



Bison Oil Well Cementing Tail & Lead

Date: 6/15/2017

Invoice # 200106

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: kona a 19-685

County: Weld

State: Colorado

Sec: 20

Twp: 9n

Range: 58w

Consultant: gary

Rig Name & Number: H&P 517

Distance To Location: 11

Units On Location: 4028/4034

Time Requested: 1200 am

Time Arrived On Location: 1030 pm

Time Left Location: 4:30 pm

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft.) : 1,923
Total Depth (ft) : 1968
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.6
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 35

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

One or the other, cannot have quantity in both

Max Rate:

Max Pressure:

Cement Data

Lead

Cement Name: fn3 gel calcium
Cement Density (lb/gal) : 13.5
Cement Yield (cuft) : 1.7
Gallons Per Sack 9.00
% Excess 15%

Tail

Cement Name: bfn 3
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 0%

Fluid Ahead (bbls) 147.9
H2O Wash Up (bbls) 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead 1588.11 ft
Casing Depth - HOC Tail
Volume of Lead Cement 776.16 cuft
HOC of Lead X Open Hole Ann
Volume of Conductor 65.76 cuft
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X
(Conductor Length ft)
Total Volume of Lead Cement 841.92 cuft
(Total cuft of Lead Cement) + (Cuft of Conductor)
bbls of Lead Cement 172.44 bbls
(Total cuft of Lead Cement) X (.1781) X (1 + % Excess)
Sacks of Lead Cement 569.53 sk
(Total Slurry Volume) : (Cement Yield) X (% Excess Cement)
bbls of Lead Mix Water 122.04 bbls
(Sacks of Lead Cement) X (Gallons Per Sack) : 42
Displacement 147.87 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe
Length)
Total Water Needed: 451.82 bbls

Tail Calculated Results

Tail Cement Volume In Ann 127.00 cuft
(HOC Tail) X (OH Ann)
Total Volume of Tail Cement 107.47 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 219.89 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 14.02 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 Mary Staphuton
Authorization To Proceed

X 6-15-17
Date