APPROVED
By Olivia Yu at 9:58 am, May 23, 2018

NMOCD approves
1RP-4965 for closure.

REMEDIATION SUMMARY AND SITE CLOSURE REQUEST

Plains Pipeline, L.P.
COG Boone 16 2H
LEA COUNTY, NEW MEXICO
UNIT LETTER "O", SECTION 16, TOWNSHIP 21 SOUTH, RANGE 33 EAST
GPS: N 32.47246° W 103.57525°
SRS #: 2018-032
NMOCD Reference: 1RP-4965

Prepared for:

Plains Pipeline, L.P.
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May 2018

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TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

1.0 INTRODUCTION AND BACKGROUND

On behalf of Plains Pipeline, L.P. (Plains), TRC Environmental Corporation (TRC) has prepared this *Remediation Summary and Site Closure Request* for the crude oil release site known as COG Boone 16 2H (SRS# 2018-032). The Release Site is located approximately twenty (20) miles southeast of Monument in Lea County, New Mexico, in Unit Letter "O", Section 16, Township 21 South, Range 33 East. The GPS coordinates for the site are N 32.47246º and W 103.57525º. The affected property is located on private land. A Site Location Map is provided as Figure 1.

On February 5, 2018, a release was discovered on the LACT Unit at COG Operating's Boone 16 2H production facility. The release was attributed to the failure of a one-half (1/2) inch (in.) nipple, resulting in a release of approximately fifty (50) barrels (bbls) of crude oil. The release affected an area on the caliche well pad measuring approximately 6,100 square feet (sq. ft.) Overspray from the release affected an area within the pasture north of the facility measuring approximately 50,000 sq. ft. During initial response activities, approximately forty-five (45) bbls of crude oil was recovered and saturated soils were excavated by hand and stockpiled on-site atop a polyurethane liner. Site photographs are provided as Appendix A. The Release Notification and Corrective Action (Form C-141) is provided as Appendix D.

2.0 NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) indicated that the average depth to groundwater in Section 16, Township 21 South, Range 33 East is one hundred seven (107) feet below ground surface (bgs). An inferred depth of groundwater reference map utilized by The New Mexico Oil Conservation Division (NMOCD) indicates groundwater should be encountered at approximately one hundred forty (140) feet bgs. Based on the NMOCD site classification system zero (0) points will be assigned to the Release Site ranking as a result of this criterion.

There are no registered water wells located within 1,000 feet of the Release Site. Based on the NMOCD Site Classification System, zero (0) points will be assigned to the Release Site ranking as a result of this criterion.

There are no surface-water features located within a 1,000 foot radius of the site. Based on the NMOCD Site Classification System, zero (0) points would be assigned to the site as a result of this criterion. The NMOCD guidelines indicate the Release Site has a ranking score of zero (0) points. The regulatory guidelines for a Release Site with a ranking score of zero (0) points are as follows:

- Benzene - 10 mg/kg
- BTEX - 50 mg/kg
- TPH – 5,000 mg/kg
- Chloride – 600 mg/kg

3.0 SUMMARY OF FIELD ACTIVITIES

On February 9, 2018, remediation activities commenced at the Release Site. Areas within the pasture affected by overspray were washed down and treated with approximately 1,500 gallons of a Microblaze® solution over the course of three (3) days in accordance with the landowner's request. Saturated soils adjacent to the affected LACT unit and above ground piping were excavated by hand. Excavated soil was stockpiled on-site, atop an impermeable liner.

On February 13, 2018, TRC conducted an initial delineation event at the site. During the delineation event, a series of hand-augered soil bores (SP-1 through SP-3) were advanced within the affected area in an effort to characterize the vertical extent of soil impacts. SP-1 was advanced on the caliche well pad, SP-2 was advanced within a pooling area on the north side of the tank battery, and SP-3 was advanced in the primary pooling area on the east side of the tank battery. During the advancement of the soil bores, three (3) soil samples (SP-1 @ 1', SP-2 @ 3', SP-3 @ 5') were collected and submitted to Xenco Laboratories for analysis of BTEX in accordance with EPA Method SW-846 8021b, TPH in accordance with EPA Method SW 846-8015M Ext and chloride in accordance with Method E300. Laboratory analytical results indicated benzene concentrations were less than the applicable laboratory reporting limit (RL) in each of the submitted soil samples. BTEX concentrations were less than the applicable laboratory RL in each of the submitted soil sample with the exception of SP-3 @ 5', which exhibited a BTEX concentration of 0.00956 mg/kg. Chloride concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of SP-1 @ 1', which exhibited a chloride concentration of 456 mg/kg. A table summarizing Concentrations of Benzene, BTEX, TPH, and Chloride in Soil is provided as Table 1. Laboratory Analytical Reports are provided as Appendix B. Soil sample locations are depicted on Figures 2a through 2c.

Additional confirmation soil samples (SP-1 @ 2', SP-2 @ 4', SP-3 @ 6'), collected from deeper intervals, were submitted to the laboratory for analysis of TPH concentrations which were determined to be below the NMOCD RRAL. Based on laboratory analytical results from delineation soil samples it was determined soil was not affected above the NMOCD RRAL beyond one (1) ft. bgs in the area characterized by sample point SP-1, three (3) ft. bgs in the area characterized by sample point SP-2 and five (5) ft. bgs in the area characterized by sample point SP-3.

In addition, eight (8) soil samples (OS-1 @ 0-3", OS-1 @ 6", OS-2 @ 0-3", OS-2 @ 6", OS-3 @ 0-3", OS-3 @ 6", OS-4 @ 0-3" and OS-4 @ 6") were collected from within the affected pasture and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from less than the applicable laboratory RL in soil sample OS-3 @ 6" and OS-4 @ 6" to 1,384.5 mg/kg in soil sample OS-2 @ 0-3". Chloride concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of OS-1 @ 6", which exhibited a chloride concentration of 6.43 mg/kg.

Upon receiving laboratory analytical results from delineation soil samples, excavation activities commenced at the Release Site. The floor and sidewalls of the excavated area were advanced

until laboratory analytical results from excavation confirmation soil samples indicated BTEX and TPH concentrations were below the NMOCD RRAL. Excavated soil was stockpiled on-site, atop an impermeable liner, pending final disposition at an NMOCD-approved facility.
Upon excavating impacted soil on the caliche well pad, twenty (20) excavation confirmation soil samples (SP-1 FL-1, SP-1 FL-2, SP-1 FL-3, SP-1 FL-4, SP-1 FL-5, SP-1 FL-6, SP-1 NSW, SP-1 ESW 1, SP-1 ESW 2, SP-1 ESW 3, SP-1 ESW 4, SP-1 ESW 5, SP-1 SSW 1, SP-1 SSW 2, SP-1 SSW 3, SP-1 WSW 1, SP-1 WSW 2, SP-1 WSW 3, SP-1 WSW 4 and SP-1 WSW 5) were collected from the floor and sidewalls of the excavated area on the caliche well pad and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated BTEX concentrations ranged from less than the applicable laboratory RL in soil samples SP-1 FL-1, SP-1 FL-3, SP-1 ESW 1, SP-1 ESW 2, SP-1 ESW 3, SP-1 ESW 4, SP-1 ESW 5, SP-1 SSW 2, SP-1 WSW 1, SP-1 WSW 2, SP-1 WSW 3, SP-1 WSW 4 and SP-1 WSW 5 to 0.0615 mg/kg in soil sample SP-1 SSW 3. TPH concentrations ranged from less than the applicable laboratory RL in soil samples SP-1 ESW 1, SP-1 ESW 2, SP-1 EWS 4 and SP-1 WSW 1 to 2,827.1 mg/kg in soil sample SP-1 SSW 3. Laboratory analytical results indicated BTEX and TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples. Soil sample locations are depicted on Figure 2a – Site & Sample Location Map – Well Pad and Overview.

On February 26, 2018, TRC collected twelve (12) confirmation soil samples (HD FL 1, HD FL 2, HD FL 3, HD FL 4, HD FL 5, HD ESW 1, HD ESW 2, HD WSW 1, HD WSW 2, HD SSW 1, HD SSW 2 and HD SSW 3) from the floor and sidewalls of the hand-dug area and submitted to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated BTEX concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil sample HD FL 1, which exhibited a BTEX concentration of 0.01438 mg/kg. Analytical results indicated TPH concentrations ranged from less than the applicable laboratory RL in soil samples HD SSW 2 and HD SSW 3 to 3,895.7 mg/kg in soil sample HD FL-3. Laboratory analytical results indicated BTEX and TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples. Soil sample locations are depicted on Figure 2b – Site & Sample Location Map – Hand-Dug Area.

On February 27, 2018, on behalf of Plains, TRC submitted a *Remediation Workplan and Partial Backfill Request* to the NMOCD, detailing remediation activities conducted to date and the results of laboratory analysis requesting permission to backfill the excavated area on the caliche well pad. The *Remediation Workplan and Partial Backfill Request* was subsequently approved.

On February 27, 2018, TRC collected twelve (12) confirmation soil samples (SP-2 FL, SP-2 NSW, SP-2 NSW 2, SP-2 ESW, SP-2 WSW, SP-2 SSW 1, SP-2 SSW-2, SP-3 FL, SP-3 NSW, SP-3 ESW, SP-3 SSW, and SP-3 WSW) from the floor and sidewalls of the excavated area on the north and east side of the tank battery facility and submitted the soil samples to the laboratory for analysis of BTEX and TPH concentrations. Laboratory analytical results indicated BTEX concentrations were less than the applicable laboratory RL in each of the submitted soil samples, with the exception of soil samples SP-2 NSW (3.76 mg/kg), SP-2 NSW 2 (0.02336 mg/kg) and SP-2 SSW 2 (0.3958 mg/kg). Analytical results indicated TPH concentrations ranged from less than the applicable laboratory RL in soil samples SP-2 FL, SP-2 WSW, SP-3 ESW, SP-3 SSW and SP-3 WSW to 2,690.1 mg/kg in soil sample SP-2 NSW. Laboratory analytical results

indicated BTEX and TPH concentrations were below the NMOCD RRAL in each of the submitted soil samples. Soil sample locations are depicted on Figure 2c – Site & Sample Location Map – Pasture Excavations.

On March 5, 2018, TRC collected one (1) additional confirmation soil sample (SP-2 FL-2) from the floor of a subexcavation within the area characterized by sample point SP-2 and submitted it to the laboratory for analysis of BTEX and TPH concentrations, which were determined to be less than the applicable laboratory RL and 25.7 mg/kg, respectively. Laboratory analytical results indicated BTEX and TPH concentrations were below the NMOCD RRAL.

On April 3, 2018, TRC collected four (4) soil samples (OS-1b, OS-2b, OS-3b and OS-4b) from the affected pasture area which had been treated with the Microblaze® solution. The collected soil samples were submitted to the laboratory for analysis of BTEX concentrations, which were determined to be less than the applicable laboratory RL in each of the submitted soil samples. Laboratory analytical results indicated BTEX concentrations were below the NMOCD RRAL in each of the submitted soil samples.

Upon receiving laboratory analytical results from confirmation soil samples, the excavated areas were backfilled with locally sourced, non-impacted "like" material. Prior to backfilling, the final dimensions of the excavated area on the caliche well pad were approximately one hundred (100) ft. in length, five (5) ft. to thirty (30) ft. in width, and one (1) ft. to two (2) ft. in depth. The final dimensions of the hand-dug area adjacent to the tank battery were approximately three hundred seventy-five (375) ft. in length, four (4) ft. to seventy (70) ft. in width, and one (1) ft. in depth. The final dimensions of the excavated area on the north side of the tank battery were approximately two hundred ten (210) ft. in length, five (5) to thirty (30) ft. in width, and two (2) ft. to four (4) ft. in depth and the final dimensions of the excavated area on the east side of the tank battery were approximately seventy (70) ft. in length, fifty (50) ft. in width, and five (5) ft. in depth

Between February 28 and March 7, 2018, approximately four hundred ninety-two (492) cubic yards (cy) of impacted soil was transported to Lazy Ace Landfarm, LLC (NMOCD Permit No. 01-0041) for disposal. Copies of non-hazardous waste manifests are provided in Appendix C.

4.0 SITE CLOSURE REQUEST

Laboratory analytical results from excavation confirmation soil samples indicated BTEX, TPH and/or chloride concentrations were below the NMOCD RRAL in each of the submitted soil samples. Based on laboratory analytical results and field activities conducted to date, TRC recommends Plains provide this *Remediation Summary and Site Closure Request* and request site closure status to the COG Boone 16 2H Release Site.

5.0 LIMITATIONS

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

This report has been prepared for the benefit of Plains Pipeline, L.P. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of TRC Environmental Corporation and/or Plains Pipeline, L.P.

6.0 DISTRIBUTION

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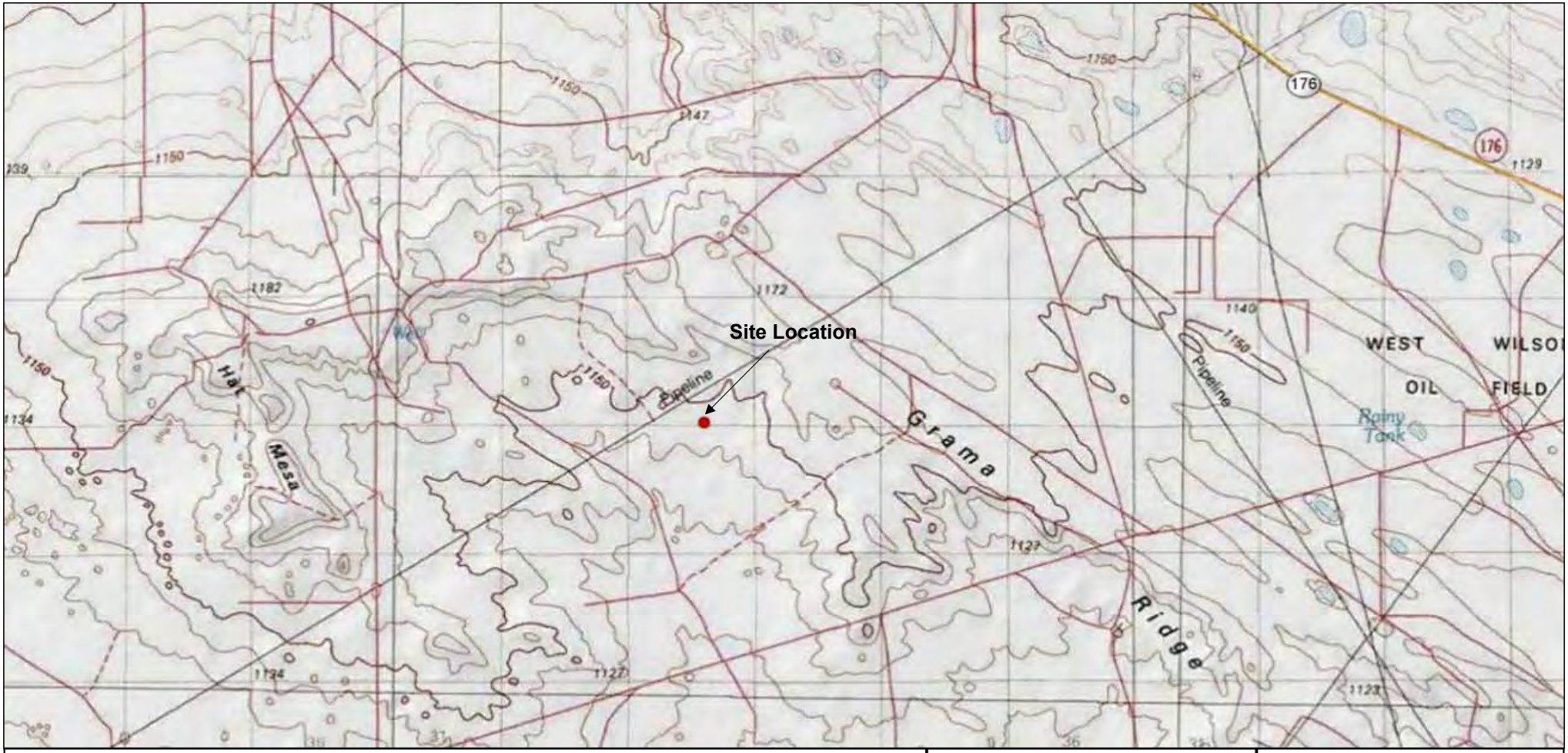


Figure 1

Site Location Map

Plains Pipeline, LP

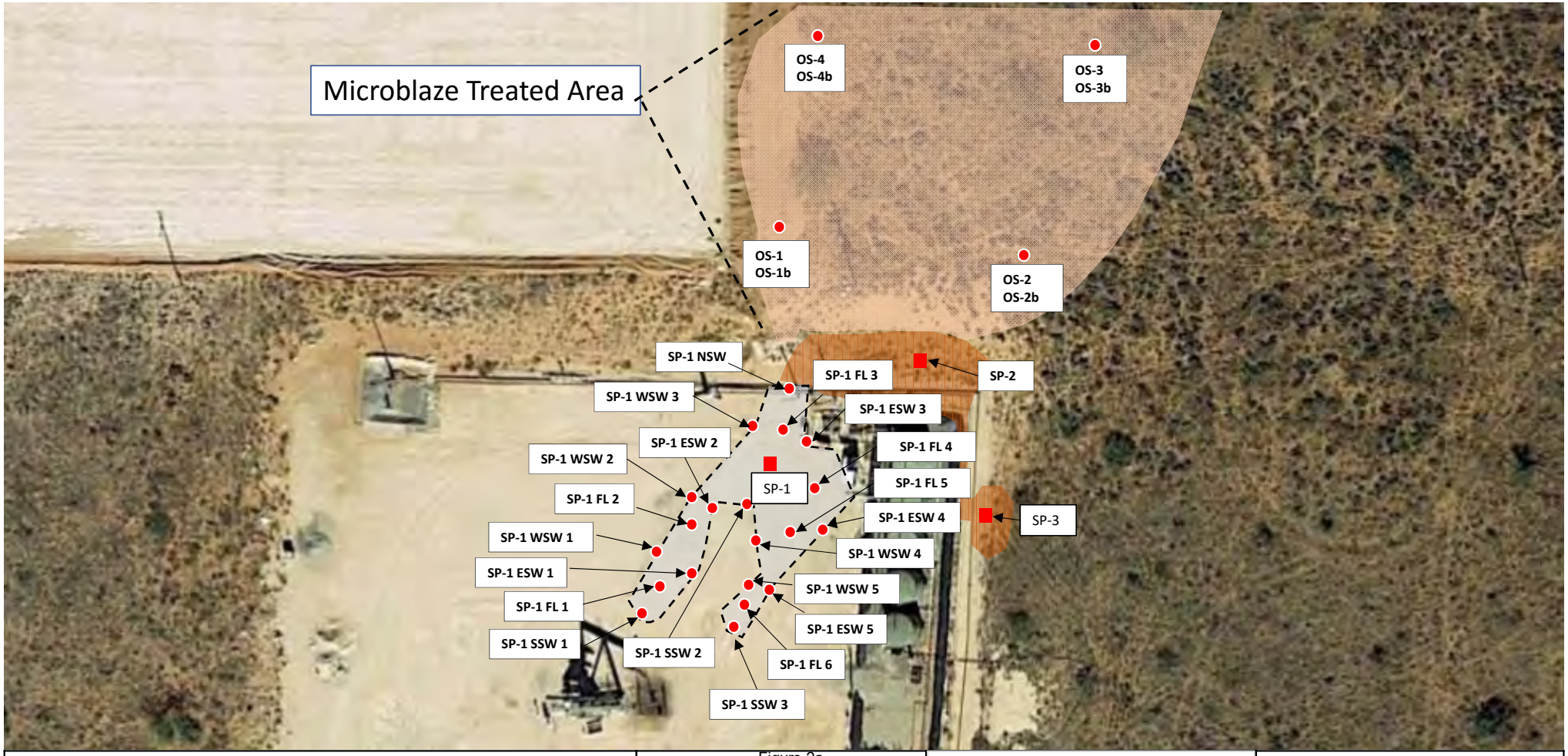
COG Boone 16 2H

Lea County, New Mexico

Scale 1" = ~6,000'	
Drafted by: ZC	Checked by: JL
Draft: February 26, 2018	
Lat. N 32.47246 Long. W 103.57525	
UL "O", Sec. 16, T21S, R33E	
TRC Proj. No.: 297190	

TRC
Results you can rely on

2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Delineation Sample Location
- Confirmation Sample Locations
- Excavated Area
- Microblaze Treated Area
- Saturated Area

Figure 2a
Site & Sample Location Map
Well Pad and Overview
Plains Pipeline, LP
COG Boone 16 Tank Battery
Lea Co, New Mexico

Scale 1" = ~60'	
Drafted by: ZC	Checked by: JL
Draft: February 27, 2018	
Lat. N 32.472150 Long. W 103.575634	
UL "O", Sec. 16, T21S, R33E	
TRC Proj. No.: 297190	

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Midland, Texas 79703
432.520.7720

LEGEND:

- Confirmation Sample Locations
- Excavated Area

Figure 2b
Site & Sample Location Map
Hand-Dug Area
Plains Pipeline, LP
COG Boone 16 Tank Battery
Lea Co, New Mexico

Scale 1" = ~25'	
Drafted by: ZC	Checked by: JL
Draft: February 27, 2018	
Lat. N 32.472150 Long. W 103.575634	
UL "O", Sec. 16, T21S, R33E	
TRC Proj. No.: 297190	

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2057 Commerce Drive
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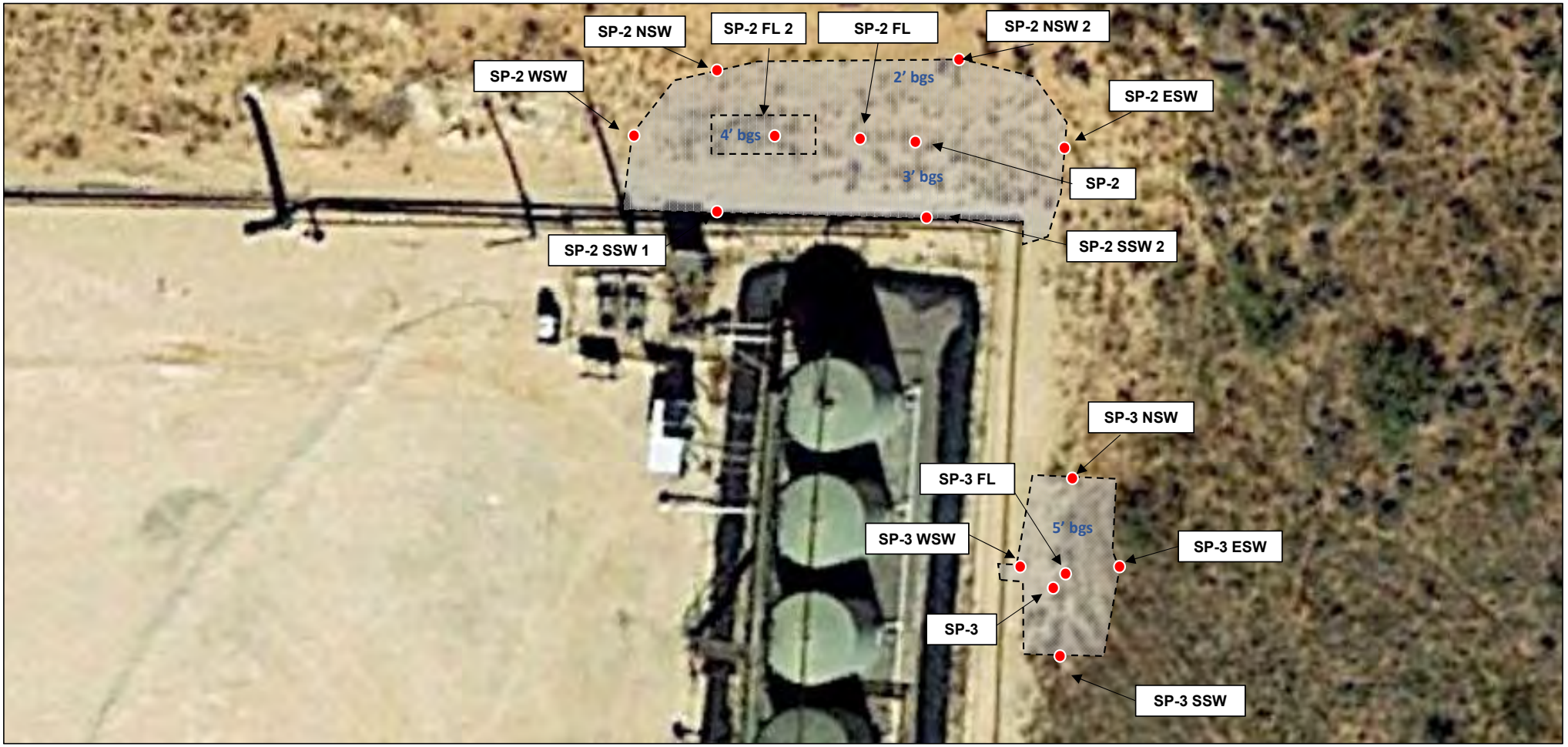

LEGEND:

- Delineation Sample Location
- Confirmation Sample Locations
- Excavated Area

Figure 2c
Site & Sample Location Map
Pasture Excavations
Plains Pipeline, LP
COG Boone 16 Tank Battery
Lea Co, New Mexico

Scale 1" = ~25'	
Drafted by: ZC	Checked by: JL
Draft: February 27, 2018	
Lat. N 32.472150 Long. W 103.575634	
UL "O", Sec. 16, T21S, R33E	
TRC Proj. No.: 297190	

TRC
Results you can rely on
2057 Commerce Drive
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432.520.7720

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL
COG BOONE 16 2H
PLAINS PIPELINE, L.P.
LEA COUNTY, NM
NMOCD REF. No. 1RP-4965

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:				Method:
									EPA SW 846-8015M				E300
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES, TOTAL (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
SP-1 @ 1'	2/13/2018	1'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15.0	456
SP-1 @ 2'	2/13/2018	2'	In-Situ	-	-	-	-	-	<15.0	<15.0	160	160	-
SP-2 @ 3'	2/13/2018	3'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	115	<15.0	115	<4.91
SP-2 @ 4'	2/13/2018	4'	In-Situ	-	-	-	-	-	<15.0	60.9	172	232.9	-
SP-3 @ 5'	2/13/2018	5'	In-Situ	<0.00201	<0.00201	<0.00201	0.00956	0.00956	<15.0	180.0	<15.0	180	<4.96
SP-3 @ 6'	2/13/2018	6'	In-Situ	-	-	-	-	-	<15.0	18.7	157	175.7	-
OS-1 @ 0-3"	2/13/2018	0-3"	Treated	-	-	-	-	-	14.9	797	81.4	878.4	<5.00
OS-1 @ 6"	2/13/2018	6"	Treated	-	-	-	-	-	<15.0	36.2	<15.0	36.2	6.43
OS-2 @ 0-3"	2/13/2018	0-3"	Treated	-	-	-	-	-	<14.9	1,290	94.5	1,384.5	<4.97
OS-2 @ 6"	2/13/2018	6"	Treated	-	-	-	-	-	<15.0	32.6	<15.0	36.2	<4.92
OS-3 @ 0-3"	2/13/2018	0-3"	Treated	-	-	-	-	-	<15.0	797.0	81.1	878.1	<4.97
OS-3 @ 6"	2/13/2018	6"	Treated	-	-	-	-	-	<15.0	<15.0	<15.0	<15	<5.00
OS-4 @ 0-3"	2/13/2018	0-3"	Treated	-	-	-	-	-	<15.0	225	21.4	246.4	<4.97
OS-4 @ 6"	2/13/2018	6"	Treated	-	-	-	-	-	<15.0	<15.0	<15.0	<15	<5.00
SP-1 FL 1	2/21/2018	1'	In-Situ	<0.000388	<0.000459	<0.000569	<0.000347	<0.000347	<7.99	12.2	<8.11	12.2	-
SP-1 FL 2	2/21/2018	1'	In-Situ	<0.000386	0.000863	0.00128	0.00837	0.010513	11.9	376	24.5	412.4	-
SP-1 FL 3	2/21/2018	1'	In-Situ	<0.000389	<0.000460	<0.000570	<0.000348	<0.000348	<7.97	92.9	<8.10	92.9	-
SP-1 FL 4	2/21/2018	1'	In-Situ	<0.000383	0.001510	0.000902	0.004410	0.006822	<7.99	37.6	<8.12	37.6	-
SP-1 FL 5	2/21/2018	1'	In-Situ	<0.000383	0.00104	<0.000561	0.003264	0.004304	<7.97	8.18	<8.10	8.18	-
SP-1 FL 6	2/21/2018	1'	In-Situ	<0.000384	0.00106	<0.000564	0.00485	0.00591	<7.99	129	13.5	142.5	-
SP-1 NSW	2/21/2018	6"	In-Situ	<0.000386	0.000651	<0.00566	0.002220	0.002871	<7.98	111	<8.10	111	-
SP-1 ESW 1	2/21/2018	6"	In-Situ	<0.00388	<0.000459	<0.000569	<0.000347	<0.000347	<8.00	<8.13	<8.13	<8	-
SP-1 ESW 2	2/21/2018	6"	In-Situ	<0.000384	<0.000455	<0.000564	<0.000344	<0.000344	<7.98	<8.10	<8.10	<7.98	-
SP-1 ESW 3	2/21/2018	6"	In-Situ	<0.000386	<0.00457	<0.000566	<0.000345	<0.000345	<7.99	48.5	11.2	59.7	-
SP-1 ESW 4	2/21/2018	6"	In-Situ	<0.00383	<0.000453	<0.000561	<0.000342	<0.000342	<7.97	<8.10	<8.10	<7.97	-
SP-1 ESW 5	2/21/2018	6"	In-Situ	<0.000381	<0.000451	<0.000559	<0.00341	<0.00341	<7.99	87.3	13.7	101	-
SP-1 SSW 1	2/21/2018	6"	In-Situ	<0.000386	0.000802	0.00143	0.00993	0.012162	17.1	468	33.7	518.8	-
SP-1 SSW 2	2/21/2018	6"	In-Situ	<0.000387	<0.000458	<0.00568	<0.000346	<0.000346	9.24	9.36	<8.10	18.6	-
SP-1 SSW 3	2/21/2018	6"	In-Situ	<0.000389	0.00458	0.00872	0.0482	0.0615	63.3	2,670	93.8	2,827.1	-
SP-1 WSW 1	2/21/2018	6"	In-Situ	<0.00383	<0.000453	<0.000561	<0.000342	<0.000342	<7.99	<8.12	<8.12	<7.99	-
SP-1 WSW 2	2/21/2018	6"	In-Situ	<0.0000388	<.000459	<0.000569	<0.000347	<0.000347	8.97	<8.11	<8.11	8.97	-
SP-1 WSW 3	2/21/2018	6"	In-Situ	<0.000384	<0.000455	<0.000564	<0.000344	<0.000344	<8.00	9.20	<8.13	9.2	-
SP-1 WSW 4	2/21/2018	6"	In-Situ	<0.000383	<0.000453	<0.00561	<0.000342	<0.000342	8.65	9.97	<8.10	18.62	-
SP-1 WSW 5	2/21/2018	6"	In-Situ	<0.000386	<0.00457	<0.000567	<0.000346	<0.000346	9.59	200	18.8	228.39	-
NMOCD Recommended Remediation Action Level				**10**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**5,000**	**600**

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH, AND CHLORIDE IN SOIL
COG BOONE 16 2H
PLAINS PIPELINE, L.P.
LEA COUNTY, NM
NMOCD REF. No. 1RP-4965

SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH	STATUS	Methods: EPA SW 846-8021B, 5030					Methods:				Method:
									EPA SW 846-8015M				E300
				BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES, TOTAL (mg/kg)	TOTAL BTEX (mg/kg)	GRO (mg/kg)	DRO (mg/kg)	ORO (mg/kg)	TOTAL TPH (mg/kg)	CHLORIDE (mg/kg)
HD FL 1	2/26/2018	1'	In-Situ	<0.00202	<0.00202	<0.00202	0.01438	0.01438	21.6	562	18.4	602	-
HD FL 2	2/26/2018	1'	In-Situ	<0.00200	<0.00200	<0.00200	<0.002	<0.002	<15.0	26.5	<15.0	26.5	-
HD FL 3	2/26/2018	1'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<14.9	3,840	55.7	3,895.7	-
HD FL 4	2/26/2018	1'	In-Situ	<0.00200	<0.00200	<0.00200	<0.00401	<0.002	<15.0	188	<15.0	188	-
HD FL 5	2/26/2018	1'	In-Situ	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<15.0	189	<15.0	189	-
HD ESW 1	2/26/2018	6"	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	36.8	<15.0	36.8	-
HD ESW 2	2/26/2018	6"	In-Situ	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<14.9	44.7	<14.9	44.7	-
HD WSW 1	2/26/2018	6"	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<14.9	119	<14.9	119	-
HD WSW 2	2/26/2018	6"	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	886	46.0	932	-
HD SSW 1	2/26/2018	6"	In-Situ	<0.00200	<0.00200	<0.00200	<0.002	<0.002	<15.0	199	<15.0	199	-
HD SSW 2	2/26/2018	1.5	In-Situ	<0.00200	<0.00200	<0.00200	<0.002	<0.002	<15.0	<15.0	<15.0	<15	-
HD SSW 3	2/26/2018	6"	In-Situ	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15	-
SP-2 FL	2/27/2018	3'	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15	-
SP -2 NSW	2/27/2018	0.5'	In-Situ	<0.0198	0.874	0.633	2.253	3.76	113	2,510	67.1	2,690.1	-
SP-2 NSW 2	2/27/2018	1.5'	In-Situ	<0.00200	0.00263	0.00224	0.01849	0.02336	<15.0	212	<15.0	212	-
SP--2 ESW	2/27/2018	1.5'	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	49.5	<15.0	49.5	-
SP-2 WSW	2/27/2018	1.5'	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	<15.0	<15.0	<15	-
SP-2 SSW 1	2/27/2018	1.5'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	63.1	<15.0	63.1	-
SP-2 SSW 2	2/27/2018	1.5'	In-Situ	<0.00200	0.0368	0.0639	0.2951	0.3958	83.4	887	28.2	998.6	-
SP-3 FL	2/27/2018	5'	In-Situ	<0.00201	<0.00201	<0.00201	<0.00201	<0.00201	<15.0	747	24.5	771.5	-
SP-3 NSW	2/27/2018	2.5'	In-Situ	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	50.1	<15.0	50.1	-
SP-3 ESW	2/27/2018	2.5'	In-Situ	<0.00199	<0.00199	<0.00199	<0.00199	<0.00199	<15.0	<15.0	<15.0	<15	-
SP-3 SSW	2/27/2018	2.5'	In-Situ	<0.00198	<0.00198	<0.00198	<0.00198	<0.00198	<15.0	<15.0	<15.0	<15	-
SP-3 WSW	2/27/2018	2.5'	In-Situ	<0.00202	<0.00202	<0.00202	<0.00202	<0.00202	<15.0	<15.0	<15.0	<15	-
SP -2 FL-2	3/5/2018	4'	In-Situ	<0.000386	<0.000457	<0.000566	<0.000345	<0.000345	<7.99	25.7	<8.12	25.7	-
OS-1b	4/3/2018	0-6"	Treated	<0.0182	<0.0182	<0.0365	<0.0182	<0.0182	-	-	-	-	-
OS-2b	4/3/2018	0-6"	Treated	<0.0196	<0.0196	<0.0392	<0.0196	<0.0196	-	-	-	-	-
OS-3b	4/3/2018	0-6"	Treated	<0.0194	<0.0194	<0.0388	<0.0194	<0.0194	-	-	-	-	-
OS-4b	4/3/2018	0-6"	Treated	<0.0198	<0.0198	<0.0396	<0.0198	<0.0198	-	-	-	-	-
NMOCD Recommended Remediation Action Level				**10**	**-**	**-**	**-**	**50**	**-**	**-**	**-**	**5,000**	**600**

Figure 1 - View of surface staining from the initial release, facing South.

Figure 2 - View of surface staining from the initial release, facing Southeast.

Figure 3 - View of surface staining from the initial release, facing Southwest.

Figure 4 - View of portion of the excavated area, facing Northeast.

Figure 5 - View of portion of the excavated area, facing South.

Figure 6 - View of portion of the excavated area, facing South.

Figure 7 - View of portion of the excavated area, facing East.

Figure 8 - View of the affected area after remediation activities, facing South.

Figure 9 - View of the affected area after remediation activities, facing South.

Figure 10 - View of the affected area after remediation activities, facing Northeast.

Certificate of Analysis Summary 576746

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16

Project Id:

Contact: Joel Lowry

Project Location: Lea Co,NM

Date Received in Lab: Fri Feb-16-18 11:30 am

Report Date: 02-MAR-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	576746-001		576746-002		576746-003		576746-004		576746-005		576746-006	
	Field Id:	SP-1 @ 1'		SP-1 @ 2'		SP-2 @ 3'		SP-2 @ 4'		SP-3 @ 5'		SP-3 @ 6'	
	Depth:	1- ft		2- ft		3- ft		4- ft		5- ft		6- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-13-18 09:00		Feb-13-18 09:05		Feb-13-18 09:10		Feb-13-18 09:15		Feb-13-18 09:20		Feb-13-18 09:25	
BTEX by EPA 8021B	***Extracted:***	Feb-21-18 08:00				Feb-20-18 15:00				Feb-20-18 15:00			
	Analyzed:	Feb-21-18 19:37				Feb-22-18 00:05				Feb-22-18 01:01			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL		
Benzene		<0.00199	0.00199			<0.00199	0.00199			<0.00201	0.00201		
Toluene		<0.00199	0.00199			<0.00199	0.00199			<0.00201	0.00201		
Ethylbenzene		<0.00199	0.00199			<0.00199	0.00199			<0.00201	0.00201		
m,p-Xylenes		<0.00398	0.00398			<0.00398	0.00398			0.00733	0.00402		
o-Xylene		<0.00199	0.00199			<0.00199	0.00199			0.00223	0.00201		
Xylenes, Total		<0.00199	0.00199			<0.00199	0.00199			0.00956	0.00201		
Total BTEX		<0.00199	0.00199			<0.00199	0.00199			0.00956	0.00201		
Chloride by EPA 300	***Extracted:***	Feb-22-18 14:20				Feb-22-18 14:20				Feb-22-18 14:20			
	Analyzed:	Feb-22-18 18:56				Feb-22-18 19:01				Feb-22-18 19:06			
	Units/RL:	mg/kg	RL			mg/kg	RL			mg/kg	RL		
Chloride		456	5.00			<4.91	4.91			<4.96	4.96		
TPH by SW8015 Mod	***Extracted:***	Feb-20-18 07:00		Feb-27-18 17:00		Feb-20-18 07:00		Feb-27-18 17:00		Feb-20-18 07:00		Feb-27-18 17:00	
	Analyzed:	Feb-20-18 09:08		Feb-28-18 19:02		Feb-20-18 10:27		Feb-28-18 19:30		Feb-20-18 10:53		Feb-28-18 19:54	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	<15.0	15.0	115	15.0	60.9	15.0	180	15.0	18.7	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	160	15.0	<15.0	15.0	172	15.0	<15.0	15.0	157	15.0
Total TPH		<15	15	160	15	115	15	232.9	15	180	15	175.7	15

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 576746

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16

Project Id:

Contact: Joel Lowry

Project Location: Lea Co,NM

Date Received in Lab: Fri Feb-16-18 11:30 am

Report Date: 02-MAR-18

Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	576746-007		576746-008		576746-009		576746-010		576746-011		576746-012	
	Field Id:	OS-1 @ 0-3"		OS-1 @ 6"		OS-2 @ 0-3"		OS-2 @ 6"		OS-3 @ 0-3"		OS-3 @ 6"	
	Depth:	0-3 In		6 In		0-3 In		6 In		0-3 In		6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-13-18 09:30		Feb-13-18 09:35		Feb-13-18 09:40		Feb-13-18 09:45		Feb-13-18 10:00		Feb-13-18 10:05	
Chloride by EPA 300	***Extracted:***	Feb-22-18 14:20		Feb-22-18 14:20		Feb-22-18 14:20		Feb-22-18 16:00		Feb-22-18 16:00		Feb-22-18 16:00	
	Analyzed:	Feb-22-18 19:12		Feb-22-18 19:23		Feb-22-18 19:28		Feb-22-18 20:00		Feb-22-18 20:16		Feb-22-18 20:21	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		<5.00	5.00	6.43	5.00	<4.97	4.97	<4.92	4.92	<4.97	4.97	<5.00	5.00
TPH by SW8015 Mod	***Extracted:***	Feb-26-18 08:00		Feb-26-18 08:00		Feb-26-18 08:00		Feb-26-18 08:00		Feb-26-18 08:00		Feb-26-18 08:00	
	Analyzed:	Feb-26-18 11:55		Feb-26-18 12:20		Feb-26-18 12:48		Feb-26-18 13:14		Feb-26-18 13:40		Feb-26-18 14:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		797	14.9	36.2	15.0	1290	14.9	32.6	15.0	797	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		81.4	14.9	<15.0	15.0	94.5	14.9	<15.0	15.0	81.1	15.0	<15.0	15.0
Total TPH		878.4	14.9	36.2	15	1384.5	14.9	32.6	15	878.1	15	<15	15

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 576746

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16

Project Id:
Contact: Joel Lowry
Project Location: Lea Co,NM

Date Received in Lab: Fri Feb-16-18 11:30 am
Report Date: 02-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	576746-013		576746-014					
	Field Id:	OS-4 @ 0-3"		OS-4 @ 6"					
	Depth:	0-3 In		6 In					
	Matrix:	SOIL		SOIL					
	Sampled:	Feb-13-18 10:10		Feb-13-18 10:15					
Chloride by EPA 300	***Extracted:***	Feb-22-18 16:00		Feb-22-18 16:00					
	Analyzed:	Feb-22-18 20:26		Feb-22-18 20:32					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		<4.97	4.97	<5.00	5.00				
TPH by SW8015 Mod	***Extracted:***	Feb-26-18 08:00		Feb-26-18 08:00					
	Analyzed:	Feb-26-18 14:31		Feb-26-18 14:56					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	<15.0	15.0				
Diesel Range Organics (DRO)		225	15.0	<15.0	15.0				
Oil Range Hydrocarbons (ORO)		21.4	15.0	<15.0	15.0				
Total TPH		246.4	15	<15	15				

Kelsey Brooks
Project Manager

Analytical Report 576746

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16

02-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta: Louisiana (04176)
Xenco-Tampa: Florida (E87429), North Carolina (483), DoD (LI0-135), Kentucky (123066)
Xenco-Lakeland: Florida (E84098)

02-MAR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **576746**
COG Boone 16
Project Address: Lea Co,NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 576746. 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. 576746 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-1 @ 1'	S	02-13-18 09:00	1 ft	576746-001
SP-1 @ 2'	S	02-13-18 09:05	2 ft	576746-002
SP-2 @ 3'	S	02-13-18 09:10	3 ft	576746-003
SP-2 @ 4'	S	02-13-18 09:15	4 ft	576746-004
SP-3 @ 5'	S	02-13-18 09:20	5 ft	576746-005
SP-3 @ 6'	S	02-13-18 09:25	6 ft	576746-006
OS-1 @ 0-3"	S	02-13-18 09:30	0 - 3 In	576746-007
OS-1 @ 6"	S	02-13-18 09:35	- 6 In	576746-008
OS-2 @ 0-3"	S	02-13-18 09:40	0 - 3 In	576746-009
OS-2 @ 6"	S	02-13-18 09:45	- 6 In	576746-010
OS-3 @ 0-3"	S	02-13-18 10:00	0 - 3 In	576746-011
OS-3 @ 6"	S	02-13-18 10:05	- 6 In	576746-012
OS-4 @ 0-3"	S	02-13-18 10:10	0 - 3 In	576746-013
OS-4 @ 6"	S	02-13-18 10:15	- 6 In	576746-014

Client Name: TRC Solutions, Inc
Project Name: COG Boone 16

Project ID:
Work Order Number(s): *576746*

Report Date: *02-MAR-18*
Date Received: *02/16/2018*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:
Batch: LBA-3041729 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3041964 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-1 @ 1'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-001	Date Collected:	02.13.18 09.00	Sample Depth:	1 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**456**	5.00	mg/kg	02.22.18 18.56		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.20.18 07.00	Basis:	Wet Weight
Seq Number:	3041815				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.20.18 09.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.20.18 09.08	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.20.18 09.08	U	1
Total TPH	PHC635	<15	15	mg/kg	02.20.18 09.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.20.18 09.08	
o-Terphenyl	84-15-1	110	%	70-135	02.20.18 09.08	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-1 @ 1'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-001	Date Collected:	02.13.18 09.00	Sample Depth:	1 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.21.18 08.00	Basis:	Wet Weight
Seq Number:	3041729				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.21.18 19.37	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.21.18 19.37	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.21.18 19.37	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.21.18 19.37	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.21.18 19.37	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	02.21.18 19.37	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.21.18 19.37	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	100	%	80-120	02.21.18 19.37	
1,4-Difluorobenzene	540-36-3	89	%	80-120	02.21.18 19.37	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-1 @ 2'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-002	Date Collected:	02.13.18 09.05	Sample Depth:	2 ft
Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.27.18 17.00	Basis:	Wet Weight
Seq Number:	3042497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.28.18 19.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.28.18 19.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	**160**	15.0	mg/kg	02.28.18 19.02		1
Total TPH	PHC635	**160**	15	mg/kg	02.28.18 19.02		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.28.18 19.02	
o-Terphenyl	84-15-1	99	%	70-135	02.28.18 19.02	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-2 @ 3'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-003	Date Collected:	02.13.18 09.10	Sample Depth:	3 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.91	4.91	mg/kg	02.22.18 19.01	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.20.18 07.00	Basis:	Wet Weight
Seq Number:	3041815				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.20.18 10.27	U	1
Diesel Range Organics (DRO)	C10C28DRO	**115**	15.0	mg/kg	02.20.18 10.27		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.20.18 10.27	U	1
Total TPH	PHC635	**115**	15	mg/kg	02.20.18 10.27		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	100	%	70-135	02.20.18 10.27	
o-Terphenyl	84-15-1	106	%	70-135	02.20.18 10.27	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-2 @ 3'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-003	Date Collected:	02.13.18 09.10	Sample Depth:	3 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.20.18 15.00	Basis:	Wet Weight
Seq Number:	3041964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	02.22.18 00.05	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	02.22.18 00.05	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	02.22.18 00.05	U	1
m,p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	02.22.18 00.05	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	02.22.18 00.05	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	02.22.18 00.05	U	1
Total BTEX		<0.00199	0.00199	mg/kg	02.22.18 00.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	99	%	80-120	02.22.18 00.05	
1,4-Difluorobenzene	540-36-3	84	%	80-120	02.22.18 00.05	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-2 @ 4'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-004	Date Collected:	02.13.18 09.15	Sample Depth:	4 ft
Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.27.18 17.00	Basis:	Wet Weight
Seq Number:	3042497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.28.18 19.30	U	1
Diesel Range Organics (DRO)	C10C28DRO	**60.9**	15.0	mg/kg	02.28.18 19.30		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**172**	15.0	mg/kg	02.28.18 19.30		1
Total TPH	PHC635	**232.9**	15	mg/kg	02.28.18 19.30		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	02.28.18 19.30	
o-Terphenyl	84-15-1	96	%	70-135	02.28.18 19.30	

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TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-3 @ 5'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-005	Date Collected:	02.13.18 09.20	Sample Depth:	5 ft

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.96	4.96	mg/kg	02.22.18 19.06	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.20.18 07.00	Basis:	Wet Weight
Seq Number:	3041815				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.20.18 10.53	U	1
Diesel Range Organics (DRO)	C10C28DRO	**180**	15.0	mg/kg	02.20.18 10.53		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.20.18 10.53	U	1
Total TPH	PHC635	**180**	15	mg/kg	02.20.18 10.53		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	113	%	70-135	02.20.18 10.53	
o-Terphenyl	84-15-1	123	%	70-135	02.20.18 10.53	

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TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-3 @ 5'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-005	Date Collected:	02.13.18 09.20	Sample Depth:	5 ft
Analytical Method:	BTEX by EPA 8021B			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	02.20.18 15.00	Basis:	Wet Weight
Seq Number:	3041964				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	02.22.18 01.01	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	02.22.18 01.01	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	02.22.18 01.01	U	1
m,p-Xylenes	179601-23-1	**0.00733**	0.00402	mg/kg	02.22.18 01.01		1
o-Xylene	95-47-6	**0.00223**	0.00201	mg/kg	02.22.18 01.01		1
Xylenes, Total	1330-20-7	**0.00956**	0.00201	mg/kg	02.22.18 01.01		1
Total BTEX		**0.00956**	0.00201	mg/kg	02.22.18 01.01		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	101	%	80-120	02.22.18 01.01	
1,4-Difluorobenzene	540-36-3	81	%	80-120	02.22.18 01.01	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**SP-3 @ 6'**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-006	Date Collected:	02.13.18 09.25	Sample Depth:	6 ft
Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.27.18 17.00	Basis:	Wet Weight
Seq Number:	3042497				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.28.18 19.54	U	1
Diesel Range Organics (DRO)	C10C28DRO	**18.7**	15.0	mg/kg	02.28.18 19.54		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**157**	15.0	mg/kg	02.28.18 19.54		1
Total TPH	PHC635	**175.7**	15	mg/kg	02.28.18 19.54		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	102	%	70-135	02.28.18 19.54	
o-Terphenyl	84-15-1	98	%	70-135	02.28.18 19.54	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-1 @ 0-3"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-007	Date Collected:	02.13.18 09.30	Sample Depth:	0 - 3 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.22.18 19.12	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.26.18 11.55	U	1
Diesel Range Organics (DRO)	C10C28DRO	**797**	14.9	mg/kg	02.26.18 11.55		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**81.4**	14.9	mg/kg	02.26.18 11.55		1
Total TPH	PHC635	**878.4**	14.9	mg/kg	02.26.18 11.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	02.26.18 11.55	
o-Terphenyl	84-15-1	113	%	70-135	02.26.18 11.55	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-1 @ 6"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-008	Date Collected:	02.13.18 09.35	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	**6.43**	5.00	mg/kg	02.22.18 19.23		1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 12.20	U	1
Diesel Range Organics (DRO)	C10C28DRO	**36.2**	15.0	mg/kg	02.26.18 12.20		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.26.18 12.20	U	1
Total TPH	PHC635	**36.2**	15	mg/kg	02.26.18 12.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	112	%	70-135	02.26.18 12.20	
o-Terphenyl	84-15-1	107	%	70-135	02.26.18 12.20	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-2 @ 0-3"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-009	Date Collected:	02.13.18 09.40	Sample Depth:	0 - 3 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 14.20	Basis:	Wet Weight
Seq Number:	3041899				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	02.22.18 19.28	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<14.9	14.9	mg/kg	02.26.18 12.48	U	1
Diesel Range Organics (DRO)	C10C28DRO	**1290**	14.9	mg/kg	02.26.18 12.48		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**94.5**	14.9	mg/kg	02.26.18 12.48		1
Total TPH	PHC635	**1384.5**	14.9	mg/kg	02.26.18 12.48		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	104	%	70-135	02.26.18 12.48	
o-Terphenyl	84-15-1	125	%	70-135	02.26.18 12.48	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-2 @ 6"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-010	Date Collected:	02.13.18 09.45	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 16.00	Basis:	Wet Weight
Seq Number:	3041902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.92	4.92	mg/kg	02.22.18 20.00	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 13.14	U	1
Diesel Range Organics (DRO)	C10C28DRO	**32.6**	15.0	mg/kg	02.26.18 13.14		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.26.18 13.14	U	1
Total TPH	PHC635	**32.6**	15	mg/kg	02.26.18 13.14		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.26.18 13.14	
o-Terphenyl	84-15-1	93	%	70-135	02.26.18 13.14	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-3 @ 0-3"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-011	Date Collected:	02.13.18 10.00	Sample Depth:	0 - 3 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 16.00	Basis:	Wet Weight
Seq Number:	3041902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	02.22.18 20.16	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 13.40	U	1
Diesel Range Organics (DRO)	C10C28DRO	**797**	15.0	mg/kg	02.26.18 13.40		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**81.1**	15.0	mg/kg	02.26.18 13.40		1
Total TPH	PHC635	**878.1**	15	mg/kg	02.26.18 13.40		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	02.26.18 13.40	
o-Terphenyl	84-15-1	124	%	70-135	02.26.18 13.40	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-3 @ 6"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-012	Date Collected:	02.13.18 10.05	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 16.00	Basis:	Wet Weight
Seq Number:	3041902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.22.18 20.21	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 14.05	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.26.18 14.05	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.26.18 14.05	U	1
Total TPH	PHC635	<15	15	mg/kg	02.26.18 14.05	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	95	%	70-135	02.26.18 14.05	
o-Terphenyl	84-15-1	94	%	70-135	02.26.18 14.05	

Certificate of Analytical Results 576746

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-4 @ 0-3"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-013	Date Collected:	02.13.18 10.10	Sample Depth:	0 - 3 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 16.00	Basis:	Wet Weight
Seq Number:	3041902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<4.97	4.97	mg/kg	02.22.18 20.26	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 14.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	**225**	15.0	mg/kg	02.26.18 14.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**21.4**	15.0	mg/kg	02.26.18 14.31		1
Total TPH	PHC635	**246.4**	15	mg/kg	02.26.18 14.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	92	%	70-135	02.26.18 14.31	
o-Terphenyl	84-15-1	90	%	70-135	02.26.18 14.31	

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id:	**OS-4 @ 6"**	Matrix:	Soil	Date Received:	02.16.18 11.30
Lab Sample Id:	576746-014	Date Collected:	02.13.18 10.15	Sample Depth:	6 In

Analytical Method:	Chloride by EPA 300			Prep Method:	E300P
Tech:	LRI			% Moisture:	
Analyst:	OJS	Date Prep:	02.22.18 16.00	Basis:	Wet Weight
Seq Number:	3041902				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	<5.00	5.00	mg/kg	02.22.18 20.32	U	1

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	02.26.18 08.00	Basis:	Wet Weight
Seq Number:	3042219				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	02.26.18 14.56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	02.26.18 14.56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	02.26.18 14.56	U	1
Total TPH	PHC635	<15	15	mg/kg	02.26.18 14.56	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	96	%	70-135	02.26.18 14.56	
o-Terphenyl	84-15-1	94	%	70-135	02.26.18 14.56	

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

QC Summary 576746

TRC Solutions, Inc

COG Boone 16

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041899 Matrix: Solid Date Prep: 02.22.18
MB Sample Id: 7639621-1-BLK LCS Sample Id: 7639621-1-BKS LCSD Sample Id: 7639621-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	256	102	258	103	90-110	1	20	mg/kg	02.22.18 16:31	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041902 Matrix: Solid Date Prep: 02.22.18
MB Sample Id: 7639624-1-BLK LCS Sample Id: 7639624-1-BKS LCSD Sample Id: 7639624-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<5.00	250	255	102	262	105	90-110	3	20	mg/kg	02.22.18 19:49	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041899 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 576570-001 MS Sample Id: 576570-001 S MSD Sample Id: 576570-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	276	248	529	102	558	114	90-110	5	20	mg/kg	02.22.18 18:11	X

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041899 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 577098-001 MS Sample Id: 577098-001 S MSD Sample Id: 577098-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	31.3	251	293	104	294	105	90-110	0	20	mg/kg	02.22.18 16:47	

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041902 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 576746-010 MS Sample Id: 576746-010 S MSD Sample Id: 576746-010 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	<4.92	246	254	103	266	108	90-110	5	20	mg/kg	02.22.18 20:05	

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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

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

QC Summary 576746

TRC Solutions, Inc

COG Boone 16

Analytical Method: **Chloride by EPA 300** Prep Method: E300P
Seq Number: 3041902 Matrix: Soil Date Prep: 02.22.18
Parent Sample Id: 576779-006 MS Sample Id: 576779-006 S MSD Sample Id: 576779-006 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chloride	78.6	246	338	105	339	106	90-110	0	20	mg/kg	02.22.18 21:19	

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3041815 Matrix: Solid Date Prep: 02.20.18
MB Sample Id: 7639517-1-BLK LCS Sample Id: 7639517-1-BKS LCSD Sample Id: 7639517-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	875	88	868	87	70-135	1	35	mg/kg	02.20.18 08:17	
Diesel Range Organics (DRO)	<15.0	1000	963	96	961	96	70-135	0	35	mg/kg	02.20.18 08:17	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	119		109		107		70-135	%	02.20.18 08:17
o-Terphenyl	125		107		106		70-135	%	02.20.18 08:17

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3042219 Matrix: Solid Date Prep: 02.26.18
MB Sample Id: 7639805-1-BLK LCS Sample Id: 7639805-1-BKS LCSD Sample Id: 7639805-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	887	89	1020	102	70-135	14	35	mg/kg	02.26.18 09:41	
Diesel Range Organics (DRO)	<15.0	1000	915	92	1040	104	70-135	13	35	mg/kg	02.26.18 09:41	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	109		109		124		70-135	%	02.26.18 09:41
o-Terphenyl	112		107		121		70-135	%	02.26.18 09:41

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3042497 Matrix: Solid Date Prep: 02.28.18
MB Sample Id: 7639972-1-BLK LCS Sample Id: 7639972-1-BKS LCSD Sample Id: 7639972-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	965	97	963	96	70-135	0	35	mg/kg	02.28.18 08:22	
Diesel Range Organics (DRO)	<15.0	1000	988	99	983	98	70-135	1	35	mg/kg	02.28.18 08:22	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	103		110		101		70-135	%	02.28.18 08:22
o-Terphenyl	106		107		110		70-135	%	02.28.18 08:22

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]

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

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

QC Summary 576746

TRC Solutions, Inc

COG Boone 16

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3041815 Matrix: Soil Date Prep: 02.20.18
Parent Sample Id: 576746-001 MS Sample Id: 576746-001 S MSD Sample Id: 576746-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	868	87	858	86	70-135	1	35	mg/kg	02.20.18 09:34	
Diesel Range Organics (DRO)	<15.0	998	966	97	960	96	70-135	1	35	mg/kg	02.20.18 09:34	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	110		107		70-135	%	02.20.18 09:34
o-Terphenyl	106		105		70-135	%	02.20.18 09:34

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3042219 Matrix: Soil Date Prep: 02.26.18
Parent Sample Id: 577421-001 MS Sample Id: 577421-001 S MSD Sample Id: 577421-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	971	97	907	91	70-135	7	35	mg/kg	02.26.18 11:02	
Diesel Range Organics (DRO)	<15.0	999	1070	107	1000	100	70-135	7	35	mg/kg	02.26.18 11:02	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	115		107		70-135	%	02.26.18 11:02
o-Terphenyl	113		107		70-135	%	02.26.18 11:02

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3042497 Matrix: Soil Date Prep: 02.28.18
Parent Sample Id: 577419-021 MS Sample Id: 577419-021 S MSD Sample Id: 577419-021 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1070	107	953	95	70-135	12	35	mg/kg	02.28.18 09:38	
Diesel Range Organics (DRO)	<15.0	999	1180	118	1060	106	70-135	11	35	mg/kg	02.28.18 09:38	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	94		90		70-135	%	02.28.18 09:38
o-Terphenyl	82		83		70-135	%	02.28.18 09:38

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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

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

QC Summary 576746

TRC Solutions, Inc

COG Boone 16

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3041964 Matrix: Solid Date Prep: 02.20.18
MB Sample Id: 7639673-1-BLK LCS Sample Id: 7639673-1-BKS LCSD Sample Id: 7639673-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0823	83	0.0935	94	70-130	13	35	mg/kg	02.21.18 20:15	
Toluene	<0.00199	0.0994	0.0887	89	0.101	101	70-130	13	35	mg/kg	02.21.18 20:15	
Ethylbenzene	<0.00199	0.0994	0.102	103	0.117	117	71-129	14	35	mg/kg	02.21.18 20:15	
m,p-Xylenes	<0.00398	0.199	0.201	101	0.229	114	70-135	13	35	mg/kg	02.21.18 20:15	
o-Xylene	<0.00199	0.0994	0.0994	100	0.114	114	71-133	14	35	mg/kg	02.21.18 20:15	
Xylenes, Total	0	0.2984	0.3004	101	0.343	114	71-133	0	20	mg/kg	02.21.18 20:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		87		86		80-120	%	02.21.18 20:15
4-Bromofluorobenzene	99		108		112		80-120	%	02.21.18 20:15

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3041729 Matrix: Solid Date Prep: 02.21.18
MB Sample Id: 7639538-1-BLK LCS Sample Id: 7639538-1-BKS LCSD Sample Id: 7639538-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.100	0.0936	94	0.0880	87	70-130	6	35	mg/kg	02.21.18 07:15	
Toluene	<0.00200	0.100	0.0992	99	0.0939	93	70-130	5	35	mg/kg	02.21.18 07:15	
Ethylbenzene	<0.00200	0.100	0.114	114	0.107	106	71-129	6	35	mg/kg	02.21.18 07:15	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	88		84		88		80-120	%	02.21.18 07:15
4-Bromofluorobenzene	116		114		115		80-120	%	02.21.18 07:15

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B
Seq Number: 3041964 Matrix: Soil Date Prep: 02.20.18
Parent Sample Id: 576848-003 MS Sample Id: 576848-003 S MSD Sample Id: 576848-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00202	0.101	0.0730	72	0.0738	74	70-130	1	35	mg/kg	02.21.18 20:53	
Toluene	0.00225	0.101	0.0781	75	0.0777	76	70-130	1	35	mg/kg	02.21.18 20:53	
Ethylbenzene	<0.00202	0.101	0.0875	87	0.0848	85	71-129	3	35	mg/kg	02.21.18 20:53	
m,p-Xylenes	<0.00403	0.202	0.171	85	0.166	83	70-135	3	35	mg/kg	02.21.18 20:53	
o-Xylene	<0.00202	0.101	0.0859	85	0.0823	83	71-133	4	35	mg/kg	02.21.18 20:53	
Xylenes, Total	0	0.303	0.2569	85	0.2483	83	71-133	0	20	mg/kg	02.21.18 20:53	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	83		87		80-120	%	02.21.18 20:53
4-Bromofluorobenzene	106		105		80-120	%	02.21.18 20:53

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]

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

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

QC Summary 576746

TRC Solutions, Inc

COG Boone 16

Analytical Method: **BTEX by EPA 8021B** Prep Method: SW5030B

Seq Number: 3041729 Matrix: Soil Date Prep: 02.21.18

Parent Sample Id: 576780-001 MS Sample Id: 576780-001 S MSD Sample Id: 576780-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.100	0.0615	62	0.0618	61	70-130	0	35	mg/kg	02.21.18 07:54	X
Toluene	<0.00201	0.100	0.0625	63	0.0655	65	70-130	5	35	mg/kg	02.21.18 07:54	X
Ethylbenzene	<0.00201	0.100	0.0747	75	0.0718	71	71-129	4	35	mg/kg	02.21.18 07:54	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	91		82		80-120	%	02.21.18 07:54
4-Bromofluorobenzene	102		117		80-120	%	02.21.18 07:54

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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

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

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www.xenco.com

Xenco Job # 576746

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com, zconder@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name: Zach Conder

Project Information

Project Name/Number: COG Boone 16
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Matrix Codes

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

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	Analytical Information: TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	SP-1 @ 1'	1'	2/13/2018	9:00	S	1									X	X	X		
2	SP-1 @ 2'	2'	2/13/2018	9:05	S	1												X	
3	SP-2 @ 3'	3'	2/13/2018	9:10	S	1									X	X	X		
4	SP-2 @ 4'	4'	2/13/2018	9:15	S	1												X	
5	SP-3 @ 5'	5'	2/13/2018	9:20	S	1									X	X	X		
6	SP-3 @ 6'	6'	2/13/2018	9:25	S	1												X	
7	OS-1 @ 0-3"	0-3"	2/13/2018	9:30	S	1									X				
8	OS-1 @ 6"	6"	2/13/2018	9:35	S	1									X				
9	OS-2 @ 0-3"	0-3"	2/13/2018	9:40	S	1									X				
10	OS-2 @ 6"	6"	2/13/2018	9:45	S	1									X				
11	OS-3 @ 0-3"	0-3"	2/13/2018	10:00	S	1									X				
11	OS-3 @ 6"	6"	2/13/2018	10:05	S	1									X				
11	OS-4 @ 0-3"	0-3"	2/13/2018	10:10	S	1									X				
11	OS-4 @ 6"	6"	2/13/2018	10:15	S	1									X				

Temp: 2.1 IR ID: R-8
CF: (0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 1.9

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

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

jlowry@trcsolutions.com, zconder@trcsolutions.com
CJBryant@paalp.com, algroves@paalp.com
kblackburn@trcsolutions.com

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		2/14 14:07	Brittany Cox		2/14/18 3:58	
2						2/14 11:30
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						X / 0.2

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 02/16/2018 11:30:00 AM

Work Order #: 576746

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 02/16/2018

Checklist reviewed by: Kelsey Brooks Date: 02/16/2018

Analytical Report 577385

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16 Tank Battery

03-MAY-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab Code: TX00122):
Texas (T104704215-18-25), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab Code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab Code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab Code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab Code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757)
Xenco-Phoenix Mobile (EPA Lab Code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)
Xenco-Tampa: Florida (E87429)
Xenco-Lakeland: Florida (E84098)

Table of Contents

03-MAY-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **577385**
COG Boone 16 Tank Battery
Project Address: Lea County, NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 577385. 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. 577385 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 577385

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-1 FL 1	S	02-21-18 09:00	1 ft	577385-001
SP-1 FL 2	S	02-21-18 09:05	1 ft	577385-002
SP-1 FL 3	S	02-21-18 09:10	1 ft	577385-003
SP-1 FL 4	S	02-21-18 09:15	1 ft	577385-004
SP-1 FL 5	S	02-21-18 09:20	1 ft	577385-005
SP-1 FL 6	S	02-21-18 09:25	1 ft	577385-006
SP-1 NSW	S	02-21-18 09:30	6 In	577385-007
SP-1 ESW 1	S	02-21-18 09:35	6 In	577385-008
SP-1 ESW 2	S	02-21-18 09:40	6 In	577385-009
SP-1 ESW 3	S	02-21-18 09:45	6 In	577385-010
SP-1 ESW 4	S	02-21-18 09:50	6 In	577385-011
SP-1 ESW 5	S	02-21-18 09:55	6 In	577385-012
SP-1 SSW 1	S	02-21-18 10:00	6 In	577385-013
SP-1 SSW 2	S	02-21-18 10:05	6 In	577385-014
SP-1 SSW 3	S	02-21-18 10:10	6 In	577385-015
SP-1 WSW 1	S	02-21-18 10:15	6 In	577385-016
SP-1 WSW 2	S	02-21-18 10:20	6 In	577385-017
SP-1 WSW 3	S	02-21-18 10:25	6 In	577385-018
SP-1 WSW 4	S	02-21-18 10:30	6 In	577385-019
SP-1 WSW 5	S	02-21-18 10:35	6 In	577385-020

Client Name: TRC Solutions, Inc

Project Name: COG Boone 16 Tank Battery

Project ID:
Work Order Number(s): *577385*

Report Date: *03-MAY-18*
Date Received: *02/23/2018*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

Revision to correct sample name

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3042198 BTEX by EPA 8021
Lab Sample ID 577385-009 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m_p-Xylenes , o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 577385-008, -009, -010, -011, -012, -013, -014, -015, -016, -017, -018, -019, -020.
The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits, therefore the data was accepted.
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3042224 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3042346 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 FL 1** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 577385-001 Date Collected: 02.21.18 09.00 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	02.24.18 17:12	U	1
Diesel Range Organics (DRO)	C10C28DRO	**12.2**	15.0	8.11	mg/kg	02.24.18 17:12	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.11	15.0	8.11	mg/kg	02.24.18 17:12	U	1
Total TPH	PHC635	**12.2**		7.99	mg/kg	02.24.18 17:12	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	113	70 - 135	%		
o-Terphenyl	113	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	02.24.18 23:35	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	02.24.18 23:35	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	02.24.18 23:35	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	02.24.18 23:35	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	02.24.18 23:35	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	02.24.18 23:35	U	
Total BTEX		<0.000347		0.000347	mg/kg	02.24.18 23:35	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	112	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 FL 2** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 577385-002 Date Collected: 02.21.18 09.05 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**11.9**	15.0	7.99	mg/kg	02.24.18 18:33	J	1
Diesel Range Organics (DRO)	C10C28DRO	**376**	15.0	8.11	mg/kg	02.24.18 18:33		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**24.5**	15.0	8.11	mg/kg	02.24.18 18:33		1
Total TPH	PHC635	**412.4**		7.99	mg/kg	02.24.18 18:33		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	70 - 135	%		
o-Terphenyl	117	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	02.25.18 00:30	U	1
Toluene	108-88-3	**0.000863**	0.00201	0.000457	mg/kg	02.25.18 00:30	J	1
Ethylbenzene	100-41-4	**0.00128**	0.00201	0.000567	mg/kg	02.25.18 00:30	J	1
m_p-Xylenes	179601-23-1	**0.00525**	0.00402	0.00102	mg/kg	02.25.18 00:30		1
o-Xylene	95-47-6	**0.00312**	0.00201	0.000346	mg/kg	02.25.18 00:30		1
Xylenes, Total	1330-20-7	**0.00837**		0.000346	mg/kg	02.25.18 00:30		
Total BTEX		**0.010513**		0.000346	mg/kg	02.25.18 00:30		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	117	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 FL 3** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 577385-003 Date Collected: 02.21.18 09.10 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.97	14.9	7.97	mg/kg	02.24.18 19:01	U	1
Diesel Range Organics (DRO)	C10C28DRO	**92.9**	14.9	8.10	mg/kg	02.24.18 19:01		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	14.9	8.10	mg/kg	02.24.18 19:01	U	1
Total TPH	PHC635	**92.9**		7.97	mg/kg	02.24.18 19:01		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000389	0.00202	0.000389	mg/kg	02.25.18 00:49	U	1
Toluene	108-88-3	<0.000460	0.00202	0.000460	mg/kg	02.25.18 00:49	U	1
Ethylbenzene	100-41-4	<0.000570	0.00202	0.000570	mg/kg	02.25.18 00:49	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00404	0.00102	mg/kg	02.25.18 00:49	U	1
o-Xylene	95-47-6	<0.000348	0.00202	0.000348	mg/kg	02.25.18 00:49	U	1
Xylenes, Total	1330-20-7	<0.000348		0.000348	mg/kg	02.25.18 00:49	U	
Total BTEX		<0.000348		0.000348	mg/kg	02.25.18 00:49	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	81	80 - 120	%		
4-Bromofluorobenzene	119	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 FL 4** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 577385-004 Date Collected: 02.21.18 09.15 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	02.24.18 19:27	U	1
Diesel Range Organics (DRO)	C10C28DRO	**37.6**	15.0	8.12	mg/kg	02.24.18 19:27		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.12	15.0	8.12	mg/kg	02.24.18 19:27	U	1
Total TPH	PHC635	**37.6**		7.99	mg/kg	02.24.18 19:27		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	108	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	02.25.18 01:08	U	1
Toluene	108-88-3	**0.00151**	0.00200	0.000457	mg/kg	02.25.18 01:08	J	1
Ethylbenzene	100-41-4	**0.000902**	0.00200	0.000566	mg/kg	02.25.18 01:08	J	1
m_p-Xylenes	179601-23-1	**0.00284**	0.00401	0.00102	mg/kg	02.25.18 01:08	J	1
o-Xylene	95-47-6	**0.00157**	0.00200	0.000345	mg/kg	02.25.18 01:08	J	1
Xylenes, Total	1330-20-7	**0.00441**		0.000345	mg/kg	02.25.18 01:08		
Total BTEX		**0.006822**		0.000345	mg/kg	02.25.18 01:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	85	80 - 120	%		
4-Bromofluorobenzene	112	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 FL 5** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 577385-005 Date Collected: 02.21.18 09.20 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.97	14.9	7.97	mg/kg	02.24.18 19:53	U	1
Diesel Range Organics (DRO)	C10C28DRO	**8.18**	14.9	8.10	mg/kg	02.24.18 19:53	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	14.9	8.10	mg/kg	02.24.18 19:53	U	1
Total TPH	PHC635	**8.18**		7.97	mg/kg	02.24.18 19:53	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	93	70 - 135	%		
o-Terphenyl	90	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.25.18 01:25	U	1
Toluene	108-88-3	**0.00104**	0.00199	0.000453	mg/kg	02.25.18 01:25	J	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	02.25.18 01:25	U	1
m_p-Xylenes	179601-23-1	**0.00231**	0.00398	0.00101	mg/kg	02.25.18 01:25	J	1
o-Xylene	95-47-6	**0.000954**	0.00199	0.000342	mg/kg	02.25.18 01:25	J	1
Xylenes, Total	1330-20-7	**0.003264**		0.000342	mg/kg	02.25.18 01:25		
Total BTEX		**0.004304**		0.000342	mg/kg	02.25.18 01:25		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	80	80 - 120	%		
4-Bromofluorobenzene	110	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 FL 6** Matrix: Soil Sample Depth: 1 ft

Lab Sample Id: 577385-006 Date Collected: 02.21.18 09.25 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	02.24.18 20:21	U	1
Diesel Range Organics (DRO)	C10C28DRO	**129**	15.0	8.11	mg/kg	02.24.18 20:21		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**13.5**	15.0	8.11	mg/kg	02.24.18 20:21	J	1
Total TPH	PHC635	**142.5**		7.99	mg/kg	02.24.18 20:21		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	94	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	02.25.18 01:44	U	1
Toluene	108-88-3	**0.00106**	0.00200	0.000455	mg/kg	02.25.18 01:44	J	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	02.25.18 01:44	U	1
m_p-Xylenes	179601-23-1	**0.00314**	0.00399	0.00101	mg/kg	02.25.18 01:44	J	1
o-Xylene	95-47-6	**0.00171**	0.00200	0.000344	mg/kg	02.25.18 01:44	J	1
Xylenes, Total	1330-20-7	**0.00485**		0.000344	mg/kg	02.25.18 01:44		
Total BTEX		**0.00591**		0.000344	mg/kg	02.25.18 01:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	108	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 NSW** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-007 Date Collected: 02.21.18 09.30 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	02.24.18 20:49	U	1
Diesel Range Organics (DRO)	C10C28DRO	**111**	15.0	8.10	mg/kg	02.24.18 20:49		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	15.0	8.10	mg/kg	02.24.18 20:49	U	1
Total TPH	PHC635	**111**		7.98	mg/kg	02.24.18 20:49		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	109	70 - 135	%		
o-Terphenyl	109	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042346 Date Prep: 02.27.18 09.30

Prep seq: 7639907

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	02.27.18 10:34	U	1
Toluene	108-88-3	**0.000651**	0.00200	0.000457	mg/kg	02.27.18 10:34	J	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	02.27.18 10:34	U	1
m_p-Xylenes	179601-23-1	**0.00222**	0.00401	0.00102	mg/kg	02.27.18 10:34	J	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	02.27.18 10:34	U	1
Xylenes, Total	1330-20-7	**0.00222**		0.000345	mg/kg	02.27.18 10:34		
Total BTEX		**0.002871**		0.000345	mg/kg	02.27.18 10:34		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	78	70 - 130	%		
4-Bromofluorobenzene	97	70 - 130	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 ESW 1** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-008 Date Collected: 02.21.18 09.35 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	02.24.18 21:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	02.24.18 21:15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	02.24.18 21:15	U	1
Total TPH	PHC635	<8		8	mg/kg	02.24.18 21:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	108	70 - 135	%		
o-Terphenyl	105	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	02.25.18 11:27	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	02.25.18 11:27	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	02.25.18 11:27	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	02.25.18 11:27	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	02.25.18 11:27	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	02.25.18 11:27	U	
Total BTEX		<0.000347		0.000347	mg/kg	02.25.18 11:27	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	114	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 ESW 2** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-009 Date Collected: 02.21.18 09.40 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.98	15.0	7.98	mg/kg	02.24.18 21:42	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	15.0	8.10	mg/kg	02.24.18 21:42	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	15.0	8.10	mg/kg	02.24.18 21:42	U	1
Total TPH	PHC635	<7.98		7.98	mg/kg	02.24.18 21:42	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	90	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	02.25.18 11:08	UX	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	02.25.18 11:08	UX	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	02.25.18 11:08	UX	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	02.25.18 11:08	UX	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	02.25.18 11:08	UX	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	02.25.18 11:08	U	
Total BTEX		<0.000344		0.000344	mg/kg	02.25.18 11:08	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	110	80 - 120	%		

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577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 ESW 3** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-010 Date Collected: 02.21.18 09.45 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	02.24.18 22:08	U	1
Diesel Range Organics (DRO)	C10C28DRO	**48.5**	15.0	8.11	mg/kg	02.24.18 22:08		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**11.2**	15.0	8.11	mg/kg	02.24.18 22:08	J	1
Total TPH	PHC635	**59.7**		7.99	mg/kg	02.24.18 22:08		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	96	70 - 135	%		
o-Terphenyl	96	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	02.25.18 11:46	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	02.25.18 11:46	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	02.25.18 11:46	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	02.25.18 11:46	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	02.25.18 11:46	U	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	02.25.18 11:46	U	
Total BTEX		<0.000345		0.000345	mg/kg	02.25.18 11:46	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	87	80 - 120	%		
4-Bromofluorobenzene	116	80 - 120	%		

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577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 ESW 4** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-011 Date Collected: 02.21.18 09.50 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.97	14.9	7.97	mg/kg	02.24.18 23:28	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.10	14.9	8.10	mg/kg	02.24.18 23:28	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	14.9	8.10	mg/kg	02.24.18 23:28	U	1
Total TPH	PHC635	<7.97		7.97	mg/kg	02.24.18 23:28	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	91	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.25.18 12:05	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	02.25.18 12:05	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	02.25.18 12:05	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	02.25.18 12:05	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	02.25.18 12:05	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	02.25.18 12:05	U	
Total BTEX		<0.000342		0.000342	mg/kg	02.25.18 12:05	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	118	80 - 120	%		

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577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 ESW 5** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-012 Date Collected: 02.21.18 09.55 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	02.24.18 23:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	**87.3**	15.0	8.12	mg/kg	02.24.18 23:56		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**13.7**	15.0	8.12	mg/kg	02.24.18 23:56	J	1
Total TPH	PHC635	**101**		7.99	mg/kg	02.24.18 23:56		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	94	70 - 135	%		
o-Terphenyl	96	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000381	0.00198	0.000381	mg/kg	02.25.18 12:24	U	1
Toluene	108-88-3	<0.000451	0.00198	0.000451	mg/kg	02.25.18 12:24	U	1
Ethylbenzene	100-41-4	<0.000559	0.00198	0.000559	mg/kg	02.25.18 12:24	U	1
m_p-Xylenes	179601-23-1	<0.00100	0.00396	0.00100	mg/kg	02.25.18 12:24	U	1
o-Xylene	95-47-6	<0.000341	0.00198	0.000341	mg/kg	02.25.18 12:24	U	1
Xylenes, Total	1330-20-7	<0.000341		0.000341	mg/kg	02.25.18 12:24	U	
Total BTEX		<0.000341		0.000341	mg/kg	02.25.18 12:24	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	80	80 - 120	%		
4-Bromofluorobenzene	108	80 - 120	%		

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577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 SSW 1** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-013 Date Collected: 02.21.18 10.00 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**17.1**	15.0	7.99	mg/kg	02.25.18 00:22		1
Diesel Range Organics (DRO)	C10C28DRO	**468**	15.0	8.12	mg/kg	02.25.18 00:22		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**33.7**	15.0	8.12	mg/kg	02.25.18 00:22		1
Total TPH	PHC635	**518.8**		7.99	mg/kg	02.25.18 00:22		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	97	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	02.25.18 12:44	U	1
Toluene	108-88-3	**0.000802**	0.00200	0.000457	mg/kg	02.25.18 12:44	J	1
Ethylbenzene	100-41-4	**0.00143**	0.00200	0.000566	mg/kg	02.25.18 12:44	J	1
m_p-Xylenes	179601-23-1	**0.00647**	0.00401	0.00102	mg/kg	02.25.18 12:44		1
o-Xylene	95-47-6	**0.00346**	0.00200	0.000345	mg/kg	02.25.18 12:44		1
Xylenes, Total	1330-20-7	**0.00993**		0.000345	mg/kg	02.25.18 12:44		
Total BTEX		**0.012162**		0.000345	mg/kg	02.25.18 12:44		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	80 - 120	%		
4-Bromofluorobenzene	98	80 - 120	%		

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577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 SSW 2** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-014 Date Collected: 02.21.18 10.05 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**9.24**	15.0	7.98	mg/kg	02.25.18 00:48	J	1
Diesel Range Organics (DRO)	C10C28DRO	**9.36**	15.0	8.10	mg/kg	02.25.18 00:48	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	15.0	8.10	mg/kg	02.25.18 00:48	U	1
Total TPH	PHC635	**18.6**		7.98	mg/kg	02.25.18 00:48		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	106	70 - 135	%		
o-Terphenyl	100	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000387	0.00201	0.000387	mg/kg	02.25.18 13:03	U	1
Toluene	108-88-3	<0.000458	0.00201	0.000458	mg/kg	02.25.18 13:03	U	1
Ethylbenzene	100-41-4	<0.000568	0.00201	0.000568	mg/kg	02.25.18 13:03	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	02.25.18 13:03	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	02.25.18 13:03	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	02.25.18 13:03	U	
Total BTEX		<0.000346		0.000346	mg/kg	02.25.18 13:03	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	80 - 120	%		
4-Bromofluorobenzene	96	80 - 120	%		

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577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 SSW 3** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-015 Date Collected: 02.21.18 10.10 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**63.3**	15.0	7.98	mg/kg	02.25.18 01:15		1
Diesel Range Organics (DRO)	C10C28DRO	**2670**	15.0	8.10	mg/kg	02.25.18 01:15		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**93.8**	15.0	8.10	mg/kg	02.25.18 01:15		1
Total TPH	PHC635	**2827.1**		7.98	mg/kg	02.25.18 01:15		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	103	70 - 135	%		
o-Terphenyl	129	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000389	0.00202	0.000389	mg/kg	02.25.18 13:22	U	1
Toluene	108-88-3	**0.00458**	0.00202	0.000460	mg/kg	02.25.18 13:22		1
Ethylbenzene	100-41-4	**0.00872**	0.00202	0.000570	mg/kg	02.25.18 13:22		1
m_p-Xylenes	179601-23-1	**0.0318**	0.00404	0.00102	mg/kg	02.25.18 13:22		1
o-Xylene	95-47-6	**0.0164**	0.00202	0.000348	mg/kg	02.25.18 13:22		1
Xylenes, Total	1330-20-7	**0.0482**		0.000348	mg/kg	02.25.18 13:22		
Total BTEX		**0.0615**		0.000348	mg/kg	02.25.18 13:22		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	80 - 120	%		
4-Bromofluorobenzene	119	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id:	**SP-1 WSW 1**	Matrix:	Soil	Sample Depth:	6 In
Lab Sample Id:	577385-016	Date Collected:	02.21.18 10.15	Date Received:	02.23.18 14.30
Analytical Method:	TPH by SW8015 Mod			Prep Method:	1005
Analyst:	ARM	% Moist:		Tech:	ARM
Seq Number:	3042064	Date Prep:	02.24.18 12.00		
		Prep seq:	7639739		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	02.25.18 01:43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.12	15.0	8.12	mg/kg	02.25.18 01:43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.12	15.0	8.12	mg/kg	02.25.18 01:43	U	1
Total TPH	PHC635	<7.99		7.99	mg/kg	02.25.18 01:43	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	89	70 - 135	%		
o-Terphenyl	86	70 - 135	%		

Analytical Method:	BTEX by EPA 8021			Prep Method:	5030B
Analyst:	ALJ	% Moist:		Tech:	ALJ
Seq Number:	3042198	Date Prep:	02.24.18 10.30		
		Prep seq:	7639790		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.25.18 13:41	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	02.25.18 13:41	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	02.25.18 13:41	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	02.25.18 13:41	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	02.25.18 13:41	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	02.25.18 13:41	U	
Total BTEX		<0.000342		0.000342	mg/kg	02.25.18 13:41	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	80 - 120	%		
4-Bromofluorobenzene	110	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 WSW 2** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-017 Date Collected: 02.21.18 10.20 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**8.97**	15.0	7.99	mg/kg	02.25.18 02:10	J	1
Diesel Range Organics (DRO)	C10C28DRO	<8.11	15.0	8.11	mg/kg	02.25.18 02:10	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.11	15.0	8.11	mg/kg	02.25.18 02:10	U	1
Total TPH	PHC635	**8.97**		7.99	mg/kg	02.25.18 02:10	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	107	70 - 135	%		
o-Terphenyl	103	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	02.25.18 14:00	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	02.25.18 14:00	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	02.25.18 14:00	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	02.25.18 14:00	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	02.25.18 14:00	U	1
Xylenes, Total	1330-20-7	<0.000347		0.000347	mg/kg	02.25.18 14:00	U	
Total BTEX		<0.000347		0.000347	mg/kg	02.25.18 14:00	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	80 - 120	%		
4-Bromofluorobenzene	110	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 WSW 3** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-018 Date Collected: 02.21.18 10.25 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	02.25.18 02:36	U	1
Diesel Range Organics (DRO)	C10C28DRO	**9.20**	15.0	8.13	mg/kg	02.25.18 02:36	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	02.25.18 02:36	U	1
Total TPH	PHC635	**9.2**		8	mg/kg	02.25.18 02:36	J	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	95	70 - 135	%		
o-Terphenyl	97	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000384	0.00200	0.000384	mg/kg	02.25.18 14:55	U	1
Toluene	108-88-3	<0.000455	0.00200	0.000455	mg/kg	02.25.18 14:55	U	1
Ethylbenzene	100-41-4	<0.000564	0.00200	0.000564	mg/kg	02.25.18 14:55	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00399	0.00101	mg/kg	02.25.18 14:55	U	1
o-Xylene	95-47-6	<0.000344	0.00200	0.000344	mg/kg	02.25.18 14:55	U	1
Xylenes, Total	1330-20-7	<0.000344		0.000344	mg/kg	02.25.18 14:55	U	
Total BTEX		<0.000344		0.000344	mg/kg	02.25.18 14:55	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	112	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 WSW 4** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-019 Date Collected: 02.21.18 10.30 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**8.65**	15.0	7.98	mg/kg	02.25.18 03:03	J	1
Diesel Range Organics (DRO)	C10C28DRO	**9.97**	15.0	8.10	mg/kg	02.25.18 03:03	J	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.10	15.0	8.10	mg/kg	02.25.18 03:03	U	1
Total TPH	PHC635	**18.62**		7.98	mg/kg	02.25.18 03:03		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	70 - 135	%		
o-Terphenyl	113	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	02.25.18 15:14	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	02.25.18 15:14	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	02.25.18 15:14	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	02.25.18 15:14	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	02.25.18 15:14	U	1
Xylenes, Total	1330-20-7	<0.000342		0.000342	mg/kg	02.25.18 15:14	U	
Total BTEX		<0.000342		0.000342	mg/kg	02.25.18 15:14	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	80 - 120	%		
4-Bromofluorobenzene	111	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **SP-1 WSW 5** Matrix: Soil Sample Depth: 6 In

Lab Sample Id: 577385-020 Date Collected: 02.21.18 10.35 Date Received: 02.23.18 14.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	**9.59**	15.0	7.98	mg/kg	02.25.18 03:31	J	1
Diesel Range Organics (DRO)	C10C28DRO	**200**	15.0	8.10	mg/kg	02.25.18 03:31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**18.8**	15.0	8.10	mg/kg	02.25.18 03:31		1
Total TPH	PHC635	**228.39**		7.98	mg/kg	02.25.18 03:31		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	112	70 - 135	%		
o-Terphenyl	117	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00201	0.000386	mg/kg	02.25.18 15:33	U	1
Toluene	108-88-3	<0.000457	0.00201	0.000457	mg/kg	02.25.18 15:33	U	1
Ethylbenzene	100-41-4	<0.000567	0.00201	0.000567	mg/kg	02.25.18 15:33	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00402	0.00102	mg/kg	02.25.18 15:33	U	1
o-Xylene	95-47-6	<0.000346	0.00201	0.000346	mg/kg	02.25.18 15:33	U	1
Xylenes, Total	1330-20-7	<0.000346		0.000346	mg/kg	02.25.18 15:33	U	
Total BTEX		<0.000346		0.000346	mg/kg	02.25.18 15:33	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	80 - 120	%		
4-Bromofluorobenzene	102	80 - 120	%		

Certificate of Analytical Results
577385

TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **7639739-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7639739-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3042064 Date Prep: 02.24.18 12.00

Prep seq: 7639739

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	02.24.18 15:52	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	02.24.18 15:52	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	02.24.18 15:52	U	1
Total TPH	PHC635	<8		8	mg/kg	02.24.18 15:52	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	102	70 - 135	%		
o-Terphenyl	107	70 - 135	%		

Sample Id: **7639790-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7639790-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042198 Date Prep: 02.24.18 10.30

Prep seq: 7639790

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000388	0.00202	0.000388	mg/kg	02.25.18 10:49	U	1
Toluene	108-88-3	<0.000459	0.00202	0.000459	mg/kg	02.25.18 10:49	U	1
Ethylbenzene	100-41-4	<0.000569	0.00202	0.000569	mg/kg	02.25.18 10:49	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00403	0.00102	mg/kg	02.25.18 10:49	U	1
o-Xylene	95-47-6	<0.000347	0.00202	0.000347	mg/kg	02.25.18 10:49	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	81	80 - 120	%		
4-Bromofluorobenzene	104	80 - 120	%		

Certificate of Analytical Results
577385
TRC Solutions, Inc, Midland, TX
COG Boone 16 Tank Battery

Sample Id: **7639837-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7639837-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042224 Date Prep: 02.24.18 11.00

Prep seq: 7639837

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	02.24.18 20:31	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	02.24.18 20:31	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	02.24.18 20:31	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	02.24.18 20:31	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	02.24.18 20:31	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	84	70 - 130	%		
4-Bromofluorobenzene	100	70 - 130	%		

Sample Id: **7639907-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7639907-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3042346 Date Prep: 02.27.18 09.30

Prep seq: 7639907

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	02.27.18 09:36	U	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	02.27.18 09:36	U	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	02.27.18 09:36	U	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	02.27.18 09:36	U	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	02.27.18 09:36	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	86	70 - 130	%		
4-Bromofluorobenzene	95	70 - 130	%		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: COG Boone 16 Tank Battery

Work Orders : 577385,

Project ID:

Lab Batch #: 3042198 **Sample:** 7639790-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/25/18 08:54

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0355	0.0300	118	80-120	

Lab Batch #: 3042198 **Sample:** 7639790-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/25/18 09:13

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0336	0.0300	112	80-120	

Lab Batch #: 3042198 **Sample:** 577385-009 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/18 09:32

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 3042198 **Sample:** 577385-009 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/25/18 09:52

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY 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	0.0358	0.0300	119	80-120	

Lab Batch #: 3042198 **Sample:** 7639790-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/25/18 10:49

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	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: COG Boone 16 Tank Battery

Work Orders : 577385,

Project ID:

Lab Batch #: 3042224 **Sample:** 7639837-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/24/18 18:58

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	70-130	
4-Bromofluorobenzene	0.0360	0.0300	120	70-130	

Lab Batch #: 3042224 **Sample:** 7639837-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/24/18 19:16

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3042224 **Sample:** 577383-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/24/18 19:35

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

Lab Batch #: 3042224 **Sample:** 577383-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/24/18 19:53

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	70-130	
4-Bromofluorobenzene	0.0353	0.0300	118	70-130	

Lab Batch #: 3042224 **Sample:** 7639837-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/24/18 20:31

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	70-130	
4-Bromofluorobenzene	0.0300	0.0300	100	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16 Tank Battery

Work Orders : 577385,

Project ID:

Lab Batch #: 3042346 **Sample:** 7639907-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/27/18 07:08

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	70-130	
4-Bromofluorobenzene	0.0323	0.0300	108	70-130	

Lab Batch #: 3042346 **Sample:** 7639907-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/27/18 07:28

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0268	0.0300	89	70-130	
4-Bromofluorobenzene	0.0333	0.0300	111	70-130	

Lab Batch #: 3042346 **Sample:** 577420-010 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/27/18 07:47

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0271	0.0300	90	70-130	
4-Bromofluorobenzene	0.0343	0.0300	114	70-130	

Lab Batch #: 3042346 **Sample:** 7639907-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/27/18 09:36

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0258	0.0300	86	70-130	
4-Bromofluorobenzene	0.0284	0.0300	95	70-130	

Lab Batch #: 3042346 **Sample:** 577420-010 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/28/18 10:51

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	70-130	
4-Bromofluorobenzene	0.0328	0.0300	109	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16 Tank Battery

Work Orders : 577385,

Project ID:

Lab Batch #: 3042064 **Sample:** 7639739-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/24/18 15:52

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	53.4	50.0	107	70-135	

Lab Batch #: 3042064 **Sample:** 7639739-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/24/18 16:18

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	54.0	50.0	108	70-135	

Lab Batch #: 3042064 **Sample:** 7639739-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/24/18 16:45

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	52.7	50.0	105	70-135	

Lab Batch #: 3042064 **Sample:** 577385-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/24/18 17:39

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 3042064 **Sample:** 577385-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/24/18 18:06

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	53.8	49.9	108	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: COG Boone 16 Tank Battery

Work Order #: 577385 **Project ID:**

Analyst: ALJ **Date Prepared:** 02/24/2018 **Date Analyzed:** 02/25/2018

Lab Batch ID: 3042198 **Sample:** 7639790-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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	<0.000383	0.0994	0.0760	76	0.0998	0.0709	71	7	70-130	35	
Toluene	<0.000453	0.0994	0.0804	81	0.0998	0.0760	76	6	70-130	35	
Ethylbenzene	<0.000561	0.0994	0.0944	95	0.0998	0.0881	88	7	71-129	35	
m_p-Xylenes	<0.00101	0.199	0.186	93	0.200	0.173	87	7	70-135	35	
o-Xylene	<0.000342	0.0994	0.0957	96	0.0998	0.0890	89	7	71-133	35	

Analyst: ALJ **Date Prepared:** 02/24/2018 **Date Analyzed:** 02/24/2018

Lab Batch ID: 3042224 **Sample:** 7639837-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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	<0.000384	0.0998	0.0805	81	0.100	0.0762	76	5	70-130	35	
Toluene	<0.000455	0.0998	0.0851	85	0.100	0.0770	77	10	70-130	35	
Ethylbenzene	<0.000564	0.0998	0.0899	90	0.100	0.0820	82	9	70-130	35	
m_p-Xylenes	<0.00101	0.200	0.174	87	0.201	0.160	80	8	70-130	35	
o-Xylene	<0.000344	0.0998	0.0902	90	0.100	0.0835	84	8	70-130	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: COG Boone 16 Tank Battery

Work Order #: 577385 **Project ID:**

Analyst: ALJ **Date Prepared:** 02/27/2018 **Date Analyzed:** 02/27/2018

Lab Batch ID: 3042346 **Sample:** 7639907-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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	<0.000383	0.0996	0.0899	90	0.0994	0.0887	89	1	70-130	35	
Toluene	<0.000454	0.0996	0.0945	95	0.0994	0.0941	95	0	70-130	35	
Ethylbenzene	<0.000563	0.0996	0.107	107	0.0994	0.107	108	0	70-130	35	
m_p-Xylenes	<0.00101	0.199	0.213	107	0.199	0.213	107	0	70-130	35	
o-Xylene	<0.000343	0.0996	0.104	104	0.0994	0.104	105	0	70-130	35	

Analyst: ARM **Date Prepared:** 02/24/2018 **Date Analyzed:** 02/24/2018

Lab Batch ID: 3042064 **Sample:** 7639739-1-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
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	891	89	1000	892	89	0	70-135	35	
Diesel Range Organics (DRO)	<8.13	1000	921	92	1000	921	92	0	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 / MSD Recoveries

Project Name: COG Boone 16 Tank Battery

Work Order # : 577385 **Project ID:**

Lab Batch ID: 3042198 **QC- Sample ID:** 577385-009 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/25/2018 **Date Prepared:** 02/24/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000384	0.0998	0.0517	52	0.100	0.0364	36	35	70-130	35	X
Toluene	<0.000455	0.0998	0.0571	57	0.100	0.0410	41	33	70-130	35	X
Ethylbenzene	<0.000564	0.0998	0.0652	65	0.100	0.0495	50	27	71-129	35	X
m_p-Xylenes	<0.00101	0.200	0.128	64	0.200	0.0952	48	29	70-135	35	X
o-Xylene	<0.000344	0.0998	0.0672	67	0.100	0.0532	53	23	71-133	35	X

Lab Batch ID: 3042224 **QC- Sample ID:** 577383-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/24/2018 **Date Prepared:** 02/24/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000382	0.0992	0.0590	59	0.0998	0.0584	59	1	70-130	35	X
Toluene	0.000994	0.0992	0.0583	58	0.0998	0.0465	46	23	70-130	35	X
Ethylbenzene	0.000582	0.0992	0.0528	53	0.0998	0.0459	45	14	70-130	35	X
m_p-Xylenes	0.00427	0.198	0.103	50	0.200	0.0944	45	9	70-130	35	X
o-Xylene	0.00175	0.0992	0.0532	52	0.0998	0.0488	47	9	70-130	35	X

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: COG Boone 16 Tank Battery

Work Order # : 577385 **Project ID:**

Lab Batch ID: 3042346 **QC- Sample ID:** 577420-010 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/27/2018 **Date Prepared:** 02/27/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.0839	84	0.0998	0.0602	60	33	70-130	35	X
Toluene	<0.000454	0.0996	0.0875	88	0.0998	0.0402	40	74	70-130	35	XF
Ethylbenzene	<0.000563	0.0996	0.0987	99	0.0998	0.0647	65	42	70-130	35	XF
m_p-Xylenes	<0.00101	0.199	0.194	97	0.200	0.127	64	42	70-130	35	XF
o-Xylene	<0.000343	0.0996	0.0959	96	0.0998	0.0628	63	42	70-130	35	XF

Lab Batch ID: 3042064 **QC- Sample ID:** 577385-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/24/2018 **Date Prepared:** 02/24/2018 **Analyst:** ARM

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
Gasoline Range Hydrocarbons (GRO)	<7.99	999	856	86	998	949	95	10	70-135	35	
Diesel Range Organics (DRO)	12.2	999	951	94	998	1040	103	9	70-135	35	

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

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Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Quote #
Xenco Job # 577385

Client / Reporting Information

Company Name / Branch: TRC Environmental
Company Address:
Email: jlowry@trcsolutions.com
Phone No:
Project Contact: Joel Lowry
Samplers's Name Zach Conder

Project Information

Project Name/Number: COG Boone 16 Tank Battery
Project Location: Lea County, NM
Invoice To: Plains Pipeline, LP C/O Camille Bryant
Invoice: SRS No.

Matrix Codes

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

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	Analytical Information: TPH 8015M	BTEX 8021B	Field Comments
1	SP-1 FL 1	1'	2/21/2018	9:00	S	1									X	X	
2	SP-1 FL 2	1'	2/21/2018	9:05	S	1									X	X	
3	SP-1 FL 3	1'	2/21/2018	9:10	S	1									X	X	
4	SP-1 FL 4	1'	2/21/2018	9:15	S	1									X	X	
5	SP-1 FL 5	1'	2/21/2018	9:20	S	1									X	X	
6	SP-1 FL 6	1'	2/21/2018	9:25	S	1									X	X	
7	SP-1 NSW	6"	2/21/2018	9:30	S	1									X	X	
8	SP-1 ESW 1	6"	2/21/2018	9:35	S	1									X	X	
9	SP-1 ESW 2	6"	2/21/2018	9:40	S	1									X	X	
10	SP-1 ESW 3	6"	2/21/2018	9:45	S	1									X	X	
11	SP-1 ESW 4	6"	2/21/2018	9:50	S	1									X	X	
12	SP-1 ESW 5	6"	2/21/2018	9:55	S	1									X	X	
13	SP-1 SSW 1	6"	2/21/2018	10;00	S	1									X	X	
14	SP-1 SSW 2	6"	2/21/2018	10:05	S	1									X	X	
15	SP-1 SSW 3	6"	2/21/2018	10:10	S	1									X	X	
16	SP-1 WSW 1	6"	2/21/2018	10:15	S	1									X	X	
17	SP-1 WSW 2	6"	2/21/2018	10:20	S	1									X	X	
18	SP-1 WSW 3	6"	2/21/2018	10;25	S	1									X	X	
19	SP-1 WSW 4	6"	2/21/2018	10;30	S	1									X	X	
20	SP-1 WSW 5	6"	2/21/2018	10:35	S	1									X	X	

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 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:

cjbryant@paalp.com
agroves@paalp.com
jlowry@trcsolutions.com
zconder@trcsolutions.com

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	Zach Conder	2-22 4:17		UPS	2/23/18 1430	
2	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
3						
4	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Therm
5						

Temp: 4.8 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4.6

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 02/23/2018 02:30:00 PM

Work Order #: 577385

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

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	4.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**Yes**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**No**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Katie Lowe Date: 02/23/2018

Checklist reviewed by: Kelsey Brooks Date: 02/27/2018

Analytical Report 577773

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16

07-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

07-MAR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **577773**
COG Boone 16
Project Address: Lea County, NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 577773. 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. 577773 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 577773

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HD FL 1	S	02-26-18 08:30	1 ft	577773-001
HD FL 2	S	02-26-18 08:35	1 ft	577773-002
HD FL 3	S	02-26-18 08:40	1 ft	577773-003
HD FL 4	S	02-26-18 08:45	1 ft	577773-004
HD FL 5	S	02-26-18 08:50	1 ft	577773-005
HD ESW 1	S	02-26-18 08:55	6 In	577773-006
HD ESW 2	S	02-26-18 09:00	6 In	577773-007
HD WSW 1	S	02-26-18 09:05	6 In	577773-008
HD WSW 2	S	02-26-18 09:10	6 In	577773-009
HD SSW 1	S	02-26-18 09:15	6 In	577773-010
HD SSW 2	S	02-26-18 09:20	1.5	577773-011
HD SSW 3	S	02-26-18 09:25	6 In	577773-012

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3042716 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 577773

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16

Project Id:
Contact: Joel Lowry
Project Location: Lea County, NM

Date Received in Lab: Wed Feb-28-18 02:30 pm
Report Date: 07-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested	*Lab Id:*	577773-001		577773-002		577773-003		577773-004		577773-005		577773-006	
	Field Id:	HD FL 1		HD FL 2		HD FL 3		HD FL 4		HD FL 5		HD ESW 1	
	Depth:	1- ft		1- ft		1- ft		1- ft		1- ft		6- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-26-18 08:30		Feb-26-18 08:35		Feb-26-18 08:40		Feb-26-18 08:45		Feb-26-18 08:50		Feb-26-18 08:55	
BTEX by EPA 8021B	*Extracted:*	Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30	
	Analyzed:	Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201
Toluene		<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201
Ethylbenzene		<0.00202	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201
m_p-Xylenes		0.00729	0.00403	<0.00399	0.00399	<0.00398	0.00398	<0.00401	0.00401	<0.00397	0.00397	<0.00402	0.00402
o-Xylene		0.00709	0.00202	<0.00200	0.00200	<0.00199	0.00199	<0.00200	0.00200	<0.00198	0.00198	<0.00201	0.00201
Xylenes, Total		0.01438	0.00202	<0.002	0.002	<0.00199	0.00199	<0.002	0.002	<0.00198	0.00198	<0.00201	0.00201
Total BTEX		0.01438	0.00202	<0.002	0.002	<0.00199	0.00199	<0.002	0.002	<0.00198	0.00198	<0.00201	0.00201
TPH by SW8015 Mod	*Extracted:*	Mar-03-18 12:00		Mar-03-18 12:00		Mar-03-18 12:00		Mar-03-18 12:00		Mar-03-18 12:00		Mar-03-18 12:00	
	Analyzed:	Mar-04-18 06:30		Mar-04-18 07:47		Mar-04-18 18:07		Mar-04-18 08:38		Mar-04-18 09:06		Mar-04-18 09:32	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		21.6	15.0	<15.0	15.0	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		562	15.0	26.5	15.0	3840	14.9	188	15.0	189	15.0	36.8	15.0
Oil Range Hydrocarbons (ORO)		18.4	15.0	<15.0	15.0	55.7	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		602	15	26.5	15	3895.7	14.9	188	15	189	15	36.8	15

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 577773

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16

Project Id:
Contact: Joel Lowry
Project Location: Lea County, NM

Date Received in Lab: Wed Feb-28-18 02:30 pm
Report Date: 07-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested	*Lab Id:*	577773-007		577773-008		577773-009		577773-010		577773-011		577773-012	
	Field Id:	HD ESW 2		HD WSW 1		HD WSW 2		HD SSW 1		HD SSW 2		HD SSW 3	
	Depth:	6- In		6- In		6- In		6- In		1.5-		6- In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-26-18 09:00		Feb-26-18 09:05		Feb-26-18 09:10		Feb-26-18 09:15		Feb-26-18 09:20		Feb-26-18 09:25	
BTEX by EPA 8021B	*Extracted:*	Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30		Mar-03-18 08:30	
	Analyzed:	Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11		Mar-05-18 10:11	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Toluene		<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Ethylbenzene		<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
m_p-Xylenes		<0.00404	0.00404	<0.00402	0.00402	<0.00398	0.00398	<0.00399	0.00399	<0.00401	0.00401	<0.00404	0.00404
o-Xylene		<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.00200	0.00200	<0.00200	0.00200	<0.00202	0.00202
Xylenes, Total		<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.002	0.002	<0.002	0.002	<0.00202	0.00202
Total BTEX		<0.00202	0.00202	<0.00201	0.00201	<0.00199	0.00199	<0.002	0.002	<0.002	0.002	<0.00202	0.00202
TPH by SW8015 Mod	*Extracted:*	Mar-03-18 12:00		Mar-03-18 12:00		Mar-03-18 12:00		Mar-03-18 12:00		Mar-05-18 07:00		Mar-05-18 07:00	
	Analyzed:	Mar-04-18 09:58		Mar-04-18 10:23		Mar-04-18 10:50		Mar-04-18 11:16		Mar-05-18 09:57		Mar-05-18 11:13	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<14.9	14.9	<14.9	14.9	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		44.7	14.9	119	14.9	886	15.0	199	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		<14.9	14.9	<14.9	14.9	46.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		44.7	14.9	119	14.9	932	15	199	15	<15	15	<15	15

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: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042788 **Sample:** 577773-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 06:30

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	53.5	49.9	107	70-135	

Lab Batch #: 3042788 **Sample:** 577773-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 07:47

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.9	103	70-135	
o-Terphenyl	50.5	50.0	101	70-135	

Lab Batch #: 3042788 **Sample:** 577773-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 08:38

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	99.7	96	70-135	
o-Terphenyl	49.9	49.9	100	70-135	

Lab Batch #: 3042788 **Sample:** 577773-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 09:06

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	99.7	97	70-135	
o-Terphenyl	50.1	49.9	100	70-135	

Lab Batch #: 3042788 **Sample:** 577773-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 09:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	99.9	94	70-135	
o-Terphenyl	46.6	50.0	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: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042788 **Sample:** 577773-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 09:58

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.6	100	70-135	
o-Terphenyl	48.5	49.8	97	70-135	

Lab Batch #: 3042788 **Sample:** 577773-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 10:23

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.6	105	70-135	
o-Terphenyl	52.0	49.8	104	70-135	

Lab Batch #: 3042788 **Sample:** 577773-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 10:50

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.8	102	70-135	
o-Terphenyl	57.6	49.9	115	70-135	

Lab Batch #: 3042788 **Sample:** 577773-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 11:16

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	99.8	100	70-135	
o-Terphenyl	51.5	49.9	103	70-135	

Lab Batch #: 3042788 **Sample:** 577773-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 18:07

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.6	106	70-135	
o-Terphenyl	47.4	49.8	95	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: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042902 **Sample:** 577773-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 09:57

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	49.1	49.9	98	70-135	

Lab Batch #: 3042716 **Sample:** 577773-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0231	0.0300	77	70-130	
4-Bromofluorobenzene	0.0347	0.0300	116	70-130	

Lab Batch #: 3042716 **Sample:** 577773-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0215	0.0300	72	70-130	
4-Bromofluorobenzene	0.0373	0.0300	124	70-130	

Lab Batch #: 3042716 **Sample:** 577773-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	70-130	
4-Bromofluorobenzene	0.0280	0.0300	93	70-130	

Lab Batch #: 3042716 **Sample:** 577773-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0210	0.0300	70	70-130	
4-Bromofluorobenzene	0.0375	0.0300	125	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042716 **Sample:** 577773-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0242	0.0300	81	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3042716 **Sample:** 577773-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0264	0.0300	88	70-130	
4-Bromofluorobenzene	0.0360	0.0300	120	70-130	

Lab Batch #: 3042716 **Sample:** 577773-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0218	0.0300	73	70-130	
4-Bromofluorobenzene	0.0330	0.0300	110	70-130	

Lab Batch #: 3042716 **Sample:** 577773-008 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	70-130	
4-Bromofluorobenzene	0.0250	0.0300	83	70-130	

Lab Batch #: 3042716 **Sample:** 577773-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0238	0.0300	79	70-130	
4-Bromofluorobenzene	0.0328	0.0300	109	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042716 **Sample:** 577773-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0238	0.0300	79	70-130	
4-Bromofluorobenzene	0.0350	0.0300	117	70-130	

Lab Batch #: 3042716 **Sample:** 577773-011 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0225	0.0300	75	70-130	
4-Bromofluorobenzene	0.0361	0.0300	120	70-130	

Lab Batch #: 3042716 **Sample:** 577773-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	70-130	
4-Bromofluorobenzene	0.0362	0.0300	121	70-130	

Lab Batch #: 3042902 **Sample:** 577773-012 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 11:13

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.7	100	70-135	
o-Terphenyl	48.4	49.9	97	70-135	

Lab Batch #: 3042788 **Sample:** 7640135-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/04/18 05:10

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	53.8	50.0	108	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: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042902 **Sample:** 7640248-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/05/18 08:40

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	100	99	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 3042716 **Sample:** 7640103-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0240	0.0300	80	70-130	
4-Bromofluorobenzene	0.0316	0.0300	105	70-130	

Lab Batch #: 3042788 **Sample:** 7640135-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/04/18 05:38

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	58.7	50.0	117	70-135	

Lab Batch #: 3042902 **Sample:** 7640248-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/05/18 09:05

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	61.0	50.0	122	70-135	

Lab Batch #: 3042716 **Sample:** 7640103-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0231	0.0300	77	70-130	
4-Bromofluorobenzene	0.0368	0.0300	123	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042788 **Sample:** 7640135-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/04/18 06:03

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	55.3	50.0	111	70-135	

Lab Batch #: 3042902 **Sample:** 7640248-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/05/18 09:32

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	56.7	50.0	113	70-135	

Lab Batch #: 3042716 **Sample:** 7640103-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

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	70-130	
4-Bromofluorobenzene	0.0362	0.0300	121	70-130	

Lab Batch #: 3042788 **Sample:** 577773-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 06:55

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	59.5	50.0	119	70-135	

Lab Batch #: 3042716 **Sample:** 577773-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0349	0.0300	116	70-130	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16

Work Orders : 577773,

Project ID:

Lab Batch #: 3042902 **Sample:** 577773-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:22

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.9	115	70-135	
o-Terphenyl	53.3	50.0	107	70-135	

Lab Batch #: 3042788 **Sample:** 577773-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/04/18 07:21

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	59.2	49.9	119	70-135	

Lab Batch #: 3042716 **Sample:** 577773-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:11

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	70-130	
4-Bromofluorobenzene	0.0378	0.0300	126	70-130	

Lab Batch #: 3042902 **Sample:** 577773-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/05/18 10:47

SURROGATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	99.8	118	70-135	
o-Terphenyl	55.2	49.9	111	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: COG Boone 16

Work Order #: 577773 **Project ID:**

Analyst: ALJ **Date Prepared:** 03/03/2018 **Date Analyzed:** 03/05/2018

Lab Batch ID: 3042716 **Sample:** 7640103-1-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	<0.00199	0.0996	0.0869	87	0.100	0.0836	84	4	70-130	35	
Toluene	<0.00199	0.0996	0.0837	84	0.100	0.0825	83	1	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0877	88	0.100	0.0865	87	1	70-130	35	
m_p-Xylenes	<0.00398	0.199	0.171	86	0.200	0.168	84	2	70-130	35	
o-Xylene	<0.00199	0.0996	0.0870	87	0.100	0.0856	86	2	70-130	35	

Analyst: ARM **Date Prepared:** 03/03/2018 **Date Analyzed:** 03/04/2018

Lab Batch ID: 3042788 **Sample:** 7640135-1-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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	998	100	1000	963	96	4	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1020	102	1000	976	98	4	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

BS / BSD Recoveries

Project Name: COG Boone 16

Work Order #: 577773 **Project ID:**

Analyst: ARM **Date Prepared:** 03/05/2018 **Date Analyzed:** 03/05/2018

Lab Batch ID: 3042902 **Sample:** 7640248-1-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
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1030	103	1000	1030	103	0	70-135	35	
Diesel Range Organics (DRO)	<15.0	1000	1060	106	1000	1050	105	1	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 / MSD Recoveries

Project Name: COG Boone 16

Work Order # : 577773 **Project ID:**

Lab Batch ID: 3042716 **QC- Sample ID:** 577773-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/05/2018 **Date Prepared:** 03/03/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00199	0.0994	0.115	116	0.0998	0.0861	86	29	70-130	35	
Toluene	<0.00199	0.0994	0.0759	76	0.0998	0.0840	84	10	70-130	35	
Ethylbenzene	<0.00199	0.0994	0.0843	85	0.0998	0.0877	88	4	70-130	35	
m_p-Xylenes	<0.00398	0.199	0.171	86	0.200	0.171	86	0	70-130	35	
o-Xylene	<0.00199	0.0994	0.0852	86	0.0998	0.0868	87	2	70-130	35	

Lab Batch ID: 3042788 **QC- Sample ID:** 577773-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/04/2018 **Date Prepared:** 03/03/2018 **Analyst:** ARM

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
Gasoline Range Hydrocarbons (GRO)	21.6	1000	1010	99	998	1020	100	1	70-135	35	
Diesel Range Organics (DRO)	562	1000	1610	105	998	1620	106	1	70-135	35	

Lab Batch ID: 3042902 **QC- Sample ID:** 577773-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/05/2018 **Date Prepared:** 03/05/2018 **Analyst:** ARM

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
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1010	101	998	1040	104	3	70-135	35	
Diesel Range Organics (DRO)	<15.0	999	1060	106	998	1100	110	4	70-135	35	

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES

Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Job # 577773

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com, zconder@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name: Zach Conder

Project Information

Project Name/Number: COG Boone 16
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	HD FL 1	1'	2/26/2018	8:30	S	1									X		X		
2	HD FL 2	1'	2/26/2018	8:35	S	1									X		X		
3	HD FL 3	3'	2/26/2018	8:40	S	1									X		X		
4	HD FL 4	1'	2/26/2018	8:45	S	1									X		X		
5	HD FL 5	1'	2/26/2018	8:50	S	1									X		X		
6	HD ESW 1	6"	2/26/2018	8:55	S	1									X		X		
7	HD ESW 2	6"	2/26/2018	9:00	S	1									X		X		
8	HD WSW 1	6"	2/26/2018	9:05	S	1									X		X		
9	HD WSW 2	6"	2/26/2018	9:10	S	1									X		X		
10	HD SSW 1	6"	2/26/2018	9:15	S	1									X		X		
11	HD SSW 2	1.5	2/26/2018	9:20	S	1									X		X		
12	HD SSW 3	6"	2/26/2018	9:25	S	1									X		X		

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 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:

jlowry@trcsolutions.com zconder@trcsolutions.com
CJBryant@paalp.com alqroves@paalp.com
kblackburn@trcsolutions.com

FED-EX / UPS: Tracking #

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

	Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1	Zach Conder	2/27 4:40	Brittany Cox	Brittany Cox	2/27 4:40	
2						14:30
3						
4						
5						
6				Custody Seal #	Preserved where applica	

Temp: 4.4 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4.2

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 02/28/2018 02:30:00 PM

Work Order #: 577773

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	4.2	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**No**	TPH received in bulk jars
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 02/28/2018

Checklist reviewed by: Kelsey Brooks Date: 03/02/2018

Certificate of Analysis Summary 578049

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16 Tank Battery

Project Id:
Contact: Joel Lowry
Project Location: Lea County NM

Date Received in Lab: Fri Mar-02-18 11:15 am
Report Date: 12-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	578049-001		578049-002		578049-003		578049-004		578049-005		578049-006	
	Field Id:	SP-2 FL @ 3'		SP-2 NSW		SP-2 NSW 2		SP-2 ESW		SP-2 WSW		SP-2 SSW 1	
	Depth:	3- ft		.5- ft		1.5- ft		1.5- ft		1.5- ft		1.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-27-18 11:00		Feb-27-18 11:05		Feb-27-18 11:10		Feb-27-18 11:15		Feb-27-18 11:20		Feb-27-18 11:25	
BTEX by EPA 8021	***Extracted:***	Mar-08-18 16:45		Mar-09-18 12:00		Mar-08-18 16:45		Mar-08-18 16:45		Mar-08-18 16:45		Mar-08-18 16:45	
	Analyzed:	Mar-09-18 10:55		Mar-10-18 00:05		Mar-09-18 10:55		Mar-09-18 10:55		Mar-09-18 10:55		Mar-12-18 09:20	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00201	0.00201	<0.0198	0.0198	<0.00200	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Toluene		<0.00201	0.00201	0.874	0.0198	0.00263	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Ethylbenzene		<0.00201	0.00201	0.633	0.0198	0.00224	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
m_p-Xylenes		<0.00402	0.00402	1.67	0.0397	0.00998	0.00399	<0.00402	0.00402	<0.00402	0.00402	<0.00398	0.00398
o-Xylene		<0.00201	0.00201	0.583	0.0198	0.00851	0.00200	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Xylenes, Total		<0.00201	0.00201	2.253	0.0198	0.01849	0.002	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
Total BTEX		<0.00201	0.00201	3.76	0.0198	0.02336	0.002	<0.00201	0.00201	<0.00201	0.00201	<0.00199	0.00199
TPH by SW8015 Mod	***Extracted:***	Mar-08-18 16:00		Mar-08-18 16:00		Mar-08-18 16:00		Mar-08-18 16:00		Mar-08-18 16:00		Mar-08-18 10:00	
	Analyzed:	Mar-09-18 05:02		Mar-09-18 06:20		Mar-09-18 06:45		Mar-09-18 07:12		Mar-09-18 07:39		Mar-09-18 01:31	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		<15.0	15.0	113	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		<15.0	15.0	2510	15.0	212	15.0	49.5	15.0	<15.0	15.0	63.1	15.0
Oil Range Hydrocarbons (ORO)		<15.0	15.0	67.1	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		<15	15	2690.1	15	212	15	49.5	15	<15	15	63.1	15

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 578049

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16 Tank Battery

Project Id:
Contact: Joel Lowry
Project Location: Lea County NM

Date Received in Lab: Fri Mar-02-18 11:15 am
Report Date: 12-MAR-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	578049-007		578049-008		578049-009		578049-010		578049-011		578049-012	
	Field Id:	SP-2 SSW 2		SP-3 FL @ 5'		SP-3 NSW		SP-3 ESW		SP-3 SSW		SP-3 WSW	
	Depth:	1.5- ft		5- ft		2.5- ft		2.5- ft		2.5- ft		2.5- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Feb-27-18 11:30		Feb-28-18 09:00		Feb-28-18 09:05		Feb-28-18 09:10		Feb-28-18 09:15		Feb-28-18 09:20	
BTEX by EPA 8021	***Extracted:***	Mar-09-18 12:00		Mar-09-18 12:00		Mar-09-18 12:00		Mar-09-18 12:00		Mar-08-18 16:45		Mar-08-18 16:45	
	Analyzed:	Mar-09-18 21:31		Mar-09-18 21:12		Mar-09-18 21:50		Mar-09-18 22:09		Mar-09-18 10:55		Mar-09-18 10:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		<0.00200	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Toluene		0.0368	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Ethylbenzene		0.0639	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
m_p-Xylenes		0.202	0.00400	<0.00402	0.00402	<0.00403	0.00403	<0.00398	0.00398	<0.00397	0.00397	<0.00403	0.00403
o-Xylene		0.0931	0.00200	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Xylenes, Total		0.2951	0.002	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
Total BTEX		0.3958	0.002	<0.00201	0.00201	<0.00202	0.00202	<0.00199	0.00199	<0.00198	0.00198	<0.00202	0.00202
TPH by SW8015 Mod	***Extracted:***	Mar-08-18 10:00		Mar-08-18 10:00		Mar-08-18 10:00		Mar-07-18 10:00		Mar-07-18 10:00		Mar-07-18 10:00	
	Analyzed:	Mar-09-18 01:58		Mar-09-18 02:24		Mar-09-18 02:51		Mar-08-18 00:43		Mar-08-18 01:08		Mar-08-18 01:35	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Gasoline Range Hydrocarbons (GRO)		83.4	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Diesel Range Organics (DRO)		887	15.0	747	15.0	50.1	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Oil Range Hydrocarbons (ORO)		28.2	15.0	24.5	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0	<15.0	15.0
Total TPH		998.6	15	771.5	15	50.1	15	<15	15	<15	15	<15	15

Kelsey Brooks
Project Manager

Analytical Report 578049

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16 Tank Battery

12-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

12-MAR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **578049**
COG Boone 16 Tank Battery
Project Address: Lea County NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 578049. 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. 578049 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-2 FL @ 3'	S	02-27-18 11:00	3 ft	578049-001
SP-2 NSW	S	02-27-18 11:05	.5 ft	578049-002
SP-2 NSW 2	S	02-27-18 11:10	1.5 ft	578049-003
SP-2 ESW	S	02-27-18 11:15	1.5 ft	578049-004
SP-2 WSW	S	02-27-18 11:20	1.5 ft	578049-005
SP-2 SSW 1	S	02-27-18 11:25	1.5 ft	578049-006
SP-2 SSW 2	S	02-27-18 11:30	1.5 ft	578049-007
SP-3 FL @ 5'	S	02-28-18 09:00	5 ft	578049-008
SP-3 NSW	S	02-28-18 09:05	2.5 ft	578049-009
SP-3 ESW	S	02-28-18 09:10	2.5 ft	578049-010
SP-3 SSW	S	02-28-18 09:15	2.5 ft	578049-011
SP-3 WSW	S	02-28-18 09:20	2.5 ft	578049-012

Client Name: TRC Solutions, Inc

Project Name: COG Boone 16 Tank Battery

Project ID:
Work Order Number(s): *578049*

Report Date: *12-MAR-18*
Date Received: *03/02/2018*

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3043201 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3043349 BTEX by EPA 8021
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-2 FL @ 3'**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-001	Date Collected:	02.27.18 11.00	Sample Depth:	3 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 16.00	Basis:	Wet Weight
Seq Number:	3043401				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 05.02	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.09.18 05.02	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.09.18 05.02	U	1
Total TPH	PHC635	<15	15	mg/kg	03.09.18 05.02	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.09.18 05.02	
o-Terphenyl	84-15-1	107	%	70-135	03.09.18 05.02	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.09.18 10.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	124	%	70-130	03.09.18 10.55	
1,4-Difluorobenzene	540-36-3	84	%	70-130	03.09.18 10.55	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-2 NSW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-002	Date Collected:	02.27.18 11.05	Sample Depth:	.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 16.00	Basis:	Wet Weight
Seq Number:	3043401				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**113**	15.0	mg/kg	03.09.18 06.20		1
Diesel Range Organics (DRO)	C10C28DRO	**2510**	15.0	mg/kg	03.09.18 06.20		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**67.1**	15.0	mg/kg	03.09.18 06.20		1
Total TPH	PHC635	**2690.1**	15	mg/kg	03.09.18 06.20		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	98	%	70-135	03.09.18 06.20	
o-Terphenyl	84-15-1	128	%	70-135	03.09.18 06.20	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.09.18 12.00	Basis:	Wet Weight
Seq Number:	3043349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.0198	0.0198	mg/kg	03.10.18 00.05	U	10
Toluene	108-88-3	**0.874**	0.0198	mg/kg	03.10.18 00.05		10
Ethylbenzene	100-41-4	**0.633**	0.0198	mg/kg	03.10.18 00.05		10
m_p-Xylenes	179601-23-1	**1.67**	0.0397	mg/kg	03.10.18 00.05		10
o-Xylene	95-47-6	**0.583**	0.0198	mg/kg	03.10.18 00.05		10
Xylenes, Total	1330-20-7	**2.253**	0.0198	mg/kg	03.10.18 00.05		10
Total BTEX		**3.76**	0.0198	mg/kg	03.10.18 00.05		10

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	76	%	70-130	03.10.18 00.05	
4-Bromofluorobenzene	460-00-4	85	%	70-130	03.10.18 00.05	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-2 NSW 2**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-003	Date Collected:	02.27.18 11.10	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 16.00	Basis:	Wet Weight
Seq Number:	3043401				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 06.45	U	1
Diesel Range Organics (DRO)	C10C28DRO	**212**	15.0	mg/kg	03.09.18 06.45		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.09.18 06.45	U	1
Total TPH	PHC635	**212**	15	mg/kg	03.09.18 06.45		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.09.18 06.45	
o-Terphenyl	84-15-1	100	%	70-135	03.09.18 06.45	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.09.18 10.55	U	1
Toluene	108-88-3	**0.00263**	0.00200	mg/kg	03.09.18 10.55		1
Ethylbenzene	100-41-4	**0.00224**	0.00200	mg/kg	03.09.18 10.55		1
m_p-Xylenes	179601-23-1	**0.00998**	0.00399	mg/kg	03.09.18 10.55		1
o-Xylene	95-47-6	**0.00851**	0.00200	mg/kg	03.09.18 10.55		1
Xylenes, Total	1330-20-7	**0.01849**	0.002	mg/kg	03.09.18 10.55		1
Total BTEX		**0.02336**	0.002	mg/kg	03.09.18 10.55		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	79	%	70-130	03.09.18 10.55	
4-Bromofluorobenzene	460-00-4	122	%	70-130	03.09.18 10.55	

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-2 ESW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-004	Date Collected:	02.27.18 11.15	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 16.00	Basis:	Wet Weight
Seq Number:	3043401				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 07.12	U	1
Diesel Range Organics (DRO)	C10C28DRO	**49.5**	15.0	mg/kg	03.09.18 07.12		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.09.18 07.12	U	1
Total TPH	PHC635	**49.5**	15	mg/kg	03.09.18 07.12		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	107	%	70-135	03.09.18 07.12	
o-Terphenyl	84-15-1	106	%	70-135	03.09.18 07.12	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.09.18 10.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	72	%	70-130	03.09.18 10.55	
4-Bromofluorobenzene	460-00-4	111	%	70-130	03.09.18 10.55	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-2 WSW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-005	Date Collected:	02.27.18 11.20	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 16.00	Basis:	Wet Weight
Seq Number:	3043401				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 07.39	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.09.18 07.39	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.09.18 07.39	U	1
Total TPH	PHC635	<15	15	mg/kg	03.09.18 07.39	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	105	%	70-135	03.09.18 07.39	
o-Terphenyl	84-15-1	100	%	70-135	03.09.18 07.39	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.09.18 10.55	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.09.18 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	116	%	70-130	03.09.18 10.55	
1,4-Difluorobenzene	540-36-3	74	%	70-130	03.09.18 10.55	

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COG Boone 16 Tank Battery

Sample Id:	**SP-2 SSW 1**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-006	Date Collected:	02.27.18 11.25	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 10.00	Basis:	Wet Weight
Seq Number:	3043255				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 01.31	U	1
Diesel Range Organics (DRO)	C10C28DRO	**63.1**	15.0	mg/kg	03.09.18 01.31		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.09.18 01.31	U	1
Total TPH	PHC635	**63.1**	15	mg/kg	03.09.18 01.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.09.18 01.31	
o-Terphenyl	84-15-1	111	%	70-135	03.09.18 01.31	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.12.18 09.20	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.12.18 09.20	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.12.18 09.20	U	1
m_p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.12.18 09.20	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.12.18 09.20	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	03.12.18 09.20	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.12.18 09.20	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	72	%	70-130	03.12.18 09.20	
4-Bromofluorobenzene	460-00-4	114	%	70-130	03.12.18 09.20	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-2 SSW 2**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-007	Date Collected:	02.27.18 11.30	Sample Depth:	1.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 10.00	Basis:	Wet Weight
Seq Number:	3043255				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	**83.4**	15.0	mg/kg	03.09.18 01.58		1
Diesel Range Organics (DRO)	C10C28DRO	**887**	15.0	mg/kg	03.09.18 01.58		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**28.2**	15.0	mg/kg	03.09.18 01.58		1
Total TPH	PHC635	**998.6**	15	mg/kg	03.09.18 01.58		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	115	%	70-135	03.09.18 01.58	
o-Terphenyl	84-15-1	118	%	70-135	03.09.18 01.58	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.09.18 12.00	Basis:	Wet Weight
Seq Number:	3043349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00200	0.00200	mg/kg	03.09.18 21.31	U	1
Toluene	108-88-3	**0.0368**	0.00200	mg/kg	03.09.18 21.31		1
Ethylbenzene	100-41-4	**0.0639**	0.00200	mg/kg	03.09.18 21.31		1
m_p-Xylenes	179601-23-1	**0.202**	0.00400	mg/kg	03.09.18 21.31		1
o-Xylene	95-47-6	**0.0931**	0.00200	mg/kg	03.09.18 21.31		1
Xylenes, Total	1330-20-7	**0.2951**	0.002	mg/kg	03.09.18 21.31		1
Total BTEX		**0.3958**	0.002	mg/kg	03.09.18 21.31		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	71	%	70-130	03.09.18 21.31	
4-Bromofluorobenzene	460-00-4	103	%	70-130	03.09.18 21.31	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-3 FL @ 5'**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-008	Date Collected:	02.28.18 09.00	Sample Depth:	5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 10.00	Basis:	Wet Weight
Seq Number:	3043255				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 02.24	U	1
Diesel Range Organics (DRO)	C10C28DRO	**747**	15.0	mg/kg	03.09.18 02.24		1
Oil Range Hydrocarbons (ORO)	PHCG2835	**24.5**	15.0	mg/kg	03.09.18 02.24		1
Total TPH	PHC635	**771.5**	15	mg/kg	03.09.18 02.24		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	106	%	70-135	03.09.18 02.24	
o-Terphenyl	84-15-1	121	%	70-135	03.09.18 02.24	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.09.18 12.00	Basis:	Wet Weight
Seq Number:	3043349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00201	0.00201	mg/kg	03.09.18 21.12	U	1
Toluene	108-88-3	<0.00201	0.00201	mg/kg	03.09.18 21.12	U	1
Ethylbenzene	100-41-4	<0.00201	0.00201	mg/kg	03.09.18 21.12	U	1
m_p-Xylenes	179601-23-1	<0.00402	0.00402	mg/kg	03.09.18 21.12	U	1
o-Xylene	95-47-6	<0.00201	0.00201	mg/kg	03.09.18 21.12	U	1
Xylenes, Total	1330-20-7	<0.00201	0.00201	mg/kg	03.09.18 21.12	U	1
Total BTEX		<0.00201	0.00201	mg/kg	03.09.18 21.12	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	110	%	70-130	03.09.18 21.12	
1,4-Difluorobenzene	540-36-3	88	%	70-130	03.09.18 21.12	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-3 NSW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-009	Date Collected:	02.28.18 09.05	Sample Depth:	2.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.08.18 10.00	Basis:	Wet Weight
Seq Number:	3043255				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.09.18 02.51	U	1
Diesel Range Organics (DRO)	C10C28DRO	**50.1**	15.0	mg/kg	03.09.18 02.51		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.09.18 02.51	U	1
Total TPH	PHC635	**50.1**	15	mg/kg	03.09.18 02.51		1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	108	%	70-135	03.09.18 02.51	
o-Terphenyl	84-15-1	109	%	70-135	03.09.18 02.51	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.09.18 12.00	Basis:	Wet Weight
Seq Number:	3043349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.09.18 21.50	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.09.18 21.50	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.09.18 21.50	U	1
m_p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.09.18 21.50	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.09.18 21.50	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	03.09.18 21.50	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.09.18 21.50	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	97	%	70-130	03.09.18 21.50	
1,4-Difluorobenzene	540-36-3	80	%	70-130	03.09.18 21.50	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-3 ESW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-010	Date Collected:	02.28.18 09.10	Sample Depth:	2.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.07.18 10.00	Basis:	Wet Weight
Seq Number:	3043121				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.08.18 00.43	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.08.18 00.43	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.08.18 00.43	U	1
Total TPH	PHC635	<15	15	mg/kg	03.08.18 00.43	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	97	%	70-135	03.08.18 00.43	
o-Terphenyl	84-15-1	93	%	70-135	03.08.18 00.43	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.09.18 12.00	Basis:	Wet Weight
Seq Number:	3043349				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00199	0.00199	mg/kg	03.09.18 22.09	U	1
Toluene	108-88-3	<0.00199	0.00199	mg/kg	03.09.18 22.09	U	1
Ethylbenzene	100-41-4	<0.00199	0.00199	mg/kg	03.09.18 22.09	U	1
m_p-Xylenes	179601-23-1	<0.00398	0.00398	mg/kg	03.09.18 22.09	U	1
o-Xylene	95-47-6	<0.00199	0.00199	mg/kg	03.09.18 22.09	U	1
Xylenes, Total	1330-20-7	<0.00199	0.00199	mg/kg	03.09.18 22.09	U	1
Total BTEX		<0.00199	0.00199	mg/kg	03.09.18 22.09	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	84	%	70-130	03.09.18 22.09	
4-Bromofluorobenzene	460-00-4	99	%	70-130	03.09.18 22.09	

Certificate of Analytical Results 578049

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-3 SSW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-011	Date Collected:	02.28.18 09.15	Sample Depth:	2.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.07.18 10.00	Basis:	Wet Weight
Seq Number:	3043121				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.08.18 01.08	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.08.18 01.08	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.08.18 01.08	U	1
Total TPH	PHC635	<15	15	mg/kg	03.08.18 01.08	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	103	%	70-135	03.08.18 01.08	
o-Terphenyl	84-15-1	103	%	70-135	03.08.18 01.08	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00198	0.00198	mg/kg	03.09.18 10.55	U	1
Toluene	108-88-3	<0.00198	0.00198	mg/kg	03.09.18 10.55	U	1
Ethylbenzene	100-41-4	<0.00198	0.00198	mg/kg	03.09.18 10.55	U	1
m_p-Xylenes	179601-23-1	<0.00397	0.00397	mg/kg	03.09.18 10.55	U	1
o-Xylene	95-47-6	<0.00198	0.00198	mg/kg	03.09.18 10.55	U	1
Xylenes, Total	1330-20-7	<0.00198	0.00198	mg/kg	03.09.18 10.55	U	1
Total BTEX		<0.00198	0.00198	mg/kg	03.09.18 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
4-Bromofluorobenzene	460-00-4	115	%	70-130	03.09.18 10.55	
1,4-Difluorobenzene	540-36-3	76	%	70-130	03.09.18 10.55	

TRC Solutions, Inc, Midland, TX

COG Boone 16 Tank Battery

Sample Id:	**SP-3 WSW**	Matrix:	Soil	Date Received:	03.02.18 11.15
Lab Sample Id:	578049-012	Date Collected:	02.28.18 09.20	Sample Depth:	2.5 ft

Analytical Method:	TPH by SW8015 Mod			Prep Method:	TX1005P
Tech:	ARM			% Moisture:	
Analyst:	ARM	Date Prep:	03.07.18 10.00	Basis:	Wet Weight
Seq Number:	3043121				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Gasoline Range Hydrocarbons (GRO)	PHC610	<15.0	15.0	mg/kg	03.08.18 01.35	U	1
Diesel Range Organics (DRO)	C10C28DRO	<15.0	15.0	mg/kg	03.08.18 01.35	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<15.0	15.0	mg/kg	03.08.18 01.35	U	1
Total TPH	PHC635	<15	15	mg/kg	03.08.18 01.35	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1-Chlorooctane	111-85-3	99	%	70-135	03.08.18 01.35	
o-Terphenyl	84-15-1	96	%	70-135	03.08.18 01.35	

Analytical Method:	BTEX by EPA 8021			Prep Method:	SW5030B
Tech:	ALJ			% Moisture:	
Analyst:	ALJ	Date Prep:	03.08.18 16.45	Basis:	Wet Weight
Seq Number:	3043201				

Parameter	Cas Number	Result	RL	Units	Analysis Date	Flag	Dil
Benzene	71-43-2	<0.00202	0.00202	mg/kg	03.09.18 10.55	U	1
Toluene	108-88-3	<0.00202	0.00202	mg/kg	03.09.18 10.55	U	1
Ethylbenzene	100-41-4	<0.00202	0.00202	mg/kg	03.09.18 10.55	U	1
m_p-Xylenes	179601-23-1	<0.00403	0.00403	mg/kg	03.09.18 10.55	U	1
o-Xylene	95-47-6	<0.00202	0.00202	mg/kg	03.09.18 10.55	U	1
Xylenes, Total	1330-20-7	<0.00202	0.00202	mg/kg	03.09.18 10.55	U	1
Total BTEX		<0.00202	0.00202	mg/kg	03.09.18 10.55	U	1

Surrogate	Cas Number	% Recovery	Units	Limits	Analysis Date	Flag
1,4-Difluorobenzene	540-36-3	81	%	70-130	03.09.18 10.55	
4-Bromofluorobenzene	460-00-4	121	%	70-130	03.09.18 10.55	

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ NELAC certification not offered for this compound.

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

QC Summary 578049

TRC Solutions, Inc

COG Boone 16 Tank Battery

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3043121 Matrix: Solid Date Prep: 03.07.18
MB Sample Id: 7640357-1-BLK LCS Sample Id: 7640357-1-BKS LCSD Sample Id: 7640357-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1040	104	1010	101	70-135	3	35	mg/kg	03.07.18 14:33	
Diesel Range Organics (DRO)	<15.0	1000	1090	109	1030	103	70-135	6	35	mg/kg	03.07.18 14:33	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	104		115		114		70-135	%	03.07.18 14:33
o-Terphenyl	107		113		109		70-135	%	03.07.18 14:33

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3043255 Matrix: Solid Date Prep: 03.08.18
MB Sample Id: 7640491-1-BLK LCS Sample Id: 7640491-1-BKS LCSD Sample Id: 7640491-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	951	95	1010	101	70-135	6	35	mg/kg	03.08.18 15:59	
Diesel Range Organics (DRO)	<15.0	1000	988	99	1060	106	70-135	7	35	mg/kg	03.08.18 15:59	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		105		114		70-135	%	03.08.18 15:59
o-Terphenyl	99		105		113		70-135	%	03.08.18 15:59

Analytical Method: **TPH by SW8015 Mod** Prep Method: TX1005P
Seq Number: 3043401 Matrix: Solid Date Prep: 03.08.18
MB Sample Id: 7640492-1-BLK LCS Sample Id: 7640492-1-BKS LCSD Sample Id: 7640492-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	1000	100	997	100	70-135	0	35	mg/kg	03.09.18 04:08	
Diesel Range Organics (DRO)	<15.0	1000	1040	104	1030	103	70-135	1	35	mg/kg	03.09.18 04:08	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	97		114		111		70-135	%	03.09.18 04:08
o-Terphenyl	99		110		109		70-135	%	03.09.18 04:08

MS/MSD Percent Recovery [D] = 100*(C-A) / B LCS = Laboratory Control Sample MS = Matrix Spike
Relative Percent Difference RPD = 200* | (C-E) / (C+E) | A = Parent Result B = Spike Added
LCS/LCSD Recovery [D] = 100 * (C) / [B] C = MS/LCS Result D = MSD/LCSD % Rec
E = MSD/LCSD Result

QC Summary 578049

TRC Solutions, Inc

COG Boone 16 Tank Battery

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3043121 — Matrix: Soil — Date Prep: 03.07.18
Parent Sample Id: 577916-005 — MS Sample Id: 577916-005 S — MSD Sample Id: 577916-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	999	1050	105	1050	105	70-135	0	35	mg/kg	03.07.18 15:52	
Diesel Range Organics (DRO)	103	999	1160	106	1170	107	70-135	1	35	mg/kg	03.07.18 15:52	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	118		120		70-135	%	03.07.18 15:52
o-Terphenyl	112		113		70-135	%	03.07.18 15:52

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3043255 — Matrix: Soil — Date Prep: 03.08.18
Parent Sample Id: 578048-003 — MS Sample Id: 578048-003 S — MSD Sample Id: 578048-003 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	1000	980	98	1040	104	70-135	6	35	mg/kg	03.08.18 18:10	
Diesel Range Organics (DRO)	<15.0	1000	1080	108	1140	114	70-135	5	35	mg/kg	03.08.18 18:10	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	105		112		70-135	%	03.08.18 18:10
o-Terphenyl	97		104		70-135	%	03.08.18 18:10

Analytical Method: TPH by SW8015 Mod — Prep Method: TX1005P
Seq Number: 3043401 — Matrix: Soil — Date Prep: 03.08.18
Parent Sample Id: 578049-001 — MS Sample Id: 578049-001 S — MSD Sample Id: 578049-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Gasoline Range Hydrocarbons (GRO)	<15.0	998	1110	111	1070	107	70-135	4	35	mg/kg	03.09.18 05:27	
Diesel Range Organics (DRO)	<15.0	998	1160	116	1110	111	70-135	4	35	mg/kg	03.09.18 05:27	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1-Chlorooctane	124		122		70-135	%	03.09.18 05:27
o-Terphenyl	123		118		70-135	%	03.09.18 05:27

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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

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

Final 1.000

QC Summary 578049

TRC Solutions, Inc

COG Boone 16 Tank Battery

Analytical Method: BTEX by EPA 8021 | Prep Method: SW5030B
Seq Number: 3043201 | Matrix: Solid | Date Prep: 03.08.18
MB Sample Id: 7640464-1-BLK | LCS Sample Id: 7640464-1-BKS | LCSD Sample Id: 7640464-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00201	0.101	0.0883	87	0.0848	84	70-130	4	35	mg/kg	03.09.18 10:55	
Toluene	<0.00201	0.101	0.0900	89	0.0930	92	70-130	3	35	mg/kg	03.09.18 10:55	
Ethylbenzene	<0.00201	0.101	0.0937	93	0.0974	96	70-130	4	35	mg/kg	03.09.18 10:55	
m_p-Xylenes	<0.00402	0.201	0.182	91	0.189	94	70-130	4	35	mg/kg	03.09.18 10:55	
o-Xylene	<0.00201	0.101	0.0921	91	0.0957	95	70-130	4	35	mg/kg	03.09.18 10:55	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	85		101		95		70-130	%	03.09.18 10:55
4-Bromofluorobenzene	118		130		122		70-130	%	03.09.18 10:55

Analytical Method: BTEX by EPA 8021 | Prep Method: SW5030B
Seq Number: 3043349 | Matrix: Solid | Date Prep: 03.09.18
MB Sample Id: 7640517-1-BLK | LCS Sample Id: 7640517-1-BKS | LCSD Sample Id: 7640517-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00200	0.0998	0.0845	85	0.0860	86	70-130	2	35	mg/kg	03.09.18 11:36	
Toluene	<0.00200	0.0998	0.0895	90	0.0924	92	70-130	3	35	mg/kg	03.09.18 11:36	
Ethylbenzene	<0.00200	0.0998	0.103	103	0.104	104	70-130	1	35	mg/kg	03.09.18 11:36	
m_p-Xylenes	<0.00399	0.200	0.204	102	0.206	103	70-130	1	35	mg/kg	03.09.18 11:36	
o-Xylene	<0.00200	0.0998	0.0994	100	0.119	119	70-130	18	35	mg/kg	03.09.18 11:36	

Surrogate	MB %Rec	MB Flag	LCS %Rec	LCS Flag	LCSD %Rec	LCSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	77		79		82		70-130	%	03.09.18 11:36
4-Bromofluorobenzene	106		121		120		70-130	%	03.09.18 11:36

Analytical Method: BTEX by EPA 8021 | Prep Method: SW5030B
Seq Number: 3043201 | Matrix: Soil | Date Prep: 03.08.18
Parent Sample Id: 578604-005 | MS Sample Id: 578604-005 S | MSD Sample Id: 578604-005 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0996	0.0818	82	0.0884	88	70-130	8	35	mg/kg	03.09.18 10:55	
Toluene	<0.00199	0.0996	0.0659	66	0.0780	78	70-130	17	35	mg/kg	03.09.18 10:55	X
Ethylbenzene	<0.00199	0.0996	0.0601	60	0.0745	75	70-130	21	35	mg/kg	03.09.18 10:55	X
m_p-Xylenes	<0.00398	0.199	0.112	56	0.143	72	70-130	24	35	mg/kg	03.09.18 10:55	X
o-Xylene	<0.00199	0.0996	0.0556	56	0.0717	72	70-130	25	35	mg/kg	03.09.18 10:55	X

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	78		70		70-130	%	03.09.18 10:55
4-Bromofluorobenzene	124		124		70-130	%	03.09.18 10:55

MS/MSD Percent Recovery [D] = 100*(C-A) / B
Relative Percent Difference RPD = 200* | (C-E) / (C+E) |
LCS/LCSD Recovery [D] = 100 * (C) / [B]

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

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

QC Summary 578049

TRC Solutions, Inc

COG Boone 16 Tank Battery

Analytical Method: **BTEX by EPA 8021** Prep Method: SW5030B

Seq Number: 3043349 Matrix: Soil Date Prep: 03.09.18

Parent Sample Id: 578048-009 MS Sample Id: 578048-009 S MSD Sample Id: 578048-009 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Benzene	<0.00199	0.0994	0.0811	82	0.0792	79	70-130	2	35	mg/kg	03.09.18 12:15	
Toluene	<0.00199	0.0994	0.0823	83	0.0804	81	70-130	2	35	mg/kg	03.09.18 12:15	
Ethylbenzene	0.00340	0.0994	0.0839	81	0.0853	82	70-130	2	35	mg/kg	03.09.18 12:15	
m_p-Xylenes	0.0140	0.199	0.169	78	0.174	80	70-130	3	35	mg/kg	03.09.18 12:15	
o-Xylene	0.00732	0.0994	0.0866	80	0.0904	83	70-130	4	35	mg/kg	03.09.18 12:15	

Surrogate	MS %Rec	MS Flag	MSD %Rec	MSD Flag	Limits	Units	Analysis Date
1,4-Difluorobenzene	79		87		70-130	%	03.09.18 12:15
4-Bromofluorobenzene	111		129		70-130	%	03.09.18 12:15

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

[D] = 100*(C-A) / B
RPD = 200* | (C-E) / (C+E) |
[D] = 100 * (C) / [B]

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

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

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Page 1 Of 1

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Xenco Job # 578049

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com, zconder@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name: Zach Conder

Project Information

Project Name/Number: COG Boone 16 Tank Battery
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Date	Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	SP-2 FL @ 3'	3'	2/27/2018	11:00	S	1									X		X		
2	SP-2 NSW 1	1.5'	2/27/2018	11:05	S	1									X		X		
3	SP-2 NSW 2	1.5'	2/27/2018	11:10	S	1									X		X		
4	SP-2 ESW	1.5'	2/27/2018	11:15	S	1									X		X		
5	SP-2 WSW	1.5'	2/27/2018	11:20	S	1									X		X		
6	SP-2 SSW 1	1.5'	2/27/2018	11:25	S	1									X		X		
7	SP-2 SSW 2	1.5'	2/27/2018	11:30	S	1									X		X		
8	SP-3 FL @ 5'	5'	2/28/2018	9:00	S	1									X		X		
9	SP-3 NSW	2.5'	2/28/2018	9:05	S	1									X		X		
10	SP-3 ESW	2.5'	2/28/2018	9:10	S	1									X		X		
11	SP-3 SSW	2.5'	2/28/2018	9:15	S	1									X		X		
12	SP-3 WSW	2.5'	2/28/2018	9:20	S	1									X		X		

Temp: 2.3 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 2.1

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 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:

jlowry@trcsolutions.com zconder@trcsolutions.com
CJBryant@paalp.com algroves@paalp.com
kblackburn@trcsolutions.com

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		3/1 1:30	1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
		3/1 2:13	3	4	3-1-18 3:25	4
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
			6			3/2 11:15 / 1.5

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 03/02/2018 11:15:00 AM

Work Order #: 578049

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	2.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**No**	TPH received in bulk jars
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**No**	
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 03/02/2018

Checklist reviewed by: Kelsey Brooks Date: 03/05/2018

Analytical Report 578649

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16

14-MAR-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

Table of Contents

14-MAR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **578649**
COG Boone 16
Project Address: Lea County, NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 578649. 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. 578649 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 578649

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-2 FL-2	S	03-05-18 12:00	4 ft	578649-001

CASE NARRATIVE

Client Name: TRC Solutions, Inc
Project Name: COG Boone 16

Project ID:
Work Order Number(s): *578649*

Report Date: *14-MAR-18*
Date Received: *03/08/2018*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3043503 BTEX by EPA 8021

Lab Sample ID 578649-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Ethylbenzene, o-Xylene recovered below QC limits in the Matrix Spike. Benzene, Toluene, m_p-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 578649-001.

The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes , o-Xylene is within laboratory Control Limits, therefore the data was accepted.

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

Certificate of Analytical Results
578649

TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id: **SP-2 FL-2** Matrix: Soil Sample Depth: 4 ft

Lab Sample Id: 578649-001 Date Collected: 03.05.18 12.00 Date Received: 03.08.18 10.30

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043412 Date Prep: 03.10.18 10.00

Prep seq: 7640552

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	03.11.18 01:11	U	1
Diesel Range Organics (DRO)	C10C28DRO	**25.7**	15.0	8.12	mg/kg	03.11.18 01:11		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.12	15.0	8.12	mg/kg	03.11.18 01:11	U	1
Total TPH	PHC635	**25.7**		7.99	mg/kg	03.11.18 01:11		

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	89	70 - 135	%		
o-Terphenyl	93	70 - 135	%		

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043503 Date Prep: 03.12.18 08.00

Prep seq: 7640672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000386	0.00200	0.000386	mg/kg	03.12.18 13:37	UX	1
Toluene	108-88-3	<0.000457	0.00200	0.000457	mg/kg	03.12.18 13:37	UX	1
Ethylbenzene	100-41-4	<0.000566	0.00200	0.000566	mg/kg	03.12.18 13:37	UX	1
m_p-Xylenes	179601-23-1	<0.00102	0.00401	0.00102	mg/kg	03.12.18 13:37	UX	1
o-Xylene	95-47-6	<0.000345	0.00200	0.000345	mg/kg	03.12.18 13:37	UX	1
Xylenes, Total	1330-20-7	<0.000345		0.000345	mg/kg	03.12.18 13:37	U	
Total BTEX		<0.000345		0.000345	mg/kg	03.12.18 13:37	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	82	70 - 130	%		
4-Bromofluorobenzene	124	70 - 130	%		

Certificate of Analytical Results
578649

TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id: **7640552-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640552-1-BLK Date Collected: Date Received:

Analytical Method: TPH by SW8015 Mod Prep Method: 1005

Analyst: ARM % Moist: Tech: ARM

Seq Number: 3043412 Date Prep: 03.10.18 10.00

Prep seq: 7640552

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	03.10.18 23:15	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	03.10.18 23:15	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	03.10.18 23:15	U	1
Total TPH	PHC635	<8		8	mg/kg	03.10.18 23:15	U	

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1-Chlorooctane	82	70 - 135	%		
o-Terphenyl	88	70 - 135	%		

Sample Id: **7640672-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7640672-1-BLK Date Collected: Date Received:

Analytical Method: BTEX by EPA 8021 Prep Method: 5030B

Analyst: ALJ % Moist: Tech: ALJ

Seq Number: 3043503 Date Prep: 03.12.18 08.00

Prep seq: 7640672

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.000383	0.00199	0.000383	mg/kg	03.12.18 09:07	U	1
Toluene	108-88-3	<0.000453	0.00199	0.000453	mg/kg	03.12.18 09:07	U	1
Ethylbenzene	100-41-4	<0.000561	0.00199	0.000561	mg/kg	03.12.18 09:07	U	1
m_p-Xylenes	179601-23-1	<0.00101	0.00398	0.00101	mg/kg	03.12.18 09:07	U	1
o-Xylene	95-47-6	<0.000342	0.00199	0.000342	mg/kg	03.12.18 09:07	U	1

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
1,4-Difluorobenzene	83	70 - 130	%		
4-Bromofluorobenzene	110	70 - 130	%		

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: COG Boone 16

Work Orders : 578649,

Project ID:

Lab Batch #: 3043503 **Sample:** 7640672-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/12/18 06:55

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0257	0.0300	86	70-130	
4-Bromofluorobenzene	0.0357	0.0300	119	70-130	

Lab Batch #: 3043503 **Sample:** 7640672-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/12/18 07:14

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0253	0.0300	84	70-130	
4-Bromofluorobenzene	0.0355	0.0300	118	70-130	

Lab Batch #: 3043503 **Sample:** 578649-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/12/18 07:34

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0248	0.0300	83	70-130	
4-Bromofluorobenzene	0.0359	0.0300	120	70-130	

Lab Batch #: 3043503 **Sample:** 578649-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/12/18 07:53

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	70-130	
4-Bromofluorobenzene	0.0387	0.0300	129	70-130	

Lab Batch #: 3043503 **Sample:** 7640672-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/12/18 09:07

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	70-130	
4-Bromofluorobenzene	0.0331	0.0300	110	70-130	

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

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16

Work Orders : 578649,

Project ID:

Lab Batch #: 3043412 **Sample:** 7640552-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 23:15

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.2	100	82	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3043412 **Sample:** 7640552-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 23:34

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

Lab Batch #: 3043412 **Sample:** 7640552-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 03/10/18 23:54

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.5	100	94	70-135	
o-Terphenyl	43.4	50.0	87	70-135	

Lab Batch #: 3043412 **Sample:** 578596-005 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/11/18 00:33

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.6	99.8	100	70-135	
o-Terphenyl	46.0	49.9	92	70-135	

Lab Batch #: 3043412 **Sample:** 578596-005 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 03/11/18 00:52

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	100	112	70-135	
o-Terphenyl	49.1	50.0	98	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: COG Boone 16

Work Order #: 578649 **Project ID:**

Analyst: ALJ **Date Prepared:** 03/12/2018 **Date Analyzed:** 03/12/2018

Lab Batch ID: 3043503 **Sample:** 7640672-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 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	<0.000388	0.101	0.0909	90	0.100	0.0883	88	3	70-130	35	
Toluene	<0.000459	0.101	0.0972	96	0.100	0.0942	94	3	70-130	35	
Ethylbenzene	<0.000569	0.101	0.111	110	0.100	0.109	109	2	70-130	35	
m_p-Xylenes	<0.00102	0.202	0.219	108	0.200	0.214	107	2	70-130	35	
o-Xylene	<0.000347	0.101	0.106	105	0.100	0.105	105	1	70-130	35	

Analyst: ARM **Date Prepared:** 03/10/2018 **Date Analyzed:** 03/10/2018

Lab Batch ID: 3043412 **Sample:** 7640552-1-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
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1090	109	1000	943	94	14	70-135	35	
Diesel Range Organics (DRO)	<8.13	1000	984	98	1000	832	83	17	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 / MSD Recoveries

Project Name: COG Boone 16

Work Order # : 578649 **Project ID:**

Lab Batch ID: 3043503 **QC- Sample ID:** 578649-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/12/2018 **Date Prepared:** 03/12/2018 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.000383	0.0996	0.0584	59	0.100	0.0656	66	12	70-130	35	X
Toluene	<0.000454	0.0996	0.0607	61	0.100	0.0664	66	9	70-130	35	X
Ethylbenzene	<0.000563	0.0996	0.0666	67	0.100	0.0704	70	6	70-130	35	X
m_p-Xylenes	<0.00101	0.199	0.131	66	0.200	0.138	69	5	70-130	35	X
o-Xylene	<0.000343	0.0996	0.0651	65	0.100	0.0709	71	9	70-130	35	X

Lab Batch ID: 3043412 **QC- Sample ID:** 578596-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 03/11/2018 **Date Prepared:** 03/10/2018 **Analyst:** ARM

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
Gasoline Range Hydrocarbons (GRO)	<7.99	998	915	92	1000	967	97	6	70-135	35	
Diesel Range Organics (DRO)	<8.11	998	800	80	1000	839	84	5	70-135	35	

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

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

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

CHAIN OF CUSTODY

Page 1 Of 1

XENCO LABORATORIES
Setting the Standard since 1990

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

Xenco Job # 578649

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com, zconder@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name: Zach Conder

Project Information

Project Name/Number: COG Boone 16
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Matrix Codes

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

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	Analytical Information: TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	SP-2 FL 2	4'	3/5/2018	12:00	S	1									X		X		
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Temp: 4.2 IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 pm

Data Deliverable Information

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

Notes:

jlowry@trcsolutions.com zconder@trcsolutions.com
CJBryant@paalp.com algroves@paalp.com
kblackburn@trcsolutions.com

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		3/7/18 4:05	Brittany Cox	Brittany Cox	3/7/18 4:08	
2						3/8 10:30
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
4						
5	Relinquished by:	Date Time:	Received By:	Custody Seal #	Preserved where applicable	On Ice / Cooler Temp. / Thermo. Corr. Factor
						1

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 03/08/2018 10:30:00 AM

Work Order #: 578649

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

Temperature Measuring device used : R8

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 03/08/2018

Checklist reviewed by: Kelsey Brooks Date: 03/09/2018

Analytical Report 581417

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16

11-APR-18

Collected By: Client

6701 Aberdeen, Suite 9 Lubbock, TX 79424

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-18-24), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-16), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-18-14)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco-Atlanta (LELAP Lab ID #04176)

11-APR-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **581417**
COG Boone 16
Project Address: Lea County, NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 581417. 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. 581417 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 581417

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
OS-1b	S	04-03-18 09:00	0 - 6 In	581417-001
OS-2b	S	04-03-18 09:05	0 - 6 In	581417-002
OS-3b	S	04-03-18 09:10	0 - 6 In	581417-003
OS-4b	S	04-03-18 09:15	0 - 6 In	581417-004

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3045854 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 581417

TRC Solutions, Inc, Midland, TX

Project Name: COG Boone 16

Project Id:
Contact: Joel Lowry
Project Location: Lea County, NM

Date Received in Lab: Wed Apr-04-18 05:35 pm
Report Date: 11-APR-18
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	581417-001		581417-002		581417-003		581417-004					
	Field Id:	OS-1b		OS-2b		OS-3b		OS-4b					
	Depth:	0-6 In		0-6 In		0-6 In		0-6 In					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Apr-03-18 09:00		Apr-03-18 09:05		Apr-03-18 09:10		Apr-03-18 09:15					
BTEX by EPA 8021B	***Extracted:***	Apr-05-18 13:00		Apr-05-18 13:00		Apr-05-18 13:00		Apr-05-18 13:00					
	Analyzed:	Apr-05-18 16:17		Apr-05-18 16:44		Apr-05-18 17:12		Apr-05-18 17:39					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		<0.0182	0.0182	<0.0196	0.0196	<0.0194	0.0194	<0.0198	0.0198				
Toluene		<0.0182	0.0182	<0.0196	0.0196	<0.0194	0.0194	<0.0198	0.0198				
Ethylbenzene		<0.0182	0.0182	<0.0196	0.0196	<0.0194	0.0194	<0.0198	0.0198				
m,p-Xylenes		<0.0365	0.0365	<0.0392	0.0392	<0.0388	0.0388	<0.0396	0.0396				
o-Xylene		<0.0182	0.0182	<0.0196	0.0196	<0.0194	0.0194	<0.0198	0.0198				
Total Xylenes		<0.0182	0.0182	<0.0196	0.0196	<0.0194	0.0194	<0.0198	0.0198				
Total BTEX		<0.0182	0.0182	<0.0196	0.0196	<0.0194	0.0194	<0.0198	0.0198				

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

SMP Client Sample **BLK** Method Blank

BKS/LCS Blank Spike/Laboratory Control Sample **BKSD/LCSD** Blank Spike Duplicate/Laboratory Control Sample Duplicate

MD/SD Method Duplicate/Sample Duplicate **MS** Matrix Spike **MSD:** Matrix Spike Duplicate

+ 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: COG Boone 16

Work Orders : 581417,

Project ID:

Lab Batch #: 3045854 **Sample:** 581417-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 16:17

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.104	0.100	104	68-120	
a,a,a-Trifluorotoluene	1.89	1.82	104	71-121	

Lab Batch #: 3045854 **Sample:** 581417-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 16:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.109	0.100	109	68-120	
a,a,a-Trifluorotoluene	2.06	1.96	105	71-121	

Lab Batch #: 3045854 **Sample:** 581417-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 17:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.105	0.100	105	68-120	
a,a,a-Trifluorotoluene	2.04	1.94	105	71-121	

Lab Batch #: 3045854 **Sample:** 581417-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 17:39

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.107	0.100	107	68-120	
a,a,a-Trifluorotoluene	2.10	1.98	106	71-121	

Lab Batch #: 3045854 **Sample:** 7642091-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 11:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.101	0.100	101	68-120	
a,a,a-Trifluorotoluene	1.98	2.00	99	71-121	

* 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: COG Boone 16

Work Orders : 581417,

Project ID:

Lab Batch #: 3045854 **Sample:** 7642091-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 19:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0958	0.100	96	68-120	
a,a,a-Trifluorotoluene	1.81	2.00	91	71-121	

Lab Batch #: 3045854 **Sample:** 7642091-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/05/18 19:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.0968	0.100	97	68-120	
a,a,a-Trifluorotoluene	1.87	2.00	94	71-121	

Lab Batch #: 3045854 **Sample:** 581417-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 14:52

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.104	0.100	104	68-120	
a,a,a-Trifluorotoluene	1.86	1.96	95	71-121	

Lab Batch #: 3045854 **Sample:** 581417-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/05/18 15:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
4-Bromofluorobenzene	0.103	0.100	103	68-120	
a,a,a-Trifluorotoluene	1.91	1.96	97	71-121	

* 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: COG Boone 16

Work Order #: 581417 **Project ID:**

Analyst: MIT **Date Prepared:** 04/05/2018 **Date Analyzed:** 04/05/2018

Lab Batch ID: 3045854 **Sample:** 7642091-1-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	<0.0200	2.00	1.91	96	2.00	2.00	100	5	55-120	20	
Toluene	<0.0200	2.00	1.92	96	2.00	1.99	100	4	77-120	20	
Ethylbenzene	<0.0200	2.00	1.98	99	2.00	2.03	102	2	77-120	20	
m,p-Xylenes	<0.0400	4.00	3.94	99	4.00	4.09	102	4	78-120	20	
o-Xylene	<0.0200	2.00	1.95	98	2.00	2.02	101	4	78-120	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

Form 3 - MS / MSD Recoveries

Project Name: COG Boone 16

Work Order # : 581417 **Project ID:**

Lab Batch ID: 3045854 **QC- Sample ID:** 581417-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/05/2018 **Date Prepared:** 04/05/2018 **Analyst:** MIT

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0196	1.96	1.86	95	1.96	1.85	94	1	54-120	25	
Toluene	<0.0196	1.96	1.92	98	1.96	1.90	97	1	57-120	25	
Ethylbenzene	<0.0196	1.96	2.06	105	1.96	1.97	101	4	58-131	25	
m,p-Xylenes	<0.0392	3.92	4.15	106	3.91	3.96	101	5	62-124	25	
o-Xylene	<0.0196	1.96	2.03	104	1.96	1.96	100	4	62-124	25	

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

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

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

CHAIN OF CUSTODY

XENCO LABORATORIES

Setting the Standard since 1990

Page 1 Of 1

Stafford,Texas (281-240-4200)
Dallas Texas (214-902-0300)
San Antonio, Texas (210-509-3334)
Midland, Texas (432-704-5251)
Phoenix, Arizona (480-355-0900)
www.xenco.com

581417

Xenco Job # 581417

Client / Reporting Information

Company Name / Branch: TRC Environmental Corporation
Company Address: 2057 Commerce Drive, Midland, TX 79703
Email: jlowry@trcsolutions.com, zconder@trcsolutions.com
Phone No: 432-466-4450
Project Contact: Joel Lowry
Samplers's Name: Zach Conder

Project Information

Project Name/Number: COG Boone 16
Project Location: Lea County, NM
Invoice To: PAALP C/O Camille Bryant
Invoice:

Analytical Information

Matrix Codes

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

No.	Field ID / Point of Collection	Collection: Sample Depth	Collection: Date	Collection: Time	Matrix	# of bottles	Number of preserved bottles: HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH 8015 M Ext	Chloride E 300	BTEX 8021B	Hold	Field Comments
1	OS-1b	0-6"	4/3/2018	9:00	S	1											X		1
2	OS-2b	0-6"	4/3/2018	9:05	S	1											X		2
3	OS-3b	0-6"	4/3/2018	9:10	S	1											X		3
4	OS-4b	0-6"	4/3/2018	9:15	S	1											X		4
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 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:

jlowry@trcsolutions.com zconder@trcsolutions.com
CJBryant@paalp.com algroves@paalp.com
kblackburn@trcsolutions.com

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			1	2		2
3	Relinquished by:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
			3	4		4
5	Relinquished by:	Date Time: 4/4/18 5:35	Received By: Brenda Ward	Custody Seal # —	Preserved where applicable	On Ice ✓ Cooler Temp. 3.4 Thermo. Corr. Factor FR-3

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Final 1.000

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 04/04/2018 05:35:00 PM

Work Order #: 581417

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

Temperature Measuring device used : IR-3

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	3.9
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6*Custody Seals Signed and dated?	**N/A**
#7 *Chain of Custody present?	**Yes**
#8 Any missing/extra samples?	**No**
#9 Chain of Custody signed when relinquished/ received?	**Yes**
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**
#11 Container label(s) legible and intact?	**Yes**
#12 Samples in proper container/ bottle?	**Yes**
#13 Samples properly preserved?	**Yes**
#14 Sample container(s) intact?	**Yes**
#15 Sufficient sample amount for indicated test(s)?	**Yes**
#16 All samples received within hold time?	**Yes**
#17 Subcontract of sample(s)?	**N/A**
#18 Water VOC samples have zero headspace?	**N/A**

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

Analyst: PH Device/Lot#:

Checklist completed by: Brenda Ward Date: 04/05/2018
Brenda Ward

Checklist reviewed by: Kelsey Brooks Date: 04/05/2018
Kelsey Brooks

Analytical Report 576952

for

TRC Solutions, Inc

Project Manager: Joel Lowry

COG Boone 16

27-FEB-18

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-17-23), Arizona (AZ0765), Florida (E871002-24), Louisiana (03054)
Oklahoma (2017-142)

Xenco-Dallas (EPA Lab code: TX01468):
Texas (T104704295-17-15), Arizona (AZ0809), Arkansas (17-063-0)

Xenco-El Paso (EPA Lab code: TX00127): Texas (T104704221-17-12)
Xenco-Lubbock (EPA Lab code: TX00139): Texas (T104704219-17-16)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-17-13)
Xenco-San Antonio (EPA Lab Code: TNI02385): Texas (T104704534-17-3)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Table of Contents

27-FEB-18

Project Manager: **Joel Lowry**
TRC Solutions, Inc
2057 Commerce
Midland, TX 79703

Reference: XENCO Report No(s): **576952**
COG Boone 16
Project Address: Lea County NM

Joel Lowry:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 576952. 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. 576952 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 576952

TRC Solutions, Inc, Midland, TX

COG Boone 16

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
WC #1	S	02-16-18 15:30		576952-001

CASE NARRATIVE

Client Name: TRC Solutions, Inc
Project Name: COG Boone 16

Project ID:
Work Order Number(s): *576952*

Report Date: *27-FEB-18*
Date Received: *02/20/2018*

This laboratory is NELAC accredited under the Texas Laboratory Accreditation Program for all the methods, analytes, and matrices reported in this data package except as noted. The data have been reviewed and are technically compliant with the requirements of the methods used, except where noted by the laboratory.

Sample receipt non conformances and comments:

None

Sample receipt non conformances and comments per sample:

None

Certificate of Analytical Results
576952
TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id: **WC #1** Matrix: Soil Sample Depth:

Lab Sample Id: 576952-001 Date Collected: 02.16.18 15.30 Date Received: 02.20.18 10.55

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: OJS % Moist: Tech: OJS

Seq Number: 3042140 Date Prep: 02.26.18 12.00

Prep seq: 7639780

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	**126**	5.00	0.858	mg/kg	02.26.18 13:34		1

Analytical Method: TCLP Metals by SW846 6010B Prep Method: 3010A

Analyst: DEP % Moist: Tech: DEP

Seq Number: 3041966 Date Prep: 02.22.18 09.40

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639607

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Arsenic	7440-38-2	<0.0168	0.0500	0.0168	mg/L	02.22.18 19:07	U	5
Barium	7440-39-3	**0.929**	0.0500	0.000700	mg/L	02.22.18 19:07		5
Cadmium	7440-43-9	<0.000656	0.0250	0.000656	mg/L	02.22.18 19:07	U	5
Chromium	7440-47-3	**0.0187**	0.0500	0.00681	mg/L	02.22.18 19:07	J	5
Lead	7439-92-1	<0.00916	0.0500	0.00916	mg/L	02.22.18 19:07	U	5
Selenium	7782-49-2	<0.0278	0.100	0.0278	mg/L	02.22.18 19:07	U	5
Silver	7440-22-4	<0.00802	0.100	0.00802	mg/L	02.22.18 19:07	U	5

Analytical Method: TCLP Mercury by SW-846 1311/7470A Prep Method: SW7470P

Analyst: ELW % Moist: Tech: ELW

Seq Number: 3041956 Date Prep: 02.23.18 08.50

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639653

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Mercury	7439-97-6	<0.000100	0.000200	0.000100	mg/L	02.23.18 14:13	U	1

Analytical Method: Reactive Cyanide by SW 846-Section7.3.3 Prep Method: SW9012P

Analyst: KCS % Moist: Tech: KCS

Seq Number: 3041991 Date Prep: 02.23.18 11.00

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639686

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide +	57-12-5	<0.0117	0.0250	0.0117	mg/kg	02.23.18 15:39	U	1

Certificate of Analytical Results
576952

TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id: **WC #1** Matrix: Soil Sample Depth:

Lab Sample Id: 576952-001 Date Collected: 02.16.18 15.30 Date Received: 02.20.18 10.55

Analytical Method: Flash Point (Closed Cup Tester) Prep Method:

Analyst: DHE % Moist: Tech: DHE

Seq Number: 3041861 Date Prep:

Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Flash Point		>180			Deg F	02.22.18 16:40	U	1

Analytical Method: Soil pH Prep Method:

Analyst: LRI % Moist: Tech: LRI

Seq Number: 3041568 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
pH	12408-02-5	**9.12**			SU	02.20.18 14:14		

Analytical Method: Paint Filter Liquids Test Prep Method:

Analyst: WRU % Moist: Tech: WRU

Seq Number: 3042215 Date Prep:

Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Paint Filter	PAIFILTER	Pass			PA/100mL	02.27.18 12:53		1

Analytical Method: Reactive Sulfide by SW9034 Prep Method:

Analyst: YAV % Moist: Tech: YAV

Seq Number: 3041984 Date Prep:

Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	02.23.18 13:15	U	1

Certificate of Analytical Results
576952

TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id:	**WC #1**	Matrix:	Soil	Sample Depth:	
Lab Sample Id:	576952-001	Date Collected:	02.16.18 15.30	Date Received:	02.20.18 10.55
Analytical Method:	TCLP BTEX by SW 8260B			Prep Method:	5030B
Analyst:	JTR	% Moist:		Tech:	JTR
Seq Number:	3041853	Date Prep:	02.22.18 14.00		
Subcontractor:	SUB: TX104704215-18-24	Prep seq:	7639625		

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00250	0.00500	0.00250	mg/L	02.22.18 16:08	U	5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	107	75 - 131	%		
1,2-Dichloroethane-D4	102	63 - 144	%		
Toluene-D8	97	80 - 117	%		

Certificate of Analytical Results
576952
TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id: **3041984-1-BLK** Matrix: Solid Sample Depth:
Lab Sample Id: 3041984-1-BLK Date Collected: Date Received:
Analytical Method: Reactive Sulfide by SW9034 Prep Method:
Analyst: YAV % Moist: Tech: YAV
Seq Number: 3041984 Date Prep:
Subcontractor: SUB: TX104704215-18-24 Prep seq:

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Reactive Sulfide	18496-25-8	<0.500	25.0	0.500	mg/kg	02.23.18 13:00	U	1

Sample Id: **7639607-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 7639607-1-BLK Date Collected: Date Received:
Analytical Method: TCLP Metals by SW846 6010B Prep Method: 3010A
Analyst: DEP % Moist: Tech: DEP
Seq Number: 3041966 Date Prep: 02.22.18 09.40
Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639607

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Arsenic	7440-38-2	<0.00336	0.0100	0.00336	mg/L	02.22.18 16:41	U	1
Barium	7440-39-3	<0.000140	0.0100	0.000140	mg/L	02.22.18 16:41	U	1
Cadmium	7440-43-9	<0.000131	0.00500	0.000131	mg/L	02.22.18 16:41	U	1
Chromium	7440-47-3	<0.00136	0.0100	0.00136	mg/L	02.22.18 16:41	U	1
Lead	7439-92-1	<0.00183	0.0100	0.00183	mg/L	02.22.18 16:41	U	1
Selenium	7782-49-2	<0.00555	0.0200	0.00555	mg/L	02.22.18 16:41	U	1
Silver	7440-22-4	<0.00160	0.0200	0.00160	mg/L	02.22.18 16:41	U	1

Sample Id: **7639625-1-BLK** Matrix: Water Sample Depth:
Lab Sample Id: 7639625-1-BLK Date Collected: Date Received:
Analytical Method: TCLP BTEX by SW 8260B Prep Method: 5030B
Analyst: JTR % Moist: Tech: JTR
Seq Number: 3041853 Date Prep: 02.22.18 11.30
Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639625

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Benzene	71-43-2	<0.00250	0.00500	0.00250	mg/L	02.22.18 12:44	U	5

Surrogate	% Recovery	Limits	Units	Analysis Date	Flag
Dibromofluoromethane	105	75 - 131	%		
1,2-Dichloroethane-D4	108	63 - 144	%		
Toluene-D8	98	80 - 117	%		

Certificate of Analytical Results
576952
TRC Solutions, Inc, Midland, TX
COG Boone 16

Sample Id: **7639653-1-BLK** Matrix: Water Sample Depth:

Lab Sample Id: 7639653-1-BLK Date Collected: Date Received:

Analytical Method: TCLP Mercury by SW-846 1311/7470A Prep Method: SW7470P

Analyst: ELW % Moist: Tech: ELW

Seq Number: 3041956 Date Prep: 02.23.18 08.50

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639653

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Mercury	7439-97-6	<0.000100	0.000200	0.000100	mg/L	02.23.18 13:52	U	1

Sample Id: **7639686-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7639686-1-BLK Date Collected: Date Received:

Analytical Method: Reactive Cyanide by SW 846-Section7.3.3 Prep Method: SW9012P

Analyst: KCS % Moist: Tech: KCS

Seq Number: 3041991 Date Prep: 02.23.18 11.00

Subcontractor: SUB: TX104704215-18-24 Prep seq: 7639686

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Cyanide +	57-12-5	<0.0117	0.0250	0.0117	mg/kg	02.23.18 15:34	U	1

Sample Id: **7639780-1-BLK** Matrix: Solid Sample Depth:

Lab Sample Id: 7639780-1-BLK Date Collected: Date Received:

Analytical Method: Inorganic Anions by EPA 300/300.1 Prep Method: E300P

Analyst: OJS % Moist: Tech: OJS

Seq Number: 3042140 Date Prep: 02.26.18 12.00

Prep seq: 7639780

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	<0.858	5.00	0.858	mg/kg	02.26.18 12:09	U	1

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

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: COG Boone 16

Work Orders : 576952,

Project ID:

Lab Batch #: 3041853 **Sample:** 7639625-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/22/18 11:29

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0453	0.0500	91	75-131	
1,2-Dichloroethane-D4	0.0508	0.0500	102	63-144	
Toluene-D8	0.0519	0.0500	104	80-117	

Lab Batch #: 3041853 **Sample:** 7639625-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/22/18 11:51

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0475	0.0500	95	75-131	
1,2-Dichloroethane-D4	0.0521	0.0500	104	63-144	
Toluene-D8	0.0501	0.0500	100	80-117	

Lab Batch #: 3041853 **Sample:** 7639625-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/22/18 12:44

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0525	0.0500	105	75-131	
1,2-Dichloroethane-D4	0.0538	0.0500	108	63-144	
Toluene-D8	0.0488	0.0500	98	80-117	

Lab Batch #: 3041853 **Sample:** 576996-001 S / MS **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 02/22/18 14:38

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0463	0.0500	93	75-131	
1,2-Dichloroethane-D4	0.0532	0.0500	106	63-144	
Toluene-D8	0.0516	0.0500	103	80-117	

* 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: COG Boone 16

Work Orders : 576952,

Project ID:

Lab Batch #: 3041853 **Sample:** 576996-001 SD / MSD **Batch:** 1 **Matrix:** Sludge

Units: mg/L **Date Analyzed:** 02/22/18 14:56

TCLP BTEX by SW 8260B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0468	0.0500	94	75-131	
1,2-Dichloroethane-D4	0.0528	0.0500	106	63-144	
Toluene-D8	0.0512	0.0500	102	80-117	

* 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: COG Boone 16

Work Order #: 576952 **Project ID:**

Analyst: OJS **Date Prepared:** 02/26/2018 **Date Analyzed:** 02/26/2018

Lab Batch ID: 3042140 **Sample:** 7639780-1-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	<0.858	250	264	106	250	269	108	2	90-110	20	

Analyst: KCS **Date Prepared:** 02/23/2018 **Date Analyzed:** 02/23/2018

Lab Batch ID: 3041991 **Sample:** 7639686-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Cyanide by SW 846-Section7.3.3 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
Cyanide	<0.0583	20.0	2.56	13	20.0	2.52	13	2	5-40	20	

Analyst: YAV **Date Prepared:** 02/23/2018 **Date Analyzed:** 02/23/2018

Lab Batch ID: 3041984 **Sample:** 3041984-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Sulfide by SW9034 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
Reactive Sulfide	<0.500	50.0	40.0	80	50.0	40.0	80	0	30-120	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: COG Boone 16

Work Order #: 576952 **Project ID:**

Analyst: JTR **Date Prepared:** 02/22/2018 **Date Analyzed:** 02/22/2018

Lab Batch ID: 3041853 **Sample:** 7639625-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP BTEX by SW 8260B 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	<0.00250	0.500	0.450	90	0.500	0.475	95	5	66-142	20	

Analyst: ELW **Date Prepared:** 02/23/2018 **Date Analyzed:** 02/23/2018

Lab Batch ID: 3041956 **Sample:** 7639653-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW-846 1311/7470A 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
Mercury	<0.000100	0.00200	0.00187	94	0.00200	0.00186	93	1	80-120	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: COG Boone 16

Work Order #: 576952 **Project ID:**

Analyst: DEP **Date Prepared:** 02/22/2018 **Date Analyzed:** 02/22/2018

Lab Batch ID: 3041966 **Sample:** 7639607-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by SW846 6010B 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
Arsenic	<0.00336	1.00	0.940	94	1.00	0.943	94	0	75-125	20	
Barium	<0.000140	1.00	0.954	95	1.00	0.952	95	0	75-125	20	
Cadmium	<0.000131	1.00	0.944	94	1.00	0.947	95	0	75-125	20	
Chromium	<0.00136	1.00	0.973	97	1.00	0.965	97	1	75-125	20	
Lead	<0.00183	1.00	0.982	98	1.00	0.980	98	0	75-125	20	
Selenium	<0.00555	1.00	0.947	95	1.00	0.953	95	1	75-125	20	
Silver	<0.00160	0.500	0.482	96	0.500	0.482	96	0	75-125	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

Form 3 - MS / MSD Recoveries

Project Name: COG Boone 16

Work Order # : 576952 **Project ID:**

Lab Batch ID: 3042140 **QC- Sample ID:** 576907-017 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/26/2018 **Date Prepared:** 02/26/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2.31	248	259	104	248	272	109	5	90-110	20	

Lab Batch ID: 3042140 **QC- Sample ID:** 577014-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/26/2018 **Date Prepared:** 02/26/2018 **Analyst:** OJS

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	228	249	474	99	249	467	96	1	90-110	20	

Lab Batch ID: 3041853 **QC- Sample ID:** 576996-001 S **Batch #:** 1 **Matrix:** Sludge

Date Analyzed: 02/22/2018 **Date Prepared:** 02/22/2018 **Analyst:** JTR

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00250	0.500	0.475	95	0.500	0.507	101	7	66-142	20	

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

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

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

Form 3 - MS / MSD Recoveries

Project Name: COG Boone 16

Work Order # : 576952 **Project ID:**

Lab Batch ID: 3041956 **QC- Sample ID:** 576806-001 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 02/23/2018 **Date Prepared:** 02/23/2018 **Analyst:** ELW

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW-846 1311/7470A 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
Mercury	<0.000100	0.00200	0.00175	88	0.00200	0.00177	89	1	75-125	20	

Lab Batch ID: 3041966 **QC- Sample ID:** 576729-001 S **Batch #:** 1 **Matrix:** Ground Water

Date Analyzed: 02/22/2018 **Date Prepared:** 02/22/2018 **Analyst:** DEP

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by SW846 6010B 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
Arsenic	0.0734	1.00	1.09	102	1.00	1.10	103	1	75-125	20	
Barium	0.156	1.00	1.15	99	1.00	1.16	100	1	75-125	20	
Cadmium	0.00150	1.00	1.01	101	1.00	1.01	101	0	75-125	20	
Chromium	0.0266	1.00	1.00	97	1.00	1.02	99	2	75-125	20	
Lead	0.00184	1.00	0.978	98	1.00	0.988	99	1	75-125	20	
Selenium	0.0366	1.00	1.06	102	1.00	1.07	103	1	75-125	20	
Silver	0.00233	0.500	0.525	105	0.500	0.526	105	0	75-125	20	

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

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

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

Sample Duplicate Recovery

Project Name: COG Boone 16

Work Order #: 576952

Lab Batch #: 3041861 **Project ID:**
Date Analyzed: 02/22/2018 09:50 **Date Prepared:** 02/22/2018 **Analyst:** DHE
QC- Sample ID: 576623-003 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: Deg F

Flash Point (Closed Cup Tester) Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Flash Point	140	140	0	25	U

Lab Batch #: 3042215
Date Analyzed: 02/27/2018 12:53 **Date Prepared:** 02/27/2018 **Analyst:** WRU
QC- Sample ID: 576952-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: PA/100mL

Paint Filter Liquids Test Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Paint Filter	Pass	Pass	0	20	U

Lab Batch #: 3041991
Date Analyzed: 02/23/2018 15:41 **Date Prepared:** 02/23/2018 **Analyst:** KCS
QC- Sample ID: 577242-001 D **Batch #:** 1 **Matrix:** Liquid
Reporting Units: mg/kg

Reactive Cyanide by SW 846-Section7.3.3 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Cyanide	<0.0117	<0.0117	0	20	U

Lab Batch #: 3041984
Date Analyzed: 02/23/2018 13:00 **Date Prepared:** 02/23/2018 **Analyst:** YAV
QC- Sample ID: 577242-001 D **Batch #:** 1 **Matrix:** Liquid
Reporting Units: mg/kg

Reactive Sulfide by SW9034 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Reactive Sulfide	<0.500	<0.500	0	20	U

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

Sample Duplicate Recovery

Project Name: COG Boone 16

Work Order #: 576952

Lab Batch #: 3041568 **Project ID:**

Date Analyzed: 02/20/2018 14:14 **Date Prepared:** 02/20/2018 **Analyst:** LRI

QC- Sample ID: 576893-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: SU

Soil pH Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	8.57	8.58	0	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

Setting the Standard since 1990

Stafford, Texas (281-240-4200)

Dallas Texas (214-902-0300)

San Antonio, Texas (210-509-3334)

Midland, Texas (432-704-5251)

Phoenix, Arizona (480-355-0900)

www.xenco.com

Xenco Quote #

Xenco Job # 576952

Client / Reporting Information

Company Name / Branch: TRC Environmental

Company Address: 16 DESTA DRIVE ST 150E

Email: jlowry@trcsolutions.com

Phone No:

Project Contact: Joel Lowry

Samplers's Name Joel Lowry

Project Information

Project Name/Number: COG BOONE 16

Project Location: LEA COUNTY NM

Invoice To: Plains Marketing C/O Camille Bryant

Pipeline

Invoice: SRS No. Pending

Analytical Information

Matrix Codes

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

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	TRC	TCLP Residue 8RI	TCLP RCRA 8	NORM	Cl-	PAINT FILTER	Field Comments
1	WC #1	NA	2-16-18	3:30	S	3									/	/	/	/	/	/	
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Temp: 4.3°C IR ID:R-8
CF:(0-6: -0.2°C)
(6-23: +0.2°C)
Corrected Temp: 4.1°C

Turnaround Time (Business days)

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

TAT Starts Day received by Lab, if received by 5:00 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:

CJBRYANT@PAALP.COM
ALGROVES@PAALP.COM
JLOWRY@TRCSOLUTIONS.COM
KBLACKBURD@TRCSOLUTIONS.COM

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		2/19/18 3:15	1	2	2/19/18 4:09	2
3	Relinquished by:	Date Time: 2-20-18 10:55	Received By: 3	Relinquished By: 4	Date Time:	Received By: 4
5	Relinquished by:	Date Time:	Received By: 5	Custody Seal #	Preserved where applicable	On Ice: X

Cooler Temp: 0.9c Thermo. Corr. Factor

Notice: Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to Xenco, its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be liable only for the cost of samples and shall not assume any responsibility for any losses or expenses incurred by the Client if such loses are due to circumstances beyond the control of Xenco. A minimum charge of $75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at $5 per sample. These terms will be enforced unless previously negotiated under a fully executed client contract.

Inter-Office Shipment

IOS Number **1056377**

Date/Time: 02/20/18 11:33
Lab# From: **Midland**
Lab# To: **Houston**

Created by: Connie Hernandez
Delivery Priority:
Air Bill No.: 771527172026

Please send report to: Kelsey Brooks
Address: 1211 W. Florida Ave, Midland TX 79701
Phone:
E-Mail: kelsey.brooks@xenco.com

Sample Id	Matrix	Client Sample Id	Sample Collection	Method	Method Name	Lab Due	HT Due	PM	Analytes	Sign
576952-001	S	WC #1	02/16/18 15:30	SW1010	Flash Point (Closed Cup Tester)	02/26/18	03/18/18	KEB	FLASHPT	
576952-001	W	WC #1	02/16/18 15:30	SW6010BTCLP	TCLP Metals by SW846 6010B	02/26/18	08/15/18	KEB	AG AS BA CD CR PB SE	
576952-001	W	WC #1	02/16/18 15:30	SW7470A_TCLP	TCLP Mercury by SW-846 1311/7470A	02/26/18	03/16/18	KEB	HG	
576952-001	W	WC #1	02/16/18 15:30	SW8260BTX_TCLP	TCLP BTEX by SW 8260B	02/26/18	03/02/18	KEB	BZ	
576952-001	S	WC #1	02/16/18 15:30	SW9012_RCI	Reactive Cyanide by SW 846-Section7.3.3	02/26/18	03/02/18	KEB	CN	
576952-001	S	WC #1	02/16/18 15:30	SW9034_RCI	Reactive Sulfide by SW9034	02/26/18	03/02/18	KEB	RS	

Inter Office Shipment or Sample Comments:

Relinquished By: Connie Hernandez

Date Relinquished: 02/20/2018

Received By: Rene Vandenberghe

Date Received: 02/21/2018 09:35

Cooler Temperature: 3.5

XENCO Laboratories

Inter Office Report- Sample Receipt Checklist

Sent To: Houston

IOS #: 1056377

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient
Temperature Measuring device used : HOU-068

Sent By: Connie Hernandez **Date Sent:** 02/20/2018 11:33 AM

Received By: Rene Vandenberghe **Date Received:** 02/21/2018 09:35 AM

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	3.5	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received with appropriate temperature?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**No**	
#5 *Custody Seals Signed and dated for Containers/coolers	**N/A**	
#6 *IOS present?	**Yes**	
#7 Any missing/extra samples?	**No**	
#8 IOS agrees with sample label(s)/matrix?	**Yes**	
#9 Sample matrix/ properties agree with IOS?	**Yes**	
#10 Samples in proper container/ bottle?	**Yes**	
#11 Samples properly preserved?	**Yes**	
#12 Sample container(s) intact?	**Yes**	
#13 Sufficient sample amount for indicated test(s)?	**Yes**	
#14 All samples received within hold time?	**Yes**	

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

NonConformance:

Corrective Action Taken:

Nonconformance Documentation

Contact: _____ **Contacted by :** _____ **Date:** _____

Checklist reviewed by: R. C. Vandenberghe Date: 02/21/2018

Rene Vandenberghe

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: TRC Solutions, Inc

Date/ Time Received: 02/20/2018 10:55:00 AM

Work Order #: 576952

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

Temperature Measuring device used : R8

Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?	4.1	
#2 *Shipping container in good condition?	**Yes**	
#3 *Samples received on ice?	**Yes**	
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**	
#5 Custody Seals intact on sample bottles?	**N/A**	
#6*Custody Seals Signed and dated?	**N/A**	
#7 *Chain of Custody present?	**Yes**	
#8 Any missing/extra samples?	**No**	
#9 Chain of Custody signed when relinquished/ received?	**Yes**	
#10 Chain of Custody agrees with sample labels/matrix?	**Yes**	
#11 Container label(s) legible and intact?	**Yes**	
#12 Samples in proper container/ bottle?	**Yes**	
#13 Samples properly preserved?	**Yes**	
#14 Sample container(s) intact?	**Yes**	
#15 Sufficient sample amount for indicated test(s)?	**Yes**	
#16 All samples received within hold time?	**Yes**	
#17 Subcontract of sample(s)?	**Yes**	Houston
#18 Water VOC samples have zero headspace?	**N/A**	

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

Analyst: PH Device/Lot#:

Checklist completed by: Connie Hernandez Date: 02/20/2018

Checklist reviewed by: Kelsey Brooks Date: 02/21/2018

TRC Solutions, INC

ATTN: Joel Lowry
4815 E. Hwy 80, Bldg. C138
2057 Commerce
432-520-7720

Sample Type:	Solid	Sample Date:	02/16/18
Sample Condition:	Intact/ Ambient deg C	Sample Time:	15:30
Lab ID#:	576952-001	Receiving Date:	02/20/18
Project Name:	COG Boone 16	Analysis Date:	02/27/18
Project # :		Analysis Time:	09:40
Project Location:	Lea County, NM	Field Code:	WC #1

Analysis Description	Analysis Results pCi/G	Analysis Error +/- 2s	Analysis Results Bq/G	Analysis Error +/- 2s	Analysis Test Method	Analysis Technician
Ra-226	<2.39	N/A	<.09	N/A	EPA 901.1M	KEB
Ra-228	<.96	N/A	<.04	N/A	EPA 901.1M	KEB
Pb-210	<2.64	N/A	<.10	N/A	EPA 901.1M	KEB
Th-228	<5.24	N/A	<.19	N/A	EPA 901.1M	KEB
Bi-214	<.45	N/A	<.02	N/A	EPA 901.1M	KEB
Total Activity	0.00	N/A	0.00	N/A	EPA 901.1M	KEB

Notes:

Quality Assurance Review

Xenco Laboratories 1211 W Florida Ave, Midland TX 79701 (432)-704-5440

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: _____

Address: _____

Phone #: _____

Originating Localtion of waste material:

Lease Name: _____

Sec. 16 T 21 R 37E

Transporter Information:

Name: _____

Address: _____

Phone #: _____

Driver Signature: _____

Date: 2-25-15

Non-Hazardous Hydro-Carbons:

of Yards: 36

Waste material placed in cell number: A-11

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations: and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • PINK - DRIVER

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: _____

Address: _____

Phone #: _____

C/O Connie Bryant

Originating Localtion of waste material:

Lease Name: _____

Sec. 16 T 21S R 37E

Transporter Information:

Name: _____

Address: _____

Phone #: _____

Driver Signature: _____

Date: 2-25-15

3 loads DM

Non-Hazardous Hydro-Carbons:

of Yards: 36

Waste material placed in cell number: B 11

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

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Facility Representative: _____ Date: _____

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • **PINK - DRIVER**

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: [illegible]

Address: [illegible]

Phone #: [illegible]

Originating Localtion of waste material:

Lease Name: [illegible]

Sec. 16 T 21 R 37E

Transporter Information:

Name: [illegible]

Address: [illegible]

Phone #: [illegible]

Driver Signature: [illegible]

Date: 3-7-15

2 loads at 12 yds

Non-Hazardous Hydro-Carbons:

of Yards: 36

Waste material placed in cell number: 24

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

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Facility Representative: _____ Date: _____

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • PINK - DRIVER

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: Plains Pipeline LP

Address: [illegible] Midland Tx 79701

Phone #: CB Camille Bryant

Originating Localtion of waste material:

Lease Name: CGG Moore 16 2H

Sec. 16 T 21S R 37E

Transporter Information:

Name: M. Baird Trucking

Address: PO Box 1363

Phone #: (575) 631-3274

Driver Signature: [illegible]

Date: 2-1-18

3 loads at 12 yds

Non-Hazardous Hydro-Carbons:

of Yards: 36 yds

Waste material placed in cell number: [illegible]

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:
Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations: and not mixed with non-exempt waste."

Facility Representative: ______________________ Date: __________

NOTE TO ALL DRIVERS!

TCP#6239 White- ORIGINAL • Yellow - INVOICE • PINK - DRIVER

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: _____

Address: _____

Phone #: _____

Originating Localtion of waste material:

Lease Name: _____

Sec. _____ T _____ R _____

Transporter Information:

Name: _____

Address: _____

Phone #: _____

Driver Signature: _____

Date: _____

Non-Hazardous Hydro-Carbons:

of Yards: _____

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:

Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

"As a condition of acceptance for disposal, I hereby certify that this waste is an exempt waste as defined by the Environmental Protection Agency (EPA). The waste are: generated from oil and gas exploration and production operations, exempt from Resource Conservation and Recovery Act (RCRA) Subtitle C Regulations: and not mixed with non-exempt waste."

Facility Representative: _____ Date: _____

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • PINK - DRIVER

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: [illegible] LP

Address: 505 [illegible] Spring Suite 600 Midland Tx 79701

Phone #: C/O Camille [illegible]

Originating Localtion of waste material:

Lease Name: [illegible] 16 [illegible]

Sec. 16 T 21S R 33E

Transporter Information:

Name: [illegible] Trucking

Address: P.O. Box 1383

Phone #: (575) 441-9271

Driver Signature: X

Date: 3-2-18

2 loads at 36 yds

Non-Hazardous Hydro-Carbons:

\# of Yards: 36

Waste material placed in cell number: A-1

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

Contacts:
Danny Berry
(575) 393-6964 - Home
(575) 369-5266 - Cell

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Facility Representative: ______________________ Date: __________

NOTE TO ALL DRIVERS!

TCP#8239 White- ORIGINAL • Yellow - INVOICE • **PINK - DRIVER**

Manifest #

Lazy Ace Landfarm

Lease Operator Information:

Name: _____

Address: _____

Phone #: _____

Originating Localtion of waste material:

Lease Name: _____

Sec. _____ T _____ R _____

Transporter Information:

Name: _____

Address: _____

Phone #: _____

Driver Signature: _____

Date: _____

Non-Hazardous Hydro-Carbons:

of Yards: _____

Waste material placed in cell number: _____

Lazy Ace Landfarm, L.L.C.
P.O. Box 130
Eunice, NM 88231

Permit # NM 01-0041
W1/2SW1/4 S22T20SR34E

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District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised April 3, 2017

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Plains Pipeline	Contact Amber Groves
Address 1911 Connie Rd, Carlsbad NM 88220	Telephone No. (575)200-5517
Facility Name COG Boone 16 2H	Facility Type Tank Battery

Surface Owner Merchant Livestock	Mineral Owner State	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	16	21S	33E					Lea

Latitude 32.4724 **Longitude** -103.5752 NAD83

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release 50 bbls	Volume Recovered 45 bbls
Source of Release ½ inch Nipple	Date and Hour of Occurrence 2/5/2018 @ 5:30 PM	Date and Hour of Discovery 2/5/2018 @ 5:30 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Voicemail to Olivia Yu	
By Whom? Amber Groves	Date and Hour 2/6/2018 @ 3:06 PM	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

RECEIVED
By Olivia Yu at 9:31 am, Feb 12, 2018

Describe Cause of Problem and Remedial Action Taken.*
½" nipple broke on the downstream side of the triplex pump. The nipple broke below the valve where chemical is injected.

Describe Area Affected and Cleanup Action Taken.*
Impacted area includes the pad, approximately 50,000 square feet off of the pad including an overspray area. All areas will be remediated as per current NMOCD guidelines.

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

Signature: Amber Groves	OIL CONSERVATION DIVISION
Printed Name: Amber Groves	Approved by Environmental Specialist: OY
Title: Remediation Coordinator	Approval Date: 2/12/2018 Expiration Date:
E-mail Address: algroves@paalp.com	Conditions of Approval: see attached directive Attached ☑
Date: Phone:	

* Attach Additional Sheets If Necessary

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pOY1804335408