



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/29/2018

Invoice # 666368

API# 05-123-47714

Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation

Well Name: Castle Pines 19-15HZ

County: Weld

State: Colorado

Sec: 8

Twp: 1N

Range: 65W

Consultant: Brian

Rig Name & Number: Cartel 88

Distance To Location: 25 Miles

Units On Location: 4023/4041/4035

Time Requested: 8:30

Time Arrived On Location: 6:50

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>1,868</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1878</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>43</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>10</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	Dye in second 10 bbl

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Pressure of cement in annulus
cuft of Shoe <u>18.66</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: <u>141.86</u> bbls (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)	Hydrostatic Pressure: <u>1378.02</u> PSI
cuft of Casing <u>961.23</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>1040.95</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>786.91</u> psi
bbls of Slurry <u>185.39</u> bbls (Total Slurry Volume) X (.1781)	Shoe Joint: <u>31.72</u> psi
Sacks Needed <u>699</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total <u>818.63</u> psi
Mix Water <u>124.42</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: <u>559.40</u> psi
	Collapse PSI: <u>2020.00</u> psi
	Burst PSI: <u>3520.00</u> psi
	Total Water Needed: <u>306.28</u> bbls

X [Signature]
Authorization To Proceed

Castle Pines 19-15HZ

— PSI — Barrels / Minute — Lbs / Gallon

