



# BISON

Bison Oil Well Cementing Inc.  
 1547 Gaylord Street  
 Denver, CO 80206  
 303-296-3010

## Invoice

Date	Invoice #
5/18/2014	25000

Bill To
Noble Energy Inc. Attn: Accounting 1625 Broadway Ste 2000 Denver, CO 80202

Location	Well Name & No.	Terms	Job Type		
Weld CO	Wells Ranch AE30-68-1BHNA	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1		2,400.00	2,400.00
Discount 15%	Discount 15%			-360.00	-360.00
MILEAGE	Mileage charge	360		1.00	360.00
Discount 15%	Discount 15%			-54.00	-54.00
Data Acquisition ...	Data Acquisition Charge	1		225.00	225.00
Discount 15%	Discount 15%			-33.75	-33.75
Service Charge	Casing Psi Test	1		500.00	500.00
	Subtotal of Services				2,460.25
BFN III Summer ...	BFN III Blend	326	Sack	10.25	3,341.50
Discount 15%	Discount 15%			-501.23	-501.23
KCL Mud Flush	(BHS 117)	4	qt	7.50	30.00
Discount 15%	Discount 15%			-4.50	-4.50
Dye - 4880	Dye (Hot Pink 4880)	16	oz	15.00	240.00
Discount 15%	Discount 15%			-36.00	-36.00
	Subtotal of Materials				3,069.77

Please Remit Payment To:

Bison Oil Well Cementing, Inc.  
 P.O. Box 29671  
 Thornton, CO 80229

Subtotal	5,811.02
Sales Tax	348.66
Total	6,159.68
Balance Due	6,159.68



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/18/2014  
Invoice #: 25000  
API#: 05-123-38676  
Foreman: Calvin Reimers

Customer: Noble Energy Inc.  
Well Name: Wells Ranch AE 30-68-1BHNA

County: Weld  
State: Colorado  
Sec: 29  
Twp: 6N  
Range: 62W  
Consultant: Bo  
Rig Name & Number: H&P 322  
Distance To Location: 33 Miles  
Units On Location: 4023-3104/4018-3203  
Time Requested: 300am  
Time Arrived On Location: 200am  
Time Left Location: 645am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 605  
Total Depth (ft) : 638  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 47  
Landing Joint (ft) : 30

Max Rate: 7  
Max Pressure: 2500

## Cement Data

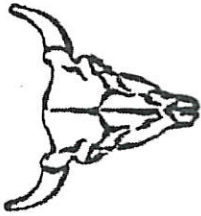
Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 12.0  
Fluid Ahead (bbls): 40.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup  
10bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J-55 only used
<b>Calculated Results</b>		<b>Displacement: 45.45 bbls</b> (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	20.27	<b>Pressure of cement in annulus</b>	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Hydrostatic Pressure: 477.40 PSI	
cuft of Conductor	89.10	<b>Pressure of the fluids inside casing</b>	
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Displacement: 240.56 psi	
cuft of Casing	305.17	Shoe Joint: 36.87 psi	
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Total 277.43 psi	
Total Slurry Volume	414.54	Differential Pressure: 199.97 psi	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Collapse PSI: 2020.00 psi	
bbls of Slurry	73.83	Burst PSI: 3520.00 psi	
(Total Slurry Volume) X (.1781)		Total Water Needed: 151.23 bbls	
Sacks Needed	326		
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	45.77		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

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

INVOICE #  
LOCATION  
FOREMAN  
Date

25000  
Weld  
Calvin Reimers  
5/18/2014

Customer  
Well Name

Noble Energy Inc.  
Wells Ranch AE 30-68-1BHNA

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI
Safety Meeting	435am															
MIRU	355am															
	456am	0	530am	80	0			0			0			0		
CIRCULATE		10	533am	140	10			10			10			10		
Drop Plug		20	535am	220	20			20			20			20		
	529am	30	536am	270	30			30			30			30		
		40	538am	270	40			40			40			40		
M & P		50	541am	230	50			50			50			50		
Time		60	Bump	480	60			60			60			60		
504am	Sacks	70			70			70			70			70		
526am		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	15%	130			130			130			130			130		
Mixed bbls	45.77	140			140			140			140			140		
Total Sacks	326	150			150			150			150			150		
bbl Returns	12															
Water Temp	50.9															

Notes:

The day

1/2 bbl back on bleed off

Casing PSI Test 542am 1020psi to 557am 1050psi

X *[Signature]*  
Work Performed

X WSS  
Title

X 5/18/14  
Date