



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/29/2014  
Invoice #: 35095  
API#  
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.  
Well Name: upchurch state Id 02-77-1bhn

County: Weld  
State: Colorado  
Sec: 14  
Twp: 9n  
Range: 58w

Consultant: jw  
Rig Name & Number: h&p 326  
Distance To Location:  
Units On Location: 3024-3103/4018-3204  
Time Requested: 600 am  
Time Arrived On Location: 430 am  
Time Left Location: 12:45 PM

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 1,137  
Total Depth (ft) : 1177  
Open Hole Diameter (in.) : 13.50  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 43  
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: 25%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit:  
Fluid Ahead (bbls): 30.0  
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 18.66 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 633.52 cuft  
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 741.28 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 132.02 bbls  
(Total Slurry Volume) X (.1781)  
Sacks Needed 498 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 88.60 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 87.28 bbls  
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

## Pressure of cement in annulus

Hydrostatic Pressure: 838.76 PSI

## Pressure of the fluids inside casing

Displacement: 471.71 psi

Shoe Joint: 31.72 psi

Total 503.43 psi

Differential Pressure: 335.33 psi

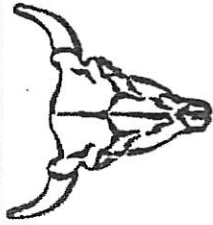
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 215.88 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

35095  
Weid  
Kirk Kallhoff  
12/29/2014

Customer  
Well Name

Noble Energy Inc.  
upchurch state Id 02-77-1bhn

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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	949am															
MIRU	920am															
CIRCULATE	1050am															
Drop Plug		0	1131a	10	0			0			0			0		
1131 am		10	1134a	30	10			10			10			10		
		20	1137a	40	20			20			20			20		
		30	1140a	100	30			30			30			30		
		40	1143a	250	40			40			40			40		
M & P		50	1145a	330	50			50			50			50		
Time	Sacks	60	1147a	370	60			60			60			60		
1059 am	498	70	1149a	410	70			70			70			70		
1128 am stop		80	1151a	400	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	25%	130			130			130			130			130		
Mixed bbls	88.7	140			140			140			140			140		
Total Sacks	498	150			150			150			150			150		
bbl Returns	37															
Water Temp																

Notes:

bumped plug at 1156 am 560 psi

casing test 1000 psi 15 min

X Jw I rwe

Work Performed

X W.S.S

Title

X 12-29-14

Date