



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/24/2018  
 Invoice # 200232  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** verde 13-3hz

County: Weld  
 State: Colorado  
 Sec: 3  
 Twp: 1n  
 Range: 68w

Consultant: bryon  
 Rig Name & Number: CARTEL 88  
 Distance To Location: 37  
 Units On Location: 4028/4024/4041  
 Time Requested: 1000 am  
 Time Arrived On Location: 930 am  
 Time Left Location: 2:00 pm

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>1.48</u>
Total Depth (ft) :	<u>1848</u>	Gallons Per Sack:	<u>7.48</u>
Open Hole Diameter (in.) :	<u>13.50</u>	% Excess:	<u>5%</u>
Conductor Length (ft) :	<u>80</u>	Displacement Fluid lb/gal:	<u>8.3</u>
Conductor ID :	<u>15.5</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>	<b>Spacer Ahead Makeup</b>	
Max Pressure:	<u>2000</u>	<b>30 BBL WATER, DYE IN 2ND 10</b>	

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results		
<b>cuft of Shoe</b>	<b>18.23</b>	<b>cuft</b>
<small>(Casing ID Squared) X (.005454) X (Shoe Joint ft)</small>		
<b>cuft of Conductor</b>	<b>64.40</b>	<b>cuft</b>
<small>(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)</small>		
<b>cuft of Casing</b>	<b>902.15</b>	<b>cuft</b>
<small>(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )</small>		
<b>Total Slurry Volume</b>	<b>984.78</b>	<b>cuft</b>
<small>(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)</small>		
<b>bbls of Slurry</b>	<b>175.39</b>	<b>bbls</b>
<small>(Total Slurry Volume) X (.1781)</small>		
<b>Sacks Needed</b>	<b>665</b>	<b>sk</b>
<small>(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)</small>		
<b>Mix Water</b>	<b>118.50</b>	<b>bbls</b>
<small>(Sacks Needed) X (Gallons Per Sack) ÷ 42</small>		

<b>Displacement:</b>	<b>139.46</b>	<b>bbls</b>
<small>(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)</small>		
<b>Pressure of cement in annulus</b>		
<b>Hydrostatic Pressure:</b>	<b>1355.89</b>	<b>PSI</b>
<b>Pressure of the fluids inside casing</b>		
<b>Displacement:</b>	<b>774.40</b>	<b>psi</b>
<b>Shoe Joint:</b>	<b>30.98</b>	<b>psi</b>
<b>Total</b>	<b>805.38</b>	<b>psi</b>
<b>Differential Pressure:</b>	<b>550.51</b>	<b>psi</b>
<b>Collapse PSI:</b>	<b>2020.00</b>	<b>psi</b>
<b>Burst PSI:</b>	<b>3520.00</b>	<b>psi</b>
<b>Total Water Needed:</b>	<b>297.97</b>	<b>bbls</b>

X [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

