



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/10/2017  
 Invoice # 200087  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** hilgers 32n-22hz

County: Weld  
 State: Colorado  
 Sec: 22  
 Twp: 3n  
 Range: 68w

Consultant: bryon  
 Rig Name & Number: wmo 252  
 Distance To Location: 28  
 Units On Location: 4028/4020/4034  
 Time Requested: 130 am  
 Time Arrived On Location: 1130 pm  
 Time Left Location: 7:00 pm

## WELL DATA

Casing Size OD (in) : 9.625  
 Casing Weight (lb) : 36.00  
 Casing Depth (ft.) : 1,854  
 Total Depth (ft) : 1879  
 Open Hole Diameter (in.) : 13.50  
 Conductor Length (ft) : 80  
 Conductor ID : 15.6  
 Shoe Joint Length (ft) : 42  
 Landing Joint (ft) : 15  
 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: 7.40  
 % Excess: 15%  
 Displacement Fluid lb/gal: 8.3  
 BBL to Pit:  
 Fluid Ahead (bbls): 30.0  
 H2O Wash Up (bbls): 10.0

### Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.23 **cuft**  
 (Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 65.76 **cuft**  
 (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 997.06 **cuft**  
 (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 1081.05 **cuft**  
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 192.53 **bbls**  
 (Total Slurry Volume) X (.1781)

**Sacks Needed** 726 **sk**  
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 127.83 **bbls**  
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 141.24 **bbls**

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1367.70 **PSI**

## Pressure of the fluids inside casing

**Displacement:** 781.30 **psi**

**Shoe Joint:** 30.98 **psi**

**Total** 812.28 **psi**

**Differential Pressure:** 555.41 **psi**

**Collapse PSI:** 2020.00 **psi**

**Burst PSI:** 3520.00 **psi**

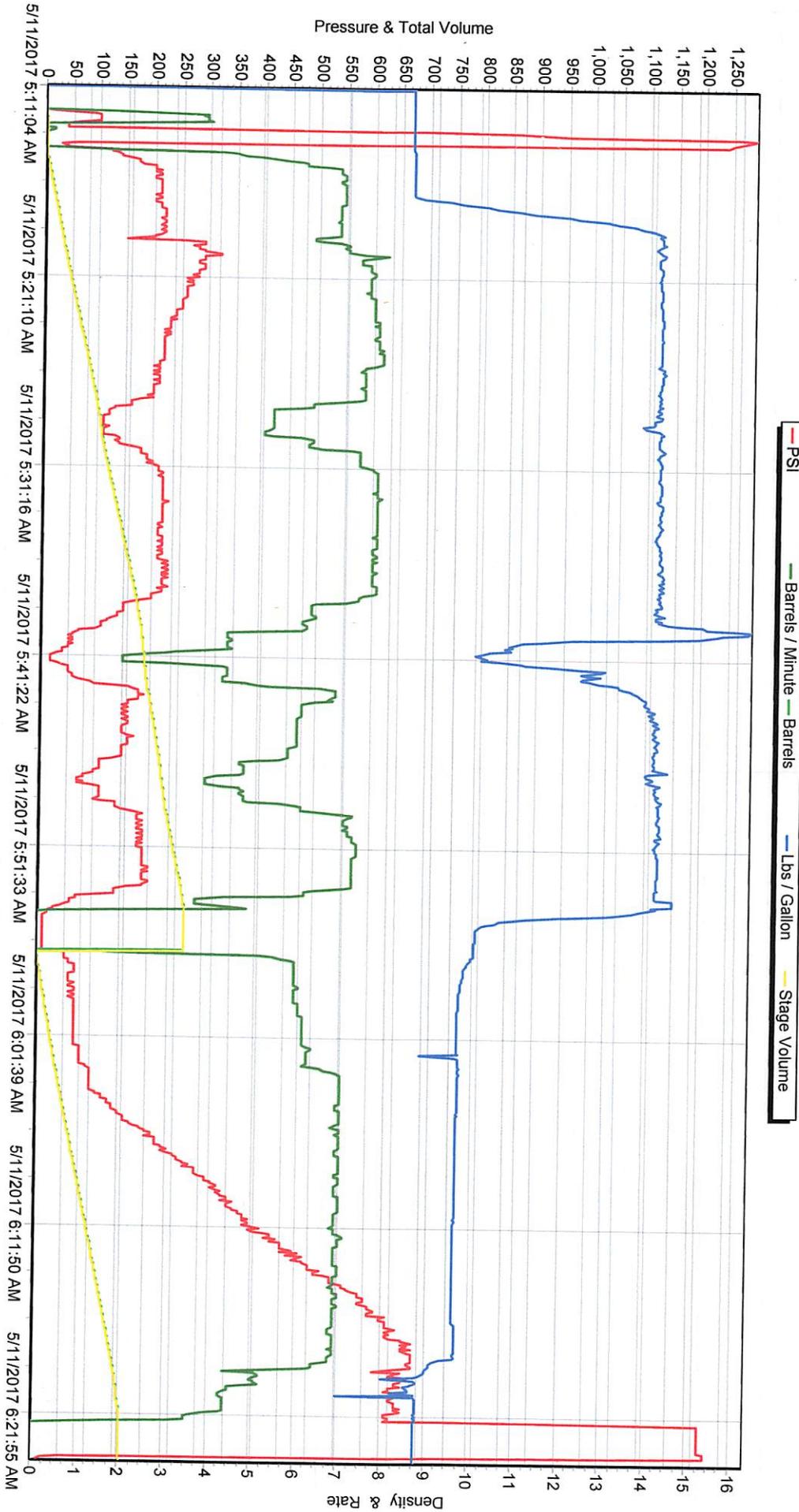
**Total Water Needed:** 309.07 **bbls**

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



5:11:04 AM