



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 9/17/2015

Invoice # 90040

API# 05-123-42070

Supervisor Nick

Customer: Anadarko Petroleum Corporation

Well Name: Sunflower 8N-17HZ

County: Weld

State: Colorado

Sec: 8

Twp: 2N

Range: 65W

Consultant: Hayden

Rig Name & Number: Noble 2

Distance To Location: 25

Units On Location: 024/3210/4007/3106/3105/320

Time Requested: 19:00

Time Arrived On Location: 18:30

Time Left Location: 22:45

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,849  
Total Depth (ft) : 1859  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 60  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 10

Max Rate: 7  
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: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 45.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
30 bbl dye in second 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.27 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 45.79 cuft  
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 1005.49 cuft  
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 1070.55 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 190.66 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 718 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 127.96 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 140.28 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1364.01 PSI

## Pressure of the fluids inside casing

**Displacement:** 778.11 psi

**Shoe Joint:** 32.75 psi

**Total** 810.86 psi

**Differential Pressure:** 553.14 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 318.24 bbls

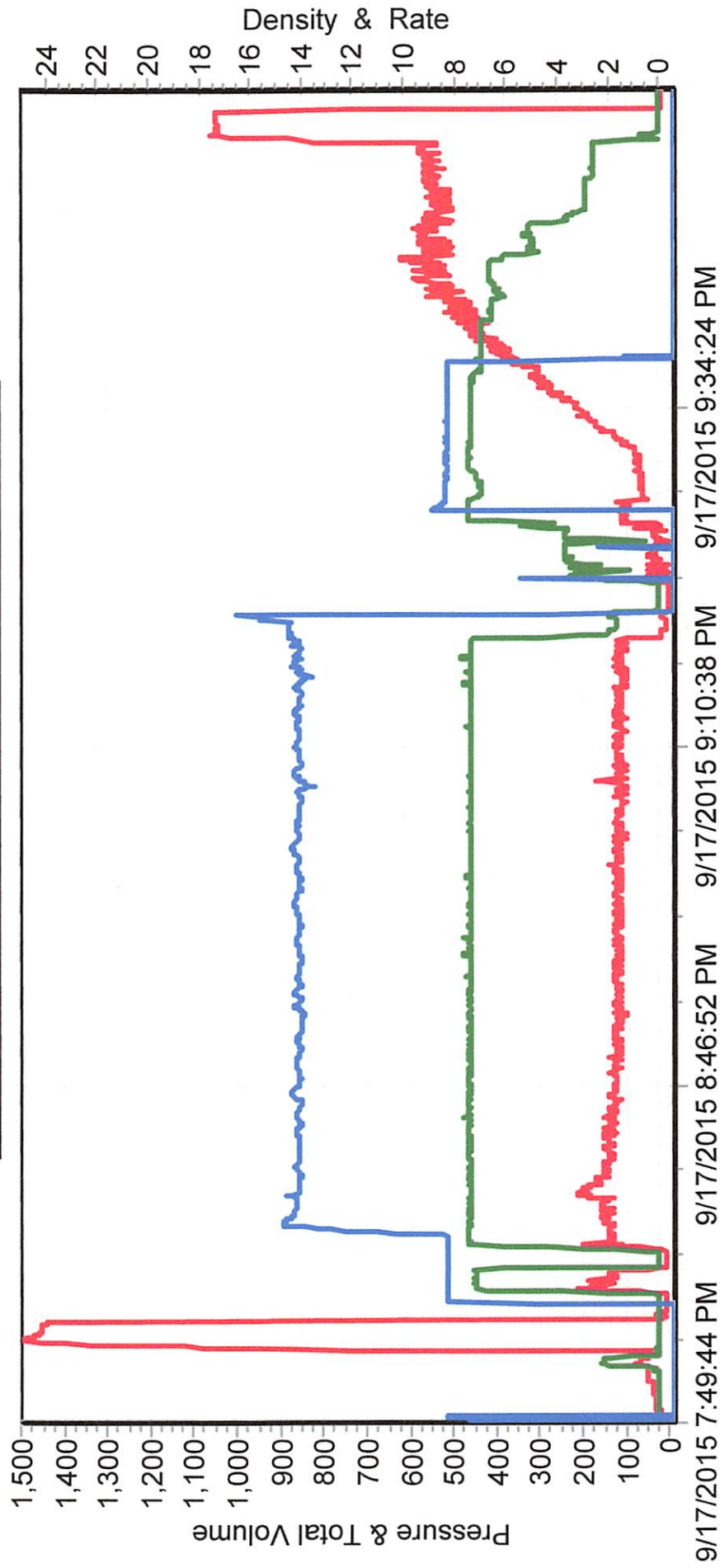
x *Bryan Brown*  
Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.

X 9/17/15  
Date

# Sunflower 8N-17HZ

— PSI — Barrels / Minute — Lbs / Gallon







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