

# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/25/2014  
Invoice #: 25075  
API#: 05-123-36462  
Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation

Well Name: Buffalo 35N-15HZ

County: Weld  
State: Colorado  
Sec: 6  
Twp: 1N  
Range: 68W

Consultant: Allen  
Rig Name & Number: Major 42  
Distance To Location: 29 Miles  
Units On Location: 4023-3104/4018-3204  
Time Requested: 200pm  
Time Arrived On Location: 1200pm  
Time Left Location: 4:45pm

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,304  
Total Depth (ft) : 1320  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) :  
Conductor ID :  
Shoe Joint Length (ft) : 42  
Landing Joint (ft) : 8

Max Rate: 7  
Max Pressure: 2500

## 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: 18  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
30bbls H2O+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 18.28 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 0.00 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 735.61 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 753.89 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 134.27 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 506 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 90.11 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 98.15 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 961.76 PSI

## Pressure of the fluids inside casing

**Displacement:** 543.99 psi

**Shoe Joint:** 31.06 psi

**Total** 575.05 psi

**Differential Pressure:** 386.71 psi

**Collapse PSI:** 2020.00 psi

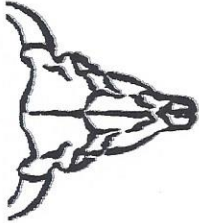
**Burst PSI:** 3520.00 psi

**Total Water Needed:** 238.26 bbls

X   
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.





SINGLE CEMENT SURFACE PIPE

## Single Cement Surface Pipe

Customer  
Well NameAnadarko Petroleum Corporation  
Buffalo 35N-15HZINVOICE #  
LOCATION  
FOREMAN  
DateWeld  
Calvin Reimers  
10/25/2014

## Treatment Report Page 2

## DESCRIPTION OF JOB EVENTS

	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BbLS	Time	PSI	BbLS	Time	PSI	BbLS	Time	PSI	BbLS	Time	PSI	BbLS	Time	PSI
Safety Meeting	237pm														
MIRU	145pm														
CIRCULATE	305pm														
Drop Plug															
333pm															
M & P															
Time	Sacks														
311pm	506														
331pm															
% Excess	15%														
Mixed bbls	90.11														
Total Sacks	506														
bbl Returns	18														
Water Temp	64.8														

Notes:

The day

1/2 bbl back on bleed off

X *Alm Smith*

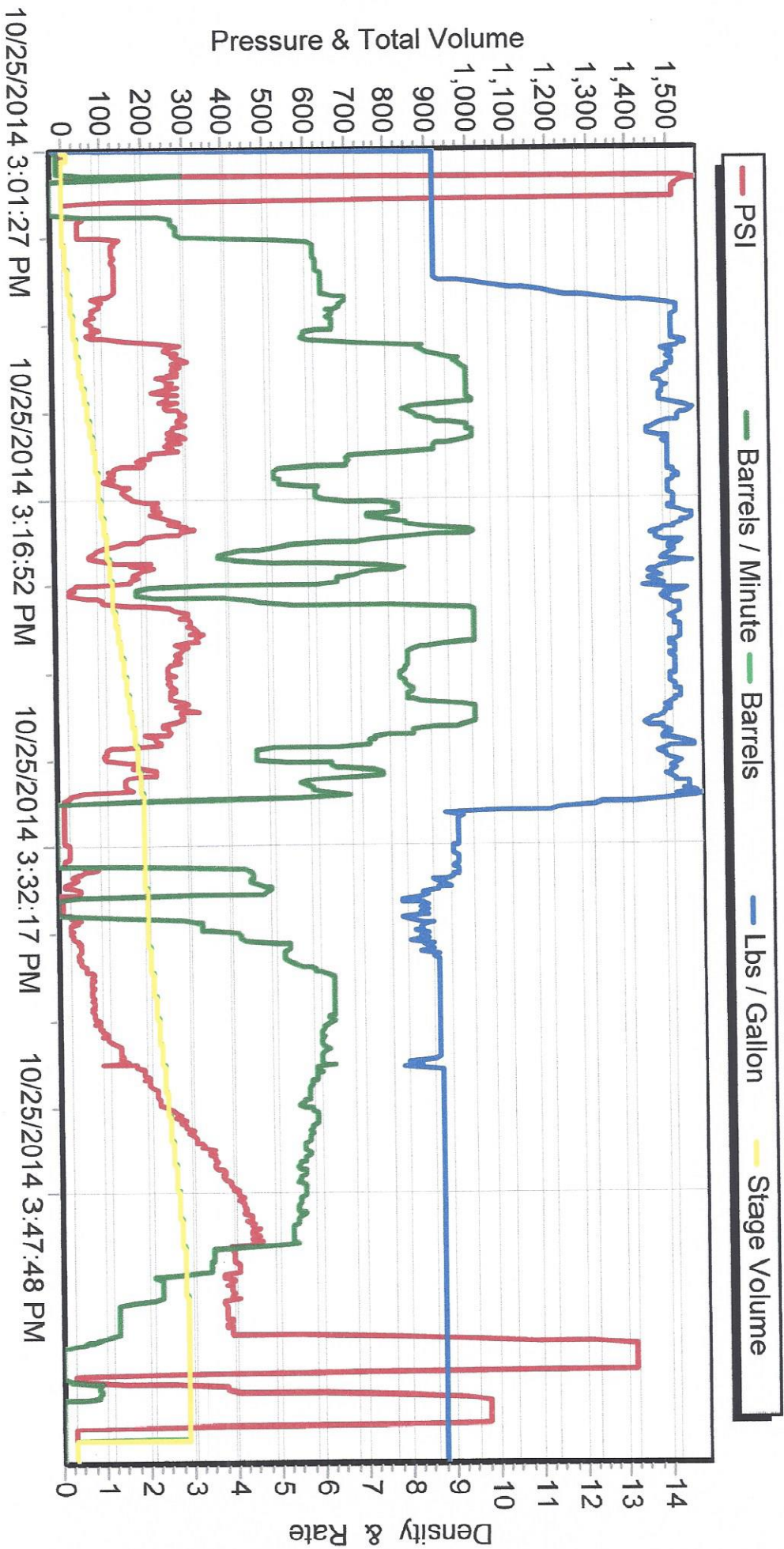
X

Title

X

Date

# SERIES 2000





## Release and Indemnification

Customer acknowledges and assumes the risks associated with oil well drilling, cementing and acidizing, including, without limitation, destabilization, loss of production, contamination, fracturing and loss of well control. Customer agrees to release Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from any and all liability for any and all damages whatsoever to property of any kind owned by, in the possession of, or leased by customer and those persons or entities customer has the ability to bind by contract. Customer also agrees to indemnify and hold harmless Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from and against any and all liability, claims, costs, expenses, attorneys fees and damages whatsoever for claims, costs, expenses, attorneys fees and damages whatsoever for personal injury, illness, death, property damage and loss resulting from: loss or reduction of production, destabilization loss of oil well control, failure of or contamination by acid stimulation, hydraulic fracturing, cementing, pumping services, incompatible fluid or other processes to stimulate, complete or end production, and/or any other condition. Customer's release, indemnity and hold harmless obligation shall apply even if the liability and claims are caused by the sole, concurrent, active or passive negligence, fault, or strict liability of Bison Oil Well Cementing, Inc. and/or Bison Energy Services, Inc. or any defect in the data, products, supplies, materials or equipment furnished by Bison Oil Well Cementing, Inc. whether in the design, manufacturing, maintenance, or marketing thereof or from failure to warn of such defect. In the event that any portion of this release and indemnity is found by a court of competent jurisdiction to be inoperable or unenforceable, the remaining portions and provisions shall apply, and customer agrees that the contract price herein shall be the limit of Bison Oil Well Cementing, Inc.'s liability, if any.