



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 8/10/2017

Invoice # 666180

API# 05-123-43576

Foreman: Nick Vigil

**Customer:** Anadarko Petroleum Corporation

**Well Name:** Norden 1C-14HZ

County: Weld  
State: Colorado

Sec: 14  
Twp: 1N  
Range: 67W

Consultant: Levi  
Rig Name & Number: Cartel 88  
Distance To Location: 32 Miles  
Units On Location: 4023/4044/4045  
Time Requested: 16:00  
Time Arrived On Location: 15:30  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,866  
Total Depth (ft) : 1876  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 80  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 10  
  
Max Rate: 8  
Max Pressure: 2000

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 5%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0  
  
Spacer Ahead Makeup  
Dye in second 10 bbl

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.10 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** 916.51 cuft  
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )

**Total Slurry Volume** 996.66 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 177.51 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 669 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 119.13 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement: 141.63 bbls**

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

## Pressure of cement in annulus

**Hydrostatic Pressure: 1376.55 PSI**

## Pressure of the fluids inside casing

**Displacement: 785.61 psi**

**Shoe Joint: 32.46 psi**

**Total 818.07 psi**

**Differential Pressure: 558.48 psi**

**Collapse PSI: 2020.00 psi**

**Burst PSI: 3520.00 psi**

**Total Water Needed: 310.76 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.



# Norden 1C-14HZ

