



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/2/2019
 Invoice # 200400
 API# _____
 Foreman: KirkKallhoff

Customer: Anadarko Petroleum Corporation
Well Name: mab 15-14hz

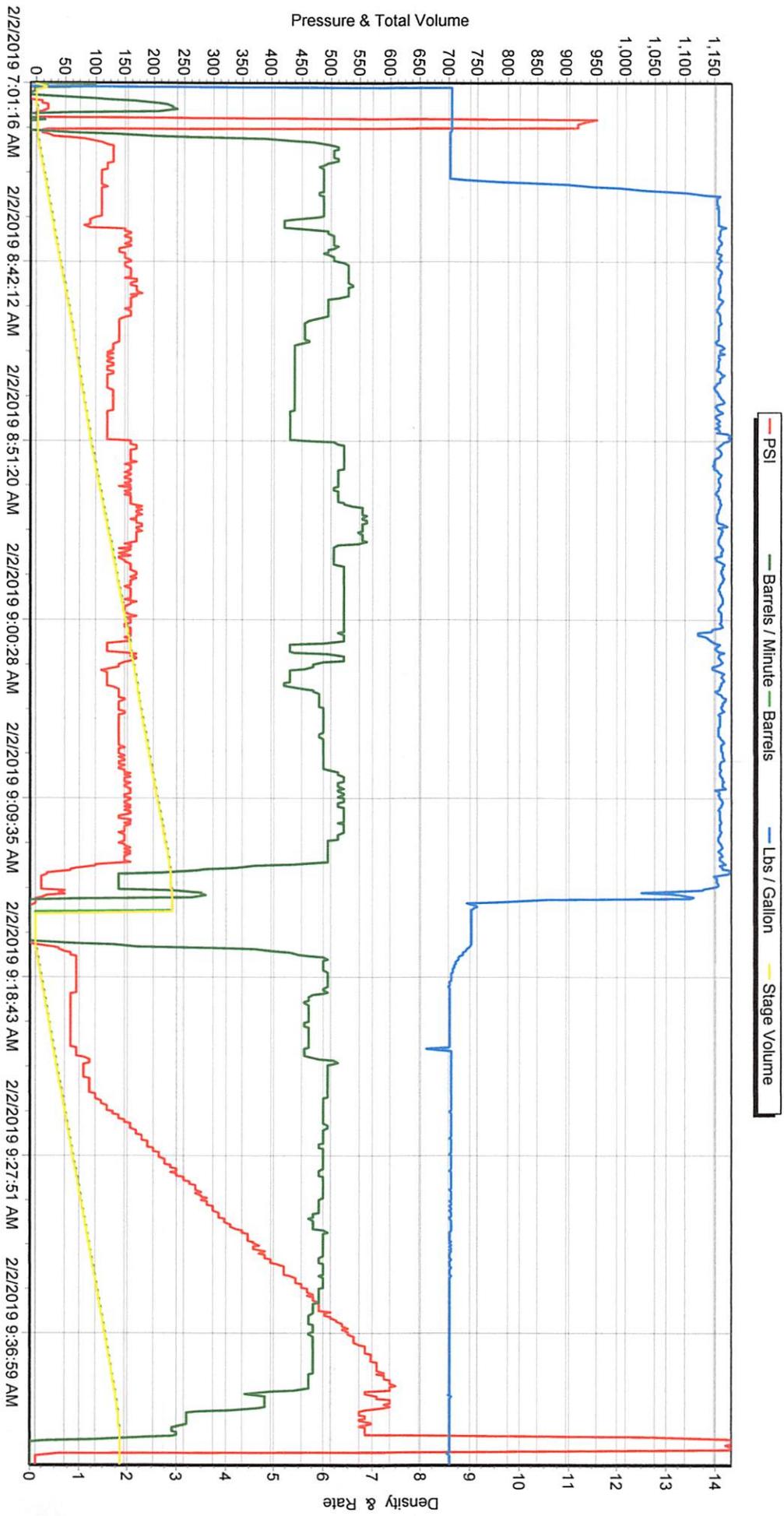
County: Weld Consultant: brent
 State: Colorado Rig Name & Number: Cartel 88
 Distance To Location: 33
 Sec: 30 Units On Location: 4047/4030/4024
 Twp: 2N Time Requested: 700 am
 Range: 65w Time Arrived On Location: 500 am
 Time Left Location: 16:00pm

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>1,872</u>	Cement Yield (cuft) : <u>1.48</u>
Total Depth (ft) : <u>1882</u>	Gallons Per Sack: <u>7.40</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>15%</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>40</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>

Calculated Results	Pressure of cement in annulus
cuft of Shoe <u>17.36</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: <u>142.25</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>1380.97</u> PSI
cuft of Casing <u>1007.17</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>1085.59</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>789.92</u> psi
bbls of Slurry <u>193.34</u> bbls (Total Slurry Volume) X (.1781)	Shoe Joint: <u>29.51</u> PSI
Sacks Needed <u>734</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total <u>819.43</u> psi
Mix Water <u>129.24</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: <u>561.54</u> psi
	Collapse PSI: <u>2020.00</u> psi
	Burst PSI: <u>3520.00</u> psi
	Total Water Needed: <u>311.48</u> bbls

X [Signature]
 Authorization To Proceed

SERIES 2000



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