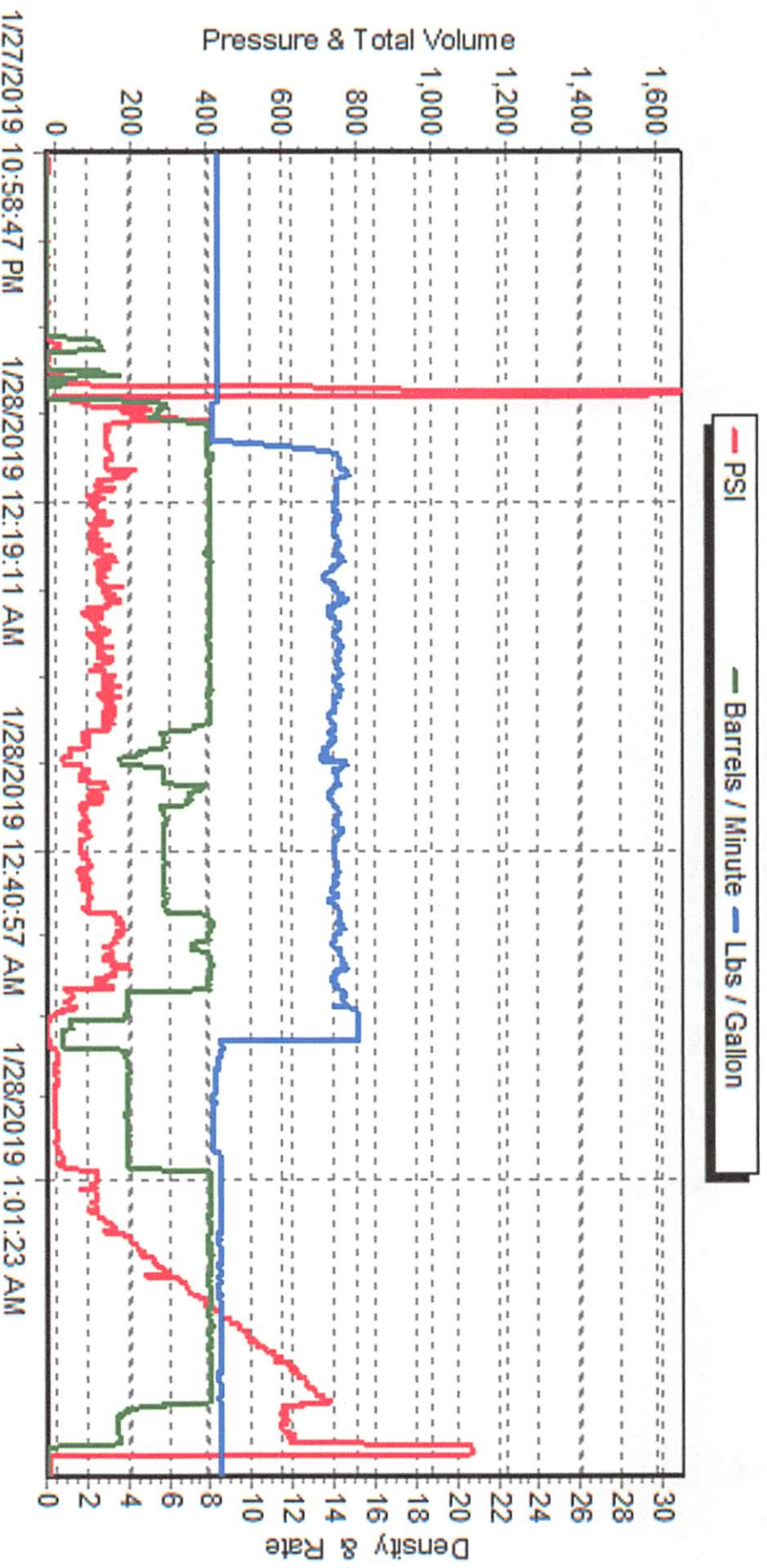


Date _____

Buddy 7-10HZ





Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/27/2019

Invoice # 606417

API# 05-123-48447

Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation

Well Name: Buddy 7-10HZ

County: Weld

State: Colorado

Sec: 8

Twp: 1N

Range: 65W

Consultant: Dave

Rig Name & Number: Cartel 88

Distance To Location: 35 Miles

Units On Location: 4045/4044/4030

Time Requested: 22:00

Time Arrived On Location: 20:45

Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 1,870
Total Depth (ft) : 1880
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.25
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 10


Max Rate: 8
Max Pressure: 2000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 5%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup
Dye in second 10 bbl

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 142.02 bbls	
cuft of Shoe 18.66 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 61.05 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of cement in annulus	
cuft of Casing 918.57 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Hydrostatic Pressure: 1379.50 PSI	
Total Slurry Volume 998.28 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Pressure of the fluids inside casing	
bbls of Slurry 177.79 bbls (Total Slurry Volume) X (.1781)		Displacement: 787.77 psi	
Sacks Needed 670 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		Shoe Joint: 31.72 psi	
Mix Water 119.32 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42		Total 819.49 psi	
		Differential Pressure: 560.01 psi	
		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed: 301.34 bbls	

X 
Authorization To Proceed