



**Bison Oil Well Cementing**  
 6143 S Willow Drive, Suite 400  
 Greenwood Village, CO 80111

FIELD INVOICE #

900287

**FIELD INVOICE**

WELL NO. AND FARM Larson A23-645		COUNTY Weld	STATE Colorado	DATE 5/2/2018	Contractor
CHARGE TO Noble Energy Inc. Attn: Accounting 1625 Broadway Ste 2000 Denver, CO 80202		WELL LOCATION Section 8 TWP 5N RANGE 62W			
		DELIVERED TO		LOCATION 1	CODE
		SHIPPED VIA 4027/3103-4032/3203		LOCATION 2	CODE
		TYPE AND PURPOSE OF JOB Two Cement		LOCATION 3	CODE
				WELL TYPE	CODE

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
<b>PUMP CHARGE</b>					
Two Cement		1		\$ 1,120.00	\$ 1,120.00
<b>MILLEAGE CHARGE</b>					
Pickup	\$1.50 per Mile	30		\$ 1.50	\$ 45.00
Truck/Equipment	\$4.00 per Mile	30		\$ 4.00	\$ 120.00
Truck/Equipment	\$4.00 per Mile	30		\$ 4.00	\$ 120.00
<b>CEMENT CHARGE:</b>					
BFN III	Lead	593		\$ 16.28	\$ 9,654.04
N-Gel-12	Tail	100		\$ 15.68	\$ 1,568.00
<b>ADDITIVES CHARGE:</b>					
Dye Hot Pink		16		\$ 12.00	\$ 192.00
<b>FLOAT EQUIPMENT:</b>					
<b>OTHER CHARGES:</b>					
Wait Time		5		\$ 250.00	\$ 1,250.00

RIG NAME & NUMBER:  
H&P 321

WELL NAME & NUMBER:  
LARSON A23-645

APP NUMBER:  
253496

TASK (DRL, COMP., W/O, P&A):  
DRL.

EXP TYPE:  
Cmt

ACCTG CODE:  
320.10.0017

DOLLAR TOTAL BEING APPROVD:  
\$ 14,069.04

FIELD APPROVAL DATE:  
Chad 5/2/18

ROUTE TO APPROVER:  
Kim Fagan

MAIL TO: NOBLE ENERGY INC.  
ATTN: ACCOUNTS PAYABLE  
1625 BROADWAY, SUITE 2200  
DENVER, CO 80202

SUB TOTAL \$ 14,069.04  
 TAX 2.90% \$ -  
 TOTAL \$ 14,069.04

If this account is not paid within 30 days of invoice date a FINANCE CHARGE will be made. Computed at a single monthly rate of 1 1/2% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

NO INVOICE WILL BE PAID W/O ALL ATTACHED SIGNED FIELD TICKETS

SUBJECT TO CORRECTION

*[Signature]*  
 Bison Oil Well Cementing, Inc. Representative

Customer or Agent

Customers hereby acknowledges and specifically agrees to the terms and conditions on this work order, including, without limitation, the provisions on the reverse hereof which include the release and indemnity.



# Bison Oil Well Cementing Tail & Lead

Date: 05/021/2018

Invoice # 900287

API# 05-123-45515

Foreman: Corey Barras

Customer: Noble Energy Inc.  
Well Name: Larson A23-645

County: Weld  
State: Colorado  
Sec: 8  
Twp: 5N  
Range: 62W

Consultant: Matt Rosales  
Rig Name & Number: H&P 321  
Distance To Location: 15  
Units On Location: 4027/3103-4032/3203  
Time Requested: 900  
Time Arrived On Location: 810  
Time Left Location:

WELL DATA	Cement Data
<p>Casing Size (in) : 9.625</p> <p>Casing Weight (lb) : 36</p> <p>Casing Depth (ft.) : 1,956</p> <p>Total Depth (ft) : 1966</p> <p>Open Hole Diameter (in) : 13.50</p> <p>Conductor Length (ft) : 80</p> <p>Conductor ID : 15.15</p> <p>Shoe Joint Length (ft) : 44</p> <p>Landing Joint (ft) : 6</p> <p>Sacks of Tail Requested: 100</p> <p>HOC Tail (ft): 0</p> <p>One or the other, cannot have quantity in both</p> <p>Max Rate: 8</p> <p>Max Pressure: 2500</p>	<p><b>Lead</b></p> <p>Cement Name: BFN III</p> <p>Cement Density (lb/gal) : 13.5</p> <p>Cement Yield (cuft) : 1.68</p> <p>Gallons Per Sack : 8.90</p> <p>% Excess : 15%</p> <p><b>Tail Type III</b></p> <p>Cement Name:</p> <p>Cement Density (lb/gal) : 15.2</p> <p>Cement Yield (cuft) : 1.27</p> <p>Gallons Per Sack: 5.80</p> <p>% Excess: 0%</p> <p>Fluid Ahead (bbls) : 50.0</p> <p>H2O Wash Up (bbls) : 20.0</p> <p><b>Spacer Ahead Makeup</b></p> <p>50 BBL ahead with Die in 2nd 10</p>

Casing ID 8.921 Casing Grade J-55 only used

Lead Calculated Results	Tail Calculated Results
HOC of Lead: 1649.22 ft	Tail Cement Volume In Ann (HOC Tail) X (OH Ann): 127.00 cuft
Casing Depth - HOC Tail	Total Volume of Tail Cement (HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann): 107.90 Cuft
Volume of Lead Cement: 806.02 cuft	bbls of Tail Cement (HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess): 22.62 bbls
HOC of Lead X Open Hole Ann	HOC Tail (Tail Cement Volume) ÷ (OH Ann): 220.78 ft
Volume of Conductor: 59.72 cuft (Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Sacks of Tail Cement (Total Volume of Tail Cement) ÷ (Cement Yield): 100.00 sk
Total Volume of Lead Cement (cuft of Lead Cement) + (Cuft of Conductor): 865.75 cuft	bbls of Tail Mix Water (Sacks of Tail Cement X Gallons Per Sack) ÷ 42: 13.81 bbls
bbls of Lead Cement (Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess): 177.32 bbls	Pressure of cement in annulus
Sacks of Lead Cement (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement): 592.62 sk	Hydrostatic Pressure: 585.23 PSI
bbls of Lead Mix Water (Sacks Needed) X (Gallons Per Sack) ÷ 42: 125.58 bbls	Collapse PSI: 2020.00 psi
Displacement (Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length): 148.26 bbls	Burst PSI: 3520.00 psi
Total Water Needed: 357.65 bbls	

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 Tail & Lead

## Cementing Customer Satisfaction Survey

Service Date	05/021/2018
Well Name	Larson A23-645
County	Weld
State	Colorado
SEC	8
TWP	5N
RNG	62W

Invoice Number	900287
API #	05-123-45515
Job Type	Two Cement
Company Name	Noble Energy Inc.

Customer Representative

Supervisor Name J Corey Barras

Employee Name (Including Supervisor)
Corey B
Monte B.
Nash M
Enrique V.

Exposure Hours (Per Employee)
10
10
10
10
40

Total Exposure Hours

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
_____	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	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:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

THE INFORMATION HEREIN IS CORRECT -

Customer Representative's Signature

DATE: 5/2/18

# Lawson A23-645

