



# Bison Oil Well Cementing Tail & Lead

Date: 1/24/2018  
Invoice #: 900246  
API#: 05-123-44601  
Foreman: Corey Barras

Customer: Noble Energy Inc.  
Well Name: Centennial State G34-684

County: Weld  
State: Colorado  
Sec: 8  
Twp: 5N  
Range: 62W  
Consultant: Matt  
Rig Name & Number: H&P 517  
Distance To Location: 20  
Units On Location: 4027/3103-4032/3203  
Time Requested: 800  
Time Arrived On Location: 700  
Time Left Location:

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625 Casing Weight (lb) : 36 Casing Depth (ft) : 1,942 Total Depth (ft) : 1952 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 80 Conductor ID : 15.25 Shoe Joint Length (ft) : 48 Landing Joint (ft) : 4</p> <p>Sacks of Tail Requested 100 HOC Tail (ft): 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: 8 Max Pressure: 2500</p>	<p><b>Lead</b></p> <p>Cement Name: BFN III Cement Density (lb/gal) : 13.5 Cement Yield (cuft) : 1.68 Gallons Per Sack 8.90 % Excess 15%</p> <p><b>Tail Type III</b></p> <p>Cement Name: Cement Density (lb/gal) : 15.2 Cement Yield (cuft) : 1.27 Gallons Per Sack: 5.80 % Excess: 0%</p> <p>Fluid Ahead (bbls) 50.0 H2O Wash Up (bbls) 20.0</p> <p><b>Spacer Ahead Makeup</b> 50 BBL ahead with Die in 2nd 10</p>

Casing ID	8.921	Casing Grade	J-55 only used
<b>Lead Calculated Results</b>		<b>Tail Calculated Results</b>	
HOC of Lead 1640.77 ft		Tail Cement Volume In Ann 127.00 cuft	
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement 801.89 cuft		Total Volume of Tail Cement 106.17 Cuft	
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor 61.05 cuft		bbls of Tail Cement 22.62 bbls	
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)		(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)	
Total Volume of Lead Cement 862.94 cuft		HOC Tail 217.23 ft	
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement 176.74 bbls		Sacks of Tail Cement 100.00 sk	
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)		(Total Volume of Tail Cement) ÷ (Cement Yield)	
Sacks of Lead Cement 590.71 sk		bbls of Tail Mix Water 13.81 bbls	
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water 125.17 bbls		Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure 585.23 PSI	
Displacement 146.72 bbls		Collapse PSI: 2020.00 psi	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI: 3520.00 psi	
Total Water Needed: 355.70 bbls			

X   
Authorization To Proceed  
DAVE NIELSEN



Customer  
Well Name

Noble Energy Inc.  
Centennial State G34-684

Date  
INVOICE #  
LOCATION  
FOREMAN

1/24/2018

900246

Weld

Corey Barras

Treatment Report Page 2

## DESCRIPTION OF JOB EVENTS

*[Signature]*

Work ☒ Performed

X	Title
1	1. The first title
2	2. The second title
3	3. The third title
4	4. The fourth title
5	5. The fifth title
6	6. The sixth title
7	7. The seventh title
8	8. The eighth title
9	9. The ninth title
10	10. The tenth title

X  
Date





# Bison Oil Well Cementing Tail & Lead

## Cementing Customer Satisfaction Survey

Service Date	1/24/2018
Well Name	Centennial State G34-684
County	Weld
State	Colorado
SEC	8
TWP	5N
RNG	62W

Invoice Number	900246
API #	05-123-44601
Job Type	Two Cement
Company Name	Noble Energy Inc.

Customer Representative John Drabota

Supervisor Name J Corey Barras

Employee Name (Including Supervisor)	Exposure Hours (Per Employee)
Corey B	6
Monte B.	6
Nash N	6
Jesse R.	6
Total Exposure Hours	
	24

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
3	Personnel -
	Equipment -
	Job Design -
	Product/Material -
	Health & Safety -
	Environmental -
	Timeliness -
	Condition/Appearance -
	Communication -

#### CUSTOMER SATISFACTION RATING

- Did our personnel perform to your satisfaction?
- Did our equipment perform to your satisfaction?
- Did we perform the job to the agreed upon design?
- Did our products and materials perform as you expected?
- Did we perform in a safe and careful manner (Pre/post mtgs, PPE, TSMR, etc.)?
- Did we perform in an environmentally sound manner (spills, leaks, cleanup, etc.)?
- Was job performed as scheduled (On time to site, accessible to customers, completed when expected)?
- Did the equipment condition and appearance meet your expectations?
- How well did our personnel communicate during mobilization, rig up and job execution?

Please Circle:

- |     |           |  |
|-----|-----------|--|
| Yes | <u>No</u> | Did an accident or injury occur?                 |
| Yes | <u>No</u> | Did an injury requiring medical treatment occur? |
| Yes | <u>No</u> | Did a first-aid injury occur?                    |
| Yes | <u>No</u> | Did a vehicle accident occur?                    |
| Yes | <u>No</u> | Was a post-job safety meeting held?              |

Please Circle:

- |            |           |                                      |
|------------|-----------|--------------------------------------|
| <u>Yes</u> | No        | Was a pre-job safety meeting held?   |
| <u>Yes</u> | No        | Was a job safety analysis completed? |
| <u>Yes</u> | No        | Were emergency services discussed?   |
| Yes        | <u>No</u> | Did environmental incident occur?    |
| Yes        | <u>No</u> | Did any near misses occur?           |

Additional Comments:

THE INFORMATION HEREIN IS CORRECT -

X John Drabota  
Customer Representative's Signature

DATE:

1/24/17

# Centennial State G34-684

