

October 22, 2014

Report to:  
Jack Sosebee  
Watpro Inc.  
9407 East Chenango Avenue  
Greenwood Village, CO 80111

Bill to:  
Jennifer Lujan  
Red River Ranch  
15850 County Road  
Weston, CO 81090

received 10/27/2014  
Project 8737  
DOC 2142482  
Pit Facility 285604  
E&P waste Facility 292833

Project ID:  
ACZ Project ID: L20851

Jack Sosebee:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on October 01, 2014. This project has been assigned to ACZ's project number, L20851. Please reference this number in all future inquiries.

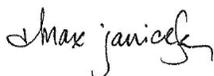
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L20851. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after November 21, 2014. If the samples are determined to be hazardous, additional charges apply for disposal (typically \$11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.



Max Janicek has reviewed and approved this report.



Red River Ranch

October 22, 2014

Project ID:

ACZ Project ID: L20851

**Sample Receipt**

ACZ Laboratories, Inc. (ACZ) received 8 soil samples from Red River Ranch on October 1, 2014. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L20851. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

**Holding Times**

All analyses were performed within EPA recommended holding times.

**Sample Analysis**

These samples were analyzed for inorganic, organic parameters. The individual methods are referenced on both the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

The Total Metals (via 3050 digestion) results for L20851 have been qualified with the N1 flag on the extended qualifier report. The chemist noted that a Laboratory Control Sample Duplicate (LCSSD) was not prepared with the prep workgroup. The RPD from the Matrix Spike (MS) and Matrix Spike Duplicate (MSD) was used to demonstrate acceptable precision (RPD < 20%). Accuracy is also demonstrated by acceptable LCSS recovery.

The Hexavalent Chromium results for L20851 have been qualified with the N1 flag on the extended qualifier report. The chemist noted that the reported values may be biased low due to interferences associated with the sample matrix/color; comparison of results to historical levels and/or data qualification may be necessary.

**Red River Ranch**

Project ID:

Sample ID: A-EAST

ACZ Sample ID: **L20851-01**

Date Sampled: 09/29/14 11:05

Date Received: 10/01/14

Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 505      | 3.4    |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:35 | las     |
| Barium, total (3050)            | M6010B ICP                       | 101      | 341    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 15:58 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 101      | 2      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 15:58 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 101      |        | U    |    | mg/Kg | 0.5    | 2      | 10/08/14 15:58 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 1.16   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:25 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 101      | 24     |      | *  | mg/Kg | 1      | 5      | 10/08/14 15:58 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 24     |      |    | mg/Kg | 1      | 5      | 10/22/14 9:04  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 101      | 20     |      | *  | mg/Kg | 1      | 5      | 10/08/14 15:58 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 101      | 17     | B    | *  | mg/Kg | 3      | 20     | 10/08/14 15:58 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.582  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:25 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 36.7   |      |    | ng/g  | 1.76   | 8.8    | 10/20/14 13:17 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 101      | 15.5   |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 15:58 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 15:58 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 15:58 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 3      |      |    |       |        |        | 10/22/14 9:04  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 2.83   |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:25 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 101      | 75     |      | *  | mg/Kg | 1      | 5      | 10/08/14 15:58 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date           | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|----------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |                |         |
| Conductivity        |                                | 1        | 0.441  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00  | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |                |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| pH                  |                                | 1        | 6.5    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| Solids, Percent     | D2216-80                       | 1        | 82.1   |      | *  | %        | 0.1   | 0.5  | 10/04/14 12:42 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:30 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/09/14 23:25 | cra     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 13:48 | pta     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 13:48 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 11:41 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 11:50 | mns     |

**Red River Ranch**

Project ID:

Sample ID: A-EAST

ACZ Sample ID: **L20851-01**

Date Sampled: 09/29/14 11:05

Date Received: 10/01/14

Sample Matrix: Soil

Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL  | PQL | Date           | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|------|-----|----------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 245      |        | U    | *  | mg/Kg | 1.23 | 4.9 | 10/14/14 15:21 | abd     |

**Red River Ranch**

Project ID:  
Sample ID: A-SOUTH

ACZ Sample ID: **L20851-02**  
Date Sampled: 09/29/14 10:35  
Date Received: 10/01/14  
Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 500      | 3.3    |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:36 | las     |
| Barium, total (3050)            | M6010B ICP                       | 100      | 301    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:14 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 100      | 3      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:14 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 100      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:14 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 1.94   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:28 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 100      | 14     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:14 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 14     |      |    | mg/Kg | 1      | 5      | 10/22/14 9:04  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 100      | 14     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:14 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 100      | 22     |      | *  | mg/Kg | 3      | 20     | 10/08/14 16:14 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.645  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:28 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 23.9   |      |    | ng/g  | 1.86   | 9.3    | 10/20/14 13:23 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 100      | 11.6   |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:14 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 100      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 16:14 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 100      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:14 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 0.13   |      |    |       |        |        | 10/22/14 9:04  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 0.152  |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:28 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 100      | 86     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:14 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date           | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|----------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |                |         |
| Conductivity        |                                | 1        | 0.291  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00  | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |                |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| pH                  |                                | 1        | 5.6    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| Solids, Percent     | D2216-80                       | 1        | 83.9   |      | *  | %        | 0.1   | 0.5  | 10/04/14 16:20 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:33 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/10/14 1:06  | cra     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 16:40 | pta     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 16:40 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 11:58 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 11:57 | mns     |

**Red River Ranch**

Project ID:

Sample ID: A-SOUTH

ACZ Sample ID: **L20851-02**

Date Sampled: 09/29/14 10:35

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 240      |        | U    | *  | mg/Kg | 1.2 | 4.8 | 10/14/14 15:22 | abd     |

**Red River Ranch**

Project ID:

Sample ID: A-CENTER

ACZ Sample ID: **L20851-03**

Date Sampled: 09/29/14 10:50

Date Received: 10/01/14

Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 510      | 4      |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:40 | las     |
| Barium, total (3050)            | M6010B ICP                       | 102      | 349    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:17 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 102      | 1      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:17 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 102      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:17 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 2.68   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:31 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 102      | 20     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:17 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 20     |      |    | mg/Kg | 1      | 6      | 10/22/14 9:06  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 102      | 19     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:17 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 102      | 22     |      | *  | mg/Kg | 3      | 20     | 10/08/14 16:17 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.831  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:31 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 49.4   |      |    | ng/g  | 2      | 10     | 10/20/14 13:30 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 102      | 13.4   |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:17 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 102      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 16:17 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 102      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:17 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 4.7    |      |    |       |        |        | 10/22/14 9:06  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 6.28   |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:31 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 102      | 65     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:17 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date           | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|----------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |                |         |
| Conductivity        |                                | 1        | 1.08   |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00  | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |                |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| pH                  |                                | 1        | 5.6    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| Solids, Percent     | D2216-80                       | 1        | 69.3   |      | *  | %        | 0.1   | 0.5  | 10/04/14 19:58 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:37 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/10/14 2:47  | cra     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 17:38 | pta     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 17:38 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 12:15 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 12:04 | mns     |

**Red River Ranch**

Project ID:

Sample ID: A-CENTER

ACZ Sample ID: **L20851-03**

Date Sampled: 09/29/14 10:50

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL  | PQL | Date           | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|------|-----|----------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 290      |        | U    | *  | mg/Kg | 1.45 | 5.8 | 10/14/14 15:23 | abd     |

**Red River Ranch**

Project ID:  
Sample ID: A-NORTH

ACZ Sample ID: **L20851-04**  
Date Sampled: 09/29/14 10:25  
Date Received: 10/01/14  
Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 505      | 3.1    |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:42 | las     |
| Barium, total (3050)            | M6010B ICP                       | 101      | 270    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:20 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 101      | 3      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:20 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:20 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 1.84   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:34 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 101      | 14     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:20 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 14     |      |    | mg/Kg | 1      | 5      | 10/22/14 9:06  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 101      | 15     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:20 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 101      | 17     | B    | *  | mg/Kg | 3      | 20     | 10/08/14 16:20 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.707  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:34 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 19     |      |    | ng/g  | 1.97   | 9.85   | 10/20/14 13:38 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 101      | 11.2   |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:20 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 16:20 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:20 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 0.13   |      |    |       |        |        | 10/22/14 9:06  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 0.151  |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:34 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 101      | 81     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:20 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date           | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|----------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |                |         |
| Conductivity        |                                | 1        | 0.284  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00  | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |                |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| pH                  |                                | 1        | 6.1    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| Solids, Percent     | D2216-80                       | 1        | 91.2   |      | *  | %        | 0.1   | 0.5  | 10/04/14 23:35 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:40 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/10/14 4:27  | cra     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 18:36 | pta     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 18:36 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 12:33 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 12:11 | mns     |

**Red River Ranch**

Project ID:

Sample ID: A-NORTH

ACZ Sample ID: **L20851-04**

Date Sampled: 09/29/14 10:25

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 220      |        | U    | *  | mg/Kg | 1.1 | 4.4 | 10/14/14 15:25 | abd     |

**Red River Ranch**

Project ID:  
Sample ID: A-WEST

ACZ Sample ID: **L20851-05**  
Date Sampled: 09/29/14 10:15  
Date Received: 10/01/14  
Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 510      | 3.7    |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:43 | las     |
| Barium, total (3050)            | M6010B ICP                       | 102      | 268    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:23 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 102      | 3      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:23 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 102      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:23 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 2.04   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:37 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 102      | 20     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:23 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 20     |      |    | mg/Kg | 1      | 5      | 10/22/14 9:07  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 102      | 22     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:23 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 102      | 21     |      | *  | mg/Kg | 3      | 20     | 10/08/14 16:23 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.711  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:37 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 21.9   |      |    | ng/g  | 1.59   | 7.95   | 10/20/14 13:45 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 102      | 12.9   |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:23 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 102      | 5      | B    | *  | mg/Kg | 5      | 30     | 10/08/14 16:23 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 102      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:23 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 0.47   |      |    |       |        |        | 10/22/14 9:07  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 0.549  |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:37 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 102      | 82     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:23 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date          | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|---------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |               |         |
| Conductivity        |                                | 1        | 0.323  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00 | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00 | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00 | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |               |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00 | pta     |
| pH                  |                                | 1        | 5.4    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00 | pta     |
| Solids, Percent     | D2216-80                       | 1        | 85.7   |      | *  | %        | 0.1   | 0.5  | 10/05/14 3:13 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:43 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/10/14 6:08  | cra     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 19:33 | pta     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 19:33 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 12:50 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 12:18 | mns     |

**Red River Ranch**

Project ID:

Sample ID: A-WEST

ACZ Sample ID: **L20851-05**

Date Sampled: 09/29/14 10:15

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL  | PQL | Date           | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|------|-----|----------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 235      |        | U    | *  | mg/Kg | 1.18 | 4.7 | 10/14/14 15:27 | abd     |

**Red River Ranch**

Project ID:  
Sample ID: B-NORTH

ACZ Sample ID: **L20851-06**  
Date Sampled: 09/29/14 11:35  
Date Received: 10/01/14  
Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 505      | 3      |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:44 | las     |
| Barium, total (3050)            | M6010B ICP                       | 101      | 179    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:26 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 101      | 3      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:26 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:26 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 3.14   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:47 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 101      | 9      |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:26 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 9      |      |    | mg/Kg | 1      | 5      | 10/22/14 9:07  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 101      | 8      |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:26 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 101      | 16     | B    | *  | mg/Kg | 3      | 20     | 10/08/14 16:26 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.800  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:47 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 17.3   |      |    | ng/g  | 1.86   | 9.3    | 10/20/14 13:52 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 101      | 7.4    |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:26 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 16:26 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:26 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 0.1    |      |    |       |        |        | 10/22/14 9:07  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 0.145  |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:47 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 101      | 46     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:26 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date          | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|---------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |               |         |
| Conductivity        |                                | 1        | 0.426  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00 | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00 | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00 | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |               |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00 | pta     |
| pH                  |                                | 1        | 6.5    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00 | pta     |
| Solids, Percent     | D2216-80                       | 1        | 94.1   |      | *  | %        | 0.1   | 0.5  | 10/05/14 6:51 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:46 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/14/14 8:00  | cra     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 20:31 | pta     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 20:31 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 13:07 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 12:26 | mns     |

**Red River Ranch**

Project ID:

Sample ID: B-NORTH

ACZ Sample ID: **L20851-06**

Date Sampled: 09/29/14 11:35

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL  | PQL | Date          | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|------|-----|---------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 215      |        | U    | *  | mg/Kg | 1.08 | 4.3 | 10/15/14 9:48 | enb     |

### Red River Ranch

Project ID:

Sample ID: B-CENTER

ACZ Sample ID: **L20851-07**

Date Sampled: 09/29/14 12:30

Date Received: 10/01/14

Sample Matrix: Soil

#### Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 505      | 2.6    |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:46 | las     |
| Barium, total (3050)            | M6010B ICP                       | 101      | 181    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:29 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 101      | 4      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:29 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:29 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 1.78   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:50 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 101      | 9      |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:29 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 9      |      |    | mg/Kg | 1      | 5      | 10/22/14 9:07  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 101      | 8      |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:29 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 101      | 14     | B    | *  | mg/Kg | 3      | 20     | 10/08/14 16:29 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.549  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:50 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 17.2   |      |    | ng/g  | 2      | 10     | 10/20/14 14:00 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 101      | 8      |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:29 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 16:29 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 101      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:29 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 3.7    |      |    |       |        |        | 10/22/14 9:07  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 3.96   |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:50 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 101      | 44     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:29 | jjc     |

#### Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date           | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|----------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |                |         |
| Conductivity        |                                | 1        | 0.809  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00  | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |                |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| pH                  |                                | 1        | 5.3    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| Solids, Percent     | D2216-80                       | 1        | 89     |      | *  | %        | 0.1   | 0.5  | 10/05/14 10:28 | mns     |

#### Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:49 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/14/14 9:36  | cra     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 21:28 | pta     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 21:28 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 13:24 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 12:33 | mns     |

**Red River Ranch**

Project ID:

Sample ID: B-CENTER

ACZ Sample ID: **L20851-07**

Date Sampled: 09/29/14 12:30

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL  | PQL | Date          | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|------|-----|---------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 225      |        | U    | *  | mg/Kg | 1.13 | 4.5 | 10/15/14 9:59 | enb     |

**Red River Ranch**

Project ID:  
Sample ID: B-SOUTH

ACZ Sample ID: **L20851-08**  
Date Sampled: 09/29/14 12:00  
Date Received: 10/01/14  
Sample Matrix: Soil

Metals Analysis

| Parameter                       | EPA Method                       | Dilution | Result | Qual | XQ | Units | MDL    | PQL    | Date           | Analyst |
|---------------------------------|----------------------------------|----------|--------|------|----|-------|--------|--------|----------------|---------|
| Arsenic, total (3050)           | M6020 ICP-MS                     | 500      | 2.8    |      | *  | mg/Kg | 0.1    | 0.5    | 10/14/14 13:47 | las     |
| Barium, total (3050)            | M6010B ICP                       | 100      | 156    |      | *  | mg/Kg | 0.3    | 2      | 10/08/14 16:32 | jjc     |
| Boron, total (3050)             | M6010B ICP                       | 100      | 3      | B    | *  | mg/Kg | 1      | 5      | 10/08/14 16:32 | jjc     |
| Cadmium, total (3050)           | M6010B ICP                       | 100      |        | U    | *  | mg/Kg | 0.5    | 2      | 10/08/14 16:32 | jjc     |
| Calcium, soluble (Sat. Paste)   | M6010B ICP                       | 1        | 2.70   |      |    | meq/L | 0.005  | 0.025  | 10/10/14 10:53 | aeb     |
| Chromium, total (3050)          | M6010B ICP                       | 100      | 8      |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:32 | jjc     |
| Chromium, Trivalent             | Calculation (Total - Hexavalent) |          | 8      |      |    | mg/Kg | 1      | 5      | 10/22/14 9:07  | calc    |
| Copper, total (3050)            | M6010B ICP                       | 100      | 7      |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:32 | jjc     |
| Lead, total (3050)              | M6010B ICP                       | 100      | 13     | B    | *  | mg/Kg | 3      | 20     | 10/08/14 16:32 | jjc     |
| Magnesium, soluble (Sat. Paste) | M6010B ICP                       | 1        | 0.750  |      |    | meq/L | 0.017  | 0.082  | 10/10/14 10:53 | aeb     |
| Mercury by Direct Combustion AA | M7473                            | 1        | 16.4   |      |    | ng/g  | 1.88   | 9.4    | 10/20/14 14:07 | mfm     |
| Nickel, total (3050)            | M6010B ICP                       | 100      | 6.8    |      | *  | mg/Kg | 0.8    | 4      | 10/08/14 16:32 | jjc     |
| Selenium, total (3050)          | M6010B ICP                       | 100      |        | U    | *  | mg/Kg | 5      | 30     | 10/08/14 16:32 | jjc     |
| Silver, total (3050)            | M6010B ICP                       | 100      |        | U    | *  | mg/Kg | 1      | 3      | 10/08/14 16:32 | jjc     |
| Sodium Adsorption Ratio         | Calculation                      |          | 0.11   |      |    |       |        |        | 10/22/14 9:07  | calc    |
| Sodium, soluble (Sat. Paste)    | M6010B ICP                       | 1        | 0.144  |      |    | meq/L | 0.0087 | 0.0435 | 10/10/14 10:53 | aeb     |
| Zinc, total (3050)              | M6010B ICP                       | 100      | 38     |      | *  | mg/Kg | 1      | 5      | 10/08/14 16:32 | jjc     |

Soil Analysis

| Parameter           | EPA Method                     | Dilution | Result | Qual | XQ | Units    | MDL   | PQL  | Date           | Analyst |
|---------------------|--------------------------------|----------|--------|------|----|----------|-------|------|----------------|---------|
| Conductivity @25C   | SM2510B                        |          |        |      |    |          |       |      |                |         |
| Conductivity        |                                | 1        | 0.333  |      | *  | mmhos/cm | 0.001 | 0.01 | 10/09/14 0:00  | pta     |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| Temperature         |                                | 1        | 21.6   |      | *  | C        | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |          |        |      |    |          |       |      |                |         |
| Max Particle Size   |                                | 1        | 2000   |      | *  | um       |       |      | 10/09/14 0:00  | pta     |
| pH                  |                                | 1        | 6.1    |      | *  | units    | 0.1   | 0.1  | 10/09/14 0:00  | pta     |
| Solids, Percent     | D2216-80                       | 1        | 94.7   |      | *  | %        | 0.1   | 0.5  | 10/05/14 14:06 | mns     |

Soil Preparation

| Parameter                  | EPA Method         | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date           | Analyst |
|----------------------------|--------------------|----------|--------|------|----|-------|-----|-----|----------------|---------|
| Air Dry at 34 Degrees C    | USDA No. 1, 1972   |          |        |      |    |       |     |     | 10/03/14 10:52 | mns     |
| Digestion - Alkaline       | M3060A             |          |        |      |    |       |     |     | 10/14/14 10:40 | cra     |
| Digestion - Hot Plate      | M3050B ICP         |          |        |      |    |       |     |     | 10/07/14 22:26 | pta     |
| Digestion - Hot Plate      | M3050B ICP-MS      |          |        |      |    |       |     |     | 10/07/14 22:26 | pta     |
| Saturated Paste Extraction | USDA No. 60 (2)    |          |        |      |    |       |     |     | 10/08/14 13:42 | pta     |
| Sieve-2000 um (2.0mm)      | ASA No.9, 15-4.2.2 |          |        |      |    |       |     |     | 10/06/14 12:40 | mns     |

**Red River Ranch**

Project ID:

Sample ID: B-SOUTH

ACZ Sample ID: **L20851-08**

Date Sampled: 09/29/14 12:00

Date Received: 10/01/14

Sample Matrix: Soil

## Wet Chemistry

| Parameter                      | EPA Method | Dilution | Result | Qual | XQ | Units | MDL  | PQL | Date           | Analyst |
|--------------------------------|------------|----------|--------|------|----|-------|------|-----|----------------|---------|
| Chromium, Hexavalent<br>(3060) | M7196A     | 210      |        | U    | *  | mg/Kg | 1.05 | 4.2 | 10/15/14 10:09 | enb     |



**Report Header Explanations**

|                |   |
|----------------|---|
| <i>Batch</i>   | A distinct set of samples analyzed at a specific time   |
| <i>Found</i>   | Value of the QC Type of interest  |
| <i>Limit</i>   | Upper limit for RPD, in %.  |
| <i>Lower</i>   | Lower Recovery Limit, in % (except for LCSS, mg/Kg)   |
| <i>MDL</i>     | Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations. |
| <i>PCN/SCN</i> | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis          |
| <i>PQL</i>     | Practical Quantitation Limit, typically 5 times the MDL.  |
| <i>QC</i>      | True Value of the Control Sample or the amount added to the Spike                                       |
| <i>Rec</i>     | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)                        |
| <i>RPD</i>     | Relative Percent Difference, calculation used for Duplicate QC Types                                    |
| <i>Upper</i>   | Upper Recovery Limit, in % (except for LCSS, mg/Kg)   |
| <i>Sample</i>  | Value of the Sample of interest   |

**QC Sample Types**

|              |  |              |  |
|--------------|--|--------------|--|
| <i>AS</i>    | Analytical Spike (Post Digestion)                      | <i>LCSWD</i> | Laboratory Control Sample - Water Duplicate  |
| <i>ASD</i>   | Analytical Spike (Post Digestion) Duplicate            | <i>LFB</i>   | Laboratory Fortified Blank                   |
| <i>CCB</i>   | Continuing Calibration Blank                           | <i>LFM</i>   | Laboratory Fortified Matrix                  |
| <i>CCV</i>   | Continuing Calibration Verification standard           | <i>LFMD</i>  | Laboratory Fortified Matrix Duplicate        |
| <i>DUP</i>   | Sample Duplicate                                       | <i>LRB</i>   | Laboratory Reagent Blank                     |
| <i>ICB</i>   | Initial Calibration Blank                              | <i>MS</i>    | Matrix Spike                                 |
| <i>ICV</i>   | Initial Calibration Verification standard              | <i>MSD</i>   | Matrix Spike Duplicate                       |
| <i>ICSAB</i> | Inter-element Correction Standard - A plus B solutions | <i>PBS</i>   | Prep Blank - Soil                            |
| <i>LCSS</i>  | Laboratory Control Sample - Soil                       | <i>PBW</i>   | Prep Blank - Water                           |
| <i>LCSSD</i> | Laboratory Control Sample - Soil Duplicate             | <i>PQV</i>   | Practical Quantitation Verification standard |
| <i>LCSW</i>  | Laboratory Control Sample - Water                      | <i>SDL</i>   | Serial Dilution                              |

**QC Sample Type Explanations**

|                         |   |
|-------------------------|---|
| Blanks                  | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples         | Verifies the accuracy of the method, including the prep procedure.                              |
| Duplicates              | Verifies the precision of the instrument and/or method.   |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any.   |
| Standard                | Verifies the validity of the calibration.   |

**ACZ Qualifiers (Qual)**

|   |   |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.   |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time.   |
| L | Target analyte response was below the laboratory defined negative threshold.  |
| U | The material was analyzed for, but was not detected above the level of the associated value.<br>The associated value is either the sample quantitation limit or the sample detection limit. |

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
- (3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
- (3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
- (4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Red River Ranch

ACZ Project ID: **L20851**

**Arsenic, total (3050)** M6020 ICP-MS

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found  | Units | Rec   | Lower   | Upper  | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|--------|-------|-------|---------|--------|------|-------|------|
| <b>WG372799</b> |      |                |            |         |        |        |       |       |         |        |      |       |      |
| WG372799ICV     | ICV  | 10/14/14 13:17 | MS141001-1 | .05     |        | .05189 | mg/L  | 103.8 | 90      | 110    |      |       |      |
| WG372799ICB     | ICB  | 10/14/14 13:18 |            |         |        | U      | mg/L  |       | -0.0006 | 0.0006 |      |       |      |
| WG372424PBS     | PBS  | 10/14/14 13:24 |            |         |        | U      | mg/Kg |       | -0.3    | 0.3    |      |       |      |
| WG372424LCSS    | LCSS | 10/14/14 13:25 | PCN46657   | 88.4    |        | 82.9   | mg/Kg |       | 71.5    | 105    |      |       |      |
| L20852-01MS     | MS   | 10/14/14 13:50 | MS140916-3 | 25.3005 | 3.5    | 28.02  | mg/Kg | 96.9  | 75      | 125    |      |       |      |
| L20852-01MSD    | MSD  | 10/14/14 13:51 | MS140916-3 | 25.3005 | 3.5    | 28.34  | mg/Kg | 98.2  | 75      | 125    | 1.14 | 20    |      |

**Barium, total (3050)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC   | Sample | Found  | Units | Rec   | Lower  | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|------|--------|--------|-------|-------|--------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |      |        |        |       |       |        |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2    |        | 2      | mg/L  | 100   | 90     | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |      |        | U      | mg/L  |       | -0.009 | 0.009 |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |      |        | U      | mg/Kg |       | -0.9   | 0.9   |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 210  |        | 194.1  | mg/Kg |       | 176    | 245   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.5 | 341    | 424.3  | mg/Kg | 165   | 75     | 125   |      |       | M3   |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.5 | 341    | 460.86 | mg/Kg | 237.3 | 75     | 125   | 8.26 | 20    | M3   |

**Boron, total (3050)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found | Units | Rec   | Lower | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|-------|-------|-------|-------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |         |        |       |       |       |       |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2       |        | 2.056 | mg/L  | 102.8 | 90    | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |         |        | U     | mg/L  |       | -0.03 | 0.03  |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |         |        | U     | mg/Kg |       | -3    | 3     |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 101     |        | 99.8  | mg/Kg |       | 73.8  | 128   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.5505 | 2      | 50.6  | mg/Kg | 96.1  | 75    | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.5505 | 2      | 50    | mg/Kg | 95    | 75    | 125   | 1.19 | 20    |      |

**Cadmium, total (3050)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC     | Sample | Found | Units | Rec  | Lower  | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|--------|--------|-------|-------|------|--------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |        |        |       |       |      |        |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2      |        | 1.966 | mg/L  | 98.3 | 90     | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |        |        | U     | mg/L  |      | -0.015 | 0.015 |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |        |        | U     | mg/Kg |      | -1.5   | 1.5   |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 143    |        | 130.1 | mg/Kg |      | 116    | 169   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.601 | U      | 44.89 | mg/Kg | 88.7 | 75     | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.601 | U      | 44.59 | mg/Kg | 88.1 | 75     | 125   | 0.67 | 20    |      |

**Calcium, soluble (Sat. Paste)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN     | QC  | Sample   | Found | Units | Rec  | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|-------------|-----|----------|-------|-------|------|-------|-------|-----|-------|------|
| <b>WG372635</b> |      |                |             |     |          |       |       |      |       |       |     |       |      |
| WG372635ICV     | ICV  | 10/10/14 9:53  | II141008-12 | 100 |          | 98.2  | mg/L  | 98.2 | 90    | 110   |     |       |      |
| WG372635ICB     | ICB  | 10/10/14 9:56  |             |     |          | U     | mg/L  |      | -0.3  | 0.3   |     |       |      |
| L20852-04DUP    | DUP  | 10/10/14 11:09 |             |     | 1.834823 | 1.81  | meq/L |      |       |       | 1.5 | 20    |      |

Red River Ranch

ACZ Project ID: **L20851**

**Chromium, Hexavalent (3060)**

M7196A

| ACZ ID          | Type | Analyzed       | PCN/SCN     | QC          | Sample | Found | Units | Rec   | Lower  | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|-------------|-------------|--------|-------|-------|-------|--------|-------|-----|-------|------|
| <b>WG372831</b> |      |                |             |             |        |       |       |       |        |       |     |       |      |
| WG372831ICV     | ICV  | 10/14/14 13:38 | WC140603-   | .05         |        | .0525 | mg/L  | 105   | 90     | 110   |     |       |      |
| WG372831ICB     | ICB  | 10/14/14 13:44 |             |             |        | U     | mg/L  |       | -0.015 | 0.015 |     |       |      |
| <b>WG372841</b> |      |                |             |             |        |       |       |       |        |       |     |       |      |
| WG372841ICV     | ICV  | 10/14/14 15:05 | WC140603-   | .05         |        | .0534 | mg/L  | 106.8 | 90     | 110   |     |       |      |
| WG372841ICB     | ICB  | 10/14/14 15:06 |             |             |        | U     | mg/L  |       | -0.015 | 0.015 |     |       |      |
| L20850-01MS1    | MS   | 10/14/14 15:09 | SI140922-51 | 37.615228   | U      | 25.2  | mg/Kg | 67    | 75     | 125   |     |       | N1   |
| L20850-02DUP    | DUP  | 10/14/14 15:13 |             |             | U      | U     | mg/Kg |       |        |       | 0   | 20    | RA   |
| WG372522LCSS    | LCSS | 10/14/14 15:29 | PCN45030    | 125         |        | 142   | mg/Kg |       | 76.3   | 174   |     |       |      |
| WG372522PBS     | PBS  | 10/14/14 15:30 |             |             |        | U     | mg/Kg |       | -3     | 3     |     |       |      |
| <b>WG372889</b> |      |                |             |             |        |       |       |       |        |       |     |       |      |
| WG372889ICV     | ICV  | 10/15/14 9:42  | WC140603-   | .05         |        | .0492 | mg/L  | 98.4  | 90     | 110   |     |       |      |
| WG372889ICB     | ICB  | 10/15/14 9:45  |             |             |        | U     | mg/L  |       | -0.015 | 0.015 |     |       |      |
| L20851-06MS1    | MS   | 10/15/14 9:52  | SI140922-51 | 34.413932   | U      | 17    | mg/Kg | 49.4  | 75     | 125   |     |       | N1   |
| L20851-06MS2    | MS   | 10/15/14 9:55  | SI130731-75 | 1356.220215 | U      | 1390  | mg/Kg | 102.5 | 75     | 125   |     |       |      |
| L20851-07DUP    | DUP  | 10/15/14 10:06 |             |             | U      | U     | mg/Kg |       |        |       | 0   | 20    | RA   |
| WG372775LCSS    | LCSS | 10/15/14 10:44 | PCN46664    | 223         |        | 161   | mg/Kg |       | 118    | 255   |     |       |      |
| WG372775PBS     | PBS  | 10/15/14 10:48 |             |             |        | U     | mg/Kg |       | -3     | 3     |     |       |      |

**Chromium, total (3050)**

M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC     | Sample | Found | Units | Rec   | Lower | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|--------|--------|-------|-------|-------|-------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |        |        |       |       |       |       |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2      |        | 1.993 | mg/L  | 99.7  | 90    | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |        |        | U     | mg/L  |       | -0.03 | 0.03  |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |        |        | U     | mg/Kg |       | -3    | 3     |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 86.8   |        | 80.6  | mg/Kg |       | 69.3  | 104   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.601 | 24     | 76.6  | mg/Kg | 104   | 75    | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.601 | 24     | 76.2  | mg/Kg | 103.2 | 75    | 125   | 0.52 | 20    |      |

**Conductivity @25C**

SM2510B

| ACZ ID          | Type | Analyzed       | PCN/SCN | QC | Sample | Found | Units    | Rec | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|---------|----|--------|-------|----------|-----|-------|-------|-----|-------|------|
| <b>WG372558</b> |      |                |         |    |        |       |          |     |       |       |     |       |      |
| L20852-04DUP    | DUP  | 10/09/14 14:42 |         |    | .308   | .313  | nmhos/cm |     |       |       | 1.6 | 20    |      |

**Copper, total (3050)**

M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found | Units | Rec   | Lower | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|-------|-------|-------|-------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |         |        |       |       |       |       |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2       |        | 2.017 | mg/L  | 100.9 | 90    | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |         |        | U     | mg/L  |       | -0.03 | 0.03  |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |         |        | U     | mg/Kg |       | -3    | 3     |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 268     |        | 251.7 | mg/Kg |       | 219   | 317   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.4495 | 20     | 68.9  | mg/Kg | 96.9  | 75    | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.4495 | 20     | 68.5  | mg/Kg | 96.1  | 75    | 125   | 0.58 | 20    |      |

Red River Ranch

ACZ Project ID: **L20851**

**Lead, total (3050) M6010B ICP**

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found | Units | Rec  | Lower | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|-------|-------|------|-------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |         |        |       |       |      |       |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 4       |        | 3.987 | mg/L  | 99.7 | 90    | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |         |        | U     | mg/L  |      | -0.09 | 0.09  |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |         |        | U     | mg/Kg |      | -9    | 9     |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 97.9    |        | 91.9  | mg/Kg |      | 80    | 116   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 101.101 | 17     | 113.4 | mg/Kg | 95.4 | 75    | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 101.101 | 17     | 110.1 | mg/Kg | 92.1 | 75    | 125   | 2.95 | 20    |      |

**Magnesium, soluble (Sat. Paste) M6010B ICP**

| ACZ ID          | Type | Analyzed       | PCN/SCN     | QC  | Sample    | Found | Units | Rec  | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|-------------|-----|-----------|-------|-------|------|-------|-------|-----|-------|------|
| <b>WG372635</b> |      |                |             |     |           |       |       |      |       |       |     |       |      |
| WG372635ICV     | ICV  | 10/10/14 9:53  | II141008-12 | 100 |           | 95.7  | mg/L  | 95.7 | 90    | 110   |     |       |      |
| WG372635ICB     | ICB  | 10/10/14 9:56  |             |     |           | U     | mg/L  |      | -0.6  | 0.6   |     |       |      |
| L20852-04DUP    | DUP  | 10/10/14 11:09 |             |     | .69230016 | .683  | meq/L |      |       |       | 1.4 | 20    |      |

**Mercury by Direct Combustion AA M7473**

| ACZ ID          | Type  | Analyzed       | PCN/SCN    | QC    | Sample | Found | Units | Rec   | Lower | Upper | RPD | Limit | Qual |
|-----------------|-------|----------------|------------|-------|--------|-------|-------|-------|-------|-------|-----|-------|------|
| <b>WG373010</b> |       |                |            |       |        |       |       |       |       |       |     |       |      |
| WG373010ICV1    | ICV   | 10/16/14 8:43  | HG141007-2 | 100   |        | 98.7  | ng/g  | 98.7  | 90    | 110   |     |       |      |
| WG373010ICV2    | ICV   | 10/16/14 9:00  | HG141007-3 | 100   |        | 93.3  | ng/g  | 93.3  | 90    | 110   |     |       |      |
| WG373010ICV3    | ICV   | 10/16/14 9:19  | HG141007-1 | 1000  |        | 1080  | ng/g  | 108   | 90    | 110   |     |       |      |
| WG373010ICV4    | ICV   | 10/16/14 9:28  | HG141007-1 | 1000  |        | 1050  | ng/g  | 105   | 90    | 110   |     |       |      |
| <b>WG373164</b> |       |                |            |       |        |       |       |       |       |       |     |       |      |
| WG373164ICV1    | ICV   | 10/20/14 7:49  | HG141007-2 | 100   |        | 98.7  | ng/g  | 98.7  | 90    | 110   |     |       |      |
| WG373164ICV2    | ICV   | 10/20/14 8:01  | HG141007-3 | 100   |        | 92.8  | ng/g  | 92.8  | 90    | 110   |     |       |      |
| WG373164ICV3    | ICV   | 10/20/14 8:15  | HG141007-1 | 1000  |        | 1060  | ng/g  | 106   | 90    | 110   |     |       |      |
| WG373164ICV4    | ICV   | 10/20/14 8:25  | HG141007-1 | 1000  |        | 1100  | ng/g  | 110   | 90    | 110   |     |       |      |
| WG373164PBS     | PBS   | 10/20/14 11:43 |            |       |        | U     | ng/g  |       | -2    | 2     |     |       |      |
| WG373164LCSS    | LCSS  | 10/20/14 11:52 | PCN46720   | 447.4 |        | 452   | ng/g  |       | 80    | 120   |     |       |      |
| WG373164LCSSD   | LCSSD | 10/20/14 11:59 | PCN46720   | 447.4 |        | 482   | ng/g  |       | 80    | 120   | 6.4 | 20    |      |
| L20850-01MS     | MS    | 10/20/14 12:17 | PCN46720   |       |        |       | ng/g  | 106.1 | 80    | 120   |     |       |      |
| L20850-02DUP    | DUP   | 10/20/14 12:32 |            |       | 39.8   | 44    | ng/g  |       |       |       | 10  | 20    |      |

**Nickel, total (3050) M6010B ICP**

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found | Units | Rec   | Lower  | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|-------|-------|-------|--------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |         |        |       |       |       |        |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2       |        | 2.006 | mg/L  | 100.3 | 90     | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |         |        | U     | mg/L  |       | -0.024 | 0.024 |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |         |        | U     | mg/Kg |       | -2.4   | 2.4   |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 236     |        | 225   | mg/Kg |       | 194    | 279   |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.6515 | 15.5   | 62.81 | mg/Kg | 93.4  | 75     | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.6515 | 15.5   | 67.65 | mg/Kg | 103   | 75     | 125   | 7.42 | 20    |      |

Red River Ranch

ACZ Project ID: **L20851**

**pH, Saturated Paste** EPA 600/2-78-054 section 3.2.2

| ACZ ID          | Type | Analyzed       | PCN/SCN  | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|----------|----|--------|-------|-------|-----|-------|-------|-----|-------|------|
| <b>WG372558</b> |      |                |          |    |        |       |       |     |       |       |     |       |      |
| WG372558ICV     | ICV  | 10/09/14 9:46  | PCN45365 | 4  |        | 4     | units | 100 | 3.9   | 4.1   |     |       |      |
| L20852-04DUP    | DUP  | 10/09/14 14:42 |          |    | 6.5    | 6.4   | units |     |       |       | 1.6 | 20    |      |

**Selenium, total (3050)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found | Units | Rec   | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|-------|-------|-------|-------|-------|-----|-------|------|
| <b>WG372526</b> |      |                |            |         |        |       |       |       |       |       |     |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 4       |        | 4.128 | mg/L  | 103.2 | 90    | 110   |     |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |         |        | U     | mg/L  |       | -0.15 | 0.15  |     |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |         |        | U     | mg/Kg |       | -15   | 15    |     |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 127     |        | 127.4 | mg/Kg |       | 98.4  | 156   |     |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 101.101 | U      | 98.6  | mg/Kg | 97.5  | 75    | 125   |     |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 101.101 | U      | 95.3  | mg/Kg | 94.3  | 75    | 125   | 3.4 | 20    |      |

**Silver, total (3050)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC     | Sample | Found | Units | Rec   | Lower | Upper | RPD  | Limit | Qual |
|-----------------|------|----------------|------------|--------|--------|-------|-------|-------|-------|-------|------|-------|------|
| <b>WG372526</b> |      |                |            |        |        |       |       |       |       |       |      |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 1.001  |        | 1.027 | mg/L  | 102.6 | 90    | 110   |      |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |        |        | U     | mg/L  |       | -0.03 | 0.03  |      |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |        |        | U     | mg/Kg |       | -3    | 3     |      |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 66.2   |        | 60    | mg/Kg |       | 49.6  | 82.8  |      |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.601 | U      | 45.7  | mg/Kg | 90.3  | 75    | 125   |      |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.601 | U      | 45.6  | mg/Kg | 90.1  | 75    | 125   | 0.22 | 20    |      |

**Sodium, soluble (Sat. Paste)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN     | QC  | Sample  | Found | Units | Rec  | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|-------------|-----|---------|-------|-------|------|-------|-------|-----|-------|------|
| <b>WG372635</b> |      |                |             |     |         |       |       |      |       |       |     |       |      |
| WG372635ICV     | ICV  | 10/10/14 9:53  | II141008-12 | 100 |         | 97.8  | mg/L  | 97.8 | 90    | 110   |     |       |      |
| WG372635ICB     | ICB  | 10/10/14 9:56  |             |     |         | U     | mg/L  |      | -0.6  | 0.6   |     |       |      |
| L20852-04DUP    | DUP  | 10/10/14 11:09 |             |     | .264219 | .258  | meq/L |      |       |       | 2.6 | 20    |      |

**Solids, Percent** D2216-80

| ACZ ID          | Type | Analyzed       | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|---------|----|--------|-------|-------|-----|-------|-------|-----|-------|------|
| <b>WG372282</b> |      |                |         |    |        |       |       |     |       |       |     |       |      |
| WG372282PBS     | PBS  | 10/03/14 11:19 |         |    |        | U     | %     |     | 99.9  | 100.1 |     |       |      |
| L20850-01DUP    | DUP  | 10/03/14 18:34 |         |    | 84.5   | 84.57 | %     |     |       |       | 0.1 | 20    |      |

**Zinc, total (3050)** M6010B ICP

| ACZ ID          | Type | Analyzed       | PCN/SCN    | QC      | Sample | Found | Units | Rec  | Lower | Upper | RPD | Limit | Qual |
|-----------------|------|----------------|------------|---------|--------|-------|-------|------|-------|-------|-----|-------|------|
| <b>WG372526</b> |      |                |            |         |        |       |       |      |       |       |     |       |      |
| WG372526ICV     | ICV  | 10/08/14 15:18 | II140929-3 | 2       |        | 1.976 | mg/L  | 98.8 | 90    | 110   |     |       |      |
| WG372526ICB     | ICB  | 10/08/14 15:21 |            |         |        | U     | mg/L  |      | -0.03 | 0.03  |     |       |      |
| WG372424PBS     | PBS  | 10/08/14 15:34 |            |         |        | U     | mg/Kg |      | -3    | 3     |     |       |      |
| WG372424LCSS    | LCSS | 10/08/14 15:37 | PCN46657   | 130     |        | 121.6 | mg/Kg |      | 106   | 155   |     |       |      |
| L20851-01MS     | MS   | 10/08/14 16:01 | II141006-2 | 50.5505 | 77     | 124   | mg/Kg | 96.9 | 75    | 125   |     |       |      |
| L20851-01MSD    | MSD  | 10/08/14 16:10 | II141006-2 | 50.5505 | 77     | 124   | mg/Kg | 96.9 | 75    | 125   | 0   | 20    |      |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM                     | PARAMETER              | METHOD       | QUAL  | DESCRIPTION   |
|-----------|-----------------------------|------------------------|--------------|---|---|
| L20851-01 | WG372799                    | Arsenic, total (3050)  | M6020 ICP-MS | N1  | See Case Narrative.   |
|           |                             |                        | M6020 ICP-MS | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |
| L20851-01 | WG372526                    | Barium, total (3050)   | M6010B ICP   | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |
|           |                             |                        | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             | Boron, total (3050)    | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             |                        | M6010B ICP   | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |                             |                        | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             | Chromium, total (3050) | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             | Copper, total (3050)   | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             | Lead, total (3050)     | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             |                        | M6010B ICP   | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |                             | Nickel, total (3050)   | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             |                        | M6010B ICP   | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |                             | Selenium, total (3050) | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             | Silver, total (3050)   | M6010B ICP   | N1  | See Case Narrative.   |
|           |                             | Zinc, total (3050)     | M6010B ICP   | N1  | See Case Narrative.   |
| WG372841  | Chromium, Hexavalent (3060) | M7196A                 | DA           | Sample required dilution due to reactivity.   |   |
|           |                             | M7196A                 | N1           | See Case Narrative.   |   |
|           |                             | M7196A                 | QD           | Reported value is the background-corrected concentration, as described by the method.   |   |
|           |                             | M7196A                 | RA           | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |

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ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM  | PARAMETER              | METHOD                      | QUAL  | DESCRIPTION   |   |
|-----------|----------|------------------------|-----------------------------|---|---|---|
| L20851-02 | WG372799 | Arsenic, total (3050)  | M6020 ICP-MS                | N1  | See Case Narrative.   |   |
|           |          |                        | M6020 ICP-MS                | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |   |
|           | WG372526 | Barium, total (3050)   | M6010B ICP                  | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Boron, total (3050)    | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Cadmium, total (3050)  | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Chromium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Copper, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Lead, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Nickel, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Selenium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Silver, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Zinc, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | WG372841               | Chromium, Hexavalent (3060) | M7196A  | DA  | Sample required dilution due to reactivity. |
|           |          |                        |                             | M7196A  | N1  | See Case Narrative.                         |
| M7196A    | QD       |                        |                             | Reported value is the background-corrected concentration, as described by the method.   |   |   |
| M7196A    | RA       |                        |                             | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |   |

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ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM  | PARAMETER              | METHOD                      | QUAL  | DESCRIPTION   |
|-----------|----------|------------------------|-----------------------------|---|---|
| L20851-03 | WG372799 | Arsenic, total (3050)  | M6020 ICP-MS                | N1  | See Case Narrative.   |
|           |          |                        | M6020 ICP-MS                | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |
|           | WG372526 | Barium, total (3050)   | M6010B ICP                  | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Boron, total (3050)    | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Cadmium, total (3050)  | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Chromium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Copper, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Lead, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |          | Nickel, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |          | Selenium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Silver, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Zinc, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | WG372841               | Chromium, Hexavalent (3060) | M7196A  | DA  |
|           | M7196A   |                        |                             | N1  | See Case Narrative.   |
|           | M7196A   |                        |                             | QD  | Reported value is the background-corrected concentration, as described by the method.   |
| M7196A    | RA       |                        |                             | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM  | PARAMETER              | METHOD                      | QUAL  | DESCRIPTION   |
|-----------|----------|------------------------|-----------------------------|---|---|
| L20851-04 | WG372799 | Arsenic, total (3050)  | M6020 ICP-MS                | N1  | See Case Narrative.   |
|           |          |                        | M6020 ICP-MS                | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |
|           | WG372526 | Barium, total (3050)   | M6010B ICP                  | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Boron, total (3050)    | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Cadmium, total (3050)  | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Chromium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Copper, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Lead, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |          | Nickel, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |          | Selenium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Silver, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | Zinc, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |
|           |          | WG372841               | Chromium, Hexavalent (3060) | M7196A  | DA  |
|           | M7196A   |                        |                             | N1  | See Case Narrative.   |
|           | M7196A   |                        |                             | QD  | Reported value is the background-corrected concentration, as described by the method.   |
| M7196A    | RA       |                        |                             | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM  | PARAMETER              | METHOD                      | QUAL  | DESCRIPTION   |   |
|-----------|----------|------------------------|-----------------------------|---|---|---|
| L20851-05 | WG372799 | Arsenic, total (3050)  | M6020 ICP-MS                | N1  | See Case Narrative.   |   |
|           |          |                        | M6020 ICP-MS                | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |   |
|           | WG372526 | Barium, total (3050)   | M6010B ICP                  | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Boron, total (3050)    | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Cadmium, total (3050)  | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Chromium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Copper, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Lead, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Nickel, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Selenium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Silver, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Zinc, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | WG372841               | Chromium, Hexavalent (3060) | M7196A  | DA  | Sample required dilution due to reactivity.   |
|           |          |                        |                             | M7196A  | N1  | See Case Narrative.   |
|           |          |                        |                             | M7196A  | QD  | Reported value is the background-corrected concentration, as described by the method. |
| M7196A    | RA       |                        |                             | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |   |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM            | PARAMETER                   | METHOD       | QUAL  | DESCRIPTION   |
|-----------|--------------------|-----------------------------|--------------|---|---|
| L20851-06 | WG372799           | Arsenic, total (3050)       | M6020 ICP-MS | N1  | See Case Narrative.   |
|           |                    |                             | M6020 ICP-MS | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |
|           | WG372526           | Barium, total (3050)        | M6010B ICP   | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |
|           |                    |                             | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    | Boron, total (3050)         | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    |                             | M6010B ICP   | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |                    |                             | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    | Cadmium, total (3050)       | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    | Chromium, total (3050)      | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    | Copper, total (3050)        | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    | Lead, total (3050)          | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    |                             | M6010B ICP   | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |                    | Nickel, total (3050)        | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    |                             | M6010B ICP   | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |
|           |                    | Selenium, total (3050)      | M6010B ICP   | N1  | See Case Narrative.   |
|           |                    | Silver, total (3050)        | M6010B ICP   | N1  | See Case Narrative.   |
|           | Zinc, total (3050) | M6010B ICP                  | N1           | See Case Narrative.   |   |
|           | WG372889           | Chromium, Hexavalent (3060) | M7196A       | DA  | Sample required dilution due to reactivity.   |
|           |                    |                             | M7196A       | N1  | See Case Narrative.   |
|           |                    |                             | M7196A       | QD  | Reported value is the background-corrected concentration, as described by the method.   |
| M7196A    |                    |                             | RA           | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM  | PARAMETER              | METHOD                      | QUAL  | DESCRIPTION   |   |
|-----------|----------|------------------------|-----------------------------|---|---|---|
| L20851-07 | WG372799 | Arsenic, total (3050)  | M6020 ICP-MS                | N1  | See Case Narrative.   |   |
|           |          |                        | M6020 ICP-MS                | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |   |
|           | WG372526 | Barium, total (3050)   | M6010B ICP                  | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Boron, total (3050)    | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Cadmium, total (3050)  | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Chromium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Copper, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Lead, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Nickel, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Selenium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Silver, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Zinc, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | WG372889               | Chromium, Hexavalent (3060) | M7196A  | DA  | Sample required dilution due to reactivity.   |
|           |          |                        |                             | M7196A  | N1  | See Case Narrative.   |
|           |          |                        |                             | M7196A  | QD  | Reported value is the background-corrected concentration, as described by the method. |
| M7196A    | RA       |                        |                             | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |   |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID    | WORKNUM  | PARAMETER              | METHOD                      | QUAL  | DESCRIPTION   |   |
|-----------|----------|------------------------|-----------------------------|---|---|---|
| L20851-08 | WG372799 | Arsenic, total (3050)  | M6020 ICP-MS                | N1  | See Case Narrative.   |   |
|           |          |                        | M6020 ICP-MS                | ZB  | The ICP-MS Serial Dilution was not used for data validation because the sample concentration was less than 100 times the MDL.   |   |
|           | WG372526 | Barium, total (3050)   | M6010B ICP                  | M3  | The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable. |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Boron, total (3050)    | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          |                        | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Cadmium, total (3050)  | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Chromium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Copper, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Lead, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Nickel, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          |                        | M6010B ICP                  | ZG  | The ICP Serial Dilution was not used for data validation because the sample concentration was less than 50 times the MDL.   |   |
|           |          | Selenium, total (3050) | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Silver, total (3050)   | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | Zinc, total (3050)     | M6010B ICP                  | N1  | See Case Narrative.   |   |
|           |          | WG372889               | Chromium, Hexavalent (3060) | M7196A  | DA  | Sample required dilution due to reactivity. |
|           |          |                        |                             | M7196A  | N1  | See Case Narrative.                         |
| M7196A    | QD       |                        |                             | Reported value is the background-corrected concentration, as described by the method.   |   |   |
| M7196A    | RA       |                        |                             | Relative Percent Difference (RPD) was not used for data validation because the sample concentration is too low for accurate evaluation (< 10x MDL). |   |   |

**Red River Ranch**  
 Project ID:  
 Sample ID: A-EAST

ACZ Sample ID: **L20851-01**  
 Date Sampled: 09/29/14 11:05  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 16:31  
 Analysis Date: 10/09/14 16:31

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 88.1       |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 86.8       |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: A-EAST

ACZ Sample ID: **L20851-01**

Date Sampled: 09/29/14 11:05

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 1:18

Analysis Date: 10/07/14 23:39

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 10         | J    | 66.7     | *  | mg/Kg | 7   | 30  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 85.6       |      | 66.7     | *  | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: A-SOUTH

ACZ Sample ID: **L20851-02**  
 Date Sampled: 09/29/14 10:35  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 17:02  
 Analysis Date: 10/09/14 17:02

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 97.5       |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 96         |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: A-SOUTH

ACZ Sample ID: **L20851-02**

Date Sampled: 09/29/14 10:35

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 2:04

Analysis Date: 10/08/14 0:06

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 23         |      | 33.3     |    | mg/Kg | 3   | 20  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 88.6       |      | 33.3     |    | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: A-CENTER

ACZ Sample ID: **L20851-03**  
 Date Sampled: 09/29/14 10:50  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 17:33  
 Analysis Date: 10/09/14 17:33

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 78         |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 77.2       |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: A-CENTER

ACZ Sample ID: **L20851-03**

Date Sampled: 09/29/14 10:50

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 2:50

Analysis Date: 10/08/14 0:32

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 17         | J    | 66.7     | *  | mg/Kg | 7   | 30  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 83.6       |      | 66.7     | *  | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: A-NORTH

ACZ Sample ID: **L20851-04**  
 Date Sampled: 09/29/14 10:25  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 18:04  
 Analysis Date: 10/09/14 18:04

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 95.6       |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 93         |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: A-NORTH

ACZ Sample ID: **L20851-04**

Date Sampled: 09/29/14 10:25

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 3:35

Analysis Date: 10/08/14 0:59

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 12         | J    | 33.3     |    | mg/Kg | 3   | 20  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 80         |      | 33.3     |    | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: A-WEST

ACZ Sample ID: **L20851-05**  
 Date Sampled: 09/29/14 10:15  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 18:35  
 Analysis Date: 10/09/14 18:35

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 96.1       |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 95.4       |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: A-WEST

ACZ Sample ID: **L20851-05**

Date Sampled: 09/29/14 10:15

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 4:21

Analysis Date: 10/08/14 1:25

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 18         | J    | 33.3     |    | mg/Kg | 3   | 20  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 72         |      | 33.3     |    | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: B-NORTH

ACZ Sample ID: **L20851-06**  
 Date Sampled: 09/29/14 11:35  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 19:06  
 Analysis Date: 10/09/14 19:06

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 95.4       |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 94.8       |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: B-NORTH

ACZ Sample ID: **L20851-06**

Date Sampled: 09/29/14 11:35

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 5:07

Analysis Date: 10/08/14 1:51

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 50         | J    | 333      | *  | mg/Kg | 30  | 200 |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 87.8       |      | 333      | *  | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: B-CENTER

ACZ Sample ID: **L20851-07**  
 Date Sampled: 09/29/14 12:30  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 19:37  
 Analysis Date: 10/09/14 19:37

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 76.7       |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 75.2       |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: B-CENTER

ACZ Sample ID: **L20851-07**

Date Sampled: 09/29/14 12:30

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 5:53

Analysis Date: 10/08/14 2:18

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 12         | J    | 33.3     |    | mg/Kg | 3   | 20  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 80.3       |      | 33.3     |    | %     | 70  | 130 |

**Red River Ranch**  
 Project ID:  
 Sample ID: B-SOUTH

ACZ Sample ID: **L20851-08**  
 Date Sampled: 09/29/14 12:00  
 Date Received: 10/01/14  
 Sample Matrix: Soil

**BTEX/Gasoline Range Organics (C6-C10)**

Analysis Method: **M8021B/8015D GC/PID/FID**  
 Extract Method: **5035A**

**Workgroup: WG372567**

Analyst: pml  
 Extract Date: 10/09/14 20:08  
 Analysis Date: 10/09/14 20:08

| Compound                 | CAS       | Result     | QUAL | Dilution | XQ | Units | MDL  | PQL  |
|--------------------------|-----------|------------|------|----------|----|-------|------|------|
| Benzene                  | 71-43-2   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Ethylbenzene             | 100-41-4  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| m p Xylene               | 1330-20-7 |            | U    | 1        | *  | ug/Kg | 2    | 2    |
| o Xylene                 | 95-47-6   |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| Toluene                  | 108-88-3  |            | U    | 1        | *  | ug/Kg | 1    | 1    |
| TVH C6 to C10            | TVH       |            | U    | 1        | *  | mg/Kg | 0.05 | 0.05 |
| Surrogate Recoveries     | CAS       | % Recovery |      | Dilution | XQ | Units | LCL  | UCL  |
| Bromofluorobenzene       | 460-00-4  | 74         |      | 1        | *  | %     | 70   | 130  |
| Bromofluorobenzene (TVH) | 460-00 4  | 72.5       |      | 1        | *  | %     | 70   | 130  |

**Red River Ranch**

Project ID:

Sample ID: B-SOUTH

ACZ Sample ID: **L20851-08**

Date Sampled: 09/29/14 12:00

Date Received: 10/01/14

Sample Matrix: Soil

**Diesel Range Organics (C10-C28)**Analysis Method: **M8015D GC/FID**Extract Method: **M3540****Workgroup:** WG372599

Analyst: rjv

Extract Date: 10/07/14 6:39

Analysis Date: 10/08/14 2:44

| Compound             | CAS     | Result     | QUAL | Dilution | XQ | Units | MDL | PQL |
|----------------------|---------|------------|------|----------|----|-------|-----|-----|
| TPH C10 to C28       |         | 16         | J    | 33.3     |    | mg/Kg | 3   | 20  |
| Surrogate Recoveries | CAS     | % Recovery |      | Dilution | XQ | Units | LCL | UCL |
| OTP                  | 84-15-1 | 87.6       |      | 33.3     |    | %     | 70  | 130 |

**Report Header Explanations**

|                |   |
|----------------|---|
| <i>Batch</i>   | A distinct set of samples analyzed at a specific time   |
| <i>Found</i>   | Value of the QC Type of interest  |
| <i>Limit</i>   | Upper limit for RPD, in %.  |
| <i>Lower</i>   | Lower Recovery Limit, in % (except for LCSS, mg/Kg)   |
| <i>LCL</i>     | Lower Control Limit   |
| <i>MDL</i>     | Method Detection Limit. Same as Minimum Reporting Limit. Allows for instrument and annual fluctuations. |
| <i>PCN/SCN</i> | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis          |
| <i>PQL</i>     | Practical Quantitation Limit, typically 5 times the MDL.  |
| <i>QC</i>      | True Value of the Control Sample or the amount added to the Spike                                       |
| <i>Rec</i>     | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)                        |
| <i>RPD</i>     | Relative Percent Difference, calculation used for Duplicate QC Types                                    |
| <i>Upper</i>   | Upper Recovery Limit, in % (except for LCSS, mg/Kg)   |
| <i>UCL</i>     | Upper Control Limit   |
| <i>Sample</i>  | Value of the Sample of interest   |

**QC Sample Types**

|             |                                   |               |                                       |
|-------------|-----------------------------------|---------------|---------------------------------------|
| <i>SURR</i> | Surrogate                         | <i>LFM</i>    | Laboratory Fortified Matrix           |
| <i>INTS</i> | Internal Standard                 | <i>LFMD</i>   | Laboratory Fortified Matrix Duplicate |
| <i>DUP</i>  | Sample Duplicate                  | <i>LRB</i>    | Laboratory Reagent Blank              |
| <i>LCSS</i> | Laboratory Control Sample - Soil  | <i>MS/MSD</i> | Matrix Spike/Matrix Spike Duplicate   |
| <i>LCSW</i> | Laboratory Control Sample - Water | <i>PBS</i>    | Prep Blank - Soil                     |
| <i>LFB</i>  | Laboratory Fortified Blank        | <i>PBW</i>    | Prep Blank - Water                    |

**QC Sample Type Explanations**

|                         |   |
|-------------------------|---|
| Blanks                  | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples         | Verifies the accuracy of the method, including the prep procedure.                              |
| Duplicates              | Verifies the precision of the instrument and/or method.   |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any.   |

**ACZ Qualifiers (Qual)**

|   |   |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.   |
| O | Analyte concentration is estimated due to result exceeding calibration range.   |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time.   |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.   |
| L | Target analyte response was below the laboratory defined negative threshold.  |
| U | The material was analyzed for, but was not detected above the level of the associated value.<br>The associated value is either the sample quantitation limit or the sample detection limit. |

**Method References**

- (1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
- (2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
- (3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
- (4) EPA SW-846. Test Methods for Evaluating Solid Waste.
- (5) Standard Methods for the Examination of Water and Wastewater.

**Comments**

- (1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
- (2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
- (3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
- (4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:

<http://www.acz.com/public/extquallist.pdf>

Red River Ranch

ACZ Project ID: **L20851**

**BTEX/Gasoline Range Organics (C6-C10)**

M8021B/8015D GC/PID/FID

**WG372567**

| <b>AS</b>                       |    | <b>Sample ID: L20850-01AS</b> |       | <b>PCN/SCN: B140918-1-SPIK</b> |      |       |       | <b>Analyzed: 10/09/14 12:37</b> |       |      |  |
|---------------------------------|----|-------------------------------|-------|--------------------------------|------|-------|-------|---------------------------------|-------|------|--|
| Compound                        | QC | Sample                        | Found | Units                          | Rec  | Lower | Upper | RPD                             | Limit | Qual |  |
| BENZENE                         | 25 | U                             | 23.1  | ug/Kg                          | 92.4 | 70    | 130   |                                 |       |      |  |
| ETHYLBENZENE                    | 25 | U                             | 17.4  | ug/Kg                          | 69.6 | 70    | 130   |                                 |       |      |  |
| M P XYLENE                      | 50 | U                             | 33.7  | ug/Kg                          | 67.4 | 70    | 130   |                                 |       | M2   |  |
| O XYLENE                        | 50 | U                             | 32.3  | ug/Kg                          | 64.6 | 70    | 130   |                                 |       | M2   |  |
| TOLUENE                         | 75 | U                             | 57.7  | ug/Kg                          | 76.9 | 70    | 130   |                                 |       |      |  |
| TVH C6 TO C10                   | .5 | U                             | .349  | mg/Kg                          | 69.8 | 70    | 130   |                                 |       |      |  |
| BROMOFLUOROBENZENE (surr)       |    |                               |       | %                              | 66.2 | 70    | 130   |                                 |       | S7   |  |
| BROMOFLUOROBENZENE (TVH) (surr) |    |                               |       | %                              | 66.3 | 70    | 130   |                                 |       | S7   |  |

| <b>ASD</b>                      |    | <b>Sample ID: L20850-01ASD</b> |       | <b>PCN/SCN: B140918-1-SPIK</b> |      |       |       | <b>Analyzed: 10/09/14 13:09</b> |       |       |  |
|---------------------------------|----|--------------------------------|-------|--------------------------------|------|-------|-------|---------------------------------|-------|-------|--|
| Compound                        | QC | Sample                         | Found | Units                          | Rec  | Lower | Upper | RPD                             | Limit | Qual  |  |
| BENZENE                         | 25 | U                              | 18    | ug/Kg                          | 72.0 | 70    | 130   | 24.82                           | 20    | RD    |  |
| ETHYLBENZENE                    | 25 | U                              | 13.9  | ug/Kg                          | 55.6 | 70    | 130   | 22.36                           | 20    | M2 RD |  |
| M P XYLENE                      | 50 | U                              | 27.4  | ug/Kg                          | 54.8 | 70    | 130   | 20.62                           | 20    | M2 RD |  |
| O XYLENE                        | 50 | U                              | 26.6  | ug/Kg                          | 53.2 | 70    | 130   | 19.35                           | 20    | M2    |  |
| TOLUENE                         | 75 | U                              | 45.3  | ug/Kg                          | 60.4 | 70    | 130   | 24.08                           | 20    | M2 RD |  |
| TVH C6 TO C10                   | .5 | U                              | .287  | mg/Kg                          | 57.4 | 70    | 130   | 19.5                            | 20    | M2    |  |
| BROMOFLUOROBENZENE (surr)       |    |                                |       | %                              | 80.2 | 70    | 130   |                                 |       |       |  |
| BROMOFLUOROBENZENE (TVH) (surr) |    |                                |       | %                              | 79.7 | 70    | 130   |                                 |       |       |  |

| <b>LCSS</b>                     |    | <b>Sample ID: WG372567LCSS</b> |       | <b>PCN/SCN: B140918-1-SPIK</b> |       |       |       | <b>Analyzed: 10/09/14 10:34</b> |       |      |  |
|---------------------------------|----|--------------------------------|-------|--------------------------------|-------|-------|-------|---------------------------------|-------|------|--|
| Compound                        | QC | Sample                         | Found | Units                          | Rec   | Lower | Upper | RPD                             | Limit | Qual |  |
| BENZENE                         | 25 |                                | 28.4  | ug/Kg                          | 113.6 | 70    | 130   |                                 |       |      |  |
| ETHYLBENZENE                    | 25 |                                | 27.2  | ug/Kg                          | 108.8 | 70    | 130   |                                 |       |      |  |
| M P XYLENE                      | 50 |                                | 54.9  | ug/Kg                          | 109.8 | 70    | 130   |                                 |       |      |  |
| O XYLENE                        | 50 |                                | 52    | ug/Kg                          | 104.0 | 70    | 130   |                                 |       |      |  |
| TOLUENE                         | 75 |                                | 80.5  | ug/Kg                          | 107.3 | 70    | 130   |                                 |       |      |  |
| TVH C6 TO C10                   | .5 |                                | .554  | mg/Kg                          | 110.8 | 70    | 130   |                                 |       |      |  |
| BROMOFLUOROBENZENE (surr)       |    |                                |       | %                              | 105.5 | 70    | 130   |                                 |       |      |  |
| BROMOFLUOROBENZENE (TVH) (surr) |    |                                |       | %                              | 104.4 | 70    | 130   |                                 |       |      |  |

| <b>LCSSD</b>                    |    | <b>Sample ID: WG372567LCSSD</b> |       | <b>PCN/SCN: B140918-1-SPIK</b> |       |       |       | <b>Analyzed: 10/09/14 11:05</b> |       |      |  |
|---------------------------------|----|---------------------------------|-------|--------------------------------|-------|-------|-------|---------------------------------|-------|------|--|
| Compound                        | QC | Sample                          | Found | Units                          | Rec   | Lower | Upper | RPD                             | Limit | Qual |  |
| BENZENE                         | 25 |                                 | 27.8  | ug/Kg                          | 111.2 | 70    | 130   | 2.1                             | 20    |      |  |
| ETHYLBENZENE                    | 25 |                                 | 26.7  | ug/Kg                          | 106.8 | 70    | 130   | 1.9                             | 20    |      |  |
| M P XYLENE                      | 50 |                                 | 54.1  | ug/Kg                          | 108.2 | 70    | 130   | 1.5                             | 20    |      |  |
| O XYLENE                        | 50 |                                 | 51.7  | ug/Kg                          | 103.4 | 70    | 130   | 0.6                             | 20    |      |  |
| TOLUENE                         | 75 |                                 | 79.2  | ug/Kg                          | 105.6 | 70    | 130   | 1.6                             | 20    |      |  |
| TVH C6 TO C10                   | .5 |                                 | .542  | mg/Kg                          | 108.4 | 70    | 130   | 2.2                             | 20    |      |  |
| BROMOFLUOROBENZENE (surr)       |    |                                 |       | %                              | 105.6 | 70    | 130   |                                 |       |      |  |
| BROMOFLUOROBENZENE (TVH) (surr) |    |                                 |       | %                              | 104.2 | 70    | 130   |                                 |       |      |  |

Red River Ranch

ACZ Project ID: **L20851**

| PBS                             |    | Sample ID: WG372567PBS |       |       |       |       |       | Analyzed: 10/09/14 11:36 |       |      |  |
|---------------------------------|----|------------------------|-------|-------|-------|-------|-------|--------------------------|-------|------|--|
| Compound                        | QC | Sample                 | Found | Units | Rec   | Lower | Upper | RPD                      | Limit | Qual |  |
| BENZENE                         |    |                        | U     | ug/Kg |       | -1    | 1     |                          |       |      |  |
| ETHYLBENZENE                    |    |                        | U     | ug/Kg |       | -1    | 1     |                          |       |      |  |
| M P XYLENE                      |    |                        | U     | ug/Kg |       | -2    | 2     |                          |       |      |  |
| O XYLENE                        |    |                        | U     | ug/Kg |       | -1    | 1     |                          |       |      |  |
| TOLUENE                         |    |                        | U     | ug/Kg |       | -1    | 1     |                          |       |      |  |
| TVH C6 TO C10                   |    |                        | U     | mg/Kg |       | -.05  | .05   |                          |       |      |  |
| BROMOFLUOROBENZENE (surr)       |    |                        |       | %     | 104.1 | 70    | 130   |                          |       |      |  |
| BROMOFLUOROBENZENE (TVH) (surr) |    |                        |       | %     | 103.1 | 70    | 130   |                          |       |      |  |

Red River Ranch

ACZ Project ID: **L20851**

**Diesel Range Organics (C10-C28)**

M8015D GC/FID

**WG372599**

| <b>MS</b>      |       | <b>Sample ID: L20850-01MS</b> |       | <b>PCN/SCN: TPH140806-1-15</b> |      |       |       | <b>Analyzed: 10/07/14 20:34</b> |       |      |  |
|----------------|-------|-------------------------------|-------|--------------------------------|------|-------|-------|---------------------------------|-------|------|--|
| Compound       | QC    | Sample                        | Found | Units                          | Rec  | Lower | Upper | RPD                             | Limit | Qual |  |
| TPH C10 TO C28 | 166.7 | 40                            | 190.2 | mg/Kg                          | 90.1 | 70    | 130   |                                 |       |      |  |
| OTP (surr)     |       |                               |       | %                              | 84.5 | 70    | 130   |                                 |       |      |  |

| <b>MSD</b>     |       | <b>Sample ID: L20850-01MSD</b> |       | <b>PCN/SCN: TPH140806-1-15</b> |      |       |       | <b>Analyzed: 10/07/14 21:01</b> |       |      |  |
|----------------|-------|--------------------------------|-------|--------------------------------|------|-------|-------|---------------------------------|-------|------|--|
| Compound       | QC    | Sample                         | Found | Units                          | Rec  | Lower | Upper | RPD                             | Limit | Qual |  |
| TPH C10 TO C28 | 166.7 | 40                             | 184.7 | mg/Kg                          | 86.8 | 70    | 130   | 2.93                            | 20    |      |  |
| OTP (surr)     |       |                                |       | %                              | 86.6 | 70    | 130   |                                 |       |      |  |

| <b>LCSS</b>    |      | <b>Sample ID: WG372390LCSS</b> |       | <b>PCN/SCN: TPH140806-1-30</b> |      |       |       | <b>Analyzed: 10/07/14 19:15</b> |       |      |  |
|----------------|------|--------------------------------|-------|--------------------------------|------|-------|-------|---------------------------------|-------|------|--|
| Compound       | QC   | Sample                         | Found | Units                          | Rec  | Lower | Upper | RPD                             | Limit | Qual |  |
| TPH C10 TO C28 | 83.3 |                                | 76.6  | mg/Kg                          | 91.9 | 70    | 130   |                                 |       |      |  |
| OTP (surr)     |      |                                |       | %                              | 85.8 | 70    | 130   |                                 |       |      |  |

| <b>LCSSD</b>   |      | <b>Sample ID: WG372390LCSSD</b> |       | <b>PCN/SCN: TPH140806-1-30</b> |      |       |       | <b>Analyzed: 10/07/14 19:41</b> |       |      |  |
|----------------|------|---------------------------------|-------|--------------------------------|------|-------|-------|---------------------------------|-------|------|--|
| Compound       | QC   | Sample                          | Found | Units                          | Rec  | Lower | Upper | RPD                             | Limit | Qual |  |
| TPH C10 TO C28 | 83.3 |                                 | 78.1  | mg/Kg                          | 93.7 | 70    | 130   | 1.9                             | 20    |      |  |
| OTP (surr)     |      |                                 |       | %                              | 86.5 | 70    | 130   |                                 |       |      |  |

| <b>PBS</b>     |    | <b>Sample ID: WG372390PBS</b> |       |       |      |       |       | <b>Analyzed: 10/07/14 18:48</b> |       |      |  |
|----------------|----|-------------------------------|-------|-------|------|-------|-------|---------------------------------|-------|------|--|
| Compound       | QC | Sample                        | Found | Units | Rec  | Lower | Upper | RPD                             | Limit | Qual |  |
| TPH C10 TO C28 |    |                               | U     | mg/Kg |      | -20   | 20    |                                 |       |      |  |
| OTP (surr)     |    |                               |       | %     | 82.0 | 70    | 130   |                                 |       |      |  |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID        | WORKNUM                 | PARAMETER       | METHOD                  | QUAL            | DESCRIPTION   |   |
|---------------|-------------------------|-----------------|-------------------------|-----------------|---|---|
| L20851-01     | WG372567                | *All Compounds* | M8021B/8015D GC/PID/FID | ZM              | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |   |
|               |                         | Benzene         | M8021B/8015D GC/PID/FID | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
|               |                         | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               |                         |                 | M8021B/8015D GC/PID/FID | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
|               |                         | m p Xylene      | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               |                         |                 | M8021B/8015D GC/PID/FID | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
|               |                         | o Xylene        | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               |                         | Toluene         | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               |                         |                 | M8021B/8015D GC/PID/FID | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
|               |                         | TVH C6 to C10   | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               |                         | WG372599        | *All Compounds*         | M8015D GC/FID   | D1  | Sample required dilution due to matrix. |
|               |                         | WG372390        |                         | M3540           | D1  | Sample required dilution due to matrix. |
|               |                         | L20851-02       | WG372567                | *All Compounds* | M8021B/8015D GC/PID/FID   | ZM                                      |
| Benzene       | M8021B/8015D GC/PID/FID |                 |                         | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
| Ethylbenzene  | M8021B/8015D GC/PID/FID |                 |                         | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               | M8021B/8015D GC/PID/FID |                 |                         | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
| m p Xylene    | M8021B/8015D GC/PID/FID |                 |                         | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               | M8021B/8015D GC/PID/FID |                 |                         | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
| o Xylene      | M8021B/8015D GC/PID/FID |                 |                         | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
| Toluene       | M8021B/8015D GC/PID/FID |                 |                         | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               | M8021B/8015D GC/PID/FID |                 |                         | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
| TVH C6 to C10 | M8021B/8015D GC/PID/FID |                 |                         | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
| L20851-03     | WG372567                | *All Compounds* | M8021B/8015D GC/PID/FID | ZM              | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |   |
|               |                         | Benzene         | M8021B/8015D GC/PID/FID | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
|               |                         | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |   |
|               |                         |                 | M8021B/8015D GC/PID/FID | RD              | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |   |
|               |                         | m p Xylene      | M8021B/8015D GC/PID/FID | M2              | Matrix spike recovery was low, the recovery of the  |   |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID           | WORKNUM  | PARAMETER       | METHOD                  | QUAL | DESCRIPTION   |
|------------------|----------|-----------------|-------------------------|------|---|
|                  |          |                 |                         |      | associated control sample (LCS or LFB) was acceptable.  |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | o Xylene        | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          | Toluene         | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | TVH C6 to C10   | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  | WG372599 | *All Compounds* | M8015D GC/FID           | D1   | Sample required dilution due to matrix.   |
|                  | WG372390 |                 | M3540                   | D1   | Sample required dilution due to matrix.   |
| <b>L20851-04</b> | WG372567 | *All Compounds* | M8021B/8015D GC/PID/FID | ZM   | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |
|                  |          | Benzene         | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | m p Xylene      | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | o Xylene        | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          | Toluene         | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | TVH C6 to C10   | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
| <b>L20851-05</b> | WG372567 | *All Compounds* | M8021B/8015D GC/PID/FID | ZM   | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |
|                  |          | Benzene         | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | m p Xylene      | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | o Xylene        | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          | Toluene         | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | TVH C6 to C10   | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the  |

REPAD.15.06.05.01

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID           | WORKNUM  | PARAMETER       | METHOD                  | QUAL | DESCRIPTION   |
|------------------|----------|-----------------|-------------------------|------|---|
|                  |          |                 |                         |      | associated control sample (LCS or LFB) was acceptable.  |
| <b>L20851-06</b> | WG372567 | *All Compounds* | M8021B/8015D GC/PID/FID | ZM   | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |
|                  |          | Benzene         | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | m p Xylene      | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | o Xylene        | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          | Toluene         | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | TVH C6 to C10   | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  | WG372599 | *All Compounds* | M8015D GC/FID           | D1   | Sample required dilution due to matrix.   |
|                  | WG372390 |                 | M3540                   | D1   | Sample required dilution due to matrix.   |
| <b>L20851-07</b> | WG372567 | *All Compounds* | M8021B/8015D GC/PID/FID | ZM   | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |
|                  |          | Benzene         | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | m p Xylene      | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | o Xylene        | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          | Toluene         | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | TVH C6 to C10   | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
| <b>L20851-08</b> | WG372567 | *All Compounds* | M8021B/8015D GC/PID/FID | ZM   | Data is estimated because result is below 200 ug/Kg; ACZ does not have a closed-system purge and trap as described in method 5035.              |
|                  |          | Benzene         | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|                  |          | Ethylbenzene    | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|                  |          |                 | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |

Red River Ranch

ACZ Project ID: **L20851**

| ACZ ID | WORKNUM | PARAMETER     | METHOD                  | QUAL | DESCRIPTION   |
|--------|---------|---------------|-------------------------|------|---|
|        |         | m p Xylene    | M8021B/8015D GC/PID/FID | M2   | homogeneity of the sample.<br>Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.         |
|        |         |               | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|        |         | o Xylene      | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|        |         | Toluene       | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |
|        |         |               | M8021B/8015D GC/PID/FID | RD   | For a solid matrix, the duplicate RPD (spike or matrix) exceeded the control limit, which is attributable to the non-homogeneity of the sample. |
|        |         | TVH C6 to C10 | M8021B/8015D GC/PID/FID | M2   | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.                                       |

**Red River Ranch**

ACZ Project ID: **L20851**

Soil Analysis

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

|                     |                                |
|---------------------|--------------------------------|
| Conductivity @25C   | SM2510B                        |
| pH, Saturated Paste | EPA 600/2-78-054 section 3.2.2 |
| Solids, Percent     | D2216-80                       |

Red River Ranch

ACZ Project ID: L20851  
 Date Received: 10/01/2014 09:52  
 Received By: ear  
 Date Printed: 10/1/2014

**Receipt Verification**

|  | YES | NO | NA |
|--|-----|----|----|
| 1) Is a foreign soil permit included for applicable samples?   |     |    | X  |
| 2) Is the Chain of Custody or other directive shipping papers present?   | X   |    |    |
| 3) Does this project require special handling procedures such as CLP protocol?   |     |    | X  |
| 4) Are any samples NRC licensable material?  |     |    | X  |
| 5) If samples are received past hold time, proceed with requested short hold time analyses?  | X   |    |    |
| 6) Is the Chain of Custody complete and accurate?  | X   |    |    |
| 7) Were any changes made to the Chain of Custody prior to ACZ receiving the samples?<br>A change was made in the Sampler's Site Information and Relinquished Date:Time section prior to ACZ custody. | X   |    |    |

**Samples/Containers**

|  | YES | NO | NA |
|--|-----|----|----|
| 8) Are all containers intact and with no leaks?                                    | X   |    |    |
| 9) Are all labels on containers and are they intact and legible?                   | X   |    |    |
| 10) Do the sample labels and Chain of Custody match for Sample ID, Date, and Time? | X   |    |    |
| 11) For preserved bottle types, was the pH checked and within limits?              |     |    | X  |
| 12) Is there sufficient sample volume to perform all requested work?               | X   |    |    |
| 13) Is the custody seal intact on all containers?                                  |     |    | X  |
| 14) Are samples that require zero headspace acceptable?                            |     |    | X  |
| 15) Are all sample containers appropriate for analytical requirements?             | X   |    |    |
| 16) Is there an Hg-1631 trip blank present?  |     |    | X  |
| 17) Is there a VOA trip blank present?   |     | X  |    |
| 18) Were all samples received within hold time?                                    | X   |    |    |

**Chain of Custody Related Remarks**

Sample Dates entered per containers.

**Client Contact Remarks**

**Shipping Containers**

| Cooler Id | Temp (°C) | Rad (µR/Hr) | Custody Seal Intact? |
|-----------|-----------|-------------|----------------------|
| 3967      | 5.3       | 8           | Yes                  |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

Red River Ranch

ACZ Project ID: L20851  
Date Received: 10/01/2014 09:52  
Received By: ear  
Date Printed: 10/1/2014



Laboratories, Inc. *20851*

CHAIN of CUSTODY

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Report to:

Name: Jack Sosebee  
 Company: Watpro, Inc.  
 E-mail: jack.sosebee@comcast.net

Address: 9407 E. Chenango Ave.  
Greenwood Village, CO 80111  
 Telephone: 303-921-9176

Copy of Report to:

Name:  
 Company:

E-mail:  
 Telephone:

Invoice to:

Name: Jennifer Lujan  
 Company: Red River Ranch  
 E-mail: jennifer.lujan@tercioranch.com

Address: Tercio Ranch, 15850 County Road 13  
Weston, CO 81091  
 Telephone: 719-868-2223

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES  NO

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes  No

If yes, please include state forms. Results will be reported to PQL for Colorado. 81091

Sampler's Name: Jack Sosebee Sampler's Site Information State CO Zip code 80111 Time Zone Mountain

\*Sampler's Signature: Jack Sosebee \*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

| Quote #:                             | PO#: | Reporting state for compliance testing: | Check box if samples include NRC licensed material? | SAMPLE IDENTIFICATION | DATE:TIME            | Matrix    | # of Containers | USE | QUOTE NO. |
|--------------------------------------|------|---|---|-----------------------|----------------------|-----------|-----------------|-----|-----------|
| <u>RED-RIVER-RANCH (Max Janicek)</u> |      |   |   | A-East                | <u>10/29/14 1105</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | A-South               | <u>10/29/14 1035</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | A-Center              | <u>10/29/14 1050</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | A-North               | <u>10/29/14 1025</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | A-West                | <u>10/29/14 1015</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | B-North               | <u>10/29/14 1135</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | B-Center              | <u>10/29/14 1230</u> | <u>SO</u> | <u>3</u>        |     |           |
|                                      |      |   |   | B-South               | <u>10/29/14 1200</u> | <u>SO</u> | <u>3</u>        |     |           |

Matrix  SW (Surface Water) ·  GW (Ground Water) ·  WW (Waste Water) ·  DW (Drinking Water) ·  SL (Sludge) ·  SO (Soil) ·  OL (Oil) · Other (Specify)

REMARKS

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

| RELINQUISHED BY:    | DATE:TIME           | RECEIVED BY: | DATE:TIME |
|---------------------|---------------------|--------------|-----------|
| <u>Jack Sosebee</u> | <u>9/30/14 1300</u> |              |           |
|                     |                     |              |           |

