



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/17/2015

Invoice # 90015

API# 05-123-41532

Supervisor Nick

Customer: Noble Energy Inc.

Well Name: 70 Ranch State BB 18-675

County: Weld

State: Colorado

Sec: 17

Twp: 5N

Range: 63W

Consultant: Robert N.

Rig Name & Number: H&P 321

Distance To Location: 60

Units On Location: 3102/4028/4007/3211

Time Requested: 18:30

Time Arrived On Location: 17:24

Time Left Location: 1:15

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft.) : 765	Cement Yield (cuft) : 1.49
Total Depth (ft) : 775	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 0%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 0.0
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 60.0 50
Landing Joint (ft) : 34	H2O Wash Up (bbls): 20.0
Max Rate: 6	Spacer Ahead Makeup
Max Pressure: 1500	DYE IN SECOND 10 BBL

Calculated Results	Pressure of cement in annulus
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 55.80 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 61.05 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 564.34 PSI
cuft of Casing 410.36 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 505.33 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 311.31 psi Shoe Joint: 31.72 psi Total: 343.03 psi
bbls of Slurry 72.00 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 221.31 psi
Sacks Needed 271 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Mix Water 48.26 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: 184.06 bbls

X 
 Authorization To Proceed

