



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/4/2016

Invoice # 80488

API# 05-123-42920

Foreman: Steve

Customer: Noble Energy Inc.

Well Name: Shadow State A26-614

County: Weld

State: Colorado

Sec: SWSE

Twp: 306N

Range: 63W

Consultant: Johnny Sanchez

Rig Name & Number: H&P 343

Distance To Location:

Units On Location: 3106

Time Requested:

Time Arrived On Location:

Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
 Casing Weight (lb) : 36.00
 Casing Depth (ft) : 1,927
 Total Depth (ft) : 1934
 Open Hole Diameter (in.) : 12.25 - 13 1/2
 Conductor Length (ft) : 80
 Conductor ID : 15.25
 Shoe Joint Length (ft) : 44
 Landing Joint (ft) : 5

Max Rate: 8
 Max Pressure: 2000

Cement Data

Cement Name: BFN III
 Cement Density (lb/gal) : 14.2
 Cement Yield (cuft) : 1.49
 Gallons Per Sack: 7.48
 % Excess: 15%
 Displacement Fluid lb/gal: 8.7
 Fluid Ahead (bbls): 50.0
 H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
 50water

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.10 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 61.05 cuft

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

cuft of Casing 902.00 cuft

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

Total Slurry Volume 1117.00 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 198.94 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 750 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 133.57 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 145.92 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1421.55 PSI

Pressure of the fluids inside casing

Displacement: 850.93 psi

Shoe Joint: 32.46 psi

Total 883.39 psi

Differential Pressure: 538.16 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 200.00 bbls

Authorization To Proceed

