



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: 900 pm 6/2/2015

Time Arrived On Location: 700 pm 6/2/2015

Time Left Location: 11:30 pm

WELL DATA

Casing Size OD (in) : 4.5

Casing Weight (lb) : 10.50

Casing Depth (ft) : 382

Total Depth (ft) : 384

Open Hole Diameter (in.) : 13.50

Conductor Length (ft) : 60

Conductor ID : 16

Shoe Joint Length (ft) :

Landing Joint (ft) :

Max Rate:

Max Pressure:

Cement Data

Cement Name: g neat

Cement Density (lb/gal) : 15.8

Cement Yield (cuft) : 1.15

Gallons Per Sack: 5.00

% Excess: 0%

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

4.052

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 0.00 cuft

(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 77.15 cuft

(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 284.50 cuft

(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 361.65 cuft

(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 64.41 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 314 sk

(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 37.44 bbls

(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 6.09 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 313.55 PSI

Pressure of the fluids inside casing

Displacement: 164.71 psi

Shoe Joint: 0.00 psi

Total 164.71 psi

Differential Pressure: 148.83 psi

Collapse PSI: #N/A psi

Burst PSI: #N/A psi

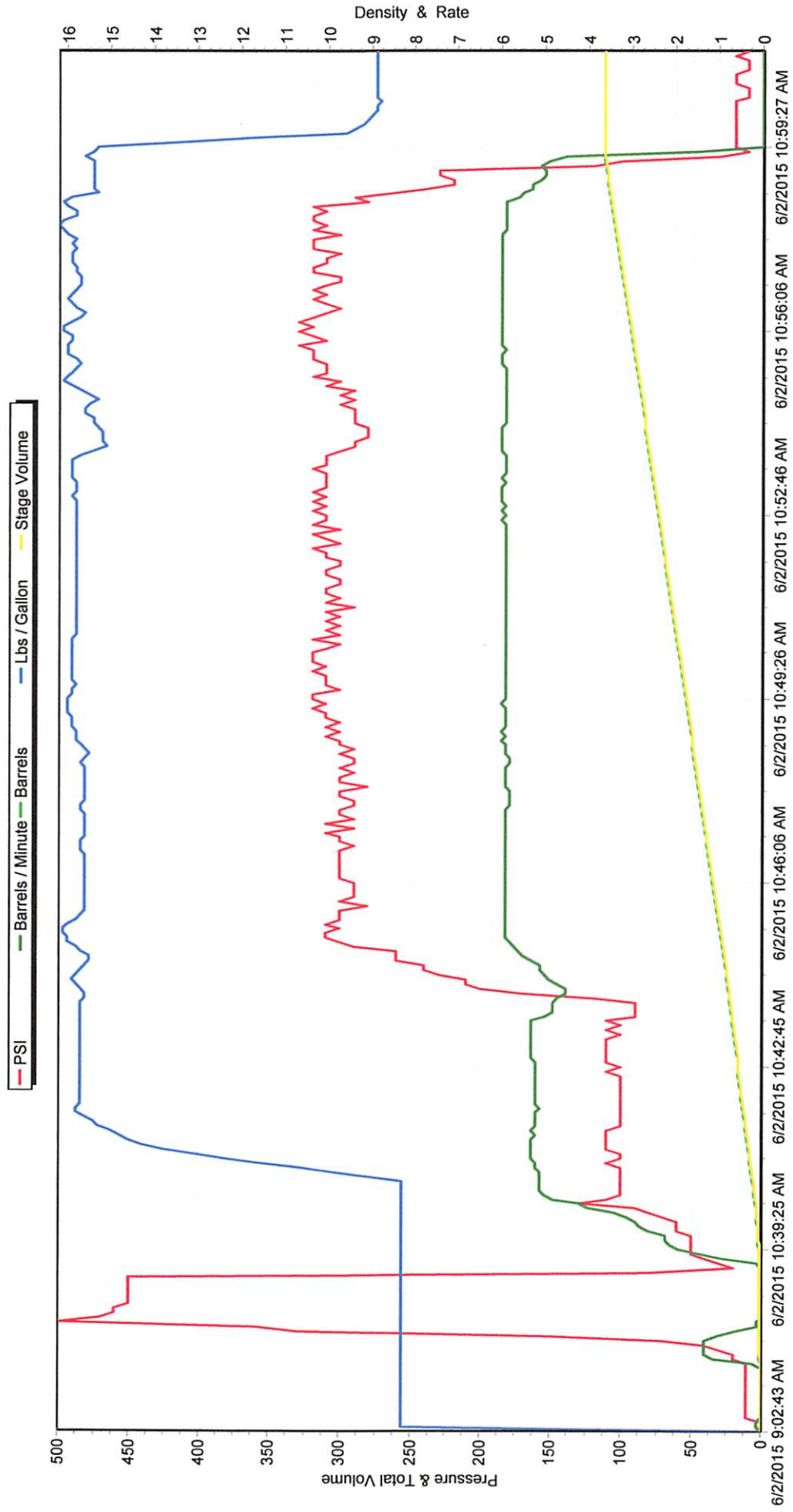
Total Water Needed: 83.53 bbls

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.

Date _____

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.