



BISON

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

Invoice

Date	Invoice #
10/18/2014	12154a

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Rhon State LD10-69-1HN	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	461.4			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
Service Charge	Cassing Test	1			
HOURS	Wait Time	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	519	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	4	qt		
Discount 15%	Discount 15%				
Sugar	Sugar	50	lb		
	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: Rhon State LD10-69-1HN

Date: 10/18/2014
Invoice # 12154
API#
Foreman: Monte Bedeaux

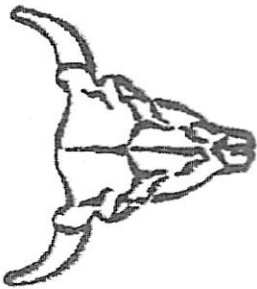
County: Weld
State: Colorado
Sec: 9
Twp: 9n
Range: 58w

Consultant: Jim Bo
Rig Name & Number: pd 828
Distance To Location: 76.9
Units On Location: 4028/3102 4022-3213
Time Requested: 4:00am
Time Arrived On Location: 3:00am
Time Left Location:

WELL DATA		Cement Data	
Casing Size (in) :	9.625	Lead	
Casing Weight (lb) :	36	Cement Name:	
Casing Depth (ft.) :	1,198	Cement Density (lb/gal) :	13.1
Total Depth (ft) :	1225	Cement Yield (cuft) :	1.69
Open Hole Diameter (in) :	13.50	Gallons Per Sack	8.64
Conductor Length (ft) :	117	% Excess	40%
Conductor ID :	15.6	Tail	
Shoe Joint Length (ft) :	41	Cement Name:	
Landing Joint (ft) :	19	Cement Density (lb/gal) :	15.2
Sacks of Tail Requested	100	Cement Yield (cuft) :	1.27
HOC Tail (ft):	0	Gallons Per Sack:	5.89
One or the other, cannot have quantity in both		% Excess:	0%
Max Rate:	4.5	Fluid Ahead (bbls)	40.0
Max Pressure:	2000	H2O Wash Up (bbls)	20.0
		Spacer Ahead Makeup	10 fresh 10 dye 20 fresh

Casing ID	8.921	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead	838.56 ft	Tail Cement Volume In Ann	127.00 cuft
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement	409.83 cuft	Total Volume of Tail Cement	109.20 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	96.18 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	506.00 cuft	HOC Tail	223.44 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement	126.17 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	419.17 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	86.23 bbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	815.24 PSI
Displacement	90.90 bbls	Collapse PSI:	2020.00 psi
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI:	3520.00 psi
Total Water Needed:	251.16 bbls		

[Signature]
Authorization To Proceed



Bison Oil Well Cementing
Two Cement Surface Pipe

Customer
Well Name

Noble Energy
Rhon State LD10-69-1HN

Date
10/18/2014
INVOICE #
12154
LOCATION
Weld
FOREMAN
Monte Bedeaux

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	6:35	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI	BBS	Time	PSI
Safety Meeting																
MIRU	6:10															
CIRCULATE	7:10	0	7:52	0	0			0			0			0		
Drop Plug		10	7:56	0	10			10			10			10		
		20	7:58	40	20			20			20			20		
7:52		30	8:00	90	30			30			30			30		
		40	8:02	110	40			40			40			40		
		50	8:04	180	50			50			50			50		
M & P		60	8:06	190	60			60			60			60		
Time		70	8:08	300	70			70			70			70		
7:15-7:50	519	80	8:10	300	80			80			80			80		
		90	8:14	600	90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
Lead mixed bbls	86.23	130			130			130			130			130		
Lead % Excess	40%	140			140			140			140			140		
Lead Sacks	419	150			150			150			150			150		

Notes:

14.02 safety meeting, miru, pressure test per company man, circulate 40 bbls ahead with dye in 2nd 10, mix and pump 419 sks lead, 13.1, 1.69 yield, 8.64 h2o
0% mix and pump 100 sks tail at 15.2, 1.27, 5.89. drop plug and displace 90.9 bbls h2o. Bump plug at 8:14 am at 600 psi, bumped plug
100 casing test 1000 psi 15 min

Total Sacks 519
Water Temp 44
bbl Returns 33

Work Performed
Monte Bedeaux

X *MISS*
Title

X *10/18/14*
Date