



# Bison Oil Well Cementing Tail & Lead

**Customer:** Crestone Peak Resources  
**Well Name:** Ruegge 3E-4H-N165

**Date:** 4/30/2018  
**Invoice #** 300120  
**API#** 05-123-46565  
**Foreman:** JASON KELEHER

**County:** Weld  
**State:** Colorado  
**Sec:** 4  
**Twp:** 1N  
**Range:** 65W

**Consultant:** ROBERT  
**Rig Name & Number:** Ensign 122  
**Distance To Location:** 36  
**Units On Location:** 3  
**Time Requested:** 1400  
**Time Arrived On Location:** 1300  
**Time Left Location:** 1930

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625</p> <p>Casing Weight (lb) : 40</p> <p>Casing Depth (ft.) : 2,484</p> <p>Total Depth (ft) : 2505</p> <p>Open Hole Diameter (in) : 13.50</p> <p>Conductor Length (ft) : 98</p> <p>Conductor ID : 15.5</p> <p>Shoe Joint Length (ft) : 78</p> <p>Landing Joint (ft) : 12</p> <p>Sacks of Tail Requested 190</p> <p>HOC Tail (ft):</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: 8</p> <p>Max Pressure: 2000</p>	<p><b>Lead N-Gel-12</b></p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 13.5</p> <p>Cement Yield (cuft) : 1.7</p> <p>Gallons Per Sack 9.00</p> <p>% Excess 15%</p> <p><b>Tail Type III</b></p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 15.2</p> <p>Cement Yield (cuft) : 1.27</p> <p>Gallons Per Sack: 5.89</p> <p>% Excess:</p> <p><b>Fluid Ahead (bbls) 60.0</b></p> <p><b>H2O Wash Up (bbls) 10.0</b></p> <p><b>Spacer Ahead Makeup</b></p> <p>60 BBL WATER DYE IN 2ND 10</p>

Casing ID 8.835	Casing Grade J-55 only used
Lead Calculated Results	Tail Calculated Results
<b>HOC of Lead 1964.00 ft</b>	<b>Tail Cement Volume In Ann 244.35 cuft</b>
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
<b>Volume of Lead Cement 1185.50 cuft</b>	<b>Total Volume of Tail Cement 210.30 Cuft</b>
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
<b>Volume of Conductor 79.90 cuft</b>	<b>bbls of Tail Cement 42.98 bbls</b>
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
<b>Total Volume of Lead Cement 1265.40 cuft</b>	<b>HOC Tail 500.00 ft</b>
(cuft of Lead Cement) + (Cuft of Conductor)	(Tail Cement Volume) ÷ (OH Ann)
<b>bbls of Lead Cement 225.30 bbls</b>	<b>Sacks of Tail Cement 190.00 sk</b>
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	(Total Volume of Tail Cement) ÷ (Cement Yield)
<b>Sacks of Lead Cement 744.00 sk</b>	<b>bbls of Tail Mix Water 28.58 bbls</b>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
<b>bbls of Lead Mix Water 159.43 bbls</b>	<b>Pressure of cement in annulus</b>
(Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Hydrostatic Pressure 585.23 PSI</b>
<b>Displacement 183.30 bbls</b>	<b>Collapse PSI: 2570.00 psi</b>
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	<b>Burst PSI: 3950.00 psi</b>
<b>Total Water Needed: 444.00 bbls</b>	

X

Authorization To Proceed



Customer  
Well Name

Crestone Peak Resources  
Ruegge 3E-4H-N165

Date

INVOICE #

LOCATION

FOREMAN

4/3/2018

0

## Weld

# Matthew Rosales

## Treatment Report Page 2

## DESCRIPTION OF JOB EVENTS

X  
CUSTOMER SIGNATURE

X  
Title

X
Date