



BISON

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

Invoice

Date	Invoice #
2/20/2014	12290

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 PCI06-68-111N	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	360			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
HOURS	Wait Time	2			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	423	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	3	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	10	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**

Customer: Noble Energy
Well Name: cecil farms pc 106-66-1hn

Date: 2/20/2014
Invoice #: 12290
API#:
Foreman: kirk

County: Weld
State: Colorado
Sec: 6
Twp: 6n
Range: 66w

Consultant: john d
Rig Name & Number: h&p 326
Distance To Location:
Units On Location: 3103-3205
Time Requested: 830 am
Time Arrived On Location: 730 am
Time Left Location:

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 38
Casing Depth (ft) : 977
Total Depth (ft) : 1013
Open Hole Diameter (in) : 13.75
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 43
Landing Joint (ft) : 25

Sacks of Tail Requested : 100
HOC Tail (ft) : 0

One or the other, cannot have quantity in both

Max Rate:
Max Pressure:

Cement Data

Lead

Cement Name:
Cement Density (lb/gal) : 13.1
Cement Yield (cuft) : 1.69
Gallons Per Sack : 8.64
% Excess : 30%

Tail

Cement Name:
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack : 5.89
% Excess : 0%

Fluid Ahead (bbls) : 74.1
H2O Wash Up (bbls) : 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

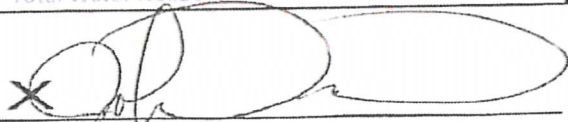
1-55 only used

Lead Calculated Results

HOC of Lead : 645.99 ft
Casing Depth - HOC Tail
Volume of Lead Cement : 339.72 cuft
HOC of Lead X Open Hole Ann
Volume of Conductor : 80.51 cuft
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
Total Volume of Lead Cement : 420.22 cuft
(cuft of Lead Cement) + (Cuft of Conductor)
bbls of Lead Cement : 97.29 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)
Sacks of Lead Cement : 323.25 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
bbls of Lead Mix Water : 66.50 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42
Displacement : 74.13 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)
Total Water Needed: 160.63 bbls

Tail Calculated Results

Tail Cement Volume In Ann : 127.00 cuft
(HOC Tail) X (OH Ann)
Total Volume of Tail Cement : 108.34 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
bbls of Tail Cement : 22.62 bbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
HOC Tail : 206.01 ft
(Tail Cement Volume) ÷ (OH Ann)
Sacks of Tail Cement : 100.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)
bbls of Tail Mix Water : 14.02 bbls
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
Pressure of cement in annulus
Hydrostatic Pressure : 664.85 PSI
Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi


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 2/20/2014
INVOICE # 12290
LOCATION Weld
FOREMAN kirk

Noble Energy
cecil farms pc 106-66-1hn

Customer
Well Name

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	11:50 AM	0	13:27	20	0			0			0			0		
MIRU	12:00 PM	10	13:30	70	10			10			10			10		
CIRCULATE	1:00 PM	20	13:34	90	20			20			20			20		
Drop Plug		30	13:36	90	30			30			30			30		
		40	13:38	170	40			40			40			40		
		50	13:38	250	50			50			50			50		
M & P		60	13:40	290	60			60			60			60		
Time		70	13:41	290	70			70			70			70		
13:03	Sacks 423	80			80			80			80			80		
13:26		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		

Notes:

14 BUMPED PLUG @13:45 WITH 440 PSI

Tail mixed bbls 14

Tail % Excess 0%

Tail Sacks 100

Total Sacks 423

bbl Returns 14

X

X

X 2-20-14

Date

Title

Work Performed

M/D TOTCO 2000 SERIES

