

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax 894-2109



#7473

FOR OGCC USE ONLY

12/17/12

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

OGCC Employee:

Spill Complaint
 Inspection NOAV

Tracking No: 2521835

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

Spill or Release Plug & Abandon Central Facility Closure Site/Facility Closure Other (describe): NFA

GENERAL INFORMATION

| | |
|---|--|
| OGCC Operator Number: 8960 | Contact Name and Telephone |
| Name of Operator: <u>Bonanza Creek Energy, Inc.</u> | Name: <u>Tom Peterson</u> |
| Address: <u>410 17th Street, Suite 1380</u> | No: <u>720-279-2330</u> |
| City: <u>Denver</u> State: <u>CO</u> Zip: <u>80202</u> | Fax: <u>720-279-2331</u> |
| API/Facility No: <u>05-057-06162 / 212269</u> | County: <u>Jackson</u> |
| Facility Name: <u>McCallum Unit 97</u> | Facility Number: <u>Location: 324651</u> |
| Well Name: <u>McCallum Unit 97</u> | Well Number: _____ |
| Location (Qtr, Sec, Twp, Rng, Meridian): <u>NESW 34-T10N-R79W</u> | Latitude: <u>40.79453</u> Longitude: <u>-106.25219</u> |

Not approved. AD

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.): Produced Water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? Y N If yes, attach evaluation. Groundwater < 20 ft.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): BLM Rangeland

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Sandy Clay

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Water well located approximately 4,600' southwest of the site.

Description of Impact (if previously provided, refer to that form or document):

| | | |
|---|------------------------------------|--|
| Impacted Media (check): | Extent of Impact: | How Determined: |
| <input checked="" type="checkbox"/> Soils | <u>260' N-S x 65' E-W x 6" bgs</u> | <u>Soil samples were collected for laboratory analysis</u> |
| <input type="checkbox"/> Vegetation | _____ | _____ |
| <input type="checkbox"/> Groundwater | <u>Not encountered</u> | _____ |
| <input type="checkbox"/> Surface water | _____ | _____ |

REMEDIALTION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Following the repair of a corroded flowline, the injection header valve was left open to bleed air from the system. The line was pressured up and approximately 27 bbls of produced water were released through the open valve onto the ground surface. Pressurizing activities ceased and the valve was closed to stop the release.

Describe how source is to be removed:

On October 10, 2011, three confirmation soil samples (Sample #1 through Sample #3) were collected from the release area and submitted for laboratory analysis of TPH, BTEX, SVOC's, pH, EC, SAR, and Table 910-1 metals. Laboratory results confirm that all concentrations were within the COGCC Table 910-1 allowable levels and/or below the background levels detected in soil sample BG01 with the exception of TPH. Laboratory results indicate that TPH concentrations exceeded COGCC allowable levels in all three soil samples. As a BLM preference, the TPH impacted soil was not excavated but was land treated on-site by periodic disking and monitored for natural attenuation. On May 7, 2012, four confirmation soil samples (SS01 through SS04) were collected from the release area and submitted for laboratory analysis of TPH and BTEX. Laboratory results for the soil samples indicate that TPH and BTEX concentrations were below COGCC allowable levels in samples SS01, SS02 and SS03. However, the TPH concentration in sample SS04, located closest to the release point, remained above allowable levels. The release area in the vicinity of SS04 continued to be disked. On August 21, 2012 two confirmation soil samples (W-4 #1 and W-4 #2) were collected from the release area in the vicinity of soil sample SS04 and submitted for laboratory analysis of TPH and BTEX. Laboratory results for the soil samples indicate that TPH and BTEX concentrations are below COGCC allowable levels in both soil samples.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

The impacted soil was land treated on site.



Tracking Number: Name of Operator: Bonanza Creek Energy, Inc. OGCC Operator No: 8960 Received Date: Well Name & No: McCallum Unit 97 Facility Name & No: McCallum Unit 97-324651

REMEDIATION WORKPLAN (CONT.)

OGCC Employee

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.): Groundwater was not impacted.

Describe reclamation plan. Discuss existing and new grade recontouring, method and testing of compaction alleviation, and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required. The site was restored to its pre-release grade and seeded with a BLM approved seed mix. Bonanza Creek's flowline remains at the site.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing. Is further site investigation required? [] Y [X] N If yes, describe: No further investigation is required at this site. Soil sample laboratory results indicate that TPH, BTEX, SVOC's, pH, EC, SAR, and Table 910-1 metal concentrations are below or within COGCC allowable levels or below background levels within the release area. Based on the laboratory results, Bonanza Creek is requesting a No Further Action status for this site.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.): The impacted soil was land treated on site. No impacted soil was excavated.

IMPLEMENTATION SCHEDULE

Table with 4 columns: Date Site Investigation Began (10/13/10), Date Site Investigation Completed (8/29/12), Remediation Plan Submitted, Remediation Start Date (10/13/12), Anticipated Completion Date (12/31/12), Actual Completion Date.

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct, and complete.

Print Name: Tom Peterson Signed: [Signature] Title: Engineering Technician Date: 12/17/12 OGCC Approved: [Signature] Title: Encl. Supv. Date: 12/21/12

See Attached Conditions of Approval. NFA is not approved at this time. [Signature]

CONDITIONS OF APPROVAL

Bonanza Creek Energy, Inc.

Location ID 324651; Spill Tracking No. 2521835

McCallum Unit 97; API 05-057-06162

NESW SEC 34, T10N, R79W

Jackson County, Colorado

*OK
12/21/12*

Soil samples collected appear to be at the ground surface and 6-inches below ground surface. Provide information on how the aerial extent and vertical extent of the impacted area was determined, in particular near the point of release.

Provide information from the surface owner (BLM) approving the remediation methods implemented.

THIS SPILL HAS NOT BEEN CLOSED

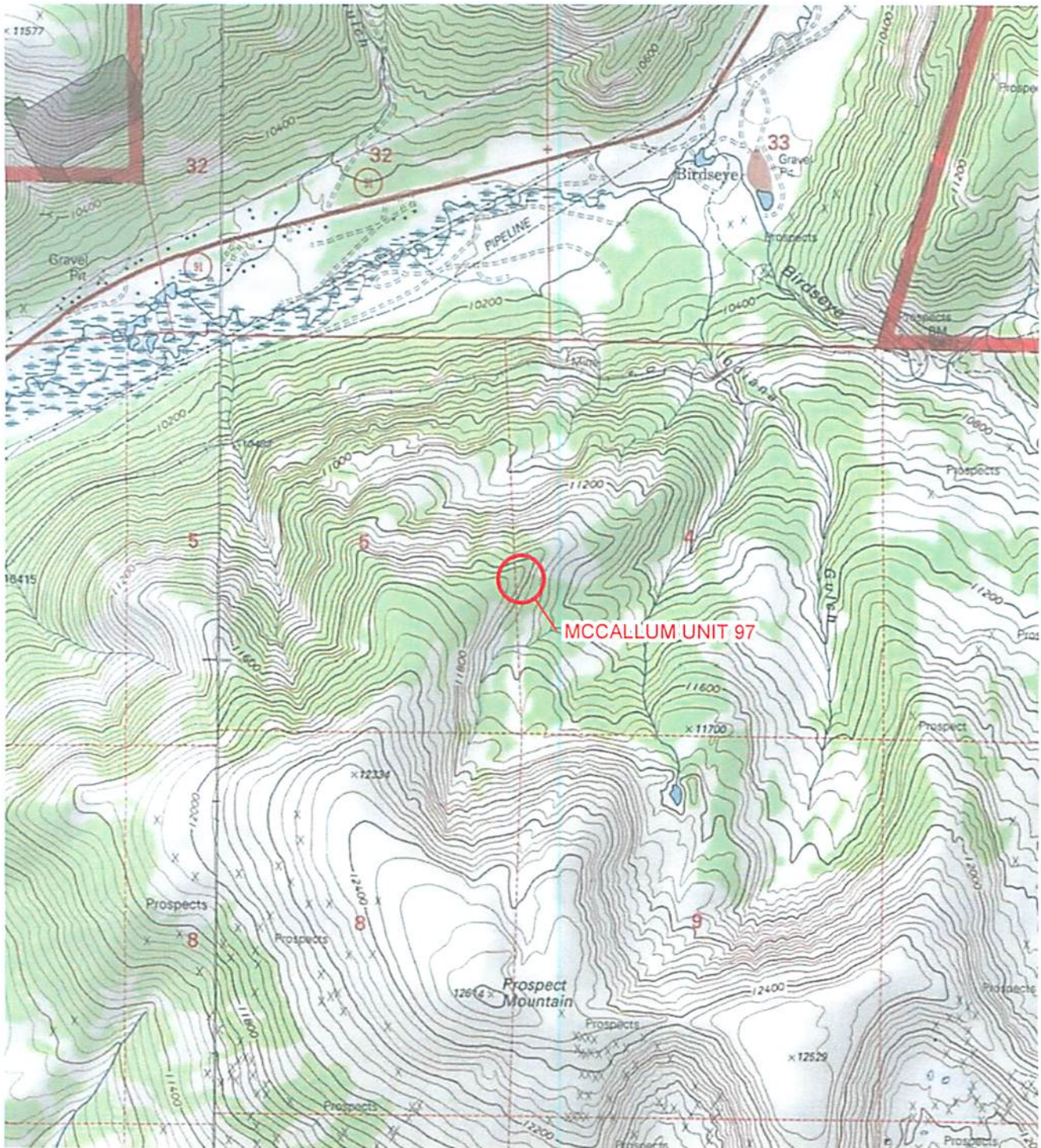


IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

 SITE LOCATION

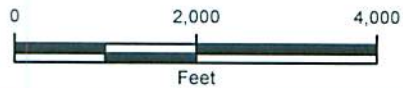


FIGURE 1
SITE LOCATION MAP
MCCALLUM UNIT 97
NE-SW 34-T10N-R79W
JACKSON COUNTY, COLORADO
BONANZA CREEK ENERGY, INC.





IMAGE COURTESY OF ESRI/BING MAPS

LEGEND

- ✕ RELEASE
- SOIL SAMPLE
- ▲ BACKGROUND SOIL SAMPLE
- ⋮ EXTENT OF RELEASE

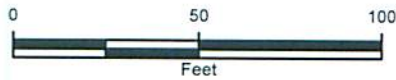


FIGURE 2
SITE MAP
 MCCALLUM UNIT 97
 NESW 34-T10N-R79W
 JACKSON COUNTY, COLORADO
 BONANZA CREEK ENERGY, INC.



Bonanza Creek Energy, Inc.
Table 1 - Soil Sample Analytical Results

| Sample ID | Date Sampled | TPH (mg/kg) | BTEX | | | | SVOC's | | | | | | | | | | | | |
|-------------------------------------|--------------|-------------|-----------------|-----------------|----------------------|-----------------|----------------------|--------------------|------------------------------|--------------------------------|--------------------------------|--------------------------|------------------|----------------------------------|----------------------|------------------|-----------------------------------|---------------------|----------------|
| | | | Benzene (mg/kg) | Toluene (mg/kg) | Ethylbenzene (mg/kg) | Xylenes (mg/kg) | Acenaphthene (mg/kg) | Anthracene (mg/kg) | Benzo (A) anthracene (mg/kg) | Benzo (B) fluoranthene (mg/kg) | Benzo (K) fluoranthene (mg/kg) | Benzo (A) pyrene (mg/kg) | Chrysene (mg/kg) | Dibenzo (A,H) anthracene (mg/kg) | Fluoranthene (mg/kg) | Fluorene (mg/kg) | Indeno (1,2,3-C,D) pyrene (mg/kg) | Naphthalene (mg/kg) | Pyrene (mg/kg) |
| Table 910-1 Allowable Levels | | 500 | 0.17 | 45 | 100 | 175 | 1000 | 1000 | 0.22 | 0.22 | 2.2 | 0.022 | 22 | 0.022 | 1000 | 1000 | 0.22 | 23 | 1000 |
| Sample #1 | 10/10/2011 | 1,080 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | 0.0191 | 0.0173 | 0.0277 | <0.0050 | 0.14 | <0.0100 | <0.0050 | 0.0338 | <0.0100 | <0.0050 | 0.0316 |
| Sample #2 | 10/10/2011 | 1,680 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | 0.0306 | <0.0050 | 0.0467 | 0.044 | <0.0050 | 0.00866 | <0.0100 | <0.0050 | <0.0050 | <0.0100 | <0.0050 | <0.0050 |
| Sample #3 | 10/10/2011 | 3,980 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | 0.0264 | <0.0050 | 0.0148 | 0.012 | 0.0197 | 0.128 | 0.0196 | <0.0050 | <0.0050 | <0.0100 | <0.0050 | <0.0050 |
| SS01@0-6" | 5/7/2012 | 150 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SS02@0-6" | 5/7/2012 | 100 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SS03@0-6" | 5/7/2012 | <50 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SS04@0-6" | 5/7/2012 | 890 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| W-4 #1 | 8/21/2012 | 60 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| W-4 #2 | 8/21/2012 | 120 | <0.0050 | <0.0050 | <0.0050 | <0.0050 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| BG01@6" | 11/7/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

Notes:

< 1.0 - less than reported laboratory reporting limit

mg/kg - milligram per kilogram

TPH - Total Petroleum Hydrocarbons

EC - Electrical Conductivity

mg/L - milligram per liter

mmhos/cm - millimhos per centimeter

NA - Not Analyzed

Results noted in bold exceed COGCC allowable levels.

Bonanza Creek Energy, Inc.
Table 1 (continued) - Soil Sample Analytical Results

| Sample ID | Date Sampled | pH | EC (mmhos/cm) | SAR | Metals | | | | | | | | | | | |
|-------------------------------------|--------------|--------------|---------------|-------------|-----------------|----------------|-----------------|---------------------|---------------------|----------------|--------------|-----------------|----------------|------------------|----------------|--------------|
| | | | | | Arsenic (mg/kg) | Barium (mg/kg) | Cadmium (mg/kg) | Chromium II (mg/kg) | Chromium VI (mg/kg) | Copper (mg/kg) | Lead (mg/kg) | Mercury (mg/kg) | Nickel (mg/kg) | Selenium (mg/kg) | Silver (mg/kg) | Zinc (mg/kg) |
| Table 910:1 Allowable Levels | 6-8 | <4 | <12 | 0.39 | 15,000 | 10 | 120,000 | 23 | 3,100 | 400 | 23 | 1,500 | 390 | 390 | 23,000 | |
| Sample #1 | 10/10/2011 | 8.7 | 0.934 | 4.51 | 3.18 | 128.0 | 0.317 | 13.6 | <0.47 | 3.64 | 11.3 | <0.0500 | 11.7 | 0.245 | <0.100 | 59.2 |
| Sample #2 | 10/10/2011 | 8.9 | 0.772 | 6.14 | 1.76 | 94.1 | 0.271 | 11.3 | <0.49 | 3.99 | 11 | <0.0500 | 10.7 | 0.193 | <0.0786 | 49 |
| Sample #3 | 10/10/2011 | 8 | 0.556 | 4.47 | 3.49 | 98.7 | 0.335 | 12.4 | <0.5 | 4.42 | 13.3 | <0.0500 | 11.6 | 0.231 | <0.0867 | 54.8 |
| SS01@0-6" | 5/7/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SS02@0-6" | 5/7/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SS03@0-6" | 5/7/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| SS04@0-6" | 5/7/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| W-4 #1 | 8/21/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| W-4 #2 | 8/21/2012 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |
| BG01@6" | 11/7/2012 | NA | NA | NA | 3.61 | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA | NA |

Notes:

< 1.0 - less than reported laboratory reporting limit

mg/kg - milligram per kilogram

TPH - Total Petroleum Hydrocarbons

EC - Electrical Conductivity

mg/L - milligram per liter

mmhos/cm - millimhos per centimeter

NA - Not Analyzed

Results noted in bold exceed COGCC allowable levels.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 24, 2011

Tom Peterson
Bonanza Creek Energy
410 17th Street, Suite 1500
Denver, CO 80202
RE: W-4 Water Incident

Enclosed are the results of analyses for samples received by Summit Scientific on 10/11/11 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Director

S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|----------------|----------------|
| Sample #1 | R110066-01 | Soil | 10/10/11 13:00 | 10/11/11 16:15 |
| Sample #2 | R110066-02 | Soil | 10/10/11 13:00 | 10/11/11 16:15 |
| Sample #3 | R110066-03 | Soil | 10/10/11 13:00 | 10/11/11 16:15 |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #1
R110066-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 920 | 50 | mg/kg | 1 | 1101210 | 10/12/11 | 10/13/11 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | 160 | 50 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: <i>o</i> -Terphenyl | | 101 % | 88.8-124 | | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 1101209 | 10/12/11 | 10/12/11 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 116 % | 67.4-143 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 95.8 % | 77.3-114 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 94.0 % | 78.4-125 | | " | " | " | " | |

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

Summit Scientific

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #1
R110066-01 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

| Analyte | Result | Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------------|--------|-------|-------|----------|---------|----------|----------|---------------|-------|
| Acenaphthene | ND | 5.00 | ug/kg | 1 | 1101206 | 10/12/11 | 10/16/11 | EPA 8270D SIM | |
| Acenaphthylene | 21.9 | 5.00 | " | " | " | " | " | " | |
| Anthracene | ND | 5.00 | " | " | " | " | " | " | |
| Benzo (a) anthracene | 19.1 | 5.00 | " | " | " | " | " | " | |
| Benzo (b) fluoranthene | 17.3 | 5.00 | " | " | " | " | " | " | |
| Benzo (k) fluoranthene | 27.7 | 5.00 | " | " | " | " | " | " | |
| Benzo (g,h,i) perylene | 56.4 | 5.00 | " | " | " | " | " | " | |
| Benzo (a) pyrene | ND | 5.00 | " | " | " | " | " | " | |
| Chrysene | 140 | 5.00 | " | " | " | " | " | " | |
| Dibenz (a,h) anthracene | ND | 10.0 | " | " | " | " | " | " | |
| Fluoranthene | ND | 5.00 | " | " | " | " | " | " | |
| Fluorene | 33.8 | 5.00 | " | " | " | " | " | " | |
| Indeno (1,2,3-cd) pyrene | ND | 10.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 5.00 | " | " | " | " | " | " | |
| Phenanthrene | 57.8 | 5.00 | " | " | " | " | " | " | |
| Pyrene | 31.6 | 5.00 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: Nitrobenzene-d5 | | 175 % | 21.8-138 | | " | " | " | " | S-06 |
| Surrogate: 2-Fluorobiphenyl | | 145 % | 31.2-131 | | " | " | " | " | S-06 |
| Surrogate: 2,4,6-Tribromophenol | | 194 % | 44.5-144 | | " | " | " | " | S-06 |
| Surrogate: Terphenyl-d14 | | 169 % | 41.7-139 | | " | " | " | " | S-06 |

Calculated Analytes

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------|--------|-----------------|-------|----------|---------|----------|----------|-------------|-------|
| Chromium+3 Calculated | 13.6 | 0.470 | mg/kg | 1 | 1102406 | 10/20/11 | 10/24/11 | Calculation | |

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Summit Scientific



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #1
R110066-01 (Soil)

Summit Scientific

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Arsenic | 3.18 | 0.100 | mg/kg | 1 | 1101207 | 10/12/11 | 10/13/11 | EPA 6020A | |
| Barium | 128 | 5.00 | " | " | " | " | " | " | |
| Cadmium | 0.317 | 0.100 | " | " | " | " | " | " | |
| Chromium | 14.1 | 0.100 | " | " | " | " | " | " | |
| Copper | 3.64 | 0.500 | " | " | " | " | " | " | |
| Lead | 11.3 | 0.500 | " | " | " | " | " | " | |
| Nickel | 11.7 | 0.500 | " | " | " | " | " | " | |
| Selenium | 0.245 | 0.100 | " | " | " | " | " | " | |
| Silver | ND | 0.100 | " | " | " | " | " | " | |
| Zinc | 59.2 | 5.00 | " | " | " | " | " | " | |

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Mercury | ND | 0.0500 | mg/kg | 1 | 1101407 | 10/14/11 | 10/17/11 | EPA 7471B | |

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------------|-------|
| Chromium, Hexavalent | ND | 0.47 | mg/kg | 1 | 1102406 | 10/20/11 | 10/24/11 | 3060A/7196 A | |

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------|--------|-----------------|----------|----------|---------|----------|----------|----------|-------|
| Specific Conductance (EC) | 0.934 | 0.00100 | mmhos/cm | 1 | 1101204 | 10/13/11 | 10/13/11 | SM 2510B | |

Summit Scientific

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #1
R110066-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|----------|----------|---------|----------|----------|-----------|-------|
| pH | 8.7 | | pH Units | 1 | 1101203 | 10/12/11 | 10/13/11 | EPA 9045B | |

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------|--------|-----------------|-------|----------|---------|----------|----------|---------------------------------|-------|
| Calcium | 231 | 2.50 | mg/kg | 1 | 1101213 | 10/12/11 | 10/17/11 | EPA 6020/USDA6 0 6(2, 3A) | |
| Magnesium | 46.0 | 1.00 | " | " | " | " | " | " | |
| Sodium | 318 | 5.00 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-------------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| Sodium Adsorption Ratio | 4.51 | | units | " | 1101402 | 10/14/11 | 10/14/11 | " | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #2
R110066-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 1200 | 50 | mg/kg | 1 | 1101210 | 10/12/11 | 10/13/11 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | 400 | 50 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: <i>o</i> -Terphenyl | | 103 % | 88.8-124 | | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 1101209 | 10/12/11 | 10/12/11 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 114 % | 67.4-143 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 94.2 % | 77.3-114 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 92.0 % | 78.4-125 | | " | " | " | " | |

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #2
R110066-02 (Soil)

Summit Scientific

Semivolatle Organic Compounds by EPA Method 8270D SIM

| Analyte | Result | Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------------|--------|-------|-------|----------|---------|----------|----------|------------------|-------|
| Acenaphthene | ND | 5.00 | ug/kg | 1 | 1101206 | 10/12/11 | 10/16/11 | EPA 8270D SIM | |
| Acenaphthylene | 32.3 | 5.00 | " | " | " | " | " | " | |
| Anthracene | 30.6 | 5.00 | " | " | " | " | " | " | |
| Benzo (a) anthracene | ND | 5.00 | " | " | " | " | " | " | |
| Benzo (b) fluoranthene | 46.7 | 5.00 | " | " | " | " | " | " | |
| Benzo (k) fluoranthene | 44.0 | 5.00 | " | " | " | " | " | " | |
| Benzo (g,h,i) perylene | ND | 5.00 | " | " | " | " | " | " | |
| Benzo (a) pyrene | ND | 5.00 | " | " | " | " | " | " | |
| Chrysene | 8.66 | 5.00 | " | " | " | " | " | " | |
| Dibenz (a,h) anthracene | ND | 10.0 | " | " | " | " | " | " | |
| Fluoranthene | ND | 5.00 | " | " | " | " | " | " | |
| Fluorene | ND | 5.00 | " | " | " | " | " | " | |
| Indeno (1,2,3-cd) pyrene | ND | 10.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 5.00 | " | " | " | " | " | " | |
| Phenanthrene | ND | 5.00 | " | " | " | " | " | " | |
| Pyrene | ND | 5.00 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: Nitrobenzene-d5 | | 217 % | 21.8-138 | | " | " | " | " | S-06 |
| Surrogate: 2-Fluorobiphenyl | | 236 % | 31.2-131 | | " | " | " | " | S-06 |
| Surrogate: 2,4,6-Tribromophenol | | 326 % | 44.5-144 | | " | " | " | " | S-06 |
| Surrogate: Terphenyl-d14 | | 307 % | 41.7-139 | | " | " | " | " | S-06 |

Calculated Analytes

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------|--------|-----------------|-------|----------|---------|----------|----------|-------------|-------|
| Chromium+3 Calculated | 11.3 | 0.490 | mg/kg | 1 | 1102406 | 10/20/11 | 10/24/11 | Calculation | |

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #2
R110066-02 (Soil)

Summit Scientific

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Arsenic | 2.76 | 0.0786 | mg/kg | 1 | 1101207 | 10/12/11 | 10/13/11 | EPA 6020A | |
| Barium | 94.1 | 3.93 | " | " | " | " | " | " | |
| Cadmium | 0.271 | 0.0786 | " | " | " | " | " | " | |
| Chromium | 11.8 | 0.0786 | " | " | " | " | " | " | |
| Copper | 3.99 | 0.393 | " | " | " | " | " | " | |
| Lead | 11.0 | 0.393 | " | " | " | " | " | " | |
| Nickel | 10.7 | 0.393 | " | " | " | " | " | " | |
| Selenium | 0.193 | 0.0786 | " | " | " | " | " | " | |
| Silver | ND | 0.0786 | " | " | " | " | " | " | |
| Zinc | 49.0 | 3.93 | " | " | " | " | " | " | |

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Mercury | ND | 0.0500 | mg/kg | 1 | 1101407 | 10/14/11 | 10/17/11 | EPA 7471B | |

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------------|-------|
| Chromium, Hexavalent | ND | 0.49 | mg/kg | 1 | 1102406 | 10/20/11 | 10/24/11 | 3060A/7196 A | |

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------|--------|-----------------|----------|----------|---------|----------|----------|----------|-------|
| Specific Conductance (EC) | 0.772 | 0.00100 | mmhos/cm | 1 | 1101204 | 10/13/11 | 10/13/11 | SM 2510B | |

Summit Scientific

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #2
R110066-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|----------|----------|---------|----------|----------|-----------|-------|
| pH | 8.9 | | pH Units | 1 | 1101203 | 10/12/11 | 10/13/11 | EPA 9045B | |

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------|--------|-----------------|-------|----------|---------|----------|----------|---------------------------------|-------|
| Calcium | 136 | 2.50 | mg/kg | 1 | 1101213 | 10/12/11 | 10/17/11 | EPA 6020/USDA6 0 6(2, 3A) | |
| Magnesium | 33.0 | 1.00 | " | " | " | " | " | " | |
| Sodium | 340 | 5.00 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-------------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| Sodium Adsorption Ratio | 6.14 | | units | " | 1101402 | 10/14/11 | 10/14/11 | " | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #3
R110066-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 2800 | 50 | mg/kg | 1 | 1101210 | 10/12/11 | 10/13/11 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | 1100 | 50 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 107 % | 88.8-124 | | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 1101209 | 10/12/11 | 10/12/11 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 114 % | 67.4-143 | | " | " | " | " | |
| Surrogate: Toluene-d8 | | 94.8 % | 77.3-114 | | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 93.4 % | 78.4-125 | | " | " | " | " | |

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
|---------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #3
R110066-03 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

| Analyte | Result | Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------------------|-------------|-------|-------|----------|---------|----------|----------|---------------|-------|
| Acenaphthene | ND | 5.00 | ug/kg | 1 | 1101206 | 10/12/11 | 10/16/11 | EPA 8270D SIM | |
| Acenaphthylene | ND | 5.00 | " | " | " | " | " | " | |
| Anthracene | 26.4 | 5.00 | " | " | " | " | " | " | |
| Benzo (a) anthracene | ND | 5.00 | " | " | " | " | " | " | |
| Benzo (b) fluoranthene | 14.8 | 5.00 | " | " | " | " | " | " | |
| Benzo (k) fluoranthene | 12.0 | 5.00 | " | " | " | " | " | " | |
| Benzo (g,h,i) perylene | 121 | 5.00 | " | " | " | " | " | " | |
| Benzo (a) pyrene | 19.7 | 5.00 | " | " | " | " | " | " | |
| Chrysene | 128 | 5.00 | " | " | " | " | " | " | |
| Dibenz (a,h) anthracene | 19.6 | 10.0 | " | " | " | " | " | " | |
| Fluoranthene | ND | 5.00 | " | " | " | " | " | " | |
| Fluorene | ND | 5.00 | " | " | " | " | " | " | |
| Indeno (1,2,3-cd) pyrene | ND | 10.0 | " | " | " | " | " | " | |
| Naphthalene | ND | 5.00 | " | " | " | " | " | " | |
| Phenanthrene | ND | 5.00 | " | " | " | " | " | " | |
| Pyrene | ND | 5.00 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: Nitrobenzene-d5 | | 132 % | 21.8-138 | | " | " | " | " | |
| Surrogate: 2-Fluorobiphenyl | | 140 % | 31.2-131 | | " | " | " | " | S-06 |
| Surrogate: 2,4,6-Tribromophenol | | 189 % | 44.5-144 | | " | " | " | " | S-06 |
| Surrogate: Terphenyl-d14 | | 138 % | 41.7-139 | | " | " | " | " | |

Calculated Analytes

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------------|-------------|-----------------|-------|----------|---------|----------|----------|-------------|-------|
| Chromium+3 Calculated | 12.4 | 0.500 | mg/kg | 1 | 1102406 | 10/20/11 | 10/24/11 | Calculation | |

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Summit Scientific



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #3
R110066-03 (Soil)

Summit Scientific

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | Units | | | | | | |
| Arsenic | 3.49 | 0.0867 | mg/kg | 1 | 1101207 | 10/12/11 | 10/13/11 | EPA 6020A | |
| Barium | 98.7 | 4.34 | " | " | " | " | " | " | |
| Cadmium | 0.335 | 0.0867 | " | " | " | " | " | " | |
| Chromium | 12.9 | 0.0867 | " | " | " | " | " | " | |
| Copper | 4.42 | 0.434 | " | " | " | " | " | " | |
| Lead | 13.3 | 0.434 | " | " | " | " | " | " | |
| Nickel | 11.6 | 0.434 | " | " | " | " | " | " | |
| Selenium | 0.231 | 0.0867 | " | " | " | " | " | " | |
| Silver | ND | 0.0867 | " | " | " | " | " | " | |
| Zinc | 54.8 | 4.34 | " | " | " | " | " | " | |

Total Mercury by EPA SW846 Method 7471/7470

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------|-------|----------|---------|----------|----------|-----------|-------|
| | | Limit | Units | | | | | | |
| Mercury | ND | 0.0500 | mg/kg | 1 | 1101407 | 10/14/11 | 10/17/11 | EPA 7471B | |

Evergreen Analytical - 6010 Hexavalent Chromium, Soil (3060A Mod Digest)

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------|--------|-----------|-------|----------|---------|----------|----------|-----------------|-------|
| | | Limit | Units | | | | | | |
| Chromium, Hexavalent | ND | 0.5 | mg/kg | 1 | 1102406 | 10/20/11 | 10/24/11 | 3060A/7196 A | |

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting | | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------------------------|--------|-----------|----------|----------|---------|----------|----------|----------|-------|
| | | Limit | Units | | | | | | |
| Specific Conductance (EC) | 0.556 | 0.00100 | mmhos/cm | 1 | 1101204 | 10/13/11 | 10/13/11 | SM 2510B | |

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Sample #3
R110066-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|----------|----------|---------|----------|----------|-----------|-------|
| pH | 8.0 | | pH Units | 1 | 1101203 | 10/12/11 | 10/13/11 | EPA 9045B | |

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------|--------|-----------------|-------|----------|---------|----------|----------|---------------------------------|-------|
| Calcium | 62.5 | 2.50 | mg/kg | 1 | 1101213 | 10/12/11 | 10/17/11 | EPA 6020/USDA6 0 6(2, 3A) | |
| Magnesium | 15.4 | 1.00 | " | " | " | " | " | " | |
| Sodium | 169 | 5.00 | " | " | " | " | " | " | |

Date Sampled: 10/10/11 13:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-------------------------|--------|-----------------|-------|----------|---------|----------|----------|--------|-------|
| Sodium Adsorption Ratio | 4.47 | | units | " | 1101402 | 10/14/11 | 10/14/11 | " | |

Summit Scientific



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike | Source | | %REC | | RPD | | Notes |
|--|-----------|-------|-------|-------------------------------|--------|---------------------------------------|----------|-------|-------|------|-------|
| | Result | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | | |
| Batch 1101210 - EPA 3550A | | | | | | | | | | | |
| Blank (1101210-BLK1) | | | | Prepared & Analyzed: 10/12/11 | | | | | | | |
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | | | | | | | | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | | | | | | | | |
| Surrogate: o-Terphenyl | 11.9 | | " | 12.5 | | 95.2 | 88.8-124 | | | | |
| LCS (1101210-BS1) | | | | Prepared & Analyzed: 10/12/11 | | | | | | | |
| C10-C28 (TEPH-DRO) | 444 | 50 | mg/kg | 501 | | 88.5 | 85-129 | | | 11.8 | |
| LCS Dup (1101210-BSD1) | | | | Prepared & Analyzed: 10/12/11 | | | | | | | |
| C10-C28 (TEPH-DRO) | 435 | 50 | mg/kg | 501 | | 86.8 | 85-129 | | 1.96 | 11.8 | |
| Matrix Spike (1101210-MS1) | | | | Source: R110066-01 | | Prepared & Analyzed: 10/12/11 | | | | | |
| C10-C28 (TEPH-DRO) | 1400 | 50 | mg/kg | 501 | 915 | 96.6 | 77.3-134 | | | 8.39 | |
| Matrix Spike Dup (1101210-MSD1) | | | | Source: R110066-01 | | Prepared: 10/12/11 Analyzed: 10/13/11 | | | | | |
| C10-C28 (TEPH-DRO) | 1390 | 50 | mg/kg | 501 | 915 | 94.3 | 77.3-134 | 0.855 | | 8.39 | |

Summit Scientific



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike | Source | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------|--------|------|--------|-----|-------|-------|
| | Result | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | |

Batch 1101209 - EPA 5030 Soil MS

Blank (1101209-BLK1)

Prepared & Analyzed: 10/12/11

| | | | | | | | | | | |
|---|---------------|--------|-------|---------------|-------------|-----------------|--|--|--|--|
| Benzene | ND | 0.0050 | mg/kg | | | | | | | |
| Toluene | ND | 0.0050 | " | | | | | | | |
| Ethylbenzene | ND | 0.0050 | " | | | | | | | |
| Xylenes (total) | ND | 0.0050 | " | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | | | | | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>0.0412</i> | | " | <i>0.0400</i> | <i>103</i> | <i>67.4-143</i> | | | | |
| <i>Surrogate: Toluene-d8</i> | <i>0.0380</i> | | " | <i>0.0400</i> | <i>95.0</i> | <i>77.3-114</i> | | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0388</i> | | " | <i>0.0400</i> | <i>97.1</i> | <i>78.4-125</i> | | | | |

LCS (1101209-BS1)

Prepared & Analyzed: 10/12/11

| | | | | | | | | | | |
|---|---------------|--------|-------|---------------|-------------|-----------------|--|--|------|--|
| Benzene | 0.0887 | 0.0050 | mg/kg | 0.100 | 88.7 | 61-139 | | | 11.1 | |
| Toluene | 0.0942 | 0.0050 | " | 0.100 | 94.2 | 64-132 | | | 10.9 | |
| Ethylbenzene | 0.0982 | 0.0050 | " | 0.100 | 98.2 | 68.7-135 | | | 20 | |
| m,p-Xylene | 0.203 | 0.010 | " | 0.200 | 101 | 70.4-129 | | | 20 | |
| o-Xylene | 0.0988 | 0.0050 | " | 0.100 | 98.8 | 66.9-126 | | | 20 | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>0.0409</i> | | " | <i>0.0400</i> | <i>102</i> | <i>67.4-143</i> | | | | |
| <i>Surrogate: Toluene-d8</i> | <i>0.0384</i> | | " | <i>0.0400</i> | <i>96.0</i> | <i>77.3-114</i> | | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0386</i> | | " | <i>0.0400</i> | <i>96.5</i> | <i>78.4-125</i> | | | | |

LCS Dup (1101209-BSD1)

Prepared & Analyzed: 10/12/11

| | | | | | | | | | | |
|---|---------------|--------|-------|---------------|-------------|-----------------|-------|--|------|--|
| Benzene | 0.0889 | 0.0050 | mg/kg | 0.100 | 88.9 | 61-139 | 0.270 | | 11.1 | |
| Toluene | 0.0954 | 0.0050 | " | 0.100 | 95.4 | 64-132 | 1.27 | | 10.9 | |
| Ethylbenzene | 0.100 | 0.0050 | " | 0.100 | 100 | 68.7-135 | 1.79 | | 20 | |
| m,p-Xylene | 0.205 | 0.010 | " | 0.200 | 102 | 70.4-129 | 1.02 | | 20 | |
| o-Xylene | 0.101 | 0.0050 | " | 0.100 | 101 | 66.9-126 | 2.01 | | 20 | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>0.0431</i> | | " | <i>0.0400</i> | <i>108</i> | <i>67.4-143</i> | | | | |
| <i>Surrogate: Toluene-d8</i> | <i>0.0384</i> | | " | <i>0.0400</i> | <i>95.9</i> | <i>77.3-114</i> | | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0380</i> | | " | <i>0.0400</i> | <i>95.0</i> | <i>78.4-125</i> | | | | |

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The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike | Source | | %REC | | RPD | Notes |
|---------|-----------|-------|-------|-------|--------|------|--------|-----|-------|-------|
| | Result | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | |

Batch 1101209 - EPA 5030 Soil MS

| Matrix Spike (1101209-MS1) | Source: R110066-01 | | | Prepared & Analyzed: 10/12/11 | | | | | | |
|----------------------------------|--------------------|--------|-------|-------------------------------|----|------|----------|--|--|------|
| Benzene | 0.0853 | 0.0050 | mg/kg | 0.100 | ND | 85.3 | 42.9-137 | | | 17.9 |
| Toluene | 0.0934 | 0.0050 | " | 0.100 | ND | 93.4 | 42.6-130 | | | 11.9 |
| Ethylbenzene | 0.0981 | 0.0050 | " | 0.100 | ND | 98.1 | 39-133 | | | 20 |
| m,p-Xylene | 0.200 | 0.010 | " | 0.200 | ND | 99.9 | 34.7-134 | | | 20 |
| o-Xylene | 0.0978 | 0.0050 | " | 0.100 | ND | 97.8 | 41.3-126 | | | 20 |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0426 | | " | 0.0400 | | 107 | 67.4-143 | | | |
| Surrogate: Toluene-d8 | 0.0381 | | " | 0.0400 | | 95.2 | 77.3-114 | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0372 | | " | 0.0400 | | 92.9 | 78.4-125 | | | |

| Matrix Spike Dup (1101209-MSD1) | Source: R110066-01 | | | Prepared & Analyzed: 10/12/11 | | | | | | |
|----------------------------------|--------------------|--------|-------|-------------------------------|----|------|----------|------|--|------|
| Benzene | 0.0790 | 0.0050 | mg/kg | 0.100 | ND | 79.0 | 42.9-137 | 7.59 | | 17.9 |
| Toluene | 0.0922 | 0.0050 | " | 0.100 | ND | 92.2 | 42.6-130 | 1.26 | | 11.9 |
| Ethylbenzene | 0.0956 | 0.0050 | " | 0.100 | ND | 95.6 | 39-133 | 2.66 | | 20 |
| m,p-Xylene | 0.196 | 0.010 | " | 0.200 | ND | 98.1 | 34.7-134 | 1.83 | | 20 |
| o-Xylene | 0.0960 | 0.0050 | " | 0.100 | ND | 96.0 | 41.3-126 | 1.86 | | 20 |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0385 | | " | 0.0400 | | 96.2 | 67.4-143 | | | |
| Surrogate: Toluene-d8 | 0.0379 | | " | 0.0400 | | 94.7 | 77.3-114 | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0380 | | " | 0.0400 | | 95.1 | 78.4-125 | | | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike | Source | %REC | | RPD | Notes |
|---------|-----------|-------|-------|-------|--------|------|--------|-----|-------|
| | Result | Limit | Units | Level | Result | %REC | Limits | RPD | |

Batch 1101206 - EPA 5030 Soil MS

Blank (1101206-BLK1)

Prepared: 10/12/11 Analyzed: 10/16/11

| | | | | | | | | | |
|--|-------------|------|----------|-------------|--|-------------|-----------------|--|--|
| Acenaphthene | ND | 5.00 | ug/kg | | | | | | |
| Acenaphthylene | ND | 5.00 | " | | | | | | |
| Anthracene | ND | 5.00 | " | | | | | | |
| Benzo (a) anthracene | ND | 5.00 | " | | | | | | |
| Benzo (b) fluoranthene | ND | 5.00 | " | | | | | | |
| Benzo (k) fluoranthene | ND | 5.00 | " | | | | | | |
| Benzo (g,h,i) perylene | ND | 5.00 | " | | | | | | |
| Benzo (a) pyrene | ND | 5.00 | " | | | | | | |
| Chrysene | ND | 5.00 | " | | | | | | |
| Dibenz (a,h) anthracene | ND | 10.0 | " | | | | | | |
| Fluoranthene | ND | 5.00 | " | | | | | | |
| Fluorene | ND | 5.00 | " | | | | | | |
| Indeno (1,2,3-cd) pyrene | ND | 10.0 | " | | | | | | |
| Naphthalene | ND | 5.00 | " | | | | | | |
| Phenanthrene | ND | 5.00 | " | | | | | | |
| Pyrene | ND | 5.00 | " | | | | | | |
| <i>Surrogate: Nitrobenzene-d5</i> | <i>36.0</i> | | <i>"</i> | <i>33.3</i> | | <i>108</i> | <i>21.8-138</i> | | |
| <i>Surrogate: 2-Fluorobiphenyl</i> | <i>36.8</i> | | <i>"</i> | <i>33.1</i> | | <i>111</i> | <i>31.2-131</i> | | |
| <i>Surrogate: 2,4,6-Tribromophenol</i> | <i>25.0</i> | | <i>"</i> | <i>33.3</i> | | <i>75.1</i> | <i>44.5-144</i> | | |
| <i>Surrogate: Terphenyl-dl4</i> | <i>37.3</i> | | <i>"</i> | <i>32.7</i> | | <i>114</i> | <i>41.7-139</i> | | |

LCS (1101206-BS1)

Prepared: 10/12/11 Analyzed: 10/16/11

| | | | | | | | | | |
|--------------------------|------|------|-------|------|--|------|--------|--|----|
| Acenaphthene | 32.4 | 5.00 | ug/kg | 33.3 | | 97.2 | 30-120 | | 30 |
| Acenaphthylene | 32.8 | 5.00 | " | 33.3 | | 98.3 | 30-120 | | 30 |
| Anthracene | 34.0 | 5.00 | " | 33.3 | | 102 | 30-120 | | 30 |
| Benzo (a) anthracene | 32.8 | 5.00 | " | 33.3 | | 98.4 | 30-120 | | 30 |
| Benzo (b) fluoranthene | 31.8 | 5.00 | " | 33.3 | | 95.3 | 30-120 | | 30 |
| Benzo (k) fluoranthene | 30.5 | 5.00 | " | 33.3 | | 91.5 | 30-120 | | 30 |
| Benzo (g,h,i) perylene | 26.1 | 5.00 | " | 33.3 | | 78.3 | 30-120 | | 30 |
| Benzo (a) pyrene | 32.1 | 5.00 | " | 33.3 | | 96.2 | 30-120 | | 30 |
| Chrysene | 29.6 | 5.00 | " | 33.3 | | 88.7 | 30-120 | | 30 |
| Dibenz (a,h) anthracene | 26.0 | 10.0 | " | 33.3 | | 77.9 | 30-120 | | 30 |
| Fluoranthene | 33.8 | 5.00 | " | 33.3 | | 101 | 30-120 | | 30 |
| Fluorene | 33.8 | 5.00 | " | 33.3 | | 101 | 30-120 | | 30 |
| Indeno (1,2,3-cd) pyrene | 25.9 | 10.0 | " | 33.3 | | 77.8 | 30-120 | | 30 |
| Naphthalene | 31.6 | 5.00 | " | 33.3 | | 94.9 | 30-120 | | 30 |
| Phenanthrene | 32.4 | 5.00 | " | 33.3 | | 97.2 | 30-120 | | 30 |
| Pyrene | 32.0 | 5.00 | " | 33.3 | | 95.9 | 30-120 | | 30 |

Summit Scientific

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike | Source | %REC | | | RPD | Notes |
|---------|-----------|-------|-------|-------|--------|------|--------|-----|-------|-------|
| | Result | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | |

Batch 1101206 - EPA 5030 Soil MS

LCS (1101206-BS1)

Prepared: 10/12/11 Analyzed: 10/16/11

| | | | | | | | | | | |
|---------------------------------|------|--|-------|------|--|------|----------|--|--|--|
| Surrogate: Nitrobenzene-d5 | 34.7 | | ug/kg | 33.3 | | 104 | 21.8-138 | | | |
| Surrogate: 2-Fluorobiphenyl | 36.6 | | " | 33.1 | | 111 | 31.2-131 | | | |
| Surrogate: 2,4,6-Tribromophenol | 22.6 | | " | 33.3 | | 67.8 | 44.5-144 | | | |
| Surrogate: Terphenyl-d14 | 36.0 | | " | 32.7 | | 110 | 41.7-139 | | | |

LCS Dup (1101206-BSD1)

Prepared: 10/12/11 Analyzed: 10/16/11

| | | | | | | | | | | |
|---------------------------------|------|------|-------|------|--|------|----------|------|----|--|
| Acenaphthene | 34.4 | 5.00 | ug/kg | 33.3 | | 103 | 30-120 | 5.95 | 30 | |
| Acenaphthylene | 34.5 | 5.00 | " | 33.3 | | 103 | 30-120 | 5.04 | 30 | |
| Anthracene | 36.2 | 5.00 | " | 33.3 | | 109 | 30-120 | 6.13 | 30 | |
| Benzo (a) anthracene | 34.9 | 5.00 | " | 33.3 | | 105 | 30-120 | 6.29 | 30 | |
| Benzo (b) fluoranthene | 33.8 | 5.00 | " | 33.3 | | 101 | 30-120 | 6.19 | 30 | |
| Benzo (k) fluoranthene | 32.4 | 5.00 | " | 33.3 | | 97.2 | 30-120 | 6.04 | 30 | |
| Benzo (g,h,i) perylene | 29.6 | 5.00 | " | 33.3 | | 88.8 | 30-120 | 12.5 | 30 | |
| Benzo (a) pyrene | 34.2 | 5.00 | " | 33.3 | | 103 | 30-120 | 6.40 | 30 | |
| Chrysene | 31.6 | 5.00 | " | 33.3 | | 94.7 | 30-120 | 6.49 | 30 | |
| Dibenz (a,h) anthracene | 28.7 | 10.0 | " | 33.3 | | 86.2 | 30-120 | 10.1 | 30 | |
| Fluoranthene | 35.4 | 5.00 | " | 33.3 | | 106 | 30-120 | 4.83 | 30 | |
| Fluorene | 35.6 | 5.00 | " | 33.3 | | 107 | 30-120 | 5.18 | 30 | |
| Indeno (1,2,3-cd) pyrene | 28.9 | 10.0 | " | 33.3 | | 86.7 | 30-120 | 10.8 | 30 | |
| Naphthalene | 33.5 | 5.00 | " | 33.3 | | 100 | 30-120 | 5.60 | 30 | |
| Phenanthrene | 34.6 | 5.00 | " | 33.3 | | 104 | 30-120 | 6.46 | 30 | |
| Pyrene | 34.2 | 5.00 | " | 33.3 | | 103 | 30-120 | 6.70 | 30 | |
| Surrogate: Nitrobenzene-d5 | 35.0 | | " | 33.3 | | 105 | 21.8-138 | | | |
| Surrogate: 2-Fluorobiphenyl | 37.1 | | " | 33.1 | | 112 | 31.2-131 | | | |
| Surrogate: 2,4,6-Tribromophenol | 21.3 | | " | 33.3 | | 64.0 | 44.5-144 | | | |
| Surrogate: Terphenyl-d14 | 36.8 | | " | 32.7 | | 113 | 41.7-139 | | | |

Matrix Spike (1101206-MS1)

Source: R110066-02

Prepared: 10/12/11 Analyzed: 10/16/11

| | | | | | | | | | | |
|-------------------------|------|------|-------|------|------|------|--------|--|----|-------|
| Acenaphthene | 28.8 | 5.00 | ug/kg | 33.3 | ND | 86.4 | 30-120 | | 30 | |
| Acenaphthylene | 48.7 | 5.00 | " | 33.3 | 32.3 | 49.2 | 30-120 | | 30 | |
| Anthracene | 50.8 | 5.00 | " | 33.3 | 30.6 | 60.5 | 30-120 | | 30 | |
| Benzo (a) anthracene | 76.4 | 5.00 | " | 33.3 | ND | 229 | 30-120 | | 30 | QM-07 |
| Benzo (b) fluoranthene | 49.6 | 5.00 | " | 33.3 | 46.7 | 8.77 | 30-120 | | 30 | QM-07 |
| Benzo (k) fluoranthene | 50.2 | 5.00 | " | 33.3 | 44.0 | 18.7 | 30-120 | | 30 | QM-07 |
| Benzo (g,h,i) perylene | 80.5 | 5.00 | " | 33.3 | ND | 242 | 30-120 | | 30 | QM-07 |
| Benzo (a) pyrene | 46.9 | 5.00 | " | 33.3 | ND | 141 | 30-120 | | 30 | QM-07 |
| Chrysene | 214 | 5.00 | " | 33.3 | 8.66 | 615 | 30-120 | | 30 | QM-07 |
| Dibenz (a,h) anthracene | 32.2 | 10.0 | " | 33.3 | ND | 96.5 | 30-120 | | 30 | |

Summit Scientific

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike | Source | | %REC | | RPD | Notes |
|---------|-----------|-------|-------|-------|--------|------|--------|-----|-------|-------|
| | Result | Limit | Units | Level | Result | %REC | Limits | RPD | Limit | |

Batch 1101206 - EPA 5030 Soil MS

| Matrix Spike (1101206-MS1) | Source: R110066-02 | | | Prepared: 10/12/11 | Analyzed: 10/16/11 | | | | | | |
|---------------------------------|--------------------|------|-------|--------------------|--------------------|------|----------|--|--|----|-------|
| Fluoranthene | 24.9 | 5.00 | ug/kg | 33.3 | ND | 74.6 | 30-120 | | | 30 | |
| Fluorene | 31.9 | 5.00 | " | 33.3 | ND | 95.6 | 30-120 | | | 30 | |
| Indeno (1,2,3-cd) pyrene | 25.8 | 10.0 | " | 33.3 | ND | 77.4 | 30-120 | | | 30 | |
| Naphthalene | 30.3 | 5.00 | " | 33.3 | ND | 90.9 | 30-120 | | | 30 | |
| Phenanthrene | 36.6 | 5.00 | " | 33.3 | ND | 110 | 30-120 | | | 30 | |
| Pyrene | 69.4 | 5.00 | " | 33.3 | ND | 208 | 30-120 | | | 30 | QM-07 |
| Surrogate: Nitrobenzene-d5 | 31.5 | | " | 33.3 | | 94.6 | 21.8-138 | | | | |
| Surrogate: 2-Fluorobiphenyl | 34.8 | | " | 33.1 | | 105 | 31.2-131 | | | | |
| Surrogate: 2,4,6-Tribromophenol | 47.7 | | " | 33.3 | | 143 | 44.5-144 | | | | |
| Surrogate: Terphenyl-dl4 | 40.1 | | " | 32.7 | | 123 | 41.7-139 | | | | |

| Matrix Spike Dup (1101206-MSD1) | Source: R110066-02 | | | Prepared: 10/12/11 | Analyzed: 10/16/11 | | | | | | |
|---------------------------------|--------------------|------|-------|--------------------|--------------------|------|----------|------|--|----|-------|
| Acenaphthene | 30.9 | 5.00 | ug/kg | 33.3 | ND | 92.7 | 30-120 | 7.02 | | 30 | |
| Acenaphthylene | 40.1 | 5.00 | " | 33.3 | 32.3 | 23.6 | 30-120 | 19.2 | | 30 | QM-07 |
| Anthracene | 43.6 | 5.00 | " | 33.3 | 30.6 | 39.0 | 30-120 | 15.2 | | 30 | |
| Benzo (a) anthracene | 35.1 | 5.00 | " | 33.3 | ND | 105 | 30-120 | 74.1 | | 30 | QM-07 |
| Benzo (b) fluoranthene | 33.8 | 5.00 | " | 33.3 | 46.7 | NR | 30-120 | 37.9 | | 30 | QM-07 |
| Benzo (k) fluoranthene | 28.9 | 5.00 | " | 33.3 | 44.0 | NR | 30-120 | 53.8 | | 30 | QM-07 |
| Benzo (g,h,i) perylene | 53.6 | 5.00 | " | 33.3 | ND | 161 | 30-120 | 40.2 | | 30 | QM-07 |
| Benzo (a) pyrene | 36.3 | 5.00 | " | 33.3 | ND | 109 | 30-120 | 25.6 | | 30 | |
| Chrysene | 72.4 | 5.00 | " | 33.3 | 8.66 | 191 | 30-120 | 98.8 | | 30 | QM-07 |
| Dibenz (a,h) anthracene | 28.0 | 10.0 | " | 33.3 | ND | 83.9 | 30-120 | 14.0 | | 30 | |
| Fluoranthene | 33.5 | 5.00 | " | 33.3 | ND | 100 | 30-120 | 29.6 | | 30 | |
| Fluorene | 37.1 | 5.00 | " | 33.3 | ND | 111 | 30-120 | 15.0 | | 30 | |
| Indeno (1,2,3-cd) pyrene | 24.9 | 10.0 | " | 33.3 | ND | 74.6 | 30-120 | 3.74 | | 30 | |
| Naphthalene | 31.1 | 5.00 | " | 33.3 | ND | 93.4 | 30-120 | 2.74 | | 30 | |
| Phenanthrene | 29.4 | 5.00 | " | 33.3 | ND | 88.3 | 30-120 | 21.7 | | 30 | |
| Pyrene | 37.5 | 5.00 | " | 33.3 | ND | 112 | 30-120 | 59.8 | | 30 | QM-07 |
| Surrogate: Nitrobenzene-d5 | 29.0 | | " | 33.3 | | 86.9 | 21.8-138 | | | | |
| Surrogate: 2-Fluorobiphenyl | 34.8 | | " | 33.1 | | 105 | 31.2-131 | | | | |
| Surrogate: 2,4,6-Tribromophenol | 45.6 | | " | 33.3 | | 137 | 44.5-144 | | | | |
| Surrogate: Terphenyl-dl4 | 35.6 | | " | 32.7 | | 109 | 41.7-139 | | | | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 1101207 - EPA 3050B

Blank (1101207-BLK1)

Prepared: 10/12/11 Analyzed: 10/13/11

| | | | |
|----------|----|-------|-------|
| Arsenic | ND | 0.100 | mg/kg |
| Barium | ND | 5.00 | " |
| Cadmium | ND | 0.100 | " |
| Chromium | ND | 0.100 | " |
| Copper | ND | 0.500 | " |
| Lead | ND | 0.500 | " |
| Nickel | ND | 0.500 | " |
| Selenium | ND | 0.100 | " |
| Silver | ND | 0.100 | " |
| Zinc | ND | 5.00 | " |

LCS (1101207-BS1)

Prepared: 10/12/11 Analyzed: 10/13/11

| | | | | | | | |
|----------|-------|-------|-------|------|------|--------|----|
| Arsenic | 2.51 | 0.100 | mg/kg | 2.54 | 98.7 | 80-120 | 20 |
| Barium | 241 | 5.00 | " | 224 | 108 | 80-120 | 20 |
| Cadmium | 0.993 | 0.100 | " | 1.02 | 97.9 | 80-120 | 20 |
| Chromium | 10.0 | 0.100 | " | 10.0 | 99.5 | 80-120 | 20 |
| Copper | 21.1 | 0.500 | " | 20.0 | 105 | 80-120 | 20 |
| Lead | 73.1 | 0.500 | " | 75.0 | 97.5 | 80-120 | 20 |
| Nickel | 15.2 | 0.500 | " | 15.1 | 101 | 80-120 | 20 |
| Selenium | 1.07 | 0.100 | " | 1.15 | 92.9 | 80-120 | 20 |
| Silver | 1.34 | 0.100 | " | 1.54 | 86.9 | 80-120 | 20 |
| Zinc | 78.1 | 5.00 | " | 75.0 | 104 | 80-120 | 20 |

LCS Dup (1101207-BSD1)

Prepared: 10/12/11 Analyzed: 10/13/11

| | | | | | | | | |
|----------|-------|-------|-------|------|------|--------|------|----|
| Arsenic | 2.25 | 0.100 | mg/kg | 2.54 | 88.6 | 80-120 | 10.8 | 20 |
| Barium | 209 | 5.00 | " | 224 | 93.2 | 80-120 | 14.3 | 20 |
| Cadmium | 0.897 | 0.100 | " | 1.02 | 88.3 | 80-120 | 10.2 | 20 |
| Chromium | 9.10 | 0.100 | " | 10.0 | 90.5 | 80-120 | 9.44 | 20 |
| Copper | 21.8 | 0.500 | " | 20.0 | 109 | 80-120 | 2.99 | 20 |
| Lead | 70.8 | 0.500 | " | 75.0 | 94.4 | 80-120 | 3.20 | 20 |
| Nickel | 15.5 | 0.500 | " | 15.1 | 102 | 80-120 | 1.68 | 20 |
| Selenium | 0.981 | 0.100 | " | 1.15 | 85.3 | 80-120 | 8.53 | 20 |
| Silver | 1.57 | 0.100 | " | 1.54 | 101 | 80-120 | 15.5 | 20 |
| Zinc | 69.9 | 5.00 | " | 75.0 | 93.1 | 80-120 | 11.1 | 20 |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 1101207 - EPA 3050B

| Matrix Spike (1101207-MS1) | | Source: R110066-01 | | | Prepared: 10/12/11 | | Analyzed: 10/13/11 | | | | |
|-----------------------------------|------|---------------------------|-------|-------|--------------------|------|--------------------|----|--|--|-------|
| Arsenic | 5.33 | 0.100 | mg/kg | 2.42 | 3.18 | 89.1 | 75-125 | 25 | | | |
| Barium | 321 | 5.00 | " | 214 | 128 | 90.0 | 75-125 | 25 | | | |
| Cadmium | 1.07 | 0.100 | " | 0.967 | 0.317 | 77.7 | 75-125 | 25 | | | |
| Chromium | 23.7 | 0.100 | " | 9.58 | 14.1 | 100 | 75-125 | 25 | | | |
| Copper | 10.1 | 0.500 | " | 19.1 | 3.64 | 34.0 | 75-125 | 25 | | | QM-07 |
| Lead | 73.7 | 0.500 | " | 71.5 | 11.3 | 87.3 | 75-125 | 25 | | | |
| Nickel | 24.2 | 0.500 | " | 14.4 | 11.7 | 86.9 | 75-125 | 25 | | | |
| Selenium | 1.06 | 0.100 | " | 1.10 | 0.245 | 74.2 | 75-125 | 25 | | | QM-07 |
| Silver | 1.25 | 0.100 | " | 1.47 | 0.0353 | 82.6 | 75-125 | 25 | | | |
| Zinc | 118 | 5.00 | " | 71.5 | 59.2 | 82.0 | 75-125 | 25 | | | |

| Matrix Spike (1101207-MS2) | | Source: R110065-03 | | | Prepared: 10/12/11 | | Analyzed: 10/13/11 | | | | |
|-----------------------------------|-------|---------------------------|-------|------|--------------------|------|--------------------|----|--|--|-------|
| Arsenic | 6.24 | 0.100 | mg/kg | 2.54 | 5.19 | 41.1 | 75-125 | 25 | | | QM-07 |
| Barium | 152 | 5.00 | " | 225 | 25.5 | 56.3 | 75-125 | 25 | | | QM-07 |
| Cadmium | 0.736 | 0.100 | " | 1.02 | 0.0222 | 70.2 | 75-125 | 25 | | | QM-07 |
| Chromium | 10.8 | 0.100 | " | 10.1 | 2.89 | 78.7 | 75-125 | 25 | | | |
| Copper | 27.6 | 0.500 | " | 20.1 | 12.2 | 76.9 | 75-125 | 25 | | | |
| Lead | 61.7 | 0.500 | " | 75.1 | 11.3 | 67.1 | 75-125 | 25 | | | QM-07 |
| Nickel | 20.9 | 0.500 | " | 15.1 | 6.57 | 94.5 | 75-125 | 25 | | | |
| Selenium | 0.924 | 0.100 | " | 1.15 | 0.0352 | 77.2 | 75-125 | 25 | | | |
| Silver | 1.14 | 0.100 | " | 1.55 | 0.000926 | 73.4 | 75-125 | 25 | | | QM-07 |
| Zinc | 186 | 5.00 | " | 75.1 | 164 | 29.1 | 75-125 | 25 | | | QM-07 |

| Matrix Spike Dup (1101207-MSD1) | | Source: R110066-01 | | | Prepared: 10/12/11 | | Analyzed: 10/13/11 | | | | |
|--|-------|---------------------------|-------|-------|--------------------|------|--------------------|------|----|--|-------|
| Arsenic | 4.92 | 0.100 | mg/kg | 2.31 | 3.18 | 75.3 | 75-125 | 8.07 | 25 | | |
| Barium | 287 | 5.00 | " | 205 | 128 | 77.8 | 75-125 | 11.0 | 25 | | |
| Cadmium | 0.972 | 0.100 | " | 0.925 | 0.317 | 70.9 | 75-125 | 9.44 | 25 | | QM-07 |
| Chromium | 20.4 | 0.100 | " | 9.16 | 14.1 | 68.5 | 75-125 | 15.1 | 25 | | QM-07 |
| Copper | 9.16 | 0.500 | " | 18.3 | 3.64 | 30.2 | 75-125 | 10.1 | 25 | | QM-07 |
| Lead | 69.0 | 0.500 | " | 68.3 | 11.3 | 84.4 | 75-125 | 6.60 | 25 | | |
| Nickel | 23.5 | 0.500 | " | 13.8 | 11.7 | 85.7 | 75-125 | 2.98 | 25 | | |
| Selenium | 0.960 | 0.100 | " | 1.05 | 0.245 | 68.3 | 75-125 | 9.68 | 25 | | QM-07 |
| Silver | 1.11 | 0.100 | " | 1.41 | 0.0353 | 76.4 | 75-125 | 11.8 | 25 | | |
| Zinc | 106 | 5.00 | " | 68.3 | 59.2 | 68.6 | 75-125 | 10.5 | 25 | | QM-07 |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Total Metals by EPA SW846 Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 1101207 - EPA 3050B

| Matrix Spike Dup (1101207-MSD2) | Source: R110065-03 | | | Prepared: 10/12/11 | | Analyzed: 10/13/11 | | | | | |
|---------------------------------|--------------------|-------|-------|--------------------|----------|--------------------|--------|------|----|--|-------|
| Arsenic | 15.0 | 0.100 | mg/kg | 2.54 | 5.19 | 386 | 75-125 | 82.5 | 25 | | QM-07 |
| Barium | 20.2 | 5.00 | " | 224 | 25.5 | NR | 75-125 | 153 | 25 | | QM-07 |
| Cadmium | 0.676 | 0.100 | " | 1.02 | 0.0222 | 64.4 | 75-125 | 8.49 | 25 | | QM-07 |
| Chromium | 15.2 | 0.100 | " | 10.0 | 2.89 | 123 | 75-125 | 34.0 | 25 | | QM-07 |
| Copper | 47.2 | 0.500 | " | 20.0 | 12.2 | 175 | 75-125 | 52.5 | 25 | | QM-07 |
| Lead | 65.9 | 0.500 | " | 75.0 | 11.3 | 72.9 | 75-125 | 6.68 | 25 | | QM-07 |
| Nickel | 32.6 | 0.500 | " | 15.1 | 6.57 | 172 | 75-125 | 43.9 | 25 | | QM-07 |
| Selenium | 0.887 | 0.100 | " | 1.15 | 0.0352 | 74.1 | 75-125 | 4.10 | 25 | | QM-07 |
| Silver | 0.696 | 0.100 | " | 1.54 | 0.000926 | 45.0 | 75-125 | 48.1 | 25 | | QM-07 |
| Zinc | 496 | 5.00 | " | 75.0 | 164 | 443 | 75-125 | 91.0 | 25 | | QM-07 |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Total Mercury by EPA SW846 Method 7471/7470 - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|--|-----------|--------|-------|---------------------------------------|--------|---------------------------------------|--------|------|-------|----|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 1101407 - EPA 7471A | | | | | | | | | | | |
| Blank (1101407-BLK1) | | | | Prepared: 10/14/11 Analyzed: 10/17/11 | | | | | | | |
| Mercury | ND | 0.0500 | mg/kg | | | | | | | | |
| LCS (1101407-BS1) | | | | Prepared: 10/14/11 Analyzed: 10/17/11 | | | | | | | |
| Mercury | 3.98 | 0.0500 | mg/kg | 4.00 | 99.4 | 80-120 | | | | 20 | |
| LCS Dup (1101407-BSD1) | | | | Prepared: 10/14/11 Analyzed: 10/17/11 | | | | | | | |
| Mercury | 3.99 | 0.0500 | mg/kg | 4.00 | 99.7 | 80-120 | 0.311 | | | 20 | |
| Matrix Spike (1101407-MS1) | | | | Source: R110076-04 | | Prepared: 10/14/11 Analyzed: 10/17/11 | | | | | |
| Mercury | 1.49 | 0.0500 | mg/kg | 1.49 | 0.0159 | 99.0 | 75-125 | | | 20 | |
| Matrix Spike Dup (1101407-MSD1) | | | | Source: R110076-04 | | Prepared: 10/14/11 Analyzed: 10/17/11 | | | | | |
| Mercury | 2.38 | 0.0500 | mg/kg | 2.37 | 0.0159 | 99.6 | 75-125 | 45.7 | | 20 | |

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|--|-----------|---------|---------------------------|-------------|--------|--|--------|-------|-------|----|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 1101203 - General Preparation | | | | | | | | | | | |
| Duplicate (1101203-DUP1) | | | Source: R110066-01 | | | Prepared: 10/12/11 Analyzed: 10/13/11 | | | | | |
| pH | 8.7 | | pH Units | | 8.7 | | | 0.115 | | 20 | |
| Batch 1101204 - General Preparation | | | | | | | | | | | |
| Duplicate (1101204-DUP1) | | | Source: R110036-01 | | | Prepared & Analyzed: 10/13/11 | | | | | |
| Specific Conductance (EC) | 2.72 | 0.00100 | mmhos/cm | | 2.85 | | | 4.77 | | 20 | |

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Soluble Nutrients by EPA 6020/USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|--|-----------|-------|-------|---------------------------------------|--------|---------------------------------------|--------|------|-------|----|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 1101213 - General Preparation | | | | | | | | | | | |
| Blank (1101213-BLK1) | | | | Prepared: 10/12/11 Analyzed: 10/17/11 | | | | | | | |
| Calcium | ND | 2.50 | mg/kg | | | | | | | | |
| Magnesium | ND | 1.00 | " | | | | | | | | |
| Sodium | ND | 5.00 | " | | | | | | | | |
| LCS (1101213-BS1) | | | | Prepared: 10/12/11 Analyzed: 10/17/11 | | | | | | | |
| Calcium | 183 | 2.50 | mg/kg | 200 | | 91.3 | 70-130 | | | 25 | |
| Magnesium | 72.9 | 1.00 | " | 80.0 | | 91.1 | 70-130 | | | 25 | |
| Sodium | 355 | 5.00 | " | 400 | | 88.8 | 70-130 | | | 25 | |
| LCS Dup (1101213-BSD1) | | | | Prepared: 10/12/11 Analyzed: 10/17/11 | | | | | | | |
| Calcium | 163 | 2.50 | mg/kg | 200 | | 81.4 | 70-130 | 11.5 | | 25 | |
| Magnesium | 68.1 | 1.00 | " | 80.0 | | 85.1 | 70-130 | 6.82 | | 25 | |
| Sodium | 326 | 5.00 | " | 400 | | 81.5 | 70-130 | 8.61 | | 25 | |
| Matrix Spike (1101213-MS1) | | | | Source: R110066-01 | | Prepared: 10/12/11 Analyzed: 10/17/11 | | | | | |
| Calcium | 491 | 2.50 | mg/kg | 242 | 231 | 107 | 70-130 | | | 25 | |
| Magnesium | 121 | 1.00 | " | 97.0 | 46.0 | 77.8 | 70-130 | | | 25 | |
| Sodium | 782 | 5.00 | " | 485 | 318 | 95.5 | 70-130 | | | 25 | |
| Matrix Spike Dup (1101213-MSD1) | | | | Source: R110066-01 | | Prepared: 10/12/11 Analyzed: 10/17/11 | | | | | |
| Calcium | 470 | 2.50 | mg/kg | 244 | 231 | 97.8 | 70-130 | 4.49 | | 25 | |
| Magnesium | 118 | 1.00 | " | 97.7 | 46.0 | 73.8 | 70-130 | 2.85 | | 25 | |
| Sodium | 747 | 5.00 | " | 488 | 318 | 87.8 | 70-130 | 4.51 | | 25 | |

Summit Scientific



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S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: W-4 Water Incident

Project Number: [none]
Project Manager: Tom Peterson

Reported:
10/24/11 15:24

Notes and Definitions

- S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interferences.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

May 10, 2012

Aimee Cole
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: BC - W-4

Enclosed are the results of analyses for samples received by Summit Scientific on 05/08/12 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Ben Shrewsbury
President / Laboratory Director

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4

Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|----------------|----------------|
| SS01@0-6" | R205053-01 | Soil | 05/07/12 13:45 | 05/08/12 16:50 |
| SS02@0-6" | R205053-02 | Soil | 05/07/12 13:50 | 05/08/12 16:50 |
| SS03@0-6" | R205053-03 | Soil | 05/07/12 13:55 | 05/08/12 16:50 |
| SS04@0-6" | R205053-04 | Soil | 05/07/12 14:00 | 05/08/12 16:50 |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S2

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4
Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

R205053

Summit Scientific

741 Corporate Circle Suite 1 • Golden, Colorado 80401
303-277-9310 • 303-277-9531 Fax

Page 1 of 1

Client: LT Environmental, Inc.
 Address: 4600 West 60th Avenue Project Manager: John Cocroft Aimee Cole
 City/State/Zip: Arvada, CO 80003 E-Mail: johnco@ltenv.com aimee@ltenv.com
 Phone: (303) 433-9788 Fax: (303) 433-1432 Project Name: W-4
 Sampler Name: Aimee Cole / Tom Petrus Project Number: Call to Arvada Creek directly

| Sample Description | Date Sampled | Time Sampled | Number of Containers | Preservative | | | Matrix | | Analyze For: | | | | Special Instructions | |
|--|--------------|--------------|----------------------|---|------------------|------|-----------------|--|--------------|-------------------------|-----------------|---------|----------------------|-------|
| | | | | HCl | HNO ₃ | None | Other (Specify) | Groundwater | Soil | Air - Canister Serial # | Other (Specify) | DRO/PRO | | GBTEX |
| SS01606" | 5-7-12 | 1345 | 1 | | X | | | | | X | X | | | |
| SS07606" | 5-7-12 | 1350 | 1 | | X | | | | | X | X | | | |
| SS08006" | 5-7-12 | 1355 | 1 | | X | | | | | X | X | | | |
| SS01606" | 5-7-12 | 1400 | 1 | | X | | | | | X | X | | | |
| R201A06" | 5-7-12 | 1358 | 1 | | X | | | | | | | | | HOLD |
| / | | | | | | | | | | | | | | |
| Relinquished by: <u>Aimee Cole</u> Date/Time: <u>5-9-12 1700</u> | | | | Received by: <u>[Signature]</u> Date/Time: <u>5/9/12 1700</u> | | | | Turn Around Time (Check) Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/> | | | | Notes: | | |
| Relinquished by: _____ Date/Time: _____ | | | | Received by: _____ Date/Time: _____ | | | | Sample Integrity: Temperature Open Receipt: <u>S-1</u> Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | | | | | | |

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4

Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

SS01@0-6"
R205053-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/07/12 13:45

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 100 | 50 | mg/kg | 1 | 2050904 | 05/09/12 | 05/10/12 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | 50 | 50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 13:45

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 98.0 % | | 80-124 | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/07/12 13:45

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 2050903 | 05/09/12 | 05/10/12 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 13:45

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|-------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 118 % | | 67.4-143 | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.3 % | | 77.3-114 | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 96.0 % | | 78.4-125 | " | " | " | " | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4
Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

SS02@0-6"
R205053-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/07/12 13:50

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 100 | 50 | mg/kg | 1 | 2050904 | 05/09/12 | 05/10/12 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 13:50

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: <i>o</i> -Terphenyl | | 108 % | 80-124 | " | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/07/12 13:50

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 2050903 | 05/09/12 | 05/10/12 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 13:50

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 119 % | 67.4-143 | " | " | " | " | " | |
| Surrogate: Toluene-d8 | | 99.6 % | 77.3-114 | " | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 92.6 % | 78.4-125 | " | " | " | " | " | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4

Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

SS03@0-6"
R205053-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/07/12 13:55

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | 1 | 2050904 | 05/09/12 | 05/10/12 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 13:55

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 100 % | 80-124 | " | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/07/12 13:55

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 2050903 | 05/09/12 | 05/10/12 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 13:55

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 117 % | 67.4-143 | " | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.6 % | 77.3-114 | " | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 94.4 % | 78.4-125 | " | " | " | " | " | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4

Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

SS04@0-6"
R205053-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 05/07/12 14:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 630 | 50 | mg/kg | 1 | 2050904 | 05/09/12 | 05/10/12 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | 260 | 50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 14:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 99.1 % | 80-124 | " | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 05/07/12 14:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 2050903 | 05/09/12 | 05/10/12 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 05/07/12 14:00

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|----------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 119 % | 67.4-143 | " | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.0 % | 77.3-114 | " | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 93.8 % | 78.4-125 | " | " | " | " | " | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4
Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|--|-----------|-------|-------|---------------------------------------|--------|--------|----------|-------|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 2050904 - EPA 3550A | | | | | | | | | | | |
| Blank (2050904-BLK1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | | | | | | | | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | | | | | | | | |
| LCS (2050904-BS1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 531 | 50 | mg/kg | 501 | 106 | 85-129 | | | | | |
| LCS Dup (2050904-BSD1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 519 | 50 | mg/kg | 501 | 104 | 85-129 | 2.31 | 11.8 | | | |
| Matrix Spike (2050904-MS1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | |
| Source: R205023-02 | | | | | | | | | | | |
| C10-C28 (TEPH-DRO) | 470 | 50 | mg/kg | 501 | 40.8 | 85.7 | 77.3-134 | | | | |
| Matrix Spike Dup (2050904-MSD1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | |
| Source: R205023-02 | | | | | | | | | | | |
| C10-C28 (TEPH-DRO) | 475 | 50 | mg/kg | 501 | 40.8 | 86.6 | 77.3-134 | 0.944 | 8.39 | | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4
Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 2050903 - EPA 5030 Soil MS

| Blank (2050903-BLK1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | | |
|----------------------------------|--------|--------|-------|---------------------------------------|------|----------|--|--|--|--|--|--|
| Benzene | ND | 0.0050 | mg/kg | | | | | | | | | |
| Toluene | ND | 0.0050 | " | | | | | | | | | |
| Ethylbenzene | ND | 0.0050 | " | | | | | | | | | |
| Xylenes (total) | ND | 0.0050 | " | | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | | | | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0424 | | " | 0.0397 | 107 | 67.4-143 | | | | | | |
| Surrogate: Toluene-d8 | 0.0399 | | " | 0.0400 | 99.8 | 77.3-114 | | | | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0380 | | " | 0.0400 | 94.9 | 78.4-125 | | | | | | |

| LCS (2050903-BS1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | | |
|----------------------------------|--------|--------|-------|---------------------------------------|------|----------|--|--|--|--|--|--|
| Benzene | 0.0736 | 0.0050 | mg/kg | 0.100 | 73.6 | 61-139 | | | | | | |
| Toluene | 0.0779 | 0.0050 | " | 0.100 | 77.9 | 64-132 | | | | | | |
| Ethylbenzene | 0.0821 | 0.0050 | " | 0.100 | 82.1 | 68.7-135 | | | | | | |
| m,p-Xylene | 0.162 | 0.010 | " | 0.200 | 81.2 | 70.4-129 | | | | | | |
| o-Xylene | 0.0805 | 0.0050 | " | 0.100 | 80.5 | 66.9-126 | | | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0420 | | " | 0.0397 | 106 | 67.4-143 | | | | | | |
| Surrogate: Toluene-d8 | 0.0398 | | " | 0.0400 | 99.4 | 77.3-114 | | | | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0407 | | " | 0.0400 | 102 | 78.4-125 | | | | | | |

| LCS Dup (2050903-BSD1) | | | | Prepared: 05/09/12 Analyzed: 05/10/12 | | | | | | | | |
|----------------------------------|--------|--------|-------|---------------------------------------|------|----------|------|------|--|--|--|--|
| Benzene | 0.0759 | 0.0050 | mg/kg | 0.100 | 75.9 | 61-139 | 3.01 | 11.1 | | | | |
| Toluene | 0.0798 | 0.0050 | " | 0.100 | 79.8 | 64-132 | 2.40 | 10.9 | | | | |
| Ethylbenzene | 0.0844 | 0.0050 | " | 0.100 | 84.4 | 68.7-135 | 2.78 | 20 | | | | |
| m,p-Xylene | 0.167 | 0.010 | " | 0.200 | 83.7 | 70.4-129 | 3.06 | 20 | | | | |
| o-Xylene | 0.0826 | 0.0050 | " | 0.100 | 82.6 | 66.9-126 | 2.65 | 20 | | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0417 | | " | 0.0397 | 105 | 67.4-143 | | | | | | |
| Surrogate: Toluene-d8 | 0.0389 | | " | 0.0400 | 97.4 | 77.3-114 | | | | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0397 | | " | 0.0400 | 99.2 | 78.4-125 | | | | | | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4
Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source Result | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|---------------|------|--------|-----|-------|-------|
| | Result | Limit | Units | | | %REC | Limits | RPD | Limit | |

Batch 2050903 - EPA 5030 Soil MS

Matrix Spike (2050903-MS1)

Source: R205023-02

Prepared: 05/09/12 Analyzed: 05/10/12

| | | | | | | | | | | |
|----------------------------------|--------|--------|-------|--------|----|------|----------|--|--|--|
| Benzene | 0.0758 | 0.0050 | mg/kg | 0.100 | ND | 75.8 | 42.9-137 | | | |
| Toluene | 0.0796 | 0.0050 | " | 0.100 | ND | 79.6 | 42.6-130 | | | |
| Ethylbenzene | 0.0837 | 0.0050 | " | 0.100 | ND | 83.7 | 39-133 | | | |
| m,p-Xylene | 0.166 | 0.010 | " | 0.200 | ND | 83.1 | 34.7-134 | | | |
| o-Xylene | 0.0831 | 0.0050 | " | 0.100 | ND | 83.1 | 41.3-126 | | | |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0461 | | " | 0.0397 | | 116 | 67.4-143 | | | |
| Surrogate: Toluene-d8 | 0.0395 | | " | 0.0400 | | 98.7 | 77.3-114 | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0406 | | " | 0.0400 | | 102 | 78.4-125 | | | |

Matrix Spike Dup (2050903-MSD1)

Source: R205023-02

Prepared: 05/09/12 Analyzed: 05/10/12

| | | | | | | | | | | |
|----------------------------------|--------|--------|-------|--------|----|------|----------|-------|------|--|
| Benzene | 0.0754 | 0.0050 | mg/kg | 0.100 | ND | 75.4 | 42.9-137 | 0.476 | 17.9 | |
| Toluene | 0.0783 | 0.0050 | " | 0.100 | ND | 78.3 | 42.6-130 | 1.67 | 11.9 | |
| Ethylbenzene | 0.0817 | 0.0050 | " | 0.100 | ND | 81.7 | 39-133 | 2.43 | 20 | |
| m,p-Xylene | 0.160 | 0.010 | " | 0.200 | ND | 80.1 | 34.7-134 | 3.64 | 20 | |
| o-Xylene | 0.0812 | 0.0050 | " | 0.100 | ND | 81.2 | 41.3-126 | 2.37 | 20 | |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0464 | | " | 0.0397 | | 117 | 67.4-143 | | | |
| Surrogate: Toluene-d8 | 0.0396 | | " | 0.0400 | | 99.1 | 77.3-114 | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0405 | | " | 0.0400 | | 101 | 78.4-125 | | | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - W-4
Project Number: 0345
Project Manager: Aimee Cole

Reported:
05/10/12 16:38

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

August 29, 2012

Tom Peterson
Bonanza Creek Energy
410 17th Street, Suite 1500
Denver, CO 80202
RE: Waldon W-4

Enclosed are the results of analyses for samples received by Summit Scientific on 08/22/12 17:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Joe Egry For Ben Shrewsbury
President / Laboratory Director

S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

ANALYTICAL REPORT FOR SAMPLES

| Sample ID | Laboratory ID | Matrix | Date Sampled | Date Received |
|-----------|---------------|--------|----------------|----------------|
| W-4 #1 | R208147-01 | Soil | 08/21/12 15:30 | 08/22/12 17:10 |
| W-4 #2 | R208147-02 | Soil | 08/21/12 15:35 | 08/22/12 17:10 |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4
Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

W-4 #1
R208147-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 08/21/12 15:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 60 | 50 | mg/kg | 1 | 2082304 | 08/23/12 | 08/28/12 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 08/21/12 15:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 97.2 % | 30-150 | " | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 08/21/12 15:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 2082302 | 08/23/12 | 08/24/12 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 08/21/12 15:30

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 96.7 % | 30-150 | " | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.9 % | 30-150 | " | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 93.2 % | 30-150 | " | " | " | " | " | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

W-4 #2
R208147-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 08/21/12 15:35

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|--------------------|--------|-----------------|-------|----------|---------|----------|----------|------------------------|-------|
| C10-C28 (TEPH-DRO) | 120 | 50 | mg/kg | 1 | 2082304 | 08/23/12 | 08/28/12 | 8015 Full Carbon Chain | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | " | " | " | " | " | |

Date Sampled: 08/21/12 15:35

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: o-Terphenyl | | 95.8 % | 30-150 | " | " | " | " | " | |

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 08/21/12 15:35

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|-----------------------------|--------|-----------------|-------|----------|---------|----------|----------|-----------|-------|
| Benzene | ND | 0.0050 | mg/kg | 1 | 2082302 | 08/23/12 | 08/24/12 | EPA 8260B | |
| Toluene | ND | 0.0050 | " | " | " | " | " | " | |
| Ethylbenzene | ND | 0.0050 | " | " | " | " | " | " | |
| Xylenes (total) | ND | 0.0050 | " | " | " | " | " | " | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | " | " | " | " | " | |

Date Sampled: 08/21/12 15:35

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------------------------------|--------|-----------------|--------|----------|-------|----------|----------|--------|-------|
| Surrogate: 1,2-Dichloroethane-d4 | | 96.6 % | 30-150 | " | " | " | " | " | |
| Surrogate: Toluene-d8 | | 97.0 % | 30-150 | " | " | " | " | " | |
| Surrogate: 4-Bromofluorobenzene | | 94.6 % | 30-150 | " | " | " | " | " | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---|-----------|-------|-------|---------------------------------------|--------|------|--------|-------|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 2082304 - EPA 3550A | | | | | | | | | | | |
| Blank (2082304-BLK1) | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | | | | | | | | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | | | | | | | | |
| Blank (2082304-BLK2) | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | ND | 50 | mg/kg | | | | | | | | |
| C28-C36 (TEPH-ORO) | ND | 50 | " | | | | | | | | |
| LCS (2082304-BS1) | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 476 | 50 | mg/kg | 501 | | 95.0 | 77-133 | | | | |
| LCS (2082304-BS2) | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 582 | 50 | mg/kg | 501 | | 116 | 77-133 | | | | |
| LCS Dup (2082304-BSD1) | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 489 | 50 | mg/kg | 501 | | 97.6 | 77-133 | 2.78 | 11 | | |
| LCS Dup (2082304-BSD2) | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 578 | 50 | mg/kg | 501 | | 115 | 77-133 | 0.577 | 11 | | |
| Matrix Spike (2082304-MS1) Source: R208115-01 | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 4870 | 50 | mg/kg | 496 | 3550 | 265 | 68-141 | | | | QM-4X |
| Matrix Spike (2082304-MS2) Source: R208118-02 | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 3250 | 50 | mg/kg | 499 | 3090 | 31.3 | 68-141 | | | | QM-4X |
| Matrix Spike Dup (2082304-MSD1) Source: R208115-01 | | | | Prepared: 08/23/12 Analyzed: 08/24/12 | | | | | | | |
| C10-C28 (TEPH-DRO) | 4500 | 50 | mg/kg | 501 | 3550 | 190 | 68-141 | 7.79 | 23 | | QM-4X |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|--|-----------|-------|-------|-------------|--------|------|--------|------|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 2082304 - EPA 3550A | | | | | | | | | | | |
| Matrix Spike Dup (2082304-MSD2) | | | | | | | | | | | |
| C10-C28 (TEPH-DRO) | 2800 | 50 | mg/kg | 498 | 3090 | NR | 68-141 | 14.7 | 23 | | QM-4X |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 2082302 - EPA 5030 Soil MS

Blank (2082302-BLK1)

Prepared & Analyzed: 08/23/12

| | | | | | | | | | | | |
|---|---------------|--------|-------|---------------|-------------|---------------|--|--|--|--|--|
| Benzene | ND | 0.0050 | mg/kg | | | | | | | | |
| Toluene | ND | 0.0050 | " | | | | | | | | |
| Ethylbenzene | ND | 0.0050 | " | | | | | | | | |
| Xylenes (total) | ND | 0.0050 | " | | | | | | | | |
| Gasoline Range Hydrocarbons | ND | 0.50 | " | | | | | | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>0.0381</i> | | " | <i>0.0397</i> | <i>96.0</i> | <i>30-150</i> | | | | | |
| <i>Surrogate: Toluene-d8</i> | <i>0.0400</i> | | " | <i>0.0400</i> | <i>100</i> | <i>30-150</i> | | | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0383</i> | | " | <i>0.0400</i> | <i>95.8</i> | <i>30-150</i> | | | | | |

LCS (2082302-BS1)

Prepared & Analyzed: 08/23/12

| | | | | | | | | | | | |
|---|---------------|--------|-------|---------------|-------------|---------------|--|--|--|--|--|
| Benzene | 0.0568 | 0.0050 | mg/kg | 0.0600 | 94.8 | 58-126 | | | | | |
| Toluene | 0.0610 | 0.0050 | " | 0.0600 | 102 | 60-132 | | | | | |
| Ethylbenzene | 0.0671 | 0.0050 | " | 0.0600 | 112 | 74-138 | | | | | |
| m,p-Xylene | 0.133 | 0.010 | " | 0.120 | 111 | 72-135 | | | | | |
| o-Xylene | 0.0636 | 0.0050 | " | 0.0600 | 106 | 73-139 | | | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>0.0384</i> | | " | <i>0.0397</i> | <i>96.6</i> | <i>30-150</i> | | | | | |
| <i>Surrogate: Toluene-d8</i> | <i>0.0398</i> | | " | <i>0.0400</i> | <i>99.5</i> | <i>30-150</i> | | | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0392</i> | | " | <i>0.0400</i> | <i>98.0</i> | <i>30-150</i> | | | | | |

LCS Dup (2082302-BSD1)

Prepared & Analyzed: 08/23/12

| | | | | | | | | | | | |
|---|---------------|--------|-------|---------------|-------------|---------------|------|----|--|--|--|
| Benzene | 0.0560 | 0.0050 | mg/kg | 0.0600 | 93.3 | 58-126 | 1.54 | 13 | | | |
| Toluene | 0.0591 | 0.0050 | " | 0.0600 | 98.6 | 60-132 | 3.10 | 14 | | | |
| Ethylbenzene | 0.0656 | 0.0050 | " | 0.0600 | 109 | 74-138 | 2.22 | 13 | | | |
| m,p-Xylene | 0.130 | 0.010 | " | 0.120 | 109 | 72-135 | 2.19 | 14 | | | |
| o-Xylene | 0.0616 | 0.0050 | " | 0.0600 | 103 | 73-139 | 3.16 | 13 | | | |
| <i>Surrogate: 1,2-Dichloroethane-d4</i> | <i>0.0371</i> | | " | <i>0.0397</i> | <i>93.4</i> | <i>30-150</i> | | | | | |
| <i>Surrogate: Toluene-d8</i> | <i>0.0392</i> | | " | <i>0.0400</i> | <i>98.1</i> | <i>30-150</i> | | | | | |
| <i>Surrogate: 4-Bromofluorobenzene</i> | <i>0.0384</i> | | " | <i>0.0400</i> | <i>96.0</i> | <i>30-150</i> | | | | | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 2082302 - EPA 5030 Soil MS

Matrix Spike (2082302-MS1)

Source: R208118-02

Prepared & Analyzed: 08/23/12

| | | | | | | | | | | | |
|----------------------------------|--------|--------|-------|--------|-------|------|--------|--|--|--|-------|
| Benzene | 0.0583 | 0.0050 | mg/kg | 0.0600 | ND | 97.2 | 33-127 | | | | |
| Toluene | 0.539 | 0.0050 | " | 0.0600 | 0.367 | 286 | 32-131 | | | | QM-4X |
| Ethylbenzene | 0.889 | 0.0050 | " | 0.0600 | 0.582 | 512 | 24-153 | | | | QM-4X |
| m,p-Xylene | 2.92 | 0.010 | " | 0.120 | 5.70 | NR | 12-157 | | | | QM-4X |
| o-Xylene | 1.63 | 0.0050 | " | 0.0600 | 2.79 | NR | 35-149 | | | | QM-4X |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0384 | | " | 0.0397 | | 96.6 | 30-150 | | | | |
| Surrogate: Toluene-d8 | 0.0381 | | " | 0.0400 | | 95.2 | 30-150 | | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0432 | | " | 0.0400 | | 108 | 30-150 | | | | |

Matrix Spike Dup (2082302-MSD1)

Source: R208118-02

Prepared & Analyzed: 08/23/12

| | | | | | | | | | | | |
|----------------------------------|--------|--------|-------|--------|-------|------|--------|------|----|--|-------|
| Benzene | 0.0746 | 0.0050 | mg/kg | 0.0600 | ND | 124 | 33-127 | 24.6 | 33 | | |
| Toluene | 0.591 | 0.0050 | " | 0.0600 | 0.367 | 373 | 32-131 | 9.20 | 31 | | QM-4X |
| Ethylbenzene | 0.995 | 0.0050 | " | 0.0600 | 0.582 | 688 | 24-153 | 11.2 | 23 | | QM-4X |
| m,p-Xylene | 3.22 | 0.010 | " | 0.120 | 5.70 | NR | 12-157 | 9.71 | 67 | | QM-4X |
| o-Xylene | 1.82 | 0.0050 | " | 0.0600 | 2.79 | NR | 35-149 | 10.9 | 38 | | QM-4X |
| Surrogate: 1,2-Dichloroethane-d4 | 0.0366 | | " | 0.0397 | | 92.1 | 30-150 | | | | |
| Surrogate: Toluene-d8 | 0.0374 | | " | 0.0400 | | 93.4 | 30-150 | | | | |
| Surrogate: 4-Bromofluorobenzene | 0.0446 | | " | 0.0400 | | 112 | 30-150 | | | | |

Summit Scientific

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S₂

Bonanza Creek Energy
410 17th Street, Suite 1500
Denver CO, 80202

Project: Waldon W-4

Project Number: [none]
Project Manager: Tom Peterson

Reported:
08/29/12 12:00

Notes and Definitions

QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration. The QC batch was accepted based on LCS and/or LCSD recoveries within the acceptance limits.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

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Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

November 12, 2012

John Cocroft
LT Environmental, Inc.
4600 West 60th Avenue
Arvada, CO 80003
RE: BC - McCallum Unit W-4

Enclosed are the results of analyses for samples received by Summit Scientific on 11/08/12 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
President / Laboratory Manager

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - McCallum Unit W-4

Project Number: 0345-12008
Project Manager: John Cocroft

Reported:
11/12/12 10:16

BG01@6"
R211056-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 11/07/12 13:40

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|---------|--------|-----------------|-----------|----------|---------|----------|----------|----------|-------|
| Arsenic | 3.61 | 0.0955 | mg/kg dry | 1 | 2110903 | 11/09/12 | 11/10/12 | EPA 6020 | |

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 11/07/12 13:40

| Analyte | Result | Reporting Limit | Units | Dilution | Batch | Prepared | Analyzed | Method | Notes |
|----------|--------|-----------------|-------|----------|---------|----------|----------|---------------|-------|
| % Solids | 84.9 | | % | 1 | 2110905 | 11/09/12 | 11/09/12 | % calculation | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - McCallum Unit W-4

Project Number: 0345-12008
Project Manager: John Cocroft

Reported:
11/12/12 10:16

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|--|-----------|--------|-----------|-------------------------------|--------|--------|--------|------|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |
| Batch 2110903 - EPA 3050B | | | | | | | | | | | |
| Blank (2110903-BLK1) | | | | Prepared & Analyzed: 11/09/12 | | | | | | | |
| Arsenic | ND | 0.100 | mg/kg wet | | | | | | | | |
| LCS (2110903-BS1) | | | | Prepared & Analyzed: 11/09/12 | | | | | | | |
| Arsenic | 2.78 | 0.100 | mg/kg wet | 2.54 | 110 | 81-121 | | | | | |
| LCS Dup (2110903-BSD1) | | | | Prepared & Analyzed: 11/09/12 | | | | | | | |
| Arsenic | 2.81 | 0.100 | mg/kg wet | 2.54 | 111 | 81-121 | 1.04 | 14 | | | |
| Matrix Spike (2110903-MS1) | | | | Prepared & Analyzed: 11/09/12 | | | | | | | |
| Source: R211043-23 | | | | | | | | | | | |
| Arsenic | 3.15 | 0.0897 | mg/kg dry | 2.28 | 0.874 | 100 | 10-173 | | | | |
| Matrix Spike Dup (2110903-MSD1) | | | | Prepared & Analyzed: 11/09/12 | | | | | | | |
| Source: R211043-23 | | | | | | | | | | | |
| Arsenic | 3.21 | 0.0898 | mg/kg dry | 2.28 | 0.874 | 102 | 10-173 | 1.72 | 26 | | |

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - McCallum Unit W-4

Project Number: 0345-12008
Project Manager: John Cocroft

Reported:
11/12/12 10:16

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

| Analyte | Reporting | | | Spike Level | Source | | %REC | | RPD | | Notes |
|---------|-----------|-------|-------|-------------|--------|------|--------|-----|-------|--|-------|
| | Result | Limit | Units | | Result | %REC | Limits | RPD | Limit | | |

Batch 2110905 - General Preparation

| Duplicate (2110905-DUP1) | Source: R211055-01 | | | Prepared & Analyzed: 11/09/12 | | | | | | | | |
|--------------------------|--------------------|--|---|-------------------------------|------|--|--|--|-------|--|----|--|
| % Solids | 97.4 | | % | | 97.9 | | | | 0.512 | | 20 | |

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

S₂

LT Environmental, Inc.
4600 West 60th Avenue
Arvada CO, 80003

Project: BC - McCallum Unit W-4

Project Number: 0345-12008
Project Manager: John Cocroft

Reported:
11/12/12 10:16

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific



The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.