



# Bison Oil Well Cementing Tail & Lead

Customer: Noble Energy  
Well Name: Rohn State LD 1-64-1HN

Date: 10/9/2014  
Invoice #: 13034  
API#: 05-123-37622  
Foreman: Calvin Reimers

County: Weld  
State: Colorado  
Sec: 9  
Twp: 9N  
Range: 58W

Consultant: Eric / John  
Rig Name & Number: PD 829  
Distance To Location: 78 Miles  
Units On Location: 4023-3104/3105-3210  
Time Requested: 500am  
Time Arrived On Location: 350am  
Time Left Location: 12:00 pm.

## WELL DATA

Casing Size (in): 9.625  
Casing Weight (lb): 36  
Casing Depth (ft): 1226  
Total Depth (ft): 1252  
Open Hole Diameter (in): 13.50  
Conductor Length (ft): 100  
Conductor ID: 16  
Shoe Joint Length (ft): 45  
Landing Joint (ft): 19

Sacks of Tail Requested: 100  
HOC Tail (ft): 0

One or the other, cannot have quantity in both

Max Rate: 7  
Max Pressure: 2500

## Cement Data

### Lead

Cement Name: BFN III  
Cement Density (lb/gal): 13.1  
Cement Yield (cuft): 1.69  
Gallons Per Sack: 8.64  
% Excess: 30%

### Tail

Cement Name: BFN III  
Cement Density (lb/gal): 15.2  
Cement Yield (cuft): 1.27  
Gallons Per Sack: 5.89  
% Excess: 0%

Fluid Ahead (bbls): 92.7  
H2O Wash Up (bbls): 20.0

### Spacer Ahead Makeup

40bbls H2O+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
HOC of Lead	887.32 ft	Tail Cement Volume In Ann (HOC Tail) X (OH Ann)	127.00 cuft
Casing Depth - HOC Tail		Total Volume of Tail Cement (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	107.42 Cuft
Volume of Lead Cement	433.66 cuft	bbls of Tail Cement (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	22.62 bbls
HOC of Lead X Open Hole Ann		HOC Tail (Tail Cement Volume) ÷ (OH Ann)	219.80 ft
Volume of Conductor (Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	89.10 cuft	Sacks of Tail Cement (Total Volume of Tail Cement) ÷ (Cement Yield)	100.00 sk
Total Volume of Lead Cement (cuft of Lead Cement) + (Cuft of Conductor)	522.75 cuft	bbls of Tail Mix Water (Sacks of Tail Cement X Gallons Per Sack) ÷ 42	14.02 bbls
bbls of Lead Cement (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	121.30 bbls	Pressure of cement in annulus	
Sacks of Lead Cement (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	403.00 sk	Hydrostatic Pressure	834.13 PSI
bbls of Lead Mix Water (Sacks Needed) X (Gallons Per Sack) ÷ 42	82.90 bbls	Collapse PSI:	2020.00 psi
Displacement (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	92.71 bbls	Burst PSI:	3520.00 psi
Total Water Needed:	302.34 bbls		

X   
Authorization To Proceed



**Bison Oil Well Cementing  
Two Cement Surface Pipe**

Customer  
Well Name

Noble Energy  
Rohn State LD 1-64-1HN

Date  
INVOICE #  
LOCATION  
FOREMAN

10/9/2014  
13034  
Weld  
Calvin Reimers

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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	927am															
MIRU	800am															
CIRCULATE	1004am	0	1037am	50	0			0			0			0		
Drop Plug		10	1040am	50	10			10			10			10		
		20	1042am	40	20			20			20			20		
1036am		30	1044am	40	30			30			30			30		
		40	1046am	40	40			40			40			40		
		50	1048am	80	50			50			50			50		
M & P		60	1050am	170	60			60			60			60		
Time	Sacks	70	1052am	230	70			70			70			70		
1012am	503	80	1054am	280	80			80			80			80		
1034am		90	1057am	310	90			90			90			90		
		100	1059am	300	100			100			100			100		
		110	Bump	410	110			110			110			110		
		120			120			120			120			120		
Lead mixed bbls	82.9	130			130			130			130			130		
Lead % Excess	30%	140			140			140			140			140		
Lead Sacks	403	150			150			150			150			150		
<b>Notes:</b>																
Tail mixed bbls	14.02	1/2 bbl back on bleed off														
Tail % Excess	0%	Casing PSI Test 1100am														
Tail Sacks	100	1020psi to 1115am 1040psi														
Total Sacks	503															
Water Temp	58.3															
bbl Returns	9															

X   
Work Performed

X \_\_\_\_\_   
Title

X \_\_\_\_\_   
Date