



# BISON

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

## Invoice

Date	Invoice #
10/26/2013	12499

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 AF20-65HN	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1			
Discount 15%	Discount 15%				
MILEAGE	Mileage charge	360			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
HOURS	Wait Time	5			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	562	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	7	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
Discount 15%	Discount 15%				
Sugar	Sugar	50	lb		
	Subtotal of Materials				

Please Remit Payment To:

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

**Subtotal****Sales Tax (2.9%)****Total****Balance Due**

# BISON OIL WELL CEMENTING, INC.

1547 Gaylord Street  
Denver, Colorado 80206  
Phone: 303-296-3010  
Fax: 303-298-8143  
E-mail: bisonoil1@qwestoffice.net



INVOICE #  
LOCATION  
FOREMAN

12499  
Wells Ranch  
Randy Lynch

## TREATMENT REPORT

DATE <u>10/26/13</u>	WELL NAME <u>Wells Ranch</u>	SECTION <u>20</u>	TWP <u>6N</u>	RGE <u>62W</u>	COUNTY <u>Weld</u>
BILL TO <u>Noble</u>		CONSULTANT			
OWNER		RIG NAME & NUMBER <u>H#P 343</u>			
MAILING ADDRESS		DISTANCE TO LOCATION <u>33</u>		UNITS ON LOCATION <u>3106/3212</u>	
CITY		TIME REQUESTED <u>11:00 PM</u>		TIME ARRIVED ON LOCATION <u>9:42 PM</u>	
STATE, ZIP		TIME LEFT LOCATION			

### WELL DATA

HOLE SIZE <u>13 3/4</u>	TUBING SIZE	PERFORATIONS
TOTAL DEPTH <u>977</u>	TUBING DEPTH	SHOTS/FT
CASING SIZE <u>9 5/8</u>	TUBING WEIGHT	OPEN HOLE
CASING DEPTH <u>972.13</u>	TUBING CONDITION	TREATMENT VIA
CASING WEIGHT <u>36#</u>	PACKER DEPTH	
CASING CONDITION <u>Good</u>		
Max Rate <u>7</u>		
Max Pressure <u>2500</u>		

### Cement Makeup

Cement Blend	<u>BEN III 3% BCCA-1 .25 lb/sk BFLA-1</u>		
Cement - Specs	lbs <u>15.2</u>	Yield <u>1.27</u>	Water Requirements <u>5.89</u>
Annulus Factor <u>.5259</u>		Capacity Factor <u>.0773</u>	
TYPE OF TREATMENT <input checked="" type="checkbox"/> Surface Pipe <input type="checkbox"/> Production <input type="checkbox"/> Squeeze <input type="checkbox"/> MISC Pump <input type="checkbox"/> P&A			
HYD HHP = RATE X PRESSURE / 40.8			
% Excess	<u>15%</u>		
BBL to Pit	<u>0</u>		

### DESCRIPTION OF JOB EVENTS

MIRU, Safety meeting, Pressure test 500 psi, Circulate 70 bbls H<sub>2</sub>O with KCL + pink Dye in 2<sup>nd</sup> 10, Mix + Pump cement @ 15.2 #/gal. with yield 1.27 tell good Dye is seen, Drop Plug, Displace 73 bbls H<sub>2</sub>O, Bump Plug @ 150 psi over lift psi, Wait 5 min. bleed off pressure, Wash up Rig Down, Top out well cement did not come to surface

X

Authorization To Proceed

Title

X 10-26-13  
Date

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



# Bison Oil Well Cementing Single Cement Surface Pipe

Invoice # 12499  
API# 05 - 123 - 37218  
Foreman: RANDY LYNCH

Customer: NOBLE  
Well Name: WELL RANCH AE 20 - 65 HN

County: Weld County  
State: Colorado  
Sec: 20  
Twp: 6N  
Range: 62W

Consultant:  
Rig Name & Number: H&P 343  
Distance To Location: 33  
Units On Location: 3106 / 3212  
Time Requested: 11:00 PM  
Time Arrived On Location: 21:42  
Time Left Location:

## WELL DATA

Casing Size OD (in) : 9.6250  
Casing Weight (lb) : 36  
Casing Depth (ft.) : 972  
Total Depth (ft) : 977  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 41  
Landing Joint (ft) : 28

Max Rate: 7  
Max Pressure: 2500

## Cement Data

Cement Name: BEN 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:  
Fluid Ahead (bbls):  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

70

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 17.80 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)  
cuft of Conductor 89.10 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)  
cuft of Casing 458.64 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 565.53 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 115.83 bbls  
(Total Slurry Volume) X (.1781) X (% Excess Cement)  
Sacks Needed 512 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 71.82 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 74.15 bbls

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

## Pressure of cement in annulus

Hydrostatic Pressure: 767.59 PSI

## Pressure of the fluids inside casing

Displacement: 401.49 psi

Shoe Joint: 32.37 psi

Total 433.86 psi

Differential Pressure: 333.73 psi

Collapse PSI: 2020.00 psi

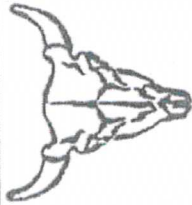
Burst PSI: 3520.00 psi

Total Water Needed: 91.82 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

INVOICE #  
LOCATION  
FOREMAN

12499  
Weld County  
RANDY LYNCH

Customer  
Well Name

NOBLE  
WELLS RANCH AE 20 65 HN

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	300AM														
MIRU	200AM														
CIRCULATE	339AM														
Drop Plug															
4:42 AM															
M & P															
Time															
START 4:13 AM															
STOP 4:39 AM															
% Excess	15%														
Mixed bbls	71.82														
Total Sacks	512														
bbl Returns															

Notes:

FLOAT HELD USED 15% EXCESS 512 SKS 115.83 BBLs OF SLURRY GOT NO CEMENT BACK TO SURFACE

TOP OUT JOB USED 50 SKS CEMENT 7BBLs OF SLURRY

THANK YOU !! / BISON OIL WELL CEMENTING

X

X

Title

X

Date

Work Performed

# M/D TOTCO 2000 SERIES

