



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/19/2016

Invoice # 80491

API# 05-1223-42884

Foreman: Matthew Rosales

Customer: Noble Energy Inc.

Well Name: Shadow A26-637

County: Weld
State: Colorado

Sec: NWSE
Twp: 306N
Range: 63W

Consultant: Lance

Rig Name & Number: H&P321

Distance To Location: 15

Units On Location: 3106, 3203

Time Requested: 11:00am

Time Arrived On Location: 10:30am

Time Left Location:

WELL DATA		Cement Data	
Casing Size OD (in) :	9.625	Cement Name:	BFN III
Casing Weight (lb) :	36.00	Cement Density (lb/gal) :	14.2
Casing Depth (ft.) :	1,917	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1919	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	15%
Conductor Length (ft) :	80	Displacement Fluid lb/gal:	8.7
Conductor ID :	15.25	Fluid Ahead (bbls):	50.0
Shoe Joint Length (ft) :	49	H2O Wash Up (bbls):	20.0
Landing Joint (ft) :	0		
Max Rate:	8	Spacer Ahead Makeup	50bbl h2o
Max Pressure:	1500		

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 144.41 bbls	
cuft of Shoe	21.29 cuft	(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Pressure of cement in annulus	
cuft of Conductor	61.05 cuft	Hydrostatic Pressure: 1414.17 PSI	
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing	881.60 cuft	Displacement: 844.13 psi	
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint: 36.18 psi	
Total Slurry Volume	1096.40 cuft	Total 880.31 psi	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure: 533.86 psi	
bbls of Slurry	195.27 bbls	Collapse PSI: 2020.00 psi	
(Total Slurry Volume) X (.1781)		Burst PSI: 3520.00 psi	
Sacks Needed	647 sk	Total Water Needed: 329.62 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	115.22 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X
 Authorization To Proceed



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

Customer
Well Name

Noble Energy Inc.
Shadow A26-637

INVOICE #
LOCATION
FOREMAN
Date

80491
Weld
Matthew Rosales
5/19/2016

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DESCRIPTION OF JOB EVENTS

Amount Pumped	Time/Date	Event	Description	Rate	BBLs	Pressure
% Excess 15%	10:30am 5/19/16	Arrive at Rig	H&P 321 is Running Casing	0.5	2	1500
Mixed bbls 195	12:30pm	Prerig up Safety Meeting				
Total Sacks 735	12:40pm	Rig Up				
bbl Returns 28	1:05pm	JSA				
Water Temp 65	1:19	Start Job				
	1:19pm	Fill Lines		0.5	2	100
Notes:	1:22pm	Pressure Test Lines		0.5	0.5	1400
	1:23pm	Water Spacer	pump cavitating popped valves and cleared pump	5-7.4	50	160
	1:43pm	Cement	14.2#/gal, 1.49yield, 7.48gal/sk	5-7.4	195	325
	2:22pm	Shutdown				
	2:23pm	Drop Plug				
	2:28pm	Displace	Displace with O.B.M sent by Rig	7.4	144.4	425
	2:51pm	Bump Plug		2		530
	2:53pm	Test Casing	Test Failed lost 90psi in 12minutes			
	3:05pm	Check Floats	Floats did not hold got back 3.5bbl shut in-backfill on cellar dropped			
	3:10pm	Test Casing	Retest casing			
	3:14pm	Check Floats	Floats failed			
	3:20pm	Shutin well				
	4:45pm	Top off Well		2	6	50
	4:55pm	Rig Down				
	5:30pm	Leave Location				

X
Work Performed

X
Title

X 5-19-16
Date