



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/8/2014  
Invoice #: 25007  
API#: 05-123-39123  
Foreman: Calvin Reimers

Customer: Noble Energy Inc.

Well Name: NCLP AA 06-68-1HNA

County: Weld

State: Colorado

Sec: 4

Twp: 6N

Range: 63W

Consultant: Josh

Rig Name & Number: H&P 321

Distance To Location: 30 Miles

Units On Location: 4023-3104/4022-3212

Time Requested: 645am

Time Arrived On Location: 515am

Time Left Location: 1000am

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 837  
Total Depth (ft) : 877  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 34

Max Rate: 7  
Max Pressure: 2500

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 10%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 15.0  
Fluid Ahead (bbls): 60.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

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

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

**cuft of Shoe** 19.42 cuft  
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

**cuft of Conductor** 89.10 cuft  
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

**cuft of Casing** 426.54 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

**Total Slurry Volume** 535.06 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

**bbls of Slurry** 95.29 bbls  
(Total Slurry Volume) X (.1781)

**Sacks Needed** 421 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

**Mix Water** 59.08 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

**Displacement:** 63.92 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

**Hydrostatic Pressure:** 661.17 PSI

## Pressure of the fluids inside casing

**Displacement:** 341.75 psi

**Shoe Joint:** 35.33 psi

**Total** 377.09 psi

**Differential Pressure:** 284.08 psi

**Collapse PSI:** 2020.00 psi

**Burst PSI:** 3520.00 psi

**Total Water Needed:** 203.01 bbls

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  
Single Cement Surface Pipe

Customer  
Well Name

Noble Energy Inc.  
NCLP AA 06-68-1HNA

INVOICE #  
LOCATION  
FOREMAN  
Date

25007  
Weld  
Calvin Reimers  
6/8/2014

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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	743am															
MIRU	705am															
CIRCULATE	816am	0	852am	60	0			0			0			0		
Drop Plug		10	855am	80	10			10			10			10		
	851am	20	857am	130	20			20			20			20		
		30	859am	200	30			30			30			30		
		40	900am	250	40			40			40			40		
		50	902am	320	50			50			50			50		
M & P																
Time	Sacks	60	905am	310	60			60			60			60		
827am	421	70	909am	300	70			70			70			70		
848am		80	Bump	400	80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	10%	120			120			120			120			120		
Mixed bbls	59.08	130			130			130			130			130		
Total Sacks	421	140			140			140			140			140		
bbl Returns	15	150			150			150			150			150		
Water Temp	67.6															

Notes:

The day

1/2 bbl Back on Bleed off

X

Work Performed

X

Title

X

Date