

**Bratcher, Mike, EMNRD**

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**From:** Logan Anderson [la\_elkeenv@yahoo.com]  
**Sent:** Tuesday, March 09, 2010 1:12 PM  
**To:** Bratcher, Mike, EMNRD  
**Subject:** Linn Operating - C A Russell Battery  
**Attachments:** Remediation Plan.pdf

Mike,

Attached is the Remediation Plan for the spill at the Linn Operating - C A Russell Battery. 2RP# 392. If you have any questions feel free to contact me.

Thanks,  
Logan Anderson

Project Manager  
Elke Environmental, Inc.  
off 432-366-0043  
cell 432-664-1269  
fax 432-366-0884

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This inbound email has been scanned for malicious software and transmitted safely to you using Webroot Email Security.

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# **Remediation Plan**

Prepared for  
Linn Operating

**C A Russell Battery**  
**Eddy County, NM**

2RP - 392

Prepared by  
***Elke Environmental, Inc.***

P.O. Box 14167 Odessa, TX 79768  
Phone (432) 366-0043 Fax (432) 366-0884

District I  
1625 N French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised October 10, 2003

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

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company – Linn Operating	Contact – Albert Valero
Address – 2651 JBS Parkway Bldg 4 Suite F	Telephone No. – 432-366-1557
Facility Name – C A Russell Battery	Facility Type – Battery

Surface Owner - BLM	Mineral Owner	Lease No. 30-015-28924 (C A Russell #19)
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
B	18	17S	31E					Eddy

Latitude 32° 50.291' N Longitude 103° 54.335' W

**NATURE OF RELEASE**

Type of Release - Oil	Volume of Release – 20 to 25 bbls	Volume Recovered – 20 bbls
Source of Release – Oil Tank (Overflowed)	Date and Hour of Occurrence – 2/19/10	Date and Hour of Discovery – 2/19/10 7:00am
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Kimberly Wilson (NMOCD)	
By Whom? Robert Aranda	Date and Hour – 2/19/10 @ 3:17pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* Electrical failure on circulating pump causing to shutdown, timer broken causing tank to overflow, allowing approx. 20 to 25 bbls to overflow. Spill was contained within the firewall. Initial sampling of the spill was completed on 2-25-10 by hand. The delineation was completed on 3-2-10 and 3-3-10. Attached is a plat map and field analytical of the delineation.

Describe Area Affected and Cleanup Action Taken.\* Site ranking for the site is as follows: Wellhead Protection – 0 points, Surface body of Water – 0 points and Groundwater (>200') - 0 points. Total ranking for the site is 0 points. The RAL's for the site will be TPH – 5,000ppm; Chloride – 250ppm and BTEX – 100ppm (using field vapor headspace measurement). Linn Operating proposes to excavate 18" of impacted soil and haul to an OCD Approved disposal. A 20 mil poly liner will be installed at 18" with a 4 oz. Geotextile Liner above and below the poly liner. After installation of the liner, clean native soil will be backfilled into the excavation. A final report with lab confirmations will be submitted at the completion of the project.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

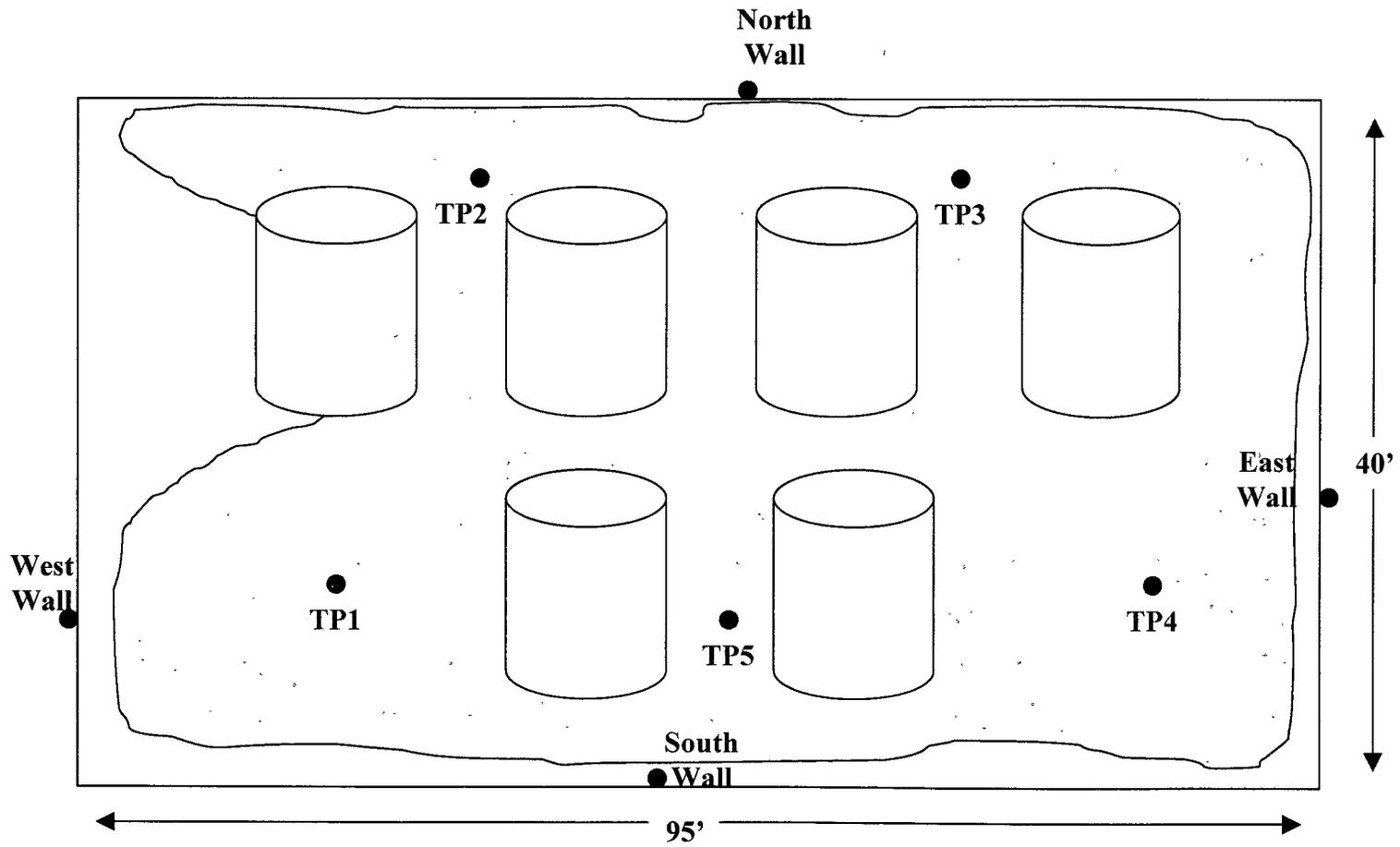
Signature: 	<b>OIL CONSERVATION DIVISION</b>		
Printed Name: Logan Anderson	Approved by District Supervisor:		
Title: Consultant	Approval Date:	Expiration Date:	
E-mail Address: la_elkeenv@yahoo.com	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 3-1-10	Phone: 432-366-0043		

\* Attach Additional Sheets If Necessary

**Linn Operating**  
C A Russell Battery  
Eddy County, NM



Plat Map



# Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

## Field Analytical Report Form

Client Linn Operating Analyst Bobby Steadham

Site C A Russell Battery

Sample ID	Date	Depth	418.1 TPH / PPM	Cl / PPM	PID / PPM	GPS
TP1	2-25-10	6"	6,450	175	1,055	32° 50.291' N 103° 54.335' W
TP1	2-25-10	1' 6"	1,004	169	219	32° 50.291' N 103° 54.335' W
TP1	3-3-10	3' 6"	1,278	239	119	32° 50.291' N 103° 54.335' W
TP1	3-3-10	4' 6"	1,295	509	106	32° 50.291' N 103° 54.335' W
TP1	3-3-10	5' 6"	465	1,075	13.5	32° 50.291' N 103° 54.335' W
TP1	3-3-10	6' 6"	6	1,762	8.7	32° 50.291' N 103° 54.335' W
TP1	3-3-10	7' 6"		1,876	6.4	32° 50.291' N 103° 54.335' W
TP1	3-3-10	8' 6"		1,423	4.5	32° 50.291' N 103° 54.335' W
TP1	3-3-10	9' 6"		1,687	3.7	32° 50.291' N 103° 54.335' W
TP1	3-3-10	10' 6"		2,377	4.8	32° 50.291' N 103° 54.335' W
TP1	3-3-10	11' 6"		1,966	5.2	32° 50.291' N 103° 54.335' W
TP1	3-3-10	12' 6"		871	3.1	32° 50.291' N 103° 54.335' W
TP1	3-3-10	13' 6"	11	256	2.0	32° 50.291' N 103° 54.335' W
TP2	2-25-10	6"	15,410	184	1,635	32° 50.294' N 103° 54.335' W
TP2	2-25-10	1' 6"	400	79	717	32° 50.294' N 103° 54.335' W
TP2	3-2-10	2' 6"	167	122	95.0	32° 50.294' N 103° 54.335' W

Analyst Notes \_\_\_\_\_

# Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

## Field Analytical Report Form

Client Linn Operating Analyst Bobby Steadham

Site C A Russell Battery

Sample ID	Date	Depth	418.1 TPH / PPM	Cl / PPM	PID / PPM	GPS
TP3	2-25-10	6"	19,580	92	1,514	32° 50.296' N 103° 54.328' W
TP3	2-25-10	1' 6"	976	117	926	32° 50.296' N 103° 54.328' W
TP3	3-2-10	2' 6"	1,276	173	1,186	32° 50.296' N 103° 54.328' W
TP3	3-2-10	3' 6"	127	118	277	32° 50.296' N 103° 54.328' W
TP3	3-2-10	5'	14	114	47.9	32° 50.296' N 103° 54.328' W
TP4	2-25-10	6"	22,150	119	1,305	32° 50.294' N 103° 54.323' W
TP4	2-25-10	1' 6"	12,850	119	1,118	32° 50.294' N 103° 54.323' W
TP4	3-2-10	2' 6"	487	200	384	32° 50.294' N 103° 54.323' W
TP4	3-2-10	3' 6"	587	119	113	32° 50.294' N 103° 54.323' W
TP4	3-2-10	4' 6"	1,250	109	76.3	32° 50.294' N 103° 54.323' W
TP4	3-2-10	5' 6"	682	141	41.1	32° 50.294' N 103° 54.323' W
TP5	2-25-10	6"	22,000	176	1,341	32° 50.292' N 103° 54.331' W
TP5	2-25-10	1' 6"	1,250	129	1,304	32° 50.292' N 103° 54.331' W
TP5	3-2-10	2' 6"	1,690	247	529	32° 50.292' N 103° 54.331' W
TP5	3-2-10	3'	10,190	449	457	32° 50.292' N 103° 54.331' W

Analyst Notes \_\_\_\_\_

# Elke Environmental, Inc.

P.O. Box 14167 Odessa, TX 79768

## Field Analytical Report Form

**Client** Linn Operating **Analyst** Bobby Steadham

**Site** C A Russell Battery

Sample ID	Date	Depth	418.1 TPH / PPM	CI / PPM	PID / PPM	GPS
TP5	3-2-10	3' 6"	3,660	569	104	32° 50.292' N 103° 54.331' W
TP5	3-2-10	5'	32	773	41.0	32° 50.292' N 103° 54.331' W
TP5	3-2-10	5' 6"		703		32° 50.292' N 103° 54.331' W
TP5	3-3-10	6'		860		32° 50.292' N 103° 54.331' W
TP5	3-3-10	8'	16	235	54.5	32° 50.292' N 103° 54.331' W
North Wall	3-3-10	5'	27	209	11.1	32° 50.297' N 103° 54.330' W
East Wall	3-3-10	5'	16	149	10.8	32° 50.296' N 103° 54.318' W
South Wall	3-3-10	5'	31	259	7.0	32° 50.288' N 103° 54.331' W
West Wall	3-3-10	5'	369	271	29.0	32° 50.291' N 103° 54.340' W

**Analyst Notes** \_\_\_\_\_

# Analytical Report 364388

for

**Elke Environmental, Inc.**

**Project Manager: Logan Anderson**

**Linn Operating  
CA Russel Battery**

**09-MAR-10**



**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-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)

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Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295)



09-MAR-10

Project Manager: **Logan Anderson**  
**Elke Environmental, Inc.**  
P.O. Box 14167  
Odessa, TX 79768

Reference: XENCO Report No: **364388**  
**Linn Operating**  
Project Address: CA Russel Battery

**Logan Anderson:**

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 364388. 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. 364388 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 364388**



**Elke Environmental, Inc., Odessa, TX**  
Linn Operating

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
TP1 @ 162"	S	Mar-03-10 17:00	162 In	364388-001
TP2 @ 30"	S	Mar-02-10 11:00	30 In	364388-002
TP3 @ 60"	S	Mar-02-10 15:00	60 In	364388-003
TP4 @ 66"	S	Mar-02-10 15:00	66 In	364388-004
TP5 @ 96"	S	Mar-03-10 12:00	96 In	364388-005



## CASE NARRATIVE

*Client Name: Elke Environmental, Inc.*

*Project Name: Linn Operating*



*Project ID: CA Russel Battery*  
*Work Order Number: 364388*

*Report Date: 09-MAR-10*  
*Date Received: 03/04/2010*

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**Sample receipt non conformances and Comments:**

None

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

None

**Analytical Non Conformances and Comments:**

*Batch: LBA-796849 Percent Moisture*  
*AD2216A*

*Batch 796849, Percent Moisture RPD is outside the QC limit. This is most likely due to sample non-homogeneity.*

*Samples affected are: 364388-004, -001, -002, -003, -005.*

*Batch: LBA-797069 TPH By SW8015 Mod*  
*None*

*Batch: LBA-797091 Anions by E300*  
*None*



# Certificate of Analysis Summary 364388

Elke Environmental, Inc., Odessa, TX

Project Name: Linn Operating



Project Id: CA Russel Battery

Contact: Logan Anderson

Project Location: CA Russel Battery

Date Received in Lab: Thu Mar-04-10 02:39 pm

Report Date: 09-MAR-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	364388-001	364388-002	364388-003	364388-004	364388-005	
	<i>Field Id:</i>	TP1 @ 162"	TP2 @ 30"	TP3 @ 60"	TP4 @ 66"	TP5 @ 96"	
	<i>Depth:</i>	162 In	30 In	60 In	66 In	96 In	
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Mar-03-10 17:00	Mar-02-10 11:00	Mar-02-10 15:00	Mar-02-10 15:00	Mar-03-10 12:00	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Mar-09-10 09:11					
	<i>Units/RL:</i>	mg/kg RL					
Chloride		ND 4.23	97.4 9.46	67.6 8.74	480 17.6	143 9.25	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Mar-05-10 17:00					
	<i>Units/RL:</i>	% RL					
Percent Moisture		ND 1.00	11.2 1.00	3.91 1.00	4.65 1.00	9.22 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Mar-08-10 09:30					
	<i>Analyzed:</i>	Mar-08-10 14:44	Mar-08-10 15:12	Mar-08-10 15:39	Mar-08-10 16:06	Mar-08-10 16:33	
	<i>Units/RL:</i>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 15.1	ND 16.8	ND 15.6	ND 15.7	ND 16.5	
C12-C28 Diesel Range Hydrocarbons		22.0 15.1	47.6 16.8	ND 15.6	130 15.7	16.9 16.5	
C28-C35 Oil Range Hydrocarbons		ND 15.1	ND 16.8	ND 15.6	39.9 15.7	ND 16.5	
Total TPH		22.0 15.1	47.6 16.8	ND 15.6	170 15.7	16.9 16.5	

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
- \* Outside XENCO's scope of NELAC Accreditation.

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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



# Form 2 - Surrogate Recoveries

Project Name: Linn Operating

Work Orders : 364388,

Project ID: CA Russel Battery

Lab Batch #: 797069

Sample: 552365-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/08/10 13:22

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 797069

Sample: 552365-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/08/10 13:49

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	58.1	50.1	116	70-135	

Lab Batch #: 797069

Sample: 552365-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 03/08/10 14:17

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	101	101	100	70-135	
o-Terphenyl	59.7	50.3	119	70-135	

Lab Batch #: 797069

Sample: 364388-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/08/10 14:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	56.4	50.0	113	70-135	

Lab Batch #: 797069

Sample: 364388-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/08/10 15:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
<b>Analytes</b>					
1-Chlorooctane	89.3	99.6	90	70-135	
o-Terphenyl	53.5	49.8	107	70-135	

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



# Form 2 - Surrogate Recoveries

Project Name: Linn Operating

Work Orders : 364388,

Project ID: CA Russel Battery

Lab Batch #: 797069

Sample: 364388-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/08/10 15:39

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	60.2	50.0	120	70-135	

Lab Batch #: 797069

Sample: 364388-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/08/10 16:06

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.9	106	70-135	
o-Terphenyl	63.5	50.0	127	70-135	

Lab Batch #: 797069

Sample: 364388-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/08/10 16:33

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	100	106	70-135	
o-Terphenyl	64.5	50.0	129	70-135	

Lab Batch #: 797069

Sample: 364388-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/09/10 00:11

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	58.4	49.8	117	70-135	

Lab Batch #: 797069

Sample: 364388-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 03/09/10 00:38

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	60.3	49.9	121	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.



# Blank Spike Recovery



**Project Name: Linn Operating**

**Work Order #: 364388**

**Project ID: CA Russel Battery**

**Lab Batch #: 797091**

**Sample: 797091-1-BKS**

**Matrix: Solid**

**Date Analyzed: 03/09/2010**

**Date Prepared: 03/09/2010**

**Analyst: LATCOR**

**Reporting Units: mg/kg**

**Batch #: 1**

### BLANK /BLANK SPIKE RECOVERY STUDY

Anions by E300 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	9.93	99	75-125	

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: Linn Operating**

**Work Order #: 364388**

**Project ID: CA Russel Battery**

**Analyst: BEV**

**Date Prepared: 03/08/2010**

**Date Analyzed: 03/08/2010**

**Lab Batch ID: 797069**

**Sample: 552365-1-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	ND	1000	902	90	1000	904	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	775	78	1000	991	99	24	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: Linn Operating

Work Order #: 364388

Project ID: CA Russel Battery

Lab Batch #: 797091

Analyst: LATCOR

Date Analyzed: 03/09/2010

Date Prepared: 03/09/2010

QC- Sample ID: 364388-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

## MATRIX / MATRIX SPIKE RECOVERY STUDY

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	101	107	106	75-125

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: Linn Operating

Work Order #: 364388

Project ID: CA Russel Battery

Lab Batch ID: 797069

QC- Sample ID: 364388-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 03/09/2010

Date Prepared: 03/08/2010

Analyst: BEV

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1040	926	89	1040	965	93	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	843	81	1040	796	77	6	70-135	35	

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

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

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



# Sample Duplicate Recovery



**Project Name: Linn Operating**

**Work Order #: 364388**

**Lab Batch #: 797091**

**Project ID: CA Russel Battery**

**Date Analyzed: 03/09/2010**

**Date Prepared: 03/09/2010**

**Analyst: LATCOR**

**QC- Sample ID: 364388-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 796849**

**Date Analyzed: 03/05/2010**

**Date Prepared: 03/05/2010**

**Analyst: WRU**

**QC- Sample ID: 364467-001 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	5.01	8.93	56	20	F

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**  
**Variance/ Corrective Action Report- Sample Log-In**

Client: Elke E.W.  
 Date/ Time: 3.4.10 14:39  
 Lab ID #: 364388  
 Initials: AL

**Sample Receipt Checklist**

				Client Initials
#1	Temperature of container/ cooler?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	56 °C
#2	Shipping container in good condition?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#3	Custody Seals intact on shipping container/ cooler?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Present
#4	Custody Seals intact on sample bottles/ container?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Present
#5	Chain of Custody present?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#6	Sample instructions complete of Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#7	Chain of Custody signed when relinquished/ received?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#8	Chain of Custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	ID written on Cont./ Lid
#9	Container label(s) legible and intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable
#10	Sample matrix/ properties agree with Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#11	Containers supplied by ELOT?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#12	Samples in proper container/ bottle?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#13	Samples properly preserved?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#14	Sample bottles intact?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#15	Preservations documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#16	Containers documented on Chain of Custody?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	
#17	Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#18	All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	See Below
#19	Subcontract of sample(s)?	<input type="radio"/> Yes	<input type="radio"/> No	<input checked="" type="radio"/> Not Applicable
#20	VOC samples have zero headspace?	<input checked="" type="radio"/> Yes	<input type="radio"/> No	Not Applicable

**Variance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/ Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that Apply:
- See attached e-mail/ fax
  - Client understands and would like to proceed with analysis
  - Cooling process had begun shortly after sampling event