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: Holly Energy Partners, L.P.	Contact: Allison Stockweather, EHS Senior Manager
Address: 1602 West Main Street, Artesia, NM 88210	Telephone No.: (575) 746-5475
Facility Name: Henshaw Station 533	Facility Type: Truck LACT

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: Eddy County

Latitude 32.8159 **Longitude** 103.9384 Henshaw Station 533 is on the corner of US 82 and Square Lake Rd. (County Rd. 220); approximately 30 min. from Artesia, NM.

NATURE OF RELEASE

Type of Release: Crude Oil Release	Volume of Release: 10 bbls	Volume Recovered: 4 bbls
Source of Release: Broken coupler on pump	Date and Hour of Occurrence: 2/11/2015, 12:30 am	Date and Hour of Discovery: 2/11/2015, 1:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required The HEP EHS Senior Manager, Allison Stockweather, gave notice via telephone to NMED at 2:19 am on 2/11/2015 (Ruth Horowitz, voicemail). Notification of the incident was per NMAC 20.6.2.1203. HEP notified Mike Bratcher, NMOCD, District 2, of incident details on 2/11/2015 at 2:56 pm.	If YES, To Whom?: Ruth Horowitz, NMED, Spill Hotline voicemail	
By Whom? Allison Stockweather	Date and Hour: 2/11/2015, 2:19 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

A coupler on the pump/motor broke, which allowed the Lease Activated Custody Transfer unit (LACT) to run, but not pump. Three of the four crude oil tanks within the tank battery overfilled with approximately 10 barrels of crude oil and released its liquids onto the ground surface. The release was contained within an earthen berm surrounding the tank battery. HEP recovered approximately 4 barrels of the crude oil via vacuum truck. The remaining liquids saturated the soil within the release point. HEP contracted Conestoga-Rovers & Associates (CRA) for project management, general oversight of the assessment, remediation activities and waste coordination.

Describe Area Affected and Cleanup Action Taken.*

*Please see appended Site Closure Report for 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: Allison Stockweather	OIL CONSERVATION DIVISION
Printed Name: Allison Stockweather	Approved by Environmental Specialist:

Title: EHS Senior Manager	Approval Date:	Expiration Date:
E-mail Address: allison.stockweather@hollyenergy.com	Conditions of Approval:	Attached ☒ Site Closure Report
Date: 05/06/15 Phone: 575-513-9338		

* Attach Additional Sheets If Necessary

Original

CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

Final Report

SITE CLOSURE REPORT

Henshaw Station 533 Crude Oil Release
Eddy County, New Mexico

NMOCD - 2RP #2820

Prepared for: Holly Energy Partners, LP

Conestoga-Rovers & Associates
2135 South Loop, 250 West
Midland, Texas 79703

May 2015 • 089886 • Report No. 1

Partners in Sustainability

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(Following Text)

List of Appendices

Section 1.0 Introduction

Conestoga-Rovers & Associates (CRA) is submitting this Site Closure Report on behalf of Holly Energy Partners (HEP) to the New Mexico Oil Conservation District (NMOCD) for the Henshaw Station 533 crude oil release site ("Site").

This Site Closure Report provides information associated with a crude oil release that occurred on February 11, 2015, and the restoration activities within the Site tank battery in Eddy County, New Mexico. The closure activities were documented and performed by CRA and its sub-contractors. The Site is located at the intersection of US Highway 82 and Eddy County Road 220 (Square Lake Road), approximately 8 miles east of Loco Hills, New Mexico. The tank battery stores crude oil in four tanks as is shown on the Site Location Map (Figure 1). The NMOCD "Release Reporting and Corrective Actions" Guidance, published September 30, 2011, was utilized for the Site assessment, remediation, and closure activities.

The scope of work for the assessment and restoration activities was developed between HEP and CRA personnel. CRA was responsible for project management, general assessment oversight, remediation activities, waste coordination, and field work documentation. The scope of work included:

- Waste characterization of crude oil impacted soils, including analytical testing and NMOCD Form C-138 (Appendix A) completion for waste management purposes.
- Excavation of crude-oil impacted soils using shovels. Loading impacted soils into wheelbarrows and staging the soils on plastic polyvinyl sheeting adjacent to the tank battery.
- Collection and analysis of confirmation samples (4-6 samples) from the excavated areas to document concentrations of Total Petroleum Hydrocarbons (TPH) and Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) in native soils.
- Identification of impacted soils above NMOCD action levels for proper disposal at the R360 Environmental Solutions waste facility in Lea County, New Mexico.
- Preparation of a Site Closure Report documenting assessment and remediation activities associated with the release and a request for "no further action" from the NMOCD, using a final report version of Form C-141, as appropriate.

Section 2.0 Release Information and Response Activities

A crude oil release was discovered at the Site on February 11, 2015. The release was caused by a broken coupler on the pump/motor, which allowed the Lease Activated Custody Transfer unit (LACT) to run, but not pump. Subsequently, this caused three of the four crude oil tanks within

the tank battery to overfill and release liquids onto the ground surface. The spill was contained within an earthen berm which surrounded the tank battery. The 10-barrels crude oil release was immediately reported to the NMOCD by HEP. NMOCD Form C-141, Release Notification and Corrective Action, dated February 11, 2015, was submitted to the agency containing "Initial Report" information regarding the location, nature of release, initial remedial actions, and other details. A copy of the NMOCD Form C-141 is attached in Appendix A. The NMOCD has designated Remediation Permit number 2RP #2820 to this incident.

HEP's contractor recovered four barrels of released fluids by vacuum truck. The remaining liquids saturated the soil along the spill path within the tank battery containment. Surface soils at the site were primarily loose, wind-blown sand deposits that were effective in absorbing the released liquids. The Petroleum Recovery Research Center (PRRC) Web Mapping Portal was utilized to research the depth to groundwater in the general area. No groundwater wells or depth to groundwater (DTW) data was available within a 5 - 6 mile radius of the release. Beyond the 5 - 6 mile radius, the DTW ranged from 79 to 246 feet below the ground surface.

CRA had previously contacted Mike Bratcher, NMOCD District 2, regarding the depth and occurrence of groundwater in the general area of Loco Hills, New Mexico. Mr. Bratcher reported that the agency was not aware of any protectable groundwater in the vicinity and the depth to groundwater in this locale would be considered to be greater than 100 feet below the ground surface.

The NMOCD 2011 guidance document was reviewed for site ranking criteria, criteria score and recommended remediation action levels (RRALs). Based on the evaluation, the site had a ranking score of "0". Consequently, the RRALs for site soils were: 5,000 mg/kg for TPH, 10 mg/kg for benzene, and 50 mg/kg for total BTEX.

CRA inspected the Site on February 13, 2015 to evaluate the site conditions and plan for additional assessment and remedial actions. A composite waste soil sample was collected for waste characterization purposes; NMOCD Form C-138 generation, and submittal and approval processing at the R360 facility located between Hobbs and Carlsbad. The Henshaw Station is not directly associated with Exploration and Production (E&P) activities as the liquids have changed custody from lease operations. The waste materials associated with the release are considered "RCRA non-exempt". A site aerial map is presented as Figure 2. Photographs of the release site and soil remediation efforts are presented in Appendix B.

Section 3.0 Soil Assessment and Remediation

3.1 Soil Excavation

The impacts of the soils were determined to be approximately 6 - inches in depth within the tank berm area and the spill paths ran between the four tanks and associated piping within the battery containment (Figure 3). Given the close proximity of the battery tanks to each other, hand tools (shovels) were used to remove the crude-oil impacted materials. Soil excavating operations were conducted at the Site between March 31 and April 1, 2015. All impacted soils that were excavated were placed in wheelbarrows and moved to a staging area on polyvinyl sheeting adjacent to the tank berm. Existing soils were blended into areas where materials were removed. All heavily-stained soil within the affected area was loaded and transported into a 12- cubic yard truck for disposal at the R360 waste facility in western Lea County, New Mexico.

3.2 Confirmation Sampling and Site Restoration

Subsequent to impacted soil removed, confirmation surface soil samples were collected on April 1, 2015 in the native soils within the spill path as depicted in Figure 3. These samples were submitted to Xenco Laboratories in Odessa, Texas and analyzed for TPH and BTEX using the methods documented above. Results of the analytical data are summarized in Table 1. All confirmation samples collected at the sample locations exhibited BTEX and TPH concentrations below NMOCD RRALs at the sampled locations. Copies of certified laboratory reports and chain of custody documentation are attached in Appendix C.

Section 4.0 Waste Management

A composite waste characterization soil sample was collected from the Site on February 13, 2015, for analysis by Xenco Laboratories in Odessa, Texas. The sample was analyzed for TPH and BTEX and waste profiling/facility approval purposes (see Form C-138 in Appendix A). The R360 waste facility in western Lea County, New Mexico was used for the disposal of the impacted soil. Approximately six cubic yards of crude oil impacted soils were removed from the remedial excavation. The analytical report is included in Appendix C. The waste manifest is included in Appendix D.

Section 5.0 Summary

A crude oil release was discovered at the Site on February 11, 2015, within the HEP Henshaw Station 533 tank battery where an equipment malfunction caused three tanks to overfill and

release liquids onto the ground surface. The following summary describes incident assessment and remediation:

- NMOCD Form C-141, Release Notification and Corrective Action, dated February 11, 2015, was submitted to the NMOCD regarding the details of the reported 10-barrels crude oil release.
- The NMOCD "Release Reporting and Corrective Actions" Guidance, published September 30, 2011, was utilized for project activities. Based on a ranking criteria score of "0", site RRALs utilized were 5,000 mg/kg of TPH, 10 mg/kg of benzene, and 50 mg/kg of total BTEX.
- A composite waste characterization sample was collected from within the release area and analyzed for TPH and BTEX. The results were forwarded to R360, who approved the C-138 form for acceptance of the non-hazardous waste.
- Soils exhibiting TPH and BTEX concentrations above NMOCD RRALs; (approximately six cubic yards) were removed from the remedial excavation and disposed at the R360 waste facility in western Lea County, New Mexico.
- Confirmation samples were collected from the excavation area to verify that hydrocarbon-impacted soils above the NMOCD RRALs had been removed.
- Assessment, remediation, restoration and closure activities were performed in coordination with HEP personnel and NMOCD guidelines. The information collected supports NMOCD closure requirements.

Section 6.0 Site Closure Request

The Site Closure Report provides documentation of closure activities performed at the release site. Based on assessment and corrective actions performed to date and documented in this report, CRA, on behalf of HEP, respectfully requests the NMOCD to rule that no further action for this Site is warranted. This report is provided along with the final C-141 report, as documentation of the closure activities.

Please feel free to contact Tom Larson, CRA, at (432) 686-0086 if there are any questions or additional information is required.

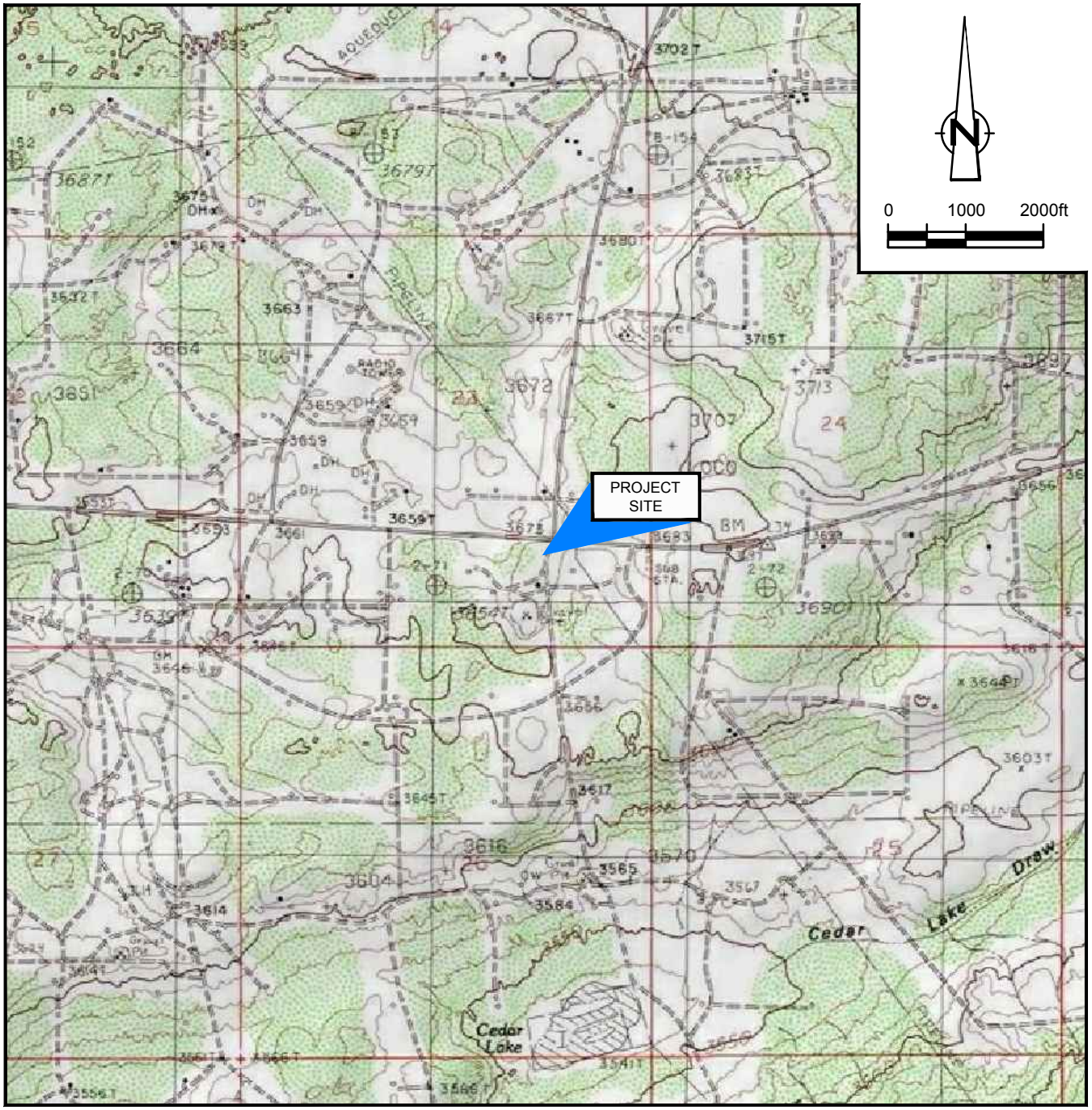
Sincerely,

Conestoga-Rovers & Associates

Thomas C. Larson
Principal, Midland Operations Manager

Carolyn J. Cook
Environmental Scientist

Figures



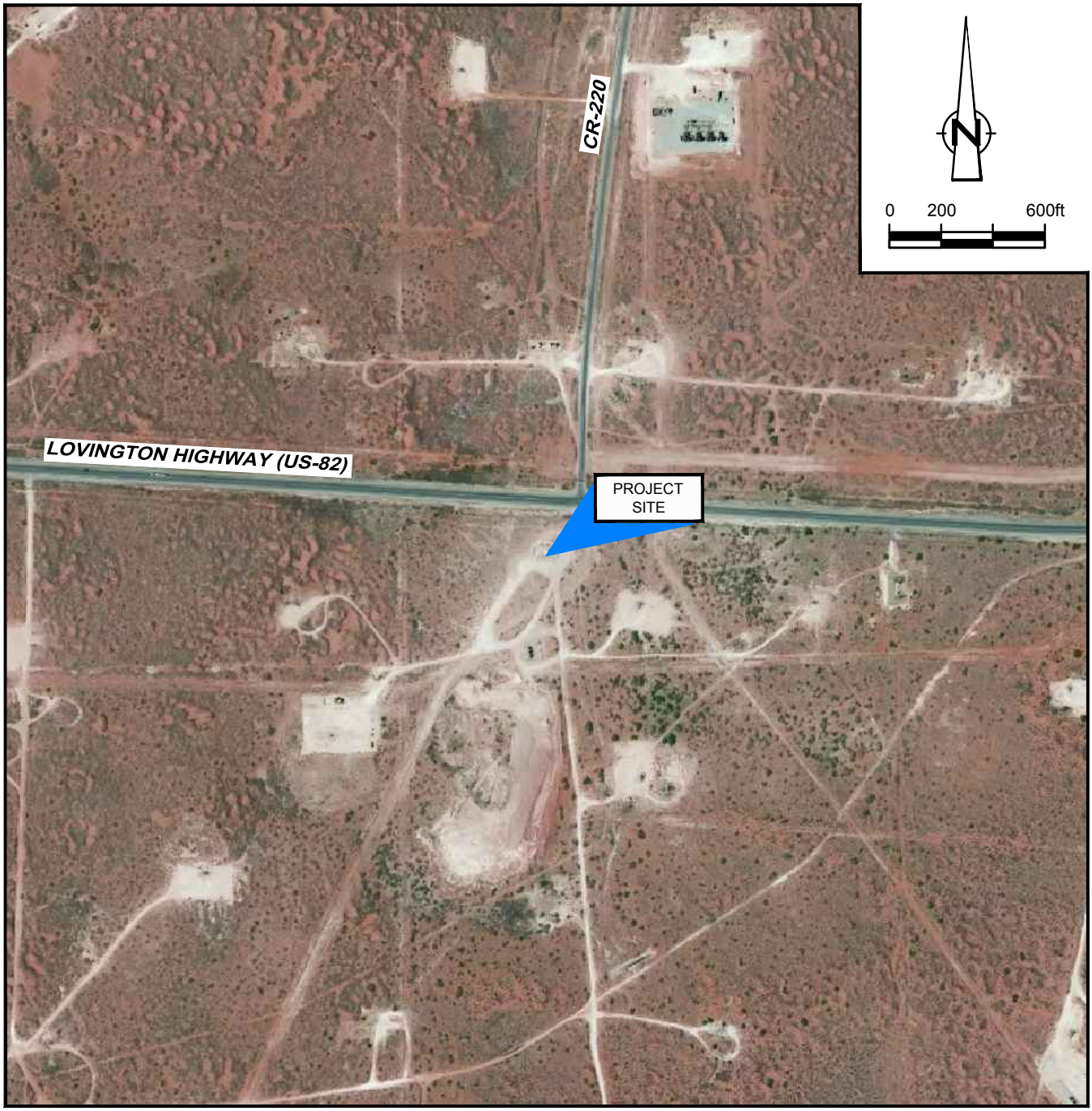
SOURCE: USGS 7.5 MINUTE QUAD
"LOCO HILLS, NEW MEXICO"

LAT/LONG: 32.8159° NORTH, 103.9384° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 1

SITE LOCATION MAP
HENSHAW STATION 533
EDDY COUNTY, NEW MEXICO
Holly Energy

089886-00(001)GN-DL001 APR 16/2015



LAT/LONG: 32.8159° NORTH, 103.9384° WEST
COORDINATE: NAD83 DATUM, U.S. FOOT
STATE PLANE ZONE - NEW MEXICO EAST

Figure 2

SITE AERIAL MAP
HENSHAW STATION 533
EDDY COUNTY, NEW MEXICO
Holly Energy

089886-00(001)GN-DL001 APR 29/2015

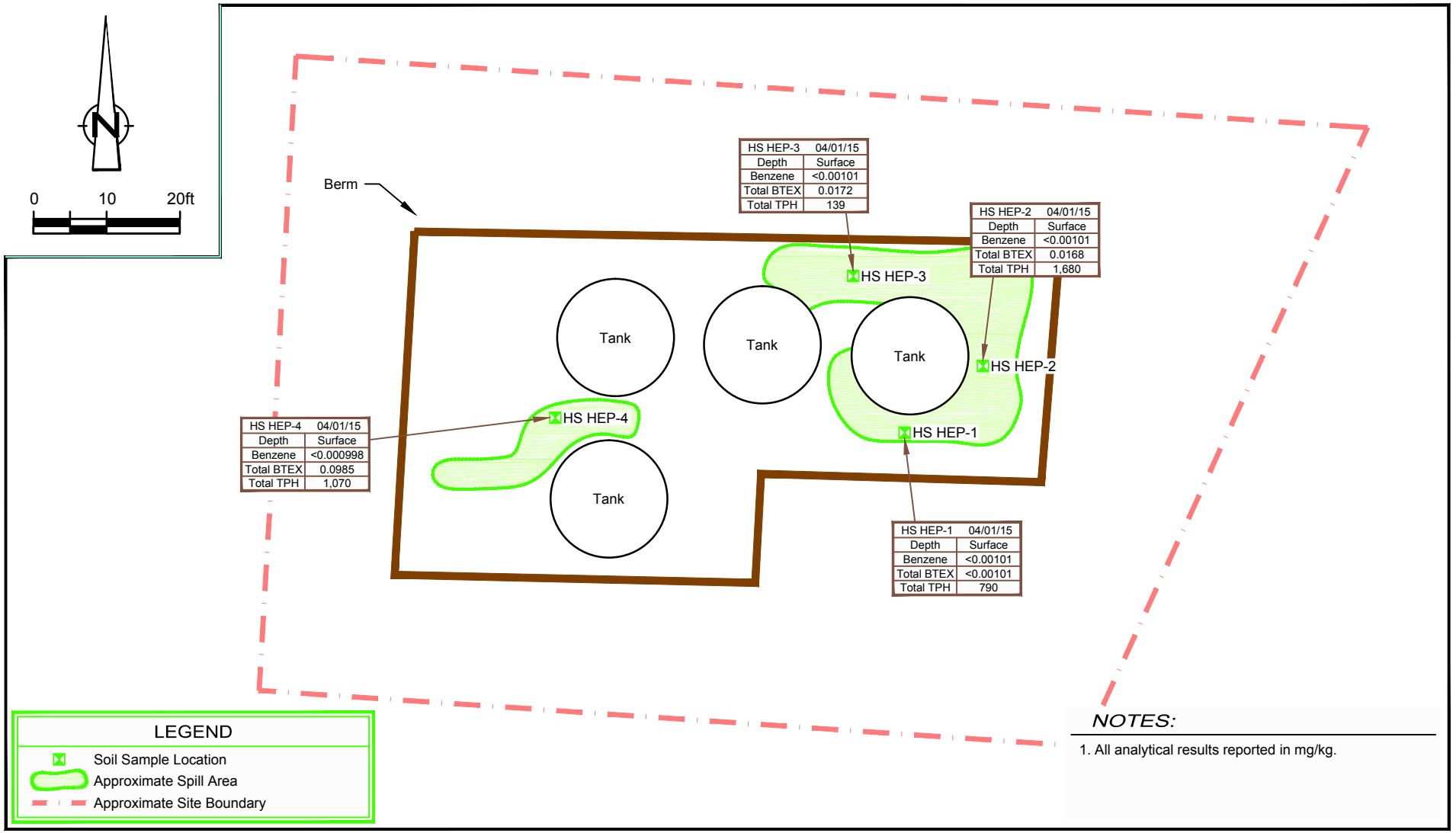


figure 3

SITE DETAILS MAP AND ANALYTICAL RESULTS MAP
HENSHAW STATION 533
EDDY COUNTY, NEW MEXICO
Holly Energy

089886-00(001)GN-DL001 APR 23/2015

Tables

Table 1

Soil Analytical Summary
HEP Henshaw Station 533 - Crude Oil Release
Eddy County, New Mexico

Sample ID	Depth	Sample Date	BTEX (EPA SW-8260B)							TPH (EPA SW-8015 Mod)			
			Benzene	Toluene	Ethyl-Benzene	m,p-Xylenes	o-Xylene	Total Xylenes	Total BTEX	C6-C12 Gas Range Hydrocarbons	C12-C28 Diesel Range Hydrocarbons	C28-C35 Oil Range Hydrocarbons	Total TPH
New Mexico Oil Conservation Division			**10**	**---**	**---**	**---**	**---**	**---**	**50**	**---**	**---**	**---**	**5,000**
Recommended Remediation Action Levels			**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**	**(mg/kg)**
HS HEP-1	Surface	4/1/15	<0.00101	<0.00101	<0.00101	<0.00202	<0.00101	<0.00101	<0.00101	<15.1	746	43.7	790
HS HEP-2	Surface	4/1/15	<0.00101	0.00152	0.00574	0.00609	0.00342	0.00951	0.0168	<15.2	1,610	74.7	1,680
HS HEP-3	Surface	4/1/15	<0.00101	0.00166	0.00394	0.00628	0.00533	0.0116	0.0172	<15.1	139	<15.1	139
HS HEP-4	Surface	4/1/15	<0.000998	0.00501	0.0104	0.0416	0.0415	0.0831	0.0985	37.2	982	49.5	1,070

Notes:

1. All analytical results reported in (mg/kg) milligrams per kilogram
2. BTEX analysis by EPA Method SW-8260B
3. TPH analysis by EPA Method SW-8015 Mod
4. Highlighted cells indicate concentrations exceeding guidance RRALs
5. RRALs from September 30, 2011 NMOCD Release Reporting and Corrective Actions Guidance, Table 1
6. "<" indicates below laboratory Reporting Limit (RL)

Appendices

Appendix A

New Mexico Oil Conservation District Forms C-138 and C-141

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

Form C-138
Revised March 12, 2007

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Holly Energy Partners, 1602 W. Main St., Artesia, NM 88210

2. Originating Site:
Henshaw Station 533, Intersection of CR220 and US Highway 82, 8 miles east of Loco Hills, NM

3. Location of Material (Street Address, City, State or ULSTR):
Henshaw Station 533, Intersection of CR220 and US Highway 82, 8 miles east of Loco Hills, NM

4. Source and Description of Waste:
soil impacted with crude oil.

Estimated Volume 60 (yd^3) / bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd^3 / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Allison Stockweather, representative or authorized agent for Holly Energy Partners do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ *Monthly* ☐ *Weekly* ☐ *Per Load*

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, _____, representative for _____ do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:
Lobo Services

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: R360

Address of Facility: Mile marker 66, Carlsbad Highway (62), Hobbs, New Mexico

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☒ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: _____ TITLE: _____ DATE: _____

SIGNATURE: _____ TELEPHONE NO.: _____

Surface Waste Management Facility Authorized Agent

NM OIL CONSERVATION
ARTESIA DISTRICT
FEB 11 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: Holly Energy Partners, L.P.	Contact: Allison Stockweather, EHS Senior Manager
Address: 1602 West Main Street, Artesia, NM 88210	Telephone No.: 575-746-5475
Facility Name: Henshaw Station 533	Facility Type: Truck LACT

Surface Owner	Mineral Owner	API No.

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County: Eddy County

Latitude_____ **Longitude** _____Henshaw Station 533 is on the corner of US 82 and Square Lake Rd. (County Rd. 220); approximately 30 mins. from Artesia, NM.

NATURE OF RELEASE

Type of Release: Crude Oil Release	Volume of Release: 10 bbls	Volume Recovered: 4 bbls
Source of Release: Broken Coupler on Pump	Date and Hour of Occurrence: 02/11/15, 12:30 AM	Date and Hour of Discovery: 02/11/15, 1:30 AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required HEP EHS telephone notification to NMED was made at 2:19 am on 02/11/15 (Ruth Horowitz, voicemail) upon notification of incident per NMAC 20.6.2.1203. HEP notified Mike Bratcher, NMOCD, District 2, of incident details at 2:56 pm on 02/11/15.	If YES, To Whom? Ruth Horowitz, NMED, Spill Hotline voicemail	
By Whom? Allison Stockweather	Date and Hour 02/11/15, 2:19 am	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*

A coupler on the pump/motor broke which allowed the LACT to run but not pump. Three tanks overfilled with an initial estimated volume of 46 bbls released; the estimate was corrected and estimated at 10 bbls by HEP Operations. The release was contained in the dike containment.

Describe Area Affected and Cleanup Action Taken.*

A vacuum truck recovered 4 bbls of crude oil. The site will be assessed and remediated in accordance with NMOCD regulations.

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: Allison Stockweather	OIL CONSERVATION DIVISION	
Printed Name: Allison Stockweather	Approved by Environmental Specialist:	
Title: EHS Senior Manager	Approval Date:	Expiration Date:
E-mail Address: Allison.Stockweather@hollyenergy.com	Conditions of Approval:	Attached ☐
Date: 02/11/15 Phone: 575-746-5475		

* Attach Additional Sheets If Necessary

Appendix B

Site Photographs

SITE PHOTOGRAPHS

PHOTO 1: VIEW FACING WEST OF THE TANK BATTERY SHOWING PRODUCT SATURATED SOIL ALONG THREE CRUDE OIL TANKS

PHOTO 2: VIEW FACING NORTH EAST OF THE TANK BATTERY SHOWING PRODUCT SATURATED SOIL AROUND TWO CRUDE OIL TANKS

SITE PHOTOGRAPHS

PHOTO 3: VIEW FACING NORTH EAST OF THE TANK BATTERY SHOWING SEVERAL LOBO'S CREW MEMBERS REMOVING PRODUCT SATURATED SOIL

PHOTO 4: VIEW FACING NORTH EAST OF THE TANK BATTERY SHOWING REMEDIATED SOIL

SITE PHOTOGRAPHS

PHOTO 5: VIEW FACING WEST OF THE TANK BATTERY SHOWING REMEDIATED SOIL ALONG THREE CRUDE OIL TANKS

Appendix C

Certified Laboratory Reports and Chain of Custody Forms

Analytical Report 502689

for

Conestoga Rovers & Associates

Project Manager: Tom Larson

Hershaw Station 552 Soil Remediation

089886

25-FEB-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), 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)

25-FEB-15

Project Manager: **Tom Larson**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **502689**
Hershaw Station 552 Soil Remediation
Project Address: Eddy Co. NM

Tom Larson:

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) 502689. 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. 502689 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 502689

Conestoga Rovers & Associates, Midland, TX

Hershaw Station 552 Soil Remediation

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SO-089886-021315-SP-COMP	S	02-13-15 09:30		502689-001

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 502689

Conestoga Rovers & Associates, Midland, TX

Project Name: Hershaw Station 552 Soil Remediation

Project Id: 089886
Contact: Tom Larson
Project Location: Eddy Co. NM

Date Received in Lab: Thu Feb-19-15 12:55 pm
Report Date: 25-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	502689-001					
	Field Id:	SO-089886-021315-SP-COM					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-13-15 09:30					
TCLP Mercury by SW 7470A SUB: E871002	***Extracted:***	Feb-24-15 11:00					
	Analyzed:	Feb-24-15 14:30					
	Units/RL:	mg/L RL					
Mercury		ND 0.000200					
TCLP Metals by SW846 6010B SUB: E871002	***Extracted:***	Feb-23-15 12:00					
	Analyzed:	Feb-23-15 18:52					
	Units/RL:	mg/L RL					
Antimony		ND 0.100					
Arsenic		ND 0.100					
Barium		1.85 0.0500					
Beryllium		ND 0.0200					
Cadmium		ND 0.0500					
Chromium		ND 0.0500					
Lead		ND 0.0750					
Nickel		ND 0.0500					
Selenium		ND 0.150					
Silver		ND 0.150					

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 502689

Conestoga Rovers & Associates, Midland, TX

Project Name: Hershaw Station 552 Soil Remediation

Project Id: 089886
Contact: Tom Larson
Project Location: Eddy Co. NM

Date Received in Lab: Thu Feb-19-15 12:55 pm
Report Date: 25-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	502689-001					
	Field Id:	SO-089886-021315-SP-COM					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-13-15 09:30					
TCLP SVOCs by EPA 8270C SUB: E871002	***Extracted:***	Feb-23-15 15:51					
	Analyzed:	Feb-24-15 16:16					
	Units/RL:	mg/L	RL				
1,4-Dichlorobenzene		ND	0.0250				
2,4,5-Trichlorophenol		ND	0.0250				
2,4,6-Trichlorophenol		ND	0.0250				
2,4-Dinitrotoluene		ND	0.0250				
2-methylphenol		ND	0.0250				
3&4-Methylphenol		ND	0.0250				
Hexachlorobenzene		ND	0.0250				
Hexachlorobutadiene		ND	0.0250				
Hexachloroethane		ND	0.0250				
Nitrobenzene		ND	0.0250				
Pentachlorophenol		ND	0.0500				
Pyridine		ND	0.0500				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 502689

Conestoga Rovers & Associates, Midland, TX

Project Name: Hershaw Station 552 Soil Remediation

Project Id: 089886
Contact: Tom Larson
Project Location: Eddy Co. NM

Date Received in Lab: Thu Feb-19-15 12:55 pm
Report Date: 25-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	502689-001					
	Field Id:	SO-089886-021315-SP-COM					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-13-15 09:30					
TCLP VOAs by EPA 8260B SUB: E871002	***Extracted:***	Feb-24-15 13:36					
	Analyzed:	Feb-24-15 16:58					
	Units/RL:	mg/L	RL				
Benzene		0.140	0.0250				
2-Butanone		ND	0.250				
Carbon Tetrachloride		ND	0.0250				
Chlorobenzene		ND	0.0250				
Chloroform		ND	0.0250				
1,4-Dichlorobenzene		ND	0.0250				
1,2-Dichloroethane		ND	0.0250				
1,1-Dichloroethene		ND	0.0250				
Tetrachloroethylene		ND	0.0250				
Trichloroethene		ND	0.0250				
Vinyl Chloride		ND	0.0100				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 502689

Conestoga Rovers & Associates, Midland, TX

Project Name: Hershaw Station 552 Soil Remediation

Project Id: 089886
Contact: Tom Larson
Project Location: Eddy Co. NM

Date Received in Lab: Thu Feb-19-15 12:55 pm
Report Date: 25-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	502689-001					
	Field Id:	SO-089886-021315-SP-COM					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-13-15 09:30					
BTEX by SW 8260B SUB: E871002	***Extracted:***	Feb-23-15 11:57					
	Analyzed:	Feb-23-15 13:09					
	Units/RL:	mg/kg	RL				
Benzene		15.3	0.544				
Toluene		130	0.544				
Ethylbenzene		109	0.544				
m,p-Xylenes		122	1.09				
o-Xylene		51.6	0.544				
Total Xylenes		174	0.544				
Total BTEX		428	0.544				
Flash Point (CC) SW-846 1010 SUB: E871002	***Extracted:***						
	Analyzed:	Feb-23-15 15:30					
	Units/RL:	Deg F	RL				
Flash Point		136	75.0				
Percent Moisture	***Extracted:***						
	Analyzed:	Feb-23-15 09:30					
	Units/RL:	%	RL				
Percent Moisture		8.78	1.00				
Reactive Cyanide by SW 846-Section7.3.3 SUB: E871002	***Extracted:***	Feb-24-15 12:41					
	Analyzed:	Feb-24-15 19:23					
	Units/RL:	mg/kg	RL				
Cyanide		ND	0.274				
Soil pH by EPA 9045C	***Extracted:***						
	Analyzed:	Feb-25-15 11:30					
	Units/RL:	SU	RL				
pH		7.76					

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 502689

Conestoga Rovers & Associates, Midland, TX

Project Name: Hershaw Station 552 Soil Remediation

Project Id: 089886
Contact: Tom Larson
Project Location: Eddy Co. NM

Date Received in Lab: Thu Feb-19-15 12:55 pm
Report Date: 25-FEB-15
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	502689-001					
	Field Id:	SO-089886-021315-SP-COM					
	Depth:						
	Matrix:	SOIL					
	Sampled:	Feb-13-15 09:30					
Sulfide by SW9034 SUB: E871002	***Extracted:***						
	Analyzed:	Feb-20-15 15:48					
	Units/RL:	mg/kg	RL				
Sulfide		ND	25.0				
TPH By SW8015 Mod	***Extracted:***	Feb-20-15 11:00					
	Analyzed:	Feb-21-15 08:35					
	Units/RL:	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		3530	328				
C12-C28 Diesel Range Hydrocarbons		13200	328				
C28-C35 Oil Range Hydrocarbons		ND	328				
Total TPH		16700	328				

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Orders : 502689,

Project ID: 089886

Lab Batch #: 962357 **Sample:** 502689-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/21/15 08:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	99.7	120	70-135	
o-Terphenyl	64.6	49.9	129	70-135	

Lab Batch #: 962424 **Sample:** 502689-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/23/15 13:09

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0490	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0499	0.0500	100	80-120	
Toluene-D8	0.0459	0.0500	92	73-132	
4-Bromofluorobenzene	0.0496	0.0500	99	58-152	

Lab Batch #: 962529 **Sample:** 502689-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 02/24/15 16:16

SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	31.1	50.0	62	30-100	
Phenol-d6	24.1	50.0	48	15-94	
Nitrobenzene-d5	36.7	50.0	73	46-111	
2-Fluorobiphenyl	35.2	50.0	70	44-117	
2,4,6-Tribromophenol	38.9	50.0	78	48-117	
Terphenyl-D14	37.7	50.0	75	46-126	

Lab Batch #: 962584 **Sample:** 502689-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 02/24/15 16:58

SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0529	0.0500	106	75-131	
1,2-Dichloroethane-D4	0.0502	0.0500	100	63-144	
Toluene-D8	0.0494	0.0500	99	80-117	
4-Bromofluorobenzene	0.0523	0.0500	105	74-124	

* 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: Hershaw Station 552 Soil Remediation

Work Orders : 502689,

Project ID: 089886

Lab Batch #: 962357 **Sample:** 688855-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/15 01:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.1	100	87	70-135	
o-Terphenyl	44.3	50.0	89	70-135	

Lab Batch #: 962424 **Sample:** 688887-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/23/15 10:26

SURROGATE RECOVERY STUDY

BTEX by SW 8260B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0504	0.0500	101	74-126	
1,2-Dichloroethane-D4	0.0507	0.0500	101	80-120	
Toluene-D8	0.0501	0.0500	100	73-132	
4-Bromofluorobenzene	0.0484	0.0500	97	58-152	

Lab Batch #: 962584 **Sample:** 689004-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/15 13:04

SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0525	0.0500	105	75-131	
1,2-Dichloroethane-D4	0.0523	0.0500	105	63-144	
Toluene-D8	0.0492	0.0500	98	80-117	
4-Bromofluorobenzene	0.0495	0.0500	99	74-124	

Lab Batch #: 962529 **Sample:** 688900-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/15 15:02

SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	46.8	50.0	94	30-100	
Phenol-d6	42.6	50.0	85	15-94	
Nitrobenzene-d5	43.6	50.0	87	46-111	
2-Fluorobiphenyl	42.7	50.0	85	44-117	
2,4,6-Tribromophenol	42.2	50.0	84	48-117	
Terphenyl-D14	45.8	50.0	92	46-126	

* 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: Hershaw Station 552 Soil Remediation

Work Orders : 502689,

Project ID: 089886

Lab Batch #: 962357 **Sample:** 688855-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/15 02:00

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.7	100	99	70-135	
o-Terphenyl	53.0	50.0	106	70-135	

Lab Batch #: 962424 **Sample:** 688887-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/23/15 09:34

SURROGATE RECOVERY STUDY

BTEX by SW 8260B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0497	0.0500	99	74-126	
1,2-Dichloroethane-D4	0.0498	0.0500	100	80-120	
Toluene-D8	0.0500	0.0500	100	73-132	
4-Bromofluorobenzene	0.0533	0.0500	107	58-152	

Lab Batch #: 962584 **Sample:** 689004-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/15 11:46

SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0503	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0499	0.0500	100	63-144	
Toluene-D8	0.0472	0.0500	94	80-117	
4-Bromofluorobenzene	0.0499	0.0500	100	74-124	

Lab Batch #: 962529 **Sample:** 688900-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/15 15:26

SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	44.7	50.0	89	30-100	
Phenol-d6	43.8	50.0	88	15-94	
Nitrobenzene-d5	41.5	50.0	83	46-111	
2-Fluorobiphenyl	41.2	50.0	82	44-117	
2,4,6-Tribromophenol	44.3	50.0	89	48-117	
Terphenyl-D14	40.3	50.0	81	46-126	

* 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: Hershaw Station 552 Soil Remediation

Work Orders : 502689,

Project ID: 089886

Lab Batch #: 962357 **Sample:** 688855-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 02/21/15 02:20

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	100	95	70-135	
o-Terphenyl	50.2	50.0	100	70-135	

Lab Batch #: 962529 **Sample:** 688900-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L **Date Analyzed:** 02/24/15 15:51

SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	44.5	50.0	89	30-100	
Phenol-d6	44.3	50.0	89	15-94	
Nitrobenzene-d5	41.7	50.0	83	46-111	
2-Fluorobiphenyl	41.5	50.0	83	44-117	
2,4,6-Tribromophenol	43.9	50.0	88	48-117	
Terphenyl-D14	40.6	50.0	81	46-126	

Lab Batch #: 962357 **Sample:** 502723-021 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/21/15 03:02

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.8	123	70-135	
o-Terphenyl	64.4	49.9	129	70-135	

Lab Batch #: 962424 **Sample:** 502793-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/23/15 14:06

SURROGATE RECOVERY STUDY

BTEX by SW 8260B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0489	0.0500	98	74-126	
1,2-Dichloroethane-D4	0.0481	0.0500	96	80-120	
Toluene-D8	0.0519	0.0500	104	73-132	
4-Bromofluorobenzene	0.0539	0.0500	108	58-152	

* 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: Hershaw Station 552 Soil Remediation

Work Orders : 502689,

Project ID: 089886

Lab Batch #: 962584 **Sample:** 502728-001 S / MS **Batch:** 1 **Matrix:** Solid

Units: mg/L **Date Analyzed:** 02/24/15 14:52

SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0505	0.0500	101	75-131	
1,2-Dichloroethane-D4	0.0493	0.0500	99	63-144	
Toluene-D8	0.0476	0.0500	95	80-117	
4-Bromofluorobenzene	0.0490	0.0500	98	74-124	

Lab Batch #: 962529 **Sample:** 502689-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/L **Date Analyzed:** 02/24/15 16:40

SURROGATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
2-Fluorophenol	33.1	50.0	66	30-100	
Phenol-d6	27.9	50.0	56	15-94	
Nitrobenzene-d5	36.7	50.0	73	46-111	
2-Fluorobiphenyl	35.9	50.0	72	44-117	
2,4,6-Tribromophenol	40.9	50.0	82	48-117	
Terphenyl-D14	34.5	50.0	69	46-126	

Lab Batch #: 962357 **Sample:** 502723-021 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/21/15 03:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	56.7	49.9	114	70-135	

Lab Batch #: 962424 **Sample:** 502793-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 02/23/15 14:32

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0511	0.0500	102	74-126	
1,2-Dichloroethane-D4	0.0505	0.0500	101	80-120	
Toluene-D8	0.0507	0.0500	101	73-132	
4-Bromofluorobenzene	0.0520	0.0500	104	58-152	

* 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: Hershaw Station 552 Soil Remediation

Work Orders : 502689, **Project ID:** 089886

Lab Batch #: 962584 **Sample:** 502728-001 SD / MSD **Batch:** 1 **Matrix:** Solid

Units: mg/L **Date Analyzed:** 02/24/15 15:17

SURROGATE RECOVERY STUDY

TCLP VOAs by EPA 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0498	0.0500	100	75-131	
1,2-Dichloroethane-D4	0.0491	0.0500	98	63-144	
Toluene-D8	0.0475	0.0500	95	80-117	
4-Bromofluorobenzene	0.0501	0.0500	100	74-124	

* 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.

Blank Spike Recovery

Project Name: Hershaw Station 552 Soil Remediation

Work Order #: 502689 **Project ID:** 089886

Lab Batch #: 962424 **Sample:** 688887-1-BKS **Matrix:** Solid

Date Analyzed: 02/23/2015 **Date Prepared:** 02/23/2015 **Analyst:** SAD

Reporting Units: mg/kg **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

BTEX by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.00100	0.100	0.0983	98	62-132	
Toluene	<0.00100	0.100	0.105	105	66-124	
Ethylbenzene	<0.00100	0.100	0.104	104	71-134	
m,p-Xylenes	<0.00200	0.200	0.223	112	69-128	
o-Xylene	<0.00100	0.100	0.108	108	72-131	

Lab Batch #: 962584 **Sample:** 689004-1-BKS **Matrix:** Water

Date Analyzed: 02/24/2015 **Date Prepared:** 02/24/2015 **Analyst:** WEW

Reporting Units: mg/L **Batch #:** 1 **BLANK /BLANK SPIKE RECOVERY STUDY**

TCLP VOAs by EPA 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.0250	0.250	0.250	100	68-123	
2-Butanone	<0.250	1.25	1.10	88	49-135	
Carbon Tetrachloride	<0.0250	0.250	0.271	108	68-135	
Chlorobenzene	<0.0250	0.250	0.223	89	78-124	
Chloroform	<0.0250	0.250	0.245	98	71-119	
1,4-Dichlorobenzene	<0.0250	0.250	0.232	93	80-119	
1,2-Dichloroethane	<0.0250	0.250	0.240	96	64-130	
1,1-Dichloroethene	<0.0250	0.250	0.257	103	68-116	
Tetrachloroethylene	<0.0250	0.250	0.240	96	79-122	
Trichloroethene	<0.0250	0.250	0.257	103	74-123	
Vinyl Chloride	<0.0100	0.250	0.283	113	59-124	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Order #: 502689 **Project ID:** 089886

Analyst: BFO **Date Prepared:** 02/24/2015 **Date Analyzed:** 02/24/2015

Lab Batch ID: 962541 **Sample:** 688965-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Reactive Cyanide by SW 846-Section7.3.3 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Cyanide	<0.250	20.0	3.59	18	20.0	3.65	18	2	5-40	20	

Analyst: KCS **Date Prepared:** 02/20/2015 **Date Analyzed:** 02/20/2015

Lab Batch ID: 962425 **Sample:** 962425-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Sulfide by SW9034 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Sulfide	<25.0	50.0	46.0	92	50.0	46.0	92	0	30-120	20	

Analyst: ANS **Date Prepared:** 02/24/2015 **Date Analyzed:** 02/24/2015

Lab Batch ID: 962518 **Sample:** 688954-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000200	0.00200	0.00212	106	0.00200	0.00212	106	0	80-120	20	

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

BS / BSD Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Order #: 502689 **Project ID:** 089886

Analyst: DAB **Date Prepared:** 02/23/2015 **Date Analyzed:** 02/23/2015

Lab Batch ID: 962517 **Sample:** 688878-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by SW846 6010B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Antimony	<0.0200	1.00	0.956	96	1.00	0.987	99	3	80-120	20	
Arsenic	<0.0200	1.00	0.990	99	1.00	1.01	101	2	80-120	20	
Barium	<0.0100	1.00	0.992	99	1.00	1.02	102	3	80-120	20	
Beryllium	<0.00400	1.00	0.961	96	1.00	0.988	99	3	80-120	20	
Cadmium	<0.0100	1.00	0.946	95	1.00	0.971	97	3	80-120	20	
Chromium	<0.0100	1.00	0.988	99	1.00	1.02	102	3	80-120	20	
Lead	<0.0150	1.00	0.972	97	1.00	1.00	100	3	80-120	20	
Nickel	<0.0100	1.00	0.980	98	1.00	1.01	101	3	80-120	20	
Selenium	<0.0300	1.00	0.994	99	1.00	1.01	101	2	80-120	20	
Silver	<0.0300	0.500	0.495	99	0.500	0.502	100	1	80-120	20	

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

BS / BSD Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Order #: 502689 **Project ID:** 089886

Analyst: PKH **Date Prepared:** 02/23/2015 **Date Analyzed:** 02/24/2015

Lab Batch ID: 962529 **Sample:** 688900-1-BKS **Batch #:** 1 **Matrix:** Water

Units: mg/L

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TCLP SVOCs by EPA 8270C 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
1,4-Dichlorobenzene	<0.0250	0.250	0.213	85	0.250	0.206	82	3	37-111	30	
2,4,5-Trichlorophenol	<0.0250	0.250	0.210	84	0.250	0.204	82	3	39-125	30	
2,4,6-Trichlorophenol	<0.0250	0.250	0.221	88	0.250	0.216	86	2	42-125	30	
2,4-Dinitrotoluene	<0.0250	0.250	0.241	96	0.250	0.235	94	3	41-128	30	
2-methylphenol	<0.0250	0.250	0.204	82	0.250	0.198	79	3	36-105	30	
3&4-Methylphenol	<0.0250	0.250	0.199	80	0.250	0.199	80	0	35-96	30	
Hexachlorobenzene	<0.0250	0.250	0.235	94	0.250	0.233	93	1	39-128	30	
Hexachlorobutadiene	<0.0250	0.250	0.229	92	0.250	0.220	88	4	31-120	30	
Hexachloroethane	<0.0250	0.250	0.221	88	0.250	0.214	86	3	37-109	30	
Nitrobenzene	<0.0250	0.250	0.238	95	0.250	0.234	94	2	37-114	30	
Pentachlorophenol	<0.0500	0.250	0.213	85	0.250	0.208	83	2	10-137	40	
Pyridine	<0.0500	0.250	0.194	78	0.250	0.186	74	4	16-135	40	

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: Hershaw Station 552 Soil Remediation

Work Order #: 502689 **Project ID:** 089886

Analyst: ARM **Date Prepared:** 02/20/2015 **Date Analyzed:** 02/21/2015

Lab Batch ID: 962357 **Sample:** 688855-1-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	829	83	1000	818	82	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	944	94	1000	880	88	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: Hershaw Station 552 Soil Remediation

Work Order #: 502689

Lab Batch #: 962529 **Project ID:** 089886

Date Analyzed: 02/24/2015 **Date Prepared:** 02/23/2015 **Analyst:** PKH

QC- Sample ID: 502689-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/L

TCLP SVOCs by SW-846 8270C Analytes	MATRIX / MATRIX SPIKE RECOVERY STUDY					
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
1,4-Dichlorobenzene	<0.0250	0.250	0.176	70	37-111	
2,4,5-Trichlorophenol	<0.0250	0.250	0.186	74	39-125	
2,4,6-Trichlorophenol	<0.0250	0.250	0.192	77	42-125	
2,4-Dinitrotoluene	<0.0250	0.250	0.216	86	41-128	
2-methylphenol	<0.0250	0.250	0.172	69	36-105	
3&4-Methylphenol	<0.0250	0.250	0.171	68	35-96	
Hexachlorobenzene	<0.0250	0.250	0.206	82	39-128	
Hexachlorobutadiene	<0.0250	0.250	0.191	76	31-120	
Hexachloroethane	<0.0250	0.250	0.194	78	37-109	
Nitrobenzene	<0.0250	0.250	0.205	82	37-114	
Pentachlorophenol	<0.0500	0.250	0.212	85	10-137	
Pyridine	<0.0500	0.250	0.0759	30	16-135	

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

Form 3 - MS / MSD Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Order # : 502689 **Project ID:** 089886

Lab Batch ID: 962424 **QC- Sample ID:** 502793-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/23/2015 **Date Prepared:** 02/23/2015 **Analyst:** SAD

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00143	0.143	0.147	103	0.140	0.144	103	2	62-132	25	
Toluene	<0.00143	0.143	0.160	112	0.140	0.161	115	1	66-124	25	
Ethylbenzene	<0.00143	0.143	0.159	111	0.140	0.155	111	3	71-134	25	
m,p-Xylenes	<0.00287	0.287	0.341	119	0.281	0.330	117	3	69-128	25	
o-Xylene	<0.00143	0.143	0.164	115	0.140	0.157	112	4	72-131	25	

Lab Batch ID: 962518 **QC- Sample ID:** 502689-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/24/2015 **Date Prepared:** 02/24/2015 **Analyst:** ANS

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Mercury by SW 7470A Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Mercury	<0.000200	0.00200	0.00158	79	0.00200	0.00159	80	1	75-125	20	

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.

Form 3 - MS / MSD Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Order # : 502689 **Project ID:** 089886

Lab Batch ID: 962517 **QC- Sample ID:** 502689-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/23/2015 **Date Prepared:** 02/23/2015 **Analyst:** DAB

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP Metals by SW846 6010B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Antimony	<0.100	5.00	4.74	95	5.00	4.97	99	5	80-120	20	
Arsenic	<0.100	5.00	4.87	97	5.00	5.11	102	5	80-120	20	
Barium	1.85	5.00	6.46	92	5.00	6.92	101	7	80-120	20	
Beryllium	<0.0200	5.00	4.68	94	5.00	4.89	98	4	80-120	20	
Cadmium	<0.0500	5.00	4.72	94	5.00	4.96	99	5	80-120	20	
Chromium	<0.0500	5.00	4.79	96	5.00	5.02	100	5	80-120	20	
Lead	<0.0750	5.00	4.72	94	5.00	4.93	99	4	80-120	20	
Nickel	<0.0500	5.00	4.65	93	5.00	4.87	97	5	80-120	20	
Selenium	<0.150	5.00	5.01	100	5.00	5.24	105	4	80-120	20	
Silver	<0.150	2.50	2.40	96	2.50	2.53	101	5	80-120	20	

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.

Form 3 - MS / MSD Recoveries

Project Name: Hershaw Station 552 Soil Remediation

Work Order # : 502689 **Project ID:** 089886

Lab Batch ID: 962584 **QC- Sample ID:** 502728-001 S **Batch #:** 1 **Matrix:** Solid

Date Analyzed: 02/24/2015 **Date Prepared:** 02/24/2015 **Analyst:** WEW

Reporting Units: mg/L

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TCLP VOAs by EPA 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.0250	0.250	0.257	103	0.250	0.259	104	1	66-142	25	
2-Butanone	<0.250	1.25	1.24	99	1.25	1.20	96	3	60-140	25	
Carbon Tetrachloride	<0.0250	0.250	0.274	110	0.250	0.286	114	4	62-125	25	
Chlorobenzene	<0.0250	0.250	0.231	92	0.250	0.235	94	2	60-133	25	
Chloroform	<0.0250	0.250	0.257	103	0.250	0.252	101	2	70-130	25	
1,4-Dichlorobenzene	<0.0250	0.250	0.234	94	0.250	0.237	95	1	75-125	25	
1,2-Dichloroethane	<0.0250	0.250	0.254	102	0.250	0.252	101	1	68-127	25	
1,1-Dichloroethene	<0.0250	0.250	0.268	107	0.250	0.271	108	1	59-172	25	
Tetrachloroethylene	<0.0250	0.250	0.240	96	0.250	0.241	96	0	71-125	25	
Trichloroethene	<0.0250	0.250	0.263	105	0.250	0.270	108	3	62-137	25	
Vinyl Chloride	<0.0100	0.250	0.295	118	0.250	0.301	120	2	60-140	25	

Lab Batch ID: 962357 **QC- Sample ID:** 502723-021 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/21/2015 **Date Prepared:** 02/20/2015 **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	<15.0	998	987	99	997	870	87	13	70-135	35	
C12-C28 Diesel Range Hydrocarbons	236	998	1450	122	997	1210	98	18	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: Hershaw Station 552 Soil Remediation

Work Order #: 502689

Lab Batch #: 962433 **Project ID:** 089886
Date Analyzed: 02/23/2015 14:45 **Date Prepared:** 02/23/2015 **Analyst:** JGT
QC- Sample ID: 502631-001 D **Batch #:** 1 **Matrix:** Solid
Reporting Units: Deg F

Flash Point (CC) SW-846 1010 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Flash Point	95.0	95.0	0	25	

Lab Batch #: 962413
Date Analyzed: 02/23/2015 09:30 **Date Prepared:** 02/23/2015 **Analyst:** WRU
QC- Sample ID: 502723-020 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	7.74	7.57	2	20	

Lab Batch #: 962413
Date Analyzed: 02/23/2015 09:30 **Date Prepared:** 02/23/2015 **Analyst:** WRU
QC- Sample ID: 502723-030 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	<1.00	<1.00	0	20	U

Lab Batch #: 962541
Date Analyzed: 02/24/2015 19:22 **Date Prepared:** 02/24/2015 **Analyst:** BFO
QC- Sample ID: 502689-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Reactive Cyanide by SW 846-Section7.3.3 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Cyanide	<0.274	<0.274	0	20	U

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

Sample Duplicate Recovery

Project Name: Hershaw Station 552 Soil Remediation

Work Order #: 502689

Lab Batch #: 962580 **Project ID:** 089886

Date Analyzed: 02/25/2015 11:30 **Date Prepared:** 02/25/2015 **Analyst:** JUM

QC- Sample ID: 502689-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: SU

Soil pH by EPA 9045C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
pH	7.76	7.74	0	20	

Lab Batch #: 962425

Date Analyzed: 02/20/2015 15:49 **Date Prepared:** 02/20/2015 **Analyst:** KCS

QC- Sample ID: 502689-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Sulfide by SW9034 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Sulfide	<24.9	<24.9	0	20	U

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

BRL - Below Reporting Limit

502687

CHAIN OF CUSTODY RECORD

COC NO.: 32800

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(See Reverse Side for Instructions)

CONESTOGA-ROVERS & ASSOCIATES

Address: 2135 S. Loop 250 W Midland TX 79703

Phone: 432-686-0086 Fax: 432-686-0186

Project No/ Phase/Task Code: 089886	Laboratory Name: Xenco Laboratories	Lab Location: Odessa, Texas	SSOW ID: 089886-2015-001
Project Name: Hershaw Station 552 Soil Remediation	Lab Contact: Kelsey Brooks	Lab Quote No:	Cooler No:
Project Location: Eddy Co., NM			Carrier: Fedex
Chemistry Contact: Tom Larson 432-686-0086 tlarson@craworld.com			Airbill No:
Sampler(s): Steve Perez			Date Shipped: 2/16/15

Item	Sample Identification (Containers for each sample may be combined on one line)	Date (mm/dd/yy)	Time (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Container Quantity & Preservation: Unpreserved	HCl	HNO_3	H_2SO_4	NaOH	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other: ICE	Total Containers/Sample	Analysis Requested: TPH (SW 846 8015)	BTX (SW846 8260)	RCI	TCLP metals 6010/7470	TCLP volatiles	TCLP semivolatiles	TCLP extraction	TCLP extraction Vol	* (please see SSOW)	MS/MSD Request	Comments/ Special Instructions:
1	~~089886-021315-SP ST~~																								
2	~~SP~~ SO-089886-021315-SP-Comp	2/13/15	930		C									9											please call Tom Larson to confirm lab analysis specifics
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									

TAT Required in business days (use separate COCs for different TATs):

☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☑ Other: 5-day

Total Number of Containers: 9

All Samples in Cooler must be on COC

Notes/ Special Requirements:

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
1. Steven Perez	CRA	2/17/15	9:50 1100 am	1. [signature]	XENCO	2/19/15	1255
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT – ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10B (20110804)

Final 1.000

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XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 02/19/2015 12:55:00 PM

Work Order #: 502689

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)?	0
#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? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 02/19/2015

Checklist reviewed by: Date: 02/19/2015

Analytical Report 505159

for

Conestoga Rovers & Associates

Project Manager: Tom Larson

Henshaw Location

089886

08-APR-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-14-18), 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)

08-APR-15

Project Manager: **Tom Larson**
Conestoga Rovers & Associates
2135 S Loop 250 W
Midland, TX 79703

Reference: XENCO Report No(s): **505159**
Henshaw Location
Project Address:

Tom Larson:

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) 505159. 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. 505159 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 505159

Conestoga Rovers & Associates, Midland, TX

Henshaw Location

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
HS HEP-1 040115	S	04-01-15 11:00		505159-001
HS HEP-2 040115	S	04-01-15 11:15		505159-002
HS HEP-3 040115	S	04-01-15 11:30		505159-003
HS HEP-4 040115	S	04-01-15 11:45		505159-004

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 505159

Conestoga Rovers & Associates, Midland, TX

Project Name: Henshaw Location

Project Id: 089886
Contact: Tom Larson
Project Location:

Date Received in Lab: Wed Apr-01-15 04:34 pm
Report Date: 08-APR-15
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	505159-001		505159-002		505159-003		505159-004					
	Field Id:	HS HEP-1 040115		HS HEP-2 040115		HS HEP-3 040115		HS HEP-4 040115					
	Depth:												
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Apr-01-15 11:00		Apr-01-15 11:15		Apr-01-15 11:30		Apr-01-15 11:45					
BTEX by SW 8260B SUB: E871002	***Extracted:***	Apr-07-15 18:22		Apr-07-15 18:23		Apr-07-15 18:24		Apr-07-15 18:25					
	Analyzed:	Apr-08-15 00:59		Apr-08-15 01:25		Apr-08-15 01:52		Apr-08-15 02:18					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Benzene		ND	0.00101	ND	0.00101	ND	0.00101	ND	0.000998				
Toluene		ND	0.00101	0.00152	0.00101	0.00166	0.00101	0.00501	0.000998				
Ethylbenzene		ND	0.00101	0.00574	0.00101	0.00394	0.00101	0.0104	0.000998				
m,p-Xylenes		ND	0.00202	0.00609	0.00201	0.00628	0.00202	0.0416	0.00200				
o-Xylene		ND	0.00101	0.00342	0.00101	0.00533	0.00101	0.0415	0.000998				
Total Xylenes		ND	0.00101	0.00951	0.00101	0.0116	0.00101	0.0831	0.000998				
Total BTEX		ND	0.00101	0.0168	0.00101	0.0172	0.00101	0.0985	0.000998				
Percent Moisture	***Extracted:***												
	Analyzed:	Apr-02-15 17:00		Apr-02-15 17:00		Apr-02-15 17:00		Apr-02-15 17:00					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		ND	1.00	1.68	1.00	1.03	1.00	ND	1.00				
TPH By SW8015 Mod	***Extracted:***	Apr-02-15 15:00		Apr-02-15 15:00		Apr-02-15 15:00		Apr-02-15 15:00					
	Analyzed:	Apr-03-15 00:11		Apr-03-15 01:14		Apr-03-15 01:35		Apr-03-15 01:56					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	15.1	ND	15.2	ND	15.1	37.2	15.1				
C12-C28 Diesel Range Hydrocarbons		746	15.1	1610	15.2	139	15.1	982	15.1				
C28-C35 Oil Range Hydrocarbons		43.7	15.1	74.7	15.2	ND	15.1	49.5	15.1				
Total TPH		790	15.1	1680	15.2	139	15.1	1070	15.1				

Kelsey Brooks
Project Manager

Flagging Criteria

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

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

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

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

F RPD exceeded lab control limits.

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

U Analyte was not detected.

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

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

K Sample analyzed outside of recommended hold time.

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

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

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

Form 2 - Surrogate Recoveries

Project Name: Henshaw Location

Work Orders : 505159, 505159 **Project ID:** 089886

Lab Batch #: 965224 **Sample:** 505159-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/03/15 00:11

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	99.7	115	70-135	
o-Terphenyl	53.7	49.9	108	70-135	

Lab Batch #: 965224 **Sample:** 505159-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/03/15 01:14

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.7	100	70-135	
o-Terphenyl	50.1	49.9	100	70-135	

Lab Batch #: 965224 **Sample:** 505159-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/03/15 01:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	49.3	49.8	99	70-135	

Lab Batch #: 965224 **Sample:** 505159-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/03/15 01:56

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.8	114	70-135	
o-Terphenyl	53.8	49.9	108	70-135	

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

Form 2 - Surrogate Recoveries

Project Name: Henshaw Location

Work Orders : 505159, 505159 **Project ID:** 089886

Lab Batch #: 965520 **Sample:** 505159-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/15 00:59

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0521	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0519	0.0500	104	80-120	
Toluene-D8	0.0480	0.0500	96	73-132	
4-Bromofluorobenzene	0.0572	0.0500	114	58-152	

Lab Batch #: 965520 **Sample:** 505159-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/15 01:25

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0526	0.0500	105	74-126	
1,2-Dichloroethane-D4	0.0500	0.0500	100	80-120	
Toluene-D8	0.0548	0.0500	110	73-132	
4-Bromofluorobenzene	0.0611	0.0500	122	58-152	

Lab Batch #: 965520 **Sample:** 505159-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/15 01:52

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0544	0.0500	109	74-126	
1,2-Dichloroethane-D4	0.0491	0.0500	98	80-120	
Toluene-D8	0.0496	0.0500	99	73-132	
4-Bromofluorobenzene	0.0492	0.0500	98	58-152	

Lab Batch #: 965520 **Sample:** 505159-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/08/15 02:18

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0529	0.0500	106	74-126	
1,2-Dichloroethane-D4	0.0489	0.0500	98	80-120	
Toluene-D8	0.0505	0.0500	101	73-132	
4-Bromofluorobenzene	0.0526	0.0500	105	58-152	

* 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: Henshaw Location

Work Orders : 505159, 505159 **Project ID:** 089886

Lab Batch #: 965224 **Sample:** 690742-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/15 19:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	64.2	50.0	128	70-135	

Lab Batch #: 965520 **Sample:** 690924-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/15 18:48

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0520	0.0500	104	74-126	
1,2-Dichloroethane-D4	0.0512	0.0500	102	80-120	
Toluene-D8	0.0497	0.0500	99	73-132	
4-Bromofluorobenzene	0.0497	0.0500	99	58-152	

Lab Batch #: 965224 **Sample:** 690742-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/15 19:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	57.6	50.0	115	70-135	

Lab Batch #: 965520 **Sample:** 690924-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/07/15 17:56

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0467	0.0500	93	80-120	
Toluene-D8	0.0515	0.0500	103	73-132	
4-Bromofluorobenzene	0.0518	0.0500	104	58-152	

* 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: Henshaw Location

Work Orders : 505159, 505159 **Project ID:** 089886

Lab Batch #: 965224 **Sample:** 690742-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 04/02/15 19:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	60.5	50.0	121	70-135	

Lab Batch #: 965224 **Sample:** 505223-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/15 21:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.8	129	70-135	
o-Terphenyl	42.5	49.9	85	70-135	

Lab Batch #: 965520 **Sample:** 505084-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/15 20:10

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0515	0.0500	103	74-126	
1,2-Dichloroethane-D4	0.0504	0.0500	101	80-120	
Toluene-D8	0.0541	0.0500	108	73-132	
4-Bromofluorobenzene	0.0518	0.0500	104	58-152	

Lab Batch #: 965224 **Sample:** 505223-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/02/15 21:44

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.7	124	70-135	
o-Terphenyl	59.6	49.9	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.

Form 2 - Surrogate Recoveries

Project Name: Henshaw Location

Work Orders : 505159, 505159 **Project ID:** 089886

Lab Batch #: 965520 **Sample:** 505084-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 04/07/15 20:36

SURROGATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Dibromofluoromethane	0.0553	0.0500	111	74-126	
1,2-Dichloroethane-D4	0.0513	0.0500	103	80-120	
Toluene-D8	0.0502	0.0500	100	73-132	
4-Bromofluorobenzene	0.0576	0.0500	115	58-152	

* 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.

Blank Spike Recovery

Project Name: Henshaw Location

Work Order #: 505159 **Project ID:** 089886

Lab Batch #: 965520 **Sample:** 690924-1-BKS **Matrix:** Solid

Date Analyzed: 04/07/2015 **Date Prepared:** 04/07/2015 **Analyst:** SAD

Reporting Units: mg/kg **Batch #:** 1

BLANK /BLANK SPIKE RECOVERY STUDY

BTEX by SW 8260B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	<0.00100	0.100	0.0944	94	62-132	
Toluene	<0.00100	0.100	0.0989	99	66-124	
Ethylbenzene	<0.00100	0.100	0.102	102	71-134	
m,p-Xylenes	<0.00200	0.200	0.212	106	69-128	
o-Xylene	<0.00100	0.100	0.107	107	72-131	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

BS / BSD Recoveries

Project Name: Henshaw Location

Work Order #: 505159, 505159 **Project ID:** 089886

Analyst: ARM **Date Prepared:** 04/02/2015 **Date Analyzed:** 04/02/2015

Lab Batch ID: 965224 **Sample:** 690742-1-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	1010	101	1000	1030	103	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	1100	110	1000	1100	110	0	70-135	35	

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

Form 3 - MS / MSD Recoveries

Project Name: Henshaw Location

Work Order # : 505159 **Project ID:** 089886

Lab Batch ID: 965520 **QC- Sample ID:** 505084-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/07/2015 **Date Prepared:** 04/07/2015 **Analyst:** SAD

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by SW 8260B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00110	0.110	0.0871	79	0.109	0.0962	88	10	62-132	25	
Toluene	<0.00110	0.110	0.0977	89	0.109	0.106	97	8	66-124	25	
Ethylbenzene	<0.00110	0.110	0.0970	88	0.109	0.102	94	5	71-134	25	
m,p-Xylenes	<0.00219	0.219	0.200	91	0.218	0.212	97	6	69-128	25	
o-Xylene	<0.00110	0.110	0.101	92	0.109	0.105	96	4	72-131	25	

Lab Batch ID: 965224 **QC- Sample ID:** 505223-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 04/02/2015 **Date Prepared:** 04/02/2015 **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	<18.4	1220	1480	121	1220	1350	111	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<18.4	1220	1540	126	1220	1410	116	9	70-135	35	

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

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

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

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

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

Sample Duplicate Recovery

Project Name: Henshaw Location

Work Order #: 505159

Lab Batch #: 965227 **Project ID:** 089886

Date Analyzed: 04/02/2015 17:00 **Date Prepared:** 04/02/2015 **Analyst:** WRU

QC- Sample ID: 505159-001 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	<1.00	<1.00	0	20	U

Lab Batch #: 965227

Date Analyzed: 04/02/2015 17:00 **Date Prepared:** 04/02/2015 **Analyst:** WRU

QC- Sample ID: 505209-005 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	7.01	7.46	6	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

Setting the Standard since 1990

CHAIN OF CUSTODY

Page ___ Of ___

Stafford, Texas (281-240-4200)

Dallas, Texas (214-902-0300)

Service Center - San Antonio, Texas (210-509-3334)

www.xenco.com

Odessa, Texas (432-563-1800)

Norcross, Georgia (770-449-8800)

Lakeland, Florida (863-646-8526)

Tampa, Florida (813-620-2000)

Xenco Quote #:

Xenco Job #: 505159

Client / Reporting Information

Company Name / Branch: CRA

Company Address: 2135 S. Loop 250 W.

Email: tLarson@craworld.com

Phone No:

Project Contact: Tom Larson

Samplers's Name: Glenn Quay

Project Information

Project Name/Number: 089886

Project Location: Henshaw location

Invoice To:

PO Number:

Matrix Codes

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

WW= Waste Water

No.	Field ID / Point of Collection	Sample Depth	Date	Time	Matrix	# of bottles	HCl	NaOH/Zn Acetate	HNO3	H2SO4	NaOH	NaHSO4	MEOH	NONE	TPH SW846 8015	BTEX SW846 8260	Field Comments
1	HS HEP-1 040115		4-1-15	1100	S	1								X	X	X	
2	HS HEP-2 040115		4-1-15	1115	S	1								X	X	X	
3	HS HEP-3 040115		4-1-15	1130	S	1								X	X	X	
4	HS HEP-4 040115		4-1-15	1145	S	1								X	X	X	
5																	
6																	
7																	
8																	
9																	
10																	

Turnaround Time (Business days)

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

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

Data Deliverable Information

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

Notes:

FED-EX / UPS: Tracking #

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

Relinquished by	Date Time	Received By	Relinquished By	Date Time	Received By
1 Relinquished by Sampler: [signature]	4-1-15/434	1 [signature]	2	4/1/15 1634	
3		3	4		
5		5	Custody Seal #		

Preserved where applicable: [ ]   On Ice: [X]   Cooler Temp.:   Thermo. Corr. Factor: 10°

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

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: Conestoga Rovers & Associates

Date/ Time Received: 04/01/2015 04:34:00 PM

Work Order #: 505159

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

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

Analyst:

PH Device/Lot#:

Checklist completed by: Kelsey Brooks Date: 04/01/2015

Checklist reviewed by: Kelsey Brooks Date: 04/01/2015

Appendix D

Waste Manifest

R360 ENVIRONMENTAL SOLUTIONS

Permian Basin

Customer:	HOLLY Energy	Ticket #:	700-687629
Customer #:	CRI3200	Bid #:	Walk-in Bid
Ordered by:	ALLISON STOCKWEATHER	Date:	4/1/2015
AFE #:		Generator:	Holly Energy
PO #:		Generator #:	
Manifest #:	NA	Well Ser. #:	999908
Manif. Date:	4/1/2015	Well Name:	~~BEESON~~ Hengham Station
Hauler:	LOBO'S SERVICE INC.	Well #:	~~6~~ 533
Driver	JORGE	Field:	
Truck #	46	Field #:	
Card #		Rig:	NON-DRILLING
Job Ref #		County	

Facility: CRI

Product / Service	Quantity	Units
Contaminated Soil (RCRA Exempt)	6.00	yards

Generator Certification Statement of Waste Status

I hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is:

X RCRA Exempt: Oil Field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste.

_ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24 or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items):

_ MSDS Information _ RCRA Hazardous Waste Analysis _ Process Knowledge _ Other (Provide description above)

Driver/ Agent Signature **R360 Representative Signature**

Customer Approval

THIS IS NOT AN INVOICE!

Approved By: _____ Date: 4/1/15

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

Form C-138
Revised March 12, 2007

*Surface Waste Management Facility Operator and Generator shall maintain and make this documentation available for Division inspection.

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. Generator Name and Address:
Holly Energy Partners, 1602 W. Main St., Artesia, NM 88210

2. Originating Site:
Henshaw Station 533, Intersection of CR220 and US Highway 82, 8 miles east of Loco Hills, NM

3. Location of Material (Street Address, City, State or ULSTR):
Henshaw Station 533, Intersection of CR220 and US Highway 82, 8 miles east of Loco Hills, NM

4. Source and Description of Waste:
soil impacted with crude oil.

Estimated Volume 60 (yd³) / bbls Known Volume (to be entered by the operator at the end of the haul) _____ yd³ / bbls

5. GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS

I, Allison Stockweather, representative or authorized agent for Holly Energy Partners do hereby certify that according to the Resource Conservation and Recovery Act (RCRA) and the US Environmental Protection Agency's July 1988 regulatory determination, the above described waste is: (Check the appropriate classification)

☐ RCRA Exempt: Oil field wastes generated from oil and gas exploration and production operations and are not mixed with non-exempt waste. *Operator Use Only: Waste Acceptance Frequency* ☐ *Monthly* ☐ *Weekly* ☐ *Per Load*

☒ RCRA Non-Exempt: Oil field waste which is non-hazardous that does not exceed the minimum standards for waste hazardous by characteristics established in RCRA regulations, 40 CFR 261.21-261.24, or listed hazardous waste as defined in 40 CFR, part 261, subpart D, as amended. The following documentation is attached to demonstrate the above-described waste is non-hazardous. (Check the appropriate items)

☐ MSDS Information ☒ RCRA Hazardous Waste Analysis ☐ Process Knowledge ☐ Other (Provide description in Box 4)

GENERATOR 19.15.36.15 WASTE TESTING CERTIFICATION STATEMENT FOR LANDFARMS

I, _____, representative for _____ do hereby certify that representative samples of the oil field waste have been subjected to the paint filter test and tested for chloride content and that the samples have been found to conform to the specific requirements applicable to landfarms pursuant to Section 15 of 19.15.36 NMAC. The results of the representative samples are attached to demonstrate the above-described waste conform to the requirements of Section 15 of 19.15.36 NMAC.

5. Transporter:
Lobo Services

OCD Permitted Surface Waste Management Facility

Name and Facility Permit #: R360

Address of Facility: Mile marker 66, Carlsbad Highway (62), Hobbs, New Mexico

Method of Treatment and/or Disposal:

☐ Evaporation ☐ Injection ☐ Treating Plant ☐ Landfarm ☒ Landfill ☐ Other

Waste Acceptance Status:

☐ **APPROVED** ☐ **DENIED** (Must Be Maintained As Permanent Record)

PRINT NAME: _____ TITLE: _____ DATE: _____

SIGNATURE: _____ TELEPHONE NO.: _____
Surface Waste Management Facility Authorized Agent