



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/12/2017  
 Invoice # 666061  
 API# 05-123-42570  
 Foreman: Nick

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** Puma Fed 34C-35HZ

County: Weld Consultant: Brian/Jeremy  
 State: Colorado Rig Name & Number: WMO  
 Distance To Location: 34 miles  
 Sec: 23 Units On Location: 4019/4028/4030  
 Twp: 1N Time Requested: 18:00  
 Range: 67W Time Arrived On Location: 17:30  
 Time Left Location: \_\_\_\_\_

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>2,222</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>2232</u>	Gallons Per Sack: <u>7.48</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>15.25</u>	BBL to Pit: <u>0.0</u>
Shoe Joint Length (ft) : <u>45</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>0</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	Dye in the second 10 bbl

Calculated Results	Displacement: <u>168.30 bbls</u>
cuft of Shoe <u>19.53</u> 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 <u>61.05</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Pressure of cement in annulus
cuft of Casing <u>1203.89</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	Hydrostatic Pressure: <u>1639.17 PSI</u>
Total Slurry Volume <u>1284.47</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry <u>228.76</u> bbls (Total Slurry Volume) X (.1781)	Displacement: <u>938.68 psi</u>
Sacks Needed <u>862</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: <u>33.20 psi</u>
Mix Water <u>153.53</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total <u>971.88 psi</u>
	Differential Pressure: <u>667.29 psi</u>
	Collapse PSI: <u>2020.00 psi</u>
	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>371.83 bbls</u>

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.



# Puma Fed 34C-35HZ

