



Bison Oil Well Cementing Tail & Lead

Customer: Noble Energy Inc.
Well Name: Hullabaloo State Y21-769

Date: 9/22/2017
Invoice #: 666204
API#: 05-123-45237
Supervisor: Nick Vigil

County: Weld
State: Colorado
Sec: 16
Twp: 2N
Range: 64W
Consultant: Chris
Rig Name & Number: H&P 517
Distance To Location: 31 miles
Units On Location: 4040/4032
Time Requested: 1:30
Time Arrived On Location: 12:30
Time Left Location:

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft.) : 2,032
Total Depth (ft) : 2042
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.25
Shoe Joint Length (ft) : 45
Landing Joint (ft) :

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

One or the other, cannot have quantity in both

Max Rate: 8
Max Pressure: 2000

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) 50.0
H2O Wash Up (bbls) 20.0

Spacer Ahead Makeup
Dye in second 10 bbl

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead 1728.11 ft
Casing Depth - HOC Tail
Volume of Lead Cement 844.58 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 905.63 cuft
(cuft of Lead Cement) + (Cuft of Conductor)
bbls of Lead Cement 185.49 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
Sacks of Lead Cement 612.63 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
bbls of Lead Mix Water 131.28 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42
Displacement 153.90 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
Total Water Needed: 369.21 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
Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



Bison Oil Well Cementing Two Cement Surface Pipe

Customer
Well Name

Noble Energy Inc.
Hullabaloo State Y21-769

Date
INVOICE #
LOCATION
FOREMAN

9/22/2017

666204

Weld

Nick Vigil

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DESCRIPTION OF JOB EVENTS

[illegible]

X

WLB

Signature

X

WSS

Title

x

9/22/15

Date _____