



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/5/2015
Invoice #: 80046
API#: 05-123-41255
Foreman: Calvin Reimers

Customer: Noble Energy Inc.

Well Name: Wells Ranch AA 11-657

County: Weld
State: Colorado
Sec: 11
Twp: 6N
Range: 63W

Consultant: Mike
Rig Name & Number: H&P 273
Distance To Location: 32 Miles
Units On Location: 4023-3104/4020-3212
Time Requested: 130am
Time Arrived On Location: 1100pm
Time Left Location: 330am

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 622
Total Depth (ft) : 653
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 29

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 43%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 22.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup
50bbls With Dye in Last 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.59 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 89.10 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 364.50 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 473.18 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 84.27 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 318 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 56.56 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 46.82 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 458.51 PSI

Pressure of the fluids inside casing

Displacement: 248.54 psi

Shoe Joint: 33.29 psi

Total 281.83 psi

Differential Pressure: 176.68 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 163.38 bbls

X
Authorization To Proceed

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