



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/3/2017
 Invoice #: 300117
 API#: 05-123-43470
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
 Well Name: WAGNER 27N-10HZ

County: Weld
 State: Colorado
 Sec: 22
 Twp: 1N
 Range: 67W
 Consultant: BRYAN
 Rig Name & Number: CARTEL 88
 Distance To Location: 34
 Units On Location: 4027-3103,4031-3214,4024-3214
 Time Requested: 200
 Time Arrived On Location: 1230
 Time Left Location: 545

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.) :	1,885	Cement Yield (cuft) :	1.48
Total Depth (ft) :	1895	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	10%
Conductor Length (ft) :	80	Displacement Fluid lb/gal:	8.3
Conductor ID :	15.25	BBL to Pit:	23.0
Shoe Joint Length (ft) :	45	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	8	H2O Wash Up (bbls):	20.0
Max Rate:	8	Spacer Ahead Makeup	
Max Pressure:	2000	30 BBL WATER, DYE IN 2ND 10	

Calculated Results	Displacement: 142.89 bbls
cuft of Shoe 19.35 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)	
cuft of Casing 970.32 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of cement in annulus Hydrostatic Pressure: 1390.50 PSI
Total Slurry Volume 1050.73 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing Displacement: 793.51 psi Shoe Joint: 32.89 psi Total 826.41 psi
bbls of Slurry 187.13 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 564.09 psi
Sacks Needed 710 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2020.00 psi Burst PSI: 3520.00 psi
Mix Water 126.44 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 2	Total Water Needed: 319.33 bbls

X 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.

WAGNER 27N-10HZ SURFACE

