



Bison Oil Well Cementing  
1547 Gaylord Street  
Denver, CO 80206

FIELD INVOICE #

80468

FIELD INVOICE

WELL NO. AND FARM	COUNTY	STATE	DATE	Contractor	
Alvin 27N-29HZ	Weld	Colorado	11/15/2015	Noble 2	
CHARGE TO	WELL LOCATION				
Anadarko Petroleum Corporation	Section	TWP	RANGE		
PO Box 4995	29	2N	65W		
The Woodlands, TX 77387	DELIVERED TO		LOCATION 1	CODE	
	125+38		Shop		
	SHIPPED VIA		LOCATION 2	CODE	
	4023-3104/4030-3203		125+38		
	TYPE AND PURPOSE OF JOB		LOCATION 3	CODE	
	SURFACE		Shop		
			WELL TYPE	CODE	
			Oil		
ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					
SURFACE		1	ea		
MILLEAGE CHARGE					
Pickup		62	mile		
Truck/Equipment		62	mile		
Truck/Equipment		62	mile		
Truck/Equipment		62	mile		
CEMENT CHARGE:					
BFN III		752	sack		
ADDITIVES CHARGE:					
KCL		3	qt		
Dye Hot Pink		16	oz		
Sugar			lb		
FLOAT EQUIPMENT:					
RUBBER PLUG - 9 5/8"	ALVIN 27N-29HZ NOBLE 2		ea		
	FRANK KINNEY USER ID: CU0741				
	CONSULTANT: <i>Bryan Brown</i>				
	AFE# 2109775 DATE: <i>11/15/15</i>				
	GL CODE: 800 <i>12090</i>				
OTHER CHARGES:					
DATA ACQUISITION FEE		1	ea		
Containment		1	ea		
Winterization			ea		
Wait Time			hour		
PSI Test			ea		

Thanks Calvin

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%.

TA)

SUBJECT TO CORRECTION

*Bryan Brown*  
Customer or Agent

*Calvin D. D.*  
Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledge and specifically agree to the terms and conditions on this work order, including, without limitation, the provisions on the reverse hereof which include the release and indemnity.



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 11/15/2015  
Invoice #: 80468  
API#: 05-123-42207  
Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation  
Well Name: Alvin 27N-29HZ

County: Weld  
State: Colorado  
Sec: 29  
Twp: 2N  
Range: 65W

Consultant: Hayden / Bryan  
Rig Name & Number: Noble 2  
Distance To Location: 31 Miles  
Units On Location: 4023-3104/4030-3203  
Time Requested: 1000am / 4:15pm  
Time Arrived On Location: 800am / 3:45pm  
Time Left Location: 7:30am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 1,860  
Total Depth (ft) : 1877  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 60  
Conductor ID : 15.25  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 10

Max Rate: 8  
Max Pressure: 1250

## 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: 26  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 15.0

### Spacer Ahead Makeup

30bbls+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.61 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 45.79 cuft  
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 1055.77 cuft  
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 1121.17 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 199.68 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 752 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 134.01 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 141.09 bbls

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

## Pressure of cement in annulus

**Hydrostatic Pressure:** 1372.27 PSI

## Pressure of the fluids inside casing

**Displacement:** 782.60 psi

**Shoe Joint:** 33.33 psi

**Total** 815.93 psi

**Differential Pressure:** 556.34 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 320.10 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.





Anadarko Petroleum Corporation  
Alvin 27N-29HZ

80468
Weld
Calvin Reimers
11/15/2015

## DESCRIPTION OF JOB EVENTS

11/15/15

# SERIES 2000

