



# BISON

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

## Invoice

Date	Invoice #
9/8/2014	45034

### Bill To

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Rohn State LD03-63-111N	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	474			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
HOURS	Wait Time	3			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	387	Sack		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
Discount 15%	Discount 15%				
	Subtotal of Materials				

Please Remit Payment To:

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

Subtotal

Sales Tax

Total

Balance Due



# Bison Oil Well Cementing Tail & Lead

Customer: NOBLE  
Well Name: ROHN STATE LD0363-1HN

Date: 9/8/2014  
Invoice #: 45034  
API#: 05-123-37471  
Foreman: LEE SHARP

County: WELD  
State: CO  
Sec: 4  
Twp: 9N  
Range: 58W

Consultant:  
Rig Name & Number: H&P 273  
Distance To Location: 79  
Units On Location: 3  
Time Requested: 6:00  
Time Arrived On Location: 4:30  
Time Left Location: 12:50

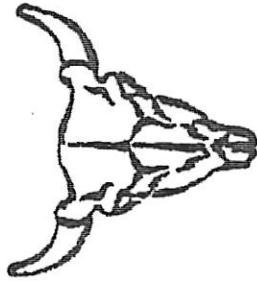
WELL DATA	Cement Data
Casing Size (in): 13.375 Casing Weight (lb/ft): 25 Casing Depth (ft): 1207 <b>Total Depth (ft): 1207</b> <b>Open Hole Diameter (in): 13.75</b> Conductor Length (ft): 15.125 Shoe Joint Length (ft): 45 Landing Joint (ft): 30  Sacks of Tail Requested: 100 HOC Tail (ft): 0  <small>One or the other, cannot have quantity in both</small>  Max Rate: Max Pressure:	<b>Lead</b> Cement Name: BFNIII Cement Density (lb/gal): 13.1 Cement Yield (cuft): 1.69 Gallons Per Sack: 8.64 % Excess: 25%  <b>Tail</b> Cement Name: BFN III Cement Density (lb/gal): 15.2 Cement Yield (cuft): 1.27 Gallons Per Sack: 5.89 % Excess:  Fluid Ahead (bbls): 50.0 H2O Wash Up (bbls): 20.0  Spacer Ahead Makeup 50BBL 10F+10D+30F

Lead Calculated Results	Tail Calculated Results
HOC of Lead: 849.52 ft	Tail Cement Volume In Ann: 127.00 cuft
Casing Depth - HOC Tail	(HOC Tail) X (OH Ann)
Volume of Lead Cement: 446.75 cuft	Total Volume of Tail Cement: 107.43 Cuft
HOC of Lead X Open Hole Ann	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
Volume of Conductor: 76.31 cuft	bbls of Tail Cement: 22.62 bbls
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
Total Volume of Lead Cement (cuft of Lead Cement) + (Cuft of Conductor): 523.06 cuft	HOC Tail: 204.29 ft
bbls of Lead Cement: 116.45 bbls	(Tail Cement Volume) ÷ (OH Ann)
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	Sacks of Tail Cement: 100.00 sk
Sacks of Lead Cement: 386.88 sk	(Total Volume of Tail Cement) ÷ (Cement Yield)
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	bbls of Tail Mix Water: 14.02 bbls
bbls of Lead Mix Water: 79.59 bbls	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
(Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Pressure of cement in annulus</b>
Displacement: 90.34 bbls	Hydrostatic Pressure: 805.58 PSI
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	Collapse PSI: 2020.00 psi
Total Water Needed: 15.97 bbls	Burst PSI: 3520.00 psi

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  
Two Cement Surface Pipe

Date 9/8/2014  
INVOICE # 45034  
LOCATION WELD  
FOREMAN LEE SHARP

Customer NOBLE  
Well Name ROHN STATE LD0363-1HN

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	10:25 9:35 11:01	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs
Safety Meeting		0	11:36		0			0			0
MIRU		10	11:38	-30	10			10			10
CIRCULATE		20	11:42	0	20			20			20
Drop Plug		30	11:45	30	30			30			30
11:36		40	11:49	190	40			40			40
		50	11:50	240	50			50			50
M & P		60	11:52	300	60			60			60
Time	Sacks	70	11:54	380	70			70			70
11:01		80	11:56	420	80			80			80
		90	12:00	970	90			90			90
		100			100			100			100
		110			110			110			110
		120			120			120			120
Lead mixed bbls	79.6	130			130			130			130
Lead % Excess	25%	140			140			140			140
Lead Sacks	387	150			150			150			150

Notes:

Tail mixed bbls	14.02	JOB WENT WITH NO ISSUES.
Tail % Excess	0%	
Tail Sacks	100	
Total Sacks	487	
Water Temp	61	
bbl Returns	23	

X

Work Performed

X

Title

X

Date