



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/8/2017
 Invoice # 666106
 API# 05-123-44411
 Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation
 Well Name: Butterball 22N2-34HZ

County: Weld
 State: Colorado
 Sec: 10
 Twp: 2N
 Range: 67W

Consultant: Brian
 Rig Name & Number: WMO 252
 Distance To Location: 27 miles
 Units On Location: 402,340,244,030
 Time Requested: 9:00
 Time Arrived On Location: 8:50
 Time Left Location:

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.) : 1,819	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1829	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 15%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.25	BBL to Pit: 0.0
Shoe Joint Length (ft) : 44	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 10	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Calculated Results	Displacement: 138.00 bbls
cuft of Shoe 19.10 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 61.05 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing 977.39 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: 1341.88 PSI
Total Slurry Volume 1057.53 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry 188.35 bbls (Total Slurry Volume) X (.1781)	Displacement: 765.35 psi
Sacks Needed 710 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: 32.46 psi
Mix Water 126.40 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total 797.81 psi
	Differential Pressure: 544.07 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 314.40 bbls

X Bryan Brown
 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.

Butterball 22N2-34HZ

