



Bison Oil Well Cementing Tail & Lead

Date: 3/8/2020
Invoice # 200586
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: guttersen d34-779

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: 4047/4034/4024
Time Requested: 830 am
Time Arrived On Location: 700 am
Time Left Location: 1:34pm

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft.) : 1,920
Total Depth (ft) : 1965
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 110
Conductor ID : 15.15
Shoe Joint Length (ft) : 40
Landing Joint (ft) : 35

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 1550.67 ft

Casing Depth - HOC Tail

Volume of Lead Cement 757.86 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 839.98 cuft

(cuft of Lead Cement) + (Cuft of Conductor)

bbls of Lead Cement 164.56 bbls

(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)

Sacks of Lead Cement 549.99 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

bbls of Lead Mix Water 116.54 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement 148.03 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe
Length)

Total Water Needed: 328.38 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

