



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/21/2017
 Invoice # 900142
 API# 05-123-44621
 Foreman: Corey B.

Customer: Anadarko Petroleum Corporation
Well Name: RW 30N-29HZ

County: Weld Consultant: Matt
 State: Colorado Rig Name & Number: Xtreme 22
 Distance To Location: 26
 Sec: 29 Units On Location: 1027/3103-4033/3212-4020/321
 Twp: 3N Time Requested: 2200
 Range: 65W Time Arrived On Location: 2100
 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>1,858</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1868</u>	Gallons Per Sack: <u>7.40</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>10%</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>	<u>30 bbl with Die in 2nd 10</u>

Calculated Results	Displacement: <u>141.40 bbls</u>
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
cuft of Casing <u>955.86</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Hydrostatic Pressure: <u>1370.65 PSI</u>
Total Slurry Volume <u>1036.01</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Pressure of the fluids inside casing
bbls of Slurry <u>184.51</u> bbls (Total Slurry Volume) X (.1781)	Displacement: <u>782.16 psi</u>
Sacks Needed <u>700</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Shoe Joint: <u>32.46 psi</u>
Mix Water <u>123.33</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total <u>814.62 psi</u>
	Differential Pressure: <u>556.03 psi</u>
	Collapse PSI: <u>2020.00 psi</u>
	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>314.73 bbls</u>

x David Covert
 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.

RW 30N-29HZ

