

Bratcher, Mike, EMNRD

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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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) |
|---------------------|---------------|---|

LOCATION OF RELEASE

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

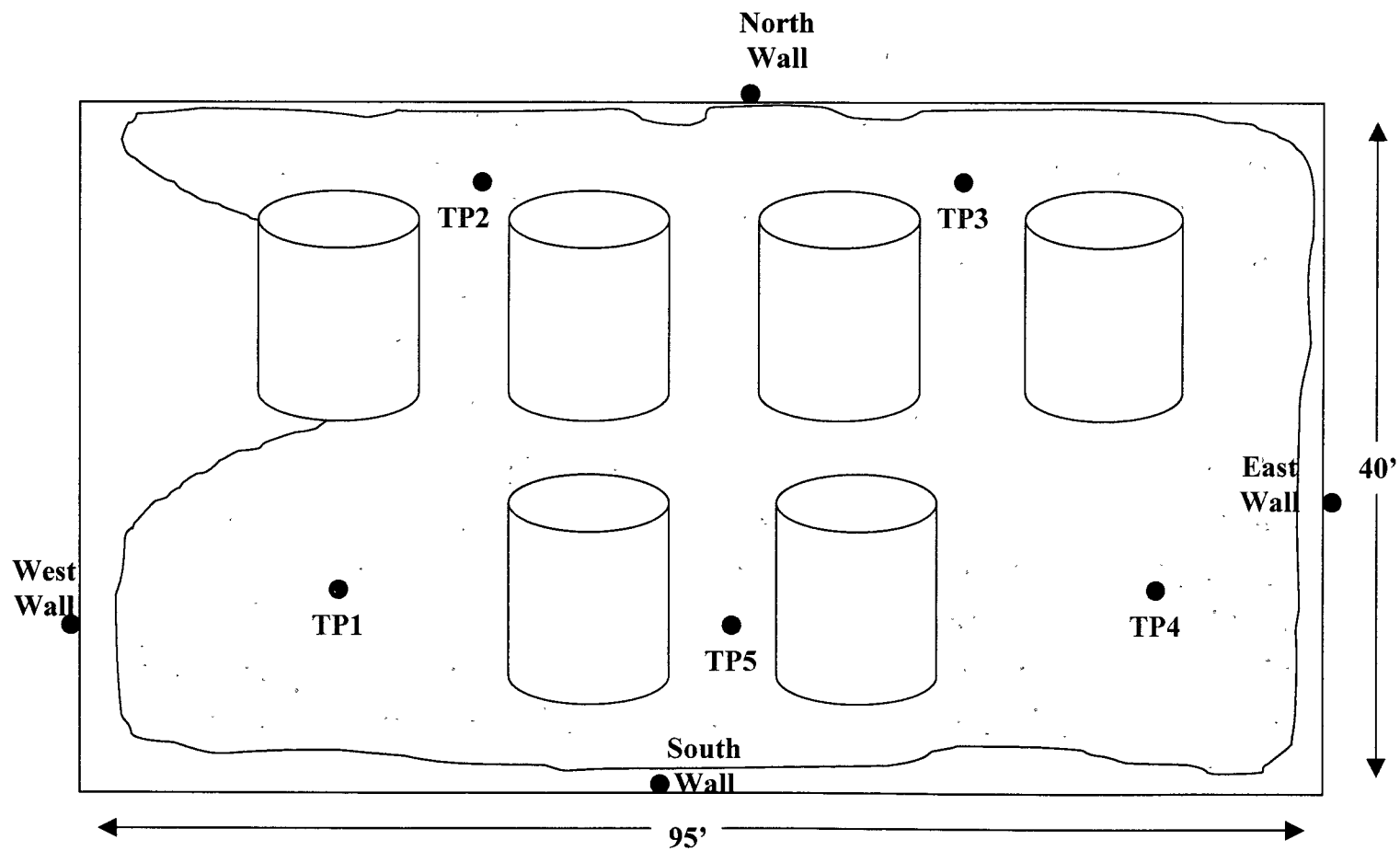
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger 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:  | <u>OIL CONSERVATION DIVISION</u> | |
| 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 | CI / 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):

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Louisiana (04176), USDA (P330-07-00105)

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Xenco-Boca Raton (EPA Lab Code: FL00449):

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

| Sample Id | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|------------|--------|-----------------|--------------|---------------|
| 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

Sample receipt non conformances and Comments:

None

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 | |
| Anions by E300 | <i>Extracted:</i> | | | | | | |
| | <i>Analyzed:</i> | Mar-09-10 09:11 | Mar-09-10 09:11 | Mar-09-10 09:11 | Mar-09-10 09:11 | Mar-09-10 09:11 | |
| | <i>Units/RL:</i> | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | mg/kg RL | |
| Chloride | | ND 4.23 | 97.4 9.46 | 67.6 8.74 | 480 17.6 | 143 9.25 | |
| Percent Moisture | <i>Extracted:</i> | | | | | | |
| | <i>Analyzed:</i> | Mar-05-10 17:00 | Mar-05-10 17:00 | Mar-05-10 17:00 | Mar-05-10 17:00 | Mar-05-10 17:00 | |
| | <i>Units/RL:</i> | % RL | % RL | % RL | % RL | % RL | |
| Percent Moisture | | ND 1.00 | 11.2 1.00 | 3.91 1.00 | 4.65 1.00 | 9.22 1.00 | |
| TPH By SW8015 Mod | <i>Extracted:</i> | Mar-08-10 09:30 | Mar-08-10 09:30 | Mar-08-10 09:30 | Mar-08-10 09:30 | 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 | mg/kg RL | mg/kg RL | mg/kg RL | 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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| 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 Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 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 Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 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 Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 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 Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 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 Analytes | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
|-------------------------------|---------------------|--------------------|-----------------------|----------------------|-------|
| 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] = $100 \times A / B$

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

Analyst: BEV

Date Prepared: 03/08/2010

Project ID: CA Russel Battery

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 |
|------------------------------------|-------------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---|-------------------------------|----------|-------------------------|---------------------------|------|
| Analytes | | | | | | | | | | | |
| 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

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 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] = $100 \cdot (C-A)/B$

Relative Percent Difference [E] = $200 \cdot (C-A)/(C+B)$

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
ApplicableN = 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 Analyte | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| 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 Analyte | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
| 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

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Logan Anderson

Company Name: Elke Environmental

Company Address: P O Box 14167

City/State/Zip: Odessa, TX 79768

Telephone No: 432-366-0043

Sampler Signature: [Signature]

Fax No: 432-366-0884

e-mail: la_elkeenv@yahoo.com

Project Name: LINA OPERATIONS

Project #:

Project Loc: CA RUSSEL BATTERY

PO #:

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

(lab use only)

ORDER #:

364388

| LAB # (lab use only) | FIELD CODE | Beginning Depth | Ending Depth | Date Sampled | Time Sampled | Field Filtered | Total #. of Containers | Ice | HNO ₃ | HCl | H ₂ SO ₄ | NaOH | Na ₂ S ₂ O ₃ | None | Other (Specify) | DW=Drinking Water SL=Sludge GW=Groundwater S=Soil/Solid NP=Non-Petroleum Specify Other | TPH: 418, 90150A, 90150B | TPH: TX 1005 TX 1008 | Cations (Ca, Mg, Na, K) | Anions (SO ₄ , Alkalinity) | SAR / ESP / CEC | Metals: As Ag Ba Cd Cr Pb Hg Se Volatiles | Semivolatiles | BTEX 9021B-5030 or BTEX 9260 | RCI | N.O.R.A. | RUSH TAT (pre-scheduling) 24, 48, 72 hrs | Standard TAT | | |
|----------------------|------------|-----------------|--------------|--------------|--------------|----------------|------------------------|-----|------------------|-----|--------------------------------|------|---|------|-----------------|--|--------------------------|----------------------|-------------------------|---------------------------------------|-----------------|--|---------------|------------------------------|-----|----------|--|--------------|--|--|
| 01 | TP1 @ 162" | | 162" | 3/3/10 | 5:PM | | | X | | | | | | | | | X | | | | | | | | | | | | | |
| 02 | TP2 @ 30" | | 30" | 3/2/10 | 11:00AM | | | X | | | | | | | | | X | | | | | | | | | | | | | |
| 03 | TP3 @ 60" | | 60" | 3/2/10 | 3:00PM | | | X | | | | | | | | | X | | | | | | | | | | | | | |
| 04 | TP4 @ 66" | | 66" | 3/2/10 | 3:00PM | | | X | | | | | | | | | X | | | | | | | | | | | | | |
| 05 | TP5 @ 96" | | 96" | 3/2/10 | 12:00PM | | | X | | | | | | | | | X | | | | | | | | | | | | | |

Special Instructions:

Laboratory Comments:

| | | | | | | |
|------------------|-------|-------|--------------------|---------------|--------------|--|
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: | VOCs Free of Headspace? <input checked="" type="checkbox"/> Custody seals on container(s) <input checked="" type="checkbox"/> Sample Hand Delivered by Sampler/Client Rep. ? <input checked="" type="checkbox"/> by Courier? <input checked="" type="checkbox"/> UPS <input checked="" type="checkbox"/> DHL <input checked="" type="checkbox"/> FedEx <input checked="" type="checkbox"/> Lone Star Temperature Upon Receipt: <u>5.6</u> °C |
| Relinquished by: | Date: | Time: | Received by: | Date: | Time: | |
| Relinquished by: | Date: | Time: | Received by ELQT: | Date: | Time: | |
| | | | <u>Andrea Lamm</u> | <u>3.4.10</u> | <u>14:39</u> | |

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