



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/13/2015
Invoice # 80474
API# 05-123-40634
Foreman: Calvin Reimers

Customer: Noble Energy Inc.
Well Name: Ann LC 34-755

County: Weld
State: Colorado
Sec: 34
Twp: 9N
Range: 59W

Consultant: Dave / JW
Rig Name & Number: H&P 273
Distance To Location: 55 Miles
Units On Location: 4023-3104/4027-3210
Time Requested: 900am
Time Arrived On Location: 730am
Time Left Location: 815pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 610
Total Depth (ft) : 643
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 44
Landing Joint (ft) : 29

Max Rate: 7
Max Pressure: 1750

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 10%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 9.0
Fluid Ahead (bbls): 40.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup
40 bbl H2O+Dye in 2nd 10 bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.18 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 273.91 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 382.19 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 68.07 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 257 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 45.68 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 45.96 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 449.64 PSI

Pressure of the fluids inside casing

Displacement: 243.76 psi

Shoe Joint: 32.60 psi

Total 276.35 psi

Differential Pressure: 173.28 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 141.64 bbls

X *Jw Travis*
Authorization To Proceed



Noble Energy Inc.
Ann LC 34-755

80474
Weld
Calvin Reimers
12/13/2015

X 12-13-15
Date