

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.1	99.9	96	70-135	
o-Terphenyl	46.8	50.0	94	70-130	

Lab Batch #: 999792 **Sample:** 534921-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 03:21

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.8	100	88	70-135	
o-Terphenyl	43.6	50.0	87	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 534921-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 03:48

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	100	87	70-135	
o-Terphenyl	43.2	50.0	86	70-130	

Lab Batch #: 999792 **Sample:** 534921-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 04:40

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.7	92	70-135	
o-Terphenyl	43.7	49.9	88	70-130	

Lab Batch #: 999792 **Sample:** 534921-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 05:06

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.6	99.9	90	70-135	
o-Terphenyl	44.4	50.0	89	70-130	

Lab Batch #: 999792 **Sample:** 534921-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 05:31

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	52.9	49.9	106	70-130	

Lab Batch #: 999807 **Sample:** 534921-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 07:44

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.8	92	70-135	
o-Terphenyl	45.1	49.9	90	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999807 **Sample:** 534921-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 09:03

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	99.7	92	70-135	
o-Terphenyl	45.4	49.9	91	70-130	

Lab Batch #: 999837 **Sample:** 534921-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 16:51

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 999837 **Sample:** 534921-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 17:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 999837 **Sample:** 534921-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 18:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 999837 **Sample:** 534921-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 19:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999837 **Sample:** 534921-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 21:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0280	0.0300	93	80-120	

Lab Batch #: 999943 **Sample:** 534921-018 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 23:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 999943 **Sample:** 534921-042 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/14/16 00:09

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0322	0.0300	107	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 999943 **Sample:** 534921-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/14/16 01:30

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 999943 **Sample:** 534921-019 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/14/16 01:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999837 **Sample:** 534921-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 16:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 999837 **Sample:** 534921-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 16:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0248	0.0300	83	80-120	

Lab Batch #: 999837 **Sample:** 534921-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 17:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 999837 **Sample:** 534921-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 17:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 999837 **Sample:** 534921-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 17:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0241	0.0300	80	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999943 **Sample:** 534921-017 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 17:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

Lab Batch #: 999943 **Sample:** 534921-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 18:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 999943 **Sample:** 534921-034 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 18:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 999943 **Sample:** 534921-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 18:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0339	0.0300	113	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 999837 **Sample:** 534921-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 19:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999837 **Sample:** 534921-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 20:06

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 999943 **Sample:** 534921-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 20:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 1000765 **Sample:** 534921-027 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/16 19:57

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.9	99.9	93	70-135	
o-Terphenyl	43.5	50.0	87	70-130	

Lab Batch #: 1000765 **Sample:** 534921-029 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/16 20:21

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.9	100	92	70-135	
o-Terphenyl	41.8	50.0	84	70-130	

Lab Batch #: 1000765 **Sample:** 534921-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/16 20:44

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.8	95	70-135	
o-Terphenyl	48.1	49.9	96	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 712054-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/12/16 18:10

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	100	98	70-135	
o-Terphenyl	48.4	50.0	97	70-130	

Lab Batch #: 999807 **Sample:** 712075-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 06:24

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	46.6	50.0	93	70-130	

Lab Batch #: 999837 **Sample:** 712092-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 06:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0294	0.0300	98	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 999943 **Sample:** 712150-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 23:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 1000765 **Sample:** 713153-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/16 08:05

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.6	100	89	70-135	
o-Terphenyl	42.0	50.0	84	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 712054-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/12/16 18:37

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	59.4	50.0	119	70-130	

Lab Batch #: 999837 **Sample:** 712092-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 05:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 999807 **Sample:** 712075-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 06:51

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	48.1	50.0	96	70-130	

Lab Batch #: 999943 **Sample:** 712150-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 21:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 1000765 **Sample:** 713153-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/16 08:33

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	48.8	50.0	98	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 712054-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/12/16 19:04

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	54.6	50.0	109	70-130	

Lab Batch #: 999837 **Sample:** 712092-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 05:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 999807 **Sample:** 712075-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 07:17

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	49.5	50.0	99	70-130	

Lab Batch #: 999943 **Sample:** 712150-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/13/16 22:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 1000765 **Sample:** 713153-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/16 08:58

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	53.0	50.0	106	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 534921-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 19:58

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	46.8	50.0	94	70-130	

Lab Batch #: 999837 **Sample:** 534909-037 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 05:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 999807 **Sample:** 534921-034 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 08:10

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.8	107	70-135	
o-Terphenyl	47.8	49.9	96	70-130	

Lab Batch #: 999943 **Sample:** 534921-018 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 11:53

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 1000765 **Sample:** 535809-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/16 09:51

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	53.4	49.9	107	70-130	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: AERE-R1603395

Work Orders : 534921,

Project ID:

Lab Batch #: 999792 **Sample:** 534921-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/12/16 20:23

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	48.3	50.0	97	70-130	

Lab Batch #: 999807 **Sample:** 534921-034 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/13/16 08:38

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	46.9	50.0	94	70-130	

Lab Batch #: 999943 **Sample:** 534921-018 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/16 12:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 1000765 **Sample:** 535809-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/16 10:17

SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	54.5	50.0	109	70-130	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: AERE-R1603395

Work Order #: 534921 **Project ID:**

Analyst: PJB **Date Prepared:** 08/12/2016 **Date Analyzed:** 08/13/2016

Lab Batch ID: 999837 **Sample:** 712092-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.100	0.107	107	0.100	0.105	105	2	70-130	35	
Toluene	<0.00200	0.100	0.109	109	0.100	0.107	107	2	70-130	35	
Ethylbenzene	<0.00200	0.100	0.109	109	0.100	0.108	108	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.218	109	0.200	0.214	107	2	70-135	35	
o-Xylene	<0.00300	0.100	0.108	108	0.100	0.106	106	2	71-133	35	

Analyst: PJB **Date Prepared:** 08/12/2016 **Date Analyzed:** 08/13/2016

Lab Batch ID: 999943 **Sample:** 712150-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.100	0.0921	92	0.100	0.0889	89	4	70-130	35	
Toluene	<0.00200	0.100	0.0926	93	0.100	0.0909	91	2	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0932	93	0.100	0.0911	91	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.180	90	2	70-135	35	
o-Xylene	<0.00300	0.100	0.0930	93	0.100	0.0908	91	2	71-133	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: AERE-R1603395

Work Order #: 534921 **Project ID:**

Analyst: MNR **Date Prepared:** 08/15/2016 **Date Analyzed:** 08/15/2016

Lab Batch ID: 999859 **Sample:** 712089-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	270	108	250	248	99	8	90-110	20	

Analyst: MNR **Date Prepared:** 08/15/2016 **Date Analyzed:** 08/15/2016

Lab Batch ID: 999879 **Sample:** 712115-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	262	105	250	243	97	8	90-110	20	

Analyst: MNR **Date Prepared:** 08/31/2016 **Date Analyzed:** 08/31/2016

Lab Batch ID: 1000983 **Sample:** 713246-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	252	101	250	249	100	1	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: AERE-R1603395

Work Order #: 534921 **Project ID:**

Analyst: ARM **Date Prepared:** 08/12/2016 **Date Analyzed:** 08/12/2016

Lab Batch ID: 999792 **Sample:** 712054-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	1000	1070	107	1000	911	91	16	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	1010	101	1000	942	94	7	70-135	35	

Analyst: ARM **Date Prepared:** 08/12/2016 **Date Analyzed:** 08/13/2016

Lab Batch ID: 999807 **Sample:** 712075-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	1000	847	85	1000	909	91	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	805	81	1000	907	91	12	70-135	35	

Analyst: ARM **Date Prepared:** 08/29/2016 **Date Analyzed:** 08/29/2016

Lab Batch ID: 1000765 **Sample:** 713153-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	1000	825	83	1000	870	87	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	803	80	1000	870	87	8	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS Recoveries

Project Name: AERE-R1603395

Work Order #: 534921

Lab Batch #: 999837 **Project ID:**

Date Analyzed: 08/13/2016 **Date Prepared:** 08/12/2016 **Analyst:** PJB

QC- Sample ID: 534909-037 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Benzene	<0.00150	0.0998	0.0751	75	70-130	
Toluene	<0.00200	0.0998	0.0744	75	70-130	
Ethylbenzene	<0.00200	0.0998	0.0737	74	71-129	
m_p-Xylenes	<0.00200	0.200	0.146	73	70-135	
o-Xylene	<0.00299	0.0998	0.0722	72	71-133	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference [E] = 200*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

Form 3 - MS / MSD Recoveries

Project Name: AERE-R1603395

Work Order # : 534921 **Project ID:**

Lab Batch ID: 999943 **QC- Sample ID:** 534921-018 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/15/2016 **Date Prepared:** 08/12/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00149	0.0992	0.0875	88	0.0992	0.0877	88	0	70-130	35	
Toluene	<0.00198	0.0992	0.0890	90	0.0992	0.0887	89	0	70-130	35	
Ethylbenzene	<0.00198	0.0992	0.0888	90	0.0992	0.0886	89	0	71-129	35	
m_p-Xylenes	<0.00198	0.198	0.178	90	0.198	0.177	89	1	70-135	35	
o-Xylene	<0.00298	0.0992	0.0903	91	0.0992	0.0894	90	1	71-133	35	

Lab Batch ID: 999859 **QC- Sample ID:** 534921-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/16/2016 **Date Prepared:** 08/15/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	865	250	1090	90	250	1050	74	4	90-110	20	X

Lab Batch ID: 999859 **QC- Sample ID:** 534921-015 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/15/2016 **Date Prepared:** 08/15/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1820	1250	3020	96	1250	3100	102	3	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: AERE-R1603395

Work Order # : 534921 **Project ID:**

Lab Batch ID: 999879 **QC- Sample ID:** 534958-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/15/2016 **Date Prepared:** 08/15/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	25.0	250	268	97	250	271	98	1	90-110	20	

Lab Batch ID: 1000983 **QC- Sample ID:** 534921-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/31/2016 **Date Prepared:** 08/31/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	54.7	250	292	95	250	295	96	1	90-110	20	

Lab Batch ID: 1000983 **QC- Sample ID:** 535942-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/31/2016 **Date Prepared:** 08/31/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	28.9	250	266	95	250	268	96	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: AERE-R1603395

Work Order # : 534921 **Project ID:**

Lab Batch ID: 999792 **QC- Sample ID:** 534921-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/12/2016 **Date Prepared:** 08/12/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	999	839	84	999	876	88	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	31.8	999	815	78	999	837	81	3	70-135	35	

Lab Batch ID: 999807 **QC- Sample ID:** 534921-034 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/13/2016 **Date Prepared:** 08/12/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	39.3	998	875	84	1000	838	80	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	246	998	1080	84	1000	1050	80	3	70-135	35	

Lab Batch ID: 1000765 **QC- Sample ID:** 535809-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/29/2016 **Date Prepared:** 08/29/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	998	882	88	1000	872	87	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	998	889	89	1000	899	90	1	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

CHAIN OF CUSTODY

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Xenco Quote # | Xenco Job # 534921

Client / Reporting Information

Company Name / Branch: NTG Environmental

Company Address: 911 Regional Park Dr Houston TX, 77060

Email: gbanks@ntglobal.com Phone No:

Project Contact: Gordon Banks

Samplers's Name: Gordon Banks

Project Information

Project Name/Number: AERE-R1603395

Project Location: Lea County, NM

Invoice To:

PO Number:

Matrix Codes

A= Air
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
WW= Waste Water
W = Wipe
O = Oil

WW= Waste Water

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 1005	BTEX 8021	Chloride	Field Comments
1	SB1	0-1'	8/10/16	907	S	1								X	X	X	X	
2	SB2	0-1'		926											X	X	X	
3	SB3	0-1'		932											X	X	X	
4	SB4	0-1'		938											X	X	X	
5	SB5	0-1'		942											X	X	X	
6	SB6	0-1'		950											X	X	X	
7	SB7	0-1'		1000											X	X	X	
8	SB7	5'		1720													X	
9	SB7	~~10~~ 15'		1728											X	X		
10	SB7	20'		1730														Hold

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [x] Contract TAT
- [ ] 3 Day EMERGENCY

TAT Starts Day received by Lab, if received by 3:00 pm

Data Deliverable Information

- [ ] Level II Std QC
- [ ] Level IV (Full Data Pkg /raw data)
- [ ] Level III Std QC+ Forms
- [ ] TRRP Level IV
- [ ] Level 3 (CLP Forms)
- [ ] UST / RG -411
- [ ] TRRP Checklist

Notes:

FED-EX / UPS: Tracking #

SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		8/11/16 1630	1 MA	2		2
3	Relinquished by:	Date Time:	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X

Temp: 9°C IR ID:R-8
C/F:0 Corrected Temp: 9°C

Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously ...ly executed client contract.

CHAIN OF CUSTODY

Page 2 Of 5

XENCO LABORATORIES

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Dallas, Texas (214-902-0300) | Norcross, Georgia (770-449-8800) | Tampa, Florida (813-620-2000)

Service Center - San Antonio, Texas (210-509-3334) | www.xenco.com

Xenco Quote # | Xenco Job # 534921

Client / Reporting Information

Company Name / Branch: NTG Environmental

Company Address: 911 Regional Park Dr. Houston TX 77060

Email: gbanks@ntglobal.com | Phone No: 281-872-9300

Project Contact: Gordon Banks

Samplers's Name: Gordon Banks

Project Information

Project Name/Number: AERE-R1603395

Project Location: Lea County, NM

Invoice To:

PO Number:

Analytical Information

Matrix Codes

A= Air
S = Soil/Sed/Solid
GW =Ground Water
DW = Drinking Water
P = Product
SW = Surface water
SL = Sludge
WW= Waste Water
W = Wipe
O = Oil

WW= Waste Water

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 1005	BTEX 8021	Chloride							Field Comments
1	SB7	25'	8/10/16	1739	S	1								X										Hold
2	SB7	30'		1741																				Hold
3	SB8	0-1'		1011											X	X	X							
4	SB9	0-1'		1019											X	X	X							
5	SB10	0-1'		1744											X	X	X							
6	SB11	0-1'		1750											X	X	X							
7	SB12	0-1'		1756											X	X	X							
8	SB13	0-1'		1402											X	X	X							
9	SB14	0-1'		1356											X	X	X							
10	SB15	0-1'		1148											X	X	X							

Turnaround Time (Business days)

- [ ] Same Day TAT
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3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			X

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A= Air
S = Soil/Sed/Solid
GW =Ground Water
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P = Product
SW = Surface water
SL = Sludge
WW= Waste Water
W = Wipe
O = Oil

WW= Waste Water

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 1005	BTEX 8021	Chloride							Field Comments
1	SB 15	5'	8/10/16	1110	S	1								X	X	X	X							
2	SB 15	10'		1119											X	X	X							
3	SB 15	15'		1124																				Hold
4	SB 15	20'		1130																				Hold
5	SB 15	25'		1135																				Hold
6	SB 16	5'		1245											X	X	X							
7	SB 16	10'		1254																				Hold
8	SB 16	15'		1258																				Hold
9	SB 16	20'		1311																				Hold
10	SB 16	25'		1323																				Hold

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			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			✓

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Project Location: Lea County, NM
Invoice To:
PO Number:

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GW =Ground Water
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WW= Waste Water

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Analytical Information: TPH 1005	BTEX 8021	Chloride	Field Comments
1	SB 16	30'	8/10/16	1345	S	1								X				Hold
2		35'		1442														Hold
3		40'		1446														Hold
4		45'		1453											X	X	X	
5		50'		1500														Hold
6		55'		1502														Hold
7		60'		1504														Hold
8		65'		1516														Hold
9		70'		1520														Hold
10		75'		1523														Hold

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	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3			3	4		4
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5			5			X

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No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 1005	BTEX 8021	Chloride	Field Comments
1	SB 16	80'	8/10/16	1530	S	S								X				Hold
2	SB 17	5'		1621											X	X	X	
3		10'		1626														Hold
4		15'		1630														Hold
5		20'		1632														Hold
6		25'		1637														Hold
7																		
8																		
9																		
10																		

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			3	4		4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable ☐	On Ice ☒ Cooler Temp. Thermo. Corr. Factor
			5			

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: New Tech Global Environmental Group

Date/ Time Received: 08/11/2016 04:30:00 PM

Work Order #: 534921

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.9
#2 *Shipping container in good condition?	**N/A**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**No**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Mary Alexis Negron
Mary Negron
Date: 08/12/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 08/15/2016