



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/2/2015  
 Invoice # 80083  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** viper pyro 39nz-10hz

County: Weld  
 State: Colorado  
 Sec: 15  
 Twp: 3n  
 Range: 67w

Consultant: rickey  
 Rig Name & Number: pinnergy 4  
 Distance To Location: 26  
 Units On Location: 4038-3103/4033-3214  
 Time Requested: 9:00 pm 9:30 AM  
 Time Arrived On Location: 7:00 pm 8:30 AM  
 Time Left Location: 11:30 pm

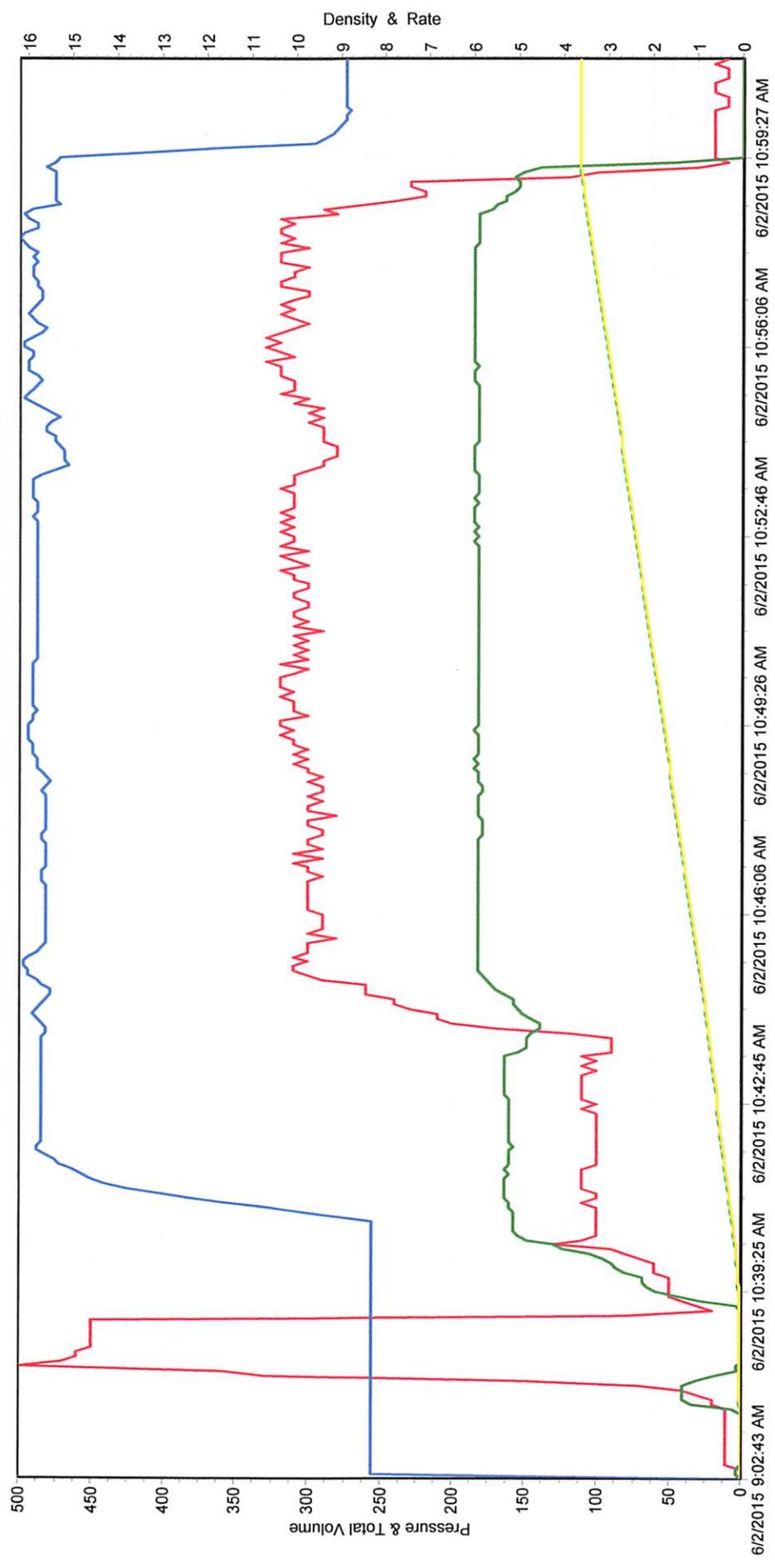
WELL DATA	Cement Data
Casing Size OD (in) : <u>4.5</u>	Cement Name: <u>g neat</u>
Casing Weight (lb) : <u>10.50</u>	Cement Density (lb/gal) : <u>15.8</u>
Casing Depth (ft.) : <u>382</u>	Cement Yield (cuft) : <u>1.15</u>
Total Depth (ft) : <u>384</u>	Gallons Per Sack: <u>5.00</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>0%</u>
Conductor Length (ft) : <u>60</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>16</u>	BBL to Pit: _____
Shoe Joint Length (ft) : _____	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : _____	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: _____	Spacer Ahead Makeup _____
Max Pressure: _____	

Calculated Results	Pressure of cement in annulus
Casing ID <u>4.052</u> Casing Grade <u>J-55 only used</u>	<b>Displacement: 6.09 bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Shoe 0.00 cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Conductor 77.15 cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Hydrostatic Pressure: 313.55 PSI</b>
<b>cuft of Casing 284.50 cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Pressure of the fluids inside casing</b>
<b>Total Slurry Volume 361.65 cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Displacement: 164.71 psi</b>
<b>bbls of Slurry 64.41 bbls</b> (Total Slurry Volume) X (.1781)	<b>Shoe Joint: 0.00 psi</b>
<b>Sacks Needed 314 sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total 164.71 psi</b>
<b>Mix Water 37.44 bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure: 148.83 psi</b>
	<b>Collapse PSI: #N/A psi</b>
	<b>Burst PSI: #N/A psi</b>
	<b>Total Water Needed: 83.53 bbls</b>

X [Signature]  
 Authorization To Proceed



# M/D TOTCO 2000 SERIES



## **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.