

# Analytical Report 412474

for

**Crain Environmental**

**Project Manager: Cindy Crain**

**Burgundy EMU Tank Battery**

**0810-001**

**12-APR-11**

**RECEIVED**

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*approved for backfill*  
*Jeffrey Stamm*  
*env. mgr.*  
*MMOCD - HOBBS*  
*04/13/11*



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

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
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: 0810-001*

*Work Order Number: 412474*

*Report Date: 12-APR-11*

*Date Received: 04/07/2011*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None



# Certificate of Analysis Summary 412474

Crain Environmental, Odessa, TX

Project Name: Burgundy EMU Tank Battery



Project Id: 0810-001

Contact: Cindy Crain

Date Received in Lab: Thu Apr-07-11 04:55 pm

Report Date: 12-APR-11

Project Location: Lea County, New Mexico

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	412474-001	412474-002				
	<i>Field Id:</i>	Spoil (East)	Spoil (West)				
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL				
	<i>Sampled:</i>	Apr-06-11 17:30	Apr-06-11 17:35				
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Apr-08-11 17:00	Apr-08-11 17:00				
	<i>Units/RL:</i>	% RL	% RL				
Percent Moisture		1.07 1.00	1.08 1.00				
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Apr-08-11 12:00	Apr-08-11 12:00				
	<i>Analyzed:</i>	Apr-09-11 19:54	Apr-09-11 20:24				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline 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.

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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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# Form 2 - Surrogate Recoveries

Project Name: Burgundy EMU Tank Battery

Work Orders : 412474,

Project ID: 0810-001

Lab Batch #: 851328

Sample: 600089-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/09/11 12:45

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.5	117	70-135	
o-Terphenyl	48.6	49.8	98	70-135	

Lab Batch #: 851328

Sample: 600089-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/09/11 13:16

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.9	101	86	70-135	
o-Terphenyl	35.8	50.3	71	70-135	

Lab Batch #: 851328

Sample: 600089-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 04/09/11 13:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.8	100	71	70-135	
o-Terphenyl	35.5	50.2	71	70-135	

Lab Batch #: 851328

Sample: 412474-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/09/11 19:54

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.9	101	70-135	
o-Terphenyl	48.8	50.0	98	70-135	

Lab Batch #: 851328

Sample: 412474-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 04/09/11 20:24

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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.



# BS / BSD Recoveries



**Project Name: Burgundy EMU Tank Battery**

**Work Order #: 412474**

**Analyst: BEV**

**Date Prepared: 04/08/2011**

**Project ID: 0810-001**

**Date Analyzed: 04/09/2011**

**Lab Batch ID: 851328**

**Sample: 600089-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	<14.9	995	850	85	1010	769	76	10	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<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



# Sample Duplicate Recovery



**Project Name: Burgundy EMU Tank Battery**

**Work Order #: 412474**

**Lab Batch #: 851392**

**Project ID: 0810-001**

**Date Analyzed: 04/08/2011 17:00**

**Date Prepared: 04/08/2011**

**Analyst: WRU**

**QC- Sample ID: 412474-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

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





**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: Crain Env.  
 Date/Time: 4/7/11 16:55  
 Lab ID #: 41274474  
 Initials: AE 4/7/11

**Sample Receipt Checklist**

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