



BISON

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

Invoice

Date	Invoice #
9/22/2014	55027

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Heartland G25-73-1HN	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	360			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
Service Charge	PSI Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	351	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 Single Cement Surface Pipe

Date: 9/22/2014
Invoice #: 55027
API#:
Foreman: Monte

Customer: Noble
Well Name: Heartland G25-73-1hn

County: Weld
State: Colorado
Sec: 25
Twp: 4n
Range: 65w

Consultant: Roger J. J. J.
Rig Name & Number: pd 829
Distance To Location: 9
Units On Location: 4032-3102 4020-3211
Time Requested: 10:00am
Time Arrived On Location: 9:20am
Time Left Location: 1:30pm

WELL DATA

Casing Size OD (in.) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 695
Total Depth (ft) : 721
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 80
Conductor ID : 15.6
Shoe Joint Length (ft) : 44
Landing Joint (ft) : 19

Max Rate:
Max Pressure:

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 15.2
Cement Yield (cuft) : 1.27
Gallons Per Sack: 5.89
% Excess: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
10 fgrsh 10 dye 30 fresh

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.10 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 65.76 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 360.68 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 445.54 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 79.35 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 351 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 49.20 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 51.80 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 548.77 PSI

Pressure of the fluids inside casing

Displacement: 280.70 psi

Shoe Joint: 34.74 psi

Total 315.44 psi

Differential Pressure: 233.33 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 170.99 bbls

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

Customer
Well Name

Noble
Heartland G25-73-1hn

INVOICE #
LOCATION
FOREMAN
Date

Weld
Monte
9/22/2014

Treatment Report Page 2

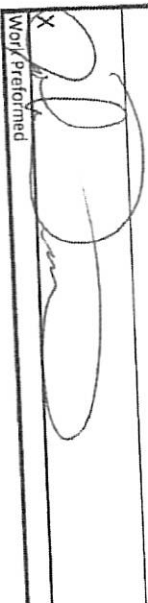
DESCRIPTION OF JOB EVENTS

DESCRIPTION OF JOB																
Safety Meeting MIRU CIRCULATE Drop Plug 12:15	10:30 9:30 11:45	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
		0	12:15	0	0			0			0			0		
		10	12:17	30	10			10			10			10		
		20	12:19	140	20			20			20			20		
		30	12:21	180	30			30			30			30		
		40	12:23	280	40			40			40			40		
M & P		50	12:26	250	50			50			50			50		
		51	12:28	620	60			60			60			60		
Time	Sacks	70			70			70			70			70		
		11:55-12:12	351					80			80			80		
		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	20%	120			120			120			120			120		
Mixed bbls	49.2	130			130			130			130			130		
Total Sacks	351	140			140			140			140			140		
bbl Returns	11	150			150			150			150			150		
Water Temp	59															

Notes:

safety meeting, miru, pressure test per company man, circulate 50 bbls ahead with dye in 2nd 10, mix and pump 351 sks,

drop plug and displace 51.8 bbls h2o, bump plug at 12:28pm at 640 psi, raise to 1000 psi hold 15 min. 11 back to pit

X 

X Co-Man
Title

X 9/22/14
Date

Work Performed