

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1 1/2% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 11/23/2016  
Invoice #: 900002  
API#: 05-123-42624  
Foreman: JASON

Customer: Anadarko Petroleum Corporation

Well Name: JAGUAR 36C-35HZ

County: Weld  
State: Colorado  
Sec: 23  
Twp: 1N  
Range: 67W

Consultant:  
Rig Name & Number: XTREME 24  
Distance To Location: 34  
Units On Location: 3102,  
Time Requested: 100  
Time Arrived On Location: 1230  
Time Left Location: 700

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 2,262  
Total Depth (ft) : 2271  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 80  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 44  
Landing Joint (ft) : 22

Max Rate: 8  
Max Pressure: 2000

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.48  
Gallons Per Sack: 7.48  
% Excess: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 10.0  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
30 BBL WATER DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.06 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** 1226.37 cuft  
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 1306.48 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 232.68 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 883 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 157.21 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 173.18 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1668.68 PSI

## Pressure of the fluids inside casing

**Displacement:** 956.40 psi

**Shoe Joint:** 32.39 psi

**Total** 988.79 psi

**Differential Pressure:** 679.89 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 380.39 bbls

X

Authorization To Proceed



## Bison Oil Well Cementing Single Cement Surface Pipe

Customer  
Well Name

Anadarko Petroleum Corporation  
JAGUAR 36C-35HZ

INVOICE #  
LOCATION  
FOREMAN  
Date

900002
Weld
JASON
11/23/2016

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## DESCRIPTION OF JOB EVENTS

[illegible]

X

**Work Preformed**

X

Title

1

Date \_\_\_\_\_

# JAGUAR 36C-35HZ SURFACE

