Bison Oil Well Cementing
Tail & Lead

Date: 9/11/2017
Invoice # 900173
API# 05-123-45239
Foreman: Corey B.

Customer: Noble Energy Inc.
Well Name: Hullabaloo State Y21-781

County: Weld
State: Colorado
Sec: 16
Twp: 2N
Range: 64W

Consultant: Matt
Rig Name & Number: H&P 517
Distance To Location: 31
Units On Location: 4027/3103-4032/3203
Time Requested: 1200
Time Arrived On Location: 1115
Time Left Location:

WELL DATA

Casing Size (in) :	9.625
Casing Weight (lb) :	36
Casing Depth (ft.) :	2,025
Total Depth (ft) :	2035
Open Hole Diameter (in) :	13.50
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	48
Landing Joint (ft) :	4
Sacks of Tail Requested	100
HOC Tail (ft):	0

One or the other, cannot have quantity in both

Max Rate: 8
Max Pressure: 2500

Cement Data

Lead

Cement Name:	BFN III
Cement Density (lb/gal) :	13.5
Cement Yield (cuft) :	1.68
Gallons Per Sack	8.90
% Excess	15%

Tail Type III

Cement Name:	
Cement Density (lb/gal) :	15.2
Cement Yield (cuft) :	1.27
Gallons Per Sack:	5.80
% Excess:	0%
Fluid Ahead (bbls)	50.0
H20 Wash Up (bbls)	20.0

Spacer Ahead Makeup

50 BBL ahed with Die in 2nd 10

Casing ID 8.921 Casing Grade J-55 only used

Lead Calculated Results

HOC of Lead	1723.77 ft
Casing Depth - HOC Tail	
Volume of Lead Cement	842.46 cuft
HOC of Lead X Open Hole Ann	
Volume of Conductor	61.05 cuft
(Conductor ID Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	
Total Volume of Lead Cement	903.51 cuft
(cuft of Lead Cement) + (Cuft of Conductor)	
bbls of Lead Cement	185.05 bbls
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	
Sacks of Lead Cement	610.00 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	
bbls of Lead Mix Water	129.26 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42	
Displacement	153.13 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed:	366.20 bbls

Tail Calculated Results

Tail Cement Volume In Ann	127.00 cuft
(HOC Tail) X (OH Ann)	
Total Volume of Tail Cement	106.17 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	217.23 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	13.81 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

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
Two Cement Surface Pipe

Customer	Noble Energy Inc.
Well Name	Hullabaloo State Y21-781

Date	9/11/2017
INVOICE #	900173
LOCATION	Weld
FOREMAN	Corey B.

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DESCRIPTION OF JOB EVENTS

Amount Pumped		Time/Date	Event	Description	Rate	BBLs	Pressure
Lead mixed bbls	129.26	1115	ARRIVE ON LOCATION	ASSESS LOCATION			
Lead % Excess	15%	1315	JSA	Bison/SPOT EQUIPMENT IN			
Lead Sacks	610	1340	JSA	Bison and Rig Crew			
		1405	PRESSURE TEST	PRESSURE TEST TO 1500 PSI			1500
		1408	SPACER AHEAD	WATER SUPPLIED BY RIG, DYE IN 2ND 10	5	50	50
Tail mixed bbls	13.81	1420	LEAD CEMENT	CEMENT MIXED AT 13.5 PPG PG 583 sks	6	185	90
Tail % Excess	0%	1450	TAIL CEMENT	CEMENT MIXED AT 15.2 PPG 100 SKS	5	22.6	70
Tail Sacks	100	1458	SHUT DOWN				
		1500	DROP PLUG	PLUG PRELOADED			
Total Sacks	710	1505	DISPLACEMENT	RIG DISPLACE	1	153	470
Water Temp	67	1530	BUMP PLUG				1050
bbl Returns	34	1532	CASING TEST	DONE BY rig for 15min			1120
		1547	CHECK FLOATS	FLOATS HELD 1 BBL BACK			
Notes:		1605	RIG DOWN	PRE RIG DOWN MEETING			
Montered well for		1630	Leave Location				
30 Min. No top out							
Needed							

X _____
Work Preformed

X _____
Title

X _____
Date

Bison Oil Well Cementing
Tail & Lead

Cementing Customer Satisfaction Survey

Service Date	9/11/2017
Well Name	Hullabaloo State Y21-781
County	Weld
State	Colorado
SEC	16
TWP	2N
RNG	64W

Invoice Number	900173
API #	05-123-45239
Job Type	Two Cement
Company Name	Noble Energy Inc.
Customer Representative	

Supervisor Name: J Corey Barras

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
Corey B	4
Monte B.	4
Nash N	4
Jaime R.	4
Total Exposure Hours	16

Did we encounter any problems on this job? ☐ Yes ☑ No

To Be Completed By Customer

Rating/Description
5 - Superior Performance (Established new quality/performance standards)
4 - Exceeded Expectation (Provided more than what was required/expected)
3 - Met Expectations (Did what was expected)
2 - Below Expectations (Job problems/failures occurred - *Recovery made)
1 - Poor Performance (Job problems/failures occurred - *Some recovery made)
*Recovery: resolved issue(s) on jobsite in a timely and professional manner

RATING	CATEGORY	CUSTOMER SATISFACTION RATING
5	Personnel -	Did our personnel perform to your satisfaction?
	Equipment -	Did our equipment perform to your satisfaction?
	Job Design -	Did we perform the job to the agreed upon design?
	Product/Material -	Did our products and materials perform as you expected?
	Health & Safety -	Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc..)?
	Environmental -	Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc..)?
	Timeliness -	Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
	Condition/Appearance -	Did the equipment condition and appearance meet your expectations?
	Communication -	How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:

Yes	(No)	Did an accident or injury occur?
Yes	(No)	Did an injury requiring medical treatment occur?
Yes	(No)	Did a first-aid injury occur?
Yes	(No)	Did a vehicle accident occur?
(Yes)	No	Was a post-job safety meeting held?

Please Circle:

(Yes)	No	Was a pre-job safety meeting held?
(Yes)	No	Was a job safety analysis completed?
(Yes)	No	Were emergency services discussed
Yes	(No)	Did environmental incident occur?
Yes	(No)	Did any near misses occur?

Additional Comments:

Good Job

THE INFORMATION HEREIN IS CORRECT

X _____
Customer Representative's Signature

DATE: 9/11/17

Any additional Customer Comments or HSE concerns should be described on the back of this form

Hullabaloo Y21-781