



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/4/2015
 Invoice #: 80036
 API#: 05-123-40688
 Foreman: Calvin Reimers

Customer: Noble Energy Inc.
 Well Name: Gleason LC 35-725

County: Weld
 State: Colorado
 Consultant: Dave / Shane
 Rig Name & Number: H&P 273
 Distance To Location: 67 Miles
 Units On Location: 4023-3104/3105-3210
 Sec: 26
 Twp: 9N
 Range: 59W
 Time Requested: 430am
 Time Arrived On Location: 300am
 Time Left Location: 700am

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.) : 652	Cement Yield (cuft) : 1.49
Total Depth (ft) : 685	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 10%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 13.0
Shoe Joint Length (ft) : 45	Fluid Ahead (bbls): 50.0
Landing Joint (ft) : 29	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	50bbls With Dye in 2nd 10bbls

Calculated Results	Displacement: 49.15 bbls
cuft of Shoe 19.52 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 89.10 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing 296.49 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: 480.62 PSI
Total Slurry Volume 405.11 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry 72.15 bbls (Total Slurry Volume) X (.1781)	Displacement: 261.52 psi
Sacks Needed 272 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: 33.18 psi
Mix Water 48.42 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total 294.71 psi
	Differential Pressure: 185.91 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 167.57 bbls

X Authorization To Proceed

