



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/6/2015
 Invoice #: 80047
 API#: 05-123-41503-00
 Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation

Well Name: English Farms 36N-8HZ

County: Weld
 State: Colorado
 Sec: 8
 Twp: 1N
 Range: 65W

Consultant: Don / Tobin
 Rig Name & Number: Extreme 24
 Distance To Location: 22 Miles
 Units On Location: 4023-3104/4030-3203
 Time Requested: 900am
 Time Arrived On Location: 735am
 Time Left Location: 1:30pm

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.) : 1,865	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1891	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 25%
Conductor Length (ft) : 43	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 30
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 19	H2O Wash Up (bbls): 10.0
Max Rate: 6	Spacer Ahead Makeup
Max Pressure: 1750	30 bbls With Dye in 2nd 10 bbls

Calculated Results	Pressure of cement in annulus
cuft of Shoe 18.61 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 142.34 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 38.31 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 1375.86 PSI
cuft of Casing 1113.12 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 1170.05 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 785.69 psi
bbls of Slurry 208.39 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 31.63 psi
Sacks Needed 785 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 817.33 psi
Mix Water 139.85 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 558.54 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 322.19 bbls

x *Handwritten Signature*
 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.

SERIES 2000

PSI Barrels / Minute Barrels Lbs / Gallon Stage Volume

