



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/21/2015
Invoice #: 80420
API#: 05-123-41552
Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation

Well Name: Carter 14N-33HZ

County: Weld
State: Colorado
Sec: 33
Twp: 2N
Range: 66W

Consultant: Bryan / Luke
Rig Name & Number: Noble 2
Distance To Location: 19 Miles
Units On Location: 4023-3104/3212/3204
Time Requested: 730am
Time Arrived On Location: 550am
Time Left Location: 11:45 am

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 1,835
Total Depth (ft) : 1852
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 40
Conductor ID : 16
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 10

Max Rate: 6
Max Pressure: 1750

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 24
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 15.0

Spacer Ahead Makeup

30 bbls With Dye in 2nd 10 bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.54 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 35.64 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 1052.95 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1107.12 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 197.18 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 743 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 132.33 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 139.36 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1353.96 PSI

Pressure of the fluids inside casing

Displacement: 772.97 psi

Shoe Joint: 31.51 psi

Total 804.47 psi

Differential Pressure: 549.49 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 316.69 bbls

X

Authorization To Proceed

Calvin Reimers

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 7/21/15
Date

SERIES 2000

