November 16, 2015 Reference No. 088210-16

Mr. Zane Kurtz
Sr. Safety and Environmental Representative
5509 Champions Dr.
Midland, TX 79706
VIA E-Mail: zane_kurtz@eogresources.com

Dear Mr. Kurtz:

Re: Remediation Summary Report
Red Hills North Unit 706 (API #30-025-32814)
1RP-3704-0
EOG Resources
Site Location: Unit I, Sec. 7, T 25-S, R 34-E
(Lat 32.1427°, Long -103.5026°)
Lea County, New Mexico

On behalf of EOG Resources (EOG), GHD Services, Inc. (GHD) is pleased to present this summary report for the above referenced site. Remediation activities were performed at the Red Hills North Unit (RHNU) 706 (hereafter referred to as the ñSiteò), from July 15, 2015 to July 23, 2015.The Site is located within Unit I, Section 7, Township 25 South, Range 34 East, in Lea County, New Mexico (see Figure 1).

The Site is an active well location operated by EOG. According to EOG personnel, the release was approximately 20 barrels of produced water which occurred on June 26, 2015. The release occurred due to a rupture on a four inch pipeline 10 feet (ft) bgs (below ground surface). Upon discovery, the line was uncovered by excavation and repaired. A C-141 Form was submitted to the New Mexico Oil Conservation Division (NMOCD) and remediation permit (RP) number 1RP-3704-0 was assigned.

1. Introduction

Site remediation activities consisted of an excavation event accompanied by the collection and analysis of soil samples. Excavation activities were performed by SDR Enterprises, LLC of Hobbs, New Mexico and observed by GHD (formerly Conestoga-Rovers and Associates). Soil samples were collected by GHD and analyzed by Xenco Laboratories (Xenco) of Odessa, Texas.

Based on information available from the Petroleum Recovery Research Center Pit Rule Mapping Portal and Tom§ġ 'Doc' Oberding, PhD, NMOCD Hydrologist, the depth to groundwater at the Site is estimated to be greater than 100 ft bgs. Additionally, there are no well head protection areas or surface water bodies within 1,000 feet of the Site. Therefore, the preliminary total ranking score is 0 (see table below).

Based on this score, the applicable NMOCD Site-specific Recommended Remediation Action Limits (RRALs) are 10 milligrams per kilogram (mg/kg) for benzene, 50 mg/kg for total benzene, toluene, ethylbenzene, and xylenes (BTEX), 5,000 mg/kg for total petroleum hydrocarbons (TPH), and 500 mg/kg for chlorides.

New Mexico Oil Conservation Division Site Assessment	
Ranking Criteria	Score
Depth to Ground Water (> 100 feet bgs)	0
Wellhead Protection Area (> 1000 feet from water source, > 200 feet from domestic source)	0
Distance to Surface Body Water (> 1000 feet)	0
Ranking Criteria Total Score	**0***
*Because the ranking criteria total score is 0, NMOCD established RRALs are 10 ppm for benzene, 50 ppm for total BTEX, 5,000 ppm for TPH, and 500 ppm for chlorides[1].	

1 NMOCD Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993

2. Remediation Activities

GHD conducted an initial soil sampling event on July 15, 2015 to assess for the presence of hydrocarbon and produced water impacts. Soil samples were collected from 1 ft 8 inches to 9 ft bgs in four locations within the areas of concern using a hand auger/shovel. The samples were field screened for chloride and submitted to Xenco for laboratory analysis of BTEX by EPA Method 8021B, TPH gasoline range organics (TPH-GRO) and diesel range organics (TPH-DRO) by EPA Modified Method SW8015B, and chloride by EPA Method 300.0.

Laboratory analytical results from this event indicated that chloride concentrations exceeded the RRAL in all samples with results ranging from 4,940 mg/kg to 5,900 mg/kg. However, BTEX and TPH concentrations were not detected above the RRALs (see Table 1 and Appendix A). Based on the laboratory results and visual observations, the impacted area requiring excavation appeared to be at approximately 57 ft x 17 ft in size.

A scope of work was submitted and agreed upon by Dr. Oberding with the NMOCD via email on July 8, 2015. The agreed upon scope of work included the following:

- Excavation of impacted soils to a maximum practical depth accompanied by soil sample analysis;
- Backfilling of excavation to approximately 4 ft bgs with clean fill material;
- Placement of a 20 mil polyethylene liner in the bottom of the excavation;
- Backfilling over liner to grade with clean fill material; and
- Fertilizing and reseeding of the disturbed area with a BLM approved seed mix.

Excavation activities occurred from July 17 to July 23, 2015. Field screening of soils for chloride, TPH, and organic vapors were performed to guide excavation activities. Once field screening indicated soil concentrations were below the RRALs, soil samples were collected and submitted to Xenco and analyzed for BTEX, TPH-GRO, TPH-DRO, and chloride by the methods listed above.

Laboratory analytical results for the excavation samples indicated that TPH and BTEX concentrations were not detected above the RRALs (see Table 1 and Appendix A). Chloride concentrations exceeded the RRAL in several locations throughout the excavation (see Figure 2). However, soil samples collected at the perimeter of the excavation were below the chloride RRAL with the exception of one S-088210-16-071715-SP-02 at 620 ppm. Consequently, another sample S-088210-16-081715-SP-01 was taken after additional excavation of impacted soil and was determined to be below the RRAL.

Soil sample SO-088210-16-072115-SP-02, collected from 20 feet bgs in the center of the spill area, returned chloride analytical results of 73.2 mg/kg, respectively. Based on this, the vertical extent of chloride impacts in the area of the release appears to be approximately 20 feet bgs.

A 20 mil polyethylene liner was placed in the bottom of the excavation. The excavation has been backfilled with clean soil to a depth of 4ft bgs. The liner was placed without rips or tears and sections were overlapped a minimum of 24 inches. The excavation was backfilled with clean fill and graded to the natural ground surface. An N-P-K fertilizer and BLM #2 seed mix was broadcasted over the disturbed area and tracked into the soil using the heavy equipment on Site.

A total of approximately 1140 cubic yards of impacted soil were removed and transported to Sundance Services, Inc. of Eunice, New Mexico, for landfill disposal. Waste manifests are included as Appendix B.

3. Summary and Recommendations

Impacted soils at the Red Hills North Unit 706 site were excavated to a depth of approximately 20 feet bgs. Confirmatory soil samples were collected from throughout the excavation (see Figure 2) for laboratory analysis. The final dimensions of the excavation were approximately 105 feet by 60 feet and a total of approximately 1140 cubic yards of impacted soil were removed.

On behalf of EOG Resources, GHD requests that the Site be granted no further action status. Should you have any questions, or require additional information regarding this submittal, please feel free to contact myself or Bernie Bockisch at (505) 884-0672 or Bernard.Bockisch@ghd.com.

Sincerely,

GHD

Steven Perez
Staff Scientist

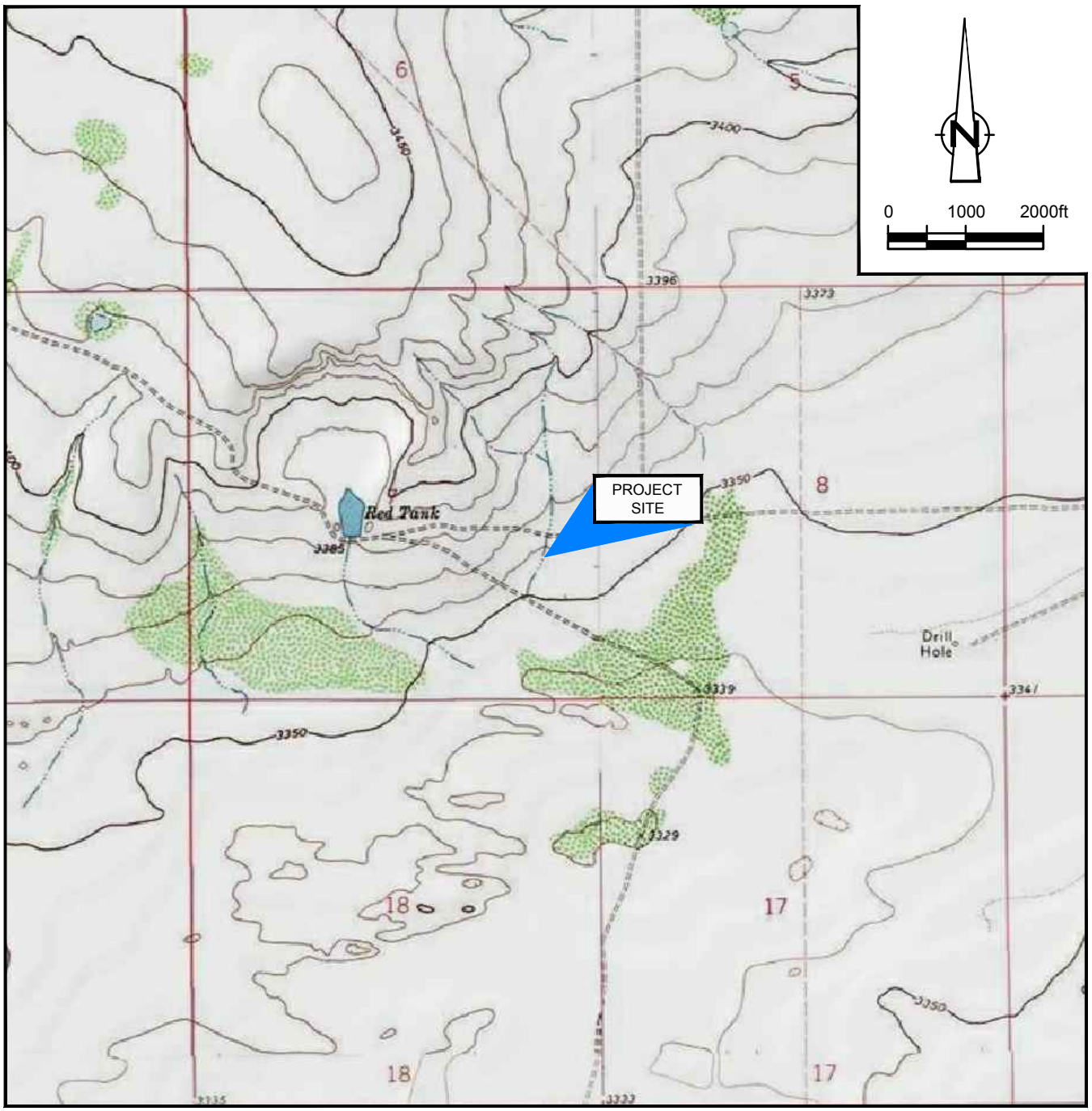
Bernard Bockisch
Senior Project Manager

BB/mc/1

Encl. (4)

Figure 1 ï Site Location Map
Figure 2 ï Site Detail Map
Table 1 ï Soil Analytical Results Summary
Appendix A ï Laboratory Analytical Reports

Figures



SOURCE: USGS 7.5 MINUTE QUAD
"BELL LAKE AND WOODLEY FLAT, NEW MEXICO"

LAT/LONG: 32.1427° NORTH, 103.5026° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

SITE LOCATION MAP
RED HILLS NORTH UNIT 706
LEA COUNTY, NEW MEXICO
EOG Resources

GHD

088210-16(000)GN-DL001 JUN 30/2015

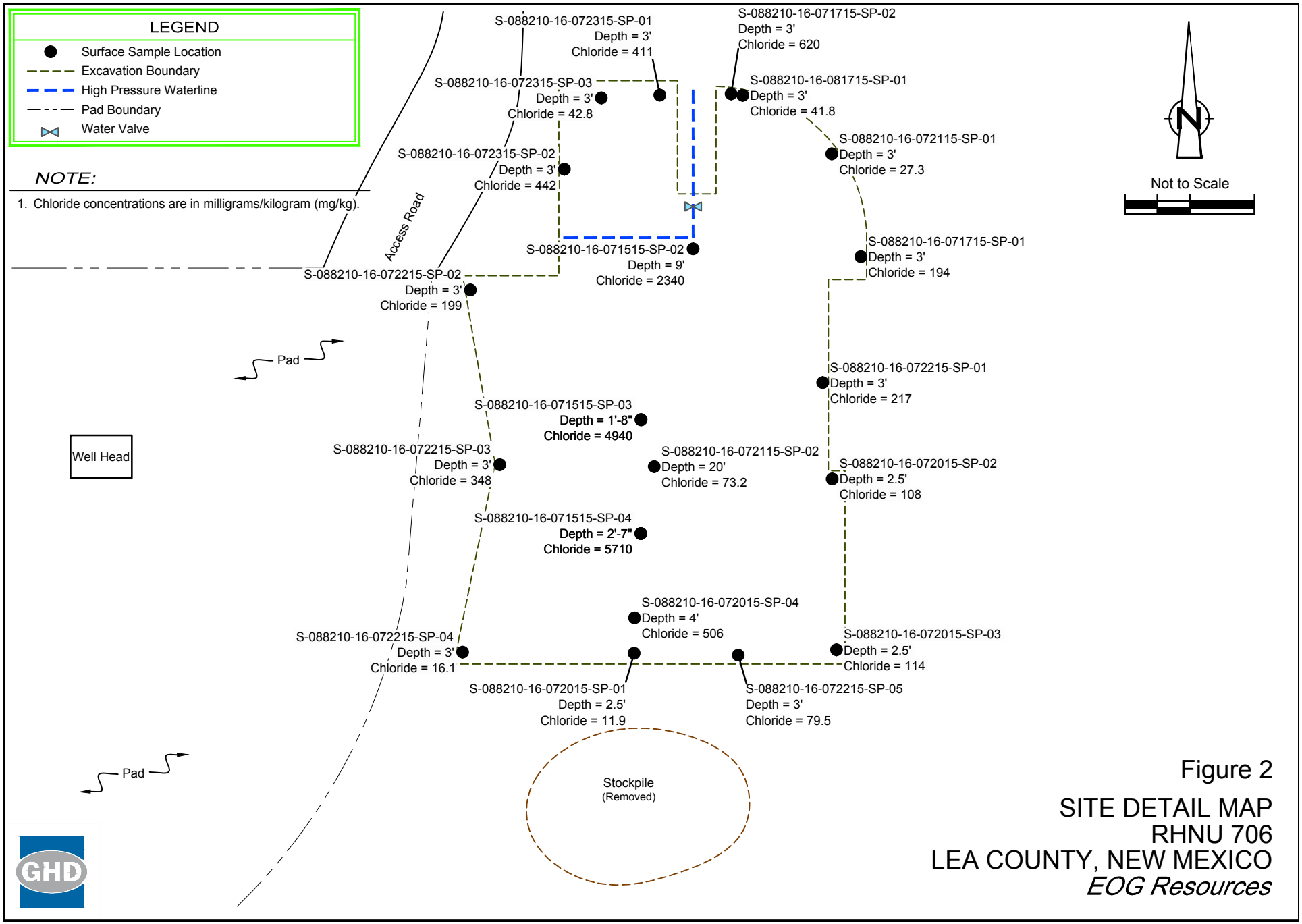


Figure 2

SITE DETAIL MAP
RHNU 706
LEA COUNTY, NEW MEXICO
EOG Resources

088210-16(000)GN-DL001 NOV 6/2015

Tables

Table 1
Soil Analytical Data Summary
Red Hills North Unit 706
Jal, NM

Sample ID	Depth (feet bgs)	Sample Date	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH			Chlorides (mg/kg)
								GRO (mg/kg)	DRO (mg/kg)	Total TPH (mg/kg)	
NMOCD RRALs (Total Ranking Score = 0)			**10**	**---**	**---**	**---**	**50**	**---**	**---**	**5000**	**500**
S-088210-16-071515-SP-01	Stockpile	7/15/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.0	26.7	26.7	**5900**
S-088210-16-071515-SP-02	9	7/15/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 19.6	< 19.6	< 19.6	**2340**
S-088210-16-071515-SP-03	1.7	7/15/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.2	< 17.2	< 17.2	**4940**
S-088210-16-071515-SP-04	2.6	7/15/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.8	< 17.8	< 17.8	**5710**
S-088210-16-071715-SP-01	3	7/17/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.1	< 16.1	< 16.1	194
S-088210-16-071715-SP-02	3	7/17/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.2	< 16.2	< 16.2	**620**
S-088210-16-072015-SP-01	2.5	7/20/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.4	< 16.4	< 16.4	11.9
S-088210-16-072015-SP-02	2.5	7/20/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.8	< 15.8	< 15.8	108
S-088210-16-072015-SP-03	2.5	7/20/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.9	< 15.9	< 15.9	114
S-088210-16-072015-SP-04	4	7/20/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.6	< 16.6	< 16.6	**506**
S-088210-16-072115-SP-01	3	7/21/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.2	< 16.2	< 16.2	27.3
S-088210-16-072115-SP-02	20	7/21/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.5	< 16.5	< 16.5	73.2
S-088210-16-072215-SP-01	3	7/22/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.7	< 15.7	< 15.7	217
S-088210-16-072215-SP-02	3	7/22/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.8	< 16.8	< 16.8	199
S-088210-16-072215-SP-03	3	7/22/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 17.1	< 17.1	< 17.1	348
S-088210-16-072215-SP-04	3	7/22/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.6	< 16.6	< 16.6	16.1
S-088210-16-072215-SP-05	3	7/22/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.9	< 15.9	< 15.9	79.5
S-088210-16-072315-SP-01	3	7/23/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.3	< 16.3	< 16.3	411
S-088210-16-072315-SP-02	3	7/23/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.2	< 16.2	< 16.2	442
S-088210-16-072315-SP-03	3	7/23/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 16.3	< 16.3	< 16.3	42.8
S-088210-16-081715-SP-01	3	8/17/2015	< 0.001	< 0.002	< 0.001	< 0.001	< 0.001	< 15.5	< 15.5	< 15.5	41.8

Notes:
bgs = below ground surface
TPH = total petroleum hydrocarbons
NMOCD = New Mexico Oil Conservation Division
RRALs = Recommended Remediation Action Limits
Highlighted = Exceeds NMOCD RRALs

Appendix A
Laboratory Analytical Reports

Analytical Report 512182

for

GHD-Albuquerque, NM

Project Manager: Bernie Bockisch

RHNU 706

088210/16

05-AUG-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

05-AUG-15

Project Manager: **Bernie Bockisch**
GHD-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **512182**
RHNU 706
Project Address: Lea County,NM

Bernie Bockisch:

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) 512182. 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. 512182 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

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 - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 512182

GHD-Albuquerque, NM, Albuquerque, NM

RHNU 706

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-088210-16-072215-SP-01	S	07-22-15 10:30	- 3 ft	512182-001
S-088210-16-072215-SP-02	S	07-22-15 13:28	- 3 ft	512182-002
S-088210-16-072215-SP-03	S	07-22-15 13:47	- 3 ft	512182-003
S-088210-16-072215-SP-04	S	07-22-15 15:20	- 3 ft	512182-004
S-088210-16-072215-SP-05	S	07-22-15 15:25	- 3 ft	512182-005
S-088210-16-072315-SP-01	S	07-23-15 12:16	- 3 ft	512182-006
S-088210-16-072315-SP-02	S	07-23-15 12:29	- 3 ft	512182-007
S-088210-16-072315-SP-03	S	07-23-15 13:05	- 3 ft	512182-008

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-973207 Inorganic Anions by EPA 300/300.1
Lab Sample ID 512183-002 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference.
Samples in the analytical batch are: 512182-001, -002, -003, -004, -005, -006, -007, -008.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-973811 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 512182-002 S.

Certificate of Analysis Summary 512182

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: RHNU 706

Project Id: 088210/16
Contact: Bernie Bockisch
Project Location: Lea County,NM

Date Received in Lab: Fri Jul-24-15 10:30 am
Report Date: 05-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	512182-001		512182-002		512182-003		512182-004		512182-005		512182-006	
	Field Id:	S-088210-16-072215-SP-01		S-088210-16-072215-SP-02		S-088210-16-072215-SP-03		S-088210-16-072215-SP-04		S-088210-16-072215-SP-05		S-088210-16-072315-SP-01	
	Depth:	3 ft		3 ft		3 ft		3 ft		3 ft		3 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-22-15 10:30		Jul-22-15 13:28		Jul-22-15 13:47		Jul-22-15 15:20		Jul-22-15 15:25		Jul-23-15 12:16	
BTEX by EPA 8021B	*Extracted:*	Jul-30-15 08:00		Aug-02-15 20:00		Jul-30-15 08:00		Jul-30-15 08:00		Jul-30-15 08:00		Jul-30-15 08:00	
	Analyzed:	Jul-30-15 22:57		Aug-03-15 08:20		Jul-30-15 23:14		Jul-30-15 23:29		Jul-30-15 23:46		Jul-31-15 00:01	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00105	ND	0.00112	ND	0.00115	ND	0.00112	ND	0.00106	ND	0.00109
Toluene		ND	0.00210	ND	0.00225	ND	0.00229	ND	0.00223	ND	0.00212	ND	0.00218
Ethylbenzene		ND	0.00105	ND	0.00112	ND	0.00115	ND	0.00112	ND	0.00106	ND	0.00109
m,p-Xylenes		ND	0.00210	ND	0.00225	ND	0.00229	ND	0.00223	ND	0.00212	ND	0.00218
o-Xylene		ND	0.00105	ND	0.00112	ND	0.00115	ND	0.00112	ND	0.00106	ND	0.00109
Total Xylenes		ND	0.00105	ND	0.00112	ND	0.00115	ND	0.00112	ND	0.00106	ND	0.00109
Total BTEX		ND	0.00105	ND	0.00112	ND	0.00115	ND	0.00112	ND	0.00106	ND	0.00109
Inorganic Anions by EPA 300/300.1	*Extracted:*	Jul-24-15 17:00		Jul-24-15 17:00		Jul-24-15 17:00		Jul-24-15 17:00		Jul-24-15 17:00		Jul-24-15 17:00	
	Analyzed:	Jul-24-15 19:58		Jul-24-15 21:06		Jul-24-15 21:29		Jul-24-15 21:52		Jul-24-15 22:14		Jul-24-15 23:22	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		217	21.0	199	11.2	348	22.9	16.1	11.2	79.5	10.6	411	21.8
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-24-15 17:20		Jul-24-15 17:20		Jul-24-15 17:20		Jul-24-15 17:20		Jul-24-15 17:20		Jul-24-15 17:20	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.87	1.00	11.0	1.00	12.8	1.00	10.3	1.00	5.59	1.00	8.08	1.00
TPH By SW8015 Mod	*Extracted:*	Jul-27-15 19:00		Jul-27-15 19:00		Jul-27-15 19:00		Jul-27-15 19:00		Jul-27-15 19:00		Jul-27-15 19:00	
	Analyzed:	Jul-28-15 04:51		Jul-28-15 05:16		Jul-28-15 05:37		Jul-28-15 05:59		Jul-28-15 06:23		Jul-28-15 06:47	
	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	15.7	ND	16.8	ND	17.1	ND	16.6	ND	15.9	ND	16.3
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	16.8	ND	17.1	ND	16.6	ND	15.9	ND	16.3
C28-C35 Oil Range Hydrocarbons		ND	15.7	ND	16.8	ND	17.1	ND	16.6	ND	15.9	ND	16.3
Total TPH		ND	15.7	ND	16.8	ND	17.1	ND	16.6	ND	15.9	ND	16.3

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 512182

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: RHNU 706

Project Id: 088210/16
Contact: Bernie Bockisch
Project Location: Lea County,NM

Date Received in Lab: Fri Jul-24-15 10:30 am
Report Date: 05-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	512182-007				512182-008							
	Field Id:	S-088210-16-072315-SP-02				S-088210-16-072315-SP-03							
	Depth:	3 ft				3 ft							
	Matrix:	SOIL				SOIL							
	Sampled:	Jul-23-15 12:29				Jul-23-15 13:05							
BTEX by EPA 8021B	***Extracted:***	Jul-30-15 08:00				Jul-30-15 08:00							
	Analyzed:	Jul-31-15 00:18				Jul-31-15 00:33							
	Units/RL:	mg/kg	RL			mg/kg	RL						
Benzene		ND	0.00108			ND	0.00109						
Toluene		ND	0.00216			ND	0.00217						
Ethylbenzene		ND	0.00108			ND	0.00109						
m,p-Xylenes		ND	0.00216			ND	0.00217						
o-Xylene		ND	0.00108			ND	0.00109						
Total Xylenes		ND	0.00108			ND	0.00109						
Total BTEX		ND	0.00108			ND	0.00109						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-24-15 17:00				Jul-24-15 17:00							
	Analyzed:	Jul-24-15 23:45				Jul-25-15 00:07							
	Units/RL:	mg/kg	RL			mg/kg	RL						
Chloride		442	21.6			42.8	10.9						
Percent Moisture	***Extracted:***												
	Analyzed:	Jul-24-15 17:20				Jul-24-15 17:20							
	Units/RL:	%	RL			%	RL						
Percent Moisture		7.61	1.00			7.92	1.00						
TPH By SW8015 Mod	***Extracted:***	Jul-27-15 19:00				Jul-27-15 19:00							
	Analyzed:	Jul-28-15 07:55				Jul-28-15 08:18							
	Units/RL:	mg/kg	RL			mg/kg	RL						
C6-C12 Gasoline Range Hydrocarbons		ND	16.2			ND	16.3						
C12-C28 Diesel Range Hydrocarbons		ND	16.2			ND	16.3						
C28-C35 Oil Range Hydrocarbons		ND	16.2			ND	16.3						
Total TPH		ND	16.2			ND	16.3						

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: RHNU 706

Work Orders : 512182,

Project ID: 088210/16

Lab Batch #: 973279 **Sample:** 512182-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 04:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.8	91	70-135	
o-Terphenyl	52.5	49.9	105	70-135	

Lab Batch #: 973279 **Sample:** 512182-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 05:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	99.6	81	70-135	
o-Terphenyl	47.2	49.8	95	70-135	

Lab Batch #: 973279 **Sample:** 512182-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 05:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.3	99.7	95	70-135	
o-Terphenyl	55.0	49.9	110	70-135	

Lab Batch #: 973279 **Sample:** 512182-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 05:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.5	81	70-135	
o-Terphenyl	46.5	49.8	93	70-135	

Lab Batch #: 973279 **Sample:** 512182-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 06:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.3	99.8	81	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

* 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: RHNU 706

Work Orders : 512182,

Project ID: 088210/16

Lab Batch #: 973279 **Sample:** 512182-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 06:47

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.8	99.9	81	70-135	
o-Terphenyl	47.9	50.0	96	70-135	

Lab Batch #: 973279 **Sample:** 512182-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 07:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.7	100	80	70-135	
o-Terphenyl	46.6	50.0	93	70-135	

Lab Batch #: 973279 **Sample:** 512182-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 08:18

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.0	99.8	88	70-135	
o-Terphenyl	50.9	49.9	102	70-135	

Lab Batch #: 973607 **Sample:** 512182-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 22:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 973607 **Sample:** 512182-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 23:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	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: RHNU 706

Work Orders : 512182,

Project ID: 088210/16

Lab Batch #: 973607 **Sample:** 512182-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 23:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 973607 **Sample:** 512182-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 23:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 973607 **Sample:** 512182-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/31/15 00:01

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 973607 **Sample:** 512182-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/31/15 00:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 973607 **Sample:** 512182-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/31/15 00:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0259	0.0300	86	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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: RHNU 706

Work Orders : 512182,

Project ID: 088210/16

Lab Batch #: 973811 **Sample:** 512182-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/03/15 08:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 973279 **Sample:** 695818-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/28/15 02:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.7	100	83	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

Lab Batch #: 973607 **Sample:** 696018-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 19:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 973811 **Sample:** 696152-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/03/15 10:18

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	0.0340	0.0300	113	80-120	

Lab Batch #: 973279 **Sample:** 695818-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/28/15 03:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	100	100	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

* 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: RHNU 706

Work Orders : 512182,

Project ID: 088210/16

Lab Batch #: 973607 **Sample:** 696018-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 17:58

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	0.0357	0.0300	119	80-120	

Lab Batch #: 973811 **Sample:** 696152-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/03/15 09:28

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	0.0345	0.0300	115	80-120	

Lab Batch #: 973279 **Sample:** 695818-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/28/15 03:22

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	58.1	50.0	116	70-135	

Lab Batch #: 973607 **Sample:** 696018-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 18:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 973811 **Sample:** 696152-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/03/15 09:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	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: RHNU 706

Work Orders : 512182,

Project ID: 088210/16

Lab Batch #: 973279 **Sample:** 511874-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 04:07

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.0	99.8	95	70-135	
o-Terphenyl	45.2	49.9	91	70-135	

Lab Batch #: 973607 **Sample:** 512003-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 18:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 973811 **Sample:** 512182-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/03/15 07:14

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	0.0372	0.0300	124	80-120	**

Lab Batch #: 973279 **Sample:** 511874-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 04:29

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	40.2	50.0	80	70-135	

* 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: RHNU 706

Work Order #: 512182 **Project ID:** 088210/16

Analyst: PJB **Date Prepared:** 07/30/2015 **Date Analyzed:** 07/30/2015

Lab Batch ID: 973607 **Sample:** 696018-1-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	<0.00100	0.100	0.0900	90	0.100	0.0914	91	2	70-130	35	
Toluene	<0.00200	0.100	0.0939	94	0.100	0.0950	95	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0963	96	0.100	0.0976	98	1	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.202	101	1	70-135	35	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.102	102	1	71-133	35	

Analyst: PJB **Date Prepared:** 08/02/2015 **Date Analyzed:** 08/03/2015

Lab Batch ID: 973811 **Sample:** 696152-1-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	<0.00100	0.100	0.0933	93	0.100	0.0893	89	4	70-130	35	
Toluene	<0.00200	0.100	0.0987	99	0.100	0.0945	95	4	70-130	35	
Ethylbenzene	<0.00100	0.100	0.101	101	0.100	0.0956	96	5	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.210	105	0.200	0.199	100	5	70-135	35	
o-Xylene	<0.00100	0.100	0.105	105	0.100	0.0999	100	5	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: RHNU 706

Work Order #: 512182 **Project ID:** 088210/16

Analyst: JUM **Date Prepared:** 07/24/2015 **Date Analyzed:** 07/24/2015

Lab Batch ID: 973207 **Sample:** 695687-1-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	<2.00	50.0	51.3	103	50.0	50.4	101	2	90-110	20	

Analyst: PJB **Date Prepared:** 07/27/2015 **Date Analyzed:** 07/28/2015

Lab Batch ID: 973279 **Sample:** 695818-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<15.0	1000	744	74	1000	845	85	13	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	932	93	1000	1040	104	11	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: RHNU 706

Work Order #: 512182

Lab Batch #: 973607 **Project ID:** 088210/16

Date Analyzed: 07/30/2015 **Date Prepared:** 07/30/2015 **Analyst:** PJB

QC- Sample ID: 512003-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Benzene	<0.00108	0.108	0.0961	89	70-130	
Toluene	<0.00215	0.108	0.0862	80	70-130	
Ethylbenzene	<0.00108	0.108	0.0863	80	71-129	
m,p-Xylenes	<0.00215	0.215	0.178	83	70-135	
o-Xylene	<0.00108	0.108	0.0906	84	71-133	

Lab Batch #: 973811

Date Analyzed: 08/03/2015 **Date Prepared:** 08/02/2015 **Analyst:** PJB

QC- Sample ID: 512182-002 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Benzene	<0.00112	0.112	0.0822	73	70-130	
Toluene	<0.00225	0.112	0.0861	77	70-130	
Ethylbenzene	<0.00112	0.112	0.0883	79	71-129	
m,p-Xylenes	<0.00225	0.225	0.181	80	70-135	
o-Xylene	<0.00112	0.112	0.0930	83	71-133	

Lab Batch #: 973207

Date Analyzed: 07/24/2015 **Date Prepared:** 07/24/2015 **Analyst:** JUM

QC- Sample ID: 512182-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Chloride	217	526	931	136	80-120	X

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 Recoveries

Project Name: RHNU 706

Work Order #: 512182

Lab Batch #: 973207 **Project ID:** 088210/16

Date Analyzed: 07/25/2015 **Date Prepared:** 07/24/2015 **Analyst:** JUM

QC- Sample ID: 512183-002 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1200	1160	2370	101	80-120	

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: RHNU 706

Work Order # : 512182 **Project ID:** 088210/16

Lab Batch ID: 973279 **QC- Sample ID:** 511874-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/28/2015 **Date Prepared:** 07/27/2015 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<17.6	1180	835	71	1180	1040	88	22	70-135	35	
C12-C28 Diesel Range Hydrocarbons	53.3	1180	1060	85	1180	1370	112	26	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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.

Sample Duplicate Recovery

Project Name: RHNU 706

Work Order #: 512182

Lab Batch #: 973281 **Project ID:** 088210/16

Date Analyzed: 07/24/2015 17:20 **Date Prepared:** 07/24/2015 **Analyst:** WRU

QC- Sample ID: 512182-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.87	5.21	7	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

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Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)
www.xenco.com

Xenco Quote #
Xenco Job # 512182

Client / Reporting Information

Company Name / Branch: GHD/Albuquerque
Company Address: 1621 Indian School Rd NE Ste 200, Albuquerque NM 87110
Email: Bernard.Bocklisch@ghd.com Phone No: 505-280-0572
Project Contact: Bernie Bocklisch
Samplers's Name: Steve Perez steven.perez@ghd.com

Project Information

Project Name/Number: BHNM 706 088210/16
Project Location: Lea County, NM
Invoice To:
PO Number:

Analytical Information

Chloride 300
BTEX 8021 SP
TPH 8015 B GRO/DRO

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	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	S-088210-16-072215-SP-01	3.0'	7/22/15	1030	S	1									
2	S-088210-16-072215-SP-02	3.0'		1328											
3	S-089210-16-072215-SP-03	3.0'		1347											
4	S-088210-16-072215-SP-04	3.0'		1520											
5	S-088210-16-072215-SP-05	3.0'		1525											
6	S-088210-16-072315-SP-01	3.0'	7/23/15	1216											
7	S-088210-16-072315-SP-02	3.0'		1229											
8	S-088210-16-072315-SP-03	3.0'		1305											
9															
10															

Turnaround Time (Business days)

- [ ] Same Day TAT
- [ ] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] Contract TAT
- [x] 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	Steven Perez	7/23/15 300pm		2	7/24/15 10:30	Bill Rhoan
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. 5.0° Thermo. Corr. Factor
			5			

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 negiotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD-Albuquerque, NM

Date/ Time Received: 07/24/2015 10:30:00 AM

Work Order #: 512182

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

Temperature Measuring device used :

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 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <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**
#22 >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: Kelsey Brooks Date: 07/24/2015

Checklist reviewed by: Date:

Analytical Report 512003

for

GHD-Albuquerque, NM

Project Manager: Bernie Bockisch

RHNU 706

088210/16

05-AUG-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

05-AUG-15

Project Manager: **Bernie Bockisch**
GHD-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **512003**
RHNU 706
Project Address: Lea County,NM

Bernie Bockisch:

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) 512003. 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. 512003 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

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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 512003

GHD-Albuquerque, NM, Albuquerque, NM

RHNU 706

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-088210-16-071715-SP-01	S	07-17-15 12:56	- 3 ft	512003-001
S-088210-16-071715-SP-02	S	07-17-15 13:49	- 3 ft	512003-002
S-088210-16-072015-SP-01	S	07-20-15 09:49	- 2.5 ft	512003-003
S-088210-16-072015-SP-02	S	07-20-15 11:00	- 2.5 ft	512003-004
S-088210-16-072015-SP-03	S	07-20-15 11:14	- 2.5 ft	512003-005
S-088210-16-072015-SP-04	S	07-20-15 13:30	- 4.0 ft	512003-006
S-088210-16-072115-SP-01	S	07-21-15 10:58	- 3.0 ft	512003-007
S-088210-16-072115-SP-02	S	07-21-15 14:40	- 20 ft	512003-008

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 512003

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: RHNU 706

Project Id: 088210/16
Contact: Bernie Bockisch
Project Location: Lea County,NM

Date Received in Lab: Wed Jul-22-15 10:00 am
Report Date: 05-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	512003-001		512003-002		512003-003		512003-004		512003-005		512003-006	
	Field Id:	S-088210-16-071715-SP-01		S-088210-16-071715-SP-02		S-088210-16-072015-SP-01		S-088210-16-072015-SP-02		S-088210-16-072015-SP-03		S-088210-16-072015-SP-04	
	Depth:	3 ft		3 ft		2.5 ft		2.5 ft		2.5 ft		4.0 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jul-17-15 12:56		Jul-17-15 13:49		Jul-20-15 09:49		Jul-20-15 11:00		Jul-20-15 11:14		Jul-20-15 13:30	
BTEX by EPA 8021B	*Extracted:*	Jul-30-15 08:00		Jul-30-15 08:00		Jul-30-15 08:00		Jul-30-15 08:00		Jul-30-15 08:00		Jul-30-15 08:00	
	Analyzed:	Jul-30-15 19:39		Jul-30-15 19:56		Jul-30-15 20:12		Jul-30-15 20:29		Jul-30-15 20:45		Jul-30-15 21:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00108	ND	0.00108	ND	0.00109	ND	0.00106	ND	0.00107	ND	0.00111
Toluene		ND	0.00215	ND	0.00217	ND	0.00218	ND	0.00211	ND	0.00213	ND	0.00222
Ethylbenzene		ND	0.00108	ND	0.00108	ND	0.00109	ND	0.00106	ND	0.00107	ND	0.00111
m,p-Xylenes		ND	0.00215	ND	0.00217	ND	0.00218	ND	0.00211	ND	0.00213	ND	0.00222
o-Xylene		ND	0.00108	ND	0.00108	ND	0.00109	ND	0.00106	ND	0.00107	ND	0.00111
Total Xylenes		ND	0.00108	ND	0.00108	ND	0.00109	ND	0.00106	ND	0.00107	ND	0.00111
Total BTEX		ND	0.00108	ND	0.00108	ND	0.00109	ND	0.00106	ND	0.00107	ND	0.00111
Inorganic Anions by EPA 300/300.1	*Extracted:*	Jul-30-15 15:00		Jul-30-15 15:00		Jul-30-15 15:00		Jul-30-15 15:00		Jul-30-15 15:00		Jul-30-15 15:00	
	Analyzed:	Jul-30-15 18:13		Jul-30-15 18:35		Jul-30-15 19:44		Jul-30-15 20:06		Jul-30-15 20:29		Jul-30-15 20:52	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		194	21.5	620	43.3	11.9	2.18	108	10.6	114	10.7	506	22.2
Percent Moisture	*Extracted:*												
	Analyzed:	Jul-28-15 17:00		Jul-28-15 17:00		Jul-28-15 17:00		Jul-28-15 17:00		Jul-28-15 17:00		Jul-28-15 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		7.02	1.00	7.65	1.00	8.27	1.00	5.28	1.00	6.12	1.00	9.75	1.00
TPH By SW8015 Mod	*Extracted:*	Jul-30-15 10:00		Jul-30-15 10:00		Jul-30-15 10:00		Jul-30-15 10:00		Jul-30-15 10:00		Jul-30-15 10:00	
	Analyzed:	Aug-02-15 03:41		Aug-02-15 04:03		Aug-02-15 23:25		Aug-02-15 05:31		Aug-02-15 05:53		Aug-02-15 06:14	
	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	16.1	ND	16.2	ND	16.4	ND	15.8	ND	15.9	ND	16.6
C12-C28 Diesel Range Hydrocarbons		ND	16.1	ND	16.2	ND	16.4	ND	15.8	ND	15.9	ND	16.6
C28-C35 Oil Range Hydrocarbons		ND	16.1	ND	16.2	ND	16.4	ND	15.8	ND	15.9	ND	16.6
Total TPH		ND	16.1	ND	16.2	ND	16.4	ND	15.8	ND	15.9	ND	16.6

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 512003

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: RHNU 706

Project Id: 088210/16
Contact: Bernie Bockisch
Project Location: Lea County,NM

Date Received in Lab: Wed Jul-22-15 10:00 am
Report Date: 05-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	512003-007		512003-008					
	Field Id:	S-088210-16-072115-SP-01		S-088210-16-072115-SP-02					
	Depth:	3.0 ft		20 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Jul-21-15 10:58		Jul-21-15 14:40					
BTEX by EPA 8021B	***Extracted:***	Jul-30-15 08:00		Jul-30-15 08:00					
	Analyzed:	Jul-30-15 21:19		Jul-30-15 21:36					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.00108	ND	0.00110				
Toluene		ND	0.00216	ND	0.00221				
Ethylbenzene		ND	0.00108	ND	0.00110				
m,p-Xylenes		ND	0.00216	ND	0.00221				
o-Xylene		ND	0.00108	ND	0.00110				
Total Xylenes		ND	0.00108	ND	0.00110				
Total BTEX		ND	0.00108	ND	0.00110				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-30-15 15:00		Jul-30-15 16:37					
	Analyzed:	Jul-30-15 21:14		Jul-30-15 23:31					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		27.3	2.16	73.2	11.0				
Percent Moisture	***Extracted:***								
	Analyzed:	Jul-28-15 17:00		Jul-28-15 17:00					
	Units/RL:	%	RL	%	RL				
Percent Moisture		7.57	1.00	9.32	1.00				
TPH By SW8015 Mod	***Extracted:***	Jul-30-15 10:00		Jul-30-15 10:00					
	Analyzed:	Aug-02-15 07:19		Aug-02-15 07:40					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	16.2	ND	16.5				
C12-C28 Diesel Range Hydrocarbons		ND	16.2	ND	16.5				
C28-C35 Oil Range Hydrocarbons		ND	16.2	ND	16.5				
Total TPH		ND	16.2	ND	16.5				

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: RHNU 706

Work Orders : 512003,

Project ID: 088210/16

Lab Batch #: 973607 **Sample:** 512003-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 19:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0279	0.0300	93	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 973607 **Sample:** 512003-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 19:56

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	0.0349	0.0300	116	80-120	

Lab Batch #: 973607 **Sample:** 512003-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 20:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 973607 **Sample:** 512003-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 20:29

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	0.0353	0.0300	118	80-120	

Lab Batch #: 973607 **Sample:** 512003-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 20:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	80-120	
4-Bromofluorobenzene	0.0327	0.0300	109	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: RHNU 706

Work Orders : 512003,

Project ID: 088210/16

Lab Batch #: 973607 **Sample:** 512003-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 21:02

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 973607 **Sample:** 512003-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 21:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

Lab Batch #: 973607 **Sample:** 512003-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 21:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0359	0.0300	120	80-120	

Lab Batch #: 973502 **Sample:** 512003-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 03:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.1	99.9	98	70-135	
o-Terphenyl	56.1	50.0	112	70-135	

Lab Batch #: 973502 **Sample:** 512003-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 04:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.8	99.7	79	70-135	
o-Terphenyl	46.3	49.9	93	70-135	

* 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: RHNU 706

Work Orders : 512003,

Project ID: 088210/16

Lab Batch #: 973502 **Sample:** 512003-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 05:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.3	99.6	84	70-135	
o-Terphenyl	48.5	49.8	97	70-135	

Lab Batch #: 973502 **Sample:** 512003-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 05:53

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.2	99.8	97	70-135	
o-Terphenyl	56.6	49.9	113	70-135	

Lab Batch #: 973502 **Sample:** 512003-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 06:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.2	99.9	97	70-135	
o-Terphenyl	57.1	50.0	114	70-135	

Lab Batch #: 973502 **Sample:** 512003-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 07:19

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	76.7	99.6	77	70-135	
o-Terphenyl	44.9	49.8	90	70-135	

Lab Batch #: 973502 **Sample:** 512003-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 07:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	99.9	96	70-135	
o-Terphenyl	56.6	50.0	113	70-135	

* 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: RHNU 706

Work Orders : 512003,

Project ID: 088210/16

Lab Batch #: 973502 **Sample:** 512003-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 23:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.0	100	96	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 973502 **Sample:** 695945-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 03:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	100	111	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 973607 **Sample:** 696018-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 19:22

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 973502 **Sample:** 695945-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 08:51

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.9	108	70-135	
o-Terphenyl	50.1	50.0	100	70-135	

Lab Batch #: 973607 **Sample:** 696018-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 17:58

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	0.0357	0.0300	119	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: RHNU 706

Work Orders : 512003,

Project ID: 088210/16

Lab Batch #: 973607 **Sample:** 696018-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/15 18:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 973502 **Sample:** 695945-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/31/15 08:21

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 973607 **Sample:** 512003-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/15 18:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0317	0.0300	106	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 973502 **Sample:** 512421-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 15:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 973502 **Sample:** 512421-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/02/15 15:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	99.6	92	70-135	
o-Terphenyl	43.9	49.8	88	70-135	

* 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: RHNU 706

Work Order #: 512003 **Project ID:** 088210/16

Analyst: PJB **Date Prepared:** 07/30/2015 **Date Analyzed:** 07/30/2015

Lab Batch ID: 973607 **Sample:** 696018-1-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	<0.00100	0.100	0.0900	90	0.100	0.0914	91	2	70-130	35	
Toluene	<0.00200	0.100	0.0939	94	0.100	0.0950	95	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0963	96	0.100	0.0976	98	1	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.202	101	1	70-135	35	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.102	102	1	71-133	35	

Analyst: JUM **Date Prepared:** 07/29/2015 **Date Analyzed:** 07/30/2015

Lab Batch ID: 973648 **Sample:** 695878-1-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	<2.00	50.0	49.0	98	50.0	49.1	98	0	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: RHNU 706

Work Order #: 512003 **Project ID:** 088210/16

Analyst: JUM **Date Prepared:** 07/30/2015 **Date Analyzed:** 07/30/2015

Lab Batch ID: 973656 **Sample:** 695938-1-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	<2.00	50.0	53.5	107	50.0	52.1	104	3	90-110	20	

Analyst: PJB **Date Prepared:** 07/29/2015 **Date Analyzed:** 07/30/2015

Lab Batch ID: 973502 **Sample:** 695945-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<15.0	999	882	88	999	878	88	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	999	819	82	999	906	91	10	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: RHNU 706

Work Order #: 512003

Lab Batch #: 973607 **Project ID:** 088210/16

Date Analyzed: 07/30/2015 **Date Prepared:** 07/30/2015 **Analyst:** PJB

QC- Sample ID: 512003-001 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	<0.00108	0.108	0.0961	89	70-130	
Toluene	<0.00215	0.108	0.0862	80	70-130	
Ethylbenzene	<0.00108	0.108	0.0863	80	71-129	
m,p-Xylenes	<0.00215	0.215	0.178	83	70-135	
o-Xylene	<0.00108	0.108	0.0906	84	71-133	

Lab Batch #: 973648

Date Analyzed: 07/30/2015 **Date Prepared:** 07/30/2015 **Analyst:** JUM

QC- Sample ID: 512001-005 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	<2.29	57.3	59.4	104	80-120	

Lab Batch #: 973648

Date Analyzed: 07/30/2015 **Date Prepared:** 07/29/2015 **Analyst:** JUM

QC- Sample ID: 512017-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	94.2	370	466	100	80-120	

Lab Batch #: 973656

Date Analyzed: 07/30/2015 **Date Prepared:** 07/30/2015 **Analyst:** JUM

QC- Sample ID: 512003-008 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	73.2	276	363	105	80-120	

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 Recoveries

Project Name: RHNU 706

Work Order #: 512003

Lab Batch #: 973656 **Project ID:** 088210/16

Date Analyzed: 07/31/2015 **Date Prepared:** 07/30/2015 **Analyst:** JUM

QC- Sample ID: 512296-004 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	269	1000	1250	98	80-120	

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: RHNU 706

Work Order # : 512003 **Project ID:** 088210/16

Lab Batch ID: 973502 **QC- Sample ID:** 512421-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/02/2015 **Date Prepared:** 07/30/2015 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	95.6	1010	827	72	1000	952	86	14	70-135	35	
C12-C28 Diesel Range Hydrocarbons	6550	1010	7590	103	1000	6890	34	10	70-135	35	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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.

Sample Duplicate Recovery

Project Name: RHNU 706

Work Order #: 512003

Lab Batch #: 973326 **Project ID:** 088210/16

Date Analyzed: 07/28/2015 17:00 **Date Prepared:** 07/28/2015 **Analyst:** WRU

QC- Sample ID: 512003-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.02	7.00	0	20	

Lab Batch #: 973326

Date Analyzed: 07/28/2015 17:00 **Date Prepared:** 07/28/2015 **Analyst:** WRU

QC- Sample ID: 512012-002 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	12.4	13.6	9	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

XENCO Laboratories

ANALYSIS REQUEST & CHAIN OF CUSTODY RECORD

☐ 4143 Greenbriar Drive, Stafford, TX 77477 **281-240-4200**
☐ 5332, Blackberry Drive, San Antonio, TX 78238 **210-509-3334**
☐ 9701 Harry Hines Blvd., Dallas, TX 75220 **214-902-0300**
☑ 12600 West I-20 East, Odessa, TX 79765 **432-563-1800**

Serial #: 322791 Page 1 of 1

Lab Only: 512003

Company-City GHD - Albuquerque	**Phone** 505-884-0672
Project Name-Location BHNL 706 Lea County, NM ☐ Previously done at XENCO	**Project ID** 088210/16
Proj. State: TX, AL, FL, GA, LA, MS, NC, NJ, PA, SC, TN, UT Other NM	**Proj. Manager (PM)** Bernie Bockisch Bernard.Bockisch@ghd.com
E-mail Results to ☑PM and Steven.Perez@GHD.com	**Fax No:**
Invoice to ☐ Accounting ☐ Inc. Invoice with Final Report ☐ Invoice must have a P.O. Bill to:	
Quote/Pricing:	**P.O. No:** ☐ Call for P.O.
Reg Program: UST DRY-CLEAN Land-Fill Waste-Disp NPDES DW **TRRP** QAPP Per-Contract CLP AGCEE NAVY DOE DOD USACE OTHER:	
Special DLs (GW DW QAPP MDLs RLs See Lab PM Included Call PM) 575-689-5782	
Sampler Name Steve Perez	**Signature** Steve Perez

TAT: ASAP 5h 12h 24h 48h (3d) 5d 7d 10d 21d Standard TAT is project specific.
It is typically 5-7 Working Days for level II and 10+ Working days for level III and IV data.

	Sample ID	Sampling Date	Time	Depth ft' In" m	Matrix	Composite	Grab	# Containers	Container Size	Container Type	Preservatives
1	S-088210-16-071715-SP-01	07/17/15	1256	3'	S		X		4oz	gl	ICE
2	S-088210-16-071715-SP-02	↓	1349	3'							
3	~~S-088210-16-071715-SP-03~~	↓		2.5'							
SP 4	~~S-088210-16-071715-SP-04~~	↓	949 SP								
5	S-088210-16-072015-SP-01	07/20/15	949	2.5'							
6	S-088210-16-072015-SP-02	↓	1100	2.5'							
7	S-088210-16-072015-SP-03		1114	2.5'							
8	S-088210-16-072015-SP-04	↓	1330	4.0							
9	S-088210-16-072115-SP-01	07/21/15	1058	3.0'							
10	S-088210-16-072115-SP-02	07/21/15	1440	20'							

	VOA: Full-List BTEX-MTBE EtOH Oxyg VOHs VOAs	VOA: PP TCL DW Appdx-1 Appdx-2 CALL Other:	PAHs SIM 8310 8270	TX-1005 DRO GRO MA EPH MA VPH	SVOCs: Full-List DW BN&AE TCLP PP Appdx-2 CALL	OC Pesticides PCBs Herbicides OP Pesticides	Metals: RCRA-8 RCRA-4 Pb 13PP 23TAL Appdx 1 Appdx2	SPLP - TCLP (Metals VOCs SVOCs Pest. Herb. PCBs)	EDB / DBCP	BTEX 8021 GRO/DRO	Chloride 300.0	TPH 8021
1										X	X	X
2												
3												
4												
5												
6												
7												
8												
9												
10												

	TAT ASAP	5h	12h	24h	48h	3d	5d	7d	10d	21d
	Addn: PAH above			mg/L	W,	mg/Kg	S	Highest Hit		
	Hold Samples (Surcharges will apply and are pre-approved)									
	Sample Clean-ups are pre-approved as needed									

Remarks

Addn: Date Rcv. by: From:

	Relinquished by (Initials and Sign)	Date & Time	Relinquished to (Initials and Sign)	Date & Time
1	1) Steven Perez SP	7/21/15 400p	2)	7/22/15 1060
2	3)		4)	
3	5)		6)	

Total Containers per COC: 8 Cooler Temp: 7 °C

Otherwise agreed on writing. Reports are the Intellectual Property of XENCO until paid. Samples will be held 30 days after final report is e-mailed unless hereby requested. Rush Charges and Collection Fees are pre-approved if needed.

Preservatives: Various (**V**), HCl pH<2 (**H**), H2SO4 pH<2 (**S**), HNO3 pH<2 (**N**), Asbc Acid&NaOH (**A**), ZnAc&NaOH (**Z**), (Cool, <4C) (**C**), None (**NA**),See Label (**L**), Other (**O**) _____
Cont. Size: 4oz (**4**), 8oz (**8**), 32oz (**32**), 40ml VOA (**40**), 1L (**1**), 500ml (**5**), Tedlar Bag (**B**), Various (**V**), Other _____ **Cont. Type:** Glass Amb (**A**), Glass Clear (**C**), Plastic (**P**), Various (**V**)

Matrix: Air (**A**), Product (**P**), Solid (**S**), Water (**W**), Liquid (**L**)

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Analytical Report 513627

for

GHD-Albuquerque, NM

Project Manager: Bernie Bockisch

RHNU 706

088210/16

28-AUG-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

28-AUG-15

Project Manager: **Bernie Bockisch**
GHD-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **513627**
RHNU 706
Project Address: Lea County, NM

Bernie Bockisch:

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) 513627. 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. 513627 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
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Sample Cross Reference 513627

GHD-Albuquerque, NM, Albuquerque, NM

RHNU 706

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SO-088210-16-081715-SP-01	S	08-17-15 13:20	- 3 ft	513627-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-975443 TPH By SW8015 Mod

Surrogate 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.

Samples affected are: 513627-001 S,513627-001 SD.

Certificate of Analysis Summary 513627

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: RHNU 706

Project Id: 088210/16
Contact: Bernie Bockisch
Project Location: Lea County, NM

Date Received in Lab: Tue Aug-18-15 11:35 am
Report Date: 28-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	513627-001					
	Field Id:	SO-088210-16-081715-SP-0					
	Depth:	3 ft					
	Matrix:	SOIL					
	Sampled:	Aug-17-15 13:20					
BTEX by EPA 8021B	***Extracted:***	Aug-24-15 20:00					
	Analyzed:	Aug-25-15 16:15					
	Units/RL:	mg/kg	RL				
Benzene		ND	0.00103				
Toluene		ND	0.00206				
Ethylbenzene		ND	0.00103				
m,p-Xylenes		ND	0.00206				
o-Xylene		ND	0.00103				
Total Xylenes		ND	0.00103				
Total BTEX		ND	0.00103				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-26-15 15:30					
	Analyzed:	Aug-27-15 08:45					
	Units/RL:	mg/kg	RL				
Chloride		41.8	10.4				
Percent Moisture	***Extracted:***						
	Analyzed:	Aug-19-15 17:30					
	Units/RL:	%	RL				
Percent Moisture		3.48	1.00				
TPH By SW8015 Mod	***Extracted:***	Aug-24-15 20:00					
	Analyzed:	Aug-26-15 00:46					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	15.5				
C12-C28 Diesel Range Hydrocarbons		ND	15.5				
C28-C35 Oil Range Hydrocarbons		ND	15.5				
Total TPH		ND	15.5				

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: RHNU 706

Work Orders : 513627, 513627 **Project ID:** 088210/16

Lab Batch #: 975347 **Sample:** 513627-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/25/15 16:15

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 975443 **Sample:** 513627-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/26/15 00:46

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.7	123	70-135	
o-Terphenyl	57.9	49.9	116	70-135	

Lab Batch #: 975347 **Sample:** 697144-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/25/15 10:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 975443 **Sample:** 697210-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/25/15 21:34

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	56.7	50.0	113	70-135	

Lab Batch #: 975347 **Sample:** 697144-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/25/15 09:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	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: RHNU 706

Work Orders : 513627, 513627 **Project ID:** 088210/16

Lab Batch #: 975443 **Sample:** 697210-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/25/15 21:59

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	135	100	135	70-135	
o-Terphenyl	58.9	50.0	118	70-135	

Lab Batch #: 975347 **Sample:** 697144-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/25/15 09:42

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	0.0325	0.0300	108	80-120	

Lab Batch #: 975443 **Sample:** 697210-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/25/15 22:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 975347 **Sample:** 513982-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/25/15 09:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 975443 **Sample:** 513627-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/26/15 01:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	137	99.6	138	70-135	**
o-Terphenyl	60.3	49.8	121	70-135	

* 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: RHNU 706

Work Orders : 513627, 513627 **Project ID:** 088210/16

Lab Batch #: 975443 **Sample:** 513627-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/26/15 01:42

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	144	99.8	144	70-135	**
o-Terphenyl	61.5	49.9	123	70-135	

* 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: RHNU 706

Work Order #: 513627, 513627 **Project ID:** 088210/16

Analyst: PJB **Date Prepared:** 08/24/2015 **Date Analyzed:** 08/25/2015

Lab Batch ID: 975347 **Sample:** 697144-1-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	<0.00100	0.100	0.0816	82	0.100	0.0806	81	1	70-130	35	
Toluene	<0.00200	0.100	0.0841	84	0.100	0.0823	82	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0902	90	0.100	0.0888	89	2	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.183	92	0.200	0.179	90	2	70-135	35	
o-Xylene	<0.00100	0.100	0.0924	92	0.100	0.0914	91	1	71-133	35	

Analyst: JUM **Date Prepared:** 08/26/2015 **Date Analyzed:** 08/27/2015

Lab Batch ID: 975559 **Sample:** 697222-1-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	<2.00	50.0	49.7	99	50.0	47.8	96	4	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: RHNU 706

Work Order #: 513627, 513627 **Project ID:** 088210/16

Analyst: PJB **Date Prepared:** 08/24/2015 **Date Analyzed:** 08/25/2015

Lab Batch ID: 975443 **Sample:** 697210-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<15.0	1000	875	88	1000	748	75	16	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	920	92	1000	872	87	5	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: RHNU 706

Work Order #: 513627

Lab Batch #: 975347 **Project ID:** 088210/16

Date Analyzed: 08/25/2015 **Date Prepared:** 08/24/2015 **Analyst:** PJB

QC- Sample ID: 513982-005 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	<0.000996	0.0996	0.0705	71	70-130	
Toluene	<0.00199	0.0996	0.0715	72	70-130	
Ethylbenzene	<0.000996	0.0996	0.0743	75	71-129	
m,p-Xylenes	<0.00199	0.199	0.150	75	70-135	
o-Xylene	<0.000996	0.0996	0.0760	76	71-133	

Lab Batch #: 975559

Date Analyzed: 08/27/2015 **Date Prepared:** 08/26/2015 **Analyst:** JUM

QC- Sample ID: 513627-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	41.8	259	298	99	80-120	

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: RHNU 706

Work Order # : 513627 **Project ID:** 088210/16

Lab Batch ID: 975443 **QC- Sample ID:** 513627-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/26/2015 **Date Prepared:** 08/24/2015 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<15.5	1030	879	85	1030	861	84	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.5	1030	911	88	1030	1000	97	9	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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.

Sample Duplicate Recovery

Project Name: RHNU 706

Work Order #: 513627

Lab Batch #: 975035 **Project ID:** 088210/16

Date Analyzed: 08/19/2015 17:30 **Date Prepared:** 08/19/2015 **Analyst:** WRU

QC- Sample ID: 513627-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.48	3.65	5	20	

Lab Batch #: 975035

Date Analyzed: 08/19/2015 17:30 **Date Prepared:** 08/19/2015 **Analyst:** WRU

QC- Sample ID: 513678-003 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	6.79	7.12	5	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

CHAIN OF CUSTODY

Page 2 Of 2

XENCO LABORATORIES

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Lakeland, Florida (863-646-8526)
Tampa, Florida (813-620-2000)
www.xenco.com

Xenco Quote #: | Xenco Job #: 513627

Client / Reporting Information

Company Name / Branch: GHD/Albuquerque
Company Address: 1621 Indian School Rd NE Ste 200, Albuquerque NM 87110
Email: Bernard.Bockisch@ghd.com Phone No: 505-780-0572
Project Contact: Bernie Bockisch
Samplers's Name: Steve Perez

Project Information

Project Name/Number: RTHNM 706 088210/16
Project Location: Lea County, NM
Invoice To:
PO Number:

Analytical Information

Chlorides 300.0
BTEX 8021
TPH 8015 GRO/DRO

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	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	Field Comments
1	S-088210-16-081715-SP-01	3"	08/17/15	1320	S	1									X X X
2															
3															
4															
5															
6															
7															
8															
9															
10															

Turnaround Time (Business days)

- [ ] Same Day TAT
- [x] 5 Day TAT
- [ ] Next Day EMERGENCY
- [ ] 7 Day TAT
- [ ] 2 Day EMERGENCY
- [ ] 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	Steve Perez	8/17/15 4:15		2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4	8/18/15 11:35	4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			5			13.3

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 negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD-Albuquerque, NM

Date/ Time Received: 08/18/2015 11:35:00 AM

Work Order #: 513627

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	13.3
#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 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <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**
#22 >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: Kelsey Brooks Date: 08/18/2015

Checklist reviewed by: Kelsey Brooks Date: 08/19/2015

Analytical Report 511888

for

GHD-Albuquerque, NM

Project Manager: Bernie Bockisch

RHNU 706

088210

31-AUG-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

31-AUG-15

Project Manager: **Bernie Bockisch**
GHD-Albuquerque, NM
6121 Indian School Rd. NE Suite 200

Albuquerque, NM 87110

Reference: XENCO Report No(s): **511888**
RHNU 706
Project Address: NM

Bernie Bockisch:

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) 511888. 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. 511888 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 511888

GHD-Albuquerque, NM, Albuquerque, NM

RHNU 706

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-088210-16-071515-SP-01	S	07-15-15 14:20		511888-001
S-088210-16-071515-SP-02	S	07-15-15 15:27		511888-002
S-088210-16-071515-SP-03	S	07-15-15 15:39		511888-003
S-088210-16-071515-SP-04	S	07-15-15 16:10		511888-004
S-088210-17-071615-SP-01	S	07-16-15 12:59		Not Analyzed
S-088210-17-071615-SP-02	S	07-16-15 13:05		Not Analyzed
S-088210-17-071615-SP-03	S	07-16-15 14:57		Not Analyzed
S-088210-17-071615-SP-04	S	07-16-15 15:00		Not Analyzed
S-088210-17-071615-SP-05	S	07-16-15 15:38		Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-973345 BTEX by EPA 8021B
Surrogate 4-Bromofluorobenzene recovered above QC limits. Matrix interferences is suspected; data confirmed by re-analysis.
Samples affected are: 511888-006.

Certificate of Analysis Summary 511888

GHD-Albuquerque, NM, Albuquerque, NM

Project Name: RHNU 706

Project Id: 088210
Contact: Bernie Bockisch
Project Location: NM

Date Received in Lab: Tue Jul-21-15 10:30 am
Report Date: 31-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested															
	Lab Id:	511888-001		511888-002		511888-003		511888-004							
	Field Id:	S-088210-16-071515-SP-01		S-088210-16-071515-SP-02		S-088210-16-071515-SP-03		S-088210-16-071515-SP-04							
	Depth:														
	Matrix:	SOIL		SOIL		SOIL		SOIL							
	Sampled:	Jul-15-15 14:20		Jul-15-15 15:27		Jul-15-15 15:39		Jul-15-15 16:10							
BTEX by EPA 8021B	***Extracted:***	Jul-27-15 16:00		Jul-27-15 16:00		Jul-27-15 16:00		Jul-27-15 16:00							
	Analyzed:	Jul-28-15 00:31		Jul-28-15 00:47		Jul-29-15 20:14		Jul-28-15 01:20							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Benzene		ND	0.00113	ND	0.00131	ND	0.00115	ND	0.00119						
Toluene		ND	0.00226	ND	0.00262	ND	0.00229	ND	0.00238						
Ethylbenzene		ND	0.00113	ND	0.00131	ND	0.00115	ND	0.00119						
m,p-Xylenes		ND	0.00226	ND	0.00262	ND	0.00229	ND	0.00238						
o-Xylene		ND	0.00113	ND	0.00131	ND	0.00115	ND	0.00119						
Total Xylenes		ND	0.00113	ND	0.00131	ND	0.00115	ND	0.00119						
Total BTEX		ND	0.00113	ND	0.00131	ND	0.00115	ND	0.00119						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jul-24-15 17:00		Jul-24-15 17:00		Jul-24-15 17:00		Jul-24-15 17:00							
	Analyzed:	Jul-25-15 01:38		Jul-25-15 02:01		Jul-25-15 02:23		Jul-25-15 02:46							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
Chloride		5900	453	2340	262	4940	230	5710	476						
Percent Moisture	***Extracted:***														
	Analyzed:	Jul-28-15 17:00		Jul-28-15 17:00		Jul-28-15 17:00		Jul-28-15 17:00							
	Units/RL:	%	RL	%	RL	%	RL	%	RL						
Percent Moisture		11.7	1.00	23.8	1.00	12.9	1.00	16.0	1.00						
TPH By SW8015 Mod	***Extracted:***	Jul-27-15 17:00		Jul-27-15 17:00		Jul-27-15 17:00		Jul-27-15 17:00							
	Analyzed:	Jul-27-15 23:48		Jul-28-15 00:09		Jul-28-15 00:31		Jul-28-15 00:52							
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL						
C6-C12 Gasoline Range Hydrocarbons		ND	17.0	ND	19.6	ND	17.2	ND	17.8						
C12-C28 Diesel Range Hydrocarbons		26.7	17.0	ND	19.6	ND	17.2	ND	17.8						
C28-C35 Oil Range Hydrocarbons		ND	17.0	ND	19.6	ND	17.2	ND	17.8						
Total TPH		26.7	17.0	ND	19.6	ND	17.2	ND	17.8						

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: RHNU 706

Work Orders : 511888, 511888 **Project ID:** 088210

Lab Batch #: 973273 **Sample:** 511888-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/27/15 23:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	99.8	96	70-135	
o-Terphenyl	42.3	49.9	85	70-135	

Lab Batch #: 973273 **Sample:** 511888-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 00:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.6	100	70-135	
o-Terphenyl	42.6	49.8	86	70-135	

Lab Batch #: 973345 **Sample:** 511888-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 00:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0350	0.0300	117	80-120	

Lab Batch #: 973273 **Sample:** 511888-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 00:31

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	100	100	70-135	
o-Terphenyl	43.0	50.0	86	70-135	

Lab Batch #: 973345 **Sample:** 511888-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 00:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0285	0.0300	95	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	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: RHNU 706

Work Orders : 511888, 511888 **Project ID:** 088210

Lab Batch #: 973273 **Sample:** 511888-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 00:52

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.4	99.9	97	70-135	
o-Terphenyl	42.9	50.0	86	70-135	

Lab Batch #: 973345 **Sample:** 511888-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/28/15 01:20

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 973345 **Sample:** 511888-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/29/15 20:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 973133 **Sample:** 695726-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/26/15 18:47

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0358	0.0300	119	80-120	

Lab Batch #: 973273 **Sample:** 695813-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/27/15 20:03

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

* 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: RHNU 706

Work Orders : 511888, 511888 **Project ID:** 088210

Lab Batch #: 973345 **Sample:** 695855-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/28/15 00:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0360	0.0300	120	80-120	

Lab Batch #: 973484 **Sample:** 695933-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/29/15 17:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0275	0.0300	92	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 973133 **Sample:** 695726-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/26/15 17:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 973273 **Sample:** 695813-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/27/15 20:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	56.1	50.0	112	70-135	

Lab Batch #: 973345 **Sample:** 695855-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/27/15 23:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	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: RHNU 706

Work Orders : 511888, 511888 **Project ID:** 088210

Lab Batch #: 973484 **Sample:** 695933-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/29/15 16:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 973133 **Sample:** 695726-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/26/15 17:40

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0339	0.0300	113	80-120	

Lab Batch #: 973273 **Sample:** 695813-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/27/15 20:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.2	50.0	106	70-135	

Lab Batch #: 973345 **Sample:** 695855-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/27/15 23:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0345	0.0300	115	80-120	

Lab Batch #: 973484 **Sample:** 695933-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/29/15 16:52

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	0.0335	0.0300	112	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: RHNU 706

Work Orders : 511888, 511888 **Project ID:** 088210

Lab Batch #: 973273 **Sample:** 512217-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/27/15 22:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	99.9	130	70-135	
o-Terphenyl	61.1	50.0	122	70-135	

Lab Batch #: 973273 **Sample:** 512217-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/27/15 23:06

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.9	104	70-135	
o-Terphenyl	51.7	50.0	103	70-135	

* 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: RHNU 706

Work Order #: 511888, 511888 **Project ID:** 088210

Analyst: PJB **Date Prepared:** 07/27/2015 **Date Analyzed:** 07/27/2015

Lab Batch ID: 973345 **Sample:** 695855-1-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	<0.00100	0.100	0.0958	96	0.100	0.0987	99	3	70-130	35	
Toluene	<0.00200	0.100	0.100	100	0.100	0.103	103	3	70-130	35	
Ethylbenzene	<0.00100	0.100	0.108	108	0.100	0.111	111	3	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.224	112	0.200	0.214	107	5	70-135	35	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.114	114	2	71-133	35	

Analyst: PJB **Date Prepared:** 07/26/2015 **Date Analyzed:** 07/26/2015

Lab Batch ID: 973133 **Sample:** 695726-1-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	<0.00100	0.100	0.0923	92	0.100	0.0987	99	7	70-130	35	
Toluene	<0.00200	0.100	0.0952	95	0.100	0.103	103	8	70-130	35	
Ethylbenzene	<0.00100	0.100	0.102	102	0.100	0.109	109	7	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.211	106	0.200	0.227	114	7	70-135	35	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.114	114	7	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: RHNU 706

Work Order #: 511888, 511888 **Project ID:** 088210

Analyst: PJB **Date Prepared:** 07/28/2015 **Date Analyzed:** 07/29/2015

Lab Batch ID: 973484 **Sample:** 695933-1-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	<0.00100	0.100	0.0871	87	0.100	0.0861	86	1	70-130	35	
Toluene	<0.00200	0.100	0.0909	91	0.100	0.0900	90	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0964	96	0.100	0.0956	96	1	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.201	101	0.200	0.198	99	2	70-135	35	
o-Xylene	<0.00100	0.100	0.101	101	0.100	0.0988	99	2	71-133	35	

Analyst: JUM **Date Prepared:** 07/24/2015 **Date Analyzed:** 07/24/2015

Lab Batch ID: 973207 **Sample:** 695687-1-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	<2.00	50.0	51.3	103	50.0	50.4	101	2	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: RHNU 706

Work Order #: 511888, 511888 **Project ID:** 088210

Analyst: PJB **Date Prepared:** 07/27/2015 **Date Analyzed:** 07/27/2015

Lab Batch ID: 973273 **Sample:** 695813-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<15.0	1000	962	96	1000	887	89	8	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	937	94	1000	872	87	7	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: RHNU 706

Work Order #: 511888

Lab Batch #: 973207 **Project ID:** 088210

Date Analyzed: 07/24/2015 **Date Prepared:** 07/24/2015 **Analyst:** JUM

QC- Sample ID: 512182-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	217	526	931	136	80-120	X

Lab Batch #: 973207

Date Analyzed: 07/25/2015 **Date Prepared:** 07/24/2015 **Analyst:** JUM

QC- Sample ID: 512183-002 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	1200	1160	2370	101	80-120	

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: RHNU 706

Work Order # : 511888 **Project ID:** 088210

Lab Batch ID: 973273 **QC- Sample ID:** 512217-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/27/2015 **Date Prepared:** 07/27/2015 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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	<16.0	1070	1110	104	1070	920	86	19	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.0	1070	1080	101	1070	887	83	20	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

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.

Sample Duplicate Recovery

Project Name: RHNU 706

Work Order #: 511888

Lab Batch #: 973317 **Project ID:** 088210

Date Analyzed: 07/28/2015 17:00 **Date Prepared:** 07/28/2015 **Analyst:** WRU

QC- Sample ID: 511888-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.7	13.3	13	20	

Lab Batch #: 973317

Date Analyzed: 07/28/2015 17:00 **Date Prepared:** 07/28/2015 **Analyst:** WRU

QC- Sample ID: 511991-002 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.73	9.64	1	20	

Spike Relative Difference RPD 200 * | (B-A)/(B+A) |
All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

511888

Chain-of-Custody Record

Xenco - Odessa

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: GHD	Turn-Around Time: ☑ Standard ☐ Rush
Mailing Address: 1621 Indian School Rd NE Ste 200 Albuquerque NM 87110	Project Name: RHNA 606 + RHNA 706
Phone #: 505-884-0672	Project #: 088210
email or Fax#:	Project Manager: 505-280-0572 Bernie Bocklisch Bernard.Bocklisch@ghd.com
QA/QC Package: ☐ Standard ☐ Level 4 (Full Validation)	Sampler: Steve Perez Steven.Perez@ghd.com
Accreditation ☐ NELAP ☐ Other	On Ice: ☐ Yes ☐ No
☐ EDD (Type)	Sample Temperature: 6°

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Chloride 300.0	BTEX 8021			Air Bubbles (Y or N)
07/15/15	1420	Soil	S-088210-16-071515-SP-01	4oz clear glass	ICE				✓									✓	✓			
	1527		S-088210-16-071515-SP-02																			
	1539		S-088210-16-071515-SP-03																			
	1610		S-088210-16-071515-SP-04																			
07/16/15	1259		S-088210-17-071615-SP-01																			
	1305		S-088210-17-071615-SP-02																			
	1457		S-088210-17-071615-SP-03																			
	1500		S-088210-17-071615-SP-04																			
	1538		S-088210-17-071615-SP-05																			

Date	Time	Relinquished by:	Received by:	Date	Time
7/20/15	3:30	Steven Perez			
				7/20/15	1030
Date	Time	Relinquished by:	Received by:	Date	Time

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: GHD-Albuquerque, NM

Date/ Time Received: 07/21/2015 10:30:00 AM

Work Order #: 511888

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	6
#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 Sample instructions complete on Chain of Custody?	**Yes**
#9 Any missing/extra samples?	**No**
#10 Chain of Custody signed when relinquished/ received?	**Yes**
#11 Chain of Custody agrees with sample label(s)?	**Yes**
#12 Container label(s) legible and intact?	**Yes**
#13 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#14 Samples in proper container/ bottle?	**Yes**
#15 Samples properly preserved?	**Yes**
#16 Sample container(s) intact?	**Yes**
#17 Sufficient sample amount for indicated test(s)?	**Yes**
#18 All samples received within hold time?	**Yes**
#19 Subcontract of sample(s)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <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**
#22 >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: Kelsey Brooks Date: 07/21/2015

Checklist reviewed by: Kelsey Brooks Date: 07/21/2015