



Bison Oil Well Cementing Single Cement Surface Pipe

Invoice # 12493
 API# _____
 Foreman: _____

Customer: ENCANA
 Well Name: STATE 3G - 16H

County: Weld County
 State: Colorado
 Sec: 16
 Twp: 3N
 Range: 68W

Consultant: _____
 Rig Name & Number: H & P 278
 Distance To Location: 25 MI.
 Units On Location: 3106
 Time Requested: 5:00 PM
 Time Arrived On Location: 4:30
 Time Left Location: _____

WELL DATA

Casing Size OD (in) : 9.6250
 Casing Weight (lb) : 40
 Casing Depth (ft.) : 900
 Total Depth (ft) : 915
 Open Hole Diameter (in.) : 12.25
 Conductor Length (ft) : 100
 Conductor ID : 15.5
 Shoe Joint Length (ft) : 45
 Landing Joint (ft) : 0

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: 25%
 Displacement Fluid lb/gal: 8.3
 BBL to Pit:
 Fluid Ahead (bbls):
 H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
 30

Casing ID

8.835

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.00 cuft
 (Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 80.51 cuft
 (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 250.54 cuft
 (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 350.05 cuft
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 77.93 bbls
 (Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 345 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 48.32 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 64.86 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 710.64 PSI

Pressure of the fluids inside casing

Displacement: 368.82 psi

Shoe Joint: 35.25 psi

Total 404.06 psi

Differential Pressure: 306.58 psi

Collapse PSI: 2570.00 psi

Burst PSI: 3950.00 psi

Total Water Needed: 68.32 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.

