

## **Bison Oil Well Cementing Single Cement Surface Pipe**

Date: 6/11/2016

Invoice # 80496

API# 05-123-42885

Foreman: Matthew Rosales

Customer: Noble Energy Inc.

Well Name: Shadow A26-663

County: Weld
State: Colorado

Sec: NWSE Twp: 306N Range: 63W

Time Left Location:

# WELL DATA

Casing Size OD (in): 9.625 Casing Weight (lb): 36.00 Casing Depth (ft.): 1,923 Total Depth (ft): 1928 Open Hole Diameter (in.): 13.50 Conductor Length (ft): 80 Conductor ID: 15.25 Shoe Joint Length (ft): 50 Landing Joint (ft): 33

Max Rate: 8
Max Pressure: 1700

### Cement Data

Cement Name: BFN III

Cement Density (lb/gal): 14.2

Cement Yield (cuft): 1.49

Gallons Per Sack: 7.48

% Excess: 15%

Displacement Fluid lb/gal: 8.7

Fluid Ahead (bbls): 50.0
H20 Wash Up (bbls): 20.0

Spacer Ahead Makeup 50h20

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results			Displacement: (Casing ID Squared) X (.0009714) X (Casing	144.80 bbls	
cuft of Shoe	21.50	cuft	Joint)	, zepin - zamanigoomi oneo	
(Casing ID Squared) X ( .005454) X (Shoe Joint ft)			Pressure of cement in annulus		
cuft of Conductor	61.05	cuft	Hydrostatic Pressure:	1418.89 PSI	
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)			Pressure of the fluids inside casing		
cuft of Casing	894.00	cuft	Displacement:	846.82 psi	
(Open Hole Squared)-(Casing Size Squ Depth - Conductor Length )	ared) X ( .00545	4) X (Casing	Shoe Joint:	36.52 psi	
Total Slurry Volume	1111.00	cuft	Total	883.33 psi	
(cuft of Shoe) + (cuft of Conductor) +	(cuft of Casing)				
bbls of Slurry	198.00	bbls	Differential Pressure:	535.56 psi	
(Total Slurry Volume) X (.1781)					
Sacks Needed	745	sk	Collapse PSI:	2020.00 psi	
(Total Slurry Volume) ÷ (Cement Yield	I) X (% Excess Ce	ment)	Burst PSI:	3520.00 psi	
Mix Water	133.00	bbls			
(Sacks Needed) X (Gallons Per Sack) ÷	42		Total Water Needed:	200.00 bbls	



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.	
	Shadow A26-663	

INVOICE # LOCATION FOREMAN Date 80496 Weld Matthew Rosales 5/25/2016

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#### **DESCRIPTION OF JOB EVENTS**

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess	15%	4:00pm 6/11/16	Arrive at Rig	Rig is Running Casing			
Mixed bbls	198	6:10pm	Prerig up Safety Meeting				
Total Sacks	745	6:20pm	Rig Up				
bbl Returns	30	6:50pm	JSA				
Water Temp	65	7:10pm	Start Job				
		7:11pm	Fill Lines		2	2	100
Notes:		7:12pm	Pressure Test Lines		1	0.5	1500
		7:14pm	Water Spacer	Fresh Water no Dye	7.4	50	200
		7:20pm	Cement	14.2#/gal, 1.49yield, 7.48Gal/sk	67	198	350
		7:58pm	Shutdown				
		8:02pm	Drop Plug				
		8:03pm	Displace	Oil Based Mud	7.4	143.15	550
		8:25pm	Bump Plug		2		770
		8:27pm	Test Casing		1		1000
		8:42pm	Check Floats	PSI droped 70psi during test/ Floats Held			
		9:07pm	End Job				
		10:00pm	Leave Location				
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