



# BISON

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

## Invoice

Date	Invoice #
12/10/2013	12532

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Timbro State LD16-65-HN	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1			1,100.00
Discount 15%	Discount 15%				-165.00
MILEAGE	Mileage charge	360		1.00	360.00
Discount 15%	Discount 15%				-54.00
Data Acquisition ...	Data Acquisition Charge	1		225.00	225.00
Discount 15%	Discount 15%				-33.75
Service Charge	Cassing PSI Test	1		500.00	500.00
	Subtotal of Services				1,216.25
BFN III Winter ...	BFN III Blend	522	Sack	15.10	7,882.20
Discount 15%	Discount 15%				-1,182.33
KCL Mud Flush	(BHS 117)	5	qt	7.50	37.50
Discount 15%	Discount 15%				-5.63
Dye - 4880	Dye (Hot Pink 4880)	16	oz	15.00	240.00
Discount 15%	Discount 15%				-36.00
	Subtotal of Materials				7,918.74
					9,135.29

Please Remit Payment To:

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

Subtotal	9,135.29
Sales Tax (2.8%)	255.79
<b>Total</b>	<b>9,391.08</b>
Balance Due	9,391.08



# Bison Oil Well Cementing Tail & Lead

Customer: Noble Energy  
Well Name: timbro state ld 16-65 1hn

Date: 12/9/2013  
Invoice #: 12532  
API#: 445564  
Foreman: monte

County: Weld  
State: Colorado  
Sec: 9  
Twp: 9n  
Range: 38w

Consultant: gary  
Rig Name & Number: h & p 326  
Distance To Location: 78.9  
Units On Location: 3  
Time Requested: 11:30pm  
Time Arrived On Location: 10:00pm  
Time Left Location:

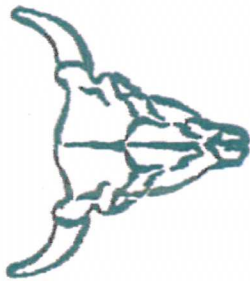
WELL DATA	Cement Data
<p>Casing Size (in) : 9.625</p> <p>Casing Weight (lb) : 36</p> <p>Casing Depth (ft) : 1,208</p> <p>Total Depth (ft) : 1218</p> <p>Open Hole Diameter (in) : 13.75</p> <p>Conductor Length (ft) : 130</p> <p>Conductor ID : 15.5</p> <p>Shoe Joint Length (ft) : 45</p> <p>Landing Joint (ft) : 30</p>	<p><b>Lead</b></p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 13.1</p> <p>Cement Yield (cuft) : 1.69</p> <p>Gallons Per Sack : 8.64</p> <p>% Excess : 30%</p>
<p>Sacks of Tail Requested : 100</p> <p>HOC Tail (ft): 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate:</p> <p>Max Pressure:</p>	<p><b>Tail</b></p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 15.2</p> <p>Cement Yield (cuft) : 1.27</p> <p>Gallons Per Sack : 5.89</p> <p>% Excess: 0%</p> <p>Fluid Ahead (bbbls) : 50.0</p> <p>H2O Wash Up (bbbls) : 20.0</p> <p><b>Spacer Ahead Makeup</b></p> <p>40 fresh 10 dye</p>

Casing ID	8.921	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
HOC of Lead	843.64 ft	Tail Cement Volume In Ann	127.00 cuft
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement	443.66 cuft	Total Volume of Tail Cement	107.47 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	104.66 cuft	bbbls of Tail Cement	22.62 bbbls
(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	548.32 cuft	HOC Tail	204.36 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbbls of Lead Cement	126.95 bbbls	Sacks of Tail Cement	100.00 sk
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement	421.78 sk	bbbls of Tail Mix Water	14.02 bbbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbbls of Lead Mix Water	86.77 bbbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	822.04 PSI
Displacement	92.22 bbbls		
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Collapse PSI:	2020.00 psi
Total Water Needed:	156.77 bbbls	Burst PSI:	3520.00 psi

*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.





Bison Oil Well Cementing  
Two Cement Surface Pipe

Date  
INVOICE #  
LOCATION  
FOREMAN

41617  
12532  
Weld  
monte

Customer  
Well Name

Noble Energy  
timbro state Id 16-65 1hn

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	5:28pm 2:05 4:30	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		0	5:43	120	0			0			0			0		
MIRU		10	5:37	230	10			10			10			10		
CIRCULATE		20	5:39	230	20			20			20			20		
Drop Plug		30	5:41	310	30			30			30			30		
	5:32	40	5:43	310	40			40			40			40		
		50	45	290	50			50			50			50		
M & P		60	0:00	310	60			60			60			60		
Time		70	5:47	320	70			70			70			70		
4:38-5:25	Sacks 522	80	5:49	300	80			80			80			80		
		90	5:52	520	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
Lead mixed bbls	87	130			130			130			130			130		
Lead % Excess	30%	140			140			140			140			140		
Lead Sacks	423	150			150			150			150			150		

Notes:

circulate 50 bbls ahead with dye in last 10, mix and pump 422 sks lead cement, 13.1, 1.69 yield, 8.64 h2o  
mix and pump 100 sks tail cement at 15.2, 1.27 yield, 5.89 h2o  
displace 92.2 bbls h2o, bump plug at 557 pm at 520 psi, hold 2 min, release pressure wash up rig down  
30 bbls back to pit

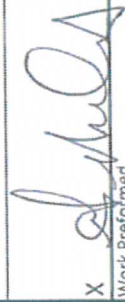
#VALUE!

Total Sacks

523

bbl Returns

30

X   
Work Performed

X WSS  
Title

X 12/9/13  
Date