



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/23/2017  
 Invoice # 200095  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** hilgers 34n-22hz

County: Weld Consultant: sean  
 State: Colorado Rig Name & Number: wmo 252  
 Distance To Location: 28  
 Sec: 22 Units On Location: 4028/4033/4019  
 Twp: 3n Time Requested: 800 am  
 Range: 68w Time Arrived On Location: 730 am  
 Time Left Location: 6:00pm

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>1,851</u>	Cement Yield (cuft) :	<u>1.49</u>
Total Depth (ft) :	<u>1876</u>	Gallons Per Sack:	<u>7.40</u>
Open Hole Diameter (in.) :	<u>13.50</u>	% Excess:	<u>15%</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>45</u>	Fluid Ahead (bbls):	<u>30.0</u>
Landing Joint (ft) :	<u>15</u>	H2O Wash Up (bbls):	<u>10.0</u>
Max Rate:	<u>8</u>	Spacer Ahead Makeup	
Max Pressure:	<u>2000</u>		

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Displacement:	140.78 bbls
<b>cuft of Shoe</b> <u>19.53</u> <b>cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
<b>cuft of Conductor</b> <u>65.76</u> <b>cuft</b> (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of cement in annulus</b>	
<b>cuft of Casing</b> <u>995.37</u> <b>cuft</b> (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	<b>Hydrostatic Pressure:</b>	<u>1365.48 PSI</u>
<b>Total Slurry Volume</b> <u>1080.67</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>	
<b>bbls of Slurry</b> <u>192.47</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement:</b>	<u>778.71 psi</u>
<b>Sacks Needed</b> <u>725</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint:</b>	<u>33.20 psi</u>
<b>Mix Water</b> <u>127.79</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total</b>	<u>811.91 psi</u>
	<b>Differential Pressure:</b>	<u>553.57 psi</u>
	<b>Collapse PSI:</b>	<u>2020.00 psi</u>
	<b>Burst PSI:</b>	<u>3520.00 psi</u>
	<b>Total Water Needed:</b>	<u>308.57 bbls</u>

X Sean Hilgers  
 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

