**Bronco Utah Operations LLC**
P.O. Box 527
Emery Utah, 84522
(435) 286-2447

July 10, 2017

Daron Haddock
Utah Division of Oil, Gas and Mining
Coal Program
1594 West North Temple, Suite 1210
Box 145801
Salt Lake City, Utah 84114-5801

Re: Bronco Utah Operations, LLC.
Emery Mine
DOGM Permit No. C/015/015
Annual Report Soil Sample Deficiency – Task ID #5426

Dear Mr. Haddock:

As requested by your June 30, 2017 letter, attached, please find the requested August 30, 2016 soil sampling results.

Please feel free to contact me with any comments or questions.

Sincerely,

Kit Pappas
Environmental Manager

Office - 435-286-2027
Cell – 435-650-7339
jpappas@broncoutah.com

Attachments: BroncoUtahS1609019.pdf & BroncoUtahS1609019.xls

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

**Date:** 9/26/2016

**CLIENT:** Bronco Utah Operations, LLC
**Project:** Emery #2 Construction as per PB
**Lab Order:** S1609019

# CASE NARRATIVE

**Report ID:** S1609019001

Samples Alluvium, Reclaim Tunnel, and Sed Pond 3 were received on September 1, 2016.

Samples were analyzed using the methods outlined in the following references:

U.S.E.P.A. 600/2-78-054 "Field and Laboratory Methods Applicable to Overburden and Mining Soils", 1978
American Society of Agronomy, Number 9, Part 2, 1982
USDA Handbook 60 "Diagnosis and Improvement of Saline and Alkali Soils", 1969
Wyoming Department of Environmental Quality, Land Quality Division, Guideline No. 1, 1984
New Mexico Overburden and Soils Inventory and Handling Guideline, March 1987
State of Utah, Division of Oil, Gas, and Mining: Guidelines for Management of Topsoil and Overburden for Underground and Surface Coal Mining, April 1988
Montana Department of State Lands, Reclamation Division: Soil, Overburden, and Regraded Spoil Guidelines, December 1994
State of Nevada Modified Sobek Procedure
Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, 3rd Edition

All Quality Control parameters met the acceptance criteria defined by EPA and Inter-Mountain Laboratories except as indicated in this case narrative.

Reviewed by: Karen A Secor
Karen Secor, Soil Lab Supervisor

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

**Soil Analysis Report**

**Bronco Utah Operations, LLC**

P.O. Box 527
550 West Consol Mine Road
Emery, UT 84522

Report ID: S1609019001

Project: Emery #2 Construction as per PB

Date Received: 9/1/2016

Date Reported: 9/26/2016

Work Order: S1609019

| Lab ID | Sample ID | pH | Saturation | Electrical Conductivity | Field Capacity | Wilting Point | Organic Matter LOI | CaCO3 |
|---|---|---|---|---|---|---|---|---|
| | | s.u. | % | dS/m | % | % | % | % |
| S1609019-001 | Sed Pond 3 | 8.0 | 30.4 | 2.98 | 24.9 | 4.8 | 1.9 | 12.6 |
| S1609019-002 | Reclaim Tunnel | 8.5 | 32.6 | 11.2 | 26.7 | 5.9 | 1.5 | 13.0 |
| S1609019-003 | Alluvium | 7.8 | 30.6 | 6.06 | 21.2 | 6.5 | 6.0 | 9.0 |

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

**Soil Analysis Report**

**Bronco Utah Operations, LLC**

P.O. Box 527
550 West Consol Mine Road
Emery, UT 84522

Report ID: S1609019001

Project: Emery #2 Construction as per PB

Date Received: 9/1/2016

Date Reported: 9/26/2016

Work Order: S1609019

| Lab ID | Sample ID | Calcium PE meq/L | Magnesium PE meq/L | Potassium PE meq/L | Sodium PE meq/L | SAR | Sand % | Silt % | Clay % | Texture | Very Fine Sand % |
|---|---|---|---|---|---|---|---|---|---|---|---|
| S1609019-001 | Sed Pond 3 | 27.0 | 6.63 | 1.01 | 7.23 | 1.76 | 58.0 | 29.0 | 13.0 | Sandy Loam | 7.8 |
| S1609019-002 | Reclaim Tunnel | 25.7 | 32.2 | 1.84 | 101 | 18.8 | 56.0 | 29.0 | 15.0 | Sandy Loam | 5.7 |
| S1609019-003 | Alluvium | 27.1 | 27.8 | 1.83 | 28.2 | 5.37 | 66.0 | 19.0 | 15.0 | Sandy Loam | 2.4 |

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

**Soil Analysis Report**

**Bronco Utah Operations, LLC**

P.O. Box 527
550 West Consol Mine Road
Emery, UT 84522

Report ID: S1609019001

Project: Emery #2 Construction as per PB

Date Received: 9/1/2016

Date Reported: 9/26/2016

Work Order: S1609019

| Lab ID | Sample ID | Boron | Phosphorus | Selenium | Nitrate(as N) | CEC | Available Potassium | Available Sodium | Exchangeable Sodium | ESP |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ppm | ppm | ppm | ppm | meq/100g | meq/100g | meq/100g | meq/100g | % |
| S1609019-001 | Sed Pond 3 | 1.00 | 9 | <0.02 | 0.9 | | 0.39 | | | |
| S1609019-002 | Reclaim Tunnel | 3.22 | 6 | <0.02 | 9.5 | 6.75 | 0.59 | 5.54 | 2.25 | 33.3 |
| S1609019-003 | Alluvium | 2.27 | 6 | <0.02 | 9.2 | | 0.63 | | | |

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor

Inter-Mountain Labs
1673 Terra Avenue, Sheridan, Wyoming 82801 ph: (307) 672-8945

Your Environmental Monitoring Partner

**Soil Analysis Report**

**Bronco Utah Operations, LLC**

P.O. Box 527
550 West Consol Mine Road
Emery, UT 84522

Report ID: S1609019001

Project: Emery #2 Construction as per PB

Date Received: 9/1/2016

Date Reported: 9/26/2016

Work Order: S1609019

| Lab ID | Sample ID | Total Carbon % | TOC % | Total Sulfur % | T.S. AB t/1000t | Neutral. Potential t/1000t | T.S. ABP t/1000t |
|---|---|---|---|---|---|---|---|
| S1609019-001 | Sed Pond 3 | 2.5 | 1.0 | 0.15 | 4.72 | 126 | 121 |
| S1609019-002 | Reclaim Tunnel | 2.1 | 0.5 | 0.22 | 6.96 | 130 | 123 |
| S1609019-003 | Alluvium | 4.9 | 3.9 | 0.49 | 15.4 | 90.1 | 74.8 |

These results apply only to the samples tested.

Abbreviations for extractants: PE= Saturated Paste Extract, H20Sol= water soluble,AB-DTPA= Ammonium Bicarbonate-DTPA, AAO= Acid Ammonium Oxalate
Abbreviations used in acid base accounting: T.S.= Total Sulfur, AB= Acid Base, ABP= Acid Base Potential, PyrS= Pyritic Sulfur, Pyr+Org= Pyritic Sulfur + Organic Sulfur, Neutral. Pot.= Neutralization Potential
Miscellaneous Abbreviations: SAR= Sodium Adsorption Ratio, CEC= Cation Exchange Capacity, ESP= Exchangeable Sodium Percentage

Reviewed by: Karen A Secor

Karen Secor, Soil Lab Supervisor

Inter-Mountain Labs, Inc
1673 Terra Ave, Sheridan, Wyoming, 82801
(307) 672-8945

# Soil Analysis Report

**Bronco Utah Operations, LLC**
P.O. Box 527
Emery, Utah 84522

Project ID: Emery #2 Construction as per PB
Date Received: 9/1/2016

Report ID: S1609019001
Date Reported: 9/26/2016
Work Order: S1609019

| Lab ID | Sample ID | Organic Matter % | Sand % | Silt % | Clay % | Very Fine Sand % | Texture | K-factor (t.ac.h/100acft.tf.in) | Structure s | Permeability p | M | Description |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S1609019-001 | Sed Pond 3 | 1.9 | 58.0 | 29.0 | 13.0 | 7.8 | Sandy Loam | 0.15 | 1 | 2 | 3201.6 | |
| S1609019-002 | Reclaim Tunnel | 1.5 | 56.0 | 29.0 | 15.0 | 5.7 | Sandy Loam | 0.14 | 1 | 2 | 2949.5 | |
| S1609019-003 | Alluvium | 6.0 | 66.0 | 19.0 | 15.0 | 2.4 | Sandy Loam | 0.04 | 2 | 2 | 1819.0 | |

These Results apply only to the samples tested.

Reviewed by: Karen A Secor
Karen Secor, Soil Lab Supervisor

# Inter-Mountain Labs

Sheridan, WY and Gillette, WY

## - CHAIN OF CUSTODY RECORD -

Page 1 of 1

*All shaded fields must be completed.*

This is a legal document; any misrepresentation may be construed as fraud.

#WEBBronco090116

| Client Name | Project Identification | Sampler (Signature/Attestation of Authenticity) | Telephone # |
|---|---|---|---|
| BRONCO UTAH OPERATIONS, LLC | EMERY #2 CONSTRUCTION AS PER P.B. | KP | 435-286-2027 |

| Report Address | Contact Name |
|---|---|
| P.O. BOX 527<br>EMERY, UTAH 84522 | KIT PAPPAS<br>Email: jpappas@broncoutah.com<br>Phone: 435-650-7339 |

| Invoice Address | Purchase Order # | Quote # |
|---|---|---|
| P.O. BOX 527<br>EMERY, UTAH 84522 | | 1362 |

ANALYSES / PARAMETERS

| ITEM | LAB ID (Lab Use Only) | DATE SAMPLED | TIME SAMPLED | SAMPLE IDENTIFICATION | Matrix | # of Containers | REMARKS |
|---|---|---|---|---|---|---|---|
| 1 | S1609019-001 | 08/30/16 | 15:00 | SED Pond 3 | | 1 | AS REQUESTED BY |
| 2 | -002 | " | 15:20 | Reclaim Tunnel | | 1 | BOB LONG PER |
| 3 | -003 | " | 15:30 | Alluvium | | 1 | TABLES 3 & 7 |
| 4 | | | | | | | |
| 5 | | | | | | | PLEASE FORWARD |
| 6 | | | | | | | RESULTS TO BOB AT |
| 7 | | | | | | | lrcsoils@msn.com |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |
| 13 | | | | | | | |
| 14 | | | | | | | |

| LAB COMMENTS | Relinquished By (Signature/Printed) | DATE | TIME | Received By (Signature/Printed) | DATE | TIME |
|---|---|---|---|---|---|---|
| | K. PAPPAS | 8-30-16 | | Karen A Secor | 9/1/16 | 1100 |
| | | | | | | |
| | | | | | | |
| | | | | | | |

| SHIPPING INFO | MATRIX CODES | | TURN AROUND TIMES | COMPLIANCE INFORMATION | ADDITIONAL REMARKS |
|---|---|---|---|---|---|
| ☐ UPS | Water | WT | Check desired service | Compliance Monitoring ? Y / N | |
| ☐ FedEx | Soil | SL | ☒ Standard turnaround | Program (SDWA, NPDES,...) | |
| ☐ USPS | Solid | SD | ☐ RUSH - 5 Working Days | PWSID / Permit # | |
| ☐ Hand Carried | Filter | FT | ☐ URGENT - < 2 Working Days | Chlorinated? Y / N | |
| ☐ Other | Other | OT | *Rush & Urgent Surcharges will be applied* | Sample Disposal: Lab ☐ Client ☐ | |

| WorkOrder | LabID | SampleID | Sampled | Begin Dept | End Depth | pH s.u. | Saturation % | Electrical Conductivit dS/m |
|---|---|---|---|---|---|---|---|---|
| S1609019 | S1609019-( | Sed Pond 3 | 8/30/16 | 0 | 0 | 8.0 | 30.4 | 2.98 |
| S1609019 | S1609019-( | Reclaim Tu | 8/30/16 | 0 | 0 | 8.5 | 32.6 | 11.2 |
| S1609019 | S1609019-( | Alluvium | 8/30/16 | 0 | 0 | 7.8 | 30.6 | 6.06 |

| Field Capacity | Wilting Point | Organic Matter | | Calcium | Magnesium | Potassium | Sodium | |
|---|---|---|---|---|---|---|---|---|
| | | LOI | CaCO3 | PE | PE | PE | PE | SAR |
| % | % | % | % | meq/L | meq/L | meq/L | meq/L | |
| 24.9 | 4.8 | 1.9 | 12.6 | 27.0 | 6.63 | 1.01 | 7.23 | 1.76 |
| 26.7 | 5.9 | 1.5 | 13.0 | 25.7 | 32.2 | 1.84 | 101 | 18.8 |
| 21.2 | 6.5 | 6.0 | 9.0 | 27.1 | 27.8 | 1.83 | 28.2 | 5.37 |

| Sand % | Silt % | Clay % | Texture | Very Fine Sand % | Boron ppm | Phosphoru ppm | Selenium ppm | Nitrate(as I ppm |
|---|---|---|---|---|---|---|---|---|
| 58.0 | 29.0 | 13.0 | Sandy Loan | 7.8 | 1.00 | 9 | <0.02 | 0.9 |
| 56.0 | 29.0 | 15.0 | Sandy Loan | 5.7 | 3.22 | 6 | <0.02 | 9.5 |
| 66.0 | 19.0 | 15.0 | Sandy Loan | 2.4 | 2.27 | 6 | <0.02 | 9.2 |

| CEC | Available Potassium | Available Sodium | Exchangeable Sodium | ESP | Total Carbon | TOC | Total Sulfur | T.S. AB |
|---|---|---|---|---|---|---|---|---|
| meq/100g | meq/100g | meq/100g | meq/100g | % | % | % | % | t/1000t |
| | 0.39 | | | | 2.5 | 1.0 | 0.15 | 4.72 |
| 6.75 | 0.59 | 5.54 | 2.25 | 33.3 | 2.1 | 0.5 | 0.22 | 6.96 |
| | 0.63 | | | | 4.9 | 3.9 | 0.49 | 15.4 |

| Neutral. Potential t/1000t | T.S. ABP t/1000t |
|---|---|
| 126 | 121 |
| 130 | 123 |
| 90.1 | 74.8 |