



BISON

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

Invoice

Date	Invoice #
4/19/2014	12212

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Oscar Y10-7711N	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%				
Service Charge	Casing Psi Test	1			
HOURS	Wait Time	2			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	534	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHIS 117)	3	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	32	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



Bison Oil Well Cementing Tail & Lead

Customer: Noble
Well Name: Oscar Y 10-77HN

Date: 4/19/2014
Invoice #: 12212
API#: 05-123-38198
Foreman: Calvin Reimers

County: Weld
State: Colorado
Sec: 10
Twp: 2N
Range: 64W

Consultant: Tawn / Devin
Rig Name & Number: PD 828
Distance To Location: 26 Miles
Units On Location: 3104/3204
Time Requested: 630pm
Time Arrived On Location: 530pm
Time Left Location: 12:30 AM

WELL DATA

Casing Size (in) 9.625
Casing Weight (lb) 35
Casing Depth (ft) 1152
Total Depth (ft) 1178
Open Hole Diameter (in) 13.75
Conductor Length (ft) 100
Conductor ID 16
Shoe Joint Length (ft) 45
Landing Joint (ft) 21

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

One or the other, cannot have quantity in both

Max Rate: 7
Max Pressure: 2500

Cement Data

Lead

Cement Name: BFN III
Cement Density (lb/gal): 13.1
Cement Yield (cuft): 1.69
Gallons Per Sack: 8.64
% Excess: 40%

Tail

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

Fluid Ahead (bbls) 30.0
H2O Wash Up (bbls) 20.0

Spacer Ahead Makeup

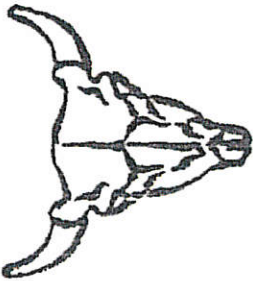
30bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J 55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead	826.73 ft	Tail Cement Volume In Ann	127.00 cuft
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement	434.77 cuft	Total Volume of Tail Cement	107.61 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	89.10 cuft	bbls of Tail Cement	22.62 bbls
(Conductor ID Squared) - (Casing Size ID 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	523.86 cuft	HOC Tail	204.63 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement	130.62 bbls	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	433.97 sk	bbls of Tail Mix Water	14.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water	89.27 bbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	783.91 PSI
Displacement	87.19 bbls		
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Collapse PSI:	2020.00 psi
Total Water Needed	139.27 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 4/19/2014
INVOICE # 12212
LOCATION Weld
FOREMAN Calvin Reimers

Customer Noble
Well Name Oscar Y 10-77HN

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	1016pm 900pm 1026pm	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	1112pm	100	0			0			0			0		
MIRU		10	1115pm	110	10			10			10			10		
CIRCULATE		20	1117pm	110	20			20			20			20		
Drop Plug		30	1119pm	140	30			30			30			30		
1111pm		40	1120pm	190	40			40			40			40		
		50	1122pm	240	50			50			50			50		
M & P		60	1123pm	280	60			60			60			60		
Time		70	1125pm	330	70			70			70			70		
1032pm	Sacks	80	1126pm	350	80			80			80			80		
1102pm	534	90	1132pm	290	90			90			90			90		
		100	Bump	370	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		
Lead mixed bbls	89.28															
Lead % Excess	40%															
Lead Sacks	434															

Notes:

Tail mixed bbls 14.02
Tail % Excess 0%
Tail Sacks 100
Total Sacks 534
bbl Returns 37

X Ben Miller Title X Well Site Supervisor Date X 4/20/14