



WYOMING DEPARTMENT OF AGRICULTURE

ANALYTICAL SERVICES

1174 Snowy Range Road

Laramie, WY 82070

Internet: <http://wyagric.state.wy.us/aslab/aslab.htm>

Phone: (307)-742-2984

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ANALYTICAL REPORT

Water Supply

Irrigation, Production Agriculture

Roy Ready
123 S. 12th Street
Thermopolis, WY 82443

Phone No: 307-864-5738

Lab Number: 69563
Date Collected: 17-Mar-2008
Date Received: 19-Mar-2008
Date Completed: 24-Mar-2008

Purchase Order No:

WDA Invoice No 108899

Amount Due: \$ 70.00

Amount Paid: \$ 70.00

Net 30 Days, Payable to: Wyoming Department of Agriculture

Sample ID: Bull Pasture Coal Draw Bridge
Analysis: Irrigation

| ANALYTE | UNITS | RESULT |
|-----------------------|----------|--------|
| Cations | | |
| Calcium | mg/L | 390 |
| Magnesium | mg/L | 59 |
| Sodium | mg/L | 170 |
| Potassium | mg/L | 35 |
| Metals | | |
| Strontium | mg/L | 5.6 |
| Other Analytes | | |
| pH | pH Units | 7.8 |
| Conductivity | umhos/cm | 2700 |

| ANALYTE | UNITS | RESULT |
|-------------------|-------|--------|
| Anions | | |
| Carbonate | mg/L | 0 |
| Bicarbonate | mg/L | 320 |
| Chloride | mg/L | 110 |
| Fluoride | mg/L | 1.7 |
| Nitrate as N | mg/L | <0.05 |
| Nitrite as N | mg/L | <0.05 |
| Sulfate | mg/L | 1200 |
| TDSbySummation | mg/L | 2100 |
| SAR | | 2.1 |
| T. Alk. as CaCO3 | mg/L | 260 |
| Hardness as CaCO3 | mg/L | 1220 |
| Boron | | 0.74 |

| Ref. | Analyte | Method | Units | Result |
|------|---------|--------|-------|--------|
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |

Prepared By: mkw *RWH*

I hereby certify that the above sample was analyzed by myself or my assistant.

Section Supervisor

Marko Smith
State Chemist/Lab Manager



**Wyoming Department of Agriculture
Analytical Services**

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IRRIGATION WATER QUALITY ANALYSIS

| | | | | | |
|---------------------------------|-------------|--------------|----------------------|-------------|--------------|
| Date Received: 19-Mar-08 | | | Lab No: 69563 | | |
| CATIONS | mg/L | meq/L | ANIONS | mg/L | meq/L |
| Calcium | 390.0 | 19.46 | Carbonate | 0.0 | 0.00 |
| Magnesium | 59.0 | 4.85 | Bicarbonate | 320.0 | 5.24 |
| Sodium | 170.0 | 7.39 | Chloride | 110.0 | 3.10 |
| Potassium | 35.0 | 0.90 | Fluoride | 1.7 | 0.09 |
| | | | Nitrate as N | 0.0 | 0.00 |
| | | | Nitrite as N | 0.0 | 0.00 |
| | | | Sulfate | 1200.0 | 24.98 |
| T. CATIONS | | 32.60 | T. ANIONS | | 33.42 |
| Conductance | | 2700 | Boron | | 0.74 |
| TDS by Summation | | 2100 | T Alk CaCO3 | | 260 |
| pH | | 7.8 | | | |

ANALYSIS

| | | | |
|--------------------|------|----------------|------|
| S A R (sodium) | 2.12 | Residual NaCO3 | 0.00 |
| Sp Cond (salinity) | 2700 | Boron | 0.74 |

CLASSIFICATION

| | | | |
|--------------------|---|--|---|
| S A R (sodium) | 1 | Residual Na ₂ CO ₃ | 1 |
| Sp Cond (salinity) | 4 | Boron | 3 |

ERROR CHECKING

$$\% \text{ ERROR} = \frac{|(\text{meq/L cations} - \text{meq/L anions})| * 100}{(\text{meq/L cations} + \text{meq/L anions})} = 1.24 \text{ } (<5\%)$$

$$\text{TDS/COND} = \frac{(\text{ROE mg/L})}{(\text{Specific Conductance})} = 0.78 \text{ } (0.65 \text{ TO } 0.85)$$

$$\text{IONIC} = \frac{(\text{meq/L cations} + \text{meq/L anions})/2}{(\text{Sp. Conductance})/100} = 1.22 \text{ } (0.8 \text{ TO } 1.2)$$

OVERALL = 0.007888 MAX. OVERALL ALLOWED = 0.0531