HOBBS OCD

AUG 0 5 2015

RECEIVED

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 August 8, 2011

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, LP	Contact: Camille Bryant
Address: 2530 State Hwy 214, Denver City, TX 79323	Telephone No.: (575) 441-1099
Facility Name: Tract 19 4"	Facility Type: Pipeline

Surface Owner: Apache Corporation	Mineral Owner	API No.30-025-12803

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	29	21S	37E					Lea

Latitude N 32.448517° **Longitude** W 103.176603°

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: >5 bbls	Volume Recovered: 0.5 bbls
Source of Release: Pipeline	Date and Hour of Occurrence: 7/9/2014 @ 11:00	Date and Hour of Discovery 7/9/2014 @ 11:20
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Verbal notification to Tomas Oberding	
By Whom? Camille Bryant	Date and Hour 7/10/2014 @ 08:00	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

APPROVED
By OCD District 1 at 12:18 pm, Aug 13, 2015

Describe Cause of Problem and Remedial Action Taken.* External corrosion of 4" steel pipeline resulted in a release of crude oil. A temporary pipeline clamp was installed on the pipeline to mitigate the release.

Describe Area Affected and Cleanup Action Taken.*
The released crude oil impacted a surface area measuring approximately 65' X 20'. The impacted area was excavated to approximately 19' below ground surface as approved by the NMOCD. Soil samples were collected and submitted to the laboratory and a 20 mil poly liner was installed on the floor of the excavation as approved by the NMOCD. Please reference the "Remediation Summary and Risk-Based Site Closure Risk" dated August 2015 for additional details.

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: Camille Bryant

Printed Name: Camille Bryant

Title: Remediation Coordinator

E-mail Address: cjbryant@paalp.com

Date: 8/5/15 Phone: (575) 441-1099

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 08/13/2015 Expiration Date: ///

Conditions of Approval:
RP will remain open until site closure at which time remaining contamination will be addressed..

Attached ☐
1RP 7-14-3189

* Attach Additional Sheets If Necessary

pTO1419850592

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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

HOBBS OCD
AUG 12 2015
RECEIVED

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Plains Pipeline, LP	Contact Camille Bryant
Address 2530 State Hwy. 214, Denver City, TX 79323	Telephone No. (575) 441-1099
Facility Name Tract 19 4"	Facility Type Pipeline

Surface Owner Apache Corporation	Mineral Owner	Lease No.

LOCATION OF RELEASE API# 30-025-12803

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	29	21S	37E					Lea

Latitude N 32.448517° Longitude W 103.176603°

NATURE OF RELEASE

Type of Release Crude Oil	Volume of Release >5 bbls	Volume Recovered 0.5 bbls
Source of Release Pipeline	Date and Hour of Occurrence 7/9/2014 @ 11:00	Date and Hour of Discovery 7/9/2014 @ 11:20
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Verbal notification to Tomas Oberding	
By Whom? Camille Bryant	Date and Hour 7/10/2014 @ 08:00	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.* External corrosion of 4" steel pipeline resulted in a release of crude oil A temporary pipeline clamp was installed on the pipeline to mitigate the release.

Describe Area Affected and Cleanup Action Taken. The released crude oil impacted a surface area measuring approximately 65' X 20'.The impacted area will be remediated as per applicable 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: Camille Bryant	**OIL CONSERVATION DIVISION**	
	Approved by ~~District Supervisor~~: [signature]	
Printed Name: Camille Bryant		
Title: Remediation Coordinator	Approval Date: 7-17-14	Expiration Date: 9-20-14
E-mail Address: cjbryant@paalp.com	Conditions of Approval: Site samples required	Attached ☐
Date: 7/17/14 Phone: (575) 441-1099		7-14-3189

* Attach Additional Sheets If Necessary

Delineate Remediate as per NMOCD guides
Submit final C-141 by 9-20-14.

HOBBS OCD
JUL 17 2014
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JUL 17 2014

[illegible] 39053
nTO 1419 8504
pTO 1419850

TRC
Results you can rely on

REMEDIATION SUMMARY AND RISK-BASED SITE CLOSURE REQUEST

TRACT 19-4 INCH
UNIT LETTER "I", SECTION 29, TOWNSHIP 21 SOUTH, RANGE 37 EAST
NORTHWEST OF EUNICE
LEA COUNTY, NEW MEXICO
SRS #: 2014-178
NMOCD Reference: 1RP 7-14-3189

Prepared for:

Plains Pipeline, L.P.
333 Clay Street, Suite 1600
Houston, Texas 77002

Prepared by:

TRC Solutions, Inc.
2057 Commerce Drive
Midland, Texas 79703

August 2015

Curt D. Stanley
Senior Project Manager

Brittan K. Byerly, P.G.
Managing Principal

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APPENDICES

1.0 INTRODUCTION AND BACKGROUND

On behalf of Plains Pipeline, L.P. (Plains), TRC Solutions, Inc. (TRC), formerly NOVA Safety and Environmental (NOVA), has prepared this Remediation Summary and Risk-Based Closure Request for the crude oil release site known as Tract 19-4 Inch (SRS# 2014-178). The Release Site is located northwest of Eunice, New Mexico, in Unit Letter "I", Section 29, Township 21 South, Range 37 East. A topographic location map and site map depicting the soil sample locations are provided as Figures 1 and 2, respectively. The Release Site is located on property owned by the Apache Corporation. On July 9, 2014, a crude oil release greater than five (5) barrels (bbls) occurred on a four-inch (4") steel pipeline. Approximately one half (0.5) bbl of crude oil was recovered during initial response activities, resulting in a net loss of greater than four and one half (4.5) bbls of crude oil. The release was attributed to external corrosion of the four (4) inch pipeline. An area of impacted soil measuring approximately twenty (20) feet in width and sixty-five (65) feet in length was observed on the ground surface. Site photographs are provided as Appendix A. The Release Notification and Corrective Action (Form C-141) is included as Appendix C.

2.0 NMOCD SITE CLASSIFICATION

A groundwater database maintained by The New Mexico Office of the State Engineer (NMOSE) did not identify any registered water wells in Section 29, Township 21 South, Range 37 East. An inferred depth of groundwater reference map utilized by The New Mexico Oil Conservation Division (NMOCD) indicates groundwater should be encountered at approximately ninety (90) feet below ground surface (bgs). Based on the NMOCD site classification system, 10 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. The nearest residence is located approximately eight hundred (800) feet south of the Release Site and a water well is likely located on the property. Based on the NMOCD Site Classification System, 20 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 radius of the site. Based on the NMOCD Site Classification System, no points would be assigned to the site as a result of this criterion. The NMOCD guidelines indicate the Site has a Ranking Score of thirty (30) points. The regulatory guidelines for a Release Site with a Ranking Score of thirty (30) points are as follows:

- Benzene - 10 mg/Kg
- BTEX - 50 mg/Kg
- TPH – 100 mg/Kg

3.0 SUMMARY OF FIELD ACTIVITIES

On July 14, 2014, remediation activities commenced at the Release Site. Impacted soil excavated from the Release Site was stockpiled on plastic west of the excavation. An investigation trench

(Trench-1) was advanced to a depth of approximately twenty-four (24) feet below ground surface (bgs) to determine the vertical extent of impact at the Release Site.

On July 17, 2014, one (1) delineation soil sample (Trench 1 @ 24') was collected from the floor of Trench-1 and submitted to the laboratory for analysis of concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) using Method SW-846 8021B and total petroleum hydrocarbon (TPH) using Method SW 846-8015M. The analytical results indicated the benzene concentration was 4.68 mg/Kg and BTEX concentration was 168.58 mg/Kg. The TPH concentration for soil sample Trench-1 @ 24' was 14,844 mg/Kg. Based on field observations and the analytical results, additional vertical delineation was warranted at the Release Site. Please reference Figure 2 for the locations of trenches and soil samples. A table summarizing Benzene, BTEX, TPH and Chloride Concentrations in Soil is provided as Table 1. Laboratory Analytical Reports are provided as Appendix B.

On July 18, 2014, non-impacted soil was excavated from the south side of the excavation to allow a track hoe to excavate to depths greater than twenty-four (24) feet bgs. The resulting non-impacted soil was segregated from the impacted soil stockpile and the non-impacted soil was stockpiled to the southwest of the excavation for use as future backfill material. Following the preparation of the track hoe work platform, an investigation trench (Trench-2) was advanced to a depth of approximately thirty (30) feet bgs.

Following the advancement of investigation Trench-2 to a depth of approximately thirty (30) feet bgs, one (1) soil sample (Trench-2 @ 30') was collected and submitted for analysis. The analytical results indicated the benzene concentration was less than the laboratory method detection limit (MDL) of 0.00109 mg/Kg and the BTEX concentration was 0.13876 mg/Kg. The TPH concentration for soil sample Trench-2 @ 30' was 515.3 mg/Kg. Based on field observations and the analytical results, additional vertical delineation was warranted. Please reference Figure 2 for the locations of trenches and soil samples. A table summarizing Benzene, BTEX, TPH and Chloride Concentrations in Soil is provided as Table 1.

On July 29, 2014, one (1) composite stockpile soil sample (SP Baseline) was collected from the impacted soil stockpile. The analytical results indicated the TPH concentration of the soil sample was 13,640 mg/Kg and blending and mixing of the impacted soil stockpile was not feasible. Based on the analytical results of soil sample SP Baseline excavated soil was transported and disposed of at the Sundance Services facility in Eunice, New Mexico.

On receipt of the analytical results for soil sample Trench-2 @ 30', additional non-impacted soil was excavated from the north side of the excavation and stockpiled with the previously excavated non-impacted soil. The excavation of the non-impacted soil to a depth of approximately ten (10) feet bgs allowed the track hoe to excavate the "Release Point Trench" to a total depth of approximately thirty-seven (37) feet bgs.

On August 14, 2014, following the advancement of the Release Point Trench to a total depth of approximately thirty-seven (37) feet bgs, two (2) soil samples (RP @ 35' and RP @ 37') were collected from the Release Point Trench and submitted for analysis. The analytical results indicated the TPH concentration ranged from 39.2 mg/Kg for soil sample RP @ 37' to 1,045.8

mg/Kg for soil sample RP @ 35'. In addition, soil sample RP @ 37' was analyzed for concentrations of BTEX and chloride. The analytical results indicated the benzene and BTEX concentrations were less the applicable laboratory MDL and chloride analysis indicated the soil sample exhibited a chloride concentration of 72.7 mg/Kg. Based on field observations and the analytical results additional vertical delineation was not required.

On August 25, 2015, representatives of Plains and NOVA met on-site with a representative of the NMOCD to discuss a path forward for the Release Site. Based on field observations and the analytical results, Plains requested NMOCD approval to utilize a risk-based closure strategy (Workplan) at the Tract 19-4 Inch Release Site.

The NMOCD approved risk-based closure strategy required a two (2) stage implementation due to safety concerns with regard to the support of the four (4) inch pipeline. In summary, Stage 1 of the Workplan included the excavation of the west half of the Release Site to approximately nineteen (19) feet bgs. Following the excavation of the west half of the excavation; north, south, and west sidewall soil samples would be collected at approximately eighteen (18) feet bgs and submitted to the laboratory for analysis. On receipt of favorable analytical results, a twenty (20) mil poly liner would be installed and the west half of the excavation would be backfilled with locally purchased caliche.

Following the completion of activities on the west half of the excavation, the east half of the Release Site would be excavated, sampled (north, south, and east sidewall soil samples) and a poly liner would be installed at approximately nineteen (19) feet bgs.

On August 26, 2014, Plains received NMOCD approval to proceed with the risk-based closure strategy at the Tract 19-4 Inch Release Site.

On August 27, 2014, Plains requested approval to proceed with a risk-based closure strategy from the landowner (Apache Corporation) and on September 2, 2014, Apache Corporation approved of the Workplan as written and approved by the NMOCD.

On October 22, 2014, three (3) sidewall soil samples (NSW-1 @ 18', SSW-1 @ 18', and WSW-1 @ 18') were collected and submitted to the laboratory for analysis. The analytical results indicated all concentrations of benzene, BTEX, and TPH were less than the applicable laboratory MDL. Chloride analysis indicated chloride concentrations ranged from 191 mg/Kg for soil sample WSW-1 @ 18' to 287 mg/Kg for soil samples NSW-1 @ 18' and SSW-1 @ 18'. Please reference Figure 2 for soil sample locations. A table summarizing Benzene, BTEX, TPH and Chloride Concentrations in Soil is provided as Table 1.

On November 4, 2014, Plains requested and received approval from the NMOCD to leave in place concentrations of elevated chloride represented by soil samples NSW-1 @ 18' and SSW-1 @ 18'.

On November 18, 2014, a composite soil sample (Top Soil SP) was collected from the segregated overburden soil stockpile and submitted for laboratory analysis. The soil stockpile was generated from the non-impacted "Equipment Access Area", which was excavated to allow

the track hoe to delineate the vertical extent of impact at depths greater than approximately twenty-four (24) feet bgs. The analytical results indicated concentrations of benzene, BTEX and TPH were less than the applicable laboratory MDL. Based on the analytical results, the soil represented by soil sample Top Soil SP was deemed suitable for use a backfill material.

On November 19, 2014, a twenty (20) mil poly liner was installed in the west half of the excavation and sufficient liner material was included to cover the eastern half of the excavation. Prior to and following the installation of the twenty (20) mil poly liner, a six (6) inch layer of locally purchased non-impacted sand was placed above and below the liner to protect the liner from sharp objects. This engineering control was designed to shed moisture to the edge of the liner beyond the area of deeper vertical impact. The excess poly liner material was rolled up pending the completion of excavation and sampling activities in the east half of the excavation.

On November 23, 2014, three (3) sidewall soil samples (SSW-2 @ 18', ESW-1 @ 18', and NSW-2 @ 18') were collected and submitted to the laboratory for analysis. The analytical results indicated all concentrations of benzene, BTEX, and TPH were less than the applicable laboratory MDL, with the exception soil sample ESW-1 @ 18', which exhibited benzene, BTEX, and TPH concentrations of 0.165 mg/Kg, 1.533 mg/Kg, and 2,868 mg/Kg, respectively. Please reference Figure 2 for soil sample locations. A table summarizing Benzene, BTEX, TPH and Chloride Concentrations in Soil is provided as Table 1.

On December 16, 2014, Plains requested and received NMOCD approval to backfill the east half of the excavation, with the exception of the east sidewall which was represented by soil sample ESW-1 @ 18'. Plains requested NMOCD approval to backfill the east half of the excavation based on the proximity of vehicle traffic on Turner Road.

On March 9, 2015, a hand auger was utilized to collect soil samples (A-1 @ 8' and A-2 @ 5') at two locations along the property fence line. The soil samples were submitted to the laboratory for analysis and the analytical results indicated all concentrations of benzene, BTEX and TPH were less than the NMOCD regulatory guidelines. Soil sample A-1 @ 8' was collected from the floor of the Plains pipeline chase, approximately two (2) feet east of the north – south barbed wire fence. The analytical results indicate hydrocarbon impact was not present on the floor of the pipeline chase at approximately two (2) feet east of the fence line and migration of hydrocarbons to east appears to be limited to areas beneath the fence line. Soil sample A-2 @ 5' was collected approximately six (6) feet north of soil sample A-1 @ 8' and approximately two (2) feet east of the fence line. The soil sample was collected from the top of the caliche layer and analytical results indicate the soil sample exhibited no hydrocarbon impact.

On March 13, 2015, NOVA on behalf of Plains excavated the east sidewall of the excavation an additional approximately five (5) feet to the east beneath the pipeline. Following the excavation activities, one (1) sidewall soil sample (ESW-1A @ 18') were collected and submitted to the laboratory for analysis. The analytical results indicated the benzene concentration was less than the laboratory MDL of 0.100 mg/Kg. The BTEX concentration was 2.168 mg/Kg and the TPH concentration was 2,721 mg/Kg.

On March 18, 2005, Plains requested NMOCD approval to leave in place the limited stained soil observed on the east sidewall of the excavation. On March 19, 2015, the NMOCD approved leaving the limited stained soil on the east sidewall in place, completing the liner installation and completing the backfilling of the excavation with locally purchased caliche. The vegetative zone was reestablished using non-impacted topsoil segregated during the excavation activities and locally purchased topsoil.

Following backfilling activities, the Release Site and disturbed area were contoured to fit the original topography of the area. On July 21, 2015, the disturbed area was reseeded with vegetation acceptable to the landowner.

A total of, approximately 3,648 cubic yards of impacted soil was transported and disposed of at Sundance Services in Eunice, New Mexico. Sundance Services disposal manifests are provided on the enclosed disk.

4.0 SITE CLOSURE REQUEST

TRC recommends, Plains provide the NMOCD a copy of this Remediation Summary and Risk-Based Closure Request and request the NMOCD grant site closure status to the Tract 19-4 Inch release of July 9, 2014.

5.0 LIMITATIONS

TRC Solutions, Inc. has prepared this Remediation Summary and Risk-Based Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

TRC Solutions, Inc. has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. TRC Solutions, Inc. 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 Solutions, Inc. has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. TRC Solutions, Inc. 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 Solutions, Inc. and/or Plains Pipeline L.P.

6.0 DISTRIBUTION

Copy 1:
Dr. Tomas Oberding
New Mexico Oil Conservation Division (District 1)
1625 French Drive
Hobbs, NM 88240

Copy 2:
Camille Bryant
Plains Pipeline, L.P.
P.O. Box 3119
Midland, Texas 79702

Copy 3:
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jpdann@paalp.com

Copy 4:
Bruce Baker
Apache Corporation
larry.baker@apachecorp.com

Copy 5:
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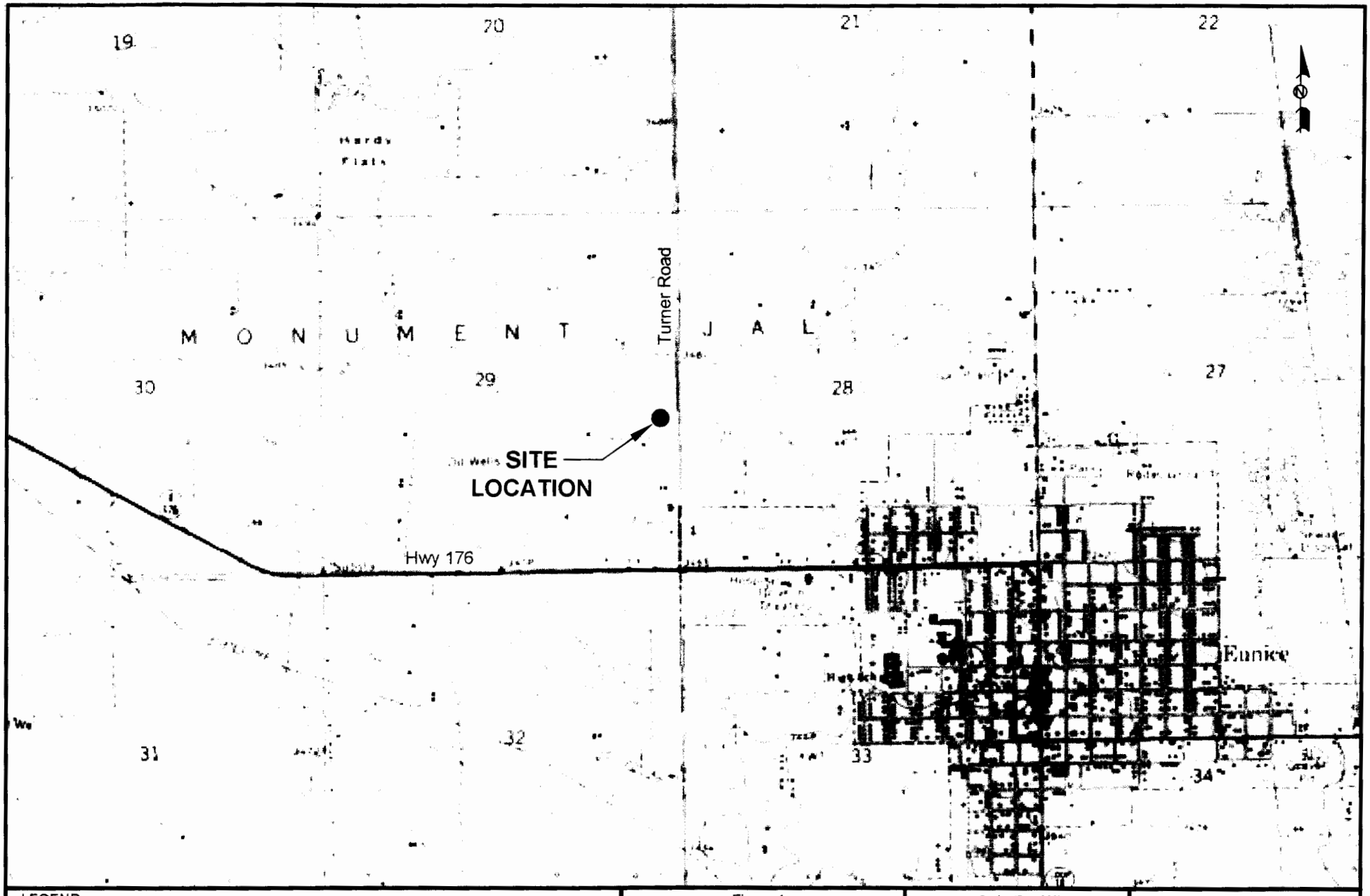
2057 Commerce Drive
Midland, TX 79703
cdstanley@trcsolutions.com



LEGEND:

2000 1000 0 1000 2000

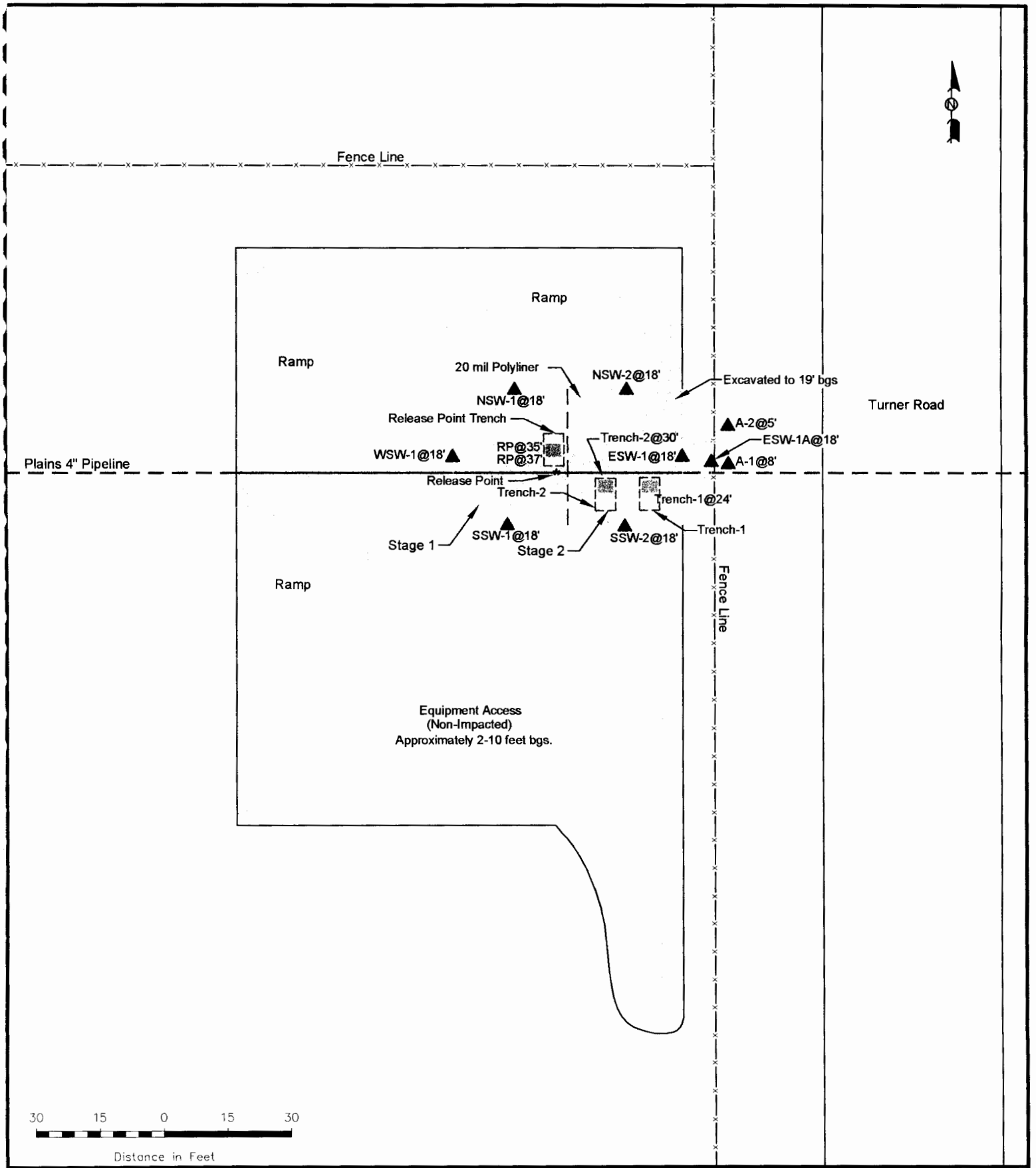
Distance in Feet

Figure 1

Site Location Map
Plains Pipeline, L.P.
Tract 19 - 4 Inch
Lea County, NM

Scale: 1" = 2000'
CAD By: TA
Checked By: CS
October 29, 2014
Lat. N 32.448517°, Long. W 103.176603°

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720



LEGEND:

- Sidewall Soil Sample Location
- Floor Soil Sample Location

Figure 2
Site Details & Confirmation Soil Sample Location Map
Plains Pipeline, LP.
Tract 19 - 4 Inch
Lea County, NM

Scale: 1" = 30'
CAD By: TA
Checked By: CS
Draft: October 29, 2014
Lat. N 32.448517°, Long. W 103.176603°

TRC
2057 Commerce Drive
Midland, Texas 79703
432.520.7720

TABLE 1

BENZENE, BTEX, TPH AND CHLORIDE CONCENTRATIONS IN SOIL

PLAINS PIPELINE, L.P.
TRACT 19 - 4 INCH
LEA COUNTY, NEW MEXICO
SRS # 2014-178

All Concentrations are reported in mg/Kg

SAMPLE DATE	SAMPLE LOCACTION	SAMPLE DEPTH	EPA SW 846-8015M				EPA SW 846-8021B, 5030						E 300.1
			GRO C6-C12 mg/Kg	DRO C12-C28 mg/Kg	ORO C28-C35 mg/Kg	TPH C_6-C_{35}	BENZENE	TOLUENE	ETHYL-BENZENE	m, p - XYLENES	o - XYLENES	BTEX	CHLORIDE
NMOCD REGULATORY GUIDELINE		-	-	-	-	**100**	**10**	-	-	-	-	**50**	**250**
07/17/14	Trench-1 @ 24'	24'	4,470	9,520	854	**14,844**	4.68	31.9	27.2	74.6	30.2	**168.58**	-
07/18/14	Trench-2 @ 30'	30'	74.3	441	<16.3	**515.3**	<0.00109	0.00626	0.0211	0.0756	0.0358	0.13876	-
07/29/14	SP Baseline	-	2,040	11,600	<76.3	**13,640**	-	-	-	-		-	-
08/14/14	RP @ 35'	35'	178	849	18.8	**1,045.8**	-	-	-	-		-	-
08/19/14	RP @ 37'	37'	<15.5	39.2	<15.5	39.2	<0.000996	<0.00199	<0.000996	<0.00199	<0.000996	<0.00199	72.7
10/22/14	NSW-1 @18'	18'	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	287
10/22/14	SSW-1 @18'	18'	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	287
10/22/14	WSW-1 @18'	18'	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	191
11/18/14	Top Soil SP	-	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	-
11/23/15	SSW-2 @ 18'	18'	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	-
11/23/15	ESW-1 @ 18'	18'	548	2,320	<100	**2,868**	0.165	0.228	0.473	0.667		1.533	-
11/23/15	NSW-2 @ 18'	18'	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	-
03/09/15	A-1 @ 8'	8'	<4.00	<50.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200		<0.0200	-
03/09/15	A-2 @ 5'	5'	<8.00	<50.0	<50.0	<50.0	<0.0400	<0.0400	<0.0400	<0.0400		<0.0400	-
03/13/15	ESW-1A @ 18'	18'	281	2,440	<250	**2,721**	<0.100	0.204	0.574	1.39		2.168	-

TRC
Results you can rely on

Photographic Documentation

Client: Plains Pipeline L.P.
Project Name: Tract 19 – 4 Inch

Prepared by: TRC Solutions
Location: Lea County, NM

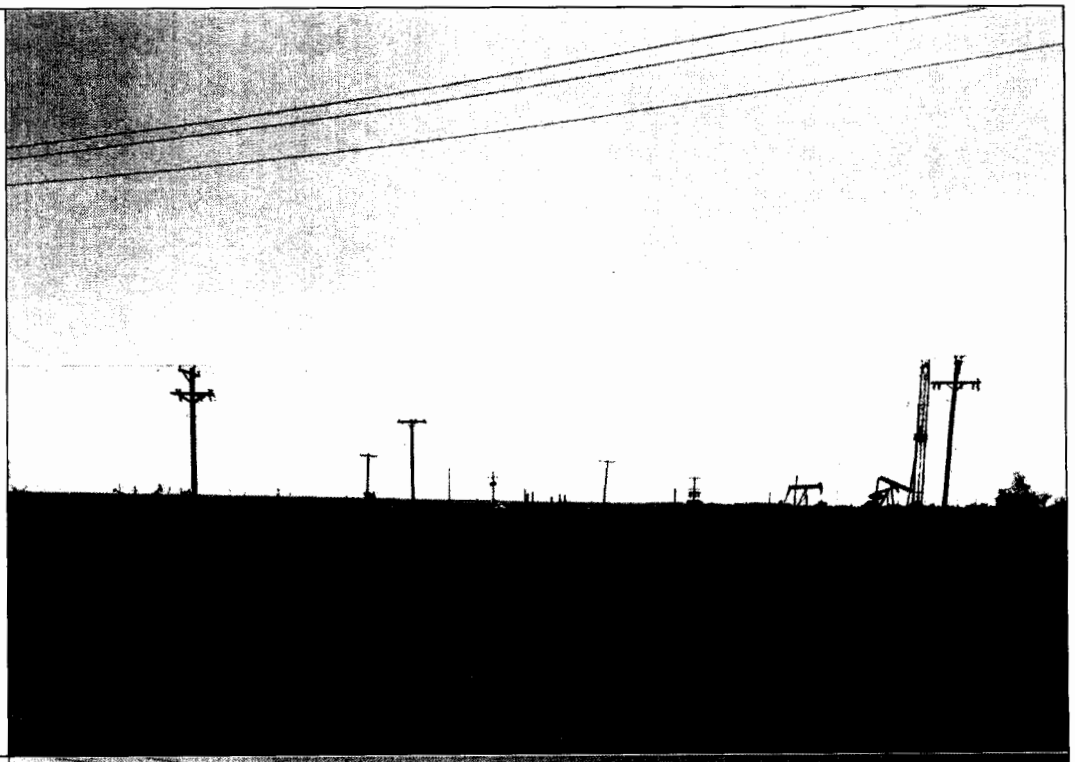
Photograph No. 1 **Date:** **November 23, 2014** **Description:** **Looking southeast.** **West floor of excavation lined and partially backfilled**	
Photograph No. 2 **Date:** **March 23, 2015** **Description:** **Looking northeast.** **East floor of excavation lined and awaiting backfill.**	

TRC
Results you can rely on

Photographic Documentation

Client: Plains Pipeline L.P.
Project Name: Tract 19 – 4 Inch

Prepared by: TRC Solutions
Location: Lea County, NM

Photograph No. 3 **Date:** **July 1, 2015** **Description:** **Looking east.** **Excavation backfilled and contoured.**	
Photograph No. 3 **Date:** **July 1, 2015** **Description:** **Looking north** **Excavation backfilled and contoured.**	

Analytical Report 489544

for

PLAINS ALL AMERICAN EH&S

Project Manager: Curt Stanley

Plains Tract 19-4 In

21-JUL-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

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

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

21-JUL-14

Project Manager: **Curt Stanley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **489544**
Plains Tract 19-4 In
Project Address: Lea County, New Mexico

Curt Stanley:

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) 489544. 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. 489544 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 489544

PLAINS ALL AMERICAN EH&S, Midland, TX

Plains Tract 19-4 In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench -1 @24'	S	07-17-14 16:00		489544-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Plains Tract 19-4 In

Project ID:
Work Order Number(s): *489544*

Report Date: *21-JUL-14*
Date Received: *07/18/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 489544

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Plains Tract 19-4 In

Project Id:
Contact: Curt Stanley
Project Location: Lea County, New Mexico

Date Received in Lab: Fri Jul-18-14 09:10 am
Report Date: 21-JUL-14
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	489544-001						
	Field Id:	Trench -1 @24'						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jul-17-14 16:00						
BTEX by EPA 8021B	***Extracted:***	Jul-18-14 17:00						
	Analyzed:	Jul-19-14 08:20						
	Units/RL:	mg/kg	RL					
Benzene		4.68	0.547					
Toluene		31.9	1.09					
Ethylbenzene		27.2	0.547					
m_p-Xylenes		74.6	1.09					
o-Xylene		30.2	0.547					
Total Xylenes		105	0.547					
Total BTEX		169	0.547					
Percent Moisture	***Extracted:***							
	Analyzed:	Jul-21-14 10:00						
	Units/RL:	%	RL					
Percent Moisture		8.97	1.00					
TPH By SW8015 Mod	***Extracted:***	Jul-18-14 11:00						
	Analyzed:	Jul-18-14 14:00						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		4470	165					
C12-C28 Diesel Range Hydrocarbons		9520	165					
C28-C35 Oil Range Hydrocarbons		854	165					
Total TPH		14800	165					

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Plains Tract 19-4 In

Work Orders : 489544,

Project ID:

Lab Batch #: 946099 **Sample:** 489544-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/14 14:00

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 946117 **Sample:** 489544-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/14 08:20

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 946099 **Sample:** 658648-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/18/14 12:20

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	100	98	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

Lab Batch #: 946117 **Sample:** 658657-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/19/14 02:21

BTEX by EPA 8021B 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	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 946099 **Sample:** 658648-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/18/14 13:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	45.1	50.0	90	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: Plains Tract 19-4 In

Work Orders : 489544,

Project ID:

Lab Batch #: 946117 **Sample:** 658657-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/19/14 02:37

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	80-120	

Lab Batch #: 946099 **Sample:** 658648-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/18/14 13:36

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	44.3	50.0	89	70-135	

Lab Batch #: 946117 **Sample:** 658657-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/19/14 02:54

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 946099 **Sample:** 489518-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/14 14:49

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	99.7	119	70-135	
o-Terphenyl	63.6	49.9	127	70-135	

Lab Batch #: 946117 **Sample:** 489518-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/14 03:10

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	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: Plains Tract 19-4 In

Work Orders : 489544,

Project ID:

Lab Batch #: 946099 **Sample:** 489518-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/18/14 15:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	60.0	49.9	120	70-135	

Lab Batch #: 946117 **Sample:** 489518-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/19/14 03:26

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0355	0.0300	118	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.

BS / BSD Recoveries

Project Name: Plains Tract 19-4 In

Work Order #: 489544 **Project ID:**

Analyst: ARM **Date Prepared:** 07/18/2014 **Date Analyzed:** 07/19/2014

Lab Batch ID: 946117 **Sample:** 658657-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.103	103	0.100	0.105	105	2	70-130	35	
Toluene	<0.00200	0.100	0.101	101	0.100	0.102	102	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.107	107	0	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.219	110	0.200	0.219	110	0	70-135	35	
o-Xylene	<0.00100	0.100	0.110	110	0.100	0.111	111	1	71-133	35	

Analyst: ARM **Date Prepared:** 07/18/2014 **Date Analyzed:** 07/18/2014

Lab Batch ID: 946099 **Sample:** 658648-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	862	86	1000	889	89	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1110	111	1000	1130	113	2	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

Sample Duplicate Recovery

Project Name: Plains Tract 19-4 In

Work Order #: 489544

Lab Batch #: 946109 **Project ID:**

Date Analyzed: 07/21/2014 10:00 **Date Prepared:** 07/21/2014 **Analyst:** WRU

QC- Sample ID: 489544-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	8.97	9.11	2	20	

Lab Batch #: 946109

Date Analyzed: 07/21/2014 10:00 **Date Prepared:** 07/21/2014 **Analyst:** WRU

QC- Sample ID: 489607-010 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.65	8.17	7	20	

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

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Curt Stanley

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature:

e-mail: cjbryant@paalp.com
cstanley@novatraining.cc

Project Name: Plains Tract 19 - 4 Inch

Project #:

Project Loc: Lea County, NM

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

(lab use only) ORDER #: 489544

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1 / 8015M / 8015B	TPH: TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chloride E300	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	Trench-1 @ 24'			7/17/2014	1600		1	x								Soil	X								X				X	

Special Instructions:
Bill to Plains

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:		
Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		
Temperature Upon Receipt:	7.1 °C	

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Nova Safety & Environmental

Date/ Time Received: 07/18/2014 09:10:00 AM

Work Order #: 489544

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 07/18/2014

Checklist reviewed by: Kelsey Brooks Date: 07/18/2014

Analytical Report 489666

for

PLAINS ALL AMERICAN EH&S

Project Manager: Curt Stanley

Plains Tract 19-4 In

22-JUL-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

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

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

22-JUL-14

Project Manager: **Curt Stanley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **489666**
Plains Tract 19-4 In
Project Address: Lea County, New Mexico

Curt Stanley:

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) 489666. 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. 489666 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

Sample Cross Reference 489666

PLAINS ALL AMERICAN EH&S, Midland, TX

Plains Tract 19-4 In

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench -2 @ 30'	S	07-18-14 15:15		489666-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Plains Tract 19-4 In

Project ID:
Work Order Number(s): *489666*

Report Date: *22-JUL-14*
Date Received: *07/21/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

XENCO Laboratories

Certificate of Analysis Summary 489666

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Plains Tract 19-4 In

Project Id:
Contact: Curt Stanley
Project Location: Lea County, New Mexico

Date Received in Lab: Mon Jul-21-14 01:30 pm
Report Date: 22-JUL-14
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	489666-001						
	Field Id:	Trench -2 @ 30'						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Jul-18-14 15:15						
BTEX by EPA 8021B	***Extracted:***	Jul-21-14 16:00						
	Analyzed:	Jul-21-14 19:34						
	Units/RL:	mg/kg	RL					
Benzene		ND	0.00109					
Toluene		0.00626	0.00217					
Ethylbenzene		0.0211	0.00109					
m_p-Xylenes		0.0756	0.00217					
o-Xylene		0.0358	0.00109					
Total Xylenes		0.111	0.00109					
Total BTEX		0.139	0.00109					
Percent Moisture	***Extracted:***							
	Analyzed:	Jul-21-14 17:00						
	Units/RL:	%	RL					
Percent Moisture		7.90	1.00					
TPH By SW8015 Mod	***Extracted:***	Jul-21-14 15:00						
	Analyzed:	Jul-21-14 19:56						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		74.3	16.3					
C12-C28 Diesel Range Hydrocarbons		441	16.3					
C28-C35 Oil Range Hydrocarbons		ND	16.3					
Total TPH		515	16.3					

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Plains Tract 19-4 In

Work Orders : 489666,

Project ID:

Lab Batch #: 946200 **Sample:** 489666-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/21/14 19:34

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0245	0.0300	82	80-120	
4-Bromofluorobenzene	0.0352	0.0300	117	80-120	

Lab Batch #: 946177 **Sample:** 489666-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/21/14 19:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.8	108	70-135	
o-Terphenyl	62.1	49.9	124	70-135	

Lab Batch #: 946177 **Sample:** 658687-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/21/14 17:11

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	63.8	50.0	128	70-135	

Lab Batch #: 946200 **Sample:** 658707-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/21/14 17:25

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0303	0.0300	101	80-120	

Lab Batch #: 946177 **Sample:** 658687-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/21/14 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	129	100	129	70-135	
o-Terphenyl	61.1	50.0	122	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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Plains Tract 19-4 In

Work Orders : 489666,

Project ID:

Lab Batch #: 946200 **Sample:** 658707-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/21/14 17:40

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0286	0.0300	95	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 946200 **Sample:** 658707-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/21/14 17:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

Lab Batch #: 946177 **Sample:** 658687-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/21/14 18:07

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	100	98	70-135	
o-Terphenyl	64.7	50.0	129	70-135	

Lab Batch #: 946200 **Sample:** 489648-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/21/14 18:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 946177 **Sample:** 489648-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/21/14 19:02

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.8	120	70-135	
o-Terphenyl	64.8	49.9	130	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: Plains Tract 19-4 In

Work Orders : 489666, **Project ID:**

Lab Batch #: 946200 **Sample:** 489648-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/21/14 18:29

BTEX by EPA 8021B 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	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

BS / BSD Recoveries

Project Name: Plains Tract 19-4 In

Work Order #: 489666 **Project ID:**

Analyst: ARM **Date Prepared:** 07/21/2014 **Date Analyzed:** 07/21/2014

Lab Batch ID: 946200 **Sample:** 658707-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.104	104	0.100	0.104	104	0	70-130	35	
Toluene	<0.00200	0.100	0.103	103	0.100	0.102	102	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.110	110	0.100	0.109	109	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.226	113	0.200	0.223	112	1	70-135	35	
o-Xylene	<0.00100	0.100	0.112	112	0.100	0.112	112	0	71-133	35	

Analyst: ARM **Date Prepared:** 07/21/2014 **Date Analyzed:** 07/21/2014

Lab Batch ID: 946177 **Sample:** 658687-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	1030	103	1000	939	94	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1060	106	1000	1090	109	3	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Plains Tract 19-4 In

Work Order #: 489666

Lab Batch #: 946177 **Project ID:**

Date Analyzed: 07/21/2014 **Date Prepared:** 07/21/2014 **Analyst:** ARM

QC- Sample ID: 489648-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

	MATRIX / MATRIX SPIKE RECOVERY STUDY					
TPH by SW8015 Mod **Analytes**	**Parent Sample Result [A]**	**Spike Added [B]**	**Spiked Sample Result [C]**	**%R [D]**	**Control Limits %R**	**Flag**
C6-C12 Gasoline Range Hydrocarbons	<23.9	1590	1640	103	70-135	
C12-C28 Diesel Range Hydrocarbons	5360	1590	7050	106	70-135	

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

BRL - Below Reporting Limit

Project Name: Plains Tract 19-4 In

Work Order # : 489666 **Project ID:**

Lab Batch ID: 946200 **QC- Sample ID:** 489648-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/21/2014 **Date Prepared:** 07/21/2014 **Analyst:** ARM

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	<0.00160	0.160	0.138	86	0.160	0.139	87	1	70-130	35	
Toluene	<0.00320	0.160	0.127	79	0.160	0.129	81	2	70-130	35	
Ethylbenzene	<0.00160	0.160	0.119	74	0.160	0.119	74	0	71-129	35	
m_p-Xylenes	<0.00320	0.320	0.242	76	0.320	0.241	75	0	70-135	35	
o-Xylene	<0.00160	0.160	0.121	76	0.160	0.122	76	1	71-133	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.

Sample Duplicate Recovery

Project Name: Plains Tract 19-4 In

Work Order #: 489666

Lab Batch #: 946179 **Project ID:**

Date Analyzed: 07/21/2014 17:00 **Date Prepared:** 07/21/2014 **Analyst:** WRU

QC- Sample ID: 489666-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.90	7.81	1	20	

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

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Curt Stanley

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature:

e-mail: cjbryant@paalp.com
cstanley@novatraining.cc

Project Name: Plains Tract 19 - 4 Inch

Project #:

Project Loc: Lea County, NM

PO #:

Report Format: ☐ Standard ☐ TRRP ☐ NPDES

24 hr.

(lab use only) ORDER #: 489666

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 / 8015M	TOTAL: TPH: 8015B / TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chloride E300			RUSH TAT (Pre-Scheduled) 24/ 48, 72 hrs	Standard TAT
	Trench-2 @ 30'			7/18/2014	1515		1	x								Soil	X								X						X	

Special Instructions:
Bill to Plains

Relinquished by:	Date	Time	Received by:	Date	Time
	7/18/14	0910			
Relinquished by:	Date	Time	Received by:	Date	Time
		1330		7/21/14	1330
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 1 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Nova Safety & Environmental

Date/ Time Received: 07/21/2014 01:30:00 PM

Work Order #: 489666

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 07/21/2014

Checklist reviewed by: Date:

Analytical Report 490303

for

PLAINS ALL AMERICAN EH&S

Project Manager: Curt Stanley

Tract 19-4 Inch

SRS 2014-178

31-JUL-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

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

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

XENCO Laboratories

31-JUL-14

Project Manager: **Curt Stanley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **490303**
Tract 19-4 Inch
Project Address: Lea County, NM

Curt Stanley:

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) 490303. 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. 490303 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 490303

PLAINS ALL AMERICAN EH&S, Midland, TX

Tract 19-4 Inch

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP Baseline	S	07-29-14 13:30		490303-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Tract 19-4 Inch

Project ID: *SRS 2014-178*
Work Order Number(s): *490303*

Report Date: *31-JUL-14*
Date Received: *07/29/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 490303

PLAINS ALL AMERICAN EH&S, Midland, TX

Tract 19-4 Inch

Sample Id : **SP Baseline**
Lab Sample Id : 490303-001

Matrix : Soil
Date Collected : 07.29.14 13.30
Date Received : 07.29.14 16.37

% Moisture : 2.05
Basis : Dry Weight

Analytical Method : TPH by SW8015 Mod
Seq Number 947022

Prep Method: TX1005P
Date Prep: 07.30.14 12.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C6-C12 Gasoline Range Hydrocarbons	PHC612	2040	mg/kg	07.30.14 22.27		5
C12-C28 Diesel Range Hydrocarbons	PHCG1028	11600	mg/kg	07.30.14 22.27		5
Total TPH	PHC635	13600	mg/kg	07.30.14 22.27		5

Final 1.000

Certificate of Analysis Summary 490303

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Tract 19-4 Inch

Project Id: SRS 2014-178
Contact: Curt Stanley
Project Location: Lea County, NM

Date Received in Lab: Tue Jul-29-14 04:37 pm
Report Date: 31-JUL-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	490303-001					
	Field Id:	SP Baseline					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Jul-29-14 13:30					
Percent Moisture	***Extracted:***						
	Analyzed:	Jul-30-14 17:10					
	Units/RL:	%	RL				
Percent Moisture		2.05	1.00				
TPH by SW8015 Mod	***Extracted:***	Jul-30-14 12:00					
	Analyzed:	Jul-30-14 22:27					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		2040	76.3				
C12-C28 Diesel Range Hydrocarbons		11600	76.3				
C28-C35 Oil Range Hydrocarbons		ND	76.3				
Total TPH		13600	76.3				

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

\+ NELAC certification not offered for this compound.

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Tract 19-4 Inch

Work Orders : 490303,

Project ID: SRS 2014-178

Lab Batch #: 947022 **Sample:** 490303-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/14 22:27

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.7	128	70-135	
o-Terphenyl	64.8	49.9	130	70-135	

Lab Batch #: 947022 **Sample:** 659234-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

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

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.8	100	100	70-135	
o-Terphenyl	52.9	50.0	106	70-135	

Lab Batch #: 947022 **Sample:** 659234-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/14 15:32

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	64.8	50.0	130	70-135	

Lab Batch #: 947022 **Sample:** 659234-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 07/30/14 15:57

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	65.0	50.0	130	70-135	

Lab Batch #: 947022 **Sample:** 490270-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/14 19:13

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	61.9	50.0	124	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: Tract 19-4 Inch

Work Orders : 490303, **Project ID:** SRS 2014-178

Lab Batch #: 947022 **Sample:** 490270-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 07/30/14 19:38

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.9	113	70-135	
o-Terphenyl	59.7	50.0	119	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: Tract 19-4 Inch

Work Order #: 490303 **Project ID:** SRS 2014-178

Analyst: ARM **Date Prepared:** 07/30/2014 **Date Analyzed:** 07/30/2014

Lab Batch ID: 947022 **Sample:** 659234-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	988	99	1000	1040	104	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1190	119	1000	1240	124	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

Project Name: Tract 19-4 Inch

Work Order # : 490303 **Project ID:** SRS 2014-178

Lab Batch ID: 947022 **QC- Sample ID:** 490270-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 07/30/2014 **Date Prepared:** 07/30/2014 **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
C6-C12 Gasoline Range Hydrocarbons	31.9	1020	997	95	1020	931	88	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.3	1020	1070	105	1020	1070	105	0	70-135	35	

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

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Sample Duplicate Recovery

Project Name: Tract 19-4 Inch

Work Order #: 490303

Lab Batch #: 946983 **Project ID:** SRS 2014-178

Date Analyzed: 07/30/2014 17:10 **Date Prepared:** 07/30/2014 **Analyst:** WRU

QC- Sample ID: 490303-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.05	1.89	8	20	

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 07/29/2014 04:37:00 PM

Work Order #: 490303

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

Temperature Measuring device used :

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 07/30/2014

Checklist reviewed by: Kelsey Brooks Date: 07/30/2014

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Curt Stanley

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature:

e-mail: cjbryant@paalp.com
cstanley@novatraining.cc

Project Name: Tract 19 - 4 Inch

Project #: SRS 2014-178

Project Loc: Lea County, NM

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)
ORDER #: 490303

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 / 8015M / 8015B	TOTAL: TPH: TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260 (X)	RCI	Paint Filter Test	Chloride E300	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	SP Baseline			7/29/2014	1330		1	x								Soil	X													X

Special Instructions:
Bill to Plains

	Date	Time		Date	Time
Relinquished by:	7/29/14	1550	Received by:	7/29/14	1550
Relinquished by:	7/29/14	1637	Received by:	7/29/14	1637
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 1 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 07/29/2014 04:37:00 PM

Work Order #: 490303

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

Temperature Measuring device used :

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 07/30/2014

Checklist reviewed by: Kelsey Brooks Date: 07/30/2014

Analytical Report 491536

for

PLAINS ALL AMERICAN EH&S

Project Manager: Curt Stanley

Tract 19-4 Inch

SRS 2014-178

18-AUG-14

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

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

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

XENCO Laboratories

18-AUG-14

Project Manager: **Curt Stanley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **491536**
Tract 19-4 Inch
Project Address: Lea County, NM

Curt Stanley:

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) 491536. 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. 491536 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 491536

PLAINS ALL AMERICAN EH&S, Midland, TX

Tract 19-4 Inch

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP @ 35' bgs	S	08-14-14 15:00		491536-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Tract 19-4 Inch

Project Id: SRS 2014-178
Contact: Curt Stanley
Project Location: Lea County, NM

Date Received in Lab: Fri Aug-15-14 10:00 am
Report Date: 18-AUG-14
Project Manager: Kelsey Brooks

Analysis Requested								
	Lab Id:	491536-001						
	Field Id:	RP @ 35' bgs						
	Depth:							
	Matrix:	SOIL						
	Sampled:	Aug-14-14 15:00						
Percent Moisture	***Extracted:***							
	Analyzed:	Aug-18-14 09:45						
	Units/RL:	%	RL					
Percent Moisture		4.19	1.00					
TPH by SW8015 Mod	***Extracted:***	Aug-15-14 16:00						
	Analyzed:	Aug-16-14 02:01						
	Units/RL:	mg/kg	RL					
C6-C12 Gasoline Range Hydrocarbons		178	15.6					
C12-C28 Diesel Range Hydrocarbons		849	15.6					
C28-C35 Oil Range Hydrocarbons		18.8	15.6					
Total TPH		1050	15.6					

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

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Certified and approved by numerous States and Agencies.

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4143 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
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
6017 Financial Drive, Norcross, GA 30071	(770) 449-8800	(770) 449-5477
3725 E. Atlanta Ave, Phoenix, AZ 85040	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: Tract 19-4 Inch

Work Orders : 491536, **Project ID:** SRS 2014-178

Lab Batch #: 948406 **Sample:** 491536-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/16/14 02:01

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	61.8	49.9	124	70-135	

Lab Batch #: 948406 **Sample:** 660148-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/15/14 15:17

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

Lab Batch #: 948406 **Sample:** 660148-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/15/14 15:46

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	100	113	70-135	
o-Terphenyl	64.2	50.0	128	70-135	

Lab Batch #: 948406 **Sample:** 660148-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/15/14 16:14

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	55.5	50.0	111	70-135	

Lab Batch #: 948406 **Sample:** 491472-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/14 17:11

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.8	115	70-135	
o-Terphenyl	64.6	49.9	129	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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Tract 19-4 Inch

Work Orders : 491536, **Project ID:** SRS 2014-178

Lab Batch #: 948406 **Sample:** 491472-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/15/14 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	108	99.8	108	70-135	
o-Terphenyl	64.6	49.9	129	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: Tract 19-4 Inch

Work Order #: 491536 **Project ID:** SRS 2014-178

Analyst: ARM **Date Prepared:** 08/15/2014 **Date Analyzed:** 08/15/2014

Lab Batch ID: 948406 **Sample:** 660148-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	944	94	1000	1050	105	11	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1110	111	1000	1170	117	5	70-135	35	

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

Project Name: Tract 19-4 Inch

Work Order # : 491536 **Project ID:** SRS 2014-178

Lab Batch ID: 948406 **QC- Sample ID:** 491472-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/15/2014 **Date Prepared:** 08/15/2014 **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
C6-C12 Gasoline Range Hydrocarbons	<17.4	1160	1120	97	1160	1120	97	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.4	1160	1380	119	1160	1360	117	1	70-135	35	

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

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

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

Sample Duplicate Recovery

Project Name: Tract 19-4 Inch

Work Order #: 491536

Lab Batch #: 948460 **Project ID:** SRS 2014-178

Date Analyzed: 08/18/2014 09:45 **Date Prepared:** 08/18/2014 **Analyst:** WRU

QC- Sample ID: 491474-002 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	14.5	14.8	2	20	

Lab Batch #: 948460

Date Analyzed: 08/18/2014 09:45 **Date Prepared:** 08/18/2014 **Analyst:** WRU

QC- Sample ID: 491502-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	4.21	4.21	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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/15/2014 10:00:00 AM

Work Order #: 491536

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 08/15/2014

Checklist reviewed by: Kelsey Brooks Date: 08/15/2014

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Curt Stanley

Company Name: Nova Safety and Environmental

Company Address: 2057 Commerce

City/State/Zip: Midland, TX 79703

Telephone No: 432.520.7720 Fax No: 432.520.7701

Sampler Signature: Edward Bellaco e-mail: cjbryant@paalp.com, cstanley@novatraining.cc

Project Name: Tract 19 - 4 Inch

Project #: SRS 2014-178

Project Loc: Lea County, NM

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only) **ORDER #:** 491536

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix (DW=Drinking Water SL=Sludge; GW = Groundwater S=Soil/Solid; NP=Non-Potable Specify Other)	Analyze For: TCLP: TPH: 8015B / 8015M / 418.1	TOTAL: TPH: TX 1005 / TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	Paint Filter Test	Chloride E300		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	RP @ 35' bgs			8/14/2014	1500		1	x								Soil	X													X	

Special Instructions:
Bill to Plains

Relinquished by:	Date	Time	Received by:	Date	Time
	8/15/14	1000		8/15/14	1000
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL FedEx Lone Star		

Temperature Upon Receipt: 2.5 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/15/2014 10:00:00 AM

Work Order #: 491536

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 08/15/2014

Checklist reviewed by: Kelsey Brooks Date: 08/15/2014

Analytical Report 491766

for

PLAINS ALL AMERICAN EH&S

Project Manager: Curt Stanley

Tract 19-4 Inch

SRS 2014-178

22-AUG-14

Collected By: Client

XENCO Laboratories

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-16-TX), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
New Jersey (TX007), North Carolina(681), Oklahoma (9218), Pennsylvania (68-03610)

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

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

XENCO Laboratories

22-AUG-14

Project Manager: **Curt Stanley**
PLAINS ALL AMERICAN EH&S
1301 S. COUNTY ROAD 1150
Midland, TX 79706

Reference: XENCO Report No(s): **491766**
Tract 19-4 Inch
Project Address: Lea County, NM

Curt Stanley:

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) 491766. 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. 491766 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 491766

PLAINS ALL AMERICAN EH&S, Midland, TX

Tract 19-4 Inch

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP @ 37'	S	08-19-14 14:00		491766-001

CASE NARRATIVE

Client Name: PLAINS ALL AMERICAN EH&S
Project Name: Tract 19-4 Inch

Project ID: *SRS 2014-178*
Work Order Number(s): *491766*

Report Date: *22-AUG-14*
Date Received: *08/20/2014*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Hits Summary 491766

PLAINS ALL AMERICAN EH&S, Midland, TX

Tract 19-4 Inch

Sample Id : **RP @ 37'**
Lab Sample Id : 491766-001

Matrix : Soil
Date Collected : 08.19.14 14.00
Date Received : 08.20.14 09.50

% Moisture : 3.56
Basis : Dry Weight

Analytical Method : Inorganic Anions by EPA 300/300.1
Seq Number 948895

Prep Method: E300P
Date Prep: 08.21.14 12.30

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.7	mg/kg	08.21.14 14.32		5

Analytical Method : TPH by SW8015 Mod
Seq Number 948777

Prep Method: TX1005P
Date Prep: 08.20.14 16.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
C12-C28 Diesel Range Hydrocarbons	PHCG1028	39.2	mg/kg	08.20.14 19.48		1
Total TPH	PHC635	39.2	mg/kg	08.20.14 19.48		1

Laboratories

Certificate of Analysis Summary 491766

PLAINS ALL AMERICAN EH&S, Midland, TX

Project Name: Tract 19-4 Inch

Project Id: SRS 2014-178
Contact: Curt Stanley
Project Location: Lea County, NM

Date Received in Lab: Wed Aug-20-14 09:50 am
Report Date: 22-AUG-14
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	491766-001					
	Field Id:	RP @ 37'					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Aug-19-14 14:00					
BTEX by EPA 8021	***Extracted:***	Aug-21-14 14:00					
	Analyzed:	Aug-22-14 04:35					
	Units/RL:	mg/kg RL					
Benzene		ND 0.000996					
Toluene		ND 0.00199					
Ethylbenzene		ND 0.000996					
m_p-Xylenes		ND 0.00199					
o-Xylene		ND 0.000996					
Xylenes, Total		ND 0.000996					
Total BTEX		ND 0.000996					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-21-14 12:30					
	Analyzed:	Aug-21-14 14:32					
	Units/RL:	mg/kg RL					
Chloride		72.7 10.4					
Percent Moisture	***Extracted:***						
	Analyzed:	Aug-20-14 16:20					
	Units/RL:	% RL					
Percent Moisture		3.56 1.00					
TPH by SW8015 Mod	***Extracted:***	Aug-20-14 16:00					
	Analyzed:	Aug-20-14 19:48					
	Units/RL:	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 15.5					
C12-C28 Diesel Range Hydrocarbons		39.2 15.5					
C28-C35 Oil Range Hydrocarbons		ND 15.5					
Total TPH		39.2 15.5					

Kelsey Brooks
Project Manager

XENCO Laboratories

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

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Tract 19-4 Inch

Work Orders : 491766,

Project ID: SRS 2014-178

Lab Batch #: 948777 **Sample:** 491766-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/20/14 19:48

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.1	99.8	91	70-135	
o-Terphenyl	49.7	49.9	100	70-135	

Lab Batch #: 948908 **Sample:** 491766-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/14 04:35

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

Lab Batch #: 948777 **Sample:** 660360-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/20/14 18:25

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	44.5	50.0	89	70-135	

Lab Batch #: 948908 **Sample:** 660435-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/21/14 23:23

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0261	0.0300	87	80-120	

Lab Batch #: 948777 **Sample:** 660360-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/20/14 18:51

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	56.9	50.0	114	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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: Tract 19-4 Inch

Work Orders : 491766,

Project ID: SRS 2014-178

Lab Batch #: 948908 **Sample:** 660435-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/21/14 23:39

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 948777 **Sample:** 660360-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/20/14 19:18

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	58.9	50.0	118	70-135	

Lab Batch #: 948908 **Sample:** 660435-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/21/14 23:56

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 948777 **Sample:** 491766-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/20/14 20:14

TPH by SW8015 Mod	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.8	107	70-135	
o-Terphenyl	59.4	49.9	119	70-135	

Lab Batch #: 948908 **Sample:** 491557-020 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/14 00:12

BTEX by EPA 8021	SURROGATE RECOVERY STUDY				
Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: Tract 19-4 Inch

Work Orders : 491766, **Project ID:** SRS 2014-178

Lab Batch #: 948777 **Sample:** 491766-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/20/14 20:40

TPH by SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	58.2	50.0	116	70-135	

Lab Batch #: 948908 **Sample:** 491557-020 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/22/14 00:29

BTEX by EPA 8021 Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0311	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.

BS / BSD Recoveries

Project Name: Tract 19-4 Inch

Work Order #: 491766 **Project ID:** SRS 2014-178

Analyst: ARM **Date Prepared:** 08/21/2014 **Date Analyzed:** 08/21/2014

Lab Batch ID: 948908 **Sample:** 660435-1-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	<0.00100	0.100	0.106	106	0.100	0.105	105	1	70-130	35	
Toluene	<0.00200	0.100	0.104	104	0.100	0.103	103	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.109	109	0.100	0.108	108	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.213	107	0.200	0.211	106	1	70-135	35	
o-Xylene	<0.00100	0.100	0.104	104	0.100	0.103	103	1	71-133	35	

Analyst: JUM **Date Prepared:** 08/20/2014 **Date Analyzed:** 08/21/2014

Lab Batch ID: 948895 **Sample:** 660337-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	54.3	109	50.0	53.2	106	2	90-110	20	

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

BS / BSD Recoveries

Project Name: Tract 19-4 Inch

Work Order #: 491766 **Project ID:** SRS 2014-178

Analyst: ARM **Date Prepared:** 08/20/2014 **Date Analyzed:** 08/20/2014

Lab Batch ID: 948777 **Sample:** 660360-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<15.0	1000	887	89	1000	817	82	8	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1040	104	1000	1110	111	7	70-135	35	

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

Form 3 - MS Recoveries

Project Name: Tract 19-4 Inch

Work Order #: 491766

Lab Batch #: 948895 **Project ID:** SRS 2014-178

Date Analyzed: 08/21/2014 **Date Prepared:** 08/20/2014 **Analyst:** JUM

QC- Sample ID: 491565-011 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	731	665	1390	99	80-120	

Lab Batch #: 948895

Date Analyzed: 08/21/2014 **Date Prepared:** 08/20/2014 **Analyst:** JUM

QC- Sample ID: 491568-007 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	268	251	515	98	80-120	

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

BRL - Below Reporting Limit

XENCO Laboratories

Project Name: Tract 19-4 Inch

Work Order # : 491766 **Project ID:** SRS 2014-178

Lab Batch ID: 948908 **QC- Sample ID:** 491557-020 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/22/2014 **Date Prepared:** 08/21/2014 **Analyst:** ARM

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	<0.00108	0.108	0.0994	92	0.108	0.0992	92	0	70-130	35	
Toluene	<0.00216	0.108	0.0971	90	0.108	0.0971	90	0	70-130	35	
Ethylbenzene	<0.00108	0.108	0.101	94	0.108	0.101	94	0	71-129	35	
m_p-Xylenes	<0.00216	0.216	0.198	92	0.216	0.197	91	1	70-135	35	
o-Xylene	<0.00108	0.108	0.0969	90	0.108	0.0966	89	0	71-133	35	

Lab Batch ID: 948777 **QC- Sample ID:** 491766-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/20/2014 **Date Prepared:** 08/20/2014 **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
C6-C12 Gasoline Range Hydrocarbons	<15.5	1030	961	93	1040	947	91	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	39.2	1030	1150	108	1040	1130	105	2	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.

Sample Duplicate Recovery

Project Name: Tract 19-4 Inch

Work Order #: 491766

Lab Batch #: 948785 **Project ID:** SRS 2014-178

Date Analyzed: 08/20/2014 16:20 **Date Prepared:** 08/20/2014 **Analyst:** WRU

QC- Sample ID: 491766-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	3.56	3.56	0	20	

Lab Batch #: 948785

Date Analyzed: 08/20/2014 16:20 **Date Prepared:** 08/20/2014 **Analyst:** WRU

QC- Sample ID: 491779-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	7.84	7.81	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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/20/2014 09:50:00 AM

Work Order #: 491766

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 08/20/2014

Checklist reviewed by: Kelsey Brooks Date: 08/20/2014

Xenco Laboratories

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Curt Stanley
Project Name: Tract 19 - 4 Inch

Company Name: Nova Safety and Environmental
Project #: SRS 2014-178

Company Address: 2057 Commerce
Project Loc: Lea County, NM

City/State/Zip: Midland, TX 79703
PO #:

Telephone No: 432.520.7720
Fax No: 432.520.7701
Report Format: [X] Standard [ ] TRRP [ ] NPDES 24 hrs

Sampler Signature: [signature] for Edward Belue
e-mail: cjbryant@paalp.com cstanley@novatraining.cc

(lab use only)
ORDER #: 491766

Analyze For: TCLP: / TOTAL: (X under BTEX 8021B/5030 or BTEX 8260)

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	Paint Filter Test	Chloride E300		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
	RP @ 37'			8/19/2014	1400		1	x								Soil	X													X	

Special Instructions:
Bill to Plains
HOLD FOR BTEX + Cl - CALL w/ VERBAL

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	8/20	950	[signature]	8/20/14	950
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?	Y	N
by Courier? UPS DHL	FedEx	Lone Star

Temperature Upon Receipt: 3 °C

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: PLAINS ALL AMERICAN EH&S

Date/ Time Received: 08/20/2014 09:50:00 AM

Work Order #: 491766

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

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	No
#5 Custody Seals intact on sample bottles?	No
#6 *Custody Seals Signed and dated?	No
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	No
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	N/A
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	N/A

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 08/20/2014

Checklist reviewed by: Kelsey Brooks Date: 08/20/2014

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

(Corrected Report)

Curt Stanley
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: October 29, 2014

Work Order: 14102321

Project Location: Eunice, NM
Project Name: Tract 19-4"
Project Number: 2014-178
SRS #: 2014-178

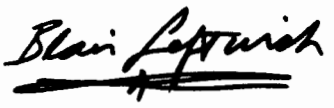
Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
377781	NSW-1 @ 18'	soil	2014-10-22	14:40	2014-10-23
377782	SSW-1 @ 18'	soil	2014-10-22	14:45	2014-10-23
377783	WSW-1 @ 18'	soil	2014-10-22	14:50	2014-10-23

Report Corrections (Work Order 14102321)

- 10/28/2014–Client requested Cl be re-run/reported for all samples.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project Tract 19-4" were received by TraceAnalysis, Inc. on 2014-10-23 and assigned to work order 14102321. Samples for work order 14102321 were received intact at a temperature of 3.5 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	98602	2014-10-23 at 13:58	116629	2014-10-24 at 10:04
Chloride (Titration)	SM 4500-Cl B	98706	2014-10-28 at 11:20	116737	2014-10-29 at 09:30
TPH DRO - NEW	S 8015 D	98619	2014-10-23 at 12:00	116624	2014-10-24 at 09:17
TPH GRO	S 8015 D	98602	2014-10-23 at 13:58	116631	2014-10-24 at 10:13
TPH ORO	S 8015 D	98619	2014-10-23 at 12:00	116625	2014-10-24 at 09:43

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 14102321 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 377781 - NSW-1 @ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	116629	Date Analyzed:	2014-10-24	Analyzed By:	AK
Prep Batch:	98602	Sample Preparation:	2014-10-23	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	5	<0.0200	mg/Kg	1	0.0200
Xylene	U	5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.06	mg/Kg	1	2.00	103	70 - 130

Sample: 377781 - NSW-1 @ 18'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	116737	Date Analyzed:	2014-10-29	Analyzed By:	MM
Prep Batch:	98706	Sample Preparation:	2014-10-28	Prepared By:	MM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**287**	mg/Kg	5	4.00

Sample: 377781 - NSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	116624	Date Analyzed:	2014-10-24	Analyzed By:	SC
Prep Batch:	98619	Sample Preparation:	2014-10-23	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs,U	5	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			100	mg/Kg	1	100	100	70 - 130

Sample: 377781 - NSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	116631	Date Analyzed:	2014-10-24	Analyzed By:	AK
Prep Batch:	98602	Sample Preparation:	2014-10-23	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	5	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.61	mg/Kg	1	2.00	80	70 - 130

Sample: 377781 - NSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	116625	Date Analyzed:	2014-10-24	Analyzed By:	SC
Prep Batch:	98619	Sample Preparation:	2014-10-23	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			72.4	mg/Kg	1	100	72	70 - 130
n-Triacontane			62.7	mg/Kg	1	100	63	37.1 - 162

Sample: 377782 - SSW-1 @ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	116629	Date Analyzed:	2014-10-24	Analyzed By:	AK
Prep Batch:	98602	Sample Preparation:	2014-10-23	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	5	<0.0200	mg/Kg	1	0.0200
Xylene	U	5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70 - 130

Sample: 377782 - SSW-1 @ 18'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	116737	Date Analyzed:	2014-10-29	Analyzed By:	MM
Prep Batch:	98706	Sample Preparation:	2014-10-28	Prepared By:	MM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**287**	mg/Kg	5	4.00

Sample: 377782 - SSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	116624	Date Analyzed:	2014-10-24	Analyzed By:	SC
Prep Batch:	98619	Sample Preparation:	2014-10-23	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs,U	5	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.6	mg/Kg	1	100	98	70 - 130

Sample: 377782 - SSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	116631	Date Analyzed:	2014-10-24	Analyzed By:	AK
Prep Batch:	98602	Sample Preparation:	2014-10-23	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	5	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.56	mg/Kg	1	2.00	78	70 - 130

Sample: 377782 - SSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	116625	Date Analyzed:	2014-10-24	Analyzed By:	SC
Prep Batch:	98619	Sample Preparation:	2014-10-23	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			71.1	mg/Kg	1	100	71	70 - 130
n-Triacontane			61.7	mg/Kg	1	100	62	37.1 - 162

Sample: 377783 - WSW-1 @ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	116629	Date Analyzed:	2014-10-24	Analyzed By:	AK
Prep Batch:	98602	Sample Preparation:	2014-10-23	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	5	<0.0200	mg/Kg	1	0.0200
Xylene	U	5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 377783 - WSW-1 @ 18'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	116737	Date Analyzed:	2014-10-29	Analyzed By:	MM
Prep Batch:	98706	Sample Preparation:	2014-10-28	Prepared By:	MM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**191**	mg/Kg	5	4.00

Sample: 377783 - WSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	116624	Date Analyzed:	2014-10-24	Analyzed By:	SC
Prep Batch:	98619	Sample Preparation:	2014-10-23	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs,U	5	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			99.0	mg/Kg	1	100	99	70 - 130

Sample: 377783 - WSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	116631	Date Analyzed:	2014-10-24	Analyzed By:	AK
Prep Batch:	98602	Sample Preparation:	2014-10-23	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	5	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.59	mg/Kg	1	2.00	80	70 - 130

Sample: 377783 - WSW-1 @ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	116625	Date Analyzed:	2014-10-24	Analyzed By:	SC
Prep Batch:	98619	Sample Preparation:	2014-10-23	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			72.3	mg/Kg	1	100	72	70 - 130
n-Triacontane			62.3	mg/Kg	1	100	62	37.1 - 162

Method Blanks

Method Blank (1) QC Batch: 116624

QC Batch: 116624 | Date Analyzed: 2014-10-24 | Analyzed By: SC
Prep Batch: 98619 | QC Preparation: 2014-10-23 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		5	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.6	mg/Kg	1	100	99	70 - 130

Method Blank (1) QC Batch: 116625

QC Batch: 116625 | Date Analyzed: 2014-10-24 | Analyzed By: SC
Prep Batch: 98619 | QC Preparation: 2014-10-23 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			0.00	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			71.2	mg/Kg	1	100	71	70 - 130
n-Triacontane			62.0	mg/Kg	1	100	62	37.1 - 162

Method Blank (1) QC Batch: 116629

QC Batch: 116629 | Date Analyzed: 2014-10-24 | Analyzed By: AK
Prep Batch: 98602 | QC Preparation: 2014-10-23 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		5	<0.00533	mg/Kg	0.02
Toluene		5	<0.00645	mg/Kg	0.02
Ethylbenzene		5	<0.0116	mg/Kg	0.02

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Xylene		5	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.86	mg/Kg	1	2.00	93	70 - 130

Method Blank (1) QC Batch: 116631

QC Batch: 116631 Date Analyzed: 2014-10-24 Analyzed By: AK
Prep Batch: 98602 QC Preparation: 2014-10-23 Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		5	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.98	mg/Kg	1	2.00	99	70 - 130
4-Bromofluorobenzene (4-BFB)			1.69	mg/Kg	1	2.00	84	70 - 130

Method Blank (1) QC Batch: 116737

QC Batch: 116737 Date Analyzed: 2014-10-29 Analyzed By: MM
Prep Batch: 98706 QC Preparation: 2014-10-28 Prepared By: MM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 116624 | Date Analyzed: 2014-10-24 | Analyzed By: SC
Prep Batch: 98619 | QC Preparation: 2014-10-23 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	249	mg/Kg	1	250	<7.41	100	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		5	252	mg/Kg	1	250	<7.41	101	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	101	99.7	mg/Kg	1	100	101	100	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 116625 | Date Analyzed: 2014-10-24 | Analyzed By: SC
Prep Batch: 98619 | QC Preparation: 2014-10-23 | Prepared By: SC

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	73.5	72.7	mg/Kg	1	100	74	73	70 - 130
n-Triacontane	62.0	61.1	mg/Kg	1	100	62	61	54.8 - 164

Laboratory Control Spike (LCS-1)

QC Batch: 116629 | Date Analyzed: 2014-10-24 | Analyzed By: AK
Prep Batch: 98602 | QC Preparation: 2014-10-23 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	2.05	mg/Kg	1	2.00	<0.00533	102	70 - 130
Toluene		5	2.05	mg/Kg	1	2.00	<0.00645	102	70 - 130
Ethylbenzene		5	2.02	mg/Kg	1	2.00	<0.0116	101	70 - 130
Xylene		5	6.11	mg/Kg	1	6.00	<0.00874	102	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		5	1.96	mg/Kg	1	2.00	<0.00533	98	70 - 130	4	20
Toluene		5	1.97	mg/Kg	1	2.00	<0.00645	98	70 - 130	4	20
Ethylbenzene		5	1.98	mg/Kg	1	2.00	<0.0116	99	70 - 130	2	20
Xylene		5	5.97	mg/Kg	1	6.00	<0.00874	100	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.84	mg/Kg	1	2.00	94	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.91	1.84	mg/Kg	1	2.00	96	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 116631 | Date Analyzed: 2014-10-24 | Analyzed By: AK
Prep Batch: 98602 | QC Preparation: 2014-10-23 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	18.7	mg/Kg	1	20.0	<2.32	94	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		5	21.7	mg/Kg	1	20.0	<2.32	108	70 - 130	15	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.99	1.99	mg/Kg	1	2.00	100	100	70 - 130
4-Bromofluorobenzene (4-BFB)	1.44	1.43	mg/Kg	1	2.00	72	72	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 116737 | Date Analyzed: 2014-10-29 | Analyzed By: MM
Prep Batch: 98706 | QC Preparation: 2014-10-28 | Prepared By: MM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2780	mg/Kg	5	2500	<19.2	111	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2730	mg/Kg	5	2500	<19.2	109	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 377607

QC Batch: 116624 | Date Analyzed: 2014-10-24 | Analyzed By: SC
Prep Batch: 98619 | QC Preparation: 2014-10-23 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	705	mg/Kg	1	250	380	130	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr,Qs	Qr,Qs	5 497	mg/Kg	1	250	380	47	70 - 130	35	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	130	125	mg/Kg	1	100	130	125	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 377607

QC Batch: 116625 | Date Analyzed: 2014-10-24 | Analyzed By: SC
Prep Batch: 98619 | QC Preparation: 2014-10-23 | Prepared By: SC

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	100	mg/Kg	1	100	104	100	70 - 130
n-Triacontane	94.1	81.7	mg/Kg	1	100	94	82	10 - 258

Matrix Spike (MS-1) Spiked Sample: 377115

QC Batch: 116629 | Date Analyzed: 2014-10-24 | Analyzed By: AK
Prep Batch: 98602 | QC Preparation: 2014-10-23 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.81	mg/Kg	1	2.00	<0.00533	90	70 - 130
Toluene		5	1.85	mg/Kg	1	2.00	<0.00645	92	70 - 130
Ethylbenzene		5	1.92	mg/Kg	1	2.00	<0.0116	96	70 - 130
Xylene		5	5.97	mg/Kg	1	6.00	<0.00874	100	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		5	1.69	mg/Kg	1	2.00	<0.00533	84	70 - 130	7	20
Toluene		5	1.75	mg/Kg	1	2.00	<0.00645	88	70 - 130	6	20
Ethylbenzene		5	1.90	mg/Kg	1	2.00	<0.0116	95	70 - 130	1	20
Xylene		5	5.77	mg/Kg	1	6.00	<0.00874	96	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	1.94	mg/Kg	1	2	98	97	70 - 130
4-Bromofluorobenzene (4-BFB)	2.15	2.10	mg/Kg	1	2	108	105	70 - 130

Matrix Spike (MS-1) Spiked Sample: 377115

QC Batch: 116631 | Date Analyzed: 2014-10-24 | Analyzed By: AK
Prep Batch: 98602 | QC Preparation: 2014-10-23 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	16.4	mg/Kg	1	20.0	<2.32	82	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		5	19.0	mg/Kg	1	20.0	<2.32	95	70 - 130	15	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.83	1.81	mg/Kg	1	2	92	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.65	1.68	mg/Kg	1	2	82	84	70 - 130

Matrix Spike (MS-1) Spiked Sample: 377783

QC Batch: 116737 | Date Analyzed: 2014-10-29 | Analyzed By: MM
Prep Batch: 98706 | QC Preparation: 2014-10-28 | Prepared By: MM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3010	mg/Kg	5	2500	191	113	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3160	mg/Kg	5	2500	191	119	78.9 - 121	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (CCV-2)

QC Batch: 116624 | Date Analyzed: 2014-10-24 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	243	97	80 - 120	2014-10-24

Standard (CCV-3)

QC Batch: 116624 | Date Analyzed: 2014-10-24 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	235	94	80 - 120	2014-10-24

Standard (CCV-2)

QC Batch: 116629 | Date Analyzed: 2014-10-24 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.102	102	80 - 120	2014-10-24
Toluene		5	mg/kg	0.100	0.102	102	80 - 120	2014-10-24
Ethylbenzene		5	mg/kg	0.100	0.0991	99	80 - 120	2014-10-24
Xylene		5	mg/kg	0.300	0.300	100	80 - 120	2014-10-24

Standard (CCV-3)

QC Batch: 116629 | Date Analyzed: 2014-10-24 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0966	97	80 - 120	2014-10-24
Toluene		5	mg/kg	0.100	0.0983	98	80 - 120	2014-10-24
Ethylbenzene		5	mg/kg	0.100	0.0953	95	80 - 120	2014-10-24
Xylene		5	mg/kg	0.300	0.288	96	80 - 120	2014-10-24

Standard (CCV-2)

QC Batch: 116631 Date Analyzed: 2014-10-24 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.913	91	80 - 120	2014-10-24

Standard (CCV-3)

QC Batch: 116631 Date Analyzed: 2014-10-24 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.848	85	80 - 120	2014-10-24

Standard (ICV-1)

QC Batch: 116737 Date Analyzed: 2014-10-29 Analyzed By: MM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2014-10-29

Standard (CCV-1)

QC Batch: 116737 Date Analyzed: 2014-10-29 Analyzed By: MM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2014-10-29

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-93	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-14-10	Lubbock
5	NELAP	T104704392-14-8	Midland
6		2014-018	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.

F	Description
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 1410232 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296

5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313

200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443

BioAquatic Testing, 2501 Mayes Rd., Ste 100, Carrollton, Texas 75006, Tel (972) 242-7750

Brandon & Clark, 3403 Industrial Blvd., Hobbs, NM 88240, Tel (575) 392-7561, Fax (575) 392-4508

Company Name: Nova Safety & Environmental Phone #: 432-520-7720
Address: (Street, City, Zip) 2057 Commerce Midland, TX 79703 Fax #:
Contact Person: Curt Stanley E-mail: cstanley@novatraining.cc
Invoice to: (If different from above) Plains (Camille Bryant)
Project #: 2014-178 Project Name: "Tract 19-4"
Project Location (including state): Eunice, NM Sampler Signature: C.A. Stanley for Albert Garcia

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE		PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE (2014)	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX (8021) / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC (Extended 35)	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	(Cl), F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity (Chloride)	Na, Ca, Mg, K, TDS, EC						Turn Around Time if different from standard (24 hr)	Hold
77781	NSW-1@18'	1	4oz		X								X		10/22	1440		X		X															X							X	
782	SSW-1@18'	↓	↓		↓								↓		↓	1445		↓		↓															↓							↓	
783	WSW-1@18'	↓	↓		↓								↓		↓	1450		↓		↓															↓							↓	

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
[signature]	NOVA	10/23/14	1143	[signature]	TA	10/23/14	11:43	INST 1 / OBS 3.6 °C / COR 3.5 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ___ / OBS ___ °C / COR ___ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ___ / OBS ___ °C / COR ___ °C

LAB USE ONLY
Intact Y / N (Y)
Headspace Y / N / NA
Log-in Review [initials]

REMARKS:

☐ Dry Weight Basis Required
☐ TRRP Report Required
☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # Carr.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Curt Stanley
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: November 24, 2014

Work Order: 14112104

Project Location: Eunice, NM
Project Name: Tract 19-4"
Project Number: 2014-178
SRS #: 2014-178

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
380227	TOP SOIL SP	soil	2014-11-18	16:00	2014-11-20

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Analytical Report

Sample: 380227 - TOP SOIL SP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	117451	Date Analyzed:	2014-11-23	Analyzed By:	AK
Prep Batch:	99299	Sample Preparation:	2014-11-21	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
Benzene	U	5	<0.0200		mg/Kg	1	0.0200
Toluene	U	5	<0.0200		mg/Kg	1	0.0200
Ethylbenzene	U	5	<0.0200		mg/Kg	1	0.0200
Xylene	U	5	<0.0200		mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.02	mg/Kg	1	2.00	101	70 - 130
4-Bromofluorobenzene (4-BFB)			2.14	mg/Kg	1	2.00	107	70 - 130

Sample: 380227 - TOP SOIL SP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117467	Date Analyzed:	2014-11-24	Analyzed By:	SC
Prep Batch:	99286	Sample Preparation:		Prepared By:	SC

Parameter	Flag	Cert	Result	RL Result	Units	Dilution	RL
DRO	U	5	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			110	mg/Kg	1	100	110	70 - 130

Sample: 380227 - TOP SOIL SP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	117452	Date Analyzed:	2014-11-23	Analyzed By:	AK
Prep Batch:	99299	Sample Preparation:	2014-11-21	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		5	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			97.7	mg/Kg	1	100	98	70 - 130

Method Blank (1) QC Batch: 117469

QC Batch: 117469 | Date Analyzed: 2014-11-24 | Analyzed By: SC
Prep Batch: 99286 | QC Preparation: 2014-11-21 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			0.00	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			98.8	mg/Kg	1	100	99	70 - 130
n-Triacontane			80.6	mg/Kg	1	100	81	37.1 - 162

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO			0.00	mg/Kg	1	250	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	104	107	mg/Kg	1	100	104	107	70 - 130
n-Triacontane	84.1	86.2	mg/Kg	1	100	84	86	54.8 - 164

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 380216

QC Batch: 117451 | Date Analyzed: 2014-11-23 | Analyzed By: AK
Prep Batch: 99299 | QC Preparation: 2014-11-21 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.73	mg/Kg	1	2.00	<0.00533	86	70 - 130
Toluene		5	1.83	mg/Kg	1	2.00	<0.00645	92	70 - 130
Ethylbenzene		5	1.94	mg/Kg	1	2.00	<0.0116	97	70 - 130
Xylene		5	5.95	mg/Kg	1	6.00	<0.00874	99	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		5	1.72	mg/Kg	1	2.00	<0.00533	86	70 - 130	1	20
Toluene		5	1.80	mg/Kg	1	2.00	<0.00645	90	70 - 130	2	20
Ethylbenzene		5	1.96	mg/Kg	1	2.00	<0.0116	98	70 - 130	1	20
Xylene		5	5.98	mg/Kg	1	6.00	<0.00874	100	70 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.14	1.97	mg/Kg	1	2	107	98	70 - 130
4-Bromofluorobenzene (4-BFB)	2.24	2.25	mg/Kg	1	2	112	112	70 - 130

Matrix Spike (MS-1) Spiked Sample: 380216

QC Batch: 117452 | Date Analyzed: 2014-11-23 | Analyzed By: AK
Prep Batch: 99299 | QC Preparation: 2014-11-21 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	16.0	mg/Kg	1	20.0	<2.32	80	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		5	17.8	mg/Kg	1	20.0	<2.32	89	70 - 130	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.75	1.80	mg/Kg	1	2	88	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.71	1.73	mg/Kg	1	2	86	86	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 380198

QC Batch: 117467 | Date Analyzed: 2014-11-24 | Analyzed By: SC
Prep Batch: 99286 | QC Preparation: 2014-11-21 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	259	mg/Kg	1	250	<7.41	104	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		5	237	mg/Kg	1	250	<7.41	95	70 - 130	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	105	102	mg/Kg	1	100	105	102	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 380198

QC Batch: 117469 | Date Analyzed: 2014-11-24 | Analyzed By: SC
Prep Batch: 99286 | QC Preparation: 2014-11-21 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO			0.00	mg/Kg	1	250	0	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO			0.00	mg/Kg	1	250	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	106	102	mg/Kg	1	100	106	102	70 - 130
n-Triacontane	84.2	82.3	mg/Kg	1	100	84	82	10 - 258

Calibration Standards

Standard (CCV-1)

QC Batch: 117451 | Date Analyzed: 2014-11-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0982	98	80 - 120	2014-11-23
Toluene		5	mg/kg	0.100	0.0992	99	80 - 120	2014-11-23
Ethylbenzene		5	mg/kg	0.100	0.0997	100	80 - 120	2014-11-23
Xylene		5	mg/kg	0.300	0.300	100	80 - 120	2014-11-23

Standard (CCV-2)

QC Batch: 117451 | Date Analyzed: 2014-11-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0965	96	80 - 120	2014-11-23
Toluene		5	mg/kg	0.100	0.100	100	80 - 120	2014-11-23
Ethylbenzene		5	mg/kg	0.100	0.0995	100	80 - 120	2014-11-23
Xylene		5	mg/kg	0.300	0.302	101	80 - 120	2014-11-23

Standard (CCV-1)

QC Batch: 117452 | Date Analyzed: 2014-11-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.922	92	80 - 120	2014-11-23

Standard (CCV-2)

QC Batch: 117452 | Date Analyzed: 2014-11-23 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.917	92	80 - 120	2014-11-23

Standard (CCV-2)

QC Batch: 117467 Date Analyzed: 2014-11-24 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	233	93	80 - 120	2014-11-24

Standard (CCV-3)

QC Batch: 117467 Date Analyzed: 2014-11-24 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	251	100	80 - 120	2014-11-24

Standard (CCV-2)

QC Batch: 117469 Date Analyzed: 2014-11-24 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2014-11-24

Standard (CCV-3)

QC Batch: 117469 Date Analyzed: 2014-11-24 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2014-11-24

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	PJLA	L14-93	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-14-10	Lubbock
5	NELAP	T104704392-14-8	Midland
6		2014-018	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.

F	Description
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 1411 CW4

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296

5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313

200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944, 1 (888) 588-3443

BioAquatic Testing, 2501 Mayes Rd., Ste 100, Carrollton, Texas 75006, Tel (972) 242-7750

Brandon & Clark, 3403 Industrial Blvd., Hobbs, NM 88240, Tel (575) 392-7561, Fax (575) 392-4508

Company Name: NOVA SAFETY & ENVIRONMENTAL Phone #: 432-520-7720

Address: (Street, City, Zip) 2057 COMMERCE MIDLAND, TX 79703 Fax #:

Contact Person: CURT STANLEY E-mail:

Invoice to: (if different from above) PLAINS (CAMILLE BRYANT)

Project #: 2014-178 Project Name: TRACT 19-4 INCH

Project Location (including state): EUNICE, NM Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC (EXT TO C35)	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	Turn Around Time If different from standard	Hold
	TOPSOIL SP	1	4oz	X								X		11/18/2014	1400		X	X	X																

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	NOVA	11/20/14	1653		TA	11/20/14	16:53	INST 3.9 °C, OBS 3.9 °C, COR 3.8 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ °C, OBS ____ °C, COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ °C, OBS ____ °C, COR ____ °C

LAB USE ONLY

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier #

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Curt Stanley
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: November 26, 2014

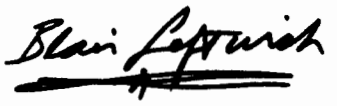
Work Order: 14112524

Project Location: Eunice, NM
Project Name: Tract 19-4"
Project Number: 2014-178
SRS #: 2014-178

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
380706	SSW- 2@ 18'	soil	2014-11-23	13:00	2014-11-25
380707	ESW- 1@ 18'	soil	2014-11-23	13:05	2014-11-25
380708	NSW- 2@ 18'	soil	2014-11-23	16:00	2014-11-25

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project Tract 19-4" were received by TraceAnalysis, Inc. on 2014-11-25 and assigned to work order 14112524. Samples for work order 14112524 were received intact at a temperature of 5.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	99379	2014-11-25 at 15:00	117548	2014-11-26 at 08:36
TPH DRO - NEW	S 8015 D	99378	2014-11-25 at 15:51	117547	2014-11-26 at 08:19
TPH GRO	S 8015 D	99379	2014-11-25 at 15:00	117550	2014-11-26 at 08:39
TPH ORO	S 8015 D	99378	2014-11-25 at 15:51	117549	2014-11-26 at 08:37

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 14112524 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 380706 - SSW- 2@ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	117548	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	Sample Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.77	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			1.99	mg/Kg	1	2.00	100	70 - 130

Sample: 380706 - SSW- 2@ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117547	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	Sample Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			130	mg/Kg	1	100	130	70 - 130

Sample: 380706 - SSW- 2@ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	117550	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	Sample Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.53	mg/Kg	1	2.00	76	70 - 130

Sample: 380706 - SSW- 2@ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117549	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	Sample Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			130	mg/Kg	1	100	130	70 - 130
n-Triacontane			123	mg/Kg	1	100	123	37.1 - 162

Sample: 380707 - ESW- 1@ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	117548	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	Sample Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.165**	mg/Kg	2	0.0200
Toluene		1	**0.228**	mg/Kg	2	0.0200
Ethylbenzene		1	**0.473**	mg/Kg	2	0.0200
Xylene		1	**0.667**	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.66	mg/Kg	2	4.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	7.85	mg/Kg	2	4.00	196	70 - 130

Sample: 380707 - ESW- 1@ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117547	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	Sample Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**2320**	mg/Kg	2	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	215	mg/Kg	2	100	215	70 - 130

Sample: 380707 - ESW- 1@ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	117550	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	Sample Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**548**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.37	mg/Kg	5	10.0	84	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	22.2	mg/Kg	5	10.0	222	70 - 130

Sample: 380707 - ESW- 1@ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117549	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	Sample Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<100	<100	<100	mg/Kg	2	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	200	mg/Kg	2	100	200	70 - 130

continued ...

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr	169	mg/Kg	2	100	169	37.1 - 162

Sample: 380708 - NSW- 2@ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	117548	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	Sample Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.90	mg/Kg	1	2.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Sample: 380708 - NSW- 2@ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117547	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	Sample Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	130	mg/Kg	1	100	130	70 - 130

Sample: 380708 - NSW- 2@ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	117550	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	Sample Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.60	mg/Kg	1	2.00	80	70 - 130

Sample: 380708 - NSW- 2@ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	117549	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	Sample Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		131	mg/Kg	1	100	131	70 - 130
n-Triacontane				120	mg/Kg	1	100	120	37.1 - 162

Method Blanks

Method Blank (1) QC Batch: 117547

QC Batch:	117547	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	QC Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			118	mg/Kg	1	100	118	70 - 130

Method Blank (1) QC Batch: 117548

QC Batch:	117548	Date Analyzed:	2014-11-26	Analyzed By:	AK
Prep Batch:	99379	QC Preparation:	2014-11-25	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.76	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			2.13	mg/Kg	1	2.00	106	70 - 130

Method Blank (1) QC Batch: 117549

QC Batch:	117549	Date Analyzed:	2014-11-26	Analyzed By:	SC
Prep Batch:	99378	QC Preparation:	2014-11-25	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			0.00	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			119	mg/Kg	1	100	119	70 - 130
n-Triacontane			111	mg/Kg	1	100	111	37.1 - 162

Method Blank (1) QC Batch: 117550

QC Batch: 117550 | Date Analyzed: 2014-11-26 | Analyzed By: AK
Prep Batch: 99379 | QC Preparation: 2014-11-25 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.62	mg/Kg	1	2.00	81	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 117547 | Date Analyzed: 2014-11-26 | Analyzed By: SC
Prep Batch: 99378 | QC Preparation: 2014-11-25 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	264	mg/Kg	1	250	<7.41	106	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	280	mg/Kg	1	250	<7.41	112	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	118	mg/Kg	1	100	116	118	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 117548 | Date Analyzed: 2014-11-26 | Analyzed By: AK
Prep Batch: 99379 | QC Preparation: 2014-11-25 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.70	mg/Kg	1	2.00	<0.00533	85	70 - 130
Toluene		1	1.75	mg/Kg	1	2.00	<0.00645	88	70 - 130
Ethylbenzene		1	1.84	mg/Kg	1	2.00	<0.0116	92	70 - 130
Xylene		1	5.72	mg/Kg	1	6.00	<0.00874	95	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.70	mg/Kg	1	2.00	<0.00533	85	70 - 130	0	20
Toluene		1	1.73	mg/Kg	1	2.00	<0.00645	86	70 - 130	1	20
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.0116	94	70 - 130	2	20
Xylene		1	5.71	mg/Kg	1	6.00	<0.00874	95	70 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.87	mg/Kg	1	2.00	94	94	70 - 130
4-Bromofluorobenzene (4-BFB)	2.29	2.18	mg/Kg	1	2.00	114	109	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 117549 | Date Analyzed: 2014-11-26 | Analyzed By: SC
Prep Batch: 99378 | QC Preparation: 2014-11-25 | Prepared By: SC

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	116	118	mg/Kg	1	100	116	118	70 - 130
n-Triacontane	106	106	mg/Kg	1	100	106	106	54.8 - 164

Laboratory Control Spike (LCS-1)

QC Batch: 117550 | Date Analyzed: 2014-11-26 | Analyzed By: AK
Prep Batch: 99379 | QC Preparation: 2014-11-25 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.9	mg/Kg	1	20.0	<2.32	74	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.3	mg/Kg	1	20.0	<2.32	76	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.74	1.76	mg/Kg	1	2.00	87	88	70 - 130
4-Bromofluorobenzene (4-BFB)	1.70	1.65	mg/Kg	1	2.00	85	82	70 - 130

Matrix Spikes

Matrix Spike (xMS-1) Spiked Sample: 380374

QC Batch: 117547 | Date Analyzed: 2014-11-26 | Analyzed By: SC
Prep Batch: 99378 | QC Preparation: 2014-11-25 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	220	mg/Kg	1	250	<7.41	88	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	235	mg/Kg	1	250	<7.41	94	70 - 130	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	123	121	mg/Kg	1	100	123	121	70 - 130

Matrix Spike (MS-1) Spiked Sample: 380429

QC Batch: 117548 | Date Analyzed: 2014-11-26 | Analyzed By: AK
Prep Batch: 99379 | QC Preparation: 2014-11-25 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.71	mg/Kg	1	2.00	<0.00533	86	70 - 130
Toluene		1	1.77	mg/Kg	1	2.00	<0.00645	88	70 - 130
Ethylbenzene		1	1.92	mg/Kg	1	2.00	<0.0116	96	70 - 130
Xylene		1	5.76	mg/Kg	1	6.00	<0.00874	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.65	mg/Kg	1	2.00	<0.00533	82	70 - 130	4	20
Toluene		1	1.71	mg/Kg	1	2.00	<0.00645	86	70 - 130	3	20
Ethylbenzene		1	1.82	mg/Kg	1	2.00	<0.0116	91	70 - 130	5	20
Xylene		1	5.60	mg/Kg	1	6.00	<0.00874	93	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.87	mg/Kg	1	2	93	94	70 - 130
4-Bromofluorobenzene (4-BFB)	2.15	2.16	mg/Kg	1	2	108	108	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 380374

QC Batch: 117549 | Date Analyzed: 2014-11-26 | Analyzed By: SC
Prep Batch: 99378 | QC Preparation: 2014-11-25 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO			0.00	mg/Kg	1	250	0	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO			0.00	mg/Kg	1	250	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	123	121	mg/Kg	1	100	123	121	70 - 130
n-Triacontane	114	112	mg/Kg	1	100	114	112	10 - 258

Matrix Spike (MS-1) Spiked Sample: 380704

QC Batch: 117550 | Date Analyzed: 2014-11-26 | Analyzed By: AK
Prep Batch: 99379 | QC Preparation: 2014-11-25 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.4	mg/Kg	1	20.0	<2.32	77	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.3	mg/Kg	1	20.0	<2.32	76	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.73	1.70	mg/Kg	1	2	86	85	70 - 130
4-Bromofluorobenzene (4-BFB)	1.71	1.70	mg/Kg	1	2	86	85	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 117547 | Date Analyzed: 2014-11-26 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	252	101	80 - 120	2014-11-26

Standard (CCV-2)

QC Batch: 117547 | Date Analyzed: 2014-11-26 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	267	107	80 - 120	2014-11-26

Standard (CCV-1)

QC Batch: 117548 | Date Analyzed: 2014-11-26 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0961	96	80 - 120	2014-11-26
Toluene		1	mg/kg	0.100	0.0970	97	80 - 120	2014-11-26
Ethylbenzene		1	mg/kg	0.100	0.0973	97	80 - 120	2014-11-26
Xylene		1	mg/kg	0.300	0.293	98	80 - 120	2014-11-26

Standard (CCV-2)

QC Batch: 117548 | Date Analyzed: 2014-11-26 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0963	96	80 - 120	2014-11-26
Toluene		1	mg/kg	0.100	0.0963	96	80 - 120	2014-11-26
Ethylbenzene		1	mg/kg	0.100	0.0962	96	80 - 120	2014-11-26
Xylene		1	mg/kg	0.300	0.287	96	80 - 120	2014-11-26

Standard (CCV-1)

QC Batch: 117550 Date Analyzed: 2014-11-26 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.826	83	80 - 120	2014-11-26

Standard (CCV-2)

QC Batch: 117550 Date Analyzed: 2014-11-26 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.856	86	80 - 120	2014-11-26

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-14-8	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 14125-24

Page 1 of 1

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Avenue, Suite 9
Lubbock, Texas 79424
Tel (806) 794-1296
Fax (806) 794-1298
1 (800) 378-1296

5002 Basin Street, Suite A1
Midland, Texas 79703
Tel (432) 689-6301
Fax (432) 689-6313

200 East Sunset Rd., Suite E
El Paso, Texas 79922
Tel (915) 585-3443
Fax (915) 585-4944
1 (888) 588-3443

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Brandon & Clark
3403 Industrial Blvd.
Hobbs, NM 88240
Tel (575) 392-7561
Fax (575) 392-4508

Company Name: NOVA SAFETY & ENVIRONMENTAL Phone #: 432-520-7720

Address: (Street, City, Zip) 2057 COMMERCE MIDLAND, TX 79703 Fax #:

Contact Person: CURT STANLEY E-mail:

Invoice to: (if different from above) PLAINS (CAMILLE BRYANT)

Project #: 2014-178 Project Name: TRACT 19-4"

Project Location (including state): EUNICE, NM Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

EXTEND TO C35

24 HR

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume / Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCl	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021 / 602 / 8260 / 624	BTEX 8021 / 602 / 8260 / 624	TPH 418.1 / TX1005 / TX1005 Ext(C35)	TPH 8015 GRO / DRO / TVHC	PAH 8270 / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010/200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260 / 624	GC/MS Semi. Vol. 8270 / 625	PCB's 8082 / 608	Pesticides 8081 / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC			Turn Around Time if different from standard	Hold
706	SSW-2@18'	1	4oz	X								X		11/23	1300	X		X																			X	
707	ESW-1@18'	↓	↓		X									11/23	1305		X		X																			↓	
708	NSW-2@18'	↓	↓									↓		11/24	1600	↓	↓	↓	↓																				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	NOVA	11/25/14	1358		TA	11/25/14	13:58	INST IR 5.1 °C, OBS 5.1 °C, COR 5.0 °C
								INST ____ °C, OBS ____ °C, COR ____ °C
								INST ____ °C, OBS ____ °C, COR ____ °C

LAB USE ONLY

Intact (Y/N/NA)

Preservation (Y/N/NA)

Log-in-Review

REMARKS: Call w/ verbals

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions listed on reverse side of C. O. C.

Carrier # CARRIER

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Curt Stanley
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: March 16, 2015

Work Order: 15031108

Project Location: Eunice, NM
Project Name: Tract 19-4"
Project Number: 2014-178
SRS #: 2014-178

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
388487	A-1 @ 8'	soil	2015-03-09	13:00	2015-03-11
388488	A-2 @ 5'	soil	2015-03-09	13:30	2015-03-11

Notes

- **Work Order 15031108:** changed to 24hrs per Curt Stanley on 3/13

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project Tract 19-4" were received by TraceAnalysis, Inc. on 2015-03-11 and assigned to work order 15031108. Samples for work order 15031108 were received intact at a temperature of -0.9 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	101490	2015-03-13 at 08:31	120006	2015-03-16 at 11:04
TPH DRO - NEW	S 8015 D	101518	2015-03-14 at 17:55	120000	2015-03-16 at 09:23
TPH GRO	S 8015 D	101490	2015-03-13 at 08:31	120007	2015-03-16 at 11:07
TPH ORO	S 8015 D	101518	2015-03-14 at 17:55	120010	2015-03-16 at 11:28

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15031108 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 388487 - A-1 @ 8'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120006	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	Sample Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			2.05	mg/Kg	1	2.00	102	70 - 130

Sample: 388487 - A-1 @ 8'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120000	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	Sample Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130

Sample: 388487 - A-1 @ 8'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120007	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	Sample Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.88	mg/Kg	1	2.00	94	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 388487 - A-1 @ 8'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120010	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	Sample Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			114	mg/Kg	1	100	114	70 - 130
n-Triacontane			99.0	mg/Kg	1	100	99	37.1 - 162

Sample: 388488 - A-2 @ 5'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120006	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	Sample Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene [1]	U	1	<0.0400	mg/Kg	2	0.0200
Toluene	U	1	<0.0400	mg/Kg	2	0.0200
Ethylbenzene	U	1	<0.0400	mg/Kg	2	0.0200
Xylene	U	1	<0.0400	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.56	mg/Kg	2	4.00	89	70 - 130
4-Bromofluorobenzene (4-BFB)			3.91	mg/Kg	2	4.00	98	70 - 130

Sample: 388488 - A-2 @ 5'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120000	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	Sample Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs,U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			115	mg/Kg	1	100	115	70 - 130

Sample: 388488 - A-2 @ 5'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120007	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	Sample Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO [2]	U	1	<8.00	mg/Kg	2	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.80	mg/Kg	2	4.00	95	70 - 130
4-Bromofluorobenzene (4-BFB)			3.64	mg/Kg	2	4.00	91	70 - 130

Sample: 388488 - A-2 @ 5'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120010	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	Sample Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<50.0	<50.0	<50.0	mg/Kg	1	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			117	mg/Kg	1	100	117	70 - 130

continued ...

sample continued ...

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			97.6	mg/Kg	1	100	98	37.1 - 162

Method Blanks

Method Blank (1) QC Batch: 120000

QC Batch:	120000	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	QC Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			108	mg/Kg	1	100	108	70 - 130

Method Blank (1) QC Batch: 120006

QC Batch:	120006	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	QC Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	70 - 130

Method Blank (1) QC Batch: 120007

QC Batch:	120007	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	QC Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Method Blank (1) QC Batch: 120010

QC Batch: 120010 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			0.00	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	70 - 130
n-Triacontane			92.5	mg/Kg	1	100	92	37.1 - 162

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	[3]	[1]	89.1	mg/Kg	1	83.3	<7.41	107	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	[4]	[1]	74.2	mg/Kg	1	83.3	<7.41	89	70 - 130	18	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	[5]	32.9	38.6	mg/Kg	1	33.3	99	116	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		[1]	1.99	mg/Kg	1	2.00	<0.00533	100	70 - 130
Toluene		[1]	1.95	mg/Kg	1	2.00	<0.00645	98	70 - 130
Ethylbenzene		[1]	1.96	mg/Kg	1	2.00	<0.0116	98	70 - 130
Xylene		[1]	5.93	mg/Kg	1	6.00	<0.00874	99	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		[1]	1.90	mg/Kg	1	2.00	<0.00533	95	70 - 130	5	20
Toluene		[1]	1.86	mg/Kg	1	2.00	<0.00645	93	70 - 130	5	20
Ethylbenzene		[1]	1.90	mg/Kg	1	2.00	<0.0116	95	70 - 130	3	20
Xylene		[1]	5.77	mg/Kg	1	6.00	<0.00874	96	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.76	1.82	mg/Kg	1	2.00	88	91	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.92	mg/Kg	1	2.00	96	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120007 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.4	mg/Kg	1	20.0	<2.32	92	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	20.3	mg/Kg	1	20.0	<2.32	102	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	1.96	mg/Kg	1	2.00	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.84	1.86	mg/Kg	1	2.00	92	93	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120010 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO	6		0.00	mg/Kg	1	83.3	0	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO	7		0.00	mg/Kg	1	83.3	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	[8]	33.3	38.8	mg/Kg	1	33.3	100	116	70 - 130
n-Triacontane	[9]	20.7	25.2	mg/Kg	1	33.3	62	76	54.8 - 164

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 388660

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	277	mg/Kg	1	250	<7.41	111	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	[10] Qr,Qs	Qr,Qs	1 <7.41	mg/Kg	1	250	<7.41	0	70 - 130	200	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	109	mg/Kg	1	100	104	109	70 - 130

Matrix Spike (MS-1) Spiked Sample: 388487

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.73	mg/Kg	1	2.00	<0.00533	86	70 - 130
Toluene		1	1.77	mg/Kg	1	2.00	<0.00645	88	70 - 130
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.0116	94	70 - 130
Xylene		1	5.74	mg/Kg	1	6.00	<0.00874	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.69	mg/Kg	1	2.00	<0.00533	84	70 - 130	2	20
Toluene		1	1.73	mg/Kg	1	2.00	<0.00645	86	70 - 130	2	20
Ethylbenzene		1	1.85	mg/Kg	1	2.00	<0.0116	92	70 - 130	2	20
Xylene		1	5.67	mg/Kg	1	6.00	<0.00874	94	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.73	1.74	mg/Kg	1	2	86	87	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.99	mg/Kg	1	2	99	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 388487

QC Batch: 120007 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.6	mg/Kg	1	20.0	<2.32	73	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.7	mg/Kg	1	20.0	<2.32	78	70 - 130	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.87	mg/Kg	1	2	93	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.95	mg/Kg	1	2	97	98	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 388660

QC Batch: 120010 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO			0.00	mg/Kg	1	250	0	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO			0.00	mg/Kg	1	250	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	110	mg/Kg	1	100	104	110	70 - 130
n-Triacontane	89.3	94.0	mg/Kg	1	100	89	94	10 - 258

Calibration Standards

Standard (CCV-1)

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	292	117	80 - 120	2015-03-16

Standard (CCV-2)

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	266	106	80 - 120	2015-03-16

Standard (CCV-1)

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0998	100	80 - 120	2015-03-16
Toluene		1	mg/kg	0.100	0.0971	97	80 - 120	2015-03-16
Ethylbenzene		1	mg/kg	0.100	0.0976	98	80 - 120	2015-03-16
Xylene		1	mg/kg	0.300	0.294	98	80 - 120	2015-03-16

Standard (CCV-2)

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.101	101	80 - 120	2015-03-16
Toluene		1	mg/kg	0.100	0.0985	98	80 - 120	2015-03-16
Ethylbenzene		1	mg/kg	0.100	0.0973	97	80 - 120	2015-03-16
Xylene		1	mg/kg	0.300	0.297	99	80 - 120	2015-03-16

Standard (CCV-1)

QC Batch: 120007 Date Analyzed: 2015-03-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2015-03-16

Standard (CCV-2)

QC Batch: 120007 Date Analyzed: 2015-03-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.976	98	80 - 120	2015-03-16

Standard (CCV-1)

QC Batch: 120010 Date Analyzed: 2015-03-16 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2015-03-16

Standard (CCV-2)

QC Batch: 120010 Date Analyzed: 2015-03-16 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2015-03-16

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-14-8	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Dilution due to surfactants.
2 Dilution due to surfactants.
3 Analyst spiked at 1/3.
4 Analyst spiked at 1/3.
5 Analyst spiked at 1/3.
6 Analyst spike at 1/3.
7 Analyst spike at 1/3.
8 Analyst spike at 1/3.
9 Analyst spike at 1/3.
10 Analyst failed to spike duplicate.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

AB Order ID # 15031108 Page ____ of ____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Ave, Ste 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296

5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313

200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944

BioAquatic Testing, 2501 Mayes Rd., Ste 100, Carrollton, Texas 75006, Tel (972) 242-7750

Company Name: NOVA / TRC	Phone #: 432.520.7720
Address: 2057 Commerce Midland, Texas 79703	Fax #: 432.520.7701
Contact Person: Curt Stanley	E-mail: cdstanley@trcsolutions.com
Invoice to: Plains (Camille Cryant)	
Project #: 2014-178	Project Name: Tract 19 - 4"
Project Location: (include state) Eunice, NM	Sampler Signature:

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
388487	A-1 @ 8'	1	4 oz		X							X		3/9/15	1300
488	A-2 @ 5'	1	4 oz		X							X		3/9	1330

LAB #	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B / 200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	TPH 8015M (Extended to C35)			Turn Around Time if different from standard	Hold
388487		X																	X				
488		X																	X				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	NOVA	3/11/15	0884		TA	3/11/15	08:54	INST IR-1
								OBS -0.8 °C
								COR -0.9 °C
								INST ____
								OBS ____ °C
								COR ____ °C
								INST ____
								OBS ____ °C
								COR ____ °C

Submittal of samples constitutes agreement to Terms and Conditions

ORIGINAL COPY

LAB USE ONLY

Intact Y/N

Headspace Y/N/NA

Log-in Review ____

Carrier # CARRY-IN

REMARKS:

- ☐ Dry Weight Basis Required
- ☐ TRRP Report Required
- ☐ Check If Special Reporting Limits Are Needed

B Order ID # 15031108 — 388481 - 488 — Page ____ of ____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944

BioAquatic Testing, 2501 Mayes Rd., Ste 100, Carrollton, Texas 75006, Tel (972) 242-7750

npany Name:	NOVA / TRC	Phone #:	432.520.7720
lress:	2057 Commerce Midland, Texas 79703	Fax #:	432.520.7701
ntact Person:	Curt Stanley	E-mail:	cdstanley@trcsolutions.com
oice to:	Plains (Camille Cryant)		
ject #:	2014-178	Project Name:	Tract 19 - 4"
ject Location: (cludes state)	Eunice, NM	Sampler Signature:	

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
388487	A-1 @ 8'	1	4 oz		X							X		3/9	1300
488	A-2 @ 5'	1	4 oz		X							X		3/9	1330

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B / 200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	TPH 8015M (Extended to C35)			Turn Around Time if different from standard	Hold
	X																		X				
	X																		X				

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	NOVA	3/11/15	0854		TA	3/11/15	08:54	INST IR-1
								OBS -0.8 °C
								COR -0.9 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____
								OBS ____ °C
								COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____
								OBS ____ °C
								COR ____ °C

LAB USE ONLY

Intact Y/N

Headspace Y/N/NA

Log-in Review ____

Carrier # carry-in

REMARKS:

* changed to 24 hrs 3.13.15 AJ - call w/ verbals

☐ Dry Weight Basis Required

☐ TRRP Report Required

☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions

ORIGINAL COPY

Lab Order ID # 388487

Page ____ of ____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

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Lubbock, Texas 79424
Tel (806) 794-1296
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5002 Basin Street, Suite A1
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200 East Sunset Rd., Suite E
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Tel (915) 585-3443
Fax (915) 585-4944

BioAquatic Testing
2501 Mayes Rd., Ste 100
Carrollton, Texas 75006
Tel (972) 242-7750

Company Name: NOVA / TRC	Phone #: 432.520.7720
Address: 2057 Commerce Midland, Texas 79703	Fax #: 432.520.7701
Contact Person: Curt Stanley	E-mail: cdstanley@trcsolutions.com
Invoice to: Plains (Camille Cryant)	
Project #: 2014-178	Project Name: Tract 19 - 4"
Project Location: (Include state) Eunice, NM	Sampler Signature:

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME
388487	A-1 @ 8'	1	4 oz		X							X		3/9/2015	1300
488	A-2 @ 5'	1	4 oz		X							X		3/9	1330

ANALYSIS REQUEST (Circle or Specify Method No.)

MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B / 200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	TPH 8015M (Extended to C35)		Turn Around Time if different from standard	Hold
	X																	X			
	X																	X			

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	NOVA	3/11/15	0854		TA	3/11/15	08:54	INST IR-1 OBS -0.8 °C COR -0.9 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ OBS ____ °C COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____ OBS ____ °C COR ____ °C

LAB USE ONLY

Intact Y/N

Headspace Y/N/NA

Log-in Review done

Carrier # CARRY-IN

REMARKS:

* Changed to 24-Hrs. 3/13/15 AJ
CALL W/ VERBALS.

☐ Dry Weight Basis Required

☐ TRRP Report Required

☐ Check If Special Reporting Limits Are Needed

Submittal of samples constitutes agreement to Terms and Conditions

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TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296
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E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Curt Stanley
Nova Safety & Environmental
2057 Commerce St.
Midland, TX, 79703

Report Date: March 16, 2015

Work Order: 15031311

Project Location: Eunice, NM
Project Name: Tract 19-4"
Project Number: 2014-178
SRS #: 2014-178

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
388668	ESW-1A @ 18'	soil	2015-03-13	00:00	2015-03-13

Notes

- **Work Order 15031311:** call w/ verbals

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project Tract 19-4" were received by TraceAnalysis, Inc. on 2015-03-13 and assigned to work order 15031311. Samples for work order 15031311 were received intact at a temperature of 1.2 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	101490	2015-03-13 at 08:31	120006	2015-03-16 at 11:04
TPH DRO - NEW	S 8015 D	101518	2015-03-14 at 17:55	120000	2015-03-16 at 09:23
TPH GRO	S 8015 D	101490	2015-03-13 at 08:31	120007	2015-03-16 at 11:07
TPH ORO	S 8015 D	101518	2015-03-14 at 17:55	120010	2015-03-16 at 11:28

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15031311 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 388668 - ESW-1A @ 18'

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120006	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	Sample Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene	U	1	<0.100	mg/Kg	5	0.0200
Toluene		1	**0.204**	mg/Kg	5	0.0200
Ethylbenzene		1	**0.574**	mg/Kg	5	0.0200
Xylene		1	**1.39**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.92	mg/Kg	5	10.0	89	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	13.2	mg/Kg	5	10.0	132	70 - 130

Sample: 388668 - ESW-1A @ 18'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120000	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	Sample Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs	1	**2440**	mg/Kg	5	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	230	mg/Kg	5	100	230	70 - 130

Sample: 388668 - ESW-1A @ 18'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120007	Date Analyzed:	2015-03-16	Analyzed By:	AK
Prep Batch:	101490	Sample Preparation:	2015-03-13	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**281**	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.60	mg/Kg	5	10.0	96	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	21.3	mg/Kg	5	10.0	213	70 - 130

Sample: 388668 - ESW-1A @ 18'

Laboratory:	Midland				
Analysis:	TPH ORO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120010	Date Analyzed:	2015-03-16	Analyzed By:	SC
Prep Batch:	101518	Sample Preparation:	2015-03-14	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	MQL Result	PQL Result	RL Result	Units	Dilution	MDL	MQL	PQL	RL
ORO			**0.00**	<250	<250	<250	mg/Kg	5	0.00	50.0	50.0	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	598	mg/Kg	5	100	598	70 - 130
n-Triacontane			99.1	mg/Kg	5	100	99	37.1 - 162

Method Blanks

Method Blank (1) QC Batch: 120000

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			108	mg/Kg	1	100	108	70 - 130

Method Blank (1) QC Batch: 120006

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.82	mg/Kg	1	2.00	91	70 - 130
4-Bromofluorobenzene (4-BFB)			1.93	mg/Kg	1	2.00	96	70 - 130

Method Blank (1) QC Batch: 120007

QC Batch: 120007 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.97	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Method Blank (1) QC Batch: 120010

QC Batch: 120010 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
ORO			0.00	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			109	mg/Kg	1	100	109	70 - 130
n-Triacontane			92.5	mg/Kg	1	100	92	37.1 - 162

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	[2]	1	89.1	mg/Kg	1	83.3	<7.41	107	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	[3]	1	74.2	mg/Kg	1	83.3	<7.41	89	70 - 130	18	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	[4]	32.9	38.6	mg/Kg	1	33.3	99	116	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.99	mg/Kg	1	2.00	<0.00533	100	70 - 130
Toluene		1	1.95	mg/Kg	1	2.00	<0.00645	98	70 - 130
Ethylbenzene		1	1.96	mg/Kg	1	2.00	<0.0116	98	70 - 130
Xylene		1	5.93	mg/Kg	1	6.00	<0.00874	99	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.90	mg/Kg	1	2.00	<0.00533	95	70 - 130	5	20
Toluene		1	1.86	mg/Kg	1	2.00	<0.00645	93	70 - 130	5	20
Ethylbenzene		1	1.90	mg/Kg	1	2.00	<0.0116	95	70 - 130	3	20
Xylene		1	5.77	mg/Kg	1	6.00	<0.00874	96	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.76	1.82	mg/Kg	1	2.00	88	91	70 - 130
4-Bromofluorobenzene (4-BFB)	1.92	1.92	mg/Kg	1	2.00	96	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120007 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	18.4	mg/Kg	1	20.0	<2.32	92	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	20.3	mg/Kg	1	20.0	<2.32	102	70 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.00	1.96	mg/Kg	1	2.00	100	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.84	1.86	mg/Kg	1	2.00	92	93	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120010 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO	5		0.00	mg/Kg	1	83.3	0	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO	6		0.00	mg/Kg	1	83.3	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate		LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	[7]	33.3	38.8	mg/Kg	1	33.3	100	116	70 - 130
n-Triacontane	[8]	20.7	25.2	mg/Kg	1	33.3	62	76	54.8 - 164

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 388660

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	277	mg/Kg	1	250	<7.41	111	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	9 Qr,Qs	Qr,Qs	1 <7.41	mg/Kg	1	250	<7.41	0	70 - 130	200	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	109	mg/Kg	1	100	104	109	70 - 130

Matrix Spike (MS-1) Spiked Sample: 388487

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.73	mg/Kg	1	2.00	<0.00533	86	70 - 130
Toluene		1	1.77	mg/Kg	1	2.00	<0.00645	88	70 - 130
Ethylbenzene		1	1.88	mg/Kg	1	2.00	<0.0116	94	70 - 130
Xylene		1	5.74	mg/Kg	1	6.00	<0.00874	96	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.69	mg/Kg	1	2.00	<0.00533	84	70 - 130	2	20
Toluene		1	1.73	mg/Kg	1	2.00	<0.00645	86	70 - 130	2	20
Ethylbenzene		1	1.85	mg/Kg	1	2.00	<0.0116	92	70 - 130	2	20
Xylene		1	5.67	mg/Kg	1	6.00	<0.00874	94	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.73	1.74	mg/Kg	1	2	86	87	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.99	mg/Kg	1	2	99	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 388487

QC Batch: 120007 | Date Analyzed: 2015-03-16 | Analyzed By: AK
Prep Batch: 101490 | QC Preparation: 2015-03-13 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	14.6	mg/Kg	1	20.0	<2.32	73	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.7	mg/Kg	1	20.0	<2.32	78	70 - 130	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.86	1.87	mg/Kg	1	2	93	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.95	mg/Kg	1	2	97	98	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 388660

QC Batch: 120010 | Date Analyzed: 2015-03-16 | Analyzed By: SC
Prep Batch: 101518 | QC Preparation: 2015-03-14 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
ORO			0.00	mg/Kg	1	250	0	0	-

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
ORO			0.00	mg/Kg	1	250	0	0	-	0	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	104	110	mg/Kg	1	100	104	110	70 - 130
n-Triacontane	89.3	94.0	mg/Kg	1	100	89	94	10 - 258

Calibration Standards

Standard (CCV-1)

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	292	117	80 - 120	2015-03-16

Standard (CCV-2)

QC Batch: 120000 | Date Analyzed: 2015-03-16 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	266	106	80 - 120	2015-03-16

Standard (CCV-1)

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0998	100	80 - 120	2015-03-16
Toluene		1	mg/kg	0.100	0.0971	97	80 - 120	2015-03-16
Ethylbenzene		1	mg/kg	0.100	0.0976	98	80 - 120	2015-03-16
Xylene		1	mg/kg	0.300	0.294	98	80 - 120	2015-03-16

Standard (CCV-2)

QC Batch: 120006 | Date Analyzed: 2015-03-16 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.101	101	80 - 120	2015-03-16
Toluene		1	mg/kg	0.100	0.0985	98	80 - 120	2015-03-16
Ethylbenzene		1	mg/kg	0.100	0.0973	97	80 - 120	2015-03-16
Xylene		1	mg/kg	0.300	0.297	99	80 - 120	2015-03-16

Standard (CCV-1)

QC Batch: 120007 Date Analyzed: 2015-03-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2015-03-16

Standard (CCV-2)

QC Batch: 120007 Date Analyzed: 2015-03-16 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.976	98	80 - 120	2015-03-16

Standard (CCV-1)

QC Batch: 120010 Date Analyzed: 2015-03-16 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2015-03-16

Standard (CCV-2)

QC Batch: 120010 Date Analyzed: 2015-03-16 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
ORO			mg/Kg	250	0.00	0	-	2015-03-16

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-14-8	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Result Comments

1 Dilution due to hydrocarbons.
2 Analyst spiked at 1/3.
3 Analyst spiked at 1/3.
4 Analyst spiked at 1/3.
5 Analyst spike at 1/3.
6 Analyst spike at 1/3.
7 Analyst spike at 1/3.
8 Analyst spike at 1/3.
9 Analyst failed to spike duplicate.

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

LAB Order ID # 15031311 Page ____ of ____

TraceAnalysis, Inc.

email: lab@traceanalysis.com

6701 Aberdeen Ave, Ste 9, Lubbock, Texas 79424, Tel (806) 794-1296, Fax (806) 794-1298, 1 (800) 378-1296

5002 Basin Street, Suite A1, Midland, Texas 79703, Tel (432) 689-6301, Fax (432) 689-6313

200 East Sunset Rd., Suite E, El Paso, Texas 79922, Tel (915) 585-3443, Fax (915) 585-4944

BioAquatic Testing, 2501 Mayes Rd., Ste 100, Carrollton, Texas 75006, Tel (972) 242-7750

Company Name:	NOVA / TRC	Phone #:	432.520.7720
Address:	2057 Commerce Midland, TX 79703	Fax #:	432.520.7701
Contact Person:	Curt Stanley	E-mail:	cdstanley@trcsolutions.com
Police to:	Plains (Camille Bryant)		
Project #:	2014-178	Project Name:	Tract 19 - 4"
Project Location: (include state)	Eunice, NM	Sampler Signature:	

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL	HNO_3	H_2SO_4	NaOH	ICE	NONE	SAMPLING: DATE	TIME	MTBE 8021B / 602 / 8260B / 624	BTEX 8021B / 602 / 8260B / 624	TPH 418.1 / TX1005 / DRO / TVHC	PAH 8270C / 625	Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B / 200.7	TCLP Metals Ag As Ba Cd Cr Pb Se Hg	TCLP Volatiles	TCLP Semi Volatiles	TCLP Pesticides	RCI	GC/MS Vol. 8260B / 624	GC/MS Semi. Vol. 8270C/625	PCB's 8082 / 608	Pesticides 8081A / 608	BOD, TSS, pH	Moisture Content	Cl, F, SO_4, NO_3-N, NO_2-N, PO_4-P, Alkalinity	Na, Ca, Mg, K, TDS, EC	TPH 8015M (Extended to C35)	Turn Around Time if different from standard	Hold
388668	ESW-1A @ 18'	1	4 oz		X							X					X																X	X	

Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	
	NOVA	3/13/15	1016		TA	3/13/15	10:16	INST IR-1
								OBS 1.3 °C
								COR 1.2 °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____
								OBS ____ °C
								COR ____ °C
Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:	INST ____
								OBS ____ °C
								COR ____ °C

Submittal of samples constitutes agreement to Terms and Conditions

ORIGINAL COPY

LAB USE ONLY

Intact (Y) N

Headspace Y / N (NA)

Log-in Review

REMARKS:

call w/ verbals

☐ Dry Weight Basis Required

☐ TRRP Report Required

☐ Check If Special Reporting Limits Are Needed

Carrier # CARRY - in

Stanley, Curtis D.

From: Oberding, Tomas, EMNRD
Sent: Friday, August 22, 2014 4:03 PM
To: cstanley@novatraining.cc
Subject: RE: Monday Meeting?

Aloha Sir,

Thank you for the info and the GPS.
I will be out there bright and early.

Have a wonderful weekend.
Mahalo
-Doc

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Curt Stanley [mailto:cstanley@novatraining.cc]
Sent: Friday, August 22, 2014 2:33 PM
To: Oberding, Tomas, EMNRD
Cc: Camille J Bryant
Subject: RE: Monday Meeting?

Doc,

Attached is a hand drawn site map of the release in Eunice (Tract 19 - 4 Inch).
The Site GPS is N32.448517 W103.176603.
See you on Monday morning at 9 AM NM Time.

Thanks,
Curt

From: Oberding, Tomas, EMNRD [mailto:Tomas.Oberding@state.nm.us]
Sent: Friday, August 22, 2014 8:22 AM
To: cstanley@novatraining.cc
Subject: RE: Monday Meeting?

Aloha Curt,

Sorry for the late response. Indeed Monday looks reasonable, what time? I prefer mornings but as of now it's all free....

Let me know.
I'll be back in the office in the afternoon (field morning now).
Mahalo
-Doc

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Curt Stanley [mailto:cstanley@novatraining.cc]
Sent: Thursday, August 21, 2014 1:13 PM
To: Oberding, Tomas, EMNRD
Cc: Camille J Bryant
Subject: Monday Meeting?

Doc,

Any chance you might have a few minutes to talk with Camille Bryant (Plains) and me on Monday? We would like to talk with you about a path forward for a Release Site (Tract 19 – 4") located northwest of Eunice.

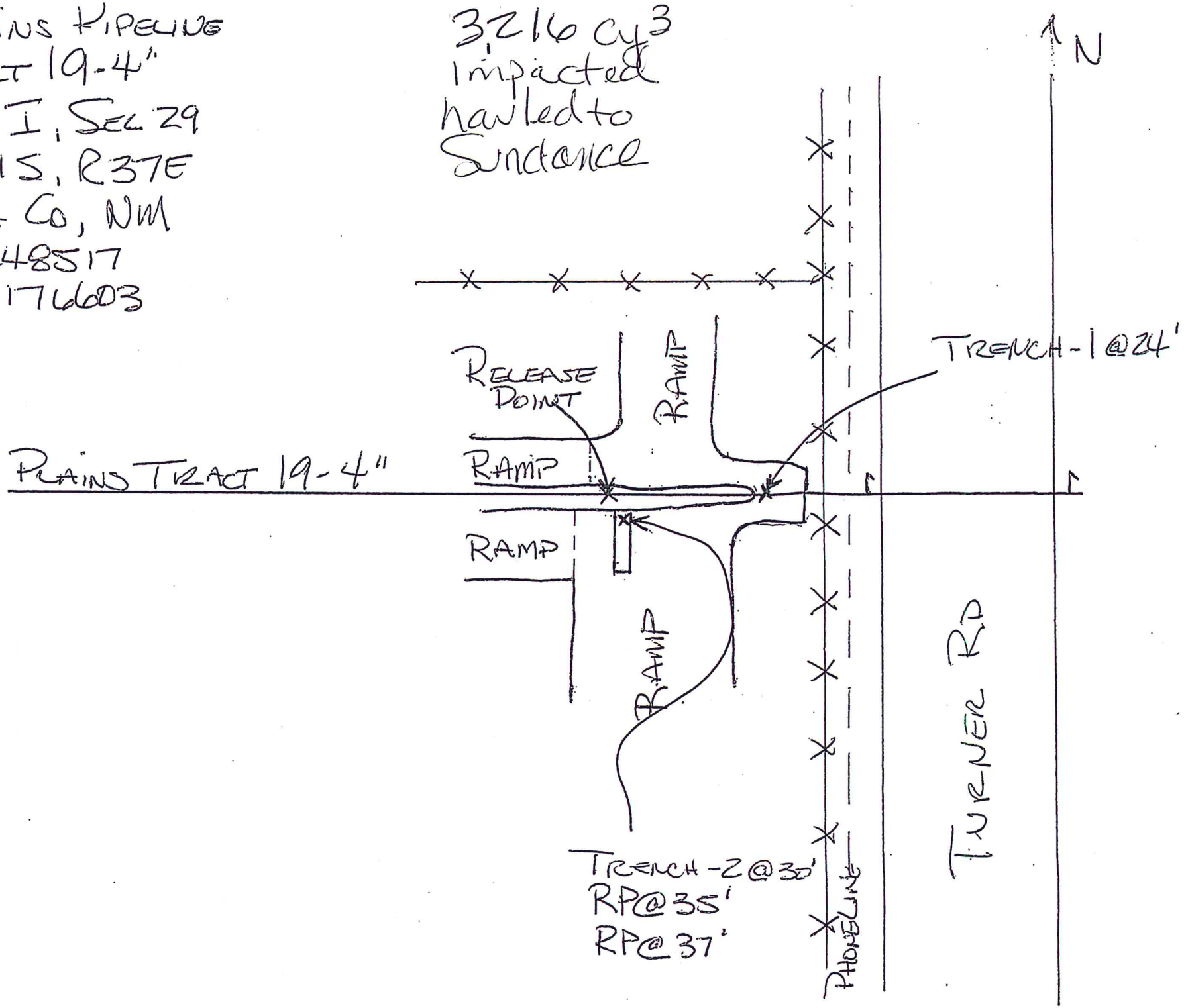
Thanks in advance...

Curt

Curt D. Stanley
Senior Project Manager
NOVA Safety and Environmental, Inc.
2057 Commerce
Midland, Texas 79703
Office: 432.520.7720
Fax: 432.520.7701
Cell: 432.559.3296
Email: cstanley@novatraining.cc

PLAINS PIPELINE
TRACT 19-4"
UNIT I, SEC 29
T 21S, R37E
LEA CO, NM
32.448517
103.176603

3,216 cy3
impacted
hauled to
Sundance



Stanley, Curtis D.

From: Oberding, Tomas, EMNRD
Sent: Monday, August 25, 2014 4:55 PM
To: cstanley@novatraining.cc
Cc: Camille J Bryant
Subject: RE: Tract 19-4 Inch Risk-Based Closure Proposal

Aloha Curt and Camille,

Thank you for the prompt email.
Please consider this the official notice of receipt for the plan.

I will review it in the morning in detail, but based on our discussions NMOCD gives conditional approval.
(final approval in the morning)
Thank you for your patience have a wonderful evening!
It was wonderful getting to meet with you in the field and I appreciate you showing me the sites!
Mahalo
-Doc

-PS: please note, please exchange Mr. with Dr. on the official communications (something our bosses can see), otherwise no need for formalities Doc or Tomas is perfectly fine. Thank you!

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Curt Stanley [mailto:cstanley@novatraining.cc]
Sent: Monday, August 25, 2014 3:51 PM
To: Oberding, Tomas, EMNRD
Cc: Camille J Bryant
Subject: Tract 19-4 Inch Risk-Based Closure Proposal

August 25, 2014

Re: Plains Pipeline
Tract 19 – 4 Inch Release Site
1RP-7-4-3189
Unit Letter "I", Section 29, T21S, R37E
Lea County, NM
Plains SRS# 2014-178

Mr. Oberding,

Thank you for meeting with us (Camille Bryant – Plains Pipeline and Curt Stanley – NOVA Safety and Environmental) today on site. I have prepared this email to summarize our discussions.

With NMOCD approval, Plains would like to pursue a Risk-Based Closure Strategy at the Tract 19 – 4 Inch Release Site. Plains proposes the following steps to progress the Release Site toward an NMOCD approved closure.

- The existing on-site investigation trenches will be backfilled with like material exhibiting benzene, BTEX and TPH concentrations less than 10 mg/Kg, 50 mg/Kg and 100 mg/Kg, respectively.
- Due to safety concerns with regard to supporting the four (4) inch pipeline, the release site will be excavated in two (2) stages.
- Stage 1:
  - The western area of impact will be excavated to a depth of approximately nineteen (19) feet below ground surface.
  - Excavated soil will be stockpiled adjacent to the excavation, pending transport to Sundance Services in Eunice, NM
  - Soil samples will be collected and submitted to the laboratory from the north, south and west sidewalls of the excavation at a depth of approximately eighteen (18) feet below ground surface.
  - Evaluate soil sample results. The NMOCD Site Classification guidelines indicate the sidewall benzene, BTEX and TPH concentrations should not exceed 10 mg/Kg, 50 mg/Kg and 100 mg/Kg, respectively.
  - On favorable analytical results for the sidewall soil samples, approximately six (6) inches of sand will be placed the floor of the excavation to cushion the impermeable twenty (20) mil poly liner.
  - A twenty (20) mil poly liner will be installed on the floor of the western area of impact and approximately six (6) inches of sand will be placed on top of the poly liner.
  - The western excavation will be partially backfilled with locally purchased like material.
- Stage 2:
  - The eastern area of impact will be excavated to a depth of approximately nineteen (19) feet below ground surface.
  - Excavated soil will be stockpiled adjacent to the excavation, pending transport to Sundance Services in Eunice, NM
  - Soil samples will be collected and submitted to the laboratory from the north, south and east sidewalls of the excavation at a depth of approximately eighteen (18) feet below ground surface.
  - Evaluate soil sample results. The NMOCD Site Classification guidelines indicate the sidewall benzene, BTEX and TPH concentrations should not exceed 10 mg/Kg, 50 mg/Kg and 100 mg/Kg, respectively.
  - On favorable analytical results for the sidewall soil samples, approximately six (6) inches of sand will be placed the floor of the excavation to cushion the impermeable twenty (20) mil poly liner.
  - A twenty (20) mil poly liner will be installed on the floor of the eastern area of impact. The eastern and western excavation poly liners will be chemically welded or sewn together. Following the joining of the poly liners, approximately six (6) inches of sand will be placed on top of the eastern excavation poly liner.
  - The excavation will be backfilled with locally purchased like material.
- Following the completion of the above activities, the site will be contoured to fit the surrounding topography.

Thank you again for your time and consideration,

Curt

Curt D. Stanley
Senior Project Manager
NOVA Safety and Environmental, Inc.
2057 Commerce
Midland, Texas 79703
Office: 432.520.7720
Fax: 432.520.7701
Cell: 432.559.3296
Email: cstanley@novatraining.cc

Stanley, Curtis D.

From: Camille J Bryant
Sent: Tuesday, September 02, 2014 8:47 AM
To: cstanley@novatraining.cc
Subject: FW: Tract 19-4 Inch Risk-Based Closure Proposal

From: Baker, Larry [mailto:Larry.Baker@apachecorp.com]
Sent: Tuesday, September 02, 2014 8:45 AM
To: Camille J Bryant
Cc: Fleming, Steven; Webb, Derek
Subject: RE: Tract 19-4 Inch Risk-Based Closure Proposal

Camille,

Apache has reviewed the information for the Tract 19-4 Inch Risk-Based Closure Proposal and approves the closure proposal as written. Please continue to inform us of any changes if necessary. Thanks and have a good day.

Bruce Baker
Apache Corporation
Environmental Technician
Northwest District
Email: larry.baker@apachecorp.com
Cell: 432-631-6982

From: Camille J Bryant [mailto:CJBryant@paalp.com]
Sent: Wednesday, August 27, 2014 2:13 PM
To: Baker, Larry
Subject: Fwd: Tract 19-4 Inch Risk-Based Closure Proposal

Bruce
Attached is the documentation for the Plains Remediation Site located on Apache property.

Thanks for the assistance.
Camille

Sent from my iPhone

Begin forwarded message:

> **From:** "Curt Stanley" <cstanley@novatraining.cc>
> **To:** "Camille J Bryant" <CJBryant@paalp.com>
> **Subject: FW: Tract 19-4 Inch Risk-Based Closure Proposal**
>
> Camille,
>
> Per your request, following is the Work Plan sent to Tomas Oberding – NMOCD Hobbs District and Mr. Oberding's response.

A Sketch Map, analytical table and laboratory reports are attached to this email.

Thank you,

Curt D. Stanley
Senior Project Manager
NOVA Safety and Environmental, Inc.
2057 Commerce
Midland, Texas 79703
Office: 432.520.7720
Fax: 432.520.7701
Cell: 432.559.3296
Email: cstanley@novatraining.cc<mailto:cstanley@novatraining.cc>

From: Oberding, Tomas, EMNRD [mailto:Tomas.Oberding@state.nm.us]
Sent: Tuesday, August 26, 2014 12:13 PM
To: cstanley@novatraining.cc
Cc: Camille J Bryant
Subject: RE: Tract 19-4 Inch Risk-Based Closure Proposal

Aloha Mr. Stanley and Ms. Bryant,

Thank you for providing this update on the closure proposal.

Based on our field meeting yesterday, NMOCD approves this risk-based closure.

Please keep me updated as the situation warrants, and let me know if I can help.
Mahalo
-Doc

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us<mailto:S@state.nm.us>
Website:
http://www.emnrd.state.nm.us/ocd/<https://webmail.state.nm.us/owa/redir.aspx?C=ZdaSCuGOPU6IkL4QTngvd2FLydwLOdEIek-jJ_-RLDCw6yzMkZT_We7xigBKjms8XnTt3MKoDI4.&URL=http%3a%2f%2fwww.emnrd.state.nm.us%2focd%2f>

From: Curt Stanley [mailto:cstanley@novatraining.cc]
Sent: Monday, August 25, 2014 3:51 PM
To: Oberding, Tomas, EMNRD
Cc: Camille J Bryant

Subject: Tract 19-4 Inch Risk-Based Closure Proposal

August 25, 2014

Re: Plains Pipeline
Tract 19 – 4 Inch Release Site
1RP-7-4-3189
Unit Letter "I", Section 29, T21S, R37E
Lea County, NM
Plains SRS# 2014-178

Mr. Oberding,

Thank you for meeting with us (Camille Bryant – Plains Pipeline and Curt Stanley – NOVA Safety and Environmental) today on site. I have prepared this email to summarize our discussions.

With NMOCD approval, Plains would like to pursue a Risk-Based Closure Strategy at the Tract 19 – 4 Inch Release Site. Plains proposes the following steps to progress the Release Site toward an NMOCD approved closure.

- The existing on-site investigation trenches will be backfilled with like material exhibiting benzene, BTEX and TPH concentrations less than 10 mg/Kg, 50 mg/Kg and 100 mg/Kg, respectively.

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- Stage 1:

o The western area of impact will be excavated to a depth of approximately nineteen (19) feet below ground surface.

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o A twenty (20) mil poly liner will be installed on the floor of the western area of impact and approximately six (6) inches of sand will be placed on top of the poly liner.

o The western excavation will be partially backfilled with locally purchased like material.

- Stage 2:

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o Evaluate soil sample results. The NMOCD Site Classification guidelines indicate the sidewall benzene, BTEX and TPH concentrations should not exceed 10 mg/Kg, 50 mg/Kg and 100 mg/Kg, respectively.

o On favorable analytical results for the sidewall soil samples, approximately six (6) inches of sand will be placed the floor of the excavation to cushion the impermeable twenty (20) mil poly liner.

o A twenty (20) mil poly liner will be installed on the floor of the eastern area of impact. The eastern and western excavation poly liners will be chemically welded or sewn together. Following the joining of the poly liners, approximately six (6) inches of sand will be placed on top of the eastern excavation poly liner.

o The excavation will be backfilled with locally purchased like material.

- Following the completion of the above activities, the site will be contoured to fit the surrounding topography.

Thank you again for your time and consideration,

Curt

Curt D. Stanley
Senior Project Manager
NOVA Safety and Environmental, Inc.
2057 Commerce
Midland, Texas 79703
Office: 432.520.7720
Fax: 432.520.7701
Cell: 432.559.3296
Email: cstanley@novatraining.cc<mailto:cstanley@novatraining.cc>

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##########
Attention:
The information contained in this message and/or attachments is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged material. If you received this in error, please contact the Plains Service Desk at 713-646-4444 and delete the material from any system and destroy any copies.

This footnote also confirms that this email message has been scanned for Viruses and Content and cleared.
##########

Stanley, Curtis D.

From: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
Sent: Friday, October 24, 2014 8:52 AM
To: Stanley, Curtis D.
Subject: RE: A meeting with Camille Bryant and I?

Good deal, see you then.

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Stanley, Curtis D. [mailto:cstanley@novatraining.cc]
Sent: Friday, October 24, 2014 7:51 AM
To: Oberding, Tomas, EMNRD
Cc: 'Camille J Bryant'
Subject: RE: A meeting with Camille Bryant and I?

Thanks. We will see you at 10 AM.

Curt

From: Oberding, Tomas, EMNRD [mailto:Tomas.Oberding@state.nm.us]
Sent: Friday, October 24, 2014 8:49 AM
To: Stanley, Curtis D.
Cc: 'Camille J Bryant'
Subject: RE: A meeting with Camille Bryant and I?

10 it is,
And yes.. ahh Mondays.....
(then again this week is filled with Mondays, so it seems par for the course).
Have a great weekend (and hopefully restful).
Cheers
-Doc

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180

(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Stanley, Curtis D. [mailto:cstanley@novatraining.cc]
Sent: Friday, October 24, 2014 7:47 AM
To: Oberding, Tomas, EMNRD
Cc: 'Camille J Bryant'
Subject: RE: A meeting with Camille Bryant and I?

Tomas,

Are you available at 10 AM? Monday mornings are always a challenge. Nothing ever goes as planned on a Monday morning…

Thanks,
Curt

From: Oberding, Tomas, EMNRD [mailto:Tomas.Oberding@state.nm.us]
Sent: Thursday, October 23, 2014 5:03 PM
To: Stanley, Curtis D.
Cc: 'Camille J Bryant'
Subject: RE: A meeting with Camille Bryant and I?

Monday it is (sorry been a complete Charley Foxtrot of a week here)
How's 8:30 or 9:00? Or when is good for you all?
Time to clock out (this is day 2 of no lunch)
Cheers
-Doc

Tomáš 'Doc' Oberding, PhD
Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Stanley, Curtis D. [mailto:cstanley@novatraining.cc]
Sent: Thursday, October 23, 2014 3:06 PM
To: Oberding, Tomas, EMNRD
Cc: 'Camille J Bryant'
Subject: A meeting with Camille Bryant and I?

Tomas,

Would you have time to meet with Camille Bryant and I on Monday morning (10/27/14)? We would like to discuss the results of some additional soil sampling completed at the Plains Jal Basin Station. A Site Map and Tables are attached for your reference.

Thanks,

Curt

Curt D. Stanley
Senior Project Manager
TRC / NOVA Safety and Environmental
2057 Commerce Drive
Midland, Texas 79703
Office: 432.520.7720
Cell: 432.559.3296
Fax: 432.520.7720
Email: cdstanley@trcsolutions.com

Stanley, Curtis D.

From: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
Sent: Tuesday, November 04, 2014 9:39 AM
To: Stanley, Curtis D.
Cc: 'Camille J Bryant'
Subject: RE: Plains Tract 19 - 4 Inch Release Site (1RP-3189)

Aloha Curtis and Camille,

Thank you for the phone discussions and the updated email.

Based on the field results, OCD agrees that the slightly elevated ~Cl are within a margin of error and reasonable to continue with the next stage of remediation for the site.
You've shown a downward trend in concentrations which is what we need to see.
Please be safe out there, and let me know if I can help.
Mahalo for all your hard work and prompt action.
-Doc

Tomáš 'Doc' Oberding, PhD
Senior Environmental Specialist – New Mexico Oil Conservation Division
Energy, Minerals and Natural Resources Department
1625 N. French Dr.
Hobbs, NM 88240
(O): (575) 393-6161 ext 111
(C): 575-370-3180
(F): (575) 393-0720
E-Mail: tomas.oberding@state.nm.us
Website: http://www.emnrd.state.nm.us/ocd/

From: Stanley, Curtis D. [mailto:cstanley@novatraining.cc]
Sent: Tuesday, November 04, 2014 8:21 AM
To: Oberding, Tomas, EMNRD
Cc: 'Camille J Bryant'
Subject: Plains Tract 19 - 4 Inch Release Site (1RP-3189)

Doc,

As a follow up to our conversation this morning (November 4, 2014). The risk-based closure at the Plains Tract 19 – 4 Inch Release Site is progressing. As approved by NMOCD, we have collected soil samples (NSW-1 @ 18', SSW-1 @ 18' and WSW-1 @ 18') from the west side (Stage 1) of the excavation to be lined. The analytical results indicated concentrations of benzene, BTEX, and TPH were less than the method detection limit. In addition, the soil samples were analyzed for concentrations of chloride and the results indicated the north and south sidewall soil samples (NSW-1 @ 18' and SSW-1 @ 18') were slightly elevated at 287 mg/Kg. As we discussed, the soil samples were analyzed using Method 4500 (Titration). A soil sample collected at 37 feet bgs (RP @ 37') indicated chloride concentrations were 72.7 mg/Kg. For reference, a site location map, site map and analytical table are attached.

Per our discussion, NMOCD considers the chloride concentrations exhibited in soil samples NSW-1 @ 18' and SSW-1 @ 18' to be within the margin of error and no further delineation of chloride is required.

Thanks for time and have a great day,

Curt

Curt D. Stanley
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TRC / NOVA Safety and Environmental
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Midland, Texas 79703
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Stanley, Curtis D.

From: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
Sent: Tuesday, December 16, 2014 8:32 AM
To: Stanley, Curtis D.
Cc: 'Camille J Bryant'
Subject: RE: Plains Tract 19 - 4 Inch WP Modification (1RP-7-14-3189)

Aloha Sir,

Based on our discussion and the documents provided-
OCD approves the request for backfill of the open excavation. We do understand that the project is not finished and also grant approval for the modifications as listed.
Please keep me informed.

Happy Hanukah, Merry Christmas, and a safe healthy New Years to you all and your families.
Cheers
-Doc

Tomáš 'Doc' Oberding, PhD
Senior Environmental Specialist
New Mexico Oil Conservation Division, District 1
Energy, Minerals and Natural Resources Department
(575) 393-6161 ext 111
E-Mail: tomas.oberding@state.nm.us

If you have any questions or concerns, and for notification, please contact me.

From: Stanley, Curtis D. [mailto:cstanley@novatraining.cc]
Sent: Tuesday, December 16, 2014 7:22 AM
To: Oberding, Tomas, EMNRD
Cc: 'Camille J Bryant'
Subject: Plains Tract 19 - 4 Inch WP Modification (1RP-7-14-3189)

RE:
Plains Pipeline
Tract 19 – 4 Inch Release Site
Unit Letter "I", Section 29, T21S, R37E
Lea County, NM
1RP-7-14-3189

Tomas,

As a follow up to your discussion this morning (December 15, 2014) with Camille Bryant of Plains Pipeline, Plains requests NMOCD permission to backfill the excavation at the Plains Tract 19-4 Inch Release Site and conduct horizontal soil delineation activities east of the existing excavation.

As previously approved by the NMOCD, soil samples were collected from the north, south, west and east sidewalls of the excavation and submitted to the laboratory for TPH and BTEX analysis and a twenty (20) mil synthetic liner was installed on the floor of the excavation at approximately 19 feet bgs. The analytical results indicated all collected sidewall soil samples exhibited TPH and BTEX concentrations less than the NMOCD regulatory guideline, with the exception of the soil sample collected from the east sidewall (ESW-1 @ 18'). Soil sample ESW-1 @ 18' exhibited a TPH concentration of 2,868 mg/Kg.

Plains requests NMOCD permission to extend the synthetic liner installed on the floor of the excavation, up the east sidewall of the excavation to approximately three (3) bgs. The "draped" liner will minimize migration of impacted soil located in the east sidewall of the excavation into the non-impacted backfill. The "draped" liner on the east sidewall will be chemically welded the liner installed on the floor of the excavation.

Plains requests this modification to the existing Work Plan due to the proximity of Turner Road on the east side of the excavation. Turner Road is highly a travelled two lane "blacktop" county road and excavation in the right-of-way would constitute a public safety hazard. The Release Site and county road right-of-way are located outside the City of Eunice. Plains requests NMOCD permission and will request Lea County Road Department permission to conduct horizontal soil delineation activities in the Turner Road right-of-way. The horizontal soil delineation activities are designed to determine the horizontal extent of impact east of the existing excavation. The trench located in the right-of-way will be sampled and immediately backfilled with non-impacted soil.

A Site Map and Table are attached for your reference.

Thanks,

Curt

Curt D. Stanley
Senior Project Manager

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Stanley, Curtis D.

From: Oberding, Tomas, EMNRD <Tomas.Oberding@state.nm.us>
Sent: Thursday, March 19, 2015 2:18 PM
To: Stanley, Curtis D.
Cc: 'Camille J Bryant'
Subject: RE: Tract 19 - 4" 1RP-7-14-3189

Aloha all,

Based on the work completed, documents and samples, OCD approves the plan as outlined below. Please keep me informed and let me know if you have any questions or concerns.
Stay safe everyone,
-Doc

Tomáš 'Doc' Oberding PhD
Hydrologist, Adv-District 1
Oil Conservation Division, EMNRD
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575-370-3180 (emergency-cell)
E-Mail: tomas.oberding@state.nm.us

If you have any questions or concerns, and for notification, please contact me.

From: Stanley, Curtis D. [mailto:CDStanley@trcsolutions.com]
Sent: Wednesday, March 18, 2015 3:47 PM
To: Oberding, Tomas, EMNRD
Cc: 'Camille J Bryant'
Subject: Tract 19 - 4" 1RP-7-14-3189

Tomas,

Attached is a site map and analytical table for the Plains Tract 19 – 4" Release Site. As background, this is the site located just west of Turner Road and north of Hwy 176 near Eunice. You met Camille and I at the site to discuss a path forward. We have numerous obstacles at the site (Road, power lines and County ROW etc). You requested we attempt to remove impacted soil on the east sidewall of the excavation where soil sample (ESW-1 @ 18') exhibited a TPH concentration of 2,868 mg/Kg. Installation of a 20 mil poly liner on the floor of the excavation was previously approved. The area of concern for this site is the potential migration of impact under Turner Road.

On March 9, 2015, we attempted and appear to be successful in delineating the impact on the east sidewall. We utilized a hand auger to collect a soil sample (A-1 @ 8') from the bottom of the pipe chase at approximately eight (8) feet bgs (at the top of the caliche) and approximately two (2) feet east of the ROW fence. The auger soil sample was located to the west of the pipeline road vent. Please reference the attached site map. During the installation of the pipeline, the pipe chase was apparently cut into the caliche and backfilled with sand. The the release, the sand in the pipe chase would

have provided a preferential pathway over the denser caliche, if the release moved to the east and toward the road. The sand in the pipe chase did not exhibit any hydrocarbon odor or staining during the hand auguring activities.

The soil sample (A-1 @ 8') was analyzed for BTEX and TPH at the laboratory and the results indicated TPH and BTEX concentrations were below the laboratory method detection limit. In addition, a second hand auger soil sample (A-2 @ 5') was collected approximately six (6) feet north of soil sample A-1 @ 8'. The soil sample was collected at the sand / caliche interface (approximately 5' bgs) outside of the pipe chase. Analytical results for TPH and BTEX concentrations indicated soil sample A-2 @ 5' exhibited concentrations less than the method detection limit.

Our premise is, if the sand within the pipe chase and the caliche / sand interface at the bottom of the pipe chase did not exhibit impact, it is unlikely the caliche underlying the pipe chase would be impacted. Based on these assumptions, we excavated the east sidewall approximately five (5) feet to the east (to the fence line). We anticipated the visual staining on the east sidewall would "cleanup" at or near the fence line. On March 13, 2015, a soil sample (ESW-1A @ 18') was collected from the east sidewall below the fence line. The analytical results indicated the TPH was 2,721 mg/Kg, the benzene concentration was 0.165 mg/Kg and the BTEX concentration was 1.533 mg/Kg. The east sidewall below the fence line exhibits some staining in and below the pipe chase (in the caliche) after the limited east sidewall excavation activities.

Based on the analytical results of the soil sample A-1 @ 8' and the hazards and obstacles associated with the site, Plains requests NMOCD permission to leave the limited stained soil observed on the east sidewall in place and backfill the release site with locally purchased caliche. Presently, the open excavation presents a safety hazard due to its proximity to Turner Road and nearby residential property. Topsoil reserved during the excavation activities will be utilized to reestablish the vegetative zone.

Thank you for your consideration,

Curt

Curt D. Stanley
Senior Project Manager

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