



BISON

Invoice

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

Date	Invoice #
3/7/2014	12073

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Cecil Farms PC106-6711N	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	2.5			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	430	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
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**

Date: 3/7/2014

Invoice # 12073

API# 05-123-38118

Foreman: Calvin Reimers

Customer: Noble

Well Name: Cecil Farms PC 106-67HN

Consultant: Shane

Rig Name & Number: H&P 326

Distance To Location: 24 Miles

Units On Location: 3104/3205

Time Requested: 930pm

Time Arrived On Location: 815pm

Time Left Location: 3:45 AM

County: Weld

State: Colorado

Sec: 6

Twp: 6N

Range: 66W

WELL DATA	Cement Data
Casing Size (in) : <u>9.625</u> Casing Weight (lb) : <u>38</u> Casing Depth (ft) : <u>1,016</u> Total Depth (ft) : <u>1055</u> Open Hole Diameter (in) : <u>13.75</u> Conductor Length (ft) : <u>100</u> Conductor ID : <u>16</u> Shoe Joint Length (ft) : <u>45</u> Landing Joint (ft) : <u>35</u> Sacks of Tail Requested : <u>100</u> HOC Tail (ft) : <u>0</u> <small>One or the other, cannot have quantity in both</small> Max Rate: <u>7</u> Max Pressure: <u>2500</u>	Lead Cement Name: <u>[REDACTED]</u> Cement Density (lb/gal) : <u>13.1</u> Cement Yield (cuft) : <u>1.69</u> Gallons Per Sack : <u>8.64</u> % Excess : <u>25%</u> Tail Cement Name: <u>[REDACTED]</u> Cement Density (lb/gal) : <u>15.2</u> Cement Yield (cuft) : <u>1.27</u> Gallons Per Sack : <u>5.89</u> % Excess: <u>0%</u> Fluid Ahead (bbls) : <u>77.7</u> H2O Wash Up (bbls) : <u>20.0</u> Spacer Ahead Makeup <u>50 bbls H2O+KCL+Dye in 2nd 10 bbls</u>

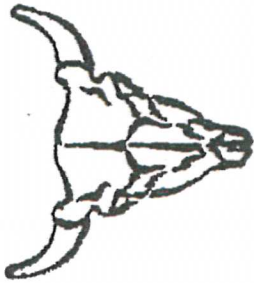
Casing ID 8 921 Casing Grade J-55 only used

Lead Calculated Results	
HOC of Lead	<u>676.42 ft</u>
Casing Depth - HOC Tail	
Volume of Lead Cement	<u>355.72 cuft</u>
HOC of Lead X Open Hole Ann	
Volume of Conductor	<u>89.10 cuft</u>
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	<u>444.82 cuft</u>
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	<u>99.03 bbls</u>
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	<u>329.01 sk</u>
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	<u>67.68 bbls</u>
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	<u>77.74 bbls</u>
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	<u>165.42 bbls</u>

Tail Calculated Results	
Tail Cement Volume In Ann	<u>127.00 cuft</u>
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	<u>107.46 Cuft</u>
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
bbls of Tail Cement	<u>22.62 bbls</u>
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
HOC Tail	<u>204.34 ft</u>
(Tail Cement Volume) ÷ (OH Ann)	
Sacks of Tail Cement	<u>100.00 sk</u>
(Total Volume of Tail Cement) ÷ (Cement Yield)	
bbls of Tail Mix Water	<u>14.02 bbls</u>
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
Pressure of cement in annulus	
Hydrostatic Pressure	<u>691.22 PSI</u>
Collapse PSI:	<u>2020.00 psi</u>
Burst PSI:	<u>3520.00 psi</u>

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**

Customer
Well Name

Noble
Cecil Farms PC 106-67HN

Date
INVOICE #
LOCATION
FOREMAN

3/7/2014
12073
Weld
Calvin Reimers

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	1250am														
MIRU	1150pm														
CIRCULATE	133am		40												
Drop Plug		225am	120												
	224am	229am	120	10			10						10		
		231am	400	20			20						20		
		233am	440	30			30						30		
		235am	500	40			40						40		
		237am	520	50			50						50		
M & P		239am	540	60			60						60		
Time		241am	600	70			70						70		
143am		244am		80			80						80		
220am		Bump		90			90						90		
				100			100						100		
				110			110						110		
				120			120						120		
				130			130						130		
				140			140						140		
				150			150						150		

Notes:

Float Held
1/2 bbl back on bleed off

Tail mixed bbls 14.02

Tail % Excess 0%

Tail Sacks 100

Total Sacks 430

bbl Returns 19

X *[Signature]*
WorkPreformed

X WSS
Title

X MacG, 2014
Date