



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/13/2016
 Invoice #: 80490
 API#: 05-123-42921
 Foreman: Matthew Rosales

Customer: Noble Energy Inc.
Well Name: Shadow State A26-618

County: Weld
 State: Colorado
 Consultant: Charles Colliver
 Rig Name & Number: H&P 343
 Distance To Location: 15miles
 Sec: 30
 Twp: 6n
 Range: 63w
 Units On Location: 3106
 Time Requested: 1730
 Time Arrived On Location: 1600
 Time Left Location:

WELL DATA	
Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	1,925
Total Depth (ft) :	1931
Open Hole Diameter (in.) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	49
Landing Joint (ft) :	5
Max Rate:	8
Max Pressure:	1500

Cement Data	
Cement Name:	BFN III
Cement Density (lb/gal) :	14.2
Cement Yield (cuft) :	1.49
Gallons Per Sack:	7.48
% Excess:	15%
Displacement Fluid lb/gal:	8.7
Fluid Ahead (bbls):	50.0
H2O Wash Up (bbls):	20.0
Spacer Ahead Makeup	50bbl H2O

Casing ID: 8.921 Casing Grade: J-55 only used

Calculated Results		
cuft of Shoe	21.10	cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		
cuft of Conductor	61.05	cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		
cuft of Casing	1036.96	cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		
Total Slurry Volume	1103.20	cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		
bbls of Slurry	196.48	bbls
(Total Slurry Volume) X (.1781)		
Sacks Needed	740	sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		
Mix Water	131.79	bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42		

Displacement:	145.41 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
Pressure of cement in annulus	
Hydrostatic Pressure:	1420.07 PSI
Pressure of the fluids inside casing	
Displacement:	847.94 psi
Shoe Joint:	35.87 psi
Total	883.80 psi
Differential Pressure:	536.27 psi
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi
Total Water Needed:	200bbl bbls

X *Wf. Bern*
 Authorization To Proceed

