

# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/20/2019  
 Invoice # 200438  
 API# \_\_\_\_\_  
 Foreman: KirkKallhoff

**Customer:** Anadarko Petroleum Corporation

**Well Name:** mc 3-3hz

County: Weld  
 State: Colorado  
 Sec: 8  
 Twp: 1n  
 Range: 65w

Consultant: bryan  
 Rig Name & Number: Cartel 88  
 Distance To Location: 38  
 Units On Location: 4047/4039/4024  
 Time Requested: 1200 pm  
 Time Arrived On Location: 1000 am  
 Time Left Location: 3:30 pm

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>1,855</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1865</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>19.125</u>	BBL to Pit:
Shoe Joint Length (ft) : <u>41</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>8</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: <u>8</u>	Spacer Ahead Makeup
Max Pressure: <u>2000</u>	<u>30 bbl with Die in 2nd 10</u>

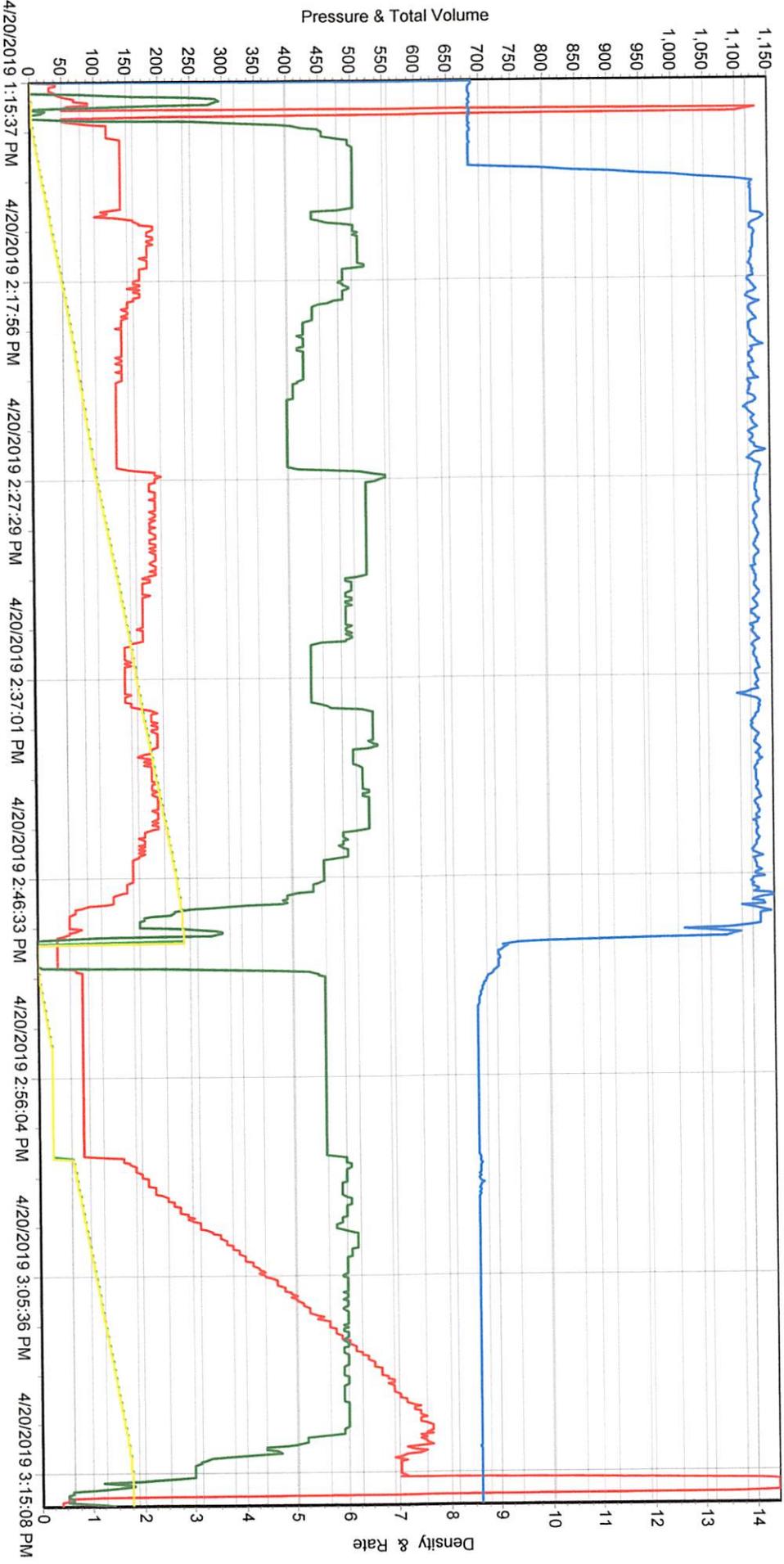
Casing ID 8.921 Casing Grade J-55 only used

Calculated Results	Pressure Calculations
<b>cuft of Shoe</b> <u>17.80</u> <b>cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Displacement:</b> <u>140.86</u> <b>bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Conductor</b> <u>119.17</u> <b>cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Casing</b> <u>954.24</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Hydrostatic Pressure:</b> <u>1368.43</u> <b>PSI</b>
<b>Total Slurry Volume</b> <u>1091.21</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry</b> <u>194.34</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement:</b> <u>782.16</u> <b>psi</b>
<b>Sacks Needed</b> <u>737</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint:</b> <u>30.25</u> <b>PSI</b>
<b>Mix Water</b> <u>129.91</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total</b> <u>812.41</u> <b>psi</b>
	<b>Differential Pressure:</b> <u>556.03</u> <b>psi</b>
	<b>Collapse PSI:</b> <u>2020.00</u> <b>psi</b>
	<b>Burst PSI:</b> <u>3520.00</u> <b>psi</b>
	<b>Total Water Needed:</b> <u>310.76</u> <b>bbls</b>

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.

# SERIES 2000



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