



**Bison Oil Well Cementing  
Tail & Lead**

Date: 3/7/2020

Invoice # 200585

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: guttersen d34-769

County: Weld

State: Colorado

Sec: 22

Twp: 3N

Range: 64W

Consultant: jim

Rig Name & Number: H&P 321

Distance To Location: 21

Units On Location: 4047/4033

Time Requested: 100 pm

Time Arrived On Location: 1100 am

Time Left Location:

**WELL DATA**

Casing Size (in) : 9.625  
 Casing Weight (lb) : 36  
 Casing Depth (ft.) : 1,919  
 Total Depth (ft) : 1964  
 Open Hole Diameter (in) : 13.50  
 Conductor Length (ft) : 110  
 Conductor ID : 15.15  
 Shoe Joint Length (ft) : 40  
 Landing Joint (ft) : 3

Sacks of Tail Requested 100  
 HOC Tail (ft): 0

One or the other, cannot have quantity in both

Max Rate: 8  
 Max Pressure: 2500

**Cement Data**

**Lead**

Cement Name: BFN III  
 Cement Density (lb/gal) : 13.5  
 Cement Yield (cuft) : 1.68  
 Gallons Per Sack 8.90  
 % Excess 10%

**Tail Type III**

Cement Name:  
 Cement Density (lb/gal) : 15.2  
 Cement Yield (cuft) : 1.27  
 Gallons Per Sack: 5.80  
 % Excess: 0%

Fluid Ahead (bbls) 30.0  
 H2O Wash Up (bbls) 20.0

**Spacer Ahead Makeup**

30 BBL ahead with Die in 2nd 10

Casing ID

8.921

Casing Grade

J-55 only used

**Lead Calculated Results**

HOC of Lead 1581.67 ft  
 Casing Depth - HOC Tail  
 Volume of Lead Cement 773.01 cuft  
 HOC of Lead X Open Hole Ann  
 Volume of Conductor 82.12 cuft  
 (Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X  
 (Conductor Length ft)  
 Total Volume of Lead Cement 855.13 cuft  
 (cuft of Lead Cement) + (Cuft of Conductor)  
 bbls of Lead Cement 167.53 bbls  
 (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)  
 Sacks of Lead Cement 559.91 sk  
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
 bbls of Lead Mix Water 118.65 bbls  
 (Sacks Needed) X (Gallons Per Sack) ÷ 42  
 Displacement 145.48 bbls  
 (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe  
 Length)  
 Total Water Needed: 327.93 bbls

**Tail Calculated Results**

Tail Cement Volume In Ann 127.00 cuft  
 (HOC Tail) X (OH Ann)  
 Total Volume of Tail Cement 109.64 Cuft  
 (HOC Tail X OH Ann) - ( Shoe Length X Shoe Joint Ann)  
 bbls of Tail Cement 22.62 bbls  
 (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (%  
 Excess)  
 HOC Tail 224.33 ft  
 (Tail Cement Volume) ÷ (OH Ann)  
 Sacks of Tail Cement 100.00 sk  
 (Total Volume of Tail Cement) ÷ (Cement Yield)  
 bbls of Tail Mix Water 13.81 bbls  
 (Sacks of Tail Cement X Gallons Per Sack) ÷ 42  
 Pressure of cement in annulus  
 Hydrostatic Pressure 585.23 PSI  
 Collapse PSI: 2020.00 psi  
 Burst PSI: 3520.00 psi

X

Authorization To Proceed



# SERIES 2000

