



Bison Oil Well Cementing Tail & Lead

Date: 7/7/2017
Invoice # 200118
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: wells ranch af 07-645

County: Weld
State: Colorado

Sec: 20
Twp: 9n
Range: 58w

Consultant: john
Rig Name & Number: H&P 517
Distance To Location: 25
Units On Location: 4028/4034
Time Requested: 830 am
Time Arrived On Location: 730 am
Time Left Location: 2:10 pm

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft.) : 1,907
Total Depth (ft) : 1952
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.6
Shoe Joint Length (ft) : 46
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 (bbbls) 146.6
H2O Wash Up (bbbls) 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Lead Calculated Results

HOC of Lead 1573.00 ft
Casing Depth - HOC Tail
Volume of Lead Cement 768.77 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 834.53 cuft
(cuft of Lead Cement) + (Cuft of Conductor)
bbbls of Lead Cement 170.92 bbbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
Sacks of Lead Cement 564.54 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
bbbls of Lead Mix Water 120.97 bbbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42
Displacement 146.56 bbbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
Total Water Needed: 448.12 bbbls

Tail Calculated Results

Tail Cement Volume In Ann 127.00 cuft
(HOC Tail) X (OH Ann)
Total Volume of Tail Cement 107.03 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
bbbls of Tail Cement 22.62 bbbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
HOC Tail 219.00 ft
(Tail Cement Volume) ÷ (OH Ann)
Sacks of Tail Cement 100.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)
bbbls of Tail Mix Water 14.02 bbbls
(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



Customer
Well Name

Noble Energy Inc.
wells ranch af 07-645

Date
INVOICE #
LOCATION
FOREMAN

7/7/2017

200118

Weld

Kirk Kallhoff

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DESCRIPTION OF JOB EVENTS

1x

Work Preformed

X	Y	Title
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
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$$\frac{X}{D}$$