



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/25/2017
Invoice #: 6661138
API#: 05-123-43311
Foreman: Nick Vigil

Customer: Anadarko Petroleum Corporation
Well Name: Hinglers 13N-22HZ

County: Weld
State: Colorado
Sec: 22
Twp: 3N
Range: 68W

Consultant: Lane/Sean
Rig Name & Number: WMO 252
Distance To Location: 28 Miles
Units On Location: 4023/4024/4033
Time Requested: 8:00
Time Arrived On Location: 7:45
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 1,878
Total Depth (ft) : 1891
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.25
Shoe Joint Length (ft) : 46
Landing Joint (ft) : 10

Max Rate:
Max Pressure:

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: 22.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.97 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 61.05 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 1010.55 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 1091.56 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 194.41 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 733 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 130.47 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 2

Displacement: 142.40 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 1385.40 PSI

Pressure of the fluids inside casing

Displacement: 789.92 psi

Shoe Joint: 33.93 psi

Total 823.86 psi

Differential Pressure: 561.54 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 322.87 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.

X 5/25/17
Date

Hilgers 13N-22HZ

