



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/10/2018
 Invoice # 900256
 API# 05-123-46102
 Foreman: Corey Barras

Customer: Anadarko Petroleum Corporation
Well Name: Azul 13-32HZ

County: Weld Consultant: Matt
 State: Colorado Rig Name & Number: Cartel 88
 Distance To Location: 37
 Sec: 13 Units On Location: 1027-3103/4030-3213/4024-320
 Twp: 1N Time Requested: 800
 Range: 66W Time Arrived On Location: 715
 Time Left Location: _____

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: BFN III
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft.) : <u>1,912</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1922</u>	Gallons Per Sack: <u>7.40</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>15.25</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>44</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>15</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	30 bbl with Die in 2nd 10

Calculated Results	Displacement: 145.57 bbls
cuft of Shoe <u>19.10</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 Hydrostatic Pressure: <u>1410.48 PSI</u>
cuft of Casing <u>940.12</u> cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing Displacement: <u>805.45 psi</u> Shoe Joint: <u>32.46 PSI</u> Total <u>837.91 psi</u>
Total Slurry Volume <u>1020.27</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Differential Pressure: <u>572.58 psi</u>
bbls of Slurry <u>181.71</u> bbls (Total Slurry Volume) X (.1781)	Collapse PSI: <u>2020.00 psi</u> Burst PSI: <u>3520.00 psi</u>
Sacks Needed <u>689</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total Water Needed: <u>317.03 bbls</u>
Mix Water <u>121.46</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	

X B. Barras
 Authorization To Proceed

AZUI 13-32HZ

