



Bison Oil Well Cementing Single Cement Surface Pipe

Customer: Noble Energy Inc.

Well Name: 70 RANCH STATE BB18-615

County: Weld

State: Colorado

Sec: 17

Twp: 5N

Range: 63W

Date: 7/3/2015

Invoice #: 80606

API#: 05-123-41537

Foreman: JASON KELEHER

Consultant: JW

Rig Name & Number: H&P 343

Distance To Location: 26

Units On Location: 4031-3106/ 4022-3213

Time Requested: 1630

Time Arrived On Location: 1530

Time Left Location: 1930

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 731
Total Depth (ft) : 765
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 15.25
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 34

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: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 13.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

50 BBL WATER/ DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.70 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 370.24 cuft

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

Total Slurry Volume 466.25 cuft

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

bbls of Slurry 83.04 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 313 sk

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

Mix Water 55.73 bbls

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

Displacement: 55.68 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 539.48 PSI

Pressure of the fluids inside casing

Displacement: 295.76 psi

Shoe Joint: 33.48 psi

Total 329.23 psi

Differential Pressure: 210.25 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 181.41 bbls

X

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.



INVOICE #
LOCATION
FOREMAN
Date

80606	Weld	JASON KELEH	7/3/2015
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Customer	Noble Energy Inc.
Well Name	70 RANCH STATE PR10

70 RANCH STATE BB18-615

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DESCRIPTION OF JOB EVENTS

[illegible]

✕

Customer Signature

X

Title

X

Date _____