



Bison Oil Well Cementing Tail & Lead

Date: 10/7/2017
Invoice #: 200177
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: hullabaloo state y21-716

County: Weld
State: Colorado
Sec: 16
Twp: 2n
Range: 64w
Consultant: dave
Rig Name & Number: H&P 524
Distance To Location: 31
Units On Location: 1
Time Requested: 1030 am
Time Arrived On Location: 900 am
Time Left Location: 7:00 pm

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft.) : 1,983
Total Depth (ft) : 2029
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.25
Shoe Joint Length (ft) : 43
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: 1500

Cement Data

Lead

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

Tail

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

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

Spacer Ahead Makeup

30BBL WATER DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead : 1646.33 ft
Casing Depth - HOC Tail
Volume of Lead Cement : 804.61 cuft
HOC of Lead X Open Hole Ann
Volume of Conductor : 61.05 cuft
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X
(Conductor Length ft)
Total Volume of Lead Cement : 865.66 cuft
(cuft of Lead Cement) + (Cuft of Conductor)
bbls of Lead Cement : 177.30 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
Sacks of Lead Cement : 585.59 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
bbls of Lead Mix Water : 125.48 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42
Displacement : 152.67 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
Total Water Needed: 342.18 bbls

Tail Calculated Results

Tail Cement Volume In Ann : 127.00 cuft
(HOC Tail) X (OH Ann)
Total Volume of Tail Cement : 108.34 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 : 221.67 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

Authorization To Proceed

X 10-7-17
Date