



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/8/2015  
Invoice # 35119  
API#  
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.  
Well Name: aggie state aa17-635

County: Weld  
State: Colorado  
Sec: 17  
Twp: 6n  
Range: 63w

Consultant: dave  
Rig Name & Number: h&p 273  
Distance To Location:  
Units On Location: 4038-3103/4020-3212  
Time Requested: 930 am  
Time Arrived On Location: 900 am  
Time Left Location: 3:30 pm

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft.) : 876  
Total Depth (ft) : 916  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 39  
Landing Joint (ft) : 35

Max Rate:  
Max Pressure:

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 14.2  
Cement Yield (cuft) : 1.49  
Gallons Per Sack: 7.48  
% Excess: 30%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 60.0  
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 16.93 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 493.03 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 599.05 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 106.69 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 402 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 71.60 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 67.41 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 646.23 PSI

## Pressure of the fluids inside casing

Displacement: 360.90 psi

Shoe Joint: 28.77 psi

Total 389.67 psi

Differential Pressure: 256.56 psi

Collapse PSI: 2020.00 psi

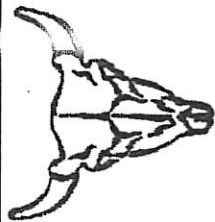
Burst PSI: 3520.00 psi

Total Water Needed: 209.02 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

INVOICE #  
LOCATION  
FOREMAN  
Date

35119  
Weld  
Kirk Kallhoff  
2/8/2015

Customer  
Well Name

Noble Energy Inc.  
aggie state aa17-635

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DESCRIPTION OF JOB EVENTS

	Time	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	1:18pm	0	214pm	10	0			0			0			0		
MIRU	1:30p	10	217pm	50	10			10			10			10		
CIRCULATE	1:38pm	20	219pm	50	20			20			20			20		
Drop Plug		30	221pm	140	30			30			30			30		
214 pm		40	223pm	230	40			40			40			40		
		50	225pm	280	50			50			50			50		
M & P		60	227pm	310	60			60			60			60		
Time	Sacks	70			70			70			70			70		
140 pm		80			80			80			80			80		
210 pm stop		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	13%	120			120			120			120			120		
Mixed bbls	52	130			130			130			130			130		
Total Sacks	148	140			140			140			140			140		
bbl Returns	24	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 230 pm 500 psi  
densitometer wasn't working right scaled job

X

X WSS

X 2-8-15

Work Performed

Title

Date