



**Bison Oil Well Cementing**  
 1547 Gaylord Street  
 Denver, CO 80206

FIELD INVOICE #  
**80543**

**FIELD INVOICE**

<b>WELL NO. AND FARM</b> wilson ranch 13n-27hz	<b>COUNTY</b> Weld	<b>STATE</b> Colorado	<b>DATE</b> 10/15/2015	<b>Contractor</b> noble 2
<b>CHARGE TO</b> Anadarko Petroleum Corporation	<b>WELL LOCATION</b>			
PO Box 4995	<b>Section</b> 26	<b>TWP</b> 4n	<b>RANGE</b> 68w	
The Woodlands, TX 77387	<b>DELIVERED TO</b> I-25-38		<b>LOCATION 1</b> shop	<b>CODE</b>
	<b>SHIPPED VIA</b> 4029-3106/4035-3203		<b>LOCATION 2</b> I-25 - 38	<b>CODE</b>
	<b>TYPE AND PURPOSE OF JOB</b> SURFACE		<b>LOCATION 3</b> shop	<b>CODE</b>
			<b>WELL TYPE</b> gas	<b>CODE</b>

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
<b>PUMP CHARGE</b>					\$ -
SURFACE		1	ea		
<b>MILLEAGE CHARGE</b>					
Pickup		60	mile		
Truck/Equipment		60	mile		
Truck/Equipment		60	mile		
Truck/Equipment		60	mile		
<b>CEMENT CHARGE:</b>					
BFN III		706	sacks		
<b>ADDITIVES CHARGE:</b>					
KCL		3	qt		
Liquid Dye Rhodamine		15	oz		
Sugar			lbs		
<b>FLOAT EQUIPMENT:</b>					
<b>OTHER CHARGES:</b>					
DATA ACQUISITION FEE		1	ea		
Containment		1	ea		

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%.

TAX

WILSON RANCH 13N-27HZ NOBLE 2  
 FRANK KINNEY USER ID: CU0741  
 CONSULTANT: *Hayden Stone*  
 AFE# 2097557 DATE: 10-15-15  
 GL CODE: 80012090

*[Signature]*  
 Customer or Agent

SUBJECT TO CORRECTION

*[Signature]*  
 Bison Oil Well Cementing, Inc. Representative

Customers hereby acknowledges and specifically agrees 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: 10/15/2015  
 Invoice # 80543  
 API# \_\_\_\_\_  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** wilson ranch 13n-27hz

County: Weld  
 State: Colorado  
 Sec: 26  
 Twp: 4n  
 Range: 68w

Consultant: hayden  
 Rig Name & Number: noble 2  
 Distance To Location: 30  
 Units On Location: 4029-3106/4035-3203  
 Time Requested: 500 am  
 Time Arrived On Location: 330 am  
 Time Left Location: 7:00 pm

WELL DATA	Cement Data
Casing Size OD (in) : <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb) : <u>36.00</u>	Cement Density (lb/gal) : <u>14.2</u>
Casing Depth (ft) : <u>1,825</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1835</u>	Gallons Per Sack: <u>7.48</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>15%</u>
Conductor Length (ft) : <u>40</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : <u>15.25</u>	BBL to Pit: _____
Shoe Joint Length (ft) : <u>41</u>	Fluid Ahead (bbls): <u>50.0</u>
Landing Joint (ft) : <u>10</u>	H2O Wash Up (bbls): <u>10.0</u>
Max Rate: _____	Spacer Ahead Makeup _____
Max Pressure: _____	

Calculated Results	Pressure Calculations
Casing ID: <u>8.921</u>	Casing Grade: <u>J-55 only used</u>
<b>cuft of Shoe</b> <u>17.80</u> <b>cuft</b> (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Displacement:</b> <u>138.69</u> <b>bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Conductor</b> <u>30.53</u> <b>cuft</b> (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Casing</b> <u>1003.24</u> <b>cuft</b> (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length )	<b>Hydrostatic Pressure:</b> <u>1346.30</u> <b>PSI</b>
<b>Total Slurry Volume</b> <u>1051.56</u> <b>cuft</b> (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Pressure of the fluids inside casing</b>
<b>bbls of Slurry</b> <u>187.28</u> <b>bbls</b> (Total Slurry Volume) X (.1781)	<b>Displacement:</b> <u>769.23</u> <b>psi</b>
<b>Sacks Needed</b> <u>706</u> <b>sk</b> (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Shoe Joint:</b> <u>30.25</u> <b>psi</b>
<b>Mix Water</b> <u>125.69</u> <b>bbls</b> (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Total</b> <u>799.47</u> <b>psi</b>
	<b>Differential Pressure:</b> <u>546.83</u> <b>psi</b>
	<b>Collapse PSI:</b> <u>2020.00</u> <b>psi</b>
	<b>Burst PSI:</b> <u>3520.00</u> <b>psi</b>
	<b>Total Water Needed:</b> <u>324.38</u> <b>bbls</b>

X [Signature]  
 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.



# M/D TOTCO 2000 SERIES

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume

