



BISON

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

Invoice

Date	Invoice #
12/29/2014	55051

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Mahaldo State AA09-721BHN	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	PSI Charge	1			
Service Charge	Winterization Charge	1			
HOURS	Wait Time	11			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	441	Sack		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	qt		
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 Single Cement Surface Pipe

Date: 12/28/2014

Invoice # 55051

API#

Foreman: Monte Bedeaux

Customer: Noble Energy Inc.

Well Name: Mahalo State AA09-72 1BHNC

County: Weld

State: Colorado

Sec: 4

Twp: 6n

Range: 63w

Consultant: Devin

Rig Name & Number: PD 828

Distance To Location: 32.2

Units On Location: 4028-3102 4022-3213

Time Requested: 11:30pm

Time Arrived On Location: 10:10pm

Time Left Location: 2:30

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 814
Total Depth (ft) : 848
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 96
Conductor ID : 15.6
Shoe Joint Length (ft) : 45
Landing Joint (ft) : 22

Max Rate: 5
Max Pressure: 1000

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.48
Gallons Per Sack: 7.48
% Excess: 58%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 60.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10 fresh 10 dye 40 fresh

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.53 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 78.91 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 554.43 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 652.88 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 116.28 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 441 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 78.56 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 61.15 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 600.49 PSI

Pressure of the fluids inside casing

Displacement: 331.58 psi

Shoe Joint: 33.20 psi

Total 364.77 psi

Differential Pressure: 235.71 psi

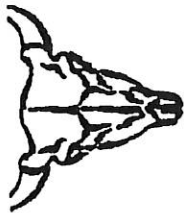
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 219.71 bbls

X *1 am Bedeaux*
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.



SINGLE CEMENT SURFACE PIPE

Single Cement Surface Pipe

Customer
Well NameNoble Energy Inc.
Mahalo State AA09-72 1BHNCLOCATION
FOREMAN
DateWeld
Monte Bedeaux
12/28/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	8:00 6:50 11:30	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		0	6:37	0	0			0			0			0		
MIRU		10	12:32	70	10			10			10			10		
CIRCULATE		20	12:40	110	20			20			20			20		
Drop Plug		30	12:43	110	30			30			30			30		
		40	12:46	260	40			40			40			40		
		50	12:48	260	50			50			50			50		
M & P		60	12:55	320	60			60			60			60		
Time		70	12:58	880	70			70			70			70		
11:37-12:28	Sacks	80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	58%	130			130			130			130			130		
Mixed bbls	78.56	140			140			140			140			140		
Total Sacks	441	150			150			150			150			150		
bbl Returns	31															
Water Temp	46															

Notes:

safety meeting, miru, pressure test per company man, circulate 60 bbls ahead with dye in 2nd 10, mix and pump 335 sks at 5%

excess, drop plug and displace 61.15 bbls h2o, bump plug at 12:58 pm at 880 psi, wash up rig down

raise to 1000 psi hold 15 min

X 1 am 8 2014

X WSS

X 12/29/14

Work Performed