



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/21/2015

Invoice # 80127

API# 05-123-40683

Foreman: JASON KELEHER

Customer: Noble Energy Inc.

Well Name: NEAL LC 35-738

County: Weld

State: Colorado

Sec: 26

Twp: 9N

Range: 59W

Consultant: JIM

Rig Name & Number: H&P 321

Distance To Location: 69

Units On Location: 4031-3107/ 4034-3203

Time Requested: 1700

Time Arrived On Location: 1600

Time Left Location: 1900

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft) : 644
Total Depth (ft) : 683
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 15.25
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 35

Max Rate: 6
Max Pressure: 1000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 50%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 19.0
Fluid Ahead (bbls): 40.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

40 BBL WATER/ DYE IN 2ND 10

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.48 cuft

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

cuft of Conductor 76.31 cuft

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

cuft of Casing 398.55 cuft

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

Total Slurry Volume 493.34 cuft

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

bbls of Slurry 87.86 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 331 sk

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

Mix Water 58.97 bbls

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

Displacement: 48.17 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 474.82 PSI

Pressure of the fluids inside casing

Displacement: 258.81 psi

Shoe Joint: 32.02 psi

Total 290.84 psi

Differential Pressure: 183.98 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 167.13 bbls

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.



Customer
Well Name

Noble Energy Inc.
NEAL LC 35-738

INVOICE #
LOCATION
FOREMAN
Date

80127
Weld
JASON KELEHER
4/21/2015

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DESCRIPTION OF JOB EVENTS

X Paul Niles
Customer Signature

X WSS
Title

X 4-21-15
Date