# FINAL C-141 AND SPILL REMEDIATION REPORT

.

AUGUST 2011

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Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

#### **Release Notification and Corrective Action**

	OPERATOR	Initial Report	Final Report
Name of Company Burgundy Oil & Gas of NM, Inc.	Contact	Ben Taylor	
Address 401 W. Texas, Suite 1003, Midland, TX 79701	Telephone No.	(432) 684-4033	
Facility Name Eunice Monument Unit Tank Battery	Facility Type	Central Oil & Gas Battery	

Surface Ow	ner:	State		Mineral C	wner: Stat			No. 015823	
						Nerti	CRY WELL EDA	VICE MONUMENT	- UNIV 028
				LOCA	TION OF RE	LEASE 30-	025-04319-	-00-00	
1 Init 1 atter	Section	Township	Dange E	last from the	North/South Line	Feet from the	Fast/West Line	County	

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	24	205	36E					Lea

Latitude N 32.56231° Longitude W 103.28065°

#### NATURE OF RELEASE

Type of Release Water with slop oil	Volume of Release 8 bbl	Volume Recovered 6 bbl
Source of Release 400 bbl fiberglass tank	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 7/15/10
Was Immediate Notice Given?	If YES, To Whom?	
Yes No Not Required		
By Whom? Geoffrey Leking	Date and Hour 7/23/10 - afterno	on
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	tercourse.
Yes No		HOBBS OCD
If a Watercourse was Impacted, Describe Fully.*		
		JUL 1 4 2011
Describe Cause of Problem and Remedial Action Taken.*		BRAFILED
		RECEIVED
Injection tank overflowed into an overflow tank that had 8 bbls of slop oil	in it. Alarm system malfunctioned, o	causing the 8 bbls to be pushed over the top
of tank. Picked up all but 2 bbls.		
Describe Area Affected and Cleanup Action Taken.*		
	4. 2502 . 1002 . 22 (1)	
Pad around tanks were stained with oil. Soil was excavated in an approxi		
TPH concentrations below 100 mg/kg and chloride concentrations below TPH concentrations were reported below 100 mg/kg, and the excavation v	250 mg/kg. Impacted soil was blended	te drawing with sample locations is
attached, along with laboratory documentation and a table summarizing th	e sample results. The tank battery an	eas were lined with 20 mil plastic and new
firewalls were constructed with the additional blended soil.	ie sample results. The talk battery at	cas were finde with 20 fill plastic and fiew
I hereby certify that the information given above is true and complete to the	ne best of my knowledge and understa	and that pursuant to NMOCD rules and
regulations all operators are required to report and/or file certain release n	otifications and perform corrective ac	tions for releases which may endanger
public health or the environment. The acceptance of a C-141 report by th		
should their operations have failed to adequately investigate and remediat		
or the environment. In addition, NMOCD acceptance of a C-141 report d	oes not relieve the operator of respon-	sibility for compliance with any other
federal, state, or local laws and/or regulations.	OUL CONGERN	
	OIL CONSERV	VATION DIVISION
Signature: Jon laybe		
	ENV ENGINEER!	
Printed Name: Ben Taylor	Approved by District-Supervisor:	Jooks John Rhoell
Title: Production Manager	Approval Date: 08/12/11	Expiration Date:
C mail Address he i Othering and	Conditions of Assessed	
E-mail Address: bogi@t3wireless.com	Conditions of Approval:	Attached
Date: 7/7/11 Phone: (432) 684-4033	~	IRP - 11 - 10 - 2660

Date: 7/7/11 Phone: (432) 684 \* Attach Additional Sheets If Necessary



July 14, 2011

HOBBS OCD JUL 1 4 2011

RECEIVED

Mr. Geoffrey Leking Oil Conservation Division New Mexico Energy, Minerals and Natural Resources Department 1625 N. French Drive Hobbs, New Mexico 88240

Re: Spill Remediation Report, Burgundy Oil & Gas of New Mexico, Inc., Eunice Monument Unit Tank Battery, Unit Letter I (NE/4, SE/4), Section 24, Township 20 South, Range 36 East, Lea County, New Mexico (Latitude: N 32.56231° / Longitude: W 103.28065°)

Dear Mr. Leking:

Burgundy Oil & Gas of New Mexico, Inc. (Burgundy) has retained Crain Environmental (CE) to remediate impacts to soil from a leak at the Eunice Monument Unit Tank Battery (Site). The Site is located in the northeast quarter (NE/4) of the southeast quarter (SE/4), Section 24, Township 20 South, Range 36 East, Lea County, New Mexico. Approximately 8 barrels of produced water and slop oil were released from a fiberglass tank on or about July 15, 2010, and approximately 6 barrels of fluid were recovered from the site. A C-141 was submitted to the New Mexico Oil Conservation Division (NMOCD) on July 28, 2010, a copy of which is included as Appendix A. Figure 1 shows the site location.

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Based on published literature (1961), well records of the New Mexico State Engineer, and well records of the United States Geological Survey, groundwater occurs at approximately 37 feet bgs in the well located nearest the Site. No domestic water wells are located within 1,000 feet of the site. The NMOCD has established recommended remediation action levels (RRALs) for benzene, total BTEX and TPH resulting from spills of natural gas liquids ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"). Remediation levels for benzene, total BTEX and TPH were calculated using the following NMOCD criteria:

Criteria	Result	Ranking Score				
Depth-to-Groundwater	< 50' -> 100 Feet-	20				
Wellhead Protection Area	No	0				
Distance to Surface Water Body	>1000 Horizontal Feet	0				
	· · · · · · · · · · · · · · · · · · ·	Total: 0				

The following RRALs have been assigned based on NMOCD criteria:

Benzene	10 mg/kg
<b>Total BTEX</b>	50 mg/kg
TPH	100 mg/kg

Mr. Geoffrey Leking Page 2 July 14, 2011

#### **Initial Investigation**

On August 27, 2010, soil samples (SS-1 through SS-14) were collected throughout the spill area at depths of six (6) inches and one (1) foot below ground surface (bgs). The soil samples were placed in clean glass sample jars, labeled, chilled in an ice chest and delivered to Xenco Laboratories (Xenco), of Odessa, Texas for analysis of benzene, toluene, ethylbenzene, and xylenes (collectively referred to as BTEX), total petroleum hydrocarbons (TPH) and chloride. Table 1 provides a summary of the laboratory results. Figure 2 shows the sample locations. Appendix B provides a copy of the laboratory reports and chain of custody documentation.

Referring to Table 1, Benzene, BTEX and chloride concentrations were reported below the RRALs of 10 mg/kg, 50 mg/kg, and 250 mg/kg, respectively, in each sample. TPH concentrations were reported above the RRAL of 100 mg/kg in the following samples at a depth of one (1) foot bgs:

SS-3	934.2 mg/kg
SS-5	311.0 mg/kg
SS-6	690.0 mg/kg
SS-9	3013.0 mg/kg
SS-10	5746.0 mg/kg
SS-11	876.2 mg/kg
SS-13	982.5 mg/kg

#### **Remediation and Confirmation Sampling Activities**

Portions of the spill area that reported elevated TPH concentrations were excavated to a depth of two (2) feet bgs, except for sample point SS-9, that was excavated to a depth of one and half (1.5) foot bgs. All excavated soil was blended on-site with clean soil and fertilizer. On October 21, 2010, soil samples were collected from the above referenced points (at a depth of 2' bgs) and from each of the two (2) blended spoil piles. The soil samples were placed in clean glass sample jars, labeled, chilled in an ice chest and delivered to Xenco for TPH analysis. Table 1 provides a summary of the laboratory results. Figure 2 shows the sample locations. Appendix B provides a copy of the laboratory reports and chain of custody documentation. Appendix C provides photographic documentation.

Referring to Table 1, soil samples SS-3, SS-5 and SS-6 reported non-detect TPH concentrations. Soil sample SS-13 reported a TPH concentration of 33.6 mg/kg. TPH concentrations in soil samples SS-9 (958.5 mg/kg), SS-10 (4156 mg/kg) and SS-11 (554.4 mg/kg) remained above the RRAL of 100 mg/kg.

Additional soil was excavated from the areas surrounding sample points SS-9 and SS-10 (to a depth of 3' bgs), and sample point SS-11 (to a depth of 4' bgs). All excavated soil was added to the two (2) spoil piles and blended, in order to reduce TPH concentrations below 100 mg/kg. On November 6, 2010, soil samples were collected from the SS-9, SS-10, SS-11 sample points, and from the two (2) spoil piles for TPH analysis. Table 1 provides a summary of the

Mr. Geoffrey Leking Page 3 July 14, 2011

laboratory results. Figure 2 shows the sample locations. Appendix B provides a copy of the laboratory reports and chain of custody documentation.

Referring to Table 1, sample points SS-9 and SS-10 reported TPH concentrations that were Non-Detect, and sample point SS-11 reported a TPH concentration of 70.6 mg/kg. TPH concentrations in the two (2) spoil piles remained above the RRAL (Spoil 1 = 820.4 mg/kg, Spoil 2 = 1022.3 mg/kg).

Additional clean soil and fertilizer was added to the spoil piles and blending continued until soil samples collected on April 6, 2011 reported TPH concentrations below 100 mg/kg (Spoil 1 = 38.6 mg/kg, Spoil 2 = 36.7 mg/kg). The excavation was backfilled with the blended soil and firewalls were constructed around the tank batteries and heater treater. The containment areas were lined with a 20 mil plastic liner.

Burgundy respectfully requests that the Eunice Monument Unit Tank Battery site be closed by the NMOCD. A final C141 form is included in Appendix D. If you have any questions or need additional information, please call Mr. Ben Taylor at (432) 684-4033, or myself at (575) 441-7244. We may also be reached by email at bogi@t3wireless.com or Cindy.Crain@gmail.com.

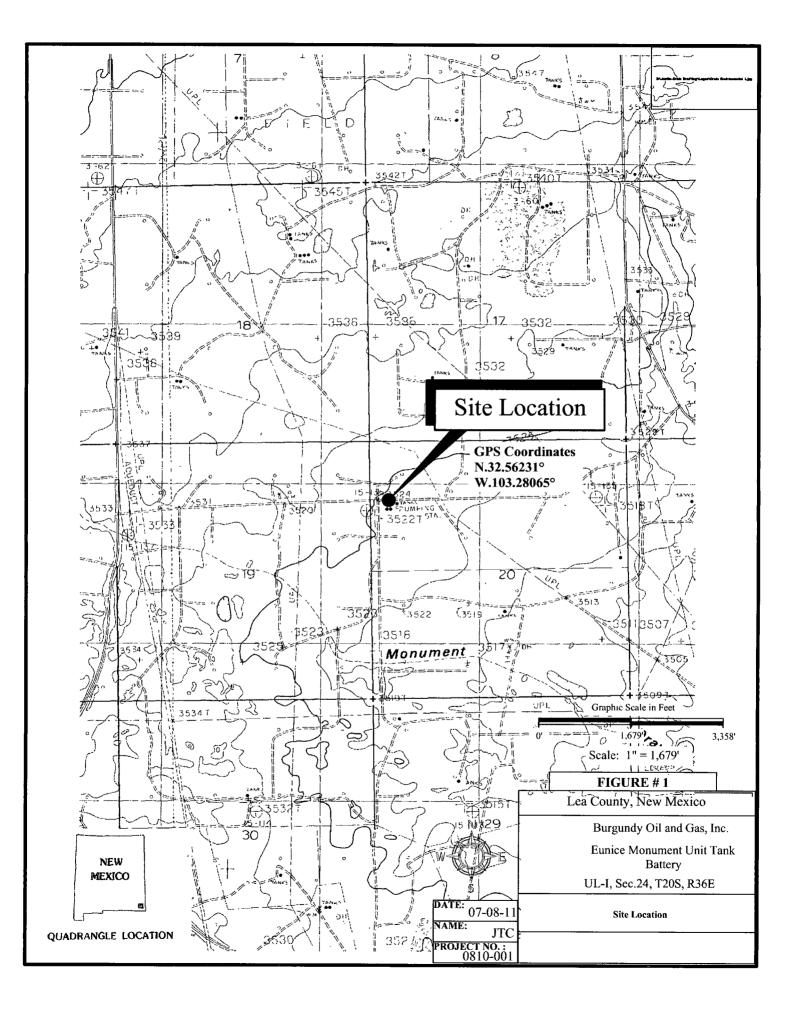
Sincerely, Crain Environmental

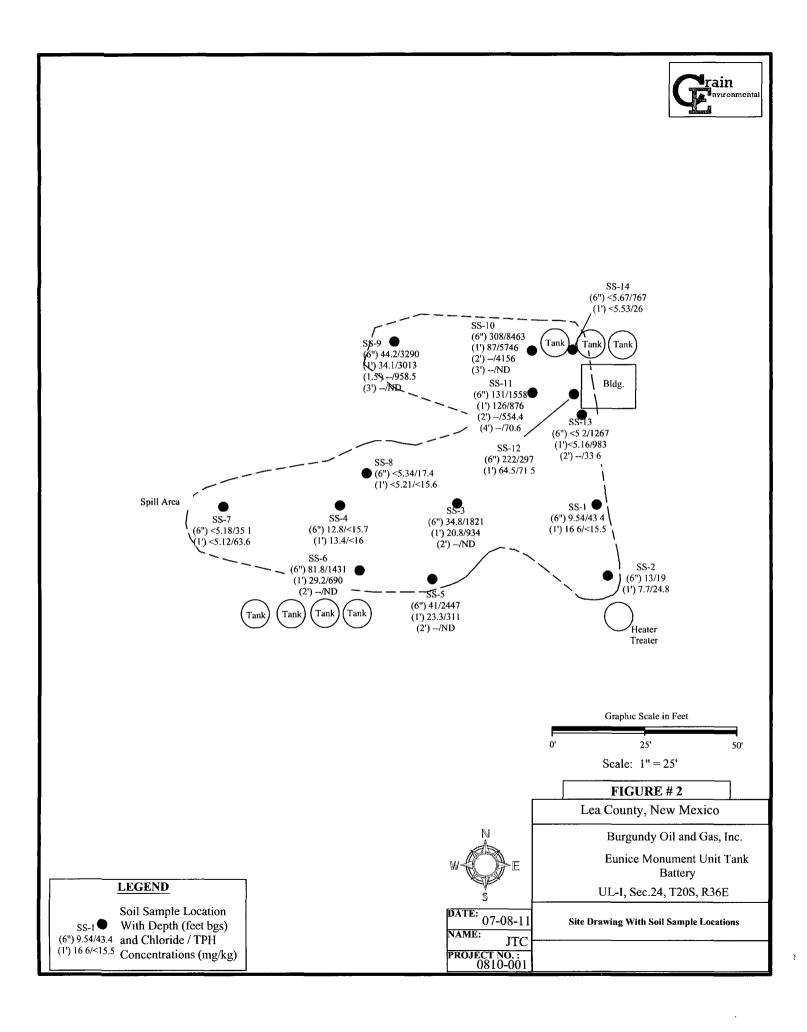
indy K. (rain

Cindy K. Crain, P.G. President

cc: Ben Taylor, Burgundy

#### **FIGURES**





TABLE

1

# Table 1: Summary of Laboratory Analysis of Soil SamplesBurgundy Oil & Gasof New Mexico, Inc., EMU Tank BatterySection 24, Township 20 South, Range 36 EastLea County, New Mexico

.

Sample Date	Soil Sample Number	Sample Depth	Benzene (mg/kg)	Total BTEX	ТРН С6-С12	ТР <b>Н</b> С12-С28	ТРН C28-C35	Total TPH (mg/kg)	Page 1 of 2 Chloride (mg/kg)
Date		(feet BGS)	(116/145)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	( <u>6</u> , <u>6</u> )	(
Standard (V	VQCC)	<u></u>	10				÷.	100	250
8/27/10	SS-1	6"	ND	ND	ND	43.4	ND	43.4	9.54
8/27/10	SS-1	1'	ND	ND	ND	ND	ND	ND	16.6
8/27/10	SS-2	6"	ND	ND	ND	19.0	ND	19.0	13.0
8/27/10	SS-2	1'	ND	ND	ND	24.8	ND	24.8	7.7
8/27/10	SS-3	6"	ND	1.5461	322	1310	189	1821	34.8
8/27/10	SS-3	1'	ND	0.5958	214	626	94.2	• • • 934.2	20.8
10/21/10	SS-3	2'			ND	ND	ND	ND	
8/27/10	SS-4	6"	ND	ND	ND	ND	ND	ND	12.8
8/27/10	SS-4	1'	ND	ND	ND	ND	ND	ND	13.4
8/27/10	SS-5	6"	ND	ND	ND	2060	387	2447	41.0
8/27/10	SS-5	1'	ND	ND	ND	248	63	311	23.3
10/21/10		2'			ND	ND	ND	ND	
8/27/10	SS-6	6"	ND	ND	ND	1130	301	1'431	81.8
8/27/10	SS-6	1'	ND	ND	ND	567	123	690	29.2
10/21/10	SS-6	2'			ND	ND	ND	ND	
8/27/10	SS-7	6"	ND	ND	ND	35.1	ND	35.1	ND
8/27/10	SS-7	1'	ND	ND	ND	63.6	ND	63.6	ND
8/27/10	SS-8	6"	ND	ND	ND	17.4	ND	17.4	ND
8/27/10	SS-8	1'	ND	ND	ND	ND	ND	ND	ND
8/27/10	SS-9	6"	ND	1.782	474	2500	316	» <u>3290</u>	44.2
8/27/10	SS-9	1'	ND	1.800	803	2210	ND	3013	34.1
10/21/10	<u>SS-9</u>	1.5'			119	790	49.5	<u>\$</u> .8958.5	
11/6/10	<u>SS-9</u>	3'			ND	ND	ND	ND	
8/27/10	SS-10	6"	0.1012	11.462	2510	5240	713	. 8463	308
8/27/10	SS-10	1'	ND	21.99	2790	2840	116	5746	87.0
10/21/10	SS-10	2'			169	3730	257	4156	
11/6/10	SS-10	3'			ND	ND	ND	ND	

									Page2 of 2
Sample	Soil Sample	Sample	Benzene	Total	ТРН	ТРН	TPH 🔺	<b>Total TPH</b>	.Chloride*
Date	Number	Depth	(mg/kg)	BTEX	C6-C12	C12-C28	C28-C35	(mg/kg)	(mg/kg)
<u>.</u>		(feet BGS)	10	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg) 🐇		250
Standard (W	1	· · · ·	10			1050		100	
8/27/10	SS-11	6"	ND	ND	ND	1250	308	1558	131
8/27/10	SS-11	<u> </u>	ND	ND	51.6	788	36.6	876.2	126
10/21/10	SS-11	2'			ND	518	36.4	\$ 554.4	
11/6/10	. SS-11	4'			ND	70.6	ND	70.6	
8/27/10	SS-12	6"	ND	ND	ND	229	68	297	222
8/27/10	SS-12	1'	ND	ND	ND	71.5	ND	71.5	65
8/27/10	SS-13		ND	ND	ND	1010	257	1267.	ND
8/27/10	SS-13	1'	ND	ND	ND	897	85.5	982.5	ND
10/21/10	SS-13	2'			ND	33.6	ND	33.6	
								belle for the stand of a	
8/27/10	SS-14	6"	ND	ND	ND	642	125	767	ND
8/27/10	SS-14	1'	ND	ND	ND	26	ND	26	ND
10/21/10	Spoil 1				83	2540	130	2753	
11/6/10	Spoil 1				54.1	744	22.3	820.4	
11/19/10	Spoil 1				<10.0*	708*		708	
12/29/10	Spoil 1				<10.0*	247*		247	
3/2/11	Spoil 1				<10.0*	190*		190	
4/6/11	Spoil 1				ND	38.6	ND	38.6	
10/21/10	Spoil 2				ND	419	ND	419	
11/6/10	Spoil 2				54.9	947	20.4	1022.3	
11/19/10	Spoil 2				<10.0*	601*		601	
12/29/10	Spoil 2				<10.0*	373*		373	
3/2/11	Spoil 2				<10.0*	272*		272	
4/6/11	Spoil 2				ND	36.7	ND	36.7	

Notes-8/27/10, 10/21/10, 11/6/10 and 4/6/11 Analysis Conducted by Xenco Laboratories, Odessa, TX

11/19/10, 12/29/10 and 3/2/11 Analysis Conducted by Cardinal Laboratories, Hobbs, NM

1 BGS. Depth in feet below ground surface

2 mg/kg 3 ----

4 ND 5 \*

Milligrams per kilogram No data available Non Detect Cardinal Laboratories TPH Results GRO (C6-C10) and DRO (>C10-C28)

#### **APPENDIX A**

#### **INITIAL C141 DOCUMENTATION**

Well Lile Form C-141 Revised October 10, 2003

A REAL PROPERTY AND A REAL PROPERTY A REAL PROPERTY AND A REAL PRO

<u>District I</u> 5625 N. French Dr., Hobbs, NM 88240 <u>District II</u> 1304 W. Grand Avenue, Artenia, NM 88210 State of New Mexico Energy Minerals and Natural Resources

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 <u>District II</u> 1000 Rio Brazos Road, Aztec, NM 87410 <u>District IV</u> 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

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Form C-141 Revised October 10, 2003

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

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			Rele	ase Notific	ation	and Co	orrective A	ction				
			_			OPERA'	TOR_		🛛 Initi	al Report		Final Report
Name of Co	mpany Bi	argundy Oil	& Gas of	New Mexico, I		Contact Be						
Address 40	W Texas	s Ave., Suite	1003; M	idland, TX 797	r01 í		No. 432-684-40					
Facility Nat	me Eunice	Monument	Unit Tan	k Battery	1	Facility Typ	central Oil &	Gas B	attery			
Surface Ow	mer State			Mineral C	wher 5	tate			Lease N	lo. 01582	3	
	-			LOCA	TION	OF RE	LEASE					
Unit Letter J	Section 24	Township 205	Range 36E	Feet from the	North/	South Line	Feet from the	East/W	est Line	County Lea	_	
			La	titude		Longituk	)e					
				NAT	URE	OF REL	EASE					
Type of Rele							Release 8 bbis		Volume I	Recovered (	ó bbis	
Source of Re	lease 400	bbi fiberglass	tanik				Hour of Occurrenc	æ	Date and	Hour of Dis	covery	7/15/2010
Was Immedi	ate Notice (		Yes 🛛	No 🗋 Not Re	equired	TOYES, TO	o Whom?				. –	
By Whom?	Geoffrey Le	king		_		Date and I	Hour 7/23/2010 a	flemoon				
Was a Water		hed?			_	IFYES, V	olume Impacting t	he Wate	CONTRE			
			Yes 🛛							<u>.                                    </u>		
IL & Walerco	urse was im	pacted, Descr	nte Fally i	F								
Describe Car	use of Proist	em and Reme	dial Actin	n Taken.*	<b>.</b>							
					slop oil	in it Alarm	system malfuncti	oned cau	sing (be 8	bbls to be p	ushed	over the top
of tank. Pic					-				-	•		
		and Cleanup										·
Pud around t	anks were s	tained with oi	L Will rea	move contaminate	ed soil ar	id haul to ap	proved facility and	d replace	soil with	fresh. Cind	y Crain	with Crain
Environmen	tel will asso	ss the 2 <sup>nd</sup> woo	* of Augu	st, 2010								
								_				
I bere by cent	ify that the	n formatico g	iven above	: is true and comp	iete to ti	he hest of my	y knowledge and u	inderstar	d that put	suant to NM	IOCO r	ules and
regularions a	ill operators	are required i	o report a	nd/or file certain r	elease n	otifications a	nd perform correct	tive auti	ons for rel	eases which	may en	ndanger Cliabelieu
public scalt	or the envi	romment. The	acceptan	ce of a C-141 rept	art by the semection	⊧NMOCD n contaminet	narked as "Final R lion that pose a thr	eport" di rest to on	nes not rel	seve the opt	nator of ater hy	r namney man health
							ve the operator of					
		ws and/or reg										
						-	<b>OIL CON</b>	SERV	ATION	DIVISI	QN	
Simple		Ban	7	1.1	1							
Signature:			( ayu				District Summer	ar.				
Printed Nam	e: Bon Tay		<i></i>			with the second se	District Supervis		<u> </u>			
Title: Produ	etion Mana	eer				 Approval Da	ate:		Expration	Date		
<u>⊏-majl Addr</u>	ess: bogi(a)	t3wireless co	n		—́~	Conditions (	of Approval			Attacher	d 🗖	
Date: 7/28/	2010		Phone	432-684-4033		,				<u> </u>		

\* Attach Additional Sheets If Necessary

#### **APPENDIX B**

#### ANALYTICAL DATA AND CHAIN OF CUSTODY DOCUMENTATION

Crain Environmental • 2925 East 17th Street • Odessa, TX 79761 • Phone: (432) 530-9797 • Fax: (432) 272-0304

# Analytical Report 387612

for Crain Environmental

**Project Manager: Cindy Crain** 

**Burgundy EMU Tank Battery** 

0810-001

09-SEP-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330) Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370) Xenco-Boca Raton (EPA Lab Code: FL01273): Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917) North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



09-SEP-10



Project Manager: **Cindy Crain Crain Environmental** 2925 E 17th St. Odessa, TX 79761

Reference: XENCO Report No: **387612 Burgundy EMU Tank Battery** Project Address: Lea County, NM

#### **Cindy Crain:**

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 387612. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 387612 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,

Brent Barron, II Odessa Laboratory Manager

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

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



## Sample Cross Reference 387612



# Crain Environmental, Odessa, TX

Burgundy EMU Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-1	S	Aug-27-10 10:11	6 - 6 In	387612-001
SS-2	S	Aug-27-10 10:12	6 - 6 In	387612-002
SS-3	S	Aug-27-10 10:15	6 - 6 In	387612-003
SS-4	S	Aug-27-10 10:21	6 - 6 In	387612-004
SS-5	S	Aug-27-10 10:17	6 - 6 In	387612-005
SS-6	S	Aug-27-10 10:23	6 - 6 In	387612-006
SS-7	S	Aug-27-10 10:25	6 - 6 In	387612-007
SS-8	S	Aug-27-10 10:27	6 - 6 In	387612-008
SS-9	S	Aug-27-10 10:28	6 - 6 In	387612-009
SS-10	S	Aug-27-10 10:30	6 - 6 In	387612-010
SS-11	S	Aug-27-10 10:31	6 - 6 In	387612-011
SS-12	S	Aug-27-10 10:34	6 - 6 In	387612-012
SS-13	S	Aug-27-10 10:35	6 - 6 In	387612-013
SS-14	S	Aug-27-10 10:38	6 - 6 In	387612-014
SS-1	S	Aug-27-10 10:40	1 - 1 ft	387612-015
SS-2	S	Aug-27-10 10:43	1 - 1 ft	387612-016
SS-3	S	Aug-27-10 10:45	1 - 1 ft	387612-017
SS-4	S	Aug-27-10 10:52	1 - 1 ft	387612-018
SS-5	S	Aug-27-10 10:47	1 - 1 ft	387612-019
SS-6	S	Aug-27-10 10:48	1 - 1 ft	387612-020
SS-7	S	Aug-27-10 10:31	1 - 1 ft	387612-021
SS-8	S	Aug-27-10 10:34	1 - 1 ft	387612-022
SS-9	S	Aug-27-10 10:35	1 - 1 ft	387612-023
SS-10	S	Aug-27-10 10:38	1 - 1 ft	387612-024
SS-11	S	Aug-27-10 10:40	1 - 1 ft	387612-025
SS-12	S	Aug-27-10 10:43	1 - 1 ft	387612-026
SS-13	S	Aug-27-10 10:45	1 - 1 ft	387612-027
SS-14	S	Aug-27-10 10:52	1 - 1 ft	387612-028



#### CASE NARRATIVE

Client Name: Crain Environmental Project Name: Burgundy EMU Tank Battery



 Project ID:
 0810-001

 Work Order Number:
 387612

Report Date: 09-SEP-10 Date Received: 08/27/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-820955 Percent Moisture None

Batch: LBA-820960 Percent Moisture None

Batch: LBA-820979 TPH By SW8015 Mod SW8015MOD\_NM

Batch 820979, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis Samples affected are: 387612-020.

Batch: LBA-820987 TPH By SW8015 Mod None

Batch: LBA-821030 Inorganic Anions by EPA 300/300.1 None

Batch: LBA-821034 Inorganic Anions by EPA 300/300.1 None





Client Name: Crain Environmental Project Name: Burgundy EMU Tank Battery



Project ID: 0810-001 Work Order Number: 387612 Report Date: 09-SEP-10 Date Received: 08/27/2010

Batch: LBA-821824 BTEX by EPA 8021B SW8021BM

Batch 821824, 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis Samples affected are: 387612-017.

#### SW8021BM

Batch 821824, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike. Samples affected are: 387612-028, -027, -023, -009, -021, -026, -022, -025, -017. The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits

#### SW8021BM

Batch 821824, Ethylbenzene, m,p-Xylenes RPD was outside QC limits. Samples affected are: 387612-028, -027, -023, -009, -021, -026, -022, -025, -017



#### CASE NARRATIVE

Client Name: Crain Environmental Project Name: Burgundy EMU Tank Battery



 Project ID:
 0810-001

 Work Order Number:
 387612

Report Date: 09-SEP-10 Date Received: 08/27/2010

Batch: LBA-821832 BTEX by EPA 8021B SW8021BM

Batch 821832, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis Samples affected are: 387612-010. 4-Bromofluorobenzene was within QC limits 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data not confirmed by re-analysis Samples affected are: 387612-003. 1,4-Difluorobenzene was within QC limits

#### SW8021BM

Batch 821832, Ethylbenzene, Toluene, o-Xylene recovered below QC limits in the Matrix Spike. *m*,*p*-Xylenes recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Samples affected are: 387612-012, -015, -019, -006, -008, -018, -004, -005, -013, -016, -010, -002, -014, -020, -011, -007, -001, -003.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-822184 BTEX by EPA 8021B SW8021BM

Batch 822184, 1,4-Difluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis Samples affected are: 387612-024. 4-Bromofluorobenzene recovered above QC limits . Matrix interferences is suspected; data confirmed by re-analysis Samples affected are: 388700-001 SD,387612-024.

Project Location: Lea County, NM

Contact: Cindy Crain

## Certificate of Analysis Summary 387612

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Date Received in Lab: Fri Aug-27-10 04:25 pm

Report Date: 09-SEP-10

oject Location: Lea County, NM													
								Project Mar	nager:	Brent Barron,	Π		
	Lab Id:	387612-0	001	387612-0	002	387612-0	003	387612-0	04	387612-0	005	387612-0	)06
Analysis Requested	Field Id:	SS-1		SS-2		SS-3		SS-4		SS-5		SS-6	
Analysis Kequesiea	Depth:	6-6 In		6-6 In	. 1	6-6 In		6-6 In	I	6-6 In		6-6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-27-10 10:11		Aug-27-10	10.12	Aug-27-10	10 <sup>.</sup> 15	Aug-27-10	10:21	Aug-27-10	10:17	Aug-27-10	10:23
BTEX by EPA 8021B	Extracted:	Sep-03-10	11.15	Sep-03-10	11:15	Sep-03-10	11:15	Sep-03-10 1	1.15	Sep-03-10	11:15	Sep-03-10	11.15
	Analyzed:	Sep-06-10	03.18	Sep-05-10	19:10	Sep-06-10	07:10	Sep-05-10 2	21:29	Sep-05-10	21:52	Sep-06-10	04.04
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0010	ND	0.0011	ND	0.0267	ND	0.0010	ND	0.0011	ND	0.0010
Toluene		ND	0.0021	ND	0.0021	ND	0.0535	ND	0.0021	ND	0.0021	ND	0.0021
Ethylbenzene		ND	0.0010	ND	0.0011	0.1289	0.0267	ND	0.0010	ND	0.0011	ND	0.0010
m,p-Xylenes		ND 0.002		ND	0.0021	0.7050	0.0535	ND	ND 0.0021		0.0021	ND	0.0021
o-Xylene		ND	0.0010	ND	0.0011	0.7122	0.0267	ND	0.0010	ND	0 0011	ND	0.0010
Total Xylenes		ND	0.0010	ND	0.0011	1.4172	0.0267	ND	0.0010	ND	0 0011	ND	0.0010
Total BTEX		ND	0.0010	ND	0.0011	1.5461	0.0267	ND	0.0010	ND	0.0011	ND	0.0010
Inorganic Anions by EPA 300/300.1	Extracted:												
	Analyzed:	Aug-30-10	12:50	Aug-30-10 12.50		Aug-30-10 12.50		Aug-30-10 12:50		Aug-30-10 12:50		Aug-30-10 12:50	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9.54	5.24	13.0	5.31	34.8	5.35	12.8	5.23	41.0	5.28	81.8	5.24
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-10	08.22	Aug-31-10 08:22		Aug-31-10 08:22		Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.60	1.00	5.81	1.00	6 49	1.00	4.31	1.00	5.32	1.00	4.67	1.00
TPH By SW8015 Mod	Extracted:	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30
	Analyzed:	Aug-30-10	17.44	Aug-30-10	18:15	Aug-30-10 18:46		Aug-30-10	19:17	Aug-30-10	19:47	Aug-30-10	20:18
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.8	ND	16.0	322	79.8	ND	15.7	ND	159	ND	157
C12-C28 Diesel Range Hydrocarbons		43.4	15.8	19.0	160	1310	79.8	ND	15.7	2060	159	1130	15
C28-C35 Oil Range Hydrocarbons		ND	15.8	ND	16.0	189	79.8	ND	15.7	387	159	301	15
Total TPH		43.4	15.8	19.0	16.0	1821	79.8	ND	15.7	2447	159	1431	15

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Brent Barron, II

Odessa Laboratory Manager



Project Location: Lea County, NM

Contact: Cindy Crain

#### Certificate of Analysis Summary 387612

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Date Received in Lab: Fri Aug-27-10 04:25 pm

Report Date: 09-SEP-10

oject Location: Lea County, NM								Project Mar	nager:	Brent Barron,	II		
	Lab Id:	387612-0	07	387612-0	08	387612-0	)09	387612-0	10	387612-0	011	387612-0	012
Annalis Descripted	Field Id:	SS-7		SS-8		SS-9		SS-10		SS-11		SS-12	
Analysis Requested	Depth:	6-6 In		6-6 In		6-6 In		6-6 In		6-6 In		6-6 In	
	Matrix:	SOIL		SOIL		SOIL		SOIL	1	SOIL		SOIL	
	Sampled:	Aug-27-10	10:25	Aug-27-10	0:27	Aug-27-10	10.28	Aug-27-10	10:30	Aug-27-10	10.31	Aug-27-10	10:34
BTEX by EPA 8021B	Extracted:	Sep-03-10	11:15	Sep-03-10 1	1:15	Sep-03-10	10:15	Sep-03-10 1	1:15	Sep-03-10	11-15	Sep-03-10	11:15
	Analyzed:	Sep-05-10	22:16	Sep-05-10 2	2:39	Sep-05-10	14:32	Sep-06-10 (	6:47	Sep-05-10	23:03	Sep-05-10	23:26
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0010	ND	0.0011	ND	0.0262	0.1012	0.0547	ND	0.0011	ND	0.0011
Toluene		ND	0.0021	ND	0.0021	0.0695	0.0525	0 7278	0.1094	ND	0 0021	ND	0.0022
Ethylbenzene		ND	0.0010	ND	0.0011	0.2395	0.0262	1.638	0.0547	ND	0.0011	ND	0.0011
m,p-Xylenes	1	ND	0.0021	ND	0.0021	1.196	0.0525	7.163	0.1094	ND	0.0021	ND	0.0022
o-Xylene		ND	0.0010	ND	0.0011	0.2773	0.0262	1.832	0.0547	ND	0.0011	ND	0.0011
Total Xylenes		ND	0.0010	ND	0.0011	1 473	0.0262	8.995	0.0547	ND	0.0011	ND	0.0011
Total BTEX		ND	0.0010	ND	0.0011	1.782	0.0262	11.462	0.0547	ND	0.0011	ND	0.0011
Inorganic Anions by EPA 300/300.1	Extracted:												
	Analyzed:	Aug-30-10	12:50	Aug-30-10	12.50	Aug-30-10	12:50	Aug-30-10	12:50	Aug-30-10	12:50	Aug-30-10	12:50
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL.	mg/kg	RL
Chloride		ND	5.18	ND	5.34	44.2	5.25	308	10.9	131	10.7	222	10.8
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-10	08:22	Aug-31-10 (	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08·22
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3 45	1.00	6.45	1.00	4.69	1.00	8.63	1.00	6.18	1.00	7.28	1.00
TPH By SW8015 Mod	Extracted:	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12·30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30
	Analyzed:	Aug-30-10	20:48	Aug-30-10	21:18	Aug-30-10	21:47	Aug-30-10	22:17	Aug-30-10	23:15	Aug-30-10	23.45
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.6	ND	16.1	474	79.0	2510	164	ND	80.1	ND	16.1
C12-C28 Diesel Range Hydrocarbons		35.1	15.6	17.4	16.1	2500	79 0	5240	164	1250	80 1	229	16 1
C28-C35 Oil Range Hydrocarbons		ND	15.6	ND	16.1	316	79.0	713	164	308	80.1	68.0	16.1
Total TPH		35 1	15.6	17.4	16.1	3290	79.0	8463	164	1558	80.1	297	16.1

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Brent Barron, II

Odessa Laboratory Manager



Project Location: Lea County, NM

Contact: Cindy Crain

#### **Certificate of Analysis Summary 387612**

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Date Received in Lab: Fri Aug-27-10 04:25 pm

Report Date: 09-SEP-10

oject Location: Lea County, NM								-					
								Project Ma	nager:	Brent Barron,	II		
	Lab Id:	387612-0	013	387612-0	14	387612-0	15	387612-0	16	387612-	017	387612-	018
Analysis Requested	Field Id:	SS-13		SS-14		SS-1		SS-2		SS-3		SS-4	
Anulysis Requested	Depth:	6-6 In		6-6 In		1-1 ft		1 <b>-1</b> ft		1-1 ft		1-1 ft	
	Matrix:	SOIL		SOIL	:	SOIL		SOIL		SOIL		SOIL	,
	Sampled:	Aug-27-10	10.35	Aug-27-10	10:38	Aug-27-10	10.40	Aug-27-10	10.43	Aug-27-10	10:45	Aug-27-10	10:52
BTEX by EPA 8021B	Extracted:	Sep-03-10	11:15	Sep-03-10	1:15	Sep-03-10	1:15	Sep-03-10	11:15	Sep-03-10	10:15	Sep-03-10	11:15
	Analyzed:	Sep-05-10	23:49	Sep-06-10 (	00:12	Sep-06-10 (	00:35	Sep-06-10 (	02.08	Sep-05-10	06.55	Sep-06-10	02:31
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0011	ND	0.0276	ND	0 0011
Toluene		ND	0.0021	ND	0.0023	ND	0.0021	ND	0.0022	ND	0.0551	ND	0.0021
Ethylbenzene		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0011	0.0582	0.0276	ND	0.0011
m,p-Xylenes		ND	0.0021	ND	0.0023	ND	0 0021	ND	0.0022	0.4240	0.0551	ND	0.0021
o-Xylene		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0011	0.1136	0.0276	ND	0.0011
Total Xylenes		ND	0.0010	ND	0.0011	ND	0 0010	ND	0.0011	0.5376	0.0276	ND	0.0011
Total BTEX		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0011	0.5958	0.0276	ND	0.0011
Inorganic Anions by EPA 300/300.1	Extracted:												
	Analyzed:	Aug-30-10	12.50	Aug-30-10	12:50	Aug-30-10	12.50	Aug-30-10	12:50	Aug-30-10	12:50	Aug-30-10	12:50
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		ND	5.20	ND	5 67	16.6	5 18	- 7.70	5.46	20.8	5.51	13.4	5.32
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08·22
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		3.83	1.00	11.9	1.00	3 48	1.00	8 40	1.00	9.31	1 00	5.96	1.00
TPH By SW8015 Mod	Extracted:	Aug-30-10	12:30	Aug-30-10	12.30	Aug-30-10	12.30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30
	Analyzed:	Aug-31-10	00:16	Aug-31-10	00:45	Aug-31-10	01:15	Aug-31-10	01:47	Aug-31-10	02:16	Aug-31-10	02.45
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	157	ND	84.8	ND	15 5	ND	16.3	214	16.6	ND	16.0
C12-C28 Diesel Range Hydrocarbons		1010	157	642	84 8	ND	15 5	24.8	16 3	626	16.6	ND	16.
C28-C35 Oil Range Hydrocarbons		257	157	125	84.8	ND	15.5	ND	16.3	94.2	16.6	ND	16.
Total TPH		1267	157	767	84.8	ND	15.5	24.8	163	934	16.6	ND	16.

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Brent Barron, II

Odessa Laboratory Manager



Project Location: Lea County, NM

Contact: Cindy Crain

#### Certificate of Analysis Summary 387612

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Date Received in Lab: Fri Aug-27-10 04:25 pm

Report Date: 09-SEP-10

roject Location: Lea County, NM								-					
									e,	Brent Barron,			
	Lab Id:	387612-(	)19	387612-0	20	387612-0	021	387612-0	22	387612-0	023	387612-0	)24
Analysis Requested	Field Id:	SS-5		SS-6		SS-7		SS-8		SS-9		SS-10	
Analysis Requested	Depth:	1-1 ft		1-1 ft		1-1 ft		1-1 ft		1-1 ft	t l	1-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-27-10	10.47	Aug-27-10	10:48	Aug-27-10	10:31	Aug-27-10	10:34	Aug-27-10	10.35	Aug-27-10	10:38
BTEX by EPA 8021B	Extracted:	Sep-03-10	11:15	Sep-03-10 1	1:15	Sep-03-10	10:15	Sep-03-10	10:15	Sep-03-10	10:15	Sep-07-10	15:39
	Analyzed:	Sep-06-10	02:55	Sep-06-10 (	04:50	Sep-05-10	14.55	Sep-05-10 (	01.30	Sep-05-10	14.09	Sep-08-10	09:51
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0010	ND	0.0263	ND	0.2221
Toluene		ND	0.0021	ND	0.0021	ND	0.0020	ND	0.0021	ND	0.0526	1.769	0.4442
Ethylbenzene		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0010	0.2476	0 0263	3.333	0.2221
m,p-Xylenes		ND	0.0021	ND	0.0021	ND	0.0020	ND	0.0021	1.252	0.0526	13.60	0.4442
o-Xylene		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0010	0.2999	0 0263	3.284	0.2221
Total Xylenes		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0010	1.552	0 0263	16 88	0.2221
Total BTEX		ND	0.0010	ND	0.0011	ND	0.0010	ND	0.0010	1.800	0.0263	21 99	0.2221
Inorganic Anions by EPA 300/300.1	Extracted:												
	Analyzed:	Aug-30-10	12:50	Aug-30-10	12:50	Aug-30-10	18:32	Aug-30-10	18:32	Aug-30-10	18:32	Aug-30-10	18:32
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		23.3	5.21	29.2	5.27	ND	5.12	ND	5.21	34.1	5.26	87.0	5.55
Percent Moisture	Extracted:												
	Analyzed:	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22	Aug-31-10	08:22
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4.03	1.00	5.06	1.00	2.26	1.00	4.06	1.00	4.87	1.00	9.95	1.00
TPH By SW8015 Mod	Extracted:	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30
	Analyzed:	Aug-31-10	03:15	Aug-31-10	03:46	Aug-30-10	17:38	Aug-30-10	17:58	Aug-30-10	18:18	Aug-30-10	18:39
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.6	ND	78.9	ND	15.3	ND	15.6	803	78.8	2790	83.4
C12-C28 Diesel Range Hydrocarbons		248	15.6	567	78.9	63 6	15.3	ND	15 6	2210	78 8	2840	83 4
C28-C35 Oil Range Hydrocarbons		63.0	15.6	123	78.9	ND	15.3	ND	15.6	ND	78.8	116	83.4
Total TPH		311	15.6	690	78.9	63.6	15.3	ND	15.6	3013	78 8	5746	83.4

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Brent Barron, II

Odessa Laboratory Manager



Project Location: Lea County, NM

Contact: Cindy Crain

## Certificate of Analysis Summary 387612

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Date Received in Lab: Fri Aug-27-10 04:25 pm

Report Date: 09-SEP-10

oject Location: Lea County, NM								-			
								Project Ma	nager:	Brent Barron, II	 
	Lab Id:	387612-0	)25	387612-0	26	387612-0	27	387612-0	28		
Analysis Requested	Field Id:	SS-11		SS-12		SS-13		SS-14			
Analysis Requested	Depth:	1-1 ft		1-1 ft		1-1 ft		1-1 ft		1	
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Aug-27-10	10.40	Aug-27-10	10:43	Aug-27-10	10:45	Aug-27-10	10.52		
BTEX by EPA 8021B	Extracted:	Sep-03-10	10:15	Sep-03-10 1	10:15	Sep-03-10	10:15	Sep-03-10	10:15		 
	Analyzed:	Sep-05-10	01:53	Sep-04-10 2	23:10	Sep-05-10 (	06.32	Sep-05-10	02:16		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Benzene		ND	0.0011	ND	0.0010	ND	0.0010	ND	0.0011		
Toluene		ND	0.0021	ND	0.0021	ND	0.0021	ND	0.0022		
Ethylbenzene		ND	0.0011	ND	0.0010	ND	0.0010	ND	0.0011		
m,p-Xylenes		ND	0.0021	ND	0.0021	ND	0.0021	ND	0.0022		
o-Xylene		ND	0 0011	ND	0.0010	ND	0.0010	ND	0.0011		 
Total Xylenes		ND	0 0011	ND	0.0010	ND	0.0010	ND	0.0011		
Total BTEX		ND	0.0011	ND	0.0010	ND	0.0010	ND	0.0011		
Inorganic Anions by EPA 300/300.1	Extracted:										
	Analyzed:	Aug-30-10	18:32	Aug-30-10	18:32	Aug-30-10	18:32	Aug-30-10	18:32		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		126	5.27	64.5	5.19	ND	5.16	ND	5.53		
Percent Moisture	Extracted:						-				
	Analyzed:	Aug-31-10	08:22	Aug-31-10 (	08:22	Aug-31-10	08·22	Aug-31-10	08:22		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		5.13	1.00	3 66	1.00	3.14	1.00	9.66	1 00		
TPH By SW8015 Mod	Extracted:	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30	Aug-30-10	12:30		
	Analyzed:	Aug-30-10	18:59	Aug-30-10	19:19	Aug-30-10	19:59	Aug-30-10	20:19		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		51.6	15.8	ND	15.5	ND	77 6	ND	16.6		
C12-C28 Diesel Range Hydrocarbons		788	15.8	71.5	15.5	897	77 6	26.0	16 6		-
C28-C35 Oil Range Hydrocarbons		36.6	15.8	ND	15.5	85.5	77.6	ND	16.6		 
Total TPH		876	15.8	71.5	15.5	983	77.6	26.0	16.6		 

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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Brent Barron, II

Odessa Laboratory 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

BRL Below Reporting Limit.

**RL** Reporting Limit

- MDL Method Detection Limit
- **PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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Project Name: Burgundy EMU Tank Battery

<b>Sample:</b> 572587-1-BKS / B					
Date Analyzed: 09/04/10 21:38	SU	RROGATE R	ECOVERY	STUDY	
X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flage
Analytes			[D]		
	0.0345	0.0300	115	80-120	
	0.0326	0.0300	109	80-120	
Sample: 572587-1-BLK / B			-		
Date Analyzed: 09/04/10 22:47	SUI	RROGATE R	ECOVERY	STUDY	
K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R (D)	Control Limits %R	Flage
Analytes	0.0306	0.0200		80.120	
				80-120	
Samuel 287612 026 / SMD					
•			-	STUDY	
· · · · · · · · · · · · · · · · · · ·			1	1	
-	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flag
	0.0308	0.0300	103	80-120	
	0.0342	0.0300	114	80-120	
Sample: 387612-026 S / MS	Batch	n: 1 Matrix	: Soil	11	
•		-		STUDY	-
K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
Analytes			[D]		
	0.0349	0.0300	116	80-120	
	0.0336	0.0300	112	80-120	
Sample: 387612-026 SD / M					
	SUI	RROGATE R	ECOVERY	STUDY	
Date Analyzed: 09/04/10 23:57					
K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Amount Found	Amount	· ·	Limits	Flag
	Date Analyzed: 09/04/10 21:38 X by EPA 8021B Analytes Sample: 572587-1-BLK / B Date Analyzed: 09/04/10 22:47 X by EPA 8021B Analytes Sample: 387612-026 / SMP Date Analyzed: 09/04/10 23:10 X by EPA 8021B Analytes Sample: 387612-026 S / MS Date Analyzed: 09/04/10 23:34 X by EPA 8021B Analytes Sample: 387612-026 S / MS Date Analyzed: 09/04/10 23:34 X by EPA 8021B Analytes	Date Analyzed: 09/04/10 21:38SUX by EPA 8021BAmount Found [A]Analytes0.03450.03450.0326Sample: 572587-1-BLK / BLKBatcl Date Analyzed: 09/04/10 22:47X by EPA 8021BAmount Found [A]Analytes0.03060.03230.0323Sample: 387612-026 / SMPBatcl Date Analyzed: 09/04/10 23:10X by EPA 8021BAmount Found [A]Analytes0.03060.0323Sample: 387612-026 / SMPBate Analyzed: 09/04/10 23:10SUX by EPA 8021BAmount Found [A]Analytes0.03080.0342Sample: 387612-026 S / MSBate Analyzed: 09/04/10 23:34SUX by EPA 8021BAmount Found [A]Analytes0.0342Sample: 387612-026 S / MSBatcl Date Analyzed: 09/04/10 23:34X by EPA 8021BAmount Found [A]Analytes0.03490.03490.0336	Date Analyzed: 09/04/10 21:38         SURROGATE R           K by EPA 8021B         Amount Found [A]         True Amount [A]         True Amount [B]           Analytes         0.0345         0.0300           Sample: 572587-1-BLK / BLK         Batch:         1           Date Analyzed: 09/04/10 22:47         SURROGATE R           K by EPA 8021B         Amount Found [A]         True Amount [B]           Analytes         0.0306         0.0300           Sample: 387612-026 / SMP Date Analyzed: 09/04/10 23:10         Batch:         1         Matrix Amount [B]           Analytes         0.0306         0.0300         0.0300           Sample: 387612-026 / SMP Date Analyzed: 09/04/10 23:10         SURROGATE R           K by EPA 8021B         Amount [A]         True Amount [B]           Analytes         0.0308         0.0300           0.0308         0.0300         0.0300           Sample: 387612-026 S / MS         Batch:         1           Date Analyzed: 09/04/10 23:34         SURROGATE R           K by EPA 8021B         Amount [A]         True Amount [A]           Analytes         0.0349         0.0300           0.0349         0.0300         0.0300	Date Analyzed: 09/04/10 21:38SURROGATE RECOVERY is the second of the second	Date Analyzed:         O9/04/10 21:38         SURROGATE RECOVERY STUDY           K by EPA 8021B         Amount [A]         True Amount [B]         Recovery %R         Control Limits %R           Analytes         0.0345         0.0300         115         80-120           0.0326         0.0300         109         80-120           Sample:         572587-1-BLK / BLK         Batch:         1         Matrix: Solid           Date Analyzed:         09/04/10 22:47         SURROGATE RECOVERY STUDY           K by EPA 8021B         Amount Found [A]         True [B]         Recovery %R [D]         Control Limits %R           Analytes         0.0306         0.0300         102         80-120           Sample:         387612-026 / SMP Analytes         Batch:         1         Matrix: Soil           Date Analyzed:         09/04/10 23:10         SURROGATE RECOVERY STUDY         X           K by EPA 8021B         Amount Found [A]         True [B]         Recovery %R [D]         Control Limits %R           Analytes         0.0308         0.0300         103         80-120           Sample:         387612-026 S / MS         Batch:         1         Matrix: Soil           Date Analyzed:         09/04/10 23:40         SURROGATE RECOVERY STUDY         <

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Project Name: Burgundy EMU Tank Battery

'ork Orders : 387612 Lab Batch #: 821824	, Sample: 387612-022 / SMP	Batc	. *	D: 0810-001 :Soil		
Units: mg/kg	Date Analyzed: 09/05/10 01:30	SU	RROGATE R	ECOVERY S	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1,4-Difluorobenzene		0.0300	0.0300	100	80-120	
4-Bromofluorobenzenc		0.0334	0.0300	111	80-120	
Lab Batch #: 821824	Sample: 387612-025 / SMP	Bate				
Units: mg/kg	Date Analyzed: 09/05/10 01:53	SU	RROGATE R	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0309	0.0300	103	80-120	
4-Bromofluorobenzene		0.0337	0.0300	112	80-120	
Lab Batch #: 821824	Sample: 387612-028 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 09/05/10 02:16	SU	RROGATE R	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Dıfluorobenzene		0.0308	0.0300	103	80-120	
4-Bromofluorobenzene		0.0339	0.0300	113	80-120	
Lab Batch #: 821824	Sample: 387612-027 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	L =	
Units: mg/kg	Date Analyzed: 09/05/10 06:32	SU	RROGATE R	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flag
1,4-Difluorobenzene		0.0310	0.0300	103	80-120	
4-Bromofluorobenzene		0.0320	0.0300	105	80-120	
Lab Batch #: 821824	Sample: 387612-017 / SMP	Bate	h: <sup>1</sup> Matrix	•Soil	1	
Units: mg/kg	Date Analyzed: 09/05/10 06:55		RROGATE R		STUDY	
	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene	· · · · · · · · · · · · · · · · · · ·	0.0304	0.0300	101	80-120	
-				- • •		

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



## Project Name: Burgundy EMU Tank Battery

ork Orders : 387612 Lab Batch #: 821824	, Sample: 387612-023 / SMP	Bate		D: 0810-001 :Soil		
Units: mg/kg	Date Analyzed: 09/05/10 14:09		RROGATE R	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1,4-Difluorobenzene		0.0269	0.0300	90	80-120	
4-Bromofluorobenzene		0.0353	0.0300	118	80-120	
Lab Batch #: 821824	Sample: 387612-009 / SMP	Bate				
Units: mg/kg	Date Analyzed: 09/05/10 14:32	SU	RROGATE R	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Dıfluorobenzene		0.0254	0.0300	85	80-120	
4-Bromofluorobenzene		0.0356	0.0300	119	80-120	
Lab Batch #: 821824	Sample: 387612-021 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	····	
Units: mg/kg	Date Analyzed: 09/05/10 14:55		RROGATE R		STUDY	
BTEX	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene	Analytes	0.0208	0.0200		80.120	
4-Bromofluorobenzene		0.0298	0.0300	99 117	80-120 80-120	
				1	80-120	
Lab Batch #: 821832	Sample: 572591-1-BKS / BK			-		
Units: mg/kg	Date Analyzed: 09/05/10 17:15	50	RROGATE R	ECOVERYS		
втех	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0346	0.0300	115	80-120	
4-Bromofluorobenzene		0.0335	0.0300	112	80-120	
Lab Batch #: 821832	Sample: 572591-1-BSD / BS					
Units: mg/kg	Date Analyzed: 09/05/10 17:38		RROGATE R		STUDY	
	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0353	0.0300	118	80-120	
				1		

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\*\*\* Poor recoveries due to dilution

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

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Project Name: Burgundy EMU Tank Battery

' <b>ork Orders :</b> 387612 Lab Batch #: 821832	2, Sample: 572591-1-BLK / B	LK Bate		D: 0810-001 : Solid		
Units: mg/kg	Date Analyzed: 09/05/10 18:47		RROGATE R	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1400	Analytes	0.0007	0.0200		00.100	
1,4-Difluorobenzene 4-Bromofluorobenzene		0.0306	0.0300	102	80-120 80-120	
	0 1 297612 002 / SMD		1		00 120	
Lab Batch #: 821832	Sample: 387612-002 / SMP	Bate	h: 1 Matrix RROGATE RI		STUDY	
Units: mg/kg	Date Analyzed: 09/05/10 19:10		r			
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Dıfluorobenzene		0 0308	0.0300	103	80-120	
4-Bromofluorobenzene		0.0353	0.0300	118	80-120	-
Lab Batch #: 821832	Sample: 387612-002 S / MS	Bate	h: <sup>1</sup> Matrix	:Soil		
Units: mg/kg	Date Analyzed: 09/05/10 19:34	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1,4-Difluorobenzene 4-Bromofluorobenzene		0.0348	0.0300	116	80-120 80-120	
					80-120	
Lab Batch #: 821832	Sample: 387612-002 SD / N		h: 1 Matrix RROGATE RI		STUDY	
Units: mg/kg	Date Analyzed: 09/05/10 19:57	50				
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0350	0.0300	117	80-120	
4-Bromofluorobenzene		0.0346	0.0300	115	80-120	
Lab Batch #: 821832	Sample: 387612-004 / SMP	Batcl	h: 1 Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 09/05/10 21:29	SU	RROGATE RI	ECOVERY	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0308	0.0300	103	80-120	
4-Bromofluorobenzene		0.0350	0.0300	L	80-120	

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\*\*\* Poor recoveries due to dilution



# Project Name: Burgundy EMU Tank Battery

ork Orders : 387612 Lab Batch #: 821832	, Sample: 387612-005 / SMP	Bate		<b>D:</b> 0810-001 : Soil		
Units: mg/kg	Date Analyzed: 09/05/10 21:52	st	RROGATE R	ECOVERY S	STUDY	
втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1,4-Difluorobenzene		0.0308	0.0300	103	80-120 80-120	
4-Bromofluorobenzene		0.0336	0.0300	112	80-120	
Lab Batch #: 821832	Sample: 387612-007 / SMP	Bato				
Units: mg/kg	Date Analyzed: 09/05/10 22:16	SU	RROGATE R	ECOVERYS	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0307	0.0300	102	80-120	
4-Bromofluorobenzene		0.0347	0.0300	116	80-120	
Lab Batch #: 821832	Sample: 387612-008 / SMP	Bate	h: 1 Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 09/05/10 22:39	SU	RROGATE R	ECOVERY S	STUDY	
BTE	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0308	0.0300	103	80-120	
4-Bromofluorobenzene		0.0353	0.0300	118	80-120	
Lab Batch #: 821832	Sample: 387612-011 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 09/05/10 23:03		RROGATE R	ECOVERY S	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0297	0.0300	99	80-120	
4-Bromofluorobenzene		0.0349	0.0300	116	80-120	
Lab Batch #: 821832	Sample: 387612-012 / SMP	Bato	h: 1 Matrix	Soil		
Units: mg/kg	Date Analyzed: 09/05/10 23:26	SU	RROGATE R	ECOVERY S	STUDY	
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzenc		0.0304	0.0300	101	80-120	
4-Bromofluorobenzene			· · · · · · · · · · · · · · · · · · ·			

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\*\*\* Poor recoveries due to dilution

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

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



Project Name: Burgundy EMU Tank Battery

ork Orders : 387612 Lab Batch #: 821832	Sample: 387612-013 / SMP	Batc		<b>D:</b> 0810-001		
Units: mg/kg	Date Analyzed: 09/05/10 23:49		RROGATE R		STUDY	
	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1.4-Difluorobenzenc		0.0307	0.0300	102	80-120	
4-Bromofluorobenzene		0.0323	0.0300	108	80-120	
Lab Batch #: 821832	Sample: 387612-014 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	I	
Units: mg/kg	Date Analyzed: 09/06/10 00:12		RROGATE R	ECOVERY	STUDY	
	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0307	0.0300	102	80-120	
4-Bromofluorobenzene		0.0339	0.0300	113	80-120	
Lab Batch #: 821832	Sample: 387612-015 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 09/06/10 00:35	SU	<b>RROGATE</b> R	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0306	0.0300	102	80-120	
4-Bromofluorobenzene		0.0347	0.0300	116	80-120	
Lab Batch #: 821832	Sample: 387612-016 / SMP	Bate	h: <sup>1</sup> Matrix	:Soil	1I	
Units: mg/kg	Date Analyzed: 09/06/10 02:08	SU	RROGATE R	ECOVERY S	STUDY	<u> </u>
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0305	0.0300	102	80-120	
4-Bromofluorobenzene		0.0345	0.0300	115	80-120	
Lab Batch #: 821832	Sample: 387612-018 / SMP	Batc	h: <sup>1</sup> Matrix	Soil	·	
Units: mg/kg	Date Analyzed: 09/06/10 02:31	SU	RROGATE R	ECOVERY	STUDY	
BTE	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1,4-Difluorobenzene		0.0307	0.0300	102	80-120	
4-Bromofluorobenzene		0.0339	0.0300	113	80-120	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



Project Name: Burgundy EMU Tank Battery

<b>ork Orders :</b> 387612 Lab Batch #: 821832	, Sample: 387612-019 / SMP	<b>Project ID:</b> 0810-001 <b>Batch:</b> 1 <b>Matrix:</b> Soil					
Units: mg/kg	Date Analyzed: 09/06/10 02:55	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B		Amount Found {A}	True Amount {B}	Recovery %R	Control Limits %R	Flag	
	Analytes			[D]			
1,4-Difluorobenzene		0.0307	0.0300	102	80-120		
4-Bromofluorobenzene		0.0345	0.0300	115	80-120		
Lab Batch #: 821832	Sample: 387612-001 / SMP						
Units: mg/kg	Date Analyzed: 09/06/10 03:18	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag	
1,4-Difluorobenzene		0 0305	0.0300	102	80-120		
4-Bromofluorobenzene		0.0349	0.0300	116	80-120		
Lab Batch #: 821832	Sample: 387612-006 / SMP	Batch	n: <sup>1</sup> Matrix	· Soil	I I		
Units: mg/kg	Date Analyzed: 09/06/10 04:04	Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag	
	Analytes			[D]			
1,4-Difluorobenzene		0.0303	0.0300	101	80-120		
4-Bromofluorobenzene		0.0324	0.0300	108	80-120		
Lab Batch #: 821832	Sample: 387612-020 / SMP	Batch: 1 Matrix: Soil					
Units: mg/kg	Date Analyzed: 09/06/10 04:50	SURROGATE RECOVERY STUDY					
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag	
140.0	Analytes	0.0007	0.0200	[D]	00.100		
1,4-Difluorobenzene		0.0303	0.0300	101	80-120		
4-Bromofluorobenzenc		0.0351	0.0300	117	80-120		
Lab Batch #: 821832	Sample: 387612-010 / SMP	Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY					
Units: mg/kg	Date Analyzed: 09/06/10 06:47	SU	RROGATE RI	COVERY S	STUDY		
BTEX by EPA 8021B Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag	
1,4-Difluorobenzene		0.0198	0.0300	66	80-120	*	
I. I. DIMUTOUTICON		0.0170	0.0300	1 00	i ov-12V l		

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



Project Name: Burgundy EMU Tank Battery

	Bate	•				
- -	SURROGATE RECOVERY STUDY					
Units: mg/kg Date Analyzed: 09/06/10 07:10 BTEX by EPA 8021B		True Amount [B]	Recovery %R	Control Limits %R	Flag	
Analytes			[D]			
	0.0295	0.0300	98	80-120		
		0.0300	151	80-120	*	
Sample: 572778-1-BKS / BK						
Date Analyzed: 09/08/10 04:10	SURROGATE RECOVERY STUDY					
X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag	
	0.0328	0.0300	109	80-120		
	0.0328	0.0300	109	80-120		
Sample: 572778-1-BSD / BS	D Batcl	h: 1 Matrix	:Solid	<u> </u>		
Date Analyzed: 09/08/10 04:34		RROGATE R	ECOVERY S	STUDY		
X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag	
Analytes						
					1	
				80-120		
Sample: 572778-1-BLK / BL						
Date Analyzed: 09/08/10 06:00	SURROGATE RECOVERY STUDY					
X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag	
	0.0290	0.0300	97	80-120		
	0.0335	0.0300	· 112	80-120		
Sample: 388700-001 S / MS	Batel	h: 1 Matrix	:Soil			
Date Analyzed: 09/08/10 06:46	SURROGATE RECOVERY STUDY					
X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag	
Analytas						
Analytes	0.0331	0.0300	110	80-120		
	Analytes         Sample: 572778-1-BKS / BK         Date Analyzed: 09/08/10 04:10         K by EPA 8021B         Analytes         Sample: 572778-1-BSD / BS         Date Analyzed: 09/08/10 04:34         K by EPA 8021B         Analytes         Sample: 572778-1-BSD / BS         Date Analyzed: 09/08/10 04:34         K by EPA 8021B         Analytes         Sample: 572778-1-BLK / BL         Date Analyzed: 09/08/10 06:00         K by EPA 8021B         Analytes         Sample: 388700-001 S / MS         Date Analyzed: 09/08/10 06:46	Sample:387612-003 / SMPBatcDate Analyzed:09/06/10 07:10SUK by EPA 8021BAmount Found [A]Analytes0.02950.04540.0295Sample:572778-1-BKS / BKSBatcDate Analyzed:09/08/10 04:10SUK by EPA 8021BAmount Found [A]Amount Found [A]Analytes0.0328Date Analyzed:09/08/10 04:34SUK by EPA 8021BAmount Found [A]Analytes0.0328Date Analyzed:09/08/10 04:34SUK by EPA 8021BAmount Found [A]Analytes0.0330Date Analyzed:09/08/10 06:00SUK by EPA 8021BAmount Found [A]Analytes0.0330O.03300.0341Sample:572778-1-BLK / BLKBatc Date Analyzed:Date Analyzed:09/08/10 06:00SUK by EPA 8021BAmount Found [A]Analytes0.02900.03350.0335Sample:388700-001 S / MSBatc Mount FoundDate Analyzed:09/08/10 06:46SUK by EPA 8021BAmount FoundK by EPA 8021BAmount Found	Sample: 387612-003 / SMPBatch:1MatrixDate Analyzed: 09/06/10 07:10SURROGATE RK by EPA 8021BAmount Found [A]True Amount [B]Analytes0.02950.03000.04540.0300Sample: 572778-1-BKS / BKSBatch:1Date Analyzed: 09/08/10 04:10SURROGATE RK by EPA 8021BAmount Found [A]True (B]Analytes0.03280.03000.03280.0300Sample: 572778-1-BSD / BSDBatch:1Matrix Date Analyzed: 09/08/10 04:34SURROGATE RK by EPA 8021BAmount Found [A]True (B]Analytes0.03280.0300Sample: 572778-1-BSD / BSDBatch:1Matrix Date Analyzed: 09/08/10 04:34SURROGATE RK by EPA 8021BAmount Found [A]True (B]Analytes0.03300.03000.03410.0300Sample: 572778-1-BLK / BLK Date Analyzed: 09/08/10 06:00SURROGATE RK by EPA 8021BAmount Found [A]True (B]Analytes0.02900.03000.03350.03000.03350.0300Sample: 388700-001 S / MS Date Analyzed: 09/08/10 06:46SURROGATE RK by EPA 8021BAmount Found [A]True (Amount (A]Analytes1Matrix Amount (A]Date Analyzed: 09/08/10 06:46SURROGATE RK by EPA 8021BAmount FoundTrue Amount	Sample:387612-003 / SMPBatch:1Matrix: SoilDate Analyzed:09/06/10 07:10SURROGATE RECOVERY SK by EPA 8021BAmount [A]True (B]Recovery %RAnalytes0.02950.0300980.04540.0300151Sample:572778-1-BKS / BKSBatch:1Matrix:SolidSURROGATE RECOVERY SK by EPA 8021BAmount Found [A]True (B]Analytes0.03280.03001090.03280.0300109Sample:572778-1-BSD / BSD 0.0328Batch:1Matrix:SolidSURROGATE RECOVERY SK by EPA 8021BAmount Found [A]True (B]Recovery %RAnalytes0.03280.0300109Sample:572778-1-BSD / BSD Found [A]Batch:1Matrix: SolidDate Analyzed:09/08/10 04:34SURROGATE RECOVERY SK by EPA 8021BAmount Found [A]True [B]%R %R [D]Analytes0.03300.03001100.03410.0300114Sample:572778-1-BLK / BLK (BLKBatch:1Matrix: SolidDate Analyzed:09/08/10 06:00SURROGATE RECOVERY SK by EPA 8021BAmount Found [A]True (B]Recovery %R %R [D]Analytes0.02900.0300112Sample:388700-001 S / MS Batch:Batch:1Matrix: SoilDate Analyzed:	Sample:387612-003 / SMPBatch:1Matrix: SoilDate Analyzed:09/06/10 07:10SURROGATERECOVERY STUDYK by EPA 8021BAmount Found [A]True Amount [B]Recovery %R [D]Control Limits %R [D]Analytes0.02950.03009880-1200.04540.030015180-120Sample:572778-1-BKS / BKS 572778-1-BKS / BKSBatch:1Matrix: SolidDate Analyzed:09/08/10 04:10SURROGATERECOVERY STUDYK by EPA 8021BAmount Found [A]True [B]Recovery %R [D]Control Limits %RAnalytes0.03280.030010980-120Sample:572778-1-BSD / BSD 0.0328Batch:1Matrix: SolidDate Analyzed:09/08/10 04:34SURROGATERecovery %R [D]Control Limits %RMalytes10Matrix: SolidSurrolSample:572778-1-BSD / BSD 0.0330Batch:1Matrix: SolidDate Analyzed:09/08/10 04:34SURROGATERecovery %R [D]Control Limits %RAnalytes1Matrix: SolidSurrolSample:572778-1-BLK / BLK 0.0330Batch:1Matrix: SolidSample:572778-1-BLK / BLK (A)Batch:1Matrix: SolidSample:572778-1-BLK / BLK (A)Batch:1Matrix: SolidSample:572778-1-BLK / BLK (A)Batch:1Matrix: Solid	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



Project Name: Burgundy EMU Tank Battery

Work Orders: 387612			-	<b>D:</b> 0810-001			
Lab Batch #: 822184	Sample: 388700-001 SD / N				OTUDA		
Units: mg/kg	Date Analyzed: 09/08/10 07:09	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1,4-Difluorobenzene		0.0342	0.0300	114	80-120		
4-Bromofluorobenzene		0.0369	0.0300	123	80-120	**	
Lab Batch #: 822184	Sample: 387612-024 / SMP	Batch:	1 Matrix	:Soil			
Units: mg/kg	Date Analyzed: 09/08/10 09:51	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene		0.0165	0.0300	55	80-120	**	
4-Bromofluorobenzene		0.0531	0.0300	177	80-120	**	
Lab Batch #: 820979	Sample: 572053-1-BKS / B	KS Batch:	1 Matrix	:Solid	1		
Units: mg/kg	Date Analyzed: 08/30/10 16:10	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1-Chlorooctane		108	101	107	70-135		
o-Terphenyl		48.5	50.3	96	70-135		
Lab Batch #: 820979	Sample: 572053-1-BSD / B	SD Batch: 1 Matrix: Solid					
Units: mg/kg	Date Analyzed: 08/30/10 16:41	SURROGATE RECOVERY STUDY					
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		103	100	103	70-135		
o-Terphenyl		46.2	50.1	92	70-135		
Lab Batch #: 820979	Sample: 572053-1-BLK / B	LK Batch:	1 Matrix	:Solid			
Units: mg/kg	Date Analyzed: 08/30/10 17:13	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane		101	99.7	101	70-135		
o-Terphenyl		51.2	49.9	103	70-135		

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Project Name: Burgundy EMU Tank Battery

Work Orders : 387612 Lab Batch #: 822184	2, Sample: 388700-001 SD / M	ISD Batch:	Project II	<b>):</b> 0810-001 Soil		
Units: mg/kg	Date Analyzed: 09/08/10 07:09		ROGATE RI		STUDY	. <u> </u>
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene		0.0342	0.0300	114	80-120	
4-Bromofluorobenzene		0.0369	0.0300	123	80-120	**
Lab Batch #: 822184	Sample: 387612-024 / SMP	Batch:	1 Matrix	Soil		
Units: mg/kg	Date Analyzed: 09/08/10 09:51	SURI	ROGATE RI	ECOVERY S	STUDY	
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Dtfluorobenzene		0.0165	0.0300	55	80-120	**
4-Bromofluorobenzene		0.0531	0.0300	177	80-120	**
Lab Batch #: 820979	Sample: 572053-1-BKS / Bk	KS Batch:	1 Matrix:	Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 08/30/10 16:10		ROGATE RI		STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		108	101	107	70-135	
o-Terphenyl		48.5	50.3	96	70-135	
Lab Batch #: 820979	Sample: 572053-1-BSD / BS	SD Batch:	l Matrix:	;Solid		
Units: mg/kg	Date Analyzed: 08/30/10 16:41	SURI	ROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		103	100	103	70-135	
o-Terphenyl		46.2	50.1	92	70-135	
Lab Batch #: 820979	Sample: 572053-1-BLK / BI	LK Batch:	1 Matrix:	;Solid	L	·
Units: mg/kg	Date Analyzed: 08/30/10 17:13		ROGATE RI		STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		101	99.7	101	70-135	
o-Terphenyl		51.2	49.9	103	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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# Project Name: Burgundy EMU Tank Battery

Sample: 387612-001 / SMP	Bate				
Date Analyzed: 08/30/10 17:44	SU	RROGATE R	ECOVERY	STUDY	
By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
Analytes					
	122	101	121	70-135	
	61.6	50.3	122	70-135	
Sample: 387612-002 / SMP					
Date Analyzed: 08/30/10 18:15	SU	RROGATE R	ECOVERY	STUDY	
By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
	91.7	101	91	70-135	
	46.2	50.3	92	70-135	
Sample: 387612-003 / SMP	Batc	h: 1 Matrix	r: Soil		
Date Analyzed: 08/30/10 18:46				STUDY	
By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
	94.0	99.5	94	70-135	
	48.6	49.8	98	70-135	
Sample: 387612-004 / SMP	Batc	h: 1 Matrix	r: Soil	<u>I</u>	
Date Analyzed: 08/30/10 19:17				STUDY	
By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
	87.6	100	88	70-135	
	44.3	50.2	88	70-135	
Sample: 387612-005 / SMP	Batc	h: <sup>1</sup> Matrix	c: Soil	<u> </u>	
Date Analyzed: 08/30/10 19:47	SU	RROGATE R	ECOVERY	STUDY	
By SW8015 Mod	Amount Found	True Amount	Recovery %R	Control Limits %R	Flag
Analytes	[A]	[B]		/010	
Analytes	[A] 96 9	[B]	<b>[D]</b> 97	70-135	
	Date Analyzed: 08/30/10 17:44By SW8015 ModAnalytesSample: 387612-002 / SMPDate Analyzed: 08/30/10 18:15By SW8015 ModAnalytesSample: 387612-003 / SMPDate Analyzed: 08/30/10 18:46By SW8015 ModAnalytesSample: 387612-003 / SMPDate Analyzed: 08/30/10 18:46By SW8015 ModAnalytesSample: 387612-004 / SMPDate Analyzed: 08/30/10 19:17By SW8015 ModAnalytesSample: 387612-004 / SMPDate Analyzed: 08/30/10 19:17By SW8015 ModAnalytesDate Analyzed: 08/30/10 19:17By SW8015 ModAnalytesDate Analyzed: 08/30/10 19:17By SW8015 ModAnalytesBy SW8015 ModAnalytesDate Analyzed: 08/30/10 19:17	Sample:387612-001 / SMPBatcDate Analyzed:08/30/10 17:44SUBy SW8015 ModAmount Found [A]Anount Found [A]Analytes12261.6Sample:387612-002 / SMPDate Analyzed:08/30/10 18:15SUBy SW8015 ModAmount Found [A]Amount Found [A]Analytes91.746.2Sample:387612-003 / SMPBatcDate Analyzed:08/30/10 18:46SUBy SW8015 ModAmount Found [A]Amount Found [A]Analytes94.048.6Sample:387612-004 / SMPBatcDate Analyzed:08/30/10 19:17SUBy SW8015 ModAmount Found [A]Amount Found [A]Analytes94.048.6Sample:387612-004 / SMPBatc BatcDate Analyzed:08/30/10 19:17SUBy SW8015 ModAmount Found [A]Amount Found [A]Analytes87.644.3Sample:387612-005 / SMPBatc BatcDate Analyzed:08/30/10 19:47SU	Sample:387612-001 / SMPBatch:1MatrixDate Analyzed:08/30/1017:44SURROGATE RBy SW8015 ModAmount Found [A]True Amount [B]Analytes12210161.650.3Sample:387612-002 / SMPBatch:1Date Analyzed:08/30/1018:15By SW8015 ModAmount Found [A]True Amount [B]Analytes91.710146.250.3Sample:387612-003 / SMP (A)Batch:1Matrix Date Analyzed:08/30/1018:46By SW8015 ModAmount Found [A]True (Amount [B]Analytes91.7101Date Analyzed:08/30/1018:46By SW8015 ModAmount [A]True [B]Analytes94.099.548.649.8Sample:387612-004 / SMP (A)Batch:1Matrix Found [A]II]By SW8015 ModAmount [A]True [B]Analytes1Matrix (A)By SW8015 ModAmount [A]True [B]Analyzed:08/30/1019:17By SW8015 ModAmount [A]II]Analytes1Matrix (A)Analytes1Matrix (A)By SW8015 ModAmount [A]II]Analytes1Matrix (A)By SW8015 ModAmount (A)True (A)By SW8015 ModAmount (A) </td <td>Sample:387612-001 / SMPBatch:1Matrix: SoilDate Analyzed:08/30/10 17:44SURROGATE RECOVERY in the second of the</td> <td>Sample:         387612-001 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 17:44         SURROGATE         RECOVERY STUDY           By SW8015 Mod         Amount Found [A]         True Amount [B]         Recovery %R [D]         Control Limits           Analytes         122         101         121         70-135           Sample:         387612-002 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 18:15         SURROGATE         RECOVERY STUDY           By SW8015 Mod         Amount Found [A]         True Amount [B]         Recovery %R [D]         Control Limits           Analytes         91.7         101         91         70-135           Sample:         387612-003 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 18:46         SURROGATE         Recovery %R [D]         Control Limits           Sample:         387612-003 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 18:46         SURROGATE         Recovery %R [D]         %R           Analytes         [A]         [B]         Recovery %R [D]         %R           Sample:         3876</br></br></td>	Sample:387612-001 / SMPBatch:1Matrix: SoilDate Analyzed:08/30/10 17:44SURROGATE RECOVERY in the second of the	Sample:         387612-001 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 17:44         SURROGATE         RECOVERY STUDY           By SW8015 Mod         Amount Found [A]         True Amount [B]         Recovery %R [D]         Control Limits           Analytes         122         101         121         70-135           Sample:         387612-002 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 18:15         SURROGATE         RECOVERY STUDY           By SW8015 Mod         Amount Found [A]         True Amount [B]         Recovery %R [D]         Control Limits           Analytes         91.7         101         91         70-135           Sample:         387612-003 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 18:46         SURROGATE         Recovery %R [D]         Control Limits           Sample:         387612-003 / SMP         Batch:         1         Matrix: Soil           Date Analyzed:         08/30/10 18:46         SURROGATE         Recovery %R [D]         %R           Analytes         [A]         [B]         Recovery 

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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

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Project Name: Burgundy EMU Tank Battery

<b>ork Orders :</b> 387612			. *	<b>D:</b> 0810-001		
Lab Batch #: 820979	Sample: 387612-006 / SMP	Batc			CTUDY .	
Units: mg/kg	Date Analyzed: 08/30/10 20:18		RROGATE R	ECOVERY		_
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flag
1-Chlorooctane	Analytes	94.1	99.8	94	70-135	
o-Terphenyl		48.8	49.9	94	70-135	
Lab Batch #: 820979	Sample: 387612-007 / SMP	Batc	1	· Soil		
Units: mg/kg	Date Analyzed: 08/30/10 20:48		RROGATE R		STUDY	
	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		91.8	100	92	70-135	
o-Terphenyl		46.4	50.2	92	70-135	<b>—</b> .
Lab Batch #: 820979	Sample: 387612-008 / SMP	Bate				
Units: mg/kg	Date Analyzed: 08/30/10 21:18	SU	RROGATE R	ECOVERY	STUDY	
TPH I	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		88.7	100	89	70-135	
o-Terphenyl		44.8	50.1	89	70-135	
Lab Batch #: 820979	Sample: 387612-009 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	<u>.</u>	
Units: mg/kg	Date Analyzed: 08/30/10 21:47	SU	RROGATE R	ECOVERY	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		106	100	106	70-135	
o-Terphenyl	· ·····	54.8	50.2	109	70-135	
Lab Batch #: 820979	Sample: 387612-010 / SMP	Bate	h: 1 Matrix RROGATE R		CTUTNY	
Units: mg/kg	Date Analyzed: 08/30/10 22:17		KRUGATE K	TTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTT		
ТРН Ј	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		128	99.7	128	70-135	
·			ļ			

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



# Project Name: Burgundy EMU Tank Battery

'ork Orders : 387612 Lab Batch #: 820979	, Sample: 387612-011 / SMP	Bate		<b>D:</b> 0810-001		
Units: mg/kg	Date Analyzed: 08/30/10 23:15	SU	RROGATE R	ECOVERY S	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		106	100	106	70-135	
o-Terphenyl		54.7	50.1	109	70-135	
Lab Batch #: 820979	Sample: 387612-012 / SMP_	Batc				
Units: mg/kg	Date Analyzed: 08/30/10 23:45	SU	RROGATE R	ECOVERY S	STUDY	
TPH ]	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		89.5	99.5	90	70-135	
o-Terphenyl		45.9	49.8	92	70-135	
Lab Batch #: 820979	Sample: 387612-013 / SMP	Bate	h: 1 Matrix	: Soil		
Units: mg/kg	Date Analyzed: 08/31/10 00:16	SU	RROGATE R	ECOVERY S	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		89.9	101	89	70-135	
o-Terphenyl		45.2	50.3	90	70-135	
Lab Batch #: 820979	Sample: 387612-014 / SMP	Batc	h: 1 Matrix	:Soil	•	
Units: mg/kg	Date Analyzed: 08/31/10 00:45	SU	RROGATE R	ECOVERY S	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane	Analytes	104	99.7	ļ	70.125	
o-Terphenyl		53.4	49.9	104	70-135 70-135	
	a 1 207/12 015 / D.D.			<u> </u>	1 10 100	
Lab Batch #: 820979	Sample: 387612-015 / SMP	Bate	h: <sup>1</sup> Matrix RROGATE R		STUDV	
Units: mg/kg	Date Analyzed: 08/31/10 01:15					
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane	Analy 103	81.8	100	82	70-135	
1 Chiorootanio		01.0	100	<u>م</u> د ا	10-133	

\* Surrogate outside of Laboratory QC limits
\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

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

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



# Project Name: Burgundy EMU Tank Battery

7 <b>ork Orders :</b> 387612 Lab Batch #: 820979	, Sample: 387612-016 / SMP	Batc	•	<b>D:</b> 0810-001		
Units: mg/kg	Date Analyzed: 08/31/10 01:47	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flag
	Analytes			L	70.126	
I-Chlorooctanc o-Tcrphenyl		90.9	99.8 49.9	91	70-135 70-135	
 Lab Batch #: 820979	Sample: 387612-017 / SMP	Batc	h: 1 Matrix	<u>r</u> Soil		
Units: mg/kg	Date Analyzed: 08/31/10 02:16		RROGATE R		STUDY	
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		105	100	105	70-135	
o-Terphenyl		52.2	50.2	104	70-135	
Lab Batch #: 820979	Sample: 387612-018 / SMP	Bate	h: <sup>1</sup> Matrix	:Soil		
Units: mg/kg	Date Analyzed: 08/31/10 02:45	SU	RROGATE R	ECOVERY S	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
I-Chlorooctane		96.0	100	96	70-135	
o-Terphenyl		47.9	50.1	96	70-135	
Lab Batch #: 820979	Sample: 387612-019 / SMP	Batc	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 08/31/10 03:15	SU	RROGATE R	ECOVERY S	STUDY	<u> </u>
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		121	100	121	70-135	
o-Terphenyl		61.0	50.1	121	70-135	
 Lab Batch #: 820979	Sample: 387612-020 / SMP	Bate	h: 1 Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 08/31/10 03:46		RROGATE R		STUDY	
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		134	99.9	134	70-135	
o-Terphenyl		68.7	50.0	137	70-135	*

\* Surrogate outside of Laboratory QC limits
\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution



## Project Name: Burgundy EMU Tank Battery

'ork Orders: 387612 Lab Batch #: 820979	Sample: 387612-001 S / MS	Bate		<b>D:</b> 0810-001 ::Soil		
Units: mg/kg	Date Analyzed: 08/31/10 04:16	SU	<b>RROGATE</b> R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		86.9	100	87	70-135	
o-Terphenyl		39.8	50.1	79	70-135	
Lab Batch #: 820979	Sample: 387612-001 SD / N					
Units: mg/kg	Date Analyzed: 08/31/10 04:47	SU	<b>RROGATE R</b>	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		105	99.5	106	70-135	
o-Terphenyl		49.1	49.8	99	70-135	<u>_</u>
Lab Batch #: 820987	Sample: 572058-1-BKS / B	KS Batc	h: 1 Matrix	: Solid	· · · · · ·	
Units: mg/kg	Date Analyzed: 08/30/10 15:15		RROGATE R		STUDY	
	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		87.8	101	87	70-135	
o-Terphenyl		52.5	50.3	104	70-135	
Lab Batch #: 820987	Sample: 572058-1-BSD / B	SD Bate	h: <sup>1</sup> Matrix	:Solid		
Units: mg/kg	Date Analyzed: 08/30/10 15:35	SU	<b>RROGATE R</b>	ECOVERY S	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		85.3	100	85	70-135	<u> </u>
o-Terphenyl		45.4	50.1	91	70-135	
Lab Batch #: 820987	Sample: 572058-1-BLK / B	LK Batc	h: 1 Matrix	:Solid		
Units: mg/kg	Date Analyzed: 08/30/10 15:56		RROGATE R		STUDY	
TPH J	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		85.5	99.7	86	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



## Project Name: Burgundy EMU Tank Battery

ork Orders : 387612 Lab Batch #: 820987	, Sample: 387612-021 / SMP	Bate		<b>D:</b> 0810-001 ::Soil		
Units: mg/kg	Date Analyzed: 08/30/10 17:38	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		83.5	99.5	84	70-135	
o-Terphenyl		41.9	49.8	84	70-135	
Lab Batch #: 820987	Sample: 387612-022 / SMP	Bato		·		
Units: mg/kg	Date Analyzed: 08/30/10 17:58	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		88.5	100	89	70-135	
o-Terphenyl		44.4	50.0	89	70-135	
Lab Batch #: 820987	Sample: 387612-023 / SMP	Batc	h: 1 Matrix	::Soil	,	
Units: mg/kg	Date Analyzed: 08/30/10 18:18	su	RROGATE R	ECOVERY S	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
	Analytes					<u> </u>
1-Chlorooctane		114	99.9	114	70-135	
o-Terphenyl		43.3	50.0	87	70-135	
Lab Batch #: 820987	Sample: 387612-024 / SMP	Bate				
Units: mg/kg	Date Analyzed: 08/30/10 18:39	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		104	100	104	70-135	
o-Terphenyl		41.5	50.1	83	70-135	
Lab Batch #: 820987	Sample: 387612-025 / SMP	Batc	h: 1 Matrix	:Soil	·!	J
Units: mg/kg	Date Analyzed: 08/30/10 18:59	SU	RROGATE R	ECOVERY S	STUDY	
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		86 5	100	87	70-135	
o-Terphenyl						

\* Surrogate outside of Laboratory QC limits
 \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

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



## Project Name: Burgundy EMU Tank Battery

'ork Orders : 387612 Lab Batch #: 820987	, Sample: 387612-026 / SMP	Batch	-	<b>D:</b> 0810-001		
Units: mg/kg	Date Analyzed: 08/30/10 19:19		RROGATE R		STUDY	
	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		81.7	99.5	82	70-135	
o-Terphenyl		41.2	49.8	83	70-135	
Lab Batch #: 820987	Sample: 387612-027 / SMP	Batch	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 08/30/10 19:59	SU	RROGATE R	ECOVERY	STUDY	
TPH ]	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		75.2	100	75	70-135	
o-Terphenyl		41.3	50.1	82	70-135	
Lab Batch #: 820987	Sample: 387612-028 / SMP	Batch	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 08/30/10 20:19	SUI	RROGATE R	ECOVERY	STUDY	
TPH ]	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		86.5	100	87	70-135	
o-Terphenyl		44.3	50.0	89	70-135	
	Sample: 387633-001 S / MS	Batch	n: 1 Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 08/30/10 20:38	SUI	RROGATE R	ECOVERY S	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1 Chlorester	Analytes	05.2	100		70.105	
1-Chlorooctane		85.3	100	85	70-135	
o-Terphenyl		44.9	50.0	90	70-135	<u> </u>
Lab Batch #: 820987	Sample: 387633-001 SD / MS					
Units: mg/kg	Date Analyzed: 08/30/10 20:58	SUI	RROGATE R	ECOVERY S		
TPHI	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane	<b>y</b> • • • •	80.6	99.5	81	70-135	
				L		

\* Surrogate outside of Laboratory QC limits
 \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution





## Project Name: Burgundy EMU Tank Battery

Work Order #: 387612		(	0810-001			
Lab Batch #: 821824 Date Analyzed: 09/04/2010	Sample: 572587 Date Prepared: 09/03/2	010	Matrix: Analyst:			
Reporting Units: mg/kg	Batch #: 1	BLANK /I	BLANK SPI	KE REC	COVERY	STUDY
BTEX by EPA 8021B Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Benzene	ND	0.1000	0.0924	92	70-130	
Toluene	ND	0.1000	0.0909	91	70-130	
Ethylbenzenc	ND	0.1000	0.0933	93	71-129	
m,p-Xylenes	ND	0.2000	0.1798	90	70-135	1
o-Xylene	ND	0.1000	0 0919	92	71-133	

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



# **BS / BSD Recoveries**



### Project Name: Burgundy EMU Tank Battery

Work Order #: 387612 Analyst: ASA	,	)ate Prenar	ed: 09/03/20	10				ject ID: ( nalyzed: (	)810-001 )9/05/2010			
•	Sample: 572591-1-BKS	-	h#: 1					Matrix: S	Solid			
Units: mg/kg		BLAN	K/BLANK	SPIKE / E	IKE / BLANK SPIKE DUPLICATE RECOVERY STUDY							
BTEX by EPA 80 Analytes	21B Blank Sample Resul [A]	Spike t Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Benzene	ND	0.1000	0.0803	80	0.1	0.0927	93	14	70-130	35		
Toluene	ND	0 1000	0 0802	80	0.1	0.0906	91	12	70-130	35		
Ethylbenzene	ND	0.1000	0.0845	85	0.1	0.0939	94	11	71-129	35		
m,p-Xylenes	ND	0.2000	0.1639	82	0.2	0.1814	91	10	70-135	35		
o-Xylene	ND	0.1000	0.0837	84	0.1	0.0932	93	11	71-133	35		
Analyst: SEE		Jata Prona	ed: 09/07/20	10			Date A	nalyzed: (	19/08/2010			
Analyst: ODD		Jaie Liepai	eu: 09/0/120	10					00/2010			
•	Sample: 572778-1-BKS	-	h#: 1	10				Matrix:				
•		Batc			BLANK S	PIKE DUP		Matrix:	Solid	Y		
Lab Batch ID: 822184 Units: <sup>mg/kg</sup> BTEX by EPA 80	Sample: 572778-1-BKS	Batc BLAN Spike	<b>h #:</b> 1		BLANK S Spike Added [E]	Blank Spike Duplicate Result [F]		Matrix:	Solid	Control Limits %RPD	Flag	
Lab Batch ID: 822184 Units: mg/kg BTEX by EPA 80 Analytes	Sample: 572778-1-BKS 21B Blank Sample Resul [A]	Batc BLAN Spike t Added [B]	h #: 1 K /BLANK Blank Spike Result [C]	SPIKE / I Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	LICATE Blk. Spk Dup. %R [G]	Matrix: S RECOVI RPD %	Solid ERY STUD Control Limits %R	Control Limits %RPD	Flag	
Lab Batch ID: 822184 Units: <sup>mg/kg</sup> BTEX by EPA 80 Analytes Benzene	Sample: 572778-1-BKS 21B Blank Sample Resul [A] ND	Batc BLAN Spike Added [B] 0.1000	h #: 1 K/BLANK Blank Spike Result [C] 0.0838	SPIKE / I Blank Spike %R [D] 84	Spike Added [E] 0 1	Blank Spike Duplicate Result [F] 0.0896	Blk. Spk Dup. %R [G] 90	Matrix: S RECOVI RPD % 7	Solid ERY STUE Control Limits %R 70-130	Control Limits %RPD 35	Flag	
Lab Batch ID: 822184 Units: mg/kg BTEX by EPA 80 Analytes Benzene Toluene	Sample: 572778-1-BKS 21B Blank Sample Resul [A] ND ND	Batc BLAN Spike Added [B] 0.1000 0.1000	h #: 1 K/BLANK Blank Spike Result [C] 0.0838 0.0881	SPIKE / I Blank Spike %R [D] 84 88	Spike Added [E] 0 1 0 1	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G] 90 90	Matrix: S RECOVI RPD %	Solid ERY STUD Control Limits %R	Control Limits %RPD	Flag	
Lab Batch ID: 822184 Units: <sup>mg/kg</sup> BTEX by EPA 80 Analytes Benzene	Sample: 572778-1-BKS 21B Blank Sample Resul [A] ND	Batc BLAN Spike Added [B] 0.1000	h #: 1 K/BLANK Blank Spike Result [C] 0.0838	SPIKE / I Blank Spike %R [D] 84	Spike Added [E] 0 1	Blank Spike Duplicate Result [F] 0.0896 0.0901	Blk. Spk Dup. %R [G] 90	Matrix: S RECOVI % 7 2	Solid ERY STUE Control Limits %R 70-130 70-130	Control Limits %RPD 35 35	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



# **BS / BSD Recoveries**



### Project Name: Burgundy EMU Tank Battery

<b>Work Order #:</b> 387612							Pro	ject ID: (	810-001		
Analyst: LATCOR	Da	ate Prepar	ed: 08/30/201	0			Date A	nalyzed: (	8/30/2010		
Lab Batch ID: 821030 Sample: 821030	-1-BKS	Batcl	h#: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K/BLANK S	SPIKE / F	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.7	107	10	10.6	106	1	80-120	20	
Analyst: LATCOR	D	ate Prepar	ed: 08/30/201	0	•		Date A	nalyzed: (	8/30/2010		
Lab Batch ID: 821034 Sample: 821034	-1-BKS	Batel	h#: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / H	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUD	Ŷ	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.62	96	10	9.50	95	1	80-120	20	
Analyst: BEV	D	ate Prepar	ed: 08/30/201	.0		• • • • • • • •	Date A	nalyzed: (	8/30/2010		
Lab Batch ID: 820979 Sample: 572053	-1-BKS	Bate	h#: 1					Matrix: S	Solid		
Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUP	LICATE	RECOVI	ERY STUD	θY	
TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1010	1020	101	1000	981	98	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1010	848	84	1000	819	82	3	70-135	35	

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



## **BS / BSD Recoveries**



### Project Name: Burgundy EMU Tank Battery

Work Order #: 387612 Analyst: BEV Lab Batch ID: 820987	Sample: 572058-1-BKS		ite Prepar Batcł	ed: 08/30/201 1#: 1	0			Date A	ject ID: ( nalyzed: ( Matrix: S	08/30/2010		
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE							RECOVI	ERY STUD	Y	
TPH By SW8	015 Mod	Blank mple 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]	[D]	(E)	Result [F]	[G]				
C6-C12 Gasoline Range Hydro	carbons	ND	1010	1120	111	1000	1100	110	2	70-135	35	
C12-C28 Diesel Range Hydroc	arbons	ND	1010	974	96	1000	1050	105	8	70-135	35	

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



## Form 3 - MS Recoveries



## Project Name: Burgundy EMU Tank Battery

Work Order #: 387612 Lab Batch #: 821030 Date Analyzed: 08/30/2010 QC- Sample ID: 387612-001 S	<b>Date Prepared:</b> 08/30 <b>Batch #:</b> 1	/2010	А	oject ID nalyst: L Matrix: S			
Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STU						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	9,54	105	116	101	80-120		
Lab Batch #: 821034 Date Analyzed: 08/30/2010 QC- Sample ID: 387612-021 S Reporting Units: mg/kg	Date Prepared: 08/30 Batch #: 1 MATR			nalyst: L Matrix: S RECO	oil	DY	
Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Chloride	ND	102	103	101	80-120	<u> </u>	

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

BRL - Below Reporting Limit



## Form 3 - MS / MSD Recoveries

### Project Name: Burgundy EMU Tank Battery



Work Order #: 387612						Project Il	<b>D:</b> 0810-0	01			
Lab Batch ID: 821824 Date Analyzed: 09/04/2010	QC- Sample ID: Date Prepared:				tch #: alyst:	l <b>Matri</b> ASA	<b>x:</b> Soil				
Reporting Units: mg/kg		M	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1038	0.0787	76	0.1038	0.0944	91	18	70-130	35	
Toluene	ND	0 1038	0.0713	69	0 1038	0.0896	86	23	70-130	35	X
Ethylbenzene	ND	0.1038	0.0605	58	0.1038	0.0883	85	37	71-129	35	XF
m,p-Xylenes	ND	0.2076	0.1054	51	0.2076	0.1580	76	40	70-135	35	XF
o-Xylene	ND	0.1038	0.0616	59	0.1038	0.0850	82	32	71-133	35	X
Lab Batch ID: 821832 Date Analyzed: 09/05/2010	QC- Sample ID: Date Prepared:				tch #: alyst:	1 Matri ASA	x: Soil				
Reporting Units: mg/kg		M	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [ <b>B</b> ]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1062	0.0763	72	0 1062	0.0845	80	10	70-130	35	
Toluene	ND	0.1062	0.0691	65	0.1062	0.0802	76	15	70-130	35	х
Ethylbenzene	ND	0.1062	0.0622	59	0 1062	0.0778	73	22	71-129	35	x
m,p-Xylenes	ND	0 2123	0.1030	49	0.2123	0.1454	68	34	70-135	35	x
o-Xylene	ND	0.1062	0.0588	55	0.1062	0.0762	72	26	71-133	35	x

Matrix Spike Percent Recovery  $[D] = 100^{*}(C-A)/B$ Relative Percent Difference RPD =  $200^{*}[(C-F)/(C+F)]$  Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



**Project Name: Burgundy EMU Tank Battery** 



#### Work Order #: 387612 Project ID: 0810-001 Lab Batch ID: 822184 **QC-Sample ID: 388700-001 S** Batch #: 1 Matrix: Soil Date Prepared: 09/07/2010 SEE Date Analyzed: 09/08/2010 Analyst: Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Duplicate Control Spiked Spiked Control **BTEX by EPA 8021B** Sample Spike Result Sample Spike Spiked Sample Dup. RPD Limits Limits Flag Result Added [C] %R Added Result [F] %R % %R %RPD Analytes **[A] [B]** [D] [E] [G] Benzene 72 0.1110 0.0876 79 ND 0.1110 0.0802 9 70-130 35 Toluene ND 0 1110 0.0806 73 0 1 1 1 0 0.0871 78 8 70-130 35 Ethylbenzene ND 0.1110 0.0849 76 0.1110 0.0915 82 7 71-129 35 0.2220 0.2220 80 7 m.p-Xylenes ND 0.1652 74 0.1778 70-135 35 79 8 o-Xylene ND 0.1110 0.0806 73 0.1110 0.0877 71-133 35 Lab Batch ID: 820979 Batch #: **QC- Sample ID:** 387612-001 S 1 Matrix: Soil Date Prepared: 08/30/2010 BEV Date Analyzed: 08/31/2010 Analyst: Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Spike Result RPD Sample Spike Spiked Sample Dup. Limits Limits Flag Result Added [**C**] %R Added Result [F] %R % %R %RPD Analytes **[A] [B]** [D] **[E]** [G] C6-C12 Gasoline Range Hydrocarbons ND 1050 847 81 1040 1030 99 19 70-135 35 C12-C28 Diesel Range Hydrocarbons 43.4 1050 940 85 1040 1150 106 20 70-135 35 Lab Batch ID: 820987 Matrix: Soil QC- Sample ID: 387633-001 S Batch #: 1 Date Prepared: 08/30/2010 Analyst: BEV Date Analyzed: 08/30/2010 Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY Parent Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Spike Result Sample Spike Spiked Sample RPD Limits Flag Dup. Limits Result Added [C] %R Added Result [F] %R % %R %RPD Analytes [A] **[B] [D]** [E] [G] C6-C12 Gasoline Range Hydrocarbons 16.5 1080 1150 105 1080 1100 100 4 70-135 35 C12-C28 Diesel Range Hydrocarbons 199 1080 1090 83 1080 1000 74 9 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 ApplicableN = See Narrative, EQL = Estimated Quantitation Limit



Sample Duplicate Recovery



## Project Name: Burgundy EMU Tank Battery

Work Order #: 387612

Lab Batch #: 821030				Project 1	<b>D:</b> 0810-00	1
Date Analyzed: 08/30/2010	Date Prepa	r <b>ed:</b> 08/30/2010	) Ana	lyst:LATC	COR	
QC- Sample ID: 387612-001 D	Bate	<b>h #:</b> 1	Mat	rix: Soil		
Reporting Units: mg/kg		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Inorganic Anions by EPA 30 Analyte	D/300.1	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride		9.54	9.65	1	20	
Lab Batch #: 821034						J
Date Analyzed: 08/30/2010	Date Prena	red: 08/30/2010	) Ana	lyst:LATC	COR	
QC- Sample ID: 387612-021 D	Batc			rix: Soil		
Reporting Units: mg/kg		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Inorganic Anions by EPA 30	0/300.1	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte			[B]			
Chloride		ND	ND	NC	20	
Lab Batch #: 820955 Date Analyzed: 08/31/2010	Date Prepa	r <b>ed:</b> 08/31/2010	) Ana	lyst:JLG		
QC- Sample ID: 387612-001 D	Bate	h#: 1	Mat	rix: Soil		
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture Analyte		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		4.60	5.60	20	20	
	· · · · ·			1 -0		<u> </u>
Lab Batch #: 820960 Date Analyzed: 08/31/2010	Date Prepa	red: 08/31/2010	) Ana	lyst:JLG		
QC- Sample ID: 387612-021 D	Bate			rix: Soil		
Reporting Units: %		SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte						
Percent Moisture		2.26	2.57	13	20	1

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

**Environmental Lab of Texas** CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST 12600 West I-20 East Phone: 432-563-1800 Odessa, Texas 79765 Fax: 432-563-1713 **Burgundy EMU Tank Battery** Project Manager: Cindy Crain Project Name: 0810-001 **Company Name** Crain Environmental Project #: Lea County, New Mexico Company Address: 2925 East 17th Street Project Loc: Odessa, TX 79761 City/State/Zip: PO #: Standard **NPDES Telephone No:** Fax No: (432) 530-9797 (432) 272-0304 Report Format: Sampler Signature: cindy.crain@gmail.com e-mail: son Analyze For: (lab use only) TCLP: 5 387612 TOTAL 2 ORDER #: Preservation & # of Containers Matrix s 8 BTEX 8260 ž ₽ 1008 Alkatinity) Metals: As Ag Ba Cd Cr Pb ð ř (Aluo Cations (Ca, Mg, Na, K) Beginning Depth BTEX 80218/5030 G Sampled Sampled (0.833) SAR / ESP / CEC Ending Depth TX 1005 (Josep) RUSH TAT (Pn Standard TAT 418.1 [어례 #. of Cor đ ield Fittered ā **DW=Drinking** NayS<sub>2</sub>03 N.O.R.M. Semivolat GW= Grou 4 HNO, HCI H<sub>S</sub>SO, Date None Other НdТ Q Ë 8 /olai õ FIELD CODE х **SS-1** 6" 6" 8/27/2010 1 X X N X 1011 s 2 х SS-2 6" 6" 8/27/2010 1 X х Х 1012 S Х 3 **SS-3** X 6" 6" 8/27/2010 1015 1 X S Х Х Х ΰ 6" 6" X Х х Х SS-4 8/27/2010 1021 1 S Х 5 Х **SS-5** 6" 6" 1 X Х Х 8/27/2010 1017 S X 6 6" 6" **SS-6** 8/27/2010 1023 1 Х S Х χ Х Х 1 **SS-7** 6" 6'' 8/27/2010 1 X Х X х 1025 S X 9 **SS-8** 6" 6" 1 Х S х X Х 8/27/2010 1027 Х х q, SS-9 6" 6" 8/27/2010 1028 1 Iх S Х Х Х 16 SS-10 6" 6" 8/27/2010 1030 1 Х Х Х Х X Special Instructions: Laboratory Comments: Sample Containers Intect? N.

Page lof 3

**P P** VOCs Free of Headspace? Ν Labels on containings) Custody seals on container(s) 282 Relinquished by. Date Received by: Date Time Time 8/27/m 1625 Š A. Custody sealing on cooler(s) Date Date Sample Hand Delivered Reliequished by Received by Time Ñ Time by Sampler/Client Rep. ? N FedEx Lone Star by Courier? UPS DHL Relinquished by: Date Time Received by ELOT: Time Date 16:25 Temperature Upon Receipt: °C Ч,

En	vironment	tal Lab of 1	Геха	is			·				Wes	CHA st I-20 exas 1	Eas	st	US	TODY	RE(	COF	RD A	ND		Phor	10: 4:	32-5	2 <i>UES</i> 63-18 63-17	800	Pa	, ge	2 ot
	Project Manager:	Cindy Crain														1	Prole	ect N	lame			Bur	gun	dy E	:MU	Tanl	k Bat	tery	
														<b></b>		-	-							30	310-0	001			
	Company Name	Crain Environmental	• <u> </u>			<u></u>				<del></del>						-										ow M	lexico	~~~ <u>~</u>	
	Company Address	2925 East 17th Street				<u> </u>										-	Pro	oject	Loc										
	City/State/Zip:	Odessa, TX 79761								-						-		I	PO #	:	_							<u>.</u>	
	Telephone No:	(432) 530-9797	~			Fax No	:	(43	2) 27	72-0	304					Rep	ort F	orm	at:	X	/ Sta	ndar	d	С	] TRF	٩P	Г	] NPC	DES
	Sampler Signature	71:1	rai			e-mail:		cir	ndv	cra	ain(	@gn	hail	cor	n	-				•									
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ORDEF	<sub>r#:</sub> 387	612	~		····		<u> </u>	×		<sup>2</sup> rese	rvatio	on&≢o	f Cor	tainer	\$	Matri				Γ		8	+	8	1				4
LAB # (iath use only)	FIE	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers 702	1	HNO.	PH	H <sub>2</sub> SO4 NaOH	Na <sub>z</sub> S <sub>z</sub> O <sub>3</sub>	None	Other ( Specify)	DW=Drinting Water SL=Studge GW = Groundwater S=SollSolid	Specify Other	TPH- TY ING THE THE	Cetions (Ce. Mg. Na, K)	(riions (C) SO4. Alkalthity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatijes Sermvolatites	BIEX 80218/5030 Jr BIEX 8260	RCI	N.O.R.M			RUSH TAT ( <del>Pre Schedule</del> ) 2 Standard TAT
15		SS-11	6"	6"	8/27/2010	1031		1	x							s		x		x				X				$\Box$	X
12		SS-12	6"	6"	8/27/2010	1034		1	X	_						S		x		x				X					X
	<u> </u>	SS-13	6"	6"	8/27/2010	1035		1	X							S		x		X				X					x
14		SS-14	6"	6"	8/27/2010	1038		1	X		_					s		<u>×</u>		X				X					X
15		SS-1	1'	1'	8/27/2010	1040		1	X		_					S	_l²	<u>×</u>		X			$\bot$	X	Ш			Ш	X
16		SS-2	1'	1'	8/27/2010	1043	4	1	×		_	_				S	/	×L	1	X			$\bot$	<u> </u>		-		$\square$	X
11		SS-3	<u>1'</u>	1'	8/27/2010	1045	$\downarrow$	1		_	$ \rightarrow$		+-			S	1	×		X			+	×	+	_	+	$\square$	X
18		<u>\$\$-4</u>	<u>†'</u>	1'	8/27/2010	1052	4	1	X	$\rightarrow$	_		+	$\square$		S	-12	×		X			+	×	1	_	+-	┝╌┨	X
19		SS-5	1'	1'	8/27/2010	1047	+	1		_	-		+-	$\left  \right $		S		<u>×</u>	+-	X			+	X		_		┝╌┥	X
20 Special	Instructions:	SS-6	1'	1'	8/27/2010	1048	1	1	х				1					×	1.0	X			nmen	X	Ш			Ш	X
Relinquis	had by: ada Jain	Dete 8/21/1 Date	0 16	ime 25 ime	Received by.	·····				1					Da			me		mple Cs f stod stod	ree on o y se Hai Samo	of He ontel als or als of bls or als of De Dar/C	ers Ini eadsp ner(s) n cont n cool slivere lient R	tact? ) tainer tainer tainer (s) ed Rep. ?	7 (8)	,	ବେ≺ ≺ଣ୍ଡବ		N N
Relinguis	hed by:	Date	Ť	ime	Received by ELC	Ban								81	27	1 1	тн 16:а	me 25	- Te			er? e Up		PS eceipt	DHL t:		edEx		Star °C

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#### **Environmental Lab of Texas** CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST 12600 West I-20 East Phone: 432-563-1800 Odessa, Texas 79765 Fax: 432-563-1713 **Burgundy EMU Tank Battery** Project Manager: Cindy Crain **Project Name:** 0810-001 Company Name Crain Environmental Project #: Lea County, New Mexico Company Address: 2925 East 17th Street Project Loc: City/State/Zip: Odessa, TX 79761 PO#: Report Format: X Standard

Page 3 of 3

#### **NPDES Telephone No:** Fax No: (432) 530-9797 (432) 272-0304 cindy.crain@gmail.com Sampler Signature: e-mail: Analyze For: (lab use only) TCLP: 387612 TOTAL: ۲ ORDER #: Preservation & # of Containers Matrix Metats: As Ag Be Cd Cr Pb Hg Se 8260 TX 1006 Na. K) ğ 202 or BTEX Arions (CL)SO4, Alkalinity) 5 (Auo eginning Depth Sampled /CEC 8021B/5030 Sampled 8 Depth ns (Ca, Mg, <u>۽</u> TX 1005 Ł Fotal #. of Contai Standard TAT 418.1 RUSH TAT QB) eld Fittered SAR / ESP / Other (Sp GW = Groun l Builbu N.O.R.M. Na,S,O ž Time H<sub>-</sub>SO4 NaOH Date HNO. R. None Ë Ë 0-MC 8 ₽ 8 õ FIELD CODE 21 Х Х X Х **SS-7** 1' 1' 8/27/2010 1031 1 Х S 22 X х **SS-8** 11 8/27/2010 1 X S х Х 11 1034 23 х X Х Х X SS-9 1' 1' 8/27/2010 1035 1 S X ZY 11 S Х х Х SS-10 1' 8/27/2010 1038 1 Х X х X х S 25 SS-11 1' 1' 8/27/2010 1040 1 Х 26 х Х SS-12 1' 1' 8/27/2010 1043 1 X S Х Х 27 1 Х S Х х Х Х SS-13 1 8/27/2010 1 1045 28 1 Х S Х Х X SS-14 1' 11 8/27/2010 1052 Special Instructions: Laboratory Comments: Ø <u>्रि</u>ः । **भ** Sample Containers Intact? Ò VOCs Free of Headspace? Ν Ç Date Date Time Labels on container(s) 11 N Time Received by: Relinquished by: Custody seals on container(s) 8 1625 sain Custody seels on coclar(s) Date Time Sampla Hand Delivered Ş Relinquished by Date Time Received by: Ñ by Sampler Plient Rep. ? N by Courier? UPS FedEx Lone Star DHL Relinquished by: Time Date Time Received by ELOT: Date 4. [ Temperature Upon Receipt: °C as



### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

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

nvironmenta Client: 16.25 Date/Time: Lab ID # : 387612 Initials:

### Sample Receipt Checklist

1. Samples on ice?		Blue	Water	No	
2. Shipping container in good condition?		Tes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?		Yes	No	(NIA)	
4. Chain of Custody present?		(es)	No		
5. Sample instructions complete on chain of custody?		Tes	No		
6. Any missing / extra samples?		Yes	1		
7. Chain of custody signed when relinquished / received?		Tes	No		
8. Chain of custody agrees with sample label(s)?		()	No		
9. Container labels legible and intact?	]	Tes	No		
10. Sample matrix / properties agree with chain of custody?		(D)	No		
11. Samples in proper container / bottle?		()	No		
12. Samples property preserved?		Tes	No	N/A	
13. Sample container intact?		Tes	No		
14. Sufficient sample amount for indicated test(s)?		() E	No		
15. All samples received within sufficient hold time?		Tes	No		
16. Subcontract of sample(s)?		Yes	<b>B</b>	N/A	
17. VOC sample have zero head space?		Tes	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
	°C	lbs	ື	lbs	°C

### Nonconformance Documentation

Contact:\_\_\_\_\_Contacted by:\_\_\_\_\_Date/Time:\_\_\_\_\_\_
Regarding: \_\_\_\_\_\_
Corrective Action Taken:\_\_\_\_\_\_

Check all that apply: Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.

Initial and Backup Temperature confirm out of temperature conditions

Client understands and would like to proceed with analysis

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# **Analytical Report 394631**

for

**Crain Environmental** 

**Project Manager: Cindy Crain** 

## **Burgundy EMU Tank Battery**

0810-001

26-OCT-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) Ncw Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330) Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370) Xenco-Boca Raton (EPA Lab Code: FL01273): Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917) North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



26-OCT-10

Project Manager: Cindy Crain Crain Environmental 2925 E 17th St. Odessa, TX 79761

Reference: XENCO Report No: **394631 Burgundy EMU Tank Battery** Project Address: Lea County, New Mexico

**Cindy Crain:** 

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 394631. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 394631 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,

Brent Barron, II Odessa Laboratory Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



## Sample Cross Reference 394631



## Crain Environmental, Odessa, TX

Burgundy EMU Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-3	S	Oct-21-10 14:35	2 - 2	394631-001
SS-5	S	Oct-21-10 14:40	2 - 2	394631-002
SS-6	S	Oct-21-10 14:45	2 - 2	394631-003
SS-9	S	Oct-21-10 14:48	1.5 - 1.5	394631-004
SS-10	S	Oct-21-10 14:50	2 - 2	394631-005
SS-11	S	Oct-21-10 14:53	2 - 2	394631-006
SS-13	S	Oct-21-10 14:56	2 - 2	394631-007
Spoil 1	S	Oct-21-10 14:59		394631-008
Spoil 2	S	Oct-21-10 15:02		394631-009



## CASE NARRATIVE

Client Name: Crain Environmental Project Name: Burgundy EMU Tank Battery



Project ID:0810-001Work Order Number:394631

*Report Date: 26-OCT-10 Date Received: 10/22/2010* 

### Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

## Certificate of Analysis Summary 394631

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Project Id:0810-001Contact:Cindy CrainProject Location:Lea County, New Mexico

Date Received in Lab: Fri Oct-22-10 01:12 pm

Report Date: 26-OCT-10

Jet Location. Lea County, New Mexico								Project Ma	nager:	Brent Barron,	П		
	Lab Id:	394631-0	394631-001		394631-002		394631-003		394631-004		394631-005		)06
An aluaia Deguested	Field Id:	SS-3		SS-5		<b>SS-6</b>		SS-9		SS-10		SS-11	
Analysis Requested	Depth:	2-2		2-2		2-2		1.5-1.5		2-2		2-2	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Oct-21-10 1	4:35	Oct-21-10 1	4.40	Oct-21-10 1	14:45	Oct-21-10 1	4.48	Oct-21-10 1	4:50	Oct-21-10 1	14.53
Percent Moisture	Extracted:												
	Analyzed:	Oct-23-10 (	09:05	Oct-23-10 0	9:05	Oct-23-10 (	09.05	Oct-23-10 (	9.05	Oct-23-10 (	)9·05	Oct-23-10 0	09:05
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		4 73	1.00	ND	1.00	1.23	1.00	1 77	1 00	4.36	1.00	1.39	1.00
TPH By SW8015 Mod	Extracted:	Oct-22-10	13:35	Oct-22-10 1	3:35	Oct-22-10	13:35	Oct-22-10 1	3 35	Oct-22-10	3:35	Oct-22-10 1	13:35
	Analyzed:	Oct-22-10	15:24	Oct-22-10 1	5:44	Oct-22-10 16:03		Oct-22-10 16:23		Oct-22-10	6:43	Oct-22-10 1	17.22
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.7	ND	15.2	ND	15.1	119	15.2	169	158	ND	15 2
C12-C28 Diesel Range Hydrocarbons		ND	15.7	ND	15 2	ND	15 1	790	15.2	3730	158	518	15.2
C28-C35 Oil Range Hydrocarbons		ND	157	ND	15.2	ND	15.1	49.5	15.2	257	158	36.4	15.2
Total TPH		ND	15 7	ND	15.2	ND	15.1	959	15.2	4156	158	554	15 2

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 hability is limited to the amount invorced for this work order unless otherwise agreed to in writing

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Brent Barron, II

Odessa Laboratory Manager



## Certificate of Analysis Summary 394631

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Project Id: 0810-001 Contact: Cindy Crain Project Location: Lea County, New Mexico

Date Received in Lab: Fri Oct-22-10 01:12 pm

Report Date: 26-OCT-10

Project Manager: Brent Barron, II

	Lab Id;	394631-0	07	394631-0	08	394631-0	09	<u></u>	
Analusia Paguastad	Field Id:	SS-13		Spoil 1		Spoil 2			
Analysis Requested	Depth:	2-2							
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Oct-21-10	14:56	Oct-21-10 1	4:59	Oct-21-10 1	5:02		
Percent Moisture	Extracted:				1				 
	Analyzed:	Oct-23-10	09:05	Oct-23-10 (	9:05	Oct-23-10 0	9:05		
	Units/RL:	%	RL	%	RL	%	RL		
Percent Moisture		3.18	1.00	1.82	1.00	2 03	1.00		
TPH By SW8015 Mod	Extracted:	Oct-22-10	13:35	Oct-22-10	3:35	Oct-22-10 1	3:35		
	Analyzed:	Oct-22-10	17:41	Oct-22-10	8:01	Oct-22-10 1	8:21		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	15.5	83.0	76.0	ND	76.7		
C12-C28 Diesel Range Hydrocarbons		33.6	15.5	2540	76 0	419	76 7		
C28-C35 Oil Range Hydrocarbons		ND	15.5	130	76.0	ND	76.7		
Total TPH		33.6	15 5	2753	76.0	419	76.7		

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Brent Barron, II

Odessa Laboratory Manager



- 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116
· · · · · · · · · · · · · · · · · · ·		



## Project Name: Burgundy EMU Tank Battery

Vork Orders : 394631 Lab Batch #: 828828	l, Sample: 576831-1-BKS / B	KS Batch		D: 0810-001		
Units: mg/kg	Date Analyzed: 10/22/10 12:45		RROGATE RI		STUDY	
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Analytes	78 9	99.8	79	70-135	
o-Terphenyl	· · · · · · · · · · · · · · · · · · ·	51.4	49.9	103	70-135	
	0 <b>1 576</b> 921 1 DOD / D	<u> </u>				
Lab Batch #: 828828	Sample: 576831-1-BSD / B		h: 1 Matrix RROGATE RI		STUDY	· · ·
Units: mg/kg	Date Analyzed: 10/22/10 13:05	50	KRUGATE KI			
ТРН	By SW8015 Mod Analytes	Amount Found  A	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		79.0	100	79	70-135	
o-Terphenyl		44.3	50.2	88	70-135	
Lab Batch #: 828828	Sample: 576831-1-BLK / B	LK Batch	h: 1 Matrix	·Solid		
	•		RROGATE R		STUDY	
Units: mg/kg	Date Analyzed: 10/22/10 13:24					
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		83.8	100	84	70-135	
o-Terphenyl		45 6	50 1	91	70-135	
Lab Batch #: 828828	Sample: 394631-001 / SMF	Batch	h: <sup>1</sup> Matrix	:Soil	<u> </u>	
Units: mg/kg	Date Analyzed: 10/22/10 15:24		RROGATE R		STUDY	
	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		85 7	99.5	86	70-135	
o-Terphenyl		46 0	49 8	92	70-135	
Lab Batch #: 828828	Sample: 394631-002 / SMF	P Batcl	h: <sup>1</sup> Matrix	:Soil		
Units: mg/kg	Date Analyzed: 10/22/10 15:44	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount	True	Recovery	Control Limits	Flags
	•	Found [A]	Amount [B]	%R [D]	%R	5
I-Chlorooctane	Analytes	1		%R		

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution



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# Form 2 - Surrogate Recoveries

Project Name: Burgundy EMU Tank Battery

'ork Orders : 394631 Lab Batch #: 828828	, Sample: 394631-003 / SMP	Batc		<b>D:</b> 0810-001 ::Soil		
Units: mg/kg	Date Analyzed: 10/22/10 16:03	SU	RROGATE R	ECOVERY S	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flag
	Analytes			[D]		
1-Chlorooctane		79.5	99.5	80	70-135	
o-Terphenyl		40 4	49.8	81	70-135	
Lab Batch #: 828828	Sample: 394631-004 / SMP	Batc				
Units: mg/kg	Date Analyzed: 10/22/10 16:23	SU	RROGATE R	ECOVERY S	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found {A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane	Analytes	87.3	99.5	88	70-135	
o-Terphenyl		56.1	49.5	113	70-135	
Lab Batch #: 828828	Sample: 394631-005 / SMP	Batc	1	1		
	Date Analyzed: 10/22/10 16:43		RROGATE R		STUDY	
Units: mg/kg	By SW8015 Mod	Amount	True		Control	
	Analytes	Found [A]	Amount [B]	Recovery %R [D]	Limits %R	Flags
1-Chlorooctane		92.1	101	91	70-135	
o-Terphenyl		50.9	50.3	101	70-135	
Lab Batch #: 828828	Sample: 394631-006 / SMP	Bate	h: 1 Matrix	Soil	1	
Units: mg/kg	Date Analyzed: 10/22/10 17:22	SU	RROGATE R	ECOVERY S	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		85 2	99.6	86	70-135	
o-Terphenyl		45 6	49 8	92	70-135	
Lab Batch #; 828828	Sample: 394631-007 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil		
Units: mg/kg	Date Analyzed: 10/22/10 17:41	SU	RROGATE R	ECOVERY S	STUDY	<u></u>
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
L Chlorogatan-	Analytes	94.5	00.0		70.125	
1-Chlorooctane		84 5	99.8	85	70-135	
o-Terphenyl		44 4	49.9	89	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Project Name: Burgundy EMU Tank Battery

7 <b>ork Orders :</b> 394631 Lab Batch #: 828828	, Sample: 394631-008 / SMP	Project ID: 0810-001 Batch: 1 Matrix: Soil												
Units: mg/kg	Date Analyzed: 10/22/10 18:01	SURROGATE RECOVERY STUDY												
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
1-Chlorooctane		97.2	99.5	98	70-135									
o-Terphenyl		52.8	49.8	106	70-135									
Lab Batch #: 828828	Sample: 394631-009 / SMP	Batc	h: 1 Matrix	c:Soil	<u> </u>									
Units: mg/kg	Date Analyzed: 10/22/10 18:21	SU	RROGATE R	GATE RECOVERY STUDY										
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags								
	Analytes													
1-Chlorooctane		82 9	100	83	70-135	,								
o-Terphenyl		44 5	50 1	89	70-135									
Lab Batch #: 828828	Sample: 394519-001 D / MD	Batc	h: <sup>1</sup> Matrix	r:Soil										
Units: mg/kg	Date Analyzed: 10/22/10 18:40	SU	RROGATE R	ECOVERY	STUDY									
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R  D]	Control Limits %R	Flags								
1-Chlorooctane		99 8	100	100	70-135	<u> </u>								
o-Terphenyl		47.7	50.1	95	70-135									

\* Surrogate outside of Laboratory QC limits

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



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### Project Name: Burgundy EMU Tank Battery

Work Order #: 394631 Analyst: BEV Lab Batch ID: 828828 Units: mg/kg	Sample: 576831-1-BKS	Dat	Batch			BLANK S	PIKE DUPI	Date A	nalyzed: 1 Matrix: 5		) Y	
TPH By SW8( Analytes	)15 Mod Bla Sample [A	Result	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydro	carbons N	D	998	932	93	1000	963	96	3	70-135	35	
C12-C28 Diesel Range Hydroca	arbons N	D	998	850	85	1000	929	93	9	70-135	35	

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



Sample Duplicate Recovery



## Project Name: Burgundy EMU Tank Battery

Work Order #: 394631

Lab Batch #: 828776	10/02/0010		-	<b>D:</b> 0810-001	
2 aug 1 11 11 j = - = -	epared: 10/23/2010		lyst:ЛG		
	<b>atch #:</b> 1		rix: Soil		
Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte		101			
Percent Moisture	5 20	5 22	0	20	
Lab Batch #: 828828					
Lau balch #: 020020					
	epared: 10/22/2010	) Anal	lyst:BEV		
Date Analyzed: 10/22/2010 Date Pro	epared: 10/22/2010 Batch #: 1		lyst:BEV rix: Soil		
Date Analyzed: 10/22/2010 Date Pro	atch #: 1		rix: Soil	ATE REC	OVERY
Date Analyzed: 10/22/2010Date ProQC- Sample ID: 394519-001 DBReporting Units: mg/kgTPH By SW8015 Mod	atch #: 1	Mat SAMPLE Sample Duplicate Result	rix: Soil	ATE REC Control Limits %RPD	OVERY Flag
Date Analyzed:10/22/2010Date ProQC- Sample ID:394519-001 DBReporting Units:mg/kg	SAMPLE / Parent Sample Result	Mat SAMPLE Sample Duplicate	rix: Soil DUPLIC	Control Limits	
Date Analyzed: 10/22/2010Date ProQC- Sample ID: 394519-001 DBReporting Units: mg/kgTPH By SW8015 Mod	SAMPLE / Parent Sample Result	Mat SAMPLE Sample Duplicate Result	rix: Soil DUPLIC	Control Limits	
Date Analyzed: 10/22/2010Date ProQC- Sample ID: 394519-001 DBReporting Units: mg/kgTPH By SW8015 ModAnalyte	SAMPLE / Parent Sample Result [A]	Mat / SAMPLE Sample Duplicate Result [B]	rix: Soil DUPLIC RPD	Control Limits %RPD	

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

EUV	Project Manager: Cindy Crain		exa	IS						:600 dess		st I-	20 E			บรา	rody	RE(				D AI	Ph Fa	one ax:	: 4: 4:	32-5 32-5	63-1 63-1	800 713		Batte	ery	
	Company Name Crain Envir	ronmental																-		ect #						08	310-	001				
	Company Address: 2925 East																		-					Le	ea C	our	nty, I	lewi	Mex	ico		
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	City/State/Zip: Odessa, T	X 79761				<u> </u>														PO #												
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	Sampler Signature:	inin (se	2			e-mail:		CI	ndy	<u>y.cr</u>	ain	@0	m	ail.c	on	<u>1</u>		_														
ab use	only)																	┢				TCLP		naly	/ze	For:	1	T			-	g
ORDER	x#: 394631								<b>—</b>	Pres	ervati	on &	# of (	Conta	ners	-1	Matri	x [	<u>æ</u> [		т	OTAL	-	<u> </u>		<u> </u>	-				F	48, 72 hrs
LAB # (lab use only)	FIELD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	lce	HNO3	нсі	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None		DW≐Drinking Water SL≃Sludge GW = Groundwater S=Soil/Solid	NP=Non-Potable Specify Other		Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Sernivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.			PIICH TAT M- CALIFICATION	KUSH IAI (Pre-Schedule) 24, Ctandard TAT
01	SS-3		2	2	10/21/2010	14135		1	x								s		x	T						T					T	)
50	SS-5		2	2	10/21/2010	1440		1	X								S	2	x												$\Box$	)
03	SS-6		2	2	10/21/2010	1445		1	x								S	;	хĻ	_	Ŀ									$\bot$	$\bot$	
<u>vy</u>	SS-9		1.5	1.5	10/21/2010	1448	<b> </b>	1		ļ					_		S	;	×						<u> </u>					$\perp$	╇	
05	SS-10		2	2	10/21/2010	1450	<u> </u>	1	X				_	_	-		S		×						-	-					╇	-)
04	SS-11		2	2	10/21/2010	1453		1	X		_		_	+	+	+	S	_	×		┨				_	+-	-	$\left  \right $		+	╀	-
07 03	SS-13 Spoil 1		2	2	10/21/2010	1456	-	1	X X	1		-		-+	+	╉	S		x v	+	╀─	+		┢	$\vdash$	+	+	$\left  \right $		-+-	╋	+
<u>وں</u> 1-ر	Spoil 2				10/21/2010	<u>1459</u> 1502		1	^ X	1				+	╉	╉		_	× ×	┿	┢	╋	-	-		+			-	+	╈	+)
<u> </u>					10/21/2010	1500		†	Ê				1	-+		+		ť		+	1-	+	†	╞	┢			┝╌╉	-+	-+-	+	ť
elinguish	idy Crain	Date 10/22/10 Date	Tir <u>/3/</u> Tir		Received by			••••••			<b>I</b>	<b>L</b>				Date			me	Sa VC La Cu Cu	mpł Cs bels stod stod	e Co Free on c ly se ly se	ontai of I conta als als	Head ainei on c	s Int dspa r(s) conta coole	act? ace? Of aliner aliner ar(s)		ts		100,,,0	콜콜콜콜 = -	Ь
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XENCO Laboratories Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

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

Client:	Environme	ental
Date/Time: 10/2	12/10 13:12	•
Lab ID # : ,	374631	
Initials:	· · · · · · · · · · · · · · · · · · ·	

### Sample Receipt Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	(N/A)	
4. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
6. Any missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	Yes	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	(es)	No	N/A	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No		
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	Yes	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	0	Cooler 5 No.	
105 $4.3$ °C $105$ °C $105$ °C	bslbs	°C	lbs	°C

### Nonconformance Documentation

Contact:	Contacted by:	Date/Time:	
Regarding:			
Corrective Action Take	r:		
			<b></b>
	□Cooling process has begun shortly aft	ter sampling event and out of temperature	

condition acceptable by NELAC 5.5.8.3.1.a.1.

 $\Box$  Initial and Backup Temperature confirm out of temperature conditions  $\Box$  Client understands and would like to proceed with analysis

# **Analytical Report 396436**

for Crain Environmental

**Project Manager: Cindy Crain** 

**Burgundy EMU Tank Battery** 

0810-001

10-NOV-10



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

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**nelao** 

10-NOV-10

Project Manager: **Cindy Crain Crain Environmental** 2925 E 17th St. Odessa, TX 79761

Reference: XENCO Report No: **396436 Burgundy EMU Tank Battery** Project Address: Lea County, New Mexico

### **Cindy Crain**:

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 396436. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 396436 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,

Brent Barron, II Odessa Laboratory Manager

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# Sample Cross Reference 396436



# Crain Environmental, Odessa, TX

Burgundy EMU Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SS-9	S	Nov-06-10 13:52	3 - 3	396436-001
SS-10	S	Nov-06-10 13:55	3 - 3	396436-002
SS-11	S	Nov-06-10 13:58	4 - 4	396436-003
Spoil 1	S	Nov-06-10 14:02		396436-004
Spoil 2	S	Nov-06-10 14:05		396436-005



### CASE NARRATIVE

Client Name: Crain Environmental Project Name: Burgundy EMU Tank Battery



Project ID: 0810-001 Work Order Number: 396436 Report Date: 10-NOV-10 Date Received: 11/08/2010

### Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

## Certificate of Analysis Summary 396436

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Project Id: 0810-001 Contact: Cindy Crain Project Location: Lea County, New Mexico

Date Received in Lab: Mon Nov-08-10 02:15 pm

Report Date: 10-NOV-10 Project Manager: Brent Barron II

· · · · · · · · · · · · · · · · · · ·								Project Mai	nager:	Brent Barron,	<u>II</u>	
	Lab Id:	396436-0	001	396436-0	02	396436-0	003	396436-0	04	396436-0	05	
Analysis Requested	Field Id:	SS-9		SS-10		SS-11		Spoil 1		Spoil 2		
Anuiysis Keyuesieu	Depth:	3-3		3-3		4-4						
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Nov-06-10	13:52	Nov-06-10	13:55	Nov-06-10	13:58	Nov-06-10	14:02	Nov-06-10	4.05	
Percent Moisture	Extracted:											
	Analyzed:	Nov-09-10	08:15	Nov-09-10 (	08:15	Nov-09-10	08:15	Nov-09-10	08-15	Nov-09-10 (	08.15	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	
Percent Moisture		13.4	1.00	3.09	1.00	5.52	1 00	ND	1.00	ND	1.00	
TPH By SW8015 Mod	Extracted:	Nov-08-10	15:00	Nov-08-10	15:00	Nov-08-10	15:00	Nov-08-10	15:00	Nov-08-10	5:00	
	Analyzed:	Nov-10-10	09:19	Nov-10-10 (	09:19	Nov-10-10	09.19	Nov-10-10	09 19	Nov-10-10	9 19	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		ND	174	ND	15.4	ND	15 9	54.1	15.1	54.9	15.1	
C12-C28 Diesel Range Hydrocarbons		ND	17.4	ND	15.4	70.6	15.9	744	15 1	947	15.1	
C28-C35 Oil Range Hydrocarbons		ND	17.4	ND	15.4	ND	15.9	22.3	15.1	20.4	15.1	
Total TPH		ND	174	ND	15.4	70.6	15 9	820	15.1	1022	15.1	

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

Brent Barron, II

Odessa Laboratory Manager



- 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

**BRL** Below Reporting Limit.

- **RL** Reporting Limit
- MDL Method Detection Limit
- PQL Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Burgundy EMU Tank Battery

'ork Orders : 396436 Lab Batch #: 831198	, Sample: 578252-1-BKS / B	KS Batc	-	<b>D:</b> 0810-001									
Units: mg/kg	Date Analyzed: 11/09/10 12:07	SU	<b>RROGATE</b> R	ECOVERY	STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
	Analytes		·										
1-Chlorooctane		96.1	100	96	70-135								
o-Terphenyl		56 9	50 1	114	70-135								
Lab Batch #: 831198	Sample: 578252-1-BSD / B		-										
Units: mg/kg	Date Analyzed: 11/09/10 12:26	SURROGATE RECOVERY STUDY											
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		98.4	100	98	70-135								
o-Terphenyl		63.5	50.1	127	70-135								
Lab Batch #: 831198	Sample: 578252-1-BLK / B	LK Batc	h: 1 Matrix	:Solid	·:								
Units: mg/kg	Date Analyzed: 11/09/10 12:46		<b>RROGATE R</b>	ECOVERY	STUDY	<u></u>							
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane	Analytes	99.1	99 7	99	70-135								
o-Terphenyl		53.4	49.9	107	70-135								
	Sample: 396436-001 / SMP		<u> </u>		10 155								
Lab Batch #: 831198 Units: mg/kg	Date Analyzed: 11/10/10 09:19	Batc SU	RROGATE R		STUDY								
	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag							
1-Chlorooctane	<b>v</b>	110	100	110	70-135								
o-Terphenyl		59 7	50.1	119	70-135								
Lab Batch #: 831198	Sample: 396436-002 / SMP	Batc	h: 1 Matrix	:Soil	·								
Units: mg/kg	Date Analyzed: 11/10/10 09:19	SU	<b>RROGATE R</b>	ECOVERY	STUDY								
TPH 7	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag							
I-Chlorooctane		105	99.6	105	70-135	l 							
-CHIOLOGIANE		105	77.0	1 103	1 10-133								

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

### Project Name: Burgundy EMU Tank Battery

/ork Orders : 396436 Lab Batch #: 831198 Units: mg/kg	, Sample: 396436-003 / SMP Date Analyzed: 11/10/10 09:19	Bate SU			STUDY								
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R  D}	Control Limits %R	Flags							
1-Chlorooctane		107	99 9	107	70-135								
o-Terphenyl		57.7	50.0	115	70-135								
Lab Batch #: 831198	Sample: 396436-004 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	<u> </u>								
Units: mg/kg	Date Analyzed: 11/10/10 09:19	SURROGATE RECOVERY STUDY											
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		101	99.6	101	70-135								
o-Terphenyl		51.2	49 8	103	70-135	·							
Lab Batch #: 831198	Sample: 396436-005 / SMP	Batc	h: <sup>1</sup> Matrix	:Soil	·								
Units: mg/kg	Date Analyzed: 11/10/10 09:19	SU	<b>RROGATE</b> R	ECOVERY S	STUDY								
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flags							
1-Chlorooctane		104	99.9	104	70-135	·							
o-Terphenyl		54.4	50 0	109	70-135								

\* Surrogate outside of Laboratory QC limits

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





### Project Name: Burgundy EMU Tank Battery

Work Order #: 396436 Analyst: BEV Lab Batch ID: 831198	Sample: 578252-1-BKS	Date	e Prepar Batcł	ed: 11/08/201	0	<b>Project ID:</b> 0810-001 <b>Date Analyzed:</b> 11/09/2010 <b>Matrix:</b> Solid										
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
TPH By SW80 Analytes		Blank Spike Blank Sample Result Added Spike [A] Result [B] [C]				Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag				
C6-C12 Gasoline Range Hydroc	arbons ND		1000	923	92	1000	941	94	2	70-135	35					
C12-C28 Diesel Range Hydroca	rbons ND		1000	919	92	1000	915	92	0	70-135	35					

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



Sample Duplicate Recovery



### Project Name: Burgundy EMU Tank Battery

Work Order #: 396436

Lab Batch #: 831044 Date Analyzed: 11/09/2010 QC- Sample ID: 396373-003 D	Date Prepared: 11/09/2010 Batch #: 1	) Ana	Project I Ilyst:JLG trix: Soil	<b>D:</b> 0810-00	l
Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	14.41	<b>[B]</b>			
Percent Moisture	1 82	1.99	9	20	

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

# **Environmental Lab of Texas**

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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	Project Manager:	Cindy Crain																I	Proj€								08				—	<u> </u>	
	Company Name	Crain Enviro	onmental											_			_			Proj	ect f	¥:							-				
	Company Address:	2925 East 1	7th Street																Pro	oject	Loc	»			Lei	a Co	ount	.y. N	ew I	Mexi	00		
	City/State/Zip:	Odessa, TX	79761														_			1	PO #	#:											
	Telephone No:	(432) 530-9	797				Fax No:		<u>(43</u>	2) 2	272-0	304	<u>ا</u>					Rep	ort F	orm	at:	¢	Í Sta	ında	rd			TRF	RP		<b></b> 1	NPD	ES
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_AB # (lab use only)	FIEL	D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	loe	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO4	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None Other / Snerifu)	Other Contract Material Contract	uvv-uninking water o∟-sluoge GW = Groundwater S≈Sou/Solid	NP=Non-Potable Specify Other ×	MCTUD 1814 HTT	s (Ca Mn Na	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N O.R.M			RUSH TAT (Pre-School and 24	Standard TAT
01		SS-9		3	3	11/6/2010	1352		1	x	+					╈	T	s		x		T	1				Π	$\square$		+	1	┢	x
OZ	S	S-10		3	3	11/6/2010	1355		1	х								S		x	Τ	Τ					$\Box$	i				Τ	X
03	9	S-11		4	4	11/6/2010	1358		1	x								S		x													X
04	S	poil 1				11/6/2010	1402	<u> </u>	1	X								S		x							$\square$						X
65	S	poil 2				11/6/2010	1405	ļ	1	X					_			_ <u>S</u>		×			_				Ш	$\square$			$\perp$		x
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#### XENCO Laboratories

Atlanta, Boca Raton, Corces Consti. Dallas

Phoenix, San Antonio, Tam.

Houston, Miami, Colessa, Factors phila

Document Title: Sample Receipt Checklist Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

# Frelogin / Nonconformance Report - Sample Log-In

Glient:	rain Er	NN.	
Date/Time:	1.310	14:15	
.eb ID : :	37643	36	
initials:	AE		

#### Sample As repr Checklist

1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Yes)	No	None	
3. Custody seals intact on shipping container (cooler) and boains?	Yes	No	CNAS	
4. Chain of Custody present	Ves	No		
5. Sample instructions contacted on chain of custody?	(Yes)	No		
6. Any missing / extre so and	Yes	(NO)		
7. Chain of custody signed was relinquished / sushes?	Yes	No	<u> </u>	
8. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix, properties agree with chain of custody?	(Yes)	No		
11. Samples in proper containe: / bottle?	(Yes)	No		
12. Samplas projetty preverve.	(Yes)	No	N/A	
13. Sample container interation	Yes)	No		
14. Sufficient sample ami indicated testis??	Yes	No		
15. All samples received bedie afficient hold times?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	(N/A)	
17. VOC sample have zero head space?	Yes	No	N/A	· · · · · · · · · · · · · · · · · · ·
18. Cooler 1 No. Upples No. Cooler 3 stc.	Cooler 4 No	).	Cooler 5 No.	
ibs 1.4°Cs °Cs	lbs	°C	lbs	°C

#### Nonconformation Nocumentation

Contact:	Contacted by::	Date/Time:
Regarding:		
Corrective Action Tax	(en:	
Check all that apport	o: aition acceptable by REL-C	
	Elsinar esc Backup Temperature cost	•

Client understands and would like to turqueed with analysis

November 29, 2010

CINDY CRAIN CRAIN ENVIRONMENTAL 2925 E. 17TH STREET ODESSA, TX 79761

RE: EMU TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 11/19/10 12:58.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D.Kune

Celey D. Keene Lab Director/Quality Manager

Page 1 of 4



#### Analytical Results For:

CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	11/19/2010	Sampling Date:	11/19/2010
Reported:	11/29/2010	Sampling Type:	Soil
Project Name:	EMU TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	0810-001	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

#### Sample ID: SPOIL 1 (H021348-01)

TPH 8015M	mg/kg		Analyzed By: AB						
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2010	ND	204	102	200	15.6	
DRO >C10-C28	708	10.0	11/25/2010	ND	201	100	200	8.12	
Surrogate: 1-Chlorooctane	86.4	% 70-130	•••••••••••••••••••••••••••••••••••••••						
Surrogate. 1-Chlorooctadecane	94.2	% 70-130	)						

#### Sample ID: SPOIL 2 (H021348-02)

TPH 8015M	mg,	mg/kg		Analyzed By: AB					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	11/25/2010	ND	204	102	200	15.6	
DRO >C10-C28	601	10.0	11/25/2010	ND	201	100	200	8.12	
Surrogate: 1-Chlorooctane	110	% 70-130	1						
Surrogate: 1-Chlorooctadecane	117	% 70-130							

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#### \*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 2 of 4

#### **Notes and Definitions**

- ND. Analyte NOT DETECTED at or above the reporting limit
- RPD Relative Percent Difference
- \*\* Samples not received at proper temperature of 6°C or below.
- \*\*\* Insufficient time to reach temperature.
- Chloride by SM4500Cl-B does not require samples be received at or below 6°C Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4



### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marlar	nd, Hobbs, NM 88240	
(575) 393-2326	FAX (575) 393-2476	

Company Name: Crain Environmental	ANALYSIS REQUEST
Project Manager: Cindy Crain	P.O. #:
Address: 2925 E. 17th 5t.	Company:
City: Odessa State: TX Zip: 79761	Attn:l
City:         Odessa         State:         Tel:         74761           Phone #:         (432) 630-9797         Fax #:         (432) 272-0304	Address:
Project #: 0810 - 001 Project Owner: Bucaudu Oil	City:
Project Name: EMU TAOK Battery	State: Zip:
Project Location: Lea Co. NM	Phone #:
Project #: 0810 - 001 Project Owner: Burgundy 0:1 Project Name: EMU Tank Battery Project Location: Lea Co., NM Sampler Name: Cindy Crain	Fax #:
	Fax #:
(C)OMP ERS TER	
(G)RAB OR (C)OM # CONTAINERS GROUNDWATER MASTEWATER Soil. OIL	
(G)RAB # CONT GROUN WASTE SoiL OIL	Studge OTHER ACID/BASE: ICE / COOL OTHER: OTHER:
H21348-1 Spoil 1 CI H Z Spoil 2 CI H	~ 11/14/10 1130 V
2 Spoil 2 CII M	- 11/19/10 1135 V
PLEASE NOTE: Liability and Damages Cardinal's liability and client's exclusive remedy for any claim arising whether based in con	tract or tort, shall be limited to the amount paid by the client for the
analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing service. In no event shall Cardinal be liable for incidental or consequental damages, including without limitation, business interruption	

affiliates or successors arising out of or related to the performance of services hereunder by Cardinal regardless of whether such claim is based upon any of the above stated reasons or otherwise

Relinquished By:	Date: 119/10 Received By:	Phone Result:
(indi rain	Time: 258 ANU HUNSON	REMARKS:
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	Time:	Criail Results to: Cindy, Crain Cogmail. com
Delivered By: (Circle One)		KED BY:
Sampler - UPS - Bus - Other:	3.5 Cool Intact	
† Cardinal cannot accept verb	bal changes. Please fax written changes to 505-393-247	6
	=26	

December 31, 2010

CINDY CRAIN CRAIN ENVIRONMENTAL 2925 E. 17TH STREET ODESSA, TX 79761

RE: EMU TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 12/29/10 12:20.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acids (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celey D.Keine

Celey D. Keene Lab Director/Quality Manager

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#### Analytical Results For:

CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	12/29/2010	Sampling Date:	12/29/2010
Reported:	12/31/2010	Sampling Type:	Soil
Project Name:	EMU TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	0810-001	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

#### Sample ID: S. P. - 1 (E) (H021616-01)

TPH 8015M	mg/kg		Analyzed By: CK					S-04	
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	12/31/2010	ND	184	92.2	200	7.68	
DRO >C10-C28	247	10.0	12/31/2010	ND	172	86.1	200	14.8	
Surrogate 1-Chlorooctane	153	% 70-130	)						
Surrogate 1-Chlorooctadecane	161	% 70-130	)						

#### Sample ID: S. P. - 2 (W) (H021616-02)

TPH 8015M	mg,	/kg	Analyze	d By: CK			·····	S-04		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier	
GRO C6-C10	<10.0	10.0	12/31/2010	ND	184	92.2	200	7.68		
DRO >C10-C28	373	10.0	12/31/2010	ND	172	86.1	200	14.8		
Surrogate: 1-Chlorooctane	148	% 70-130	)				····			

Surrogate 1-Chlorooctadecane 164 % 70-130

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Celey D.Kune

Celey D. Keene, Lab Director/Quality Manager

#### **Notes and Definitions**

RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500CI-B does not require samples be received at or below 6°C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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\*=Accredited Analyte

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Celey D. Keine

Celey D. Keene, Lab Director/Quality Manager

ARDINAL LABORATORIES

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

101 East Marland, Hobbs, NM 88240 (575) 393-2326 FAX (575) 393-2476

Company Name:	Crain, Environ	mental					Γ		B	://	LTO					ļ	NAL	YSIS	REC	QUES	T			
Project Manager	: Cindy Crain						P.C	). #:						T							Ī		Τ	
Address: 29	Cindy Crain 25 El 19th St						Co	mpa	ny:															
City: Ode	6 <i>51</i> C Sta	ite: X Zip	: 2	91	61	/	Att	n:																
Phone #:432.	530-9797 Fax	#: 432-27	2-	030	94	/	Ad	dres	s:		0											ł		
Project #:08/	0-001 Proj E.M.U. T.B	ect Owner: $\mathcal{B}_{l}$	150	un	dy	/	Cit	y:			N													
Project Name: 2	E.M.U. T.B.	· · · · · · · · · · · · · · · · · · ·	U		/		Sta	ite:	6	μ.	Zip:													
Project Location	Lea Co. N	M					Ph	one	#:				X											
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+ Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476



March 08, 2011

CINDY CRAIN CRAIN ENVIRONMENTAL 2925 E. 17TH STREET ODESSA, TX 79761

RE: EMU TANK BATTERY

Enclosed are the results of analyses for samples received by the laboratory on 03/02/11 14:34.

Cardinal Laboratories is accredited through Texas NELAP for:

Method SW-846 8021	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method SW-846 8260	Benzene, Toluene, Ethyl Benzene, and Total Xylenes
Method TX 1005	Total Petroleum Hydorcarbons

Certificate number T104704398-08-TX. Accreditation applies to solid and chemical materials and non-potable water matrices.

Cardinal Laboratories is accreditated through the State of Colorado Department of Public Health and Environment for:

Method EPA 552.2	Haloacetic Acıds (HAA-5)
Method EPA 524.2	Total Trihalomethanes (TTHM)
Method EPA 524.4	Regulated VOCs (V2, V3)

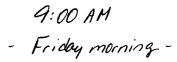
Accreditation applies to public drinking water matrices.

This report meets NELAP requirements and is made up of a cover page, analytical results, and a copy of the original chain-of-custody. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Celeg D. Keine

Celey D. Keene Lab Director/Quality Manager





PHONE (575) 393-2326 ° 101 E. MARLAND ° HOBBS, NM 88240

#### Analytical Results For:

CRAIN ENVIRONMENTAL CINDY CRAIN 2925 E. 17TH STREET ODESSA TX, 79761 Fax To: (432) 272-0304

Received:	03/02/2011	Sampling Date:	03/02/2011
Reported:	03/08/2011	Sampling Type:	Soil
Project Name:	EMU TANK BATTERY	Sampling Condition:	Cool & Intact
Project Number:	0111-01	Sample Received By:	Jodi Henson
Project Location:	LEA CO., NM		

#### Sample ID: SP - 1 E (H100417-01)

TPH 8015M	mg/	kg	Analyze	d By: CK			· · · · · · · ·		
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2011	ND	192	96.0	200	1.89	
DRO >C10-C28	190	10.0	03/04/2011	ND	189	94.5	200	4.31	
Surrogate 1-Chlorooctane	106%	% 70-130	)				· ·		
Surrogate 1-Chlorooctadecane	101 %	% 70-130	)						•

#### Sample ID: SP - 2 W (H100417-02)

TPH 8015M	mg	/kg	Analyze	d By: CK					
Analyte	Result	Reporting Limit	Analyzed	Method Blank	BS	% Recovery	True Value QC	RPD	Qualifier
GRO C6-C10	<10.0	10.0	03/04/2011	ND	192	96.0	200	1.89	
DRO >C10-C28	272	10.0	03/04/2011	ND	189	94.5	200	4.31	
Surrogate 1-Chlorooctane	104	% 70-130	)						
Surrogate 1-Chlorooctadecane	100	% 70-130	)						

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#### \*=Accredited Analyte

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager



#### **Notes and Definitions**

ND	Analyte NOT DETECTED at or above the reporting limit
RPD	Relative Percent Difference
**	Samples not received at proper temperature of 6°C or below.
***	Insufficient time to reach temperature.
-	Chloride by SM4500CI-B does not require samples be received at or below $6^{\circ}$ C
	Samples reported on an as received basis (wet) unless otherwise noted on report

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Celey D. Kune

Celey D. Keene, Lab Director/Quality Manager

Page 3 of 4

### CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES 101 East Marland, Hobbs, NM 88240

	(575) 393-2326 FAX (575)	393-2476																						
Company Name:	Crain, Environm	ental	1				÷	ų. ,	B	;//	LTO	с					ANAL	YSIS	RE	QUES	ST			
Project Manager	Cindy Crain						P.0	<b>).</b> #:																
Address: 2	Crain, Environm Cindy Crain Gab E 17+2	5+					Co	mpa	ny:															
City: Odr	State:	.X.zip	: 7	97	61	/	At	tn:																
Phone #: 432	530-9797 Fax #:4	32-2	72	2.0	30	4/	Ad	dres	is:		1.													
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Sampler Name:	Virgil Guagli	esi			_		Fa	x #:					3	•										
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unaryses All claims incluain	g those for negligence and any other cause whatsoever would be liable for incidental or consequental damages,	shall be deemed w	aved un	iless made	in writin	g and re	ceived	by Card	linal wit	hin 30	days after comp	letion of the appli	cable											
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Revision 1.0

† Cardinal cannot accept verbal changes. Please fax written changes to 575-393-2476

# Analytical Report 412474

for Crain Environmental

**Project Manager: Cindy Crain** 

**Burgundy EMU Tank Battery** 

0810-001

12-APR-11



Celebrating 20 Years of commitment to excellence in Environmental Testing Services



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330) Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370) Xenco-Boca Raton (EPA Lab Code: FL01273): Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917) North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

Final 1.000



12-APR-11



Project Manager: **Cindy Crain Crain Environmental** 2925 E 17th St. Odessa, TX 79761

Reference: XENCO Report No: 412474 Burgundy EMU Tank Battery Project Address: Lea County, New Mexico

#### **Cindy Crain**:

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 412474. 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. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. 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. 412474 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,

Brent Barron, II Odessa Laboratory Manager

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# Sample Cross Reference 412474



### Crain Environmental, Odessa, TX

Burgundy EMU Tank Battery

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Spoil (East)	S	Apr-06-11 17:30		412474-001
Spoil (West)	S	Apr-06-11 17:35		412474-002



### CASE NARRATIVE

Client Name: Crain Environmental Project Name: Burgundy EMU Tank Battery



Project ID:0810-001Work Order Number:412474

Report Date: 12-APR-11 Date Received: 04/07/2011

Sample receipt non conformances and Comments: None

Sample receipt Non Conformances and Comments per Sample:

None

Project Id: 0810-001

Contact: Cindy Crain

Project Location: Lea County, New Mexico

### Certificate of Analysis Summary 412474

### Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Date Received in Lab: Thu Apr-07-11 04.55 pm

Report Date: 12-APR-11

Project Manager: Brent Barron, II

	Lab Id:	412474-001	412474-002		
Analysis Requested	Field Id:	Spoil (East)	Spoil (West)		
Anuiysis Kequesteu	Depth:				
	Matrix:	SOIL	SOIL		
	Sampled:	Apr-06-11 17.30	Apr-06-11 17.35		
Percent Moisture	Extracted:				
	Analyzed:	Apr-08-11 17:00	Apr-08-11 17:00		
	Units/RL:	% RL	% RL		
Percent Moisture		1.07 1.00	1.08 1.00		
TPH By SW8015 Mod	Extracted:	Apr-08-11 12:00	Apr-08-11 12.00		
	Analyzed:	Apr-09-11 19:54	Apr-09-11 20:24		
	Units/RL:	mg/kg RL	mg/kg RL		
C6-C12 Gasolinc Range Hydrocarbons		ND 15.1	ND 15.2		
C12-C28 Diesel Range Hydrocarbons		38.6 15.1	36.7 15.2		
C28-C35 Oil Range Hydrocarbons		ND 15.1	ND 15.2		
Total TPH		38.6 15.1	36.7 15 2		

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

Brent Barron, II

Odessa Laboratory 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 effect the recovery of the spike concentration. This condition could also effect 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 MQL and above the SQL.
- 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.

BRL Below Reporting Limit.

**RL** Reporting Limit

MDL Method Detection Limit

- PQL Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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Houston - Dallas - San Antonio - Corpus Christi - Midland	/Odessa - Tampa - Miami	- Latin America
	Phone	Fax
4143 Greenbriar Dr. Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St. Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116

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# Form 2 - Surrogate Recoveries

Project Name: Burgundy EMU Tank Battery

<b>ork Orders :</b> 412474 Lab Batch #: 851328	, Sample: 600089-1-BKS / B	KS Batcl	-	<b>D:</b> 0810-001		
Units: mg/kg	Date Analyzed: 04/09/11 12:45		RROGATE R		STUDY	
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
I-Chlorooctane		116	99.5	117	70-135	
o-Terphenyl		48.6	49 8	98	70-135	
Lab Batch #: 851328	Sample: 600089-1-BSD / B	SD Batel	h: 1 Matrix	:Solid	<u> </u>	
Units: mg/kg	Date Analyzed: 04/09/11 13:16		RROGATE R		STUDY	
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		86.9	101	86	70-135	
o-Terphenyl		35.8	50.3	71	70-135	
Lab Batch #: 851328	Sample: 600089-1-BLK / B	LK Batcl	h: <sup>1</sup> Matrix	•Solid	L	
Units: mg/kg	Date Analyzed: 04/09/11 13:46		RROGATE R		STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		70.8	100	71	70-135	
o-Terphenyl		35.5	50.2	71	70-135	<u></u>
Lab Batch #: 851328	Sample: 412474-001 / SMP	Batcl	h: 1 Matrix	:Soil	·	
Units: mg/kg	Date Analyzed: 04/09/11 19:54		RROGATE R	ECOVERY	STUDY	<u> </u>
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		101	99.9	101	70-135	
o-Tcrphenyl		48.8	50.0	98	70-135	
Lab Batch #: 851328	Sample: 412474-002 / SMP	Batel	h: 1 Matrix	:Soil		
Units: mg/kg	Date Analyzed: 04/09/11 20:24	SU	RROGATE R	ECOVERYS	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flag
1-Chlorooctane		85.7	100	86	70-135	
o-Terphenyl		39.6	50.1	79	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



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### Project Name: Burgundy EMU Tank Battery

Work Order #: 412474 Analyst: BEV Lab Batch ID: 851328	Sample: 600089-1-BKS	Date Prepared: 04/08/2011 -1-BKS Batch #: 1					Project ID: 0810-001 Date Analyzed: 04/09/2011 Matrix: Solid								
Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY															
TPH By SW80	Samp	lank de 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>[B]</b>	(C)	[D]	[E]	Result [F]	[G]							
C6-C12 Gasoline Range Hydroc	arbons <	14.9	995	850	85	1010	769	76	10	70-135	35				
C12-C28 Diesel Range Hydroca	rbons <	:14.9	995	894	90	1010	800	79	11	70-135	35				

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

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### Project Name: Burgundy EMU Tank Battery

#### Work Order #: 412474

Lab Batch #: 851392 Date Analyzed: 04/08/2011 17:00 QC- Sample ID: 412474-001 D	Date Prepar Batch	ed:04/08/2011	Ana	<b>Project I</b> lyst: WRU rix: Soil	<b>D:</b> 0810-00)	l
Reporting Units: %		SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture		Parent Sample Result [A]	Sample · Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		( <i>1</i>	<b>[B]</b>			
Percent Moisture		1.07	1.05	2	20	

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

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Env	vironmental	Lab of T	exa	IS								st I-	/A/N 20 E s 79	ast	CU	бто	DY F	REC	ORI	D AI	ND	F	Pho	YSIS ne: 4 c: 4	32-5	63-1	800				
	Project Manager: Cinc	ly Crain														_	Pi	rojec	t Na	me:			Bur	rgun	dy E	MU	Tar	ik Ba	atter	У	
	Company Name Cra	n Environmental				_										-		P	rojec	:t #;					08	310-	001				
	Company Address: 292	5 East 17th Street														-		Proj						Lea (	Coun	ity, N	lew	Mexic	:0		
		ssa, TX 79761													_	-		•		0#:											
	Telephone No: (432	2) 530-9797	γ	•	· · · · ·	Fax No				272-(						-	Repo	rt Fo				Sta	ndar	d	C	] TR	RP		N	PDE	s
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LAB # (tab use only)	FIELD CO	DDE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	rield Filtered	Total #. of Containers	E C	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO4	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None Other ( Specify)	DW≐Dnnking Water SL≑Sludge	GW = Groundwater S=Soil/Solid NP=Non-Potabla Snoois Other	TPH. 418.1 8015M 8	12	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals As Ag Ba Cd Cr Pb Hg	Volatiles Semuvolatiles	BTEX 80218/5030 or BTEX 8260	RCI	N.O.R.M			RUSH TAT (Pre-Schedule) 2	
01	Spoil (E			 	4/6/2011	1730	<u> </u>	-	x	+						Ê	S S	X		Ĕ	4	<i>"</i>	4	<u> </u>	1	f	É			┢	X
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Page 10 of 11

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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Document Title: Sample Receipt Checklist Document No.: SYS-SRC Revision/Date: No. 01, 5/27/2010 Effective Date: 6/1/2010 Page 1 of 1

Phoenix, San Antonio, Tampa

# Prelogin / Nonconformance Report - Sample Log-In

Client:	Crain Env.	
Date/Time:	4711 16:55	•
Lab ID # :	41274474	
Initials:	AE MATIN	

#### Sample Receipt Checklist

1. Samples on ice?		Blue	(Water)	No	
2. Shipping container in good condition?		Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?		Yes	No	(NA)	
4. Chain of Custody present?	1	Yes	No		
5. Sample instructions complete on chain of custody?	12	Yes	No		
6. Any missing / extra samples?		Yes	(No)		
7. Chain of custody signed when relinquished / received?	(	(Yes)	No		
8. Chain of custody agrees with sample label(s)?		Tes	No		
9. Container labels legible and intact?		Yes	No		
10. Sample matrix / properties agree with chain of custody?		Yes	No .		
11. Samples in proper container / bottle?		Yes	No		
12. Samples property preserved?		Yes	No	N/A	
13. Sample container intact?	-	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?		Yes	No		
15. All samples received within sufficient hold time?		(Ves)	No		
16. Subcontract of sample(s)?		Yes	No	(NA)	
17. VOC sample have zero head space?		Yes	No	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	c	ooler 4 No	).	Cooler 5 No.	
ibs /./ °C ibs °C ibs	°C	ibs	°C	lbs	°C

#### Nonconformance Documentation

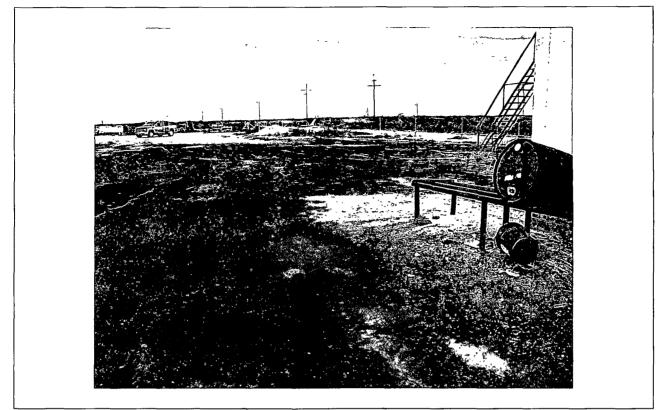
Contact:	Contacted by: Date/Time:	
Regarding:		
Corrective Action Tak	en:	
Check all that apply:	<ul> <li>Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.</li> <li>Initial and Backup Temperature confirm out of temperature conditions</li> <li>Client understands and would like to proceed with analysis</li> </ul>	· · · ·

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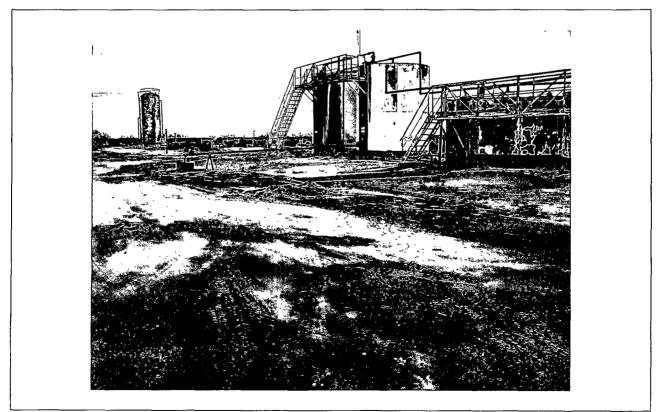
### **APPENDIX C**

### **PHOTOGRAPHS**

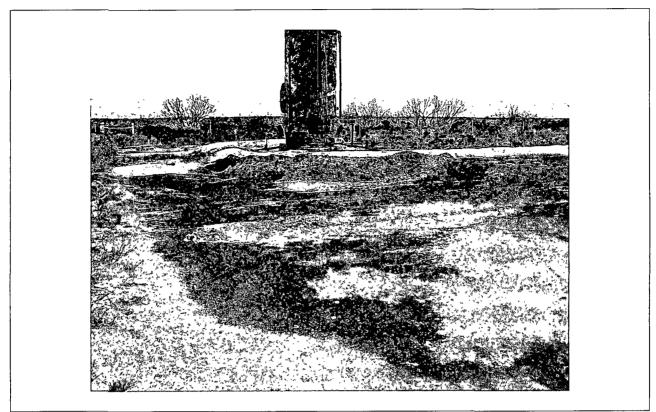
Crain Environmental • 2925 East 17th Street • Odessa, TX 79761 • Phone: (432) 530-9797 • Fax: (432) 272-0304



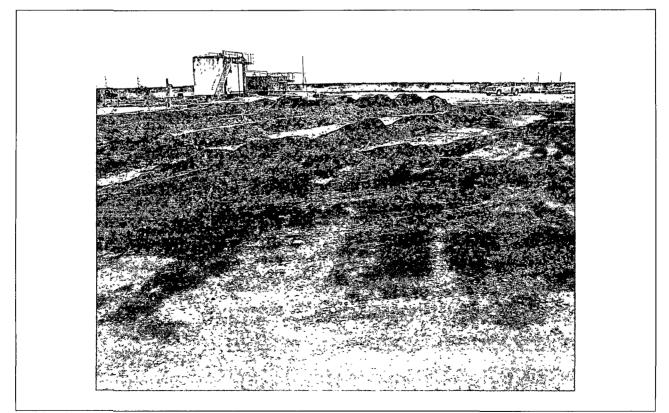
View to west of spill 8/6/10



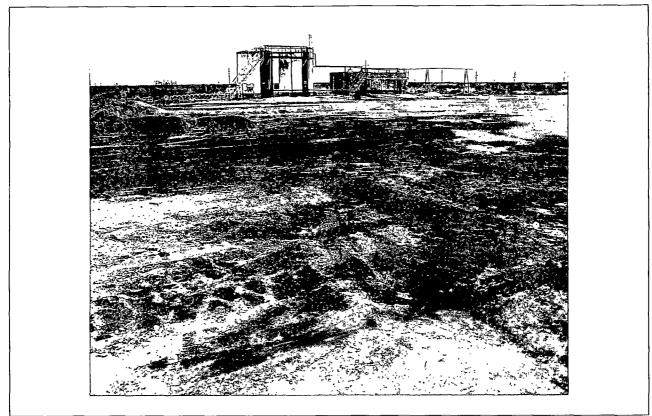
View to east of spill 8/6/10



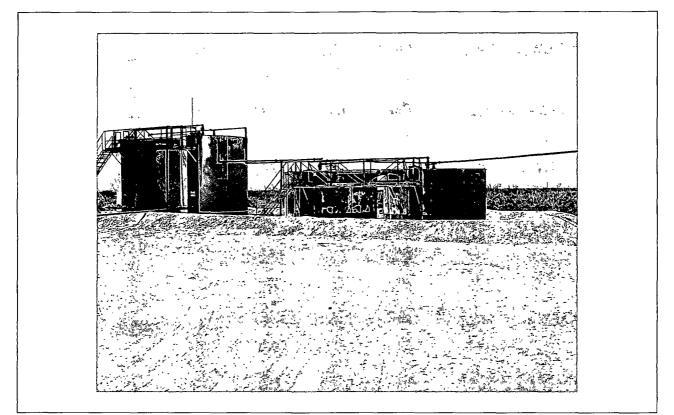
View to south of spill 8/6/10



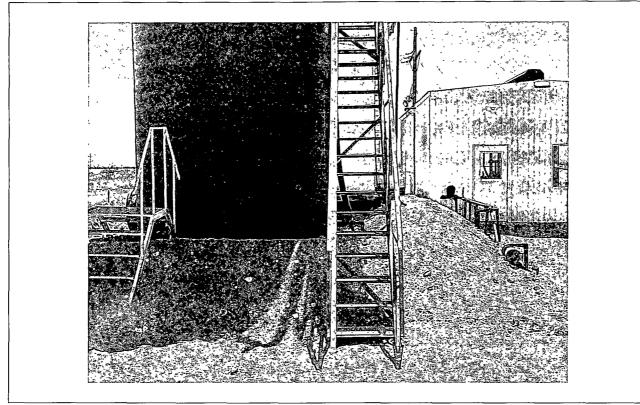
View to west of spill 8/6/10



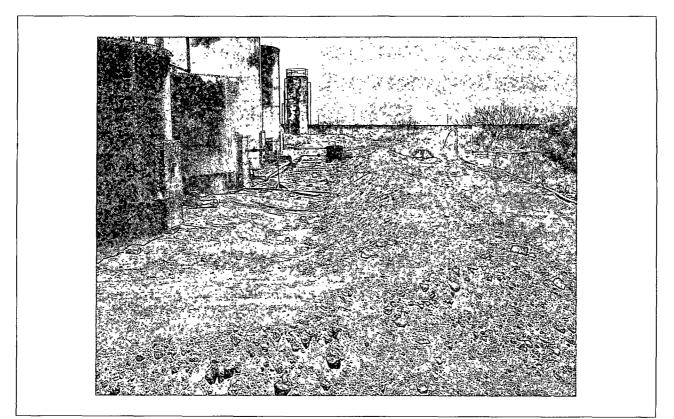
View to south of spill 8/6/10



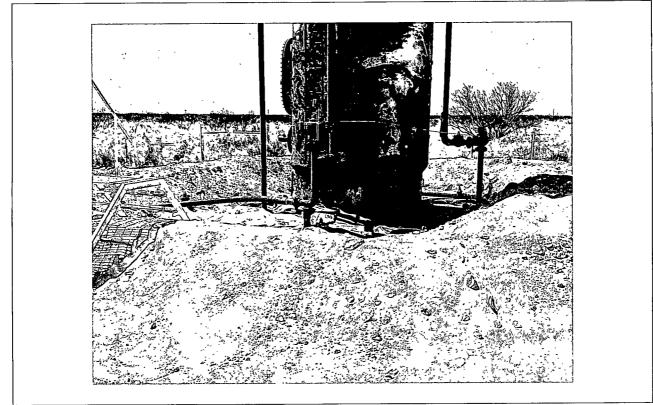
View to south of completed remediation



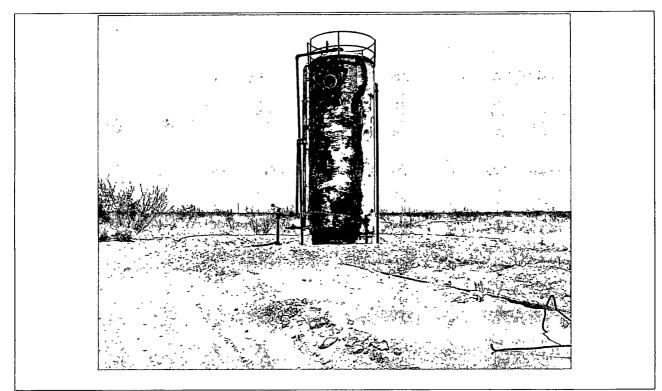
View to east of completed remediation



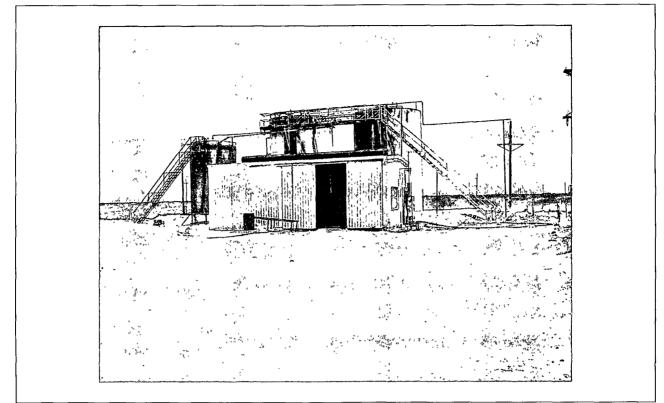
View to east of completed remediation



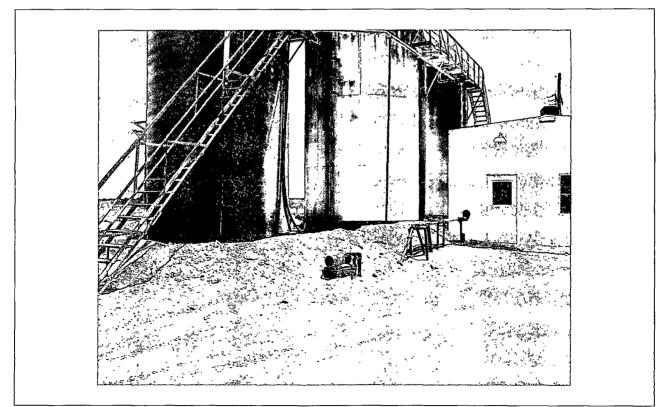
View to south of completed remediation



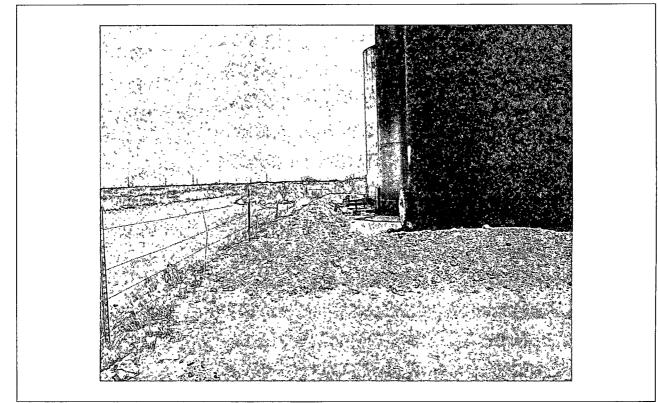
View to east of completed remediation



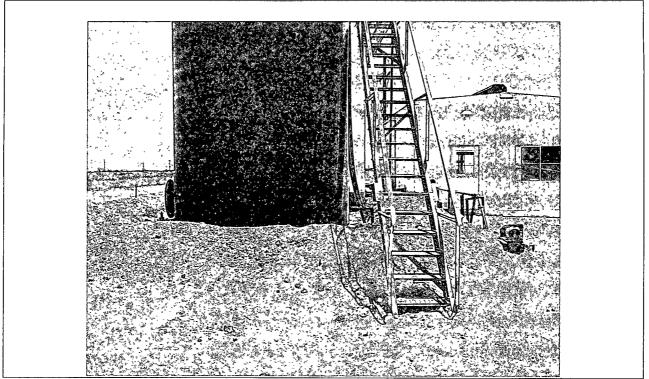
View to north of completed remediation



View to northeast of completed remediation



View to east of completed remediation



View to east of completed remediation

### **APPENDIX D**

### FINAL C141 FORM

Crain Environmental • 2925 East 17th Street • Odessa, TX 79761 • Phone: (432) 530-9797 • Fax: (432) 272-0304

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

### **Release Notification and Corrective Action**

	OPERATOR	Initial Report	Final Report
Name of Company Burgundy Oil & Gas of NM, In	nc. Contact	Ben Taylor	
Address 401 W. Texas, Suite 1003, Midland, TX	79701 Telephone No.	(432) 684-4033	
Facility Name Eunice Monument Unit Tank Battery	Facility Type	Central Oil & Gas Battery	
Surface Owner: State Minu	eral Owner: State	Lease No. 015823	

Duridee of the		C) CLAY Q							1
						NEAR	UBY WELL EUR	ALE MUNUMENT UN	11.059
				LOCA	TION OF REI	LEASE 30-	025-04319-	00-00	
Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County	
1	24	205	36E					Lea	i

Latitude N 32.56231° Longitude W 103.28065°

NATURE OF RELEASE

Type of Release Water with slop oil	Volume of Release 8 bbl	Volume Recovered 6 bbl							
Source of Release 400 bbl fiberglass tank	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 7/15/10							
Was Immediate Notice Given?	If YES, To Whom?								
By Whom? Geoffrey Leking	Date and Hour 7/23/10 - afterno	on							
Was a Watercourse Reached?	If YES, Volume Impacting the Wat	tercourse.							
🗌 Yes 🖾 No		HOBBS OCD							
If a Watercourse was Impacted, Describe Fully.*		JUL 1 4 2011							
Describe Cause of Problem and Remedial Action Taken.*		RECEIVED							
Injection tank overflowed into an overflow tank that had 8 bbls of slop oil of tank. Picked up all but 2 bbls.	l in it. Alarm system malfunctioned, c	causing the 8 bbls to be pushed over the top							
Describe Area Affected and Cleanup Action Taken.*									
Pad around tanks were stained with oil. Soil was excavated in an approxi TPH concentrations below 100 mg/kg and chloride concentrations below TPH concentrations were reported below 100 mg/kg, and the excavation attached, along with laboratory documentation and a table summarizing the firewalls were constructed with the additional blended soil.	250 mg/kg. Impacted soil was blende was backfilled with blended soil. A si	ed on-site with clean soil and fertilizer until ite drawing with sample locations is							
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.									
	OIL CONSERV	VATION DIVISION							
Signature: For layoz	7								
	TWV ENGINEER-	· · · · · · ·							
Printed Name: Ben Taylor	Approved by District-Supervisor:	Josef Johans							
Title: Production Manager	Approval Date: 08 [12]11	Expiration Date:							
	Conditions of Approval:								
E-mail Address: bogi@t3wireless.com	Conditions of Approval.	Attached 🔲							
Date: 7/7/11 Phone: (432) 684-4033		IRP-11-10-2660							

Date: 7/7/11 Phone: (432) 684-4033 \* Attach Additional Sheets If Necessarv