



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/17/2017
 Invoice # 200125
 API# _____
 Foreman: Kirk Kallhoff

Customer: Anadarko Petroleum Corporation
 Well Name: rw 2n-29hz

County: Weld Consultant: lane
 State: Colorado Rig Name & Number: cartel 88
 Distance To Location: 20
 Sec: 6 Units On Location: 4028/4039/4035
 Twp: 3n Time Requested: 600 am
 Range: 66w Time Arrived On Location: 700 am
 Time Left Location: 9:30 am

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft.) : <u>1,838</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1848</u>	Gallons Per Sack: <u>7.40</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>2%</u>
Conductor Length (ft) : <u>80</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.6</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>42</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>8</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	

Calculated Results	Pressure of cement in annulus
Casing ID: <u>8.921</u>	Casing Grade: <u>J-55 only used</u>
Displacement: 139.46 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	Pressure of cement in annulus
cuft of Shoe 18.23 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Hydrostatic Pressure: 1355.89 PSI
cuft of Conductor 65.76 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of the fluids inside casing
cuft of Casing 876.37 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Displacement: 774.40 psi
Total Slurry Volume 960.36 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Shoe Joint: 30.98 psi
bbls of Slurry 171.04 bbls (Total Slurry Volume) X (.1781)	Total 805.38 psi
Sacks Needed 645 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Differential Pressure: 550.51 psi
Mix Water 113.56 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 293.03 bbls

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 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

