



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/6/2019
 Invoice # 900365
 API# 05-123-50075
 Foreman: Corey Barras

Customer: Anadarko Petroleum Corporation
Well Name: Sarchet 21-7 HZ

County: Weld Consultant: Bryan
 State: Colorado Rig Name & Number: CARTEL 88
 Sec: 21 Distance To Location: 21
 Twp: 3n Units On Location: 4028/3103-4024/3214-4044/3205
 Range: 66w Time Requested: 2230
 Time Arrived On Location: 2130
 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>1,899</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1909</u>	Gallons Per Sack: <u>7.48</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>42</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>8</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 WATER, DYE IN 2ND 10</u>

Calculated Results	Pressure of cement in annulus
Casing ID <u>8.921</u> Casing Grade <u>J-55 only used</u>	Displacement: <u>144.18 bbls</u> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe <u>18.23</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor <u>61.05</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: <u>1400.89 PSI</u>
cuft of Casing <u>977.90</u> cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume <u>1057.18</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>800.70 psi</u>
bbls of Slurry <u>188.28</u> bbls (Total Slurry Volume) X (.1781)	Shoe Joint: <u>30.98 psi</u>
Sacks Needed <u>714</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total <u>831.69 psi</u>
Mix Water <u>127.22</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: <u>569.21 psi</u>
	Collapse PSI: <u>2020.00 psi</u>
	Burst PSI: <u>3520.00 psi</u>
	Total Water Needed: <u>321.39 bbls</u>

X
 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.

Sarchet 21-7 HZ

