





#### Remediation and Closure Report

Hackberry Hills Federal #4 - SRS #2017-077 2RP-4247 Talon Project No. 700376.270.01

#### **Prepared For:**

Plains Marketing, L.P 577 US Highway 385 North Seminole, Texas 79360

#### Prepared By:

TALON/LPE 408 W. Texas Avenue Artesia, New Mexico 88210

January 22, 2018

Ms. Camille Bryant Plains All Marketing, L.P. 577 US Highway 385 North Seminole, Texas 79360

Subject:

Remediation and Closure Report

Hackberry Hills Federal #4 – SRS #2017-077

2RP-4247

Dear Ms. Bryant,

Plains All American Marketing, LP (Plains) had contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The incident description, soil sampling results, remediation activities and closure request are submitted herein.

#### **Site Information**

The Hackberry Hills Federal #4 is located approximately three (3) miles west of Carlsbad, New Mexico. The legal description for this release is Unit Letter F, Section 22, Township 22 South and Range 26 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.37848 North and -104.2834 West. A site plan is presented in Appendix I. This property is administered by the United States Department of the Interior-Bureau of Land Management (BLM) Carlsbad field office.

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services (NRCS) the soil in this area is made up of Ector extremely rocky loam with a 9 to 25 percent slopes. The local surface and shallow geology, Paleozoic Age sedimentary deposits, is comprised of the Guadeloupian Artesia Group, Tansil and Yates formations, which are made up of residuum weathered limestone under lain by very cobbly loam and hard caliches. Drainage courses in this area are normally dry.

#### **Ground Water and Site Ranking**

The New Mexico Office of the State Engineer (NMOSE) database indicates the nearest ground water data to be in S23-T22S-R26E approximately 2,061 feet from the project. The ground water in Section 23 is reported to be at depth of 74 feet below ground surface (BGS). A copy of this report is attached in Appendix II.

Therefore the ranking for this site is a 10 based on the following:

Depth to ground water 50-100'
Wellhead Protection Area >1000'
Distance to surface water body >1000'

Based upon the site ranking of **10**, NMOCD Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene and 1,000 mg/kg for TPH.

#### **Incident Description and Initial Remedial Actions**

On May 10, 2017, a Plains driver was removing the bull plug from a tank valve and inadvertently removed one part of the two part valve which resulted in the release of approximately 116 barrels of crude oil with 2 barrels recovered. The released crude oil impacted a surface area of approximately 9,000 square feet of the Read and Stevens Hackberry Hills Federal #4 location, flowing downward through the Karst material and leaching out eastward of the tank battery impacting approximately 4,700 square feet of adjacent pastureland. A site plan illustrating the impacted area is attached in Appendix I.

On May 10, 2017, the release was verbally reported to a representative with the New Mexico Oil Conservation Division (NMOCD) District II. On June 5, 2017, the Release Notification and Corrective Action Form (C-141) was submitted to the NMOCD District II Office and is attached in Appendix III. The BLM was also notified of the release on May 10, 2017. A Cultural Resource Survey (Arch Survey) was subsequently conducted by Boone Archaeological Resource Consultants, LLC, on the pasture lands adjacent to the tank battery location. Results of the Arch Survey found cultural resources to be negative in the study area. A complete copy of the Arch Survey is presented in Appendix IV.

#### Remedial Actions Taken

On May 15, 2017, Talon mobilized equipment and personnel to begin remediation activities. A PID meter and field titration screening for chlorides were utilized to guide the excavation. The impacted area was excavated between approximately 1-4 feet deep depending upon the depths refusal was encountered. Soil samples were collected as the excavation activities progressed. Several site meetings with the client, consultant, BLM and NMOCD were held regarding further remedial actions, excavation limitations, sampling locations and facility reconstruction.

On May 24, 2107, a site meeting was held with Plains and BLM representatives. It was decided by the BLM that due to the Karst Topography present and the proximity to potable wells that no extreme measures should be undertaken and that excavation depths would terminate at hard rock refusal without further disturbance of the formation.

On June 23, 2017, the areas on location and in the pasture were treated with Micro-Blaze, a bioremediation agent.

On June 29, 2017, a meeting was held at the NMOCD District II Office in Artesia, New Mexico. In attendance were NMOCD, BLM, and Plains representatives. A site plan and laboratory data were presented for regulatory review. Conclusions from the meeting included the following:

- approval that vertical excavation depths would only extend to hard rock refusal depths;
- regulatory acceptance of slightly elevated analytical results as a result of excavation depth limitations;
- excavation eastward would continue in the pasture near sample location S-11 due to elevated TPH levels when roadrunner nesting was complete (vicinity of sampling location S-11). Work had previously ceased in this area so as not to disturb the nesting pattern per BLM request. After several weeks when the roadrunner was off the nest, excavation activities continued in this area and sample S-19 was subsequently obtained;
- additional vertical excavation, to the extent feasible, and additional horizontal sampling would be carried out regarding Chloride concentrations at sample location S-13. Following additional excavation activities this location was resampled (see 13A) and additional samples were collected in the immediate vicinity (S-15, S-16, S-17 and S-18).

On September 13, 2017, BLM and Plains representatives met on site to discuss reconstruction of the location, berms and the backfilling techniques to be utilized on the location slopes and in the pasture. A new cattle guard was also installed as requested by the BLM.

All excavated soil (1,1965.29 tons) was transported to Lea Land, LLC (Permit #WM-01-035; MM 64 Hwy 62-180 East, Carlsbad, NM 88220), a NMOCD approved disposal facility. The waste was profiled into Lea Land prior to project commencement. A copy of the C-138 Form is attached in Appendix V for review.

The work area was backfilled with imported non-impacted material, watered, compacted and contoured to match the surrounding terrain per BLM direction. Per BLM request, the pasture was not to be reseeded but allowed to naturally re-vegetate.

#### **Laboratory Results**

All soil samples were collected by Talon personnel wearing clean nitrile gloves. The soil samples were placed in laboratory provided sample containers, iced and transported to Xenco Laboratories in Midland, Texas for analysis. The samples were analyzed for TPH (Total Petroleum Hydrocarbons), volatile organics (BTEX) and Total Chlorides per EPA Method 300. A copy of the confirmation sampling results are presented in the following data tables. See Appendix VI for complete report of laboratory results.

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT ORO	Total TPH (mg/kg)
S-1	3.0	0.160	409	87	542		629
S-2	2.0	ND	868	ND	274		274
S-3	3.0	0.073	502	440	3140		3580
Battery	1.0	ND	8.73	ND	104	ND	104
S-3	3.25	ND	467	47.5	1420	ND	1470
S-4	1.5	ND	49.7	86.7	1540	ND	1630
S-5	3.0	ND	381	31.6	819	ND	851
S-6	3.0	ND	928	ND	235	ND	235
S-7	1.0	ND	175	77.5	1350	ND	1430
S-8	2.0	ND	189	114	1110	ND	1220
S-9	4.0	ND	ND	ND	ND	ND	ND
S-10	3.0	0.0134	31.3	86.4	1380	ND	1470
S-11	1.5	0.755	28.4	1360	7760	ND	9120
S-11 *	1.5			37.5	4380	1140	5560

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT ORO	Total TPH (mg/kg)
S-12	0.75	0.0206	28.5	61.9	1250	ND	1310
S-13	2.0	ND	3550	ND.	155	ND	155
S-13A	2.5		47.5				
S-17	2.5		29.8				
S-18	2.5		130				
S-19	2.5			<7.99	30.4	<8.11	30.4

-- Analyte Not Tested ND – Analyte Not Detected within Laboratory Reporting Limits \* Post Micro-Blaze resample

#### Closure

Based upon the remedial actions described herein, resulting laboratory data, the Karst Topography and hard rock excavation limitations and verbal approval from the BLM and NMOCD, Talon, on behalf of Plains All American Marketing, respectfully requests that no further actions be required and that closure with respect to this release be granted.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768

Respectfully submitted,

TALON/LPE

David J. Adkins

District Manager

#### Attachments:

Appendix I Site Plan

Appendix II Groundwater Data

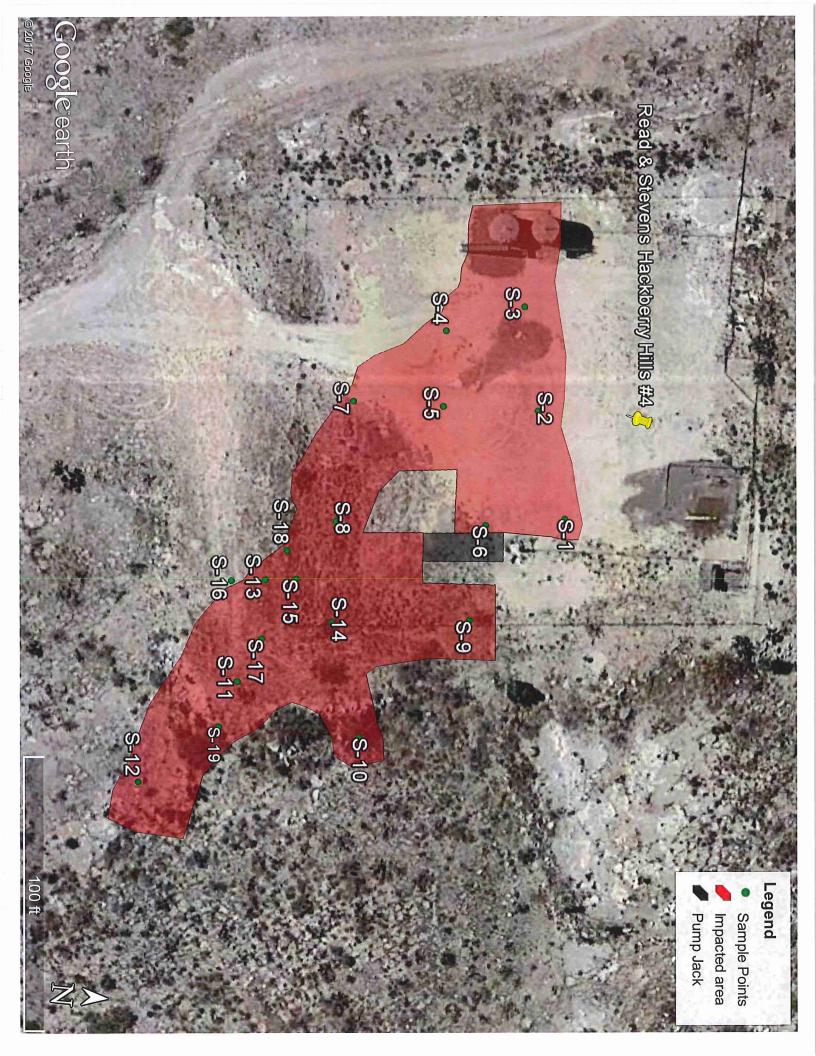
Appendix III Initial C-141's

Appendix IV Archaeological Survey

Appendix V C-138

Appendix VI Laboratory Results

# APPENDIX I SITE PLAN



# APPENDIX II GROUNDWATER DATA



#### New Mexico Office of the State Engineer Water Column/Average Depth to Water

(A CLW#### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned,

C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to

largest)

(NAD83 UTM in meters)

(In feet)

		POD Sub-		Q	Q	Q					,					Water
POD Number	Code	basin	County	64	116	4	Sec	Tws	Rng	Х	Υ	Distance	DepthWell[	)epth	ıWater C	Column
C 00558		С	ED	2	3	1	23	22S	26E	568749	3582872*	628	140	. 1	74	66
C 01133		С	ED			4	22	22S	26E	568037	3582149*	926	224	1	76	148
C 01513		С	ED			1	22	22S	26E	567235	3582937*	926	156,		90	66

Average Depth to Water:

80 feet

Minimum Depth:

74 feet

Maximum Depth:

90 feet

#### Record Count:3

UTMNAD83 Radius Search (in meters):

Easting (X): 568152

Northing (Y): 3583068

Radius: 1000

\*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

5/10/17 10:47 AM

WATER COLUMN/ AVERAGE DEPTH TO **WATER** 

# APPENDIX III INITIAL C-141

#### **NM OIL CONSERVATION**

ARTESIA DISTRICT

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

JUN 05 2017

Form C-141 Revised October 10, 2003

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

FABITICE	1440988	Relea	se Notificat	ion	and Co	rrective A	ction			
NABITI	6441175				OPERAT		$\square$	Initia	al Report	☐ Final Repor
Name of Co	mpany Plains Ma	rketing, LP	34055		Contact	Camille Brya				
Address			iole, Texas 79360			To. (575) 441-1				
Facility Nan	пе наскоенту	Hills Fed #4	ł	1	асину гур	e Tank Battery				
Surface Ow	ner BLM		Mineral Own	er B	LM		L	ease N	lo.	
			LOCAT	ON	OF REI	LEASE				
Unit Letter F	Section Township 22 22S	Range 26E	Feet from the N	orth/s	South Line	Feet from the	East/West	Line	County Eddy	
			Latitude N 32.37	7848	" Longitude	W 104.2834°				
			NATUI	RE	OF RELI	EASE			_	
Type of Rele					<del></del>	Release 116 bb			Recovered	
Source of Re	lease Tank	_			05/10/2017				Hour of Dis 17 @ 07:45	covery
Was Immedi	ate Notice Given?	Yes □No	☐ Not Required		If YES, To Mike Brate					
	Camille Bryant				Date and I		17@ 13:55			
Was a Water	course Reached?	☐ Yes ⊠	No		If YES, Vo	lume Impacting	the Waterco	urse.		
If a Watercon	irse was Impacted, De	cribe Fully.*			1,					
	·									
	65.11		m.i. + Di t. I t.					L		L- industration
removed one	ise of Problem and Repart of the two part va	nedial Action lve which rest	laken.* Plains driv alted in a release of	er wi	as attempting e oil.	to remove a buil	plug from t	ne tank	valve wher	i ne madvenentry
December	a Affected and Cleanu	- Anti- Tole	The released and	da ai	limmostad a	· auan af annuarin	natalii 0 000		fact on the	galighe and the
	a Affected and Cleand I flowed south off the p									
NMOCD gu	delines.			•	·					
I hereby cert	ify that the information	given above	is true and complete	to ti	he best of my	knowledge and i	understand t	hat pur	suant to NM	IOCD rules and
regulations a	Il operators are require or the environment.	d to report and	d/or file certain rele	ase n	otifications a	nd perform corre	ctive actions	for re	leases which	n may endanger
should their	operations have failed	to adequately	investigate and rem	ediat	e contaminat	ion that pose a th	reat to grour	id wate	r, surface w	ater, human health
	nment. In addition, N		ance of a C-141 rep	ort d	oes not relie	ve the operator of	responsibili	ty for	compliance	with any other
rederar, state	or local laws and/or r	egutatrons.	j	T		OIL CON	SERVA'	TION	DIVISI	ON
1. \ c	, O		X							
Signature U.	more			$\dashv$	<b>4</b>	District Supervi	By The	Kg ,	A Secretary of the	.xte
Printed Nam	e: Camille Bryant	,		_	Approved by	District Supervi	50r;		Oran was	
Title: Remo	ediation Coordinator			$\perp$	Approval Da	nte: [0]13]11	)   Ext	iration	Date: N	IA
E-mail Addr	ess: cjbryant@paalp.c	om			Conditions of	of Approval:				, 🖂
	5 17					See att	ache	$\mathscr{A}$	Attache	a 🗀
* Attach Add	itional Sheets If Nec		ne: (575) 441-1099			NT WIT	1110	•		700 100
A LELGOTT AND	eronar muoro il 1400	opour j			ı 6-	und in the				471-447

New forms can be found in the New Mexico State Website in forms: http://www.emnrd.state.nm.us/

OCD/forms.html

# APPENDIX IV ARCHAELOGICAL SURVEY

NMCRIS No.: 138190

#### NMCRIS INVESTIGATION ABSTRACT FORM (NIAF)

1. NMCRIS	2a. Lead Agency:	2b. Other Agency(ies):	3. Lead	Agency F	Report No.:
<b>Activity No.:</b> 138190	US Bureau of Land Management Carlsbad Field Office				
4. Title of Report:				5. Type	of Report
A Class III Archaeolo	ogical Survey for the Plains Pipeline	Proposed Hackberry Hills Federal #4	Spill	Nega	tive
Remediation, Eddy 0	County, New Mexico			Positi	ve
Author(s)				hl	
	and Joshua W. Broxson				
6. Investigation Typ	oe e				
Research Design	Archaeological Survey/Invento	ryArchitectural Survey/Inventory	Test Ex	cavation	Excavation
Collections/Non-F	ield Study Compliance Decision	n Based on Previous Inventory	verview/Lit	Review	Monitoring
Ethnographic Stud	dy Site/Property Specific Visit	Historic Structures Report	Other		
7. Description of U	ndertaking (what does the project	entail?):			-
conducted around the	ne spill, excluding the well pad. The s	peke conducted on May 12, 2017, a 1 survey measures 0.83 acres.			
				I	] Continuation
8. Dates of Investig	ation: from: 13-May-2017 to:	13-May-2017 <b>9. Report Date</b>	: 08-Jun-2	2017	-
10. Performing Age	ency/Consultant: Boone Archaeolo	gical Resource Consultants, LLC.			
Principal Investiga	ator: Stacy K. Galassini				
Field Supervisor:	Stacy K. Galassini				
Field Personnel N	ames: Stacy K. Galassini				
Historian / Other:					
11. Performing Age	ency/Consultant Report No.:	'			
BARC 03-17-50					
12. Applicable Cul	tural Resource Permit No(s):				
BLM Permit No.: 19	0-2920-16-V				

NMCRIS No.: 138190							
13. Client/Customer (project propone	ent):						
Talon LPE							
Contact: David Adkins							
Address:					Phone:		
14. Client/Customer Project No.:							
15. Land Ownership Status (must be	indicated or	n project ma	ıp):				
Land Owner (By Agency)					Acres Survey	ed A	cres in APE
US Bureau of Land Management Carls	sbad Field Off	ice			0.83	0.	83
-				TOTA	<b>LS</b> 0.83	0.	83
16. Records Search(es):	2 May 2017	Name of Po	dowor(o):	S. K. Golossin	i		
Date(s) of HPD/ARMS File Review: 1	2 May 2017	Name of Rev	viewei(s). 3	o. K. Galassiii	I		
Date(s) of Other Agency File Review:	12 May 2017	Name of Rev	viewer(s): S	S. K. Galassin	i Agency: BLI	M/CFO	
17. Survey Data:							
a. Source Graphics [ ] NAD 27	[ x ]	NAD 83	Note	· NAD 83 is fl	ne NMCRIS star	ndard	
USGS 7.5' (1:24,000) topo map				. 11/12/00/13 (1	ic milorno star	iuui ui	
GPS Unit Accuracy <1.0m			┌┐>100r	n	<b>□</b> Aerial	Photo(	s)
Other Source Graphic(s):						,	
b. USGS 7.5' Topographic Map Nan	ne				USGS Qua	d Code	
Carlsbad West, NM					32104-D3		
c. County(ies): EDDY	e 0						
d. Nearest City or Town: Carlsbad,	NM						
e. Legal Description:	D /E 044			Section			
Township (N/S)  22S	Range (E/W	)		22			
Projected legal description? [	L	Γv	] No		Unplatted		
f. Other Description (e.g. well pad for		_	_				
						[	] Continuation
18. Survey Field Methods:							
Intensity: 100% coverage	e ┌┐<1	00% covera	ge				

NMCRIS No.: 138190	(I A)
Configuration: ✓ block survey units ☐ linear survey units ☐ other survey units (specify):	(I x w):
Scope: non-selective (all sites/properties recorded) selecti	ive/thematic (selected sites/properties recorded)
Coverage Method: systematic pedestrian coverage	
other method (describe):	
Survey Interval (m): 15 Crew Size: 1 Fieldwork Da	ates: from: 13-May-2017 to: 13-May-2017
Survey Person Hours: 0.50 Recording Person Hours	rs: 0.00 Total Hours: 0.50
Additional Narrative:	
The survey was conducted using 50 ft. parallel transects across an in The proposed project lies within 1 mile of ten previously recorded arch 164989, 164990, 164991, 166710, 182746, and an unnumbered site r	naeological sites: LAs 65400, 140906, 142044, 148155,
	[ ] Continuat
19. Environmental Setting (NRCS soil designation; vegetative con	nmunity; elevation; etc.):
dependent upon the location. The current vegetative community consi grasses and forbs. The project area lies on the southwestern slope of Carlsbad, NM. The elevation ranges from 3,390 ft. to 3,400 ft. above n	the Hackberry Hills, approximately 3 miles southwest of
20.a. Percent Ground Visibility: 85% b. Condition of	[ ] Continual Survey Area (grazed, bladed, undistributed, etc.):
The survey area surrounds a spill and abuts a well pad and lease roa	d. The survey area has also been disturbed by erosion.
	[ ] Continuat
21. CULTURAL RESOURCE FINDINGS Yes, see nex	ct report section No, discuss why
21. CULTURAL RESOURCE FINDINGS  Yes, see next No cultural materials were recorded or updated during the survey. The of disturbance.	
No cultural materials were recorded or updated during the survey. Th	
No cultural materials were recorded or updated during the survey. Th	is is most likely due to the small survey area and high leve
No cultural materials were recorded or updated during the survey. Th of disturbance.	is is most likely due to the small survey area and high leve
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):	is is most likely due to the small survey area and high leve
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):  [ x ] USGS 7.5 Topographic Map with sites, isolates, and surve	is is most likely due to the small survey area and high lever [ ] Continuate graphs of the small survey area and high lever [ ] Continuate graphs of the small survey area clearly drawn (required)
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):  [ x ] USGS 7.5 Topographic Map with sites, isolates, and surve.  [ x ] Copy of NMCRIS Map Check (required)	is is most likely due to the small survey area and high lever [ ] Continual y area clearly drawn (required)
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):  [ x ] USGS 7.5 Topographic Map with sites, isolates, and surve [ x ] Copy of NMCRIS Map Check (required)  [ ] LA Site Forms - new sites (with sketch map & topographic	is is most likely due to the small survey area and high lever [ ] Continual y area clearly drawn (required)
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):  [ x ] USGS 7.5 Topographic Map with sites, isolates, and surveing a light site of the content of	is is most likely due to the small survey area and high lever [ ] Continual y area clearly drawn (required)
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):  [ x ] USGS 7.5 Topographic Map with sites, isolates, and surve [ x ] Copy of NMCRIS Map Check (required)  [ ] LA Site Forms - new sites (with sketch map & topographic [ ] LA Site Forms (update) - previously recorded & un-relocate [ ] Historic Cultural Property Inventory Forms, if applicable	is is most likely due to the small survey area and high lever [ ] Continual y area clearly drawn (required)
No cultural materials were recorded or updated during the survey. The of disturbance.  22. Attachments (check all appropriate boxes):  [ x ] USGS 7.5 Topographic Map with sites, isolates, and surve [ x ] Copy of NMCRIS Map Check (required)  [ ] LA Site Forms - new sites (with sketch map & topographic [ ] LA Site Forms (update) - previously recorded & un-relocate [ ] Historic Cultural Property Inventory Forms, if applicable [ ] List and Description of Isolates, if applicable	is is most likely due to the small survey area and high lever [ ] Continual y area clearly drawn (required)

NMCRIS No.: 138190 24. I certify the information provided above is correct and accurate and meets all applicable agency standards. Principal Investigator/Qualified Supervisor: Printed Name: Stacy K. Galassini Stacy K. Galassini Date: 6/9/17 Title: Principal Investigator Signature: 26. SHPO 25. Reviewing Agency Reviewer's Name/Date: Reviewer's Name/Date: HPD Log #: Rejected [ Accepted [ 1 1 Date sent to ARMS: CULTURAL RESOURCE **FINDINGS** [fill in appropriate section(s)] SURVEY RESULTS: Archaeological Sites discovered and registered: 0 Archaeological Sites discovered and NOT registered: 0 Previously recorded archaeological sites revisited (site update form required): 0 Previously recorded archaeological sites not relocated (site update form required): 0 TOTAL ARCHAEOLOGICAL SITES (visited & recorded): 0 Non-selective isolate recording? Total isolates recorded: 0 HCPI properties discovered and registered: 0 HCPI properties discovered and NOT registered: 0 Previously recorded HCPI properties revisited: 0 Previously recorded HCPI properties not relocated: 0 TOTAL HCPI PROPERTIES (visited & recorded, including acequias): 0

MANAGEMENT SUMMARY:

No cultural materials were recorded or updated during the survey. If cultural materials are encountered during the spill remediation, work should be halted and archaeologists with the BLM/CFO should be notified immediately.

] Continuation

#### IF REPORT IS NEGATIVE, YOU ARE DONE AT THIS POINT.

SURVEY LA/HCPI NUMBER LOG

Sites/Properties Discovered:

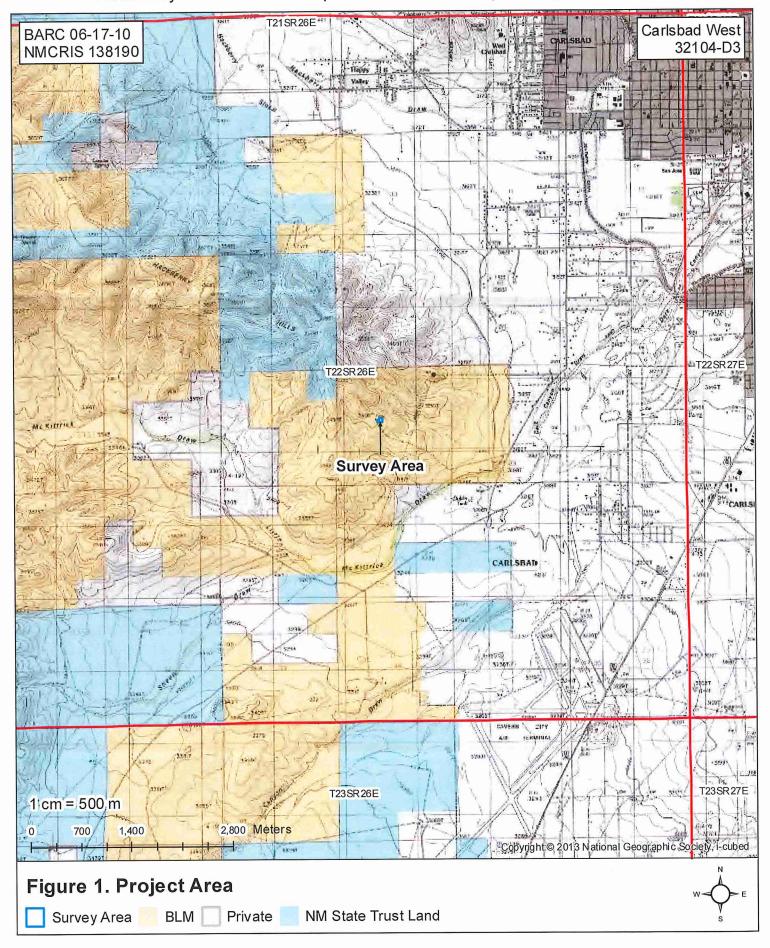
LA/HCPI No. Field/Agency No.

Eligible? (Y/N/U, applicable criteria)

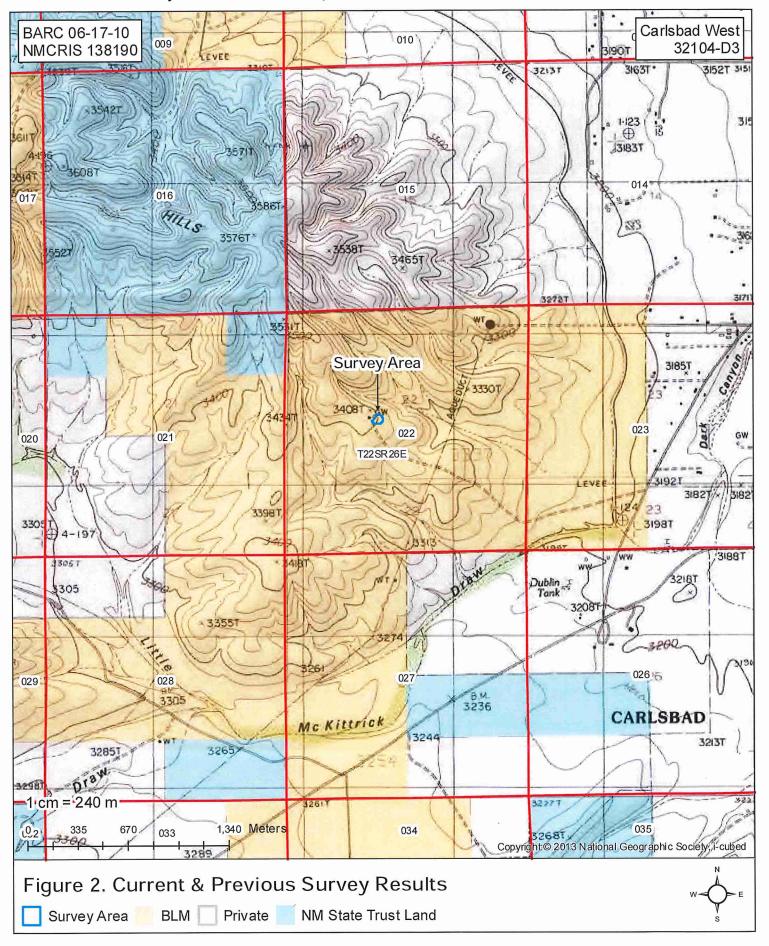
Previously rec	orded revisited sites/HCPI properties:			
LA/HCPI No.	Field/Agency No.	Eligil	ble? (Y/N/U, applicable	criteria)
MONITORING	LA NUMBER LOG (site form required)			
Sites Discover	red (site form required):	Previously	recorded sites (site up	date form required):
LA No.	Field/Agency No.	LA No.	Field/Agency No	
Areas outside	known nearby site boundaries monitored?	1 1	Yes	[ ] No, Explain why:
TESTING & EX	CAVATION LA NUMBER LOG (site form req	uired)		
Tested LA nun	nber(s)	Excavated	LA number(s)	

NMCRIS No.: 138190

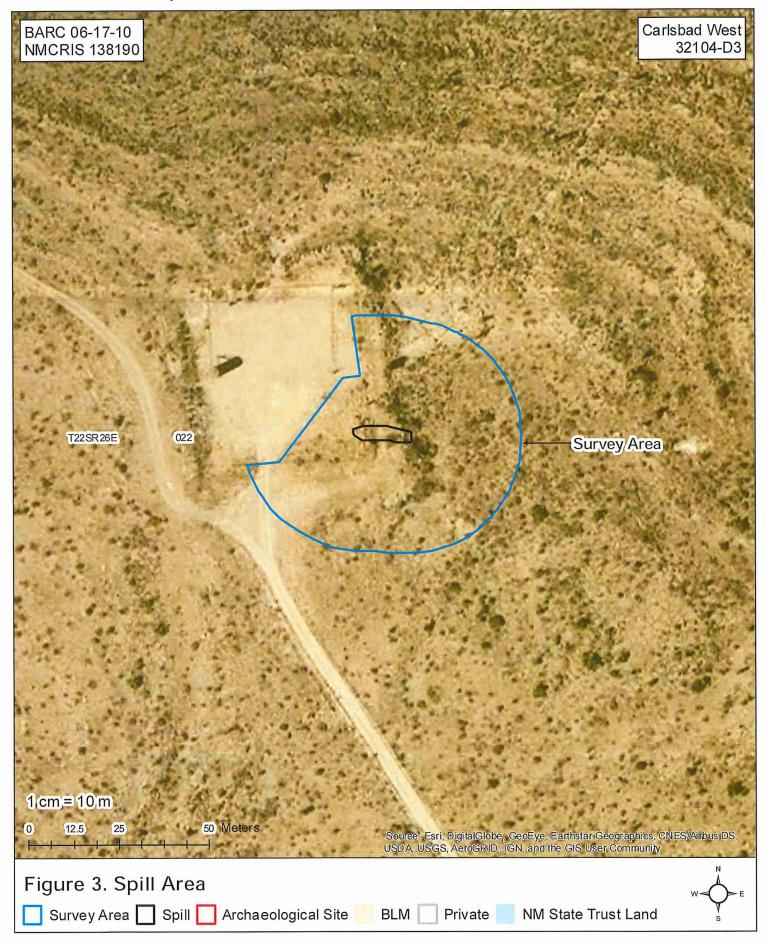
## A Class III Archaeological Survey for the Plains Pipeline Proposed Hackberry Hills Federal #4 Spill Remediation, Eddy County, New Mexico



### A Class III Archaeological Survey for the Plains Pipeline Proposed Hackberry Hills Federal #4 Spill Remediation, Eddy County, New Mexico



## A Class III Archaeological Survey for the Plains Pipeline Proposed Hackberry Hills Federal #4 Spill Remediation, Eddy County, New Mexico



#### **APPENDIX V**

C-138

District 1 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

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

Form C-138 Revised August 1, 2011

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

REO	UEST	FOR	APPRO	VAL	TO	ACCEPT	SOLID	WASTE
-----	------	-----	-------	-----	----	--------	-------	-------

1. Generator Name and Address: Plains Marketing
Connie Road, Carlsbad NM
2. Originating Site:
Hackberry Hill #4, Read and Stevens location, Carlsbad, NM
3. Location of Material (Street Address, City, State or ULSTR):
UL F, Section 22, Township 22 S, Range 26 East, Eddy County, New Mexico
4. Source and Description of Waste: Crude oil release from storage tank.
97879797979
Estimated Volume 600 yd3 Known Volume (to be entered by the operator at the end of the haul) yd% bbls
5 GENERATOR CERTIFICATION STATEMENT OF WASTE STATUS  1, Camille Bryant , representative or authorized agent for Plains Pipeline, LP do hereby
t, representative or authorized agent for Plains Pipeline 122 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 Mark Acceptance Production** Internation** Internation*
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, Camille Bryant , representative for Plams Pipeline; CP 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: Talon LPE
FAIGH FLE
OCD Permitted Surface Waste Management Facility
Name and Facility Permit #: Lea Land, LLC WM-01-035
Address of Facility: MM 64 Hwy 62/180 East, Carlsbad, NM 88220
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: Squay Mall TITLE: May Truy DATE: 5193/17
SIGNATURE: TELEPHONE NO.: 405 574 187

# APPENDIX VI LABORATORY REPORTS

#### **Analytical Report 553431**

for Talon LPE

Project Manager: David Adkins
Hackberry Hill #4
700376.270.01
25-MAY-17

Collected By: Client





#### 1211 W. Florida Ave, Midland TX 79701

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

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





25-MAY-17

Project Manager: David Adkins

**Talon LPE** 408 W. Texas St. Artesia, NM 88210

Reference: XENCO Report No(s): 553431

Hackberry Hill #4

Project Address: Hackberry Hill #4

#### David Adkins:

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) 553431. 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. 553431 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** 

Knis froak

Project Manager

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



#### **Sample Cross Reference 553431**



#### Talon LPE, Artesia, NM

#### Hackberry Hill #4

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
S-1	S	05-16-17 13:30	3 - 0 ft	553431-001
S-2	S	05-16-17 13:50	2 - 0 ft	553431-002
S-3	S	05-16-17 14:10	3 - 0 ft	553431-003



#### CASE NARRATIVE

Client Name: Talon LPE
Project Name: Hackberry Hill #4

Project ID:

700376.270.01

Work Order Number(s): 553431

Report Date: *25-MAY-17* Date Received: *05/18/2017* 

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3018068 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



# Project Id:

700376.270.01

**Project Location:** Hackberry Hill #4 David Adkins

Contact:

# Certificate of Analysis Summary 553431

Talon LPE, Artesia, NM

Project Name: Hackberry Hill #4

Date Received in Lab: Thu May-18-17 10:14 am Report Date: 25-MAY-17

Project Manager: Kelsey Brooks

3580 15.0	274 15.0	629 15.0		Total TPH
	274 15.0	542 15.0		C10-C28 Diesel Range Organics
440 15.0	ND 15.0	87.0 15.0		C6-C10 Gasoline Range Hydrocarbons
mg/kg RL	mg/kg RL	mg/kg RL	Units/RL:	
May-19-17 21:51	May-19-17 21:30	May-19-17 21:09	Analyzed:	
May-19-17 13:00	May-19-17 13:00	May-19-17 13:00	Extracted:	TPH By SW8015 Mod
502 9.54	868 8.96	409 9.92		Chloride
mg/kg RL	mg/kg RL	mg/kg RL	Units/RL:	
May-22-17 22:08	May-22-17 21:58	May-22-17 21:49	Analyzed:	SUB: E871002
May-22-17 20:53	May-22-17 20:53	May-22-17 20:53	Extracted:	Chloride by EPA 300
0.0730 0.00200	ND 0.00201	0.160 0.00199		Total BTEX
0.0562 0.00200	ND 0.00201	0.135 0.00199		Total Xylenes
0.0151 0.00200	ND 0.00201	0.0405 0.00199		o-Xylene
0.0411 0.00399	ND 0.00402	0.0947 0.00398		m,p-Xylenes
0.00972 0.00200	ND 0.00201	0.0213 0.00199		Ethylbenzene
0.00711 0.00200	ND 0.00201	0.00390 0.00199		Toluene
ND 0.00200	ND 0.00201	ND 0.00199		Benzene
mg/kg RL	mg/kg RL	mg/kg RL	Units/RL:	
May-23-17 15:16	May-23-17 14:44	May-23-17 15:00	Analyzed:	
May-23-17 07:30	May-23-17 07:30	May-23-17 07:30	Extracted:	BTEX by EPA 8021B
May-16-17 14:10	May-16-17 13:50	May-16-17 13:30	Sampled:	
SOIL	SOIL	SOIL	Matrix:	
3-0 ft	2-0 ft	3-0 ft	Depth:	Analysis nequesieu
S-3	S-2	S-1	Field Id:	Donner J
553431-003	553431-002	553431-001	Lab Id:	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Project Manager



#### Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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Project Name: Hackberry Hill #4

Work Orders: 553431,

Lab Batch #: 3017886

Sample: 553431-001 / SMP

**Project ID:** 700376.270.01

Matrix: Soil Batch:

Units:

mg/kg

Date Analyzed: 05/19/17 21:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	91.0	99.7	91	70-135	
o-Terphenyl	52.0	49.9	104	70-135	

Lab Batch #: 3017886

Sample: 553431-002 / SMP

Batch: 1

Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 05/19/17 21:30	SURROGATE RECOVERY STUDY					
	ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes			[D]			
1-Chlorooc	ctane		88.3	99.9	88	70-135		
o-Terpheny	yl		47.7	50.0	95	70-135		

Lab Batch #: 3017886

Sample: 553431-003 / SMP

Batch: 1

Matrix: Soil SURROGATE RECOVERY STUDY

Units:

mg/kg

Date Analyzed: 05/19/17 21:51

Control Amount True TPH By SW8015 Mod Flags Found Amount Recovery Limits %R [A] [B] %R [D]Analytes 97 70-135 1-Chlorooctane 96.9 100 50.0 97 70-135 48.5 o-Terphenyl

Lab Batch #: 3018068

Sample: 553431-002 / SMP

Batch:

1 Matrix: Soil

<b>Units:</b>
---------------

mg/kg

Date Analyzed: 05/23/17 14:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 3018068

Sample: 553431-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 05/23/17 15:0	$^{0}$ SU	SURROGATE RECOVERY STUDY					
I	BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Difluorobenzene		0.0250	0.0300	83	80-120			
4-Bromofluorobenzene	3	0.0278	0.0300	93	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hill #4

Work Orders: 553431,

Lab Batch #: 3018068

Sample: 553431-003 / SMP

Project ID: 700376.270.01

Batch: 1 Matrix: Soil

Date Analyzed: 05/23/17 15:16 Units: mg/kg SURROGATE RECOVERY STUDY Amount True Control BTEX by EPA 8021B Flags Amount Recovery Limits Found %R [A] [B] %R [D] **Analytes** 0.0279 0.0300 93 80-120 1,4-Difluorobenzene 4-Bromofluorobenzene 0.0330 0.0300 110 80-120

Lab Batch #: 3017886

Sample: 724972-1-BLK / BLK

Batch: 1 Matrix: Solid

Date Analyzed: 05/19/17 14:20 Units: SURROGATE RECOVERY STUDY mg/kg Control True Amount TPH By SW8015 Mod Flags Found Amount Recovery Limits %R %R [A] [B] [D] Analytes 105 70-135 105 100 1-Chlorooctane 51.8 50.0 104 70-135 o-Terphenyl

Lab Batch #: 3018068

Sample: 725094-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 05/23/17 08:43 SURROGATE RECOVERY STUDY

Amount True Control

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 3017886

Sample: 724972-1-BKS / BKS

Batch: 1 Matrix: Solid

Date Analyzed: 05/19/17 14:41 Units: mg/kg SURROGATE RECOVERY STUDY True Control Amount TPH By SW8015 Mod Found Amount Recovery Limits Flags %R %R [B] [A] [D] Analytes 70-135 100 99 1-Chlorooctane 98.6 70-135 o-Terphenyl 45.1 50.0 90

Lab Batch #: 3018068

Sample: 725094-1-BKS / BKS

Batch: 1

Matrix: Solid

Units:	mg/kg	Date Analyzed: 05/23/17 07:21	SURROGATE RECOVERY STUDY					
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
		Analytes			1-1			
1,4-Difluor	robenzene		0.0246	0.0300	82	80-120		
4-Bromofly	uorobenzene		0.0320	0.0300	107	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hill #4

Work Orders: 553431,

Lab Batch #: 3017886

Sample: 724972-1-BSD / BSD

Project ID: 700376.270.01

Unite

ma/ka

Date Analyzed: 05/19/17 15:02

Batch: 1 Matrix: Solid

Units: hig/kg Date Analyzed: 05/15/17 15.02	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	. ,		[D]		
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	46.4	50.0	93	70-135	

Lab Batch #: 3018068

Sample: 725094-1-BSD / BSD

Batch: 1

Matrix: Solid

CUDDOCATE DECOVERY CTUDY

Units:		$\mathbf{SU}$	SURROGATE RECOVERY STUDY					
	BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Difluo	robenzene	0.0287	0.0300	96	80-120			
4-Bromofl	uorobenzene	0.0315	0.0300	105	80-120			

Lab Batch #: 3017886

Sample: 553325-043 S / MS

Batch: 1

Matrix: Soil

SURROGATE RECOVERY STUDY

Units:

mg/kg

Date Analyzed: 05/19/17 15:46

TPH By SW8015 Mod	Amount Found	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[A]	[D]	[D]	/0K	
	95.8	99.8	96	70-135	
	17.3	40.0	00	70.125	

Lab Batch #: 3018068

1-Chlorooctane o-Terphenyl

Sample: 553455-001 S / MS

Units:	mg/kg	Date Analyzed: 05/23/17 07:54	SURROGATE RECOVERY STUDY						
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
		Analytes			[D]		1		
1,4-Difluo	robenzene		0.0329	0.0300	110	80-120			
4-Bromofl	uorobenzene		0.0322	0.0300	107	80-120			

Lab Batch #: 3017886

Sample: 553325-043 SD / MSD

Batch: 1

Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 05/19/17 16:06	SURROGATE RECOVERY STUDY						
	TPH :	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooc	tane	1 may tes	95.6	100	96	70-135			
o-Terpheny	1		45.2	50.0	90	70-135			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hill #4

Work Orders: 553431, Lab Batch #: 3018068

Sample: 553455-001 SD / MSD

**Project ID:** 700376.270.01

Batch: 1 Matrix: Soil

ate Analyzed:	05/23/1	7 08:10
---------------	---------	---------

Units: mg/kg	<b>Date Analyzed:</b> 05/23/17 08:10	SU	RROGATE R	ECOVERY	STUDY	
вті	EX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	Z KII KI J COS	0.0349	0.0300	116	80-120	
4-Bromofluorobenzene		0.0354	0.0300	118	80-120	

Surrogate Recovery [D] = 100 \* A / B
All results are based on MDL and validated for QC purposes.

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



# BS / BSD Recoveries



Project Name: Hackberry Hill #4

Work Order #: 553431

Lab Batch ID: 3018068

Sample: 725094-1-BKS

Date Prepared: 05/23/2017

Batch #: 1

Project ID: 700376.270.01

Date Analyzed: 05/23/2017

Matrix: Solid

Units: mg/kg	ďĠ		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	SPIKE / I	BLANK S	PIKE DUP	LICATE	RECOVI	ERY STUD	Y	
BTI	BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes			[8]	[C]	[0]	E	Result [F]	ଦ୍ର		,		
Benzene		<0.00199	0.0996	0.101	101	0.0998	0.0973	97	4	70-130	35	
Toluene		<0.00199	0.0996	0.0945	95	0.0998	0.108	108	13	70-130	35	
Ethylbenzene		<0.00199	0.0996	0.102	102	0.0998	0.115	115	12	71-129	35	
m,p-Xylenes		<0.00398	0.199	0.206	104	0.200	0.211	106	2	70-135	35	
o-Xylene		<0.00199	0.0996	0.100	100	0.0998	0.0910	91	9	71-133	35	

Date Prepared: 05/22/2017

Batch #: 1

Lab Batch ID: 3017956

Sample: 725041-1-BKS

Analyst:

DHE

Date Analyzed: 05/22/2017 Matrix: Solid

Units:	m mg/kg		BLAN	K/BLANK	SPIKE / 1	BLANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	LICATE	RECOVI	ERY STUD	Y	
	Chloride by EPA 300	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Ana	Analytes	2	B	[C]	[D]	E	Result [F]	[G]	70	701	%KFD	
Chloride	C	<1.00	10.0	9.71	97	10.0	9.69	97	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: Hackberry Hill #4

Work Order #: 553431

Lab Batch ID: 3017886

Analyst:

ARM

Date Prepared: 05/19/2017

Date Analyzed: 05/19/2017 Project ID: 700376.270.01

Sample: 724972-1-BKS Batch #: 1 Matrix: Solid

Units:	mg/kg		BLAN	K/BLANK	SPIKE / I	BLANK	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	LICATE	RECOVI	ERY STUL	Y	
	TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Ana	Analytes		[8]	C	ΈJ	E	Result [F]	ပြ				
C6-C1	C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	953	95	1000	982	98	ω	70-135	35	
C10-C	C10-C28 Diesel Range Organics	<15.0	1000	966	97	1000	996	100	ω	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: Hackberry Hill #4

Work Order #: 553431

Lab Batch ID: Date Analyzed: 05/23/2017 3018068

Reporting Units: mg/kg

> QC- Sample ID: 553455-001 S Date Prepared: 05/23/2017

Batch #:

Project ID: 700376.270.01

Matrix: Soil

Analyst: ALJ

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample	Spike	Spike Spiked Sample Spike Result S	Spiked Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	[D]	Added [E]	Result [F]	[ଦୁ ନ	%	%R	%RPD	
Benzene	<0.00358	0.179	0.135	75	0.177	0.133	75	1	70-130	35	
Toluene	<0.00358	0.179	0.137	77	0.177	0.135	76	ы	70-130	35	
Ethylbenzene	<0.00358	0.179	0.164	92	0.177	0.138	78	17	71-129	35	
m,p-Xylenes	<0.00717	0.358	0.331	92	0.353	0.254	72	26	70-135	35	
o-Xylene	<0.00358	0.179	0.168	94	0.177	0.127	72	28	71-133	35	

Lab Batch ID: 3017956

Reporting Units:

mg/kg

Date Analyzed:

05/22/2017

QC- Sample ID: 553304-001 S Date Prepared: 05/22/2017

Batch #:

Matrix: Soil

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Analyst: DHE

[A] [B] [D] [E]
[B] [D]

QC- Sample ID: 553550-001 S

Reporting Units:

mg/kg

Date Analyzed:

05/23/2017

Analyst: DHE

Date Prepared: 05/22/2017

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride	Analytes	Chloride by EPA 300
<9.80	Result [A]	Parent Sample
98.0	Added [B]	Spike
99.8	[C]	Spiked Sample Result
102	%R [D]	Spiked Sample
98.0	Added [E]	Spike
101	Result [F]	Duplicate Spiked Sample
103	[G] %R	Spiked Dup.
-	%	RPD
80-120	%R	Control Limits
20	%RPD	Control Limits
		Flag

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

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

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



## Form 3 - MS / MSD Recoveries



Project Name: Hackberry Hill #4

Work Order #: 553431
Lab Batch ID: 3017886

Date Analyzed: 05/19/2017

Reporting Units:

mg/kg

QC- Sample ID: 553325-043 S

Date Prepared: 05/19/2017

Batch #: 1 Matrix: Soil

Project ID: 700376.270.01

9/2017 Analyst: ARM

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

C10-C28 Diesel Range Organics	C6-C10 Gasoline Range Hydrocarbons	Analytes	TPH By SW8015 Mod
<15.0	<15.0	Result [A]	Parent Sample
998	998	Added [B]	Spike
982	994	[C]	Spiked Sample Result
98	100	[D]	Spiked Sample
1000	1000	Added [E]	
1000	1030	Result [F]	Duplicate Spiked Sample
100	103	[G]	Spiked Dup.
2	4	%	RPD
70-135	70-135	%R	Control Limits
35	35	%RPD	Control Limits
		g.	Flao

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

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

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



### CHAIN OF CUSTODY

	1		Project Information		Client / Reporting Information	
Matrix Codes	Analytical Information					
Xenco Job# 105343		Xenco Quote #	www.xenco.com			
Service Center- Hobbs, NM (575) 392-7550	Service Center - Baton Rouge, LA (832) 712-8143	Service Center - Bato	San Antonio, TX (210) 509-3334	Lubbock, TX (806) 794-1296	Dallas, TX (214) 902-0300	
Service Center-Amarillo, TX (806)678-4514	5,0900	Phoenix, AZ (480) 355-0900	Midland, TX-(432)-704*5440	ELPaso, TX-(915)-585-3443	—Stafford_TX-(284)-240-4200	
					Setting the Stationard Stitce 1990	

" Relin	Relin	Relin	TAT				S	10	9 8	7 6	Cn	ω 4	2 1	No.		mplei	8	2 mpair	mpan	2
Relinquished by:	Relinquished by:	Relinquished by Sampler:	TAT Starts Day received by Lab, if received by 5:00 pm	3 Day EMERGENCY	2 Day EMERGENCY	Next Day EMERGENCY	Same Day TAT	Turnaround Time ( Business days)			S-3	\     		FIRM TO A POINT OF CONTROL		Samplers's Name:	tos	Company Address: 408 w 74	Company Name / Branch:	
	1/6	SAMPLE CUSTOBY	Lab, if received by 5:0		Contract TAT	7 Day TAT	S Day TAT	lays)								ADKINS	Phone No: 8	Texas Ave A-tesin	2017 200	
Date Time:	Date Time:	Date Time: -30M	)0 pm								3 3	1/2 : 2/1	4 6 6 7	Sample Date	Collection	PO Number:	(6) 3 5   Invoice 10:		Projec	
Received By:	Received By: 3.MUMM)	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COUNTER DELIVERY  Date Time:    Date   Received By:		Levelli	Level 3 (	Level III s	Level II Std QC				5/16 of 5	5/16/150 S	7134 3		tion	ımber:	"" Plains	Project Location:	Project Name/Number: 700376	B50004 146
	(N) 10:1-	TIME SAMPLES CHAN		Level II Report with TRRP checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	std QC	Data Deliverable Information		in Etha				bottles  HCI  NaOH/Zr  Acetate	Num		> V	4		
Custody Seal #	Relinquished By:	Relinquishe		checklist	UST / RG -411	TRRP Level IV	Level IV (Fi	rmation						HNO3 H2SO4 NaOH NaHSO4	Number of preserved bottles	+	Cande	H # MH	270,01	
	tous	ed By:			411	NIV	Level IV (Full Data Pkg /raw data)				1			MEOH	ottles	DIG				
Preserved where applicable	Date Time:	Date Time:					a)				1				B	TB)	e cl	lov	ide	Analytical Info
plicable	Received By:	Received By:	FED-EX / UPS: Tracking i	Name of the last o				Notos:												tical Information
	i c			l Temp.						1000000										
Solet reinby thenilo, contractor	Corrected lemp: 5,	(6-23: +0.2°C)	CF:(0-6: -0.2°C)	Temm: NO	The state of the s									Field Comments		A = Air	OW = Ocea WI = Wipe O = Oil WW = Was	DW = Drinki P = Product SW = Surfac SL - Sludge	W = Water S = Soil/Si GW = Gro	Matrix Codes
s, coll. Paciol	2	\ }	: :	מיכו מיכו										ents			OW = Ocean/Sea Water WI = Wipe O = Oil WW = Waste Water	DW = Drinking Water P = Product SW = Surface Water SL - Sludge	W = Water S = Soil/Sed/Solid GW = Ground Water	Codes



### **XENCO Laboratories**



### Inter Office Report-Sample Receipt Checklist

Sent To: Houston IOS #: 1043926

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

Sent By:	Marithza Anaya	Date Sent:	05/18/2017 11:54 AM		
Received By	: Santiago Ortega	Date Received:	05/19/2017 09:10 AM		
		Sample Re	ceipt Checklist		Comments
#1 *Temper	ature of cooler(s)?			2.4	
#2 *Shippin	g container in good conditio	n?		Yes	
#3 *Sample	s received with appropriate	temperature?		Yes	
#4 *Custody	Seals intact on shipping co	ontainer/ cooler?		N/A	
#5 *Custody	Seals Signed and dated fo	r Containers/cool	ers	N/A	
#6 *IOS pre	sent?			Yes	
#7 Any miss	sing/extra samples?			No	
#8 IOS agre	es with sample label(s)/ma	trix?		Yes	
#9 Sample	matrix/ properties agree witl	n IOS?		Yes	
#10 Sample	es in proper container/ bottle	?		Yes	
#11 Sample	es properly preserved?			Yes	
#12 Sample	container(s) intact?			N/A	
#13 Sufficie	ent sample amount for indica	ated test(s)?		Yes	
#14 All sam	ples received within hold tir	me?		No	
* Must be co	mpleted for after-hours de	elivery of sample	es prior to placing in th	ne refrigerator	
	•		. , .	•	
NonConforma	ance:				
Corrective Ac	ction Taken:				
		Nonconfo	rmance Documentatio	n	
Contact:		Contacted by :		Date	
	Checklist reviewed by:	unfaula Guerra	ח	ate: 05/19/2017	
		Maria Pa	ula Guerra	30/10/2011	



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 05/18/2017 10:14:00 AM

Work Order #: 553431

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

Temperature Measuring device used: R8

Sample	Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5.7	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seal present on shipping container/ coole	er? N/A	
#5 *Custody Seals intact on shipping container/ coole	r? <b>N/A</b>	
#6 Custody Seals intact on sample bottles?	N/A	
#7 *Custody Seals Signed and dated?	N/A	
#8 *Chain of Custody present?	N/A	
#9 Sample instructions complete on Chain of Custody	? Yes	
#10 Any missing/extra samples?	No	
#11 Chain of Custody signed when relinquished/ rece	ived? Yes	
#12 Chain of Custody agrees with sample label(s)?	Yes	
#13 Container label(s) legible and intact?	Yes	
#14 Sample matrix/ properties agree with Chain of Cu	stody? Yes	
#15 Samples in proper container/ bottle?	Yes	
#16 Samples properly preserved?	Yes	
#17 Sample container(s) intact?	Yes	
#18 Sufficient sample amount for indicated test(s)?	Yes	
#19 All samples received within hold time?	Yes	
#20 Subcontract of sample(s)?	N/A	7
#21 VOC samples have zero headspace?	N/A	

* Must be c	ompleted for after-hours de	livery of samples prior to pla	cing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	Mulita Anaya  Marithza Anaya	Date: <u>05/18/2</u> 017
	Checklist reviewed by:	Mury Horah Kelsey Brooks	Date: 05/19/2017

### **Analytical Report 555091**

for Talon LPE

Project Manager: David Adkins
Hackberry Hill #4 Read and Stevens
700376.269.01

16-JUN-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

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

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





16-JUN-17

Project Manager: **David Adkins Talon LPE**408 W. Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): 555091

Hackberry Hill #4 Read and Stevens

Project Address: Hackberry Hill #4 Read and Stevens

### David Adkins:

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) 555091. 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. 555091 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,

Kunsk

**Kelsey Brooks** 

Project Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.

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Houston - Dallas - Midland - San Antonio - Phoenix - Oklahoma - Latin America



### **Sample Cross Reference 555091**



### Talon LPE, Artesia, NM

Hackberry Hill #4 Read and Stevens

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Tank Battery	S	06-09-17 10:40	- 1 ft	555091-001



### CASE NARRATIVE

Client Name: Talon LPE

Project Name: Hackberry Hill #4 Read and Stevens

Project ID:

700376.269.01

Work Order Number(s): 555091

Report Date:

16-JUN-17

Date Received: 06/10/2017

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3019644 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



**Project Location:** 

Hackberry Hill #4 Read and Stevens

Contact: Project Id:

David Adkins 700376.269.01

# Certificate of Analysis Summary 555091

Talon LPE, Artesia, NM

Project Name: Hackberry Hill #4 Read and Stevens

Date Received in Lab: Sat Jun-10-17 12:28 pm Report Date: 16-JUN-17

Project Manager: Kelsey Brooks

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Project Manager Kelsey Brooks



### 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 OA 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 Sam

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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Project Name: Hackberry Hill #4 Read and Stevens

Work Orders: 555091,

Sample: 555091-001 / SMP

Project ID: 700376.269.01

Lab Batch #: 3019519

Matrix: Soil Batch: 1

Units:	mg/kg	<b>Date Analyzed:</b> 06/13/17 00:54	SU	RROGATE R	ECOVERY	STUDY	
	TPI	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terpheny	yl		51.0	49.9	102	70-130	
1-Chlorooc	ctane		94.2	99.8	94	70-130	

Lab Batch #: 3019644

Sample: 555091-001 / SMP

Batch: 1

0.0300

0.0300

Matrix: Soil

Units: mg/kg Date Analyzed: 06/13/17 09:44

BTEX by EPA 8021B

**Analytes** 

SU	RROGATE R	ECOVERY S	STUDY	
Amount	True	Recovery	Control	Flags
Found	Amount	%R	Limits	
[A]	[B]	[D]	%R	

103

112

80-120

80-120

4-Bromofluorobenzene Lab Batch #: 3019519

1,4-Difluorobenzene

Sample: 725985-1-BLK / BLK

Batch:

Matrix: Solid

SURROGATE RECOVERY STUDY

Units:

0-

mg/kg

Date Analyzed: 06/12/17 18:25

TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[-~]	1-1	[D]		
-Terphenyl	50.8	50.0	102	70-130	
Chlorocetane	03.1	100	93	70-130	

0.0309

0.0335

Lab Batch #: 3019644

Sample: 726036-1-BLK / BLK

Batch:

Matrix: Solid

Units:	mg/kg	Date Analyzed: 06/13/17 08:39	SU	RROGATE R	ECOVERY S	STUDY	
	втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluor	robenzene		0.0256	0.0300	85	80-120	
4-Bromofh	uorobenzene		0.0282	0.0300	94	80-120	

Lab Batch #: 3019519

Sample: 725985-1-BKS / BKS

Batch:

Units: mg/kg	<b>Date Analyzed:</b> 06/12/17 18:59	SU	RROGATE R	ECOVERY	STUDY	
TI	PH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R  D	Control Limits %R	Flags
	Analytes		50.0		70.120	<del></del>
o-Terphenyl		57.5	50.0	115	70-130	
1-Chlorooctane		104	100	104	70-130	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B All results are based on MDL and validated for QC purposes.

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hill #4 Read and Stevens

Work Orders: 555091,

Project ID: 700376.269.01

Lab Batch #: 3019644

**Sample:** 726036-1-BKS / BKS

Matrix: Solid Batch:

Units:	mg/kg	<b>Date Analyzed:</b> 06/13/17 07:01	SU	RROGATE R	ECOVERY	STUDY	
	BTE	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluo	robenzene	-	0.0289	0.0300	96	80-120	
4-Bromofl	uorobenzene		0.0326	0.0300	109	80-120	

Lab Batch #: 3019519

Sample: 725985-1-BSD / BSD

Batch: 1

Matrix: Solid Units: mg/kg Date Analyzed: 06/12/17 19:33 SURROGATE RECOVERY STUDY

TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	, 5==	
o-Terphenyl	57.5	50.0	115	70-130	
1-Chlorooctane	103	100	103	70-130	

Lab Batch #: 3019644

Sample: 726036-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 06/13/17 07:17 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 3019519

Sample: 555067-021 S / MS

Batch: 1

Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/12/17 20:42	SU	RROGATE R	RECOVERY	STUDY	
	TP	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			55.8	49.9	112	70-130	
1-Chlorooctar	ne		102	99.8	102	70-130	

Lab Batch #: 3019644

Sample: 555002-005 S / MS

Batch: 1

Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/13/17 07:34	SU	RROGATE R	ECOVERY	STUDY	
	ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorol	penzene	Analytes	0.0347	0.0300	116	80-120	
4-Bromofluo	robenzene		0.0344	0.0300	115	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hill #4 Read and Stevens

Work Orders: 555091,

Project ID: 700376.269.01

Lab Batch #: 3019519

Sample: 555067-021 SD / MSD

Matrix: Soil Batch:

Units:

mg/kg

g	<b>Date Analyzed:</b> 06/12/17 21:15	SU	RROGATE R	ECOVERY S	STUDY	
TPH	by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	, - · · ·	1-1	[D]		
		58.0	50.0	116	70-130	

1-Chlorooctane Lab Batch #: 3019644

o-Terphenyl

Sample: 555002-005 SD / MSD

Batch:

105

Matrix: Soil

99.9

Units:

mg/kg

Date Analyzed: 06/13/17 07:49

SURROGATE RECOVERY STUDY

70-130

			ECO ( EICI )	3,02,	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Surrogate Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### BS / BSD Recoveries



Project Name: Hackberry Hill #4 Read and Stevens

Work Order #: 555091

ALJ Analyst:

Date Prepared: 06/13/2017

Batch #: 1

Date Analyzed: 06/13/2017

**Project ID:** 700376.269.01

Sample: 726036-1-BKS Lab Batch ID: 3019644

Matrix: Solid

Units:	mg/kg		BLAN	K /BLANK S	SPIKE / E	STANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	ICATE 1	RECOVE	CRY STUD	λ.	
B. Analytes	FEX by EPA 8021B	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	Control Limits %RPD	Flag
Benzene		<0.00200	8660.0	0.0974	86	0.101	0.0885	88	10	70-130	35	To the control of the
Toluene		<0.00200	8660.0	0.0962	96	0.101	0.0839	83	14	70-130	35	
Ethylbenzene	sene	<0.00200	0.0998	0.108	108	0.101	0.0972	96	11	71-129	35	
m,p-Xylenes	nes	<0.00399	0.200	0.191	96	0.201	0.169	84	12	70-135	35	
o-Xylene		<0.00200	0.0998	0.101	101	0.101	0.0903	68	11	71-133	35	

MGO Analyst:

Lab Batch ID: 3019863

Date Prepared: 06/15/2017

Batch #: 1

Sample: 726141-1-BKS

Matrix: Solid

Date Analyzed: 06/15/2017

mg/kg		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	SPIKE / E	LANKS	PIKE DUPI	ICATE 1	RECOVE	CRY STUD	Į.	
Chloride by EPA 300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits	Control Limits	Flag
		<u>@</u>	[C]	ē	9	Result [F]	[5]				
	<5.00	250	251	100	250	246	86	2	90-110	20	

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



### BS / BSD Recoveries



Project Name: Hackberry Hill #4 Read and Stevens

Work Order #: 555091

Analyst:

**Date Prepared:** 06/12/2017

**Project ID: 700376.269.01 Date Analyzed:** 06/12/2017

Lab Batch ID: 3019519

Matrix: Solid

Batch #: 1 Sample: 725985-1-BKS

Units:	mg/kg		BLAN	K/BLANK	SPIKE / F	SLANK S	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	JCATE 1	RECOVE	CRY STUD	λ	
	TPH by Texas1005	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Ans	Analytes	•	[B]	<u>[</u> ]	[a]	<u>a</u>	Result [F]	[5]				
C6-CI	C6-C12 Range Hydrocarbons	<25.0	1000	873	87	1000	932	93	7	75-125	25	
C12-C	112-C28 Range Hydrocarbons	<25.0	1000	923	92	1000	951	95	3	75-125	25	

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

Final 1.000



## Form 3 - MS / MSD Recoveries



Project Name: Hackberry Hill #4 Read and Stevens

3019644 555091 Work Order #:

06/13/2017

Date Analyzed:

Lab Batch ID:

Matrix: Soil Batch #: QC-Sample ID: 555002-005 S

Date Prepared: 06/13/2017

Analyst: ALJ

Project ID: 700376.269.01

Flag X × × × Control Limits %RPD 35 35 35 35 35 Control Limits 70-130 71-129 71-133 70-135 70-130 %R MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD % 17 41 1 21 Spiked Dup. SR [G] Matrix: Soil 78 45 59 53 41 Spiked Sample Duplicate Result [F] 0.0843 0.146 0.109 0.0977 0.154 Spike Added 0.186 0.186 0.186 0.186 0.372  $\Xi$ Batch #: Spiked Sample %R [D] 78 62 61 20 29 Spiked Sample S Result 0.116 0.148 0.117 0.190 0.128  $\overline{\Sigma}$ QC-Sample ID: 555092-005 S Spike Added 0.190 0.190 0.190 0.190 0.380 <u>B</u> <0.00380 <0.00380 <0.00760 <0.00380 Parent Sample Result <0.00380  $\overline{\mathbf{A}}$ BTEX by EPA 8021B Analytes 3019863 mg/kg Ethylbenzene Reporting Units: m,p-Xylenes o-Xylene Benzene Toluene

Analyst: MGO Date Prepared: 06/15/2017 06/15/2017 Date Analyzed: Lab Batch ID:

Reporting Units:	mg/kg		M	ATRIX SPIK	E/MAT	RIX SPIF	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE RECO	OVERY!	STUDY		
	Chloride by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Spiked Result Sample SI [C] %R Ac [D]	Spiked Sample %R [D]	oike Ided E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride		175	247	412	96	247	413	96	0	90-110	20	
Lah Batch ID:	3019863	OC- Sample ID: 555423-001 S	555423-	001 S	Bai	Batch #:	1 Matrix: Soil	Soil				

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Analyst: MGO Date Prepared: 06/15/2017 06/15/2017 mg/kg Reporting Units: Date Analyzed: Lab

Flag Control Limits %RPD 20 Control Limits 90-110 RPD % N Spiked Dup. <u>G</u> % 101 Spiked Sample Duplicate Result [F] 292 Spike Added 248 Sample %R [D] Spiked 103 Spiked Sample Result  $\overline{\mathbf{C}}$ 297 Spike Added <u>B</u> 248 Parent Sample Result  $\overline{\mathbf{A}}$ Chloride by EPA 300 Analytes Chloride

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

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

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

Final 1.000



## Form 3 - MS / MSD Recoveries



Project Name: Hackberry Hill #4 Read and Stevens

3019519 555091 Work Order #: Lab Batch ID:

06/12/2017 Date Analyzed:

Reporting Units:

QC-Sample ID: 555067-021 S

**Project ID:** 700376.269.01 Matrix: Soil

Batch #:

Analyst: ARM Date Prepared: 06/12/2017

mg/kg	TOO L. Toward A.	Sample	Result Added	Analytes [A] [B]
MATRIX SPIKE / MATRIX SPIKE DUPLICATE	Spiked Sample	Result		
E/MATF		Sample	%R	<u>[</u> ]
SIX SPII			Added	
KE DUPLICA	Duplicate	Spiked Sample	Result [F]	
re reco	Spiked	Dup.	%R	<u>ত</u>
RECOVERY STUDY		RPD	%	
STUDY	Control	Limits	%R	
	Control	Limits	%RPD	
		Flag		
Γ				

25 25

75-125 75-125

n

103 66

1030 1050

666 666

100 100

<25.0

62.0

C12-C28 Range Hydrocarbons C6-C12 Range Hydrocarbons

<u>B</u> 866 866

1060 866

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

Setting the Standard since 1990

### CHAIN OF CUSTODY

No. Samplers's Name: Project Contact: Company Address: Company Name / Branch: Dallas, TX (214) 902-0300 Stafford, TX (281) 240-4200 dadleins of talonly e.com 4°C & 3 Day EMERGENCY Next Day EMERGENCY Relinquished by Samp 2 Day EMERGENCY TAT Starts Day received by Lab, if received by 5:00 pm Same Day TAT Client / Reporting Information Tank battery dished by Turnaround Time ( Business days) W. Taxas Ave, Artesia wu Maria Field ID / Point of Collection Ä Ö THON/LPE ANKINS ADKINS 7 Day TAT Contract TAT X 5 Day TAT Lubbock, TX (806) 794-1296 El Paso, TX (915) 585-3443 SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY Phone No: 575 441 4835 Date Time: 230 6-917-430pms Sample Depth Invoice To: PO Number: Project Location: Project Name/Number: Collection 50 pg 040 Received By: Level III Std QC+ Forms Level II Report with TRRP checklist Received By: TANK BATERY San Antonio, TX (210) 509-3334 Midland, TX (432) 704-5440 Project Information Level 3 (CLP Forms) Level II Std QC to Seberry 702247.001.01 Matrix - TALOW/LAG Ś Data Deliverable Information www.xenco.com # of 702247.001.01 нсі NaOH/Zn Number of preserved bottles Stevens Acetate たまかん UST / RG -411 TRRP Level IV EONH Relinquished By: Relimpuished By: Level IV (Full Data Pkg /raw data) NaOH NaHSO4 Service Center - Baton Rouge, LA (832) 712-8143 Phoenix, AZ (480) 355-0900 меон NONE TPH BTEX Total chlorides Date Time: Analytical Information FED-EX / UPS: Tracking # Notes: # doL coneX Received By: Received By: CF:(0-6: -0.2°C) Temp: (1.) Service Center- Amarillo, TX (806)678-4514 Service Center- Hobbs, NM (575) 392-7550 Field Comments SW = Surface Water
SL - Sludge
OW = Ocean/Sea Water
WI = Wipe
O = Oil
WW = Waste Water W = Water
S = Soll/Sed/Solid
GW = Ground Water
DW = Drinking Water P = Product Matrix Codes 코 ₹ ID:R-8

9

Custody Seal #

Preserved where applicable

Corrected Temp: 4.

(6-23: +0.2°C)

Relinquished by:



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 06/10/2017 12:28:00 PM

Work Order #: 555091

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

Temperature Measuring device used: r8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		4.1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seal present on shipping conta	iner/ cooler?	N/A	
#5 *Custody Seals intact on shipping contai	ner/ cooler?	N/A	
#6 Custody Seals intact on sample bottles?		N/A	
#7 *Custody Seals Signed and dated?		N/A	
#8 *Chain of Custody present?		Yes	
#9 Sample instructions complete on Chain of	of Custody?	Yes	
#10 Any missing/extra samples?		No	
#11 Chain of Custody signed when relinquis	shed/ received?	Yes	
#12 Chain of Custody agrees with sample la	abel(s)?	Yes	
#13 Container label(s) legible and intact?		Yes	
#14 Sample matrix/ properties agree with C	hain of Custody?	Yes	
#15 Samples in proper container/ bottle?		Yes	
#16 Samples properly preserved?		Yes	
#17 Sample container(s) intact?		Yes	
#18 Sufficient sample amount for indicated	test(s)?	Yes	
#19 All samples received within hold time?		Yes	
#20 Subcontract of sample(s)?		N/A	
#21 VOC samples have zero headspace?		N/A	

* Must be o	completed for after-hours de	livery of samples prior to plac	sing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	MMitga thaya Marithza Anaya	Date: <u>06/12/2017</u>
	Checklist reviewed by:	Mus froak Kelsey Brooks	Date: <u>06/12/2</u> 017

### **Analytical Report 555092**

### for Talon LPE

Project Manager: David Adkins
Hackberry Hills #4 Plains-Camille Bryant
700376.270.01
19-JUN-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

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

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)





19-JUN-17

Project Manager: David Adkins

**Talon LPE** 408 W. Texas St. Artesia, NM 88210

Reference: XENCO Report No(s): 555092

Hackberry Hills #4 Plains-Camille Bryant

Project Address: Hackberry Hills #4 Plains-Camille Bryant

### **David Adkins:**

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) 555092. 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. 555092 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** 

Kursko

Project Manager

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### **Sample Cross Reference 555092**



### Talon LPE, Artesia, NM

Hackberry Hills #4 Plains-Camille Bryant

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
S-3	S	06-09-17 00:00	3.25 ft	555092-001
S-4	S	06-09-17 00:00	1.5 ft	555092-002
S-5	S	06-09-17 00:00	3 ft	555092-003
S-6	S	06-09-17 00:00	3 ft	555092-004
S-7	S	06-09-17 00:00	1 ft	555092-005
S-8	S	06-09-17 00:00	2 ft	555092-006
S-9	S	06-09-17 00:00	4 ft	555092-007
S-10	S	06-09-17 00:00	3 ft	555092-008
S-11	S	06-09-17 00:00	1.5 ft	555092-009
S-12	S	06-09-17 00:00	.75 ft	555092-010
S-13	S	06-09-17 00:00	2 ft	555092-011
S-14	S	06-09-17 00:00	2.5 ft	555092-012



### CASE NARRATIVE

Client Name: Talon LPE

Project Name: Hackberry Hills #4 Plains-Camille Bryant

Project ID:

700376.270.01

Work Order Number(s): 555092

Report Date:

19-JUN-17

Date Received: 06/12/2017

### Sample receipt non conformances and comments:

### Sample receipt non conformances and comments per sample:

None

### Analytical non conformances and comments:

Batch: LBA-3019769 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030. Lab Sample ID 555092-011 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 555092-006, -007, -008, -011.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits, therefore the data was accepted.

o-Xylene Relative Percent Difference (RPD) between matrix spike and duplicate was above quality control limits.

Samples in the analytical batch are: 555092-006, -007, -008, -011

Batch: LBA-3019770 BTEX by EPA 8021B

Lab Sample ID 555092-005 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Toluene, m,p-Xylenes recovered below QC limits in the Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 555092-001, -004, -005, -009, -010. The Laboratory Control Sample for Toluene, m,p-Xylenes is within laboratory Control Limits, therefore the data was accepted.

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3019774 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3019910 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



Project Location:

Hackberry Hills #4 Plains-Camille Bryant

Project Id: Contact:

700376.270.01 David Adkins

# Certificate of Analysis Summary 555092 Talon LPE, Artesia, NM



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Date Received in Lab: Mon Jun-12-17 10:11 am

Report Date: 19-JUN-17

Project Manager: Kelsey Brooks

	I ah Id.	555000_001	555002_002	555092_003	555097 <u>-</u> 004	555092-005	555092-006
	Field Id:	S	S-4	S-5	S-6	S-7	S-8
Analysis Requested	Depth:	3.25- ft	1.5- ft	3- ft	3- ft	I- ft	2- ft
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
	Sampled:	Jun-09-17 00:00	Jun-09-17 00:00	Jun-09-17 00:00	Jun-09-17 00:00	Jun-09-17 00:00	Jun-09-17 00:00
BTEX by EPA 8021B	Extracted:	Jun-13-17 17:00	Jun-15-17 08:00	Jun-15-17 08:00	Jun-13-17 17:00	Jun-13-17 17:00	Jun-13-17 15:00
	Analyzed:	Jun-14-17 13:52	Jun-15-17 10:57	Jun-15-17 11:13	Jun-14-17 14:41	Jun-14-17 13:36	Jun-14-17 01:49
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Benzene		ND 0.00200	ND 0.00358	ND 0.00364	ND 0.00366	ND 0.00202	ND 0.00200
Toluene		ND 0.00200	ND 0.00358	ND 0.00364	ND 0.00366	ND 0.00202	ND 0.00200
Ethylbenzene		ND 0.00200	ND 0.00358	ND 0.00364	ND 0.00366	ND 0.00202	ND 0.00200
m,p-Xylenes		ND 0.00399	ND 0.00717	ND 0.00727	ND 0.00733	ND 0.00405	ND 0.00399
o-Xylene		ND 0.00200	ND 0.00358	ND 0.00364	ND 0.00366	ND 0.00202	ND 0.00200
Total Xylenes		ND 0.00200	ND 0.00358	ND 0.00364	ND 0.00366	ND 0.00202	ND 0.00200
Total BTEX	***************************************	ND 0.00200	ND 0.00358	ND 0.00364	ND 0.00366	ND 0.00202	ND 0.00200
Chloride by EPA 300	Extracted:	Jun-15-17 11:00	Jun-15-17 11:00	Jun-15-17 11:00	Jun-15-17 11:00	Jun-15-17 11:00	Jun-15-17 11:00
	Analyzed:	Jun-15-17 15:52	Jun-15-17 16:00	Jun-15-17 16:07	Jun-15-17 16:15	Jun-15-17 16:23	Jun-15-17 16:45
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
Chloride		467 4.95	49.7 4.98	381 4.93	928 4.98	175 4.94	189 4.92
TPH by Texas1005	Extracted:	Jun-12-17 16:00	Jun-12-17 16:00	Jun-12-17 16:00	Jun-12-17 16:00	Jun-12-17 16:00	Jun-12-17 16:00
	Analyzed:	Jun-13-17 01:25	Jun-13-17 01:56	Jun-13-17 03:27	Jun-13-17 03:56	Jun-13-17 04:26	Jun-13-17 04:55
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL
C6-C12 Range Hydrocarbons		47.5 25.0	86.7 25.0	31.6 24.9	ND 24.9	77.5 24.9	114 24.9
C12-C28 Range Hydrocarbons		1420 25.0	1540 25.0	819 24.9	235 24.9	1350 24.9	1110 24.9
C28-C35 Range Hydrocarbons		ND 25.0	ND 25.0	ND 24.9	ND 24.9	ND 24.9	ND 24.9
Total TPH		1470 25.0	1630 25.0	851 24.9	235 24.9	1430 24.9	1220 24.9

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Kelsey Brooks Project Manager

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Final 1.000



# Certificate of Analysis Summary 555092

Talon LPE, Artesia, NM

Project Name: Hackberry Hills #4 Plains-Camille Bryant

Date Received in Lab: Mon Jun-12-17 10:11 am

Report Date: 19-JUN-17

Project Manager: Kelsey Brooks

### Project Location: Contact: Project Id: David Adkins 700376.270.01

Hackberry Hills #4 Plains-Camille Bryant

Total TPH	C28-C35 Range Hydrocarbons	C12-C28 Range Hydrocarbons	C6-C12 Range Hydrocarbons			TPH by Texas1005	Chloride			Chloride by EPA 300	Total BTEX	Total Xylenes	o-Xylene	m,p-Xylenes	Ethylbenzene	Toluene	Benzene			BTEX by EPA 8021B			Anaiysis Kequesieu	Analusis Dans	
						as1005				PA 300	II.	a transition of the control of the c		The state of the s	WHEN THE PARTY OF		The state of the s			\ 8021B			Sieu		
				Units/RL:	Analyzed:	Extracted:		Units/RL:	Analyzed:	Extracted:								Units/RL:	Analyzed:	Extracted:	Sampled:	Matrix:	Depth:	Field Id:	Lab Id:
ND 24.9	ND 24.9	ND 24.9	ND 24.9	mg/kg RL	Jun-13-17 05:24	Jun-12-17 16:00	ND 4.93	mg/kg RL	Jun-15-17 16:53	Jun-15-17 11:00	ND 0.00200	ND 0.00200	ND 0.00200	ND 0.00401	ND 0.00200	ND 0.00200	ND 0.00200	mg/kg RL	Jun-14-17 02:05	Jun-13-17 15:00	Jun-09-17 00:00	SOIL	4- ft	S-9	555092-007
1470 25.0	ND 25.0	1380 25.0	86.4 25.0	mg/kg RL	Jun-13-17 05:53	Jun-12-17 16:00	31.3 4.95	mg/kg RL	Jun-15-17 17:16	Jun-15-17 11:00	0.0134 0.00199	0.0105 0.00199	ND 0.00199	0.0105 0.00398	ND 0.00199	0.00293 0.00199	ND 0.00199	mg/kg RL	Jun-14-17 02:21	Jun-13-17 15:00	Jun-09-17 00:00	SOIL	3- ft	S-10	555092-008
9120 125	ND 125	7760 125	1360 125	mg/kg RL	Jun-13-17 08:16	Jun-12-17 16:00	28.4 4.96	mg/kg RL	Jun-15-17 17:23	Jun-15-17 11:00	0.755 0.00351	0.490 0.00351	0.178 0.00351	0.312 0.00702	0.115 0.00351	0.145 0.00351	0.00461 0.00351	mg/kg RL	Jun-14-17 14:58	Jun-13-17 17:00	Jun-09-17 00:00	SOIL	1.5- ft	S-11	555092-009
1310 25.0	ND 25.0	1250 25.0	61.9 25.0	mg/kg RL	Jun-13-17 06:49	Jun-12-17 16:00	28.5 4.90		Jun-15-17 17:31	Jun-15-17 11:00	0.0206 0.00346	0.0206 0.00346	ND 0.00346	0.0206 0.00692	ND 0.00346	ND 0.00346	ND 0.00346	mg/kg RL	Jun-14-17 15:34	Jun-13-17 17:00	Jun-09-17 00:00	SOIL	.75- ft	S-12	555092-010
155 24.9	ND 24.9	155 24.9			Jun-13-17 07:18	Jun-12-17 16:00	3550 24.7		Jun-15-17 17:39	Jun-15-17 11:00	ND 0.00199	ND 0.00199	ND 0.00199	ND 0.00398	ND 0.00199	ND 0.00199	ND 0.00199	mg/kg RL	Jun-14-17 01:33	Jun-13-17 15:00	Jun-09-17 00:00	SOIL	2- ft	S-13	555092-011
597 24.9	ND 24.9	559 24.9			Jun-13-17 07:47	Jun-12-17 16:00	74.5 4.94	mg/kg RL	Jun-15-17 17:46	Jun-15-17 11:00	ND 0.00358	ND 0.00358	ND 0.00358	1	ND 0.00358	ND 0.00358	ND 0.00358	mg/kg RL	Jun-14-17 23:57	Jun-14-17 15:00	Jun-09-17 00:00	SOIL	2.5- ft	S-14	555092-012

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Project Manager Kelsey Brooks

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Final 1.000



### 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 OA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

**Project ID:** 700376.270.01

Lab Batch #: 3019519

Sample: 555092-001 / SMP

Matrix: Soil Batch:

Units:	mg/kg	<b>Date Analyzed:</b> 06/13/17 01:25	SU	RROGATE R	ECOVERY S	STUDY	
	TPI	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphen	yl		63.0	50.0	126	70-130	
1-Chloroo	ctane		95.7	100	96	70-130	

Lab Batch #: 3019519

1-Chlorooctane

Sample: 555092-002 / SMP

Batch: Matrix: Soil

Units:

mg/kg	<b>Date Analyzed:</b> 06/13/17 01:56	SU	RROGATE R	ECOVERY S	STUDY	
TPF	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		60.9	50.0	122	70-130	
		00.9	30.0	01	70-130	

Lab Batch #: 3019519

Sample: 555092-003 / SMP

Batch:

Units: mg/kg

o-Terphenyl 1-Chlorooctane

Date Analyzed: 06/13/17 03:27

onits: mg ng	SURROGATE RECOVERT STODY					
TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
o-Terphenyl	57.6	49.9	115	70-130		
1-Chlorooctane	93.7	99.7	94	70-130		

Lab Batch #: 3019519

Sample: 555092-004 / SMP

Batch: 1

Matrix: Soil

SURROGATE RECOVERY STUDY

SURROGATE RECOVERY STUDY

Units:

mg/kg

Date Analyzed: 06/13/17 03:56

TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	49.0	49.8	98	70-130	
1-Chlorocetane	87.9	99.6	88	70-130	

Lab Batch #: 3019519

Sample: 555092-005 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/13/17 04:26 SURROGATE RECOVERY STUDY							
	TPI	H by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphen	yl		63.0	49.9	126	70-130	
1-Chloroo	ctane		93.7	99.7	94	70-130	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

Project ID: 700376.270.01

Lab Batch #: 3019519

Sample: 555092-006 / SMP

Matrix: Soil Batch:

99.6

Units: mg/kg Date Analyzed: 06/13/17 04:55 SURROGATE RECOVERY STUDY							
	TPl	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphen	yl		59.3	49.8	119	70-130	

97.0

Lab Batch #: 3019519

Sample: 555092-007 / SMP

Batch:

Matrix: Soil

Units: mg/kg

1-Chlorooctane

Date Analyzed: 06/13/17 05:24

SURROGATE RECOVERY STUDY

97

70-130

70-130

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	50.0	49.8	100	70-130	
1-Chlorooctane	92.0	99.6	92	70-130	

Lab Batch #: 3019519

Sample: 555092-008 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/13/17 05:53

SURROGATE RECOVERY STUDY True Control Amount TPH by Texas1005 Flags Amount Recovery Limits Found %R %R [A] B [D]**Analytes** 70-130 63.1 50.0 126

Lab Batch #: 3019519

Sample: 555092-010 / SMP

Batch:

94.5

Matrix: Soil 1

99.9

Units:

o-Terphenyl 1-Chlorooctane

mg/kg

Date Analyzed: 06/13/17 06:49

SURROGATE RECOVERY STUDY

95

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	59.8	50.0	120	70-130	
1-Chlorooctane	94.4	99.9	94	70-130	

Lab Batch #: 3019519

Sample: 555092-011 / SMP

Batch:

Matrix: Soil

Units: 1	mg/kg	<b>Date Analyzed:</b> 06/13/17 07:18	SURROGATE RECOVERY STUDY					
		by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
o-Terphenyl		analy tes	50.6	49.9	101	70-130		
1-Chlorooctane			91.7	99.7	92	70-130		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

Project ID: 700376.270.01

Lab Batch #: 3019519

Sample: 555092-012 / SMP

Matrix: Soil Batch:

Units:

mg/kg

Date Analyzed: 06/13/17 07:47

SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	56.1	49.9	112	70-130	
1-Chlorooctane	95.3	99.7	96	70-130	

Lab Batch #: 3019519

Sample: 555092-009 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/13/17 08:16

SURROGATE RECOVERY STUDY

·					
TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
o-Terphenyl	55.0	49.9	110	70-130	
1-Chlorooctane	118	99.8	118	70-130	

Lab Batch #: 3019769

Sample: 555092-011 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 01:33

BTEX by EPA 8021B

**Analytes** 

SURROGATE RECOVERY STUDY True Control Amount Flags Found Amount Recovery Limits %R [A] [B] %R [D] 0.0287 0.0300 96 80-120

1,4-Difluorobenzene 4-Bromofluorobenzene Lab Batch #: 3019769

Sample: 555092-006 / SMP

Batch:

Matrix: Soil

86

80-120

0.0300

1

Units:

mg/kg

Date Analyzed: 06/14/17 01:49

SURROGATE RECOVERY STUDY

0.0258

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0246	0.0300	82	80-120	

Lab Batch #: 3019769

Sample: 555092-007 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 02:05 SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

Project ID: 700376.270.01

Lab Batch #: 3019769

Sample: 555092-008 / SMP

Matrix: Soil Batch:

Units:

mg/kg

**Date Analyzed:** 06/14/17 02:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes  1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 3019770

Sample: 555092-005 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 13:36

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 3019770

Sample: 555092-001 / SMP

Batch: 1

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 13:52

SURROGATE RECOVERY STUDY True Control Amount BTEX by EPA 8021B Found Amount Recovery Limits Flags [B] %R %R [A] [D]**Analytes** 0.0266 0.0300 89 80-120 0.0300 98 80-120 4-Bromofluorobenzene 0.0295

Lab Batch #: 3019770

1,4-Difluorobenzene

Sample: 555092-004 / SMP

Batch:

1

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 14:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 3019770

Sample: 555092-009 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 14:58

SURROGATE RECOVERY STUDY

ome.	SURROGATE RECOVERT STODI						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0247	0.0300	82	80-120			
4-Bromofluorobenzene	0.0347	0.0300	116	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

Project ID: 700376.270.01

Lab Batch #: 3019770

Sample: 555092-010 / SMP

Matrix: Soil Batch:

Units:

mg/kg

Date Analyzed: 06/14/17 15:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 3019774

Sample: 555092-012 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 23:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 3019910

Sample: 555092-002 / SMP

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/15/17 10:57

SURROGATE RECOVERY STUDY Control Amount True BTEX by EPA 8021B Found Amount Recovery Limits Flags [A] [B] %R %R [D]**Analytes** 0.0300 90 0.0270 80-120 0.0247 0.0300 82 80-120

4-Bromofluorobenzene Lab Batch #: 3019910

1,4-Difluorobenzene

Sample: 555092-003 / SMP

Batch:

1

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/15/17 11:13

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0328	0.0300	109	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 3019519

Sample: 725985-1-BLK / BLK

Batch:

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/12/17 18:25 SURROGATE RECOVERY STUDY

TPH by Texas1005  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
o-Terphenyl	50.8	50.0	102	70-130	
1-Chlorooctane	93.1	100	93	70-130	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

**Project ID:** 700376.270.01

Lab Batch #: 3019769

Sample: 726090-1-BLK / BLK

Matrix: Solid Batch:

Units:

mg/kg

**Date Analyzed:** 06/14/17 01:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0289	0.0300	96	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 3019770

Sample: 726122-1-BLK / BLK

Batch: 1

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/14/17 13:19

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Diffuorobenzene	0.0247	0.0300	82	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 3019774

Sample: 726126-1-BLK / BLK

Batch:

Matrix: Solid

Units:

mg/kg

/kg	<b>Date Analyzed:</b> 06/14/17 22:04	SURROGATE RECOVERY STUDY						
втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
e		0.0290	0.0300	97	80-120			

0.0277

4-Bromofluorobenzene Lab Batch #: 3019910

1,4-Difluorobenzene

Sample: 726185-1-BLK / BLK

Batch:

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/15/17 10:08

SURROGATE RECOVERY STUDY

80-120

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0315	0.0300	105	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 3019519

Sample: 725985-1-BKS / BKS

Batch:

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/12/17 18:59

SURROGATE RECOVERY STUDY

CHILL.	BURNOGATE RECOVERT STODI						
TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
o-Terphenyl	57.5	50.0	115	70-130			
1-Chlorooctane	104	100	104	70-130			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

**Sample:** 726090-1-BKS / BKS

Project ID: 700376.270.01

Lab Batch #: 3019769

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06/13/17 23:40 SURROGATE 1						STUDY	
	BTE	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorol	benzene		0.0285	0.0300	95	80-120	
4-Bromofluo	probenzene		0.0287	0.0300	96	80-120	

Lab Batch #: 3019770

Sample: 726122-1-BKS / BKS

Batch: 1

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/14/17 11:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 3019774

Sample: 726126-1-BKS / BKS

Batch: 1

Matrix: Solid

mg/kg

Units:	mg/kg	<b>Date Analyzed:</b> 06/14/17 20:29	SURROGATE RECOVERY STUDY					
	BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
		Analytes		1	[D]			
1,4-Difluor	obenzene		0.0299	0.0300	100	80-120		
4-Bromoflu	iorobenzene		0.0309	0.0300	103	80-120		

Lab Batch #: 3019910

Sample: 726185-1-BKS / BKS

Batch:

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/15/17 08:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0266	0.0300	89	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 3019519

Sample: 725985-1-BSD / BSD

Batch:

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/12/17 19:33

SURROGATE RECOVERY STUDY TPH by Texas1005 Amount True Control Found Recovery Amount Limits Flags [A] [B] %R %R [D] Analytes o-Terphenyl 57.5 50.0 115 70-130 1-Chlorooctane 103 100 103 70-130

Surrogate Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Batch:

Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

Sample: 726090-1-BSD / BSD

Project ID: 700376.270.01

Lab Batch #: 3019769

Matrix: Solid

Units: mg/kg Date Analyzed: 06/13/17 23:56	6 SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0278	0.0300	93	80-120		
4-Bromofluorobenzene	0.0287	0.0300	96	80-120		

Lab Batch #: 3019770

Sample: 726122-1-BSD / BSD

Batch:

Matrix: Solid

Units:

mg/kg

Date Analyzed: 06/14/17 11:58

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 3019774

DTEV by EDA 0031D

Sample: 726126-1-BSD / BSD

Batch:

Matrix: Solid

**Units:** 

mg/kg

Date Analyzed: 06/14/17 20:45

SURROGATE RECOVERY STUDY Control True Amount

BIEA DY EPA 8021B	Found [A]	Amount [B]	Recovery %R	Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0283	0.0300	94	80-120	

Lab Batch #: 3019910

Sample: 726185-1-BSD / BSD

Batch: 1

Matrix: Solid

SURROGATE RECOVERY STUDY

Units:

mg/kg

Date Analyzed: 06/15/17 08:47

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

Lab Batch #: 3019519

Sample: 555067-021 S / MS

1

Matrix: Soil

Units:

Units:	mg/kg	<b>Date Analyzed:</b> 06/12/17 20:42	SU	STUDY			
	TPI	H by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
o-Terphenyl			55.8	49.9	112	70-130	
1-Chloroocta	ane		102	99.8	102	70-130	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

**Project ID:** 700376.270.01

Lab Batch #: 3019769

Sample: 555092-011 S / MS

Matrix: Soil Batch:

**Units:** 

mg/kg

Date Analyzed: 06/14/17 00:12

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 3019770

Sample: 555092-005 S / MS

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 12:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 3019774

Sample: 555170-001 S/MS

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/14/17 21:01

SURROGATE RECOVERY STUDY Control Amount True BTEX by EPA 8021B Found Amount Recovery Limits Flags [A] [B] %R %R [D]**Analytes** 0.0300 114 0.0342 80-120 0.0316 0.0300 105 80-120

4-Bromofluorobenzene Lab Batch #: 3019910

1,4-Difluorobenzene

Sample: 555245-002 S / MS

Batch:

1

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/15/17 09:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 3019519

Sample: 555067-021 SD / MSD

Batch:

Matrix: Soil

Units:

mg/kg

**Date Analyzed:** 06/12/17 21:15

SURROGATE RECOVERY STUDY

	SORROGNIE RECOVERI STODI				
TPH by Texas1005	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
o-Terphenyl	58.0	50.0	116	70-130	
1-Chlorooctane	105	99.9	105	70-130	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### Form 2 - Surrogate Recoveries

Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Orders: 555092,

**Project ID:** 700376.270.01

Lab Batch #: 3019769

Sample: 555092-011 SD / MSD

Matrix: Soil Batch:

Units:

mg/kg

Date Analyzed: 06/14/17 00:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0291	0.0300	97	80-120	
4-Bromofluorobenzene	0.0357	0.0300	119	80-120	

Lab Batch #: 3019770

Sample: 555092-005 SD / MSD

Matrix: Soil Batch:

Units:

mg/kg

Date Analyzed: 06/14/17 12:31

SURROGATE RECOVERY STUDY

	50	MICOMIE N	ECCVERT	JIODI	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0337	0.0300	112	80-120	
4-Bromofluorobenzene	0.0356	0.0300	119	80-120	

Lab Batch #: 3019774

Sample: 555170-001 SD / MSD

Batch:

Matrix: Soil

Units:	mg/kg	<b>Date Analyzed:</b> 06/14/17 21:17	SU	RROGATE R	ECOVERY S	STUDY	
	ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes			[D]		
1,4-Difluoi	robenzene		0.0263	0.0300	88	80-120	
4-Bromofl	uorobenzene		0.0336	0.0300	112	80-120	

Lab Batch #: 3019910

Sample: 555245-002 SD / MSD

Batch:

Matrix: Soil

Units:

mg/kg

Date Analyzed: 06/15/17 09:19

SURROGATE	RECOVERY	STUDY
-----------	----------	-------

BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0261	0.0300	87	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Surrogate Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### **BS/BSD Recoveries**



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Order #: 555092

Analyst: ALJ

Lab Batch ID: 3019769

Sample: 726090-1-BKS

Date Prepared: 06/13/2017

Batch #: 1

Date Analyzed: 06/13/2017 Project ID: 700376.270.01

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg	BLAN	BLANK /BLANK SPIKE / BLANK	SPIKE / I		SPIKE DUPLICATE RECOVERY STUDY	LICATE 1	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B	Blank Spike Sample Result Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[B]	[C]	[0]	[E]	Result [F]	[G]				
Benzene	<0.00200 0.0998	0.0856	86	0.100	0.0795	80	7	70-130	35	
Toluene	<0.00200 0.0998	0.0813	81	0.100	0.0815	82	0	70-130	35	
Ethylbenzene	<0.00200 0.0998	0.0916	92	0.100	0.0845	85	∞	71-129	35	
m,p-Xylenes	<0.00399 0.200	0.158	79	0.200	0.145	73	9	70-135	35	
o-Xylene	<0.00200 0.0998	0.0858	86	0.100	0.0821	82	4	71-133	35	
			•							

**Date Prepared:** 06/13/2017 Date Analyzed: 06/14/2017

Analyst:

ALJ

Lab Batch ID: 3019770	Sample: 726122-1-BKS	3KS	Batch #: ]	1#: 1					Matrix: Solid	olid		
Units: mg/kg			BLANI	BLANK /BLANK SPIKE / BLANK S	PIKE / H	SLANK S	SPIKE DUPLICATE RECOVERY STUDY	JCATE 1	RECOVE	RY STUD	Y	
ВТЕХ by	BTEX by EPA 8021B	Blank Sample Result	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes			[B]	[C]	[0]	[E]	Result [F]	[G]				
Benzene		<0.00200	0.100	0.0910	91	0.100	0.0841	84	8	70-130	35	
Toluene	A CAMPAGNA C	<0.00200	0.100	0.0899	90	0.100	0.0818	82	9	70-130	35	
Ethylbenzene		<0.00200	0.100	0.102	102	0.100	0.0951	95	7	71-129	35	
m,p-Xylenes		<0.00400	0.200	0.178	89	0.201	0.165	82	8	70-135	35	
o-Xylene		<0.00200	0.100	0.0960	96	0.100	0.0882	88	~	71-133	35	

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



### **BS/BSD Recoveries**



Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Order #: 555092

ALJ

Lab Batch ID: 3019774

Date Prepared: 06/14/2017

Date Analyzed: 06/14/2017 Project ID: 700376.270.01

Sample: 726126-1-BKS Batch #: 1

Matrix: Solid

mg/kg RLANK /BLANK SPIKE / BLANK SPIKE DIJPLICATE RECOVERY STUDY

Cures.		DLANA	/BLAINN	SELINE / D	LAINN	BLAIN / BLAIN STINE / BLAIN STINE DUTLICATE NECOVENT STOP	TALE	AECO A E	ער אני אני	1,1	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	,	[B]	[C]	[¤]	[E]	Result [F]	[G]				
Benzene	<0.00202	0.101	0.0860	85	0.100	0.0843	84	2	70-130	35	
Toluene	<0.00202	0.101	0.0827	82	0.100	0.0777	78	6	70-130	35	
Ethylbenzene	<0.00202	0.101	0.0972	96	0.100	0.0903	90	7	71-129	35	
m,p-Xylenes	<0.00404	0.202	0.167	83	0.200	0.154	77	<b>∞</b>	70-135	35	
o-Xylene	<0.00202	0.101	0.0948	94	0.100	0.0864	86	9	71-133	35	
				,							

Date Prepared: 06/15/2017 Date Analyzed: 06/15/2017

Sample: 726185-1-BKS Batch #: 1 Matrix: Solid

Analyst:

ALJ

Lab Batch ID: 3019910	Sample: 726185-1-I	3KS	Batch	#: 1					Matrix: S	solid		
ng/kg			BLANI	₹/BLANK S	PIKE / B		PIKE DUPI	JCATE 1	RECOVE	CRY STUD	Y	
STEX by EPA 80	)21B	Blank Sample Result	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
38			[8]	[C]	[a]	[E]	Result [F]	[G]				
	ACTION AND ACTION AND ACTION AND ACTION AND ACTION AND ACTION ACTION AND ACTION	<0.00202	0.101	0.0791	78	0.101	0.0779	77	2	70-130	35	
		<0.00202	0.101	0.0771	76	0.101	0.0724	72	6	70-130	35	
v		<0.00202	0.101	0.0880	87	0.101	0.0819	81	7	71-129	35	
		<0.00403	0.202	0.150	74	0.202	0.145	72	3	70-135	35	
	A CONTRACTOR OF THE CONTRACTOR	<0.00202	0.101	0.0805	80	0.101	0.0822	81	2	71-133	35	
	Batch ID: 3019910 : mg/kg  BTEX by EPA 80  Analytes  Benzene Toluene Ethylbenzene Ethylbenzene m,p-Xylenes o-Xylene	by EPA 80	Sample: 726185-1-B by EPA 8021B	Sample: 726185-1-BKS         Blank [A]       \$ Sample Result [A]       \$          <0.00202	Sample: 726185-1-BKS         Blank [A]       \$ Sample Result [A]       \$          <0.00202	Sample: 726185-1-BKS         Blank [A]       \$ Sample Result [A]       \$          <0.00202	Sample: 726185-1-BKS   Batch #: 1					

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: Hackberry Hills #4 Plains-Camille Bryant

Work Order #: 555092

Analyst: MGO

Lab Batch ID: 3019863

Sample: 726141-1-BKS

Date Prepared: 06/15/2017

**Project ID:** 700376.270.01 **Date Analyzed:** 06/15/2017

Matrix: Solid

Batch #: 1

Chloride by EPA 300         Blank Spike Sample Result Added         Spike Spike Spike Spike Spike Result (A) Spike	5/12/20	Date Analyzed: 06/12/2017	Date Ar			17	Date Prepared: 06/12/2017	ate Prepar	<b>D</b> .	Analyst: ARM
hloride by EPA 300  Blank Spike Sample Result [A]  [B]  [C]  Blank Spike Spike Spike Spike Spike Spike Added Spike Spike Added Spike		2	98	246	250	100	251	250	<5.00	Chloride
Blank Spike Blank Blank Spike Blank Blk. Spk Sample Result Added Spike Spike Added Spike Dup. RPD [A] Result %R Duplicate %R %			[ଦ୍ର	Result [F]	[표]	[D]	[C]	[B]		Analytes
Blank Spike Blank Blank Spike Blank Blk. Spk Sample Result Added Spike Spike Added Spike Dup. RPD		%	%R	Duplicate		%R	Result		[A]	
Blank Spike Blank Blank Spike Blank Blk Spk	ĭ	RPD	Dup.	Spike	Added	Spike	Spike	Added	Sample Result	•
	Q		Blk. Spk	Blank	Spike	Blank	Blank	Spike	Blank	Chloride by EPA 300

Units: Lab Batch ID: 3019519 C12-C28 Range Hydrocarbons C6-C12 Range Hydrocarbons Analytes mg/kg TPH by Texas1005 Sample: 725985-1-BKS Sample Result Blank <25.0 <25.0  $\overline{\underline{\mathsf{A}}}$ Spike Added 1000 1000  $[\mathbf{B}]$ BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Batch #: 1 Blank Spike Result [C] 923 873 Blank Spike %R [D] 92 87 Spike Added 1000 1000 E Blank Spike Duplicate Result [F] 932 951 Blk. Spk Dup. %R 95 93 Matrix: Solid RPD % w 7 Control Limits %R 75-125 75-125 %RPD Control Limits 25 25

Flag

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





Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Order #: 555092

Date Analyzed: Lab Batch ID: 06/14/2017 3019769

Reporting Units: mg/kg

QC- Sample ID: 555092-011 S

Batch #:

Matrix: Soil

Project ID: 700376.270.01

**Date Prepared:** 06/13/2017 Analyst: ALJ

# MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

		k: Soil	1 Matrix: Soil	Batch #:	Ba	005 S	555092	QC- Sample ID: 555092-005 S	<b>3</b> 019770	Lab Batch ID:
71-133	42	51	0.0519	0.101	33	0.0338	0.101	<0.00202		o-Xylene
70-135	16	35	0.0707	0.203	30	0.0603	0.202	<0.00404	enes	m,p-Xylenes
71-129	4	40	0.0399	0.101	38	0.0385	0.101	<0.00202	izene	Ethylbenzene
70-130	23	56	0.0568	0.101	45	0.0452	0.101	<0.00202		Toluene
70-130	17	43	0.0436	0.101	51	0.0518	0.101	<0.00202		Benzene
8	8	[G]	Kesuit [F]	Added [E]	[D]	2	[B]	[A]	Analytes	
Control Limits	RPD	Spiked Dup.	Duplicate Spiked Sample	Spike	Spiked Sample	Spiked Sample Spiked Result Sample	Spike	Parent Sample Beenlt	BTEX by EPA 8021B	

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Analyst: ALJ

**Date Prepared:** 06/13/2017

Reporting Units: Date Analyzed:

mg/kg

06/14/2017

BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Spike Result S	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	[D]	Added [E]	Result [F]	[G]	%	%R	%RPD	
Benzene	<0.00200	0.100	0.0749	75	0.101	0.0752	74	0	70-130	35	
Toluene	<0.00200	0.100	0.0709	71	0.101	0.0701	69	_	70-130	35	×
Ethylbenzene	<0.00200	0.100	0.0806	81	0.101	0.0801	79	1	71-129	35	
m,p-Xylenes	<0.00401	0.200	0.144	72	0.202	0.137	68	S	70-135	35	×
o-Xylene	<0.00200	0.100	0.0803	80	0.101	0.0767	76	5	71-133	35	

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

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

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

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Final 1.000





Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Order #: 555092

Date Analyzed: Lab Batch ID: 06/14/2017 3019774

QC- Sample ID: 555170-001 S Date Prepared: 06/14/2017

Project ID: 700376.270.01

Matrix: Soil

Analyst: ALJ

Batch #:

Reporting Units:	mg/kg		3	(ATRIX SPIK	E/MAT	RIX SPI	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE REC	OVERY	STUDY		
	BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Spiked Sample	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
	Analytes	Result [A]	Added [B]	[C]	%R [D]		Result [F]	%R [G]	%	%R	%RPD	
Benzene		<0.00200	0.0998	0.0678	68	0.0994	0.0406	4	50	70-130	35	¥
Toluene		<0.00200	0.0998	0.0625	63	0.0994	0.0451	45	32	70-130	35	×
Ethylbenzene		<0.00200	0.0998	0.0567	57	0.0994	0.0457	46	21	71-129	35	×
m,p-Xylenes		<0.00399	0.200	0.103	52	0.199	0.0695	35	39	70-135	35	XF
o-Xylene		<0.00200	0.0998	0.0590	59	0.0994	0.0504	51	16	71-133	35	×

Lab Batch ID: 3019910 QC- Sample ID: 555245-002 S

Reporting Units: Date Analyzed:

mg/kg

06/15/2017

Date Prepared: 06/15/2017

Batch #: Matrix: Soil

Analyst: ALJ

# MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Spike Result S	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Contro	ıtrol nits
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	[G]	%	%R	~	RPD
Benzene	<0.00201	0.101	0.0572	57	0.100	0.0546	. 55	C <sub>1</sub>	70-130		35
Toluene	<0.00201	0.101	0.0740	73	0.100	0.0537	54	32	70-130		35
Ethylbenzene	<0.00201	0.101	0.0634	63	0.100	0.0617	62	3	71-129		35
m,p-Xylenes	<0.00402	0.201	0.111	55	0.200	0.105	53	6	70-135		35
o-Xylene	<0.00201	0.101	0.0646	64	0.100	0.0620	62	4	71-133		35

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

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

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

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Final 1.000





Project Name: Hackberry Hills #4 Plains-Camille Bryant

Work Order #: 555092

Date Analyzed: Lab Batch ID: 06/15/2017 3019863

Reporting Units: mg/kg

> QC- Sample ID: 555092-005 S Date Prepared: 06/15/2017

> > Batch #:

Matrix: Soil

Project ID: 700376.270.01

Analyst: MGO

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Chloride	Analytes		CHIOING BJ ELIX 300	Chloride by EPA 300
175	[A]	Result	Sample	Parent
247	[B]	Added	Spike	
412	,	<u>C</u>	Result	Spiked Sample
96	[Φ]	%R	Sample	Spiked
247		Added		
413	,	Result [F]	Spiked Sample	Duplicate
96			Dup.	
0		%	RPD	
90-110		%R	Limits	Control
20		%RPD	Limits	Control
		-	Flag	

Date Prepared: 06/15/2017 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Analyst: MGO

QC- Sample ID: 555423-001 S

Batch #:

Matrix: Soil

Reporting Units: Date Analyzed:

mg/kg

06/15/2017 3019863

Lab Batch ID:

			Soil	Matrix:	Ratch #:	Ra	-021 S	555067	OC- Sample ID: 555067-021 S	3019519	Lab Batch ID:
	90-110	2	101	292	248	103	297	248	41.0		Chloride
	%	%	(ଦ୍ର	Kesuit [F]	Added [E]	[D]		[B]	[A]	Analytes	
ı it	Limits	RPD		Spiked Sample	Spike	Sample		Spike	Sample	CHIOLING BY ELEX 500	
2	Conti			Duplicate		Spiked	Spiked Sample		Parent	Chloride by EPA 300	

Batch ID:	3019519	QC- Sample ID: 555067-021 S	Batch #: 1	Matrix: Soil
e Analyzed:	06/12/2017	Date Prepared: 06/12/2017	Analyst: ARN	S

Date

Reporting Units:

mg/kg

# MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

C12-C28 Range Hydrocarbons	C6-C12 Range Hydrocarbons	Analytes	TPH by Texas1005
62.0	<25.0	Result [A]	Parent Sample
998	998	Added [B]	Spike
1060	998	G	Spiked Sample Result
100	100	[D]	Spiked Sample
999	999	Added [E]	Spike
1050	1030	Result [F]	Duplicate Spiked Sample
99	103	% <b>R</b> [G]	Spiked Dup.
1	w	%	RPD
75-125	75-125	%R	Control Limits
25	25	%RPD	Control Limits
			Flag

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

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

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Service Center - Baton Rouge, LA (832) 712-8143 Xenco Quote #

Service Center- Amarillo, TX (806)678-4514 Service Center- Hobbs, NM (575) 392-7550 Xenco Job # TO TO

			MMM	www.xenco.com	ш					<u>.                                    </u>	* 722 2215	かり	しろえ	
									Analytical Information	nformation		)	Matter N	( )
Client / Reporting Information		Proje	ct Informat	LO LO					\$				S KIRBER	San
Company Name / Branch: TALON CPB	Projec	Project Name/Number:	umber: 770,0/	177	0	,			נשצי				W = Water S = Soil/Sec	/Solid
Company Address:	Project	Project Location:  Ack Devil HUS # 4	\ \{\}	tus	#	4			vol				GW = Ground Water DW = Drinking Water P = Product	d Water ng Water
dadkings talonipe.com 44 8035	S78 Invoice	Invoice To: PCANS-CAMULE	3 #	3	TOTAL 1	B	fart.		J				SW = Surface Water SL · Sludge OW = Ocean/Sea Water WI = Wipe	e Water /Sea Water
Project Contact: D- ADKINS	TedmiN Od			70-1107	1	277		<del>]</del>	7- 7-8-2-8-1				0 = 0il WW = Waste Water	Water
Samplers's Name: D. ADK(NS								70	<del>V ]</del> 2_L				A≒Alr	
	Collection	ion			Number	Number of preserved bottles	d bottles		(S)					
No. Field ID / Point of Collection	Sample Deoth	Ë	# of # Of Watrix	ıcı	laOH/Zn cetate ivolate	ISSO4	IEOH	IONE					į.	
5-3	3.25 619				1	4	145435	1/7	7				rieid Comments	w
2 S-4	1.5' 6/9		N					7	1					
3 S-5	3, 6/4		N					1	1					
4 S-6	૭	9	n	-				7	1					
2 - 2	6/9 01	ر د	N	Value Table				7	)					
°. N D	5,66	4	V					7	1					
7 5-9	6/9 , 4	3)	S					1	1					
0/ l N	3, 6/	6,	V	۰				7	7					
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10 S-/2		0-	V					\ \ \	1					
Turnaround Time ( Business days)			Data	Data Deliverable Information	Informatic	u e				Notes:				
Same Day TAT Same Day TAT		Leve	Level II Std QC			Level IV	Level IV (Full Data Pkg /raw data)	Pkg /raw	iata)					
Next Day EMERGENCY 7 Day TAT		Leve	Level III Std QC+ Forms	+ Forms		TRRP Level IV	Vel IV							
2 Day EMERGENCY Contract TAT		Leve	Level 3 (CLP Forms)	ırms)		UST / RG -411	3 -411							
3 Day EMERGENCY		Leve	Level II Report with TRRP checklist	with TRI	RP check	list								A. C.
TAT Starts Day received by Lab, if received by 5:00 pm	00 pm									ED-EX / UP	FED-EX / UPS: Tracking #	-		
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Relinquished by:	Date Time:	Received		670	1.	Custody Seal #	Seal #		Preserved where applicable	plicable	ō _	On Ice	(6-23: +0.2°C)	
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### CHAIN OF CUSTODY

XENCO LABORATORIES Setting the Standard since 1990

Stafford, TX (281) 240-4200 Dallas, TX (214) 902-0300

Lubbock, TX (806) 794-1296 El Paso, TX (915) 585-3443

San Antonio, TX (210) 509-3334 Midland, TX (432) 704-5440

Service Center - Baton Rouge, LA (832) 712-8143 Phoenix, AZ (480) 355-0900

Service Center- Amarillo, TX (806)678-4514 Service Center- Hobbs, NM (575) 392-7550

	www.xenco.com		Xenco Quote #	Xenco Job#		
			Analytical Information	ormation	Matrix Codes	
Company Name / Branch: TALON しゅん	Project Information umber: 7 & 376	270,01	5		W = Water S = Soil/Sed/Solid	
408 WITELES ATESE NM	Project Location:  Ach bery	Who #4	ימקב		GW = Ground Water  DW = Drinking Water  P = Product  SW = Surface Water	
Email: 1ad KINS Stalan Pe.Com 441 4835	Invoice To: NA	(US) 1/0 B 1/1 1	S		SL-Sludge OW = Ocean/Sea Water WI = Wipe O = Oil	ter
Project Contact: D. ADKINS Samplers's Name: ADKINS	PO Number:	1017-077	128X HO		WW = Waste Water A = Air	
0.0	$ \hat{j} $	Number of preserved bottles	. 21 19 11			
No. Field ID / Point of Collection Sample	10)	ONE 9H2O4 S2O4 NO3 001			C P1 0:1	
1 5-73	6/9	А Н И			STEEL CO DEST	
2 5-14	1		/			
4						3
S						
9						
4						
8						
6						
10						1111
Time ( Business days)	Data Deliverable Information			Notes:		
Same Day TAT 5 Day TAT	Level II Std QC	Level IV (Full Data Pkg /raw data)	/raw data)	The control of the co		
Next Day EMERGENCY 7 Day TAT	Level III Std QC+ Forms	TRRP Level IV				
2 Day EMERGENCY	Lavel 3 (CLP Forms)	UST/RG-411				
3 Day EMERGENCY	Level II Report with TRRP checklist	' checklist				
TAT Starts Day received by Lab, if received by 5:00 pm	,			FED-EX / UPS: Tracking #		
Relinquished by Sampler.   Date Ti	SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY    Date Time:   Received By:   Date Time:   Received By:   Date Time   Date Time	NGE POSSESSION, INCLUDING COL	RIER DELIVERY Date Time:	Received By:		
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5 Simplified Strangists of this decrimant and collective includes of seconditutes and the decrimant and collective of seconditutes and the second sec	X of votacion	) ) ) )	V V V V V V V V V V V V V V V V V V V	V V	Contected Tellip.	***************************************

Notice, signative of this obcument and relinquishment of samples constitutes a value purchase ofder from client company to Xenco, its attitutes and subcontractors, it assigns standard terms and conditions of service. Xenco will be itable of the cost of samples. Any samples rec



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 06/12/2017 10:11:52 AM

Work Order #: 555092

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

Temperature Measuring device used: r8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		4.1	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seal present on shipping conta	iner/ cooler?	N/A	
#5 *Custody Seals intact on shipping contai	ner/ cooler?	N/A	
#6 Custody Seals intact on sample bottles?		N/A	
#7 *Custody Seals Signed and dated?		N/A	
#8 *Chain of Custody present?		Yes	
#9 Sample instructions complete on Chain of	of Custody?	Yes	
#10 Any missing/extra samples?		No	
#11 Chain of Custody signed when relinquis	shed/ received?	Yes	
#12 Chain of Custody agrees with sample la	abel(s)?	Yes	
#13 Container label(s) legible and intact?		Yes	
#14 Sample matrix/ properties agree with Cl	hain of Custody?	Yes	
#15 Samples in proper container/ bottle?		Yes	
#16 Samples properly preserved?		Yes	
#17 Sample container(s) intact?		Yes	
#18 Sufficient sample amount for indicated to	test(s)?	Yes	
#19 All samples received within hold time?		Yes	
#20 Subcontract of sample(s)?		N/A	
#21 VOC samples have zero headspace?		N/A	

* Must be completed for after-hours de	elivery of samples prior to plac	ing in the refrigerator
Analyst:	PH Device/Lot#:	
Checklist completed by:	Marithza Anaya	Date: <u>06/12/2017</u>
Checklist reviewed by:	Kelsey Brooks	Date: <u>06/12/2</u> 017

### **Analytical Report 557665**

### for Talon LPE

Project Manager: David Adkins
Hackberry Hills #4
700376.270.01
18-JUL-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

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



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MS / MSD Recoveries	11
Chain of Custody	12
Sample Receipt Conformance Report	13





18-JUL-17

Project Manager: David Adkins

**Talon LPE** 408 W. Texas St. Artesia, NM 88210

Reference: XENCO Report No(s): 557665

Hackberry Hills #4

Project Address: Hackberry Hills #4

### **David Adkins:**

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) 557665. 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. 557665 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** 

Knishoah

Project Manager

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### **Sample Cross Reference 557665**



### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
S-13A	S	06-30-17 11:30		557665-001
S-15	S	06-30-17 11:40		557665-002
S-16	S	06-30-17 11:50		557665-003
S-17	S	06-30-17 12:00		557665-004
S-18	S	06-30-17 12:10		557665-005



### CASE NARRATIVE

Client Name: Talon LPE
Project Name: Hackberry Hills #4

Project ID: 7003

700376.270.01

Work Order Number(s): 557665

Report Date: 18

18-JUL-17

Date Received: 07/14/2017

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None





### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id: S-13A

Matrix:

Soil

Sample Depth:

Lab Sample Id: 557665-001

Date Collected: 06.30.17 11.30

Date Received: 07.14.17 10.06

Prep Method: E300P

Analytical Method: Chloride by EPA 300 Analyst:

MGO

% Moist:

Tech:

MGO

Seq Number: 3022517

Date Prep: 07.18.17 09.30

Prep seq: 727803

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	47.5	4.92	0.845	mg/kg	07.18.17 10:35		1

Sample Id:

S-15

Matrix:

Soil

Sample Depth:

Lab Sample Id: 557665-002

Date Collected: 06.30.17 11.40

Date Received: 07.14.17 10.06

Analytical Method: Chloride by EPA 300

Analyst:

MGO

% Moist:

Tech:

Prep Method: E300P

Seq Number: 3022517

Date Prep: 07.18.17 09.30

MGO

Prep seq: 727803

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	59.6	4.97	0.853	mg/kg	07.18.17 10:58		1

Sample Id:

S-16

Matrix:

Soil

Sample Depth:

Lab Sample Id: 557665-003

Date Collected: 06.30.17 11.50

Date Received: 07.14.17 10.06

Analytical Method: Chloride by EPA 300

MGO

% Moist:

Prep Method: Tech:

E300P MGO

Analyst:

Seq Number: 3022517

Date Prep: 07.18.17 09.30

Prep seq: 727803

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	73.2	4.96	0.852	mg/kg	07.18.17 11:06		1

Sample Id:

S-17

Matrix:

Soil

Date Collected: 06.30.17 12.00

Sample Depth:

Lab Sample Id: 557665-004

Date Received: 07.14.17 10.06

Prep Method: E300P

Analytical Method: Chloride by EPA 300

MGO

% Moist:

Tech:

MGO

Analyst:

Seq Number: 3022517

Date Prep: 07.18.17 09.30

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	29.8	4.96	0.852	mg/kg	07.18.17 11:14		1





### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id: S-18

Lab Sample Id: 557665-005

Analytical Method: Chloride by EPA 300

Seq Number: 3022517

Analyst:

MGO

Matrix:

% Moist:

Soil

Date Collected: 06.30.17 12.10

Sample Depth:

Date Received: 07.14.17 10.06

Prep Method: E300P

MGO

Tech:

Date Prep: 07.18.17 09.30

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	130	4.94	0.848	mg/kg	07.18.17 11:21		1





### Talon LPE, Artesia, NM

Hackberry Hills #4

Solid

Sample Id: **727803-1-BLK** 

Seq Number: 3022517

1-BLK Matrix:

Sample Depth:

Lab Sample Id: 727803-1-BLK Date Collected:

Date Received:

Tech:

Prep Method: E300P

MGO

Analytical Method: Chloride by EPA 300

% Moist:

Analyst: MGO

Date Prep: 07.18.17 09.30

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Chloride	16887-00-6	< 0.858	5.00	0.858	mg/kg	07.18.17 10:12	U	1



### Flagging Criteria



- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- **B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- **D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F RPD exceeded lab control limits.
- J The target analyte was positively identified below the quantitation limit and above the detection limit.
- U Analyte was not detected.
- L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K Sample analyzed outside of recommended hold time.
- JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- \*\* Surrogate recovered outside laboratory control limit.
- BRL Below Reporting Limit.
- **RL** Reporting Limit

MDL Method Detection Limit

SDL Sample Detection Limit

LOD Limit of Detection

PQL Practical Quantitation Limit

MQL Method Quantitation Limit

LOQ Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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### BS / BSD Recoveries



Project Name: Hackberry Hills #4

Work Order #: 557665

MGO Analyst:

Lab Batch ID: 3022517

Sample: 727803-1-BKS

**Date Prepared:** 07/18/2017

Batch #: 1

**Project ID:** 700376.270.01

Date Analyzed: 07/18/2017

Matrix: Solid

	Flag		
J.	Control Limits %RPD		20
ERY STUL	Control Limits %R		90-110
RECOV	RPD		
LICATE	Blk. Spk Dup. %R	[0]	103
SPIKE DUP	Blank Spike Duplicate	Result [F]	257
3LANK	Spike Added	9	250
SPIKE / F	Blank Spike %R	<u>[a</u>	102
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	Blank Spike Result	[C]	254
BLAN	Spike Added	[B]	250
	Blank Sample Result [A]		<0.858
mg/kg	Chloride by EPA 300	nalytes	Chloride
Units:		¥	Chi

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

Final 1.000





Project Name: Hackberry Hills #4

QC-Sample ID: 557365-002 S 07/18/2017 3022517 Date Analyzed: Lab Batch ID:

557665

Work Order #:

Batch #: **Date Prepared:** 07/18/2017

Matrix: Soil Analyst: MGO

**Project ID:** 700376.270.01

Flag Limits %RPD Control 20 Control Limits %R 90-110 MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY RPD 0 Spiked Dup. G.R. 103 Duplicate Spiked Sample Result [F] 335 Spike Added 246  $\Xi$ Spiked Sample Spiked Result Sample %<u>R</u> 102  $\Box$ 334 Spike Added 246 <u>B</u> Parent Sample Result 82.6 Ā Chloride by EPA 300 Analytes mg/kg Reporting Units: Chloride

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Analyst: MGO **Date Prepared:** 07/18/2017 07/18/2017 mg/kg Reporting Units: Date Analyzed:

Matrix: Soil

Batch #:

QC-Sample ID: 557665-001 S

3022517

Lab Batch ID:

H Pag		
Control	%RPD	20
Control	%R	90-110
RPD	%	-
	%R [G]	109
Duplicate Sniked Sample	Result [F]	316
Spike	Added [E]	246
Spiked Sample	%R [D]	110
Spiked Sample Spik Result Samr	<u>D</u>	318
	Added [B]	246
Parent Sample	Result [A]	47.5
Chloride by EPA 300	Analytes	Chloride

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

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

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



### CHAIN OF CUSTODY

Stafford, Texas (281-240-4200) Setting the Standard since 1990

5	ω						<del>-</del> 1			Т-							-					,									
	Relinquished by:	Relination by Salphon	IA I SIGNIS DAY received by Lab, if received by 3:00 pm	TAT COLUMN DENOT	3 Day EMERGENCY	2 Day EMEDGENCY	Next Day EMEDGENCY	Turnaround Time ( Business days)	10	9	8	7	6	5 - 70	1 S-17	3 5-16	2 0-10	20-		No. Field ID / Point of Collection		Xm wilson	Samplers's Name: J. Policins	Gadkers & tales person	Email:	40810. Texas Arteria No	Company Address:	Client / Reporting Information Company Name / Branch:		Service Center - San Antonio, Texas (210-509-3334)	Dallas, Texas (214-902-0300)
	D . (	5 0 p	Lab, if received by 3:00 pm  SAMPLE CUSTODY MUST		Contract TAT	7 Day TAT	5 Day TAT	aye)														Sec	SC	percon 441.	Phone No: 5%	the No	1LPE	on		Texas (210-509-3334)	
	E1-41	Date Time:   [ ]   Received By Date Time: Received By	BE DOCUMENT										V /EnC	<i>k</i> ; :	12.00	//:50	1 1/2	6/36/19 11:30	Sample Date Time		Collection	SRS	PO Number:	1838 Klain	Invoice To:	1/2/11	Project Location:				
neceived by:	3 ANCESIO.	red By:	ED BELOW EACH TIME SAMPLES CHANGE POSSESSION INCLIDING COURSES AND WESTERN	TRRP Checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Date Deliverable Information					C	9		20	11: to	8	Matrix bottles HCI	Žn Z		井とごって	the support	; t . X	wary sells		lumber:	Project Information		www.xenco.com	
Custody Seal #	4	Relinquished By: 2 37 ttany (sx	NGE POSSESSION INCLUDING		UST/RG-411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	ormation											Acetate HNO3 H2SO4 NaOH NaHSO4	Jimber of preserved		j			7 1 12	1#1	100376.270.01	and the second s	li	3	
Preserved where applicable	7-15-1	Date Timp: 18:00					Pkg /raw data)										\	1	NONE	hlo	25.0	id	le «	<u></u>	H	tas		Analyt		Xenco Quote #   Xe	Name of the
	7-15-17 15:20 Received By:	1 18:00 Rece	FED-EX/UPS: T	CE	<u></u>		3 DAY	Notes:																				Analytical Information		(770-449-8800)	( +ut-000-1000)
On Ice Cooler Temp.		Corrected Leitip: 52.	(6-23: +0.2°C)	CF:(0-6:-0.2°C)	Temn: 32.		TAT PU												ņ.										20110	Tampa, Florida (813-620-2000)	Lakeland, Florida (863-646-8526)
Thermo. Corr. Factor		52.5	) !	the section of the se	IR ID:R-8	\ \ \	LS. The			And the second s								rielu Comments			WW= Waste Water	0 ≈ Oil	ww= waste water W = Wipe	SW = Surface water SL = Sludge	P = Product	GW =Ground Water	A= Air	Matrix Codes	dob	3-620-2000)	363-646-8526)

5
Notice: Signature of this document and relinquishment of samples constitutes a valid purchase order from client company to XENCO Laboratories and its affiliates, subcontractors and assigns XENCO's standard terms and conditions of service unless previously neglociated under a fully executed client contract.

Cooler Temp. Thermo. Corr. Factor  $\mathcal{GO}, \mathcal{G}) \circ \mathcal{C}$ 



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 07/14/2017 10:06:00 AM

Work Order #: 557665

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

Temperature Measuring device used: R8

Sample	Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	32.3	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	No	
#4 *Custody Seal present on shipping container/ coole	er? N/A	
#5 *Custody Seals intact on shipping container/ cooler	? <b>N/A</b>	
#6 Custody Seals intact on sample bottles?	N/A	
#7 *Custody Seals Signed and dated?	N/A	
#8 *Chain of Custody present?	Yes	
#9 Sample instructions complete on Chain of Custody	? Yes	
#10 Any missing/extra samples?	No	
#11 Chain of Custody signed when relinquished/ recei	ved? Yes	
#12 Chain of Custody agrees with sample label(s)?	Yes	
#13 Container label(s) legible and intact?	Yes	
#14 Sample matrix/ properties agree with Chain of Cus	stody? Yes	
#15 Samples in proper container/ bottle?	Yes	
#16 Samples properly preserved?	Yes	
#17 Sample container(s) intact?	Yes	
#18 Sufficient sample amount for indicated test(s)?	Yes	
#19 All samples received within hold time?	Yes	
#20 Subcontract of sample(s)?	N/A	
#21 VOC samples have zero headspace?	N/A	

Must be c	ompleted for after-hours de	livery of samples prior to pla	cing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	Jessica Warner  Jessica Kramer	Date: <u>07/17/2</u> 017
	Checklist reviewed by:	Mmy Moah Kelsey Brooks	Date: <u>07/17/2</u> 017

### **Analytical Report 561861**

### for Talon LPE

Project Manager: David Adkins
Hackberry Hills #4
700376.270.0
05-SEP-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

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



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05-SEP-17

Project Manager: David Adkins

**Talon LPE** 408 W. Texas St. Artesia, NM 88210

Reference: XENCO Report No(s): 561861

Hackberry Hills #4

Project Address: Carlsbad NM

### David Adkins:

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) 561861. 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. 561861 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Knis Hoah

Project Manager

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### **Sample Cross Reference 561861**



### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
S-11	S	08-29-17 15:37		561861-001



### CASE NARRATIVE

Client Name: Talon LPE
Project Name: Hackberry Hills #4

Project ID: 700376.270.0 Work Order Number(s): 561861

Report Date: *05-SEP-17*Date Received: *08/31/2017* 

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None





### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id: S-11

Lab Sample Id: 561861-001

Matrix:

Soil

Sample Depth:

Date Collected: 08.29.17 15.37

Date Received: 08.31.17 14.08

Prep Method: 1005

Analytical Method: TPH by SW8015 Mod

ARM

% Moist:

Tech:

ARM

Seq Number: 3026616

Analyst:

Date Prep: 09.02.17 14.00

		r						
Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Facto
Gasoline Range Hydrocarbons (GRO)	PHC610	37.5	15.0	7.99	mg/kg	09.03.17 04:41		1
Diesel Range Organics (DRO)	C10C28DRO	4380	15.0	8.12	mg/kg	09.03.17 04:41		1
Oil Range Hydrocarbons (ORO)	PHCG2835	1140	15.0	8.12	mg/kg	09.03.17 04:41		1
Total TPH	PHC635	5560		7.99	mg/kg	09.03.17 04:41		
Surrogate		% Recovery		Limits	Un	its Analysis	Date	Flag
1-Chlorooctane		98		70 - 13	35 %	ó		
o-Terphenyl		81		70 - 13	35 %	ó		





### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id:

730330-1-BLK

Matrix:

Solid

Sample Depth:

Lab Sample Id: 730330-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst:

ARM

% Moist:

Tech:

ARM

Seq Number: 3026616

Date Prep: 09.02.17 14.00

Prep	sea.	730330

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	09.03.17 01:56	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	09.03.17 01:56	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	09.03.17 01:56	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	09.03.17 01:56	U	
Surrogate		% Recovery		Limits	Uni	its Analysis	Date	Flag
1-Chlorooctane		105		70 - 13	35 %			
o-Terphenyl		104		70 - 13	35 %			



### 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.
- 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

POL Practical Quantitation Limit MOL Method Quantitation Limit

LOO Limit of Quantitation

**DL** Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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### Form 2 - Surrogate Recoveries

Project Name: Hackberry Hills #4

Work Orders: 561861,

**Project ID:** 700376.270.0

Lab Batch #: 3026616

Sample: 730330-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/03/17 01:56	SU	RROGATE R	ECOVERY :	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	52.0	50.0	104	70-135	

Lab Batch #: 3026616

Sample: 730330-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 09/03/17 02:16	SU	RROGATE R	ECOVERY :	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

Lab Batch #: 3026616

**Sample:** 730330-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 09/03/17 02:37	SU	RROGATE R	<b>ECOVERY</b>	STUDY	
ТРН	by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes			[D]	<u></u>	
1-Chlorooctane		102	100	102	70-135	
o-Terphenyl		51.1	50.0	102	70-135	

Lab Batch #: 3026616

Sample: 561383-008 S / MS

Batch:

1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/03/17 03:18	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	99.4	99.9	99	70-135	***************************************
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 3026616

Sample: 561383-008 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 09/03/17 03:39	SU	RROGATE RI	ECOVERY S	STUDY	
TPH by SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			1-1		
1-Chlorooctane	93.7	99.8	94	70-135	
o-Terphenyl	45.1	49.9	90	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### BS / BSD Recoveries



Project Name: Hackberry Hills #4

Work Order #: 561861

Lab Batch ID: 3026616 ARM Analyst:

Sample: 730330-1-BKS

**Date Prepared:** 09/02/2017

Batch #: 1

**Project ID:** 700376.270.0

**Date Analyzed:** 09/03/2017

Matrix: Solid

	Flag			
J.	Control Limits %RPD		35	35
ERY STUD	Control Limits %R		70-135	70-135
RECOVI	RPD		2	1
LICATE	Bik. Spk Dup. %R	<u>[5]</u>	91	103
BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	Blank Spike Duplicate	Result [F]	911	1030
BLANK S	Spike Added	Œ	1000	1000
SPIKE / 1	Blank Spike %R	ē	68	102
K/BLANK	Blank Spike Result	[C]	891	1020
BLAN	Spike Added	[B]	1000	1000
	Blank Sample Result [A]	•	<8.00	<8.13
mg/kg	TPH by SW8015 Mod	Analytes	Gasoline Range Hydrocarbons (GRO)	Diesel Range Organics (DRO)
Units:		7	Ga	Dik

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



Project Name: Hackberry Hills #4



561861 Work Order #:

Lab Batch ID:

3026616 Date Analyzed:

09/03/2017

QC-Sample ID: 561383-008 S

**Date Prepared:** 09/02/2017

Batch #:

Analyst: ARM

Matrix: Soil

**Project ID: 700376.270.0** 

Reporting Units: mg/kg		W	ATRIX SPIKI	E / MATI	RIX SPI	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE RECC	VERY S	STUDY		
TPH by SW8015 Mod	Parent Sample		Spiked Sample S Result S	Spiked Sample	Spike	Duplicate Spiked Sample		RPD	Control	Control	Flag
Analytes	Result [A]	Added [B]	[c]	%R [D]	Added [E]	Result [F]	%, [G]	%	%R	%RPD	)
Gasoline Range Hydrocarbons (GRO)	<7.99	666	988	68	866	940	94	9	70-135	35	
Diesel Range Organics (DRO)	41.5	666	1020	86	866	1020	86	0	70-135	35	

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

Page 11 of 14

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

Final 1.000

Xonco Job# 5615401		Xanco Quoto #	www.xenco.com		
Service Center- Amarillo, TX (806)678-4514	LA (832)	Phoenix, AZ (480) 355-0900	Midland, TX (432) 704-5440	El Paso, TX (915) 585-3443	Stafford, TX (281) 240-4200
Service Center- Hobbs, NM (575) 392-7550		Service Center - Baton Rouge,	San Antonio, TX (210) 509-3334	Lubbock, TX (806) 794-1296	Dallas, TX (214) 902-0300

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

Revision 2016.1







### **XENCO Laboratories** Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 08/31/2017 02:08:00 PM

Work Order #: 561861

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

Temperature Measuring device used: R8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		1.4	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contai	ner/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ned/ received?	Yes	
#10 Chain of Custody agrees with sample la	abels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated	test(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		N/A	
#18 Water VOC samples have zero headsp	ace?	N/A	

Must be	completed for after-hours de	livery of samples prior to plac	ing in the refrigerator
Analyst:		PH Device/Lot#:	
	Checklist completed by:	Jessica Warner Jessica Kramer	Date: 09/01/2017
	Checklist reviewed by:	Mmy Moah Kelsey Brooks	Date: 09/05/2017

### **Analytical Report 563017**

### for Talon LPE

Project Manager: David Adkins
Hackberry Hills #4
700376.270.01
20-SEP-17

Collected By: Client





### 1211 W. Florida Ave, Midland TX 79701

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

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

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



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MS / MSD Recoveries	11
Chain of Custody	12
Sample Receipt Conformance Report	13





20-SEP-17

Project Manager: **David Adkins Talon LPE**408 W. Texas St.
Artesia, NM 88210

Reference: XENCO Report No(s): 563017

Hackberry Hills #4

Project Address: Hackberry Hills #4

### David Adkins:

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) 563017. 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. 563017 will be filed for 45 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Kelsey Brooks** 

Project Manager

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### **Sample Cross Reference 563017**



### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
S-19	S	09-13-17 15:50		563017-001



### **CASE NARRATIVE**

Client Name: Talon LPE
Project Name: Hackberry Hills #4

Project ID:

700376.270.01

Work Order Number(s): 563017

Report Date: 20-SEP-17 Date Received: 09/18/2017

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

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



### **Certificate of Analytical Results** 563017



### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id: S-19 Matrix:

Soil

Sample Depth:

Lab Sample Id: 563017-001

Date Collected: 09.13.17 15.50

Date Received: 09.18.17 15.48

Prep Method: 1005

Analyst:

Analytical Method: TPH by SW8015 Mod ARM

% Moist:

Tech:

ARM

Seq Number: 3028150

Date Prep: 09.19.17 15.00

Prep seq: 731244

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Facto
Gasoline Range Hydrocarbons (GRO)	PHC610	<7.99	15.0	7.99	mg/kg	09.19.17 21:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	30.4	15.0	8.11	mg/kg	09.19.17 21:26		1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.11	15.0	8.11	mg/kg	09.19.17 21:26	U	1
Total TPH	PHC635	30.4		7.99	mg/kg	09.19.17 21:26		
Surrogate		% Recovery		Limits	Un	its Analysis	Date	Flag
1-Chlorooctane		100		70 - 13	35 %	6		
o-Terphenyl		96		70 - 13	35 %	6		



### **Certificate of Analytical Results** 563017



### Talon LPE, Artesia, NM

Hackberry Hills #4

Sample Id:

731244-1-BLK

Matrix:

Solid

Sample Depth:

Lab Sample Id: 731244-1-BLK

Date Collected:

Date Received:

Analytical Method: TPH by SW8015 Mod

Prep Method: 1005

Analyst:

ARM

% Moist:

Tech:

ARM

Seq Number: 3028150

Date Prep: 09.19.17 15.00

Prep seq: 731244

Parameter	CAS Number	Result	MQL	SDL	Units	Analysis Date	Flag	Dil Factor
Gasoline Range Hydrocarbons (GRO)	PHC610	<8.00	15.0	8.00	mg/kg	09.19.17 20:26	U	1
Diesel Range Organics (DRO)	C10C28DRO	<8.13	15.0	8.13	mg/kg	09.19.17 20:26	U	1
Oil Range Hydrocarbons (ORO)	PHCG2835	<8.13	15.0	8.13	mg/kg	09.19.17 20:26	U	1
Total TPH	PHC635	<8.00		8.00	mg/kg	09.19.17 20:26	U	
Surrogate		% Recovery		Limits	Un	its Analysis	Date	Flag
1-Chlorooctane		100		70 - 13	5 %	ó		
o-Terphenyl		98		70 - 13	5 %	, o		



### 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

SDL Sample Detection Limit

LOD Limit of Detection

POL Practical Quantitation Limit

MQL Method Quantitation Limit

LOO Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

- + NELAC certification not offered for this compound.
- \* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 (602) 437-0330



### Form 2 - Surrogate Recoveries

Project Name: Hackberry Hills #4

Work Orders: 563017,

Project ID: 700376.270.01

Lab Batch #: 3028150

Sample: 731244-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg Date Analyzed: 09/19/17 20:26	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	49.0	50.0	98	70-135	

Lab Batch #: 3028150

Sample: 731244-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 09/19/17 20:46	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
V					
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	52.1	50.0	104	70-135	

Lab Batch #: 3028150

Sample: 731244-1-BSD / BSD

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 09/19/17 21:06	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 3028150

Sample: 563017-001 S/MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 09/19/17 21:46	SU	RROGATE R	ECOVERY	STUDY	
TPH by SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Allalytes			1-1		
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	49.9	50.0	100	70-135	

Lab Batch #: 3028150

Sample: 563017-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 09/19/17 22:06	SU	RROGATE RI	ECOVERY S	STUDY	
TPH by SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.8	99.9	99	70-135	
o-Terphenyl	47.2	50.0	94	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100 \* A / B

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### BS / BSD Recoveries



Project Name: Hackberry Hills #4

Work Order #: 563017

Analyst: ARM

Lab Batch ID: 3028150

Sample: 731244-1-BKS

**Date Prepared:** 09/19/2017

Batch #: 1

**Project ID:** 700376.270.01

Date Analyzed: 09/19/2017

Matrix: Solid

Units:	mg/kg		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY	SPIKE / E	SLANK S	PIKE DUP	LICATE	RECOVI	ERY STUD	J.	
	TPH by SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	ytes		[ <u>B</u> ]	<u>[</u>	<u>a</u>	Ē	Result [F]	<u>5</u>				
Gasoline	Gasoline Range Hydrocarbons (GRO)	<8.00	1000	940	94	1000	931	93	1	70-135	35	
Diesel Ra	Diesel Range Organics (DRO)	<8.13	1000	1070	107	1000	1090	109	2	70-135	35	

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

Final 1.000

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# Form 3 - MS / MSD Recoveries





563017 Work Order #:

3028150 Lab Batch ID:

09/19/2017 mg/kg Reporting Units: Date Analyzed:

QC-Sample ID: 563017-001 S

**Date Prepared:** 09/19/2017

Analyst: ARM

.01	
700376.270.01	Soil
Project ID:	Matrix:
	Batch #:

Reporting Units: mg/kg		Σ	ATRIX SPIKI	E/MATI	SIX SPII	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY	TE REC	OVERY S	TUDY		
TPH by SW8015 Mod	Parent Sample	Spike	Spiked Sample S Result S	Spiked Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Kesuit [A]	Added [B]	<u> </u>	<u>8</u> 2	Adde [E]	Kesult [F]	Z []	%	%K	%KPD	
Gasoline Range Hydrocarbons (GRO)	<8.00	1000	1030	103	666	1060	106	3	70-135	35	
Diesel Range Organics (DRO)	30.4	1000	1160	113	666	1130	110	3	70-135	35	

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

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

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

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Relinquished by:	Relinquished by:	Relinquished by Sampler:	TAT Starts Day received by Lab, if received by 5:00 pm	3 Day EMERGENCY	2 Day EMERGENCY Contract TAT	Next Day EMERGENCY 7 Day TAT	Same Day TAT \$ Day TAT	Turnaround Time (Business days)	10	9	œ	7	6	5	4	σ.	N	1 S-19	No. Field ID / Point of Collection	Samplers's Name: 5. ADILOS	ひってひとこと	Project Contact.	408 W. Texas Ave, Artesia	Company Name / Branch:  TALON / LP &	Client / Reporting Information
Date Time:	Date Time:	2) Date Jime: 13 40	00 pm	- Asymmetrian and a second and	The state of the s													7/13/17	<u> </u>		PO Number:	Invoice to	27.77	Project Na	
Received By:	eceive	Date pine: 13 4/5 Received by:  (1577)  Received by:  (1577)  Received by:  (1577)  Received by:  (1577)	D BEI OW EACH TIME SAMDI ES CHANGE DA	Level II Report with TRRP checklist	Level 3 (CLP Forms)	Level III Std QC+ Forms	Level II Std QC	Data Deliverable information										1850 5 1	Matrix boilies HC	2017-077	er:	camille Bry and	Hackberry Hills # 4	Project Name/Number: 760 376, 270, 0	Project Information
Custody Seal #	Ϋ́	Relinquished By:  2 1/10 1 2 50 11 150		dist	UST / RG -411	TRRP Level IV	Level IV (Full Data Pkg /raw data)	On											H2SO4 PROBLEM NACH NACH NACH NACH NACH NACH NACH NACH					•	
Preserved where applicable	Date Time:	e Time: ⊗ . ↓ ×			0			No										Z	7PH	- (	80	)15 M	nod-	)	
On Ice Cooler Temp. Thermo. Corr. Factor	egeiyed E	Received By:	FED-EX / UPS: Tracking #		Corrected Temp:	(6-33: +0.2°C)	Temp: CO IR ID:R-8										actuaties	further excevation	Field Comments		WW = Wasto Water A = Air	SL-Slidge OW = Ocean/Sea Water WI = Wipe 0 = Oil	DW = Drinking Water P = Product SW = Surface Water	W = Water S = Soil/Sed/Solid GW = Ground Wate	

Nulices Stepaiure of this document and relinquishment of samples constitutes a valle prechase odder form client company to Xonco. Its affiliates and subcontractors. It assigns standard terms and conditions of service. Xenco will be fabile only for the cost of samples constitutes a valle prechase odder form client of samples and standard terms and conditions of service. Xenco will be fabile only for the cost of samples are due to circumstances beyond the control of Xenco. A minimum charge of \$75 will be applied to each project. Xenco's liability will be limited to the cost of samples. Any samples received by Xenco but not analyzed will be invoiced at \$5 per samples. These arms will be enforced unless previously responsed under a fully executed client contract.

Revision 2016.1



### XENCO Laboratories Prelogin/Nonconformance Report- Sample Log-In



Client: Talon LPE

Date/ Time Received: 09/18/2017 03:48:00 PM

Work Order #: 563017

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

Temperature Measuring device used: R8

	Sample Receipt Checklist		Comments
#1 *Temperature of cooler(s)?		5.8	
#2 *Shipping container in good condition?		Yes	
#3 *Samples received on ice?		Yes	
#4 *Custody Seals intact on shipping contain	er/ cooler?	N/A	
#5 Custody Seals intact on sample bottles?		N/A	
#6*Custody Seals Signed and dated?		N/A	
#7 *Chain of Custody present?		Yes	
#8 Any missing/extra samples?		No	
#9 Chain of Custody signed when relinquish	ed/ received?	Yes	
#10 Chain of Custody agrees with sample la	bels/matrix?	Yes	
#11 Container label(s) legible and intact?		Yes	
#12 Samples in proper container/ bottle?		Yes	
#13 Samples properly preserved?		Yes	
#14 Sample container(s) intact?		Yes	
#15 Sufficient sample amount for indicated to	est(s)?	Yes	
#16 All samples received within hold time?		Yes	
#17 Subcontract of sample(s)?		No	
#18 Water VOC samples have zero headspa	ace?	N/A	

	actively of campion prior to place	ng in the refrigerator
nalyst:	PH Device/Lot#:	
Checklist completed b	y: Manual Armitto Shawnee Smith	Date: <u>09/18/2017</u>
Checklist reviewed b	y: Mmy Moah Kelsey Brooks	Date: <u>09/18/2</u> 017