Bison Oil Well Cementing
Tail & Lead

Date: 2/25/2017

Invoice # 200040

API#

Customer: Noble Energy Inc.

Foreman: Kirk Kallhoff

Well Name: benelli federal lc 10-765

Consultant: stetson

County: Weld

Rig Name & Number: H&P 517

State: Colorado

Distance To Location: 65

Units On Location: 4028/4024/4020

Sec: 20

Time Requested: 1100 pm

Twp: 9n

Time Arrived On Location: 1000 pm

Range: 58w

Time Left Location:

WELL DATA

Casing Size (in) :	9.625
Casing Weight (lb) :	36
Casing Depth (ft.) :	1,874
Total Depth (ft) :	1919
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.6
Shoe Joint Length (ft) :	45
Landing Joint (ft) :	35
Sacks of Tail Requested	100
HOC Tail (ft):	0

One or the other, cannot have quantity in both

Max Rate:

Max Pressure:

Cement Data

Lead

Cement Name:	fn3 gel calcium
Cement Density (lb/gal) :	13.5
Cement Yield (cuft) :	1.7
Gallons Per Sack	9.00
% Excess	15%

Tail

Cement Name:	bfn 3
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.89
% Excess:	0%

Fluid Ahead (bbls)	144.1
H20 Wash Up (bbls)	20.0

Spacer Ahead Makeup

Casing ID	8.921	Casing Grade	J-55 only used

Lead Calculated Results

HOC of Lead	1539.11 ft
Casing Depth - HOC Tail	
Volume of Lead Cement	752.21 cuft
HOC of Lead X Open Hole Ann	
Volume of Conductor	65.76 cuft
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	817.97 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	167.53 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	553.33 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	118.57 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	144.09 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	**440.77 bbls**

Tail Calculated Results

Tail Cement Volume In Ann	127.00 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	107.47 Cuft
(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
bbls of Tail Cement	22.62 bbls
(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
HOC Tail	219.89 ft
(Tail Cement Volume) ÷ (OH Ann)	
Sacks of Tail Cement	100.00 sk
(Total Volume of Tail Cement) ÷ (Cement Yield)	
bbls of Tail Mix Water	14.02 bbls
(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
Pressure of cement in annulus	
Hydrostatic Pressure	585.23 PSI
Collapse PSI:	2020.00 psi
Burst PSI:	3520.00 psi

X _____

Authorization To Proceed

Bison Oil Well Cementing
Two Cement Surface Pipe

Date	2/25/2017
INVOICE #	200040
LOCATION	Weld
FOREMAN	Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: benelli federal lc 22-765

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	118.5	1000 pm	arived on location				
Lead % Excess	15%	1240 am	rig up				
Lead Sacks	553	120 am	jsa				
		144 am	test lines	test lines to 1300 psi	1	2	1300
		146 am	bbls ahead	50 bbls h2o dye in 2nd 10	5	50	120
Tail mixed bbls	14	155 am	m&p lead cement	553 sks 167.5 bbls slury	5	167.5	200
Tail % Excess	0%	224 am	m&p tail cement	100 sks 22.6 bbls slury	5	22.6	200
Tail Sacks	100	228 am	shutdown				
		232 am	drop plug				
Total Sacks	653	232 am	displace	rig to displace 144 bbls OBM		144	
Water Temp	55	300 am	bump plug	lift psi 500	1.5	144	640
bbl Returns	28	300 am	casing test	rig to test			1000
		315 am	release psi				0
Notes:		445 am	rig down				
		500 am	leave location				
				monitered well no top off			

X _(signature)_
Work Preformed

X WSS
Title

X 2-25-17
Date