



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/30/2015

Invoice # 8 01205

API# 05-069-06470

Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: MIRACLE 40N-11HZ

County: LARIMER

State: Colorado

Sec: 12

Twp: 5N

Range: 68W

Consultant: CODY

Rig Name & Number: NOBLE 2

Distance To Location: 20

Units On Location: 4031-3106/ 4019-3205

Time Requested: 200

Time Arrived On Location: 1230

Time Left Location: 400

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,848  
Total Depth (ft) : 1860  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 47  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 42  
Landing Joint (ft) : 7

Max Rate: 6

Max Pressure: 1000

## 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: 25.0

Fluid Ahead (bbls): 30.0

H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30BBL WATER/ DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 18.23 cuft

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

cuft of Conductor 35.87 cuft

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

cuft of Casing 1012.23 cuft

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

Total Slurry Volume 1066.33 cuft

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

bbls of Slurry 189.91 bbls

(Total Slurry Volume) X (.1781)

Sacks Needed 716 sk

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

Mix Water 127.46 bbls

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

Displacement: 140.16 bbls

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

## Pressure of cement in annulus

Hydrostatic Pressure: 1363.27 PSI

## Pressure of the fluids inside casing

Displacement: 778.71 psi

Shoe Joint: 30.98 psi

Total 809.70 psi

Differential Pressure: 553.57 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 317.61 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.

## Bison Oil Well Cementing Single Cement Surface Pipe

Customer  
Well Name

Anadarko Petroleum Corporation  
MIRACLE 40N-11HZ

INVOICE #  
LOCATION  
FOREMAN  
Date

80605
LARIMER
JASON KELEHER
6/30/2015

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## DESCRIPTION OF JOB EVENTS

[illegible]

X

Customer Signature

X

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Title

x

Date \_\_\_\_\_

# MIRACLE 40N-11HZ SURFACE

