



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/9/2014
Invoice # 45035
API# 05-123-37613
Foreman: JASON KELEHER

Customer: EnCana Oil & Gas (USA) Inc.

Well Name: DRIETH 4D-6H-I368

County: Weld
State: Colorado

Sec: 6
Twp: 3N
Range: 68W

Consultant: KEVIN
Rig Name & Number: H&P 522
Distance To Location: 27
Units On Location: 4031-3106/ 4019-3213
Time Requested: 900
Time Arrived On Location: 830
Time Left Location: 1230

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 40.00
Casing Depth (ft.) : 834
Total Depth (ft) : 880
Open Hole Diameter (in.) : 12.25
Conductor Length (ft) : 110
Conductor ID : 15.25
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 39

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 8
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
30BBL H2O W/KCL, Dye in 2nd 10

Casing ID

8.835

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

cuft of Casing 272.27 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 375.40 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 66.86 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 296 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 41.45 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 62.80 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 658.91 PSI

Pressure of the fluids inside casing

Displacement: 340.38 psi

Shoe Joint: 35.58 psi

Total 375.96 psi

Differential Pressure: 282.94 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 154.26 bbls

X *Kevin Berger*
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.