



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

FIELD INVOICE #
200304

FIELD INVOICE

WELL NO. AND FARM Emmy State H25-757	COUNTY Weld	STATE Colorado	DATE 8/4/2018	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 4028/4030/4039	LOCATION 2	CODE	
	TYPE AND PURPOSE OF JOB Two Cement	LOCATION 3	CODE	
		WELL TYPE	CODE	

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					\$ -
Two Cement		1		\$ 1,120.00	\$ 1,120.00
MILLEAGE CHARGE					\$ -
Pickup	\$1.50 per Mile	46		\$ 1.50	\$ 69.00
Truck/Equipment	\$4.00 per Mile	46		\$ 4.00	\$ 184.00
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CEMENT CHARGE:					\$ -
BFN III	Lead	580		\$ 16.28	\$ 9,442.40
N-Gel-12	Tail	100		\$ 15.68	\$ 1,568.00
ADDITIVES CHARGE:					\$ -
Dye Hot Pink		16		\$ 12.00	\$ 192.00
FLOAT EQUIPMENT:					\$ -
OTHER CHARGES:					\$ -
Wait Time				\$ 250.00	\$ -

RIG NAME & NUMBER:
HP 517

WELL NAME & NUMBER:
Emmy State H25-757

A/E NUMBER:
205782

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

EXP TYPE:
320.10

ACTG CODE:
0017

DOLLAR TOTAL BEING APPLIED:
\$12,943.40

FIELD APPROVAL DATE:
Kim Fornall 8-3-18

ROUTE TO APPROVER:
Kim Fornall

SUB TOTAL	\$ 12,943.40
TAX 2.90%	\$ -
TOTAL	\$ 12,943.40

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 1.12% which is equal to an ANNUAL PERCENTAGE RATE OF 18%.

Kim Fornall
Customer or Agent

[Signature]
Bison Oil Well Cementing, Inc. Representative



**Bison Oil Well Cementing
Tail & Lead**

Date: 8/4/2018
 Invoice #: 200304
 API#: _____
 Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
 Well Name: Emmy State H25-751

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

Consultant: tommy
 Rig Name & Number: H&P 517
 Distance To Location: 23
 Units On Location: 4028/4030/4039
 Time Requested: 400 am
 Time Arrived On Location: 200 am
 Time Left Location: _____

WELL DATA	Cement Data
Casing Size (in) : 9.625 Casing Weight (lb) : 36 Casing Depth (ft) : 1,917 Total Depth (ft) : 1962 Open Hole Diameter (in) : 13.50 Conductor Length (ft) : 110 Conductor ID : 15.6 Shoe Joint Length (ft) : 41 Landing Joint (ft) : 35 Sacks of Tail Requested : 100 HOC Tail (ft) : 0 <small>One or the other, cannot have quantity in both</small> Max Rate: 8 Max Pressure: 2500	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) : 30.0 H2O Wash Up (bbls) : 20.0 Spacer Ahead Makeup 30 BBL ahead with Die in 2nd 10

Casing ID 8.921 Casing Grade J-55 only used

Lead Calculated Results	Tail Calculated Results
HOC of Lead : 1548.56 ft	Tail Cement Volume In Ann (HOC Tail) X (OH Ann) : 127.00 cuft
Casing Depth - HOC Tail	Total Volume of Tail Cement : 109.20 Cuft
Volume of Lead Cement : 756.82 cuft	(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)
HOC of Lead X Open Hole Ann	bbls of Tail Cement : 22.62 bbls
Volume of Conductor : 90.42 cuft	(HOC of Tail) X (OH Ann) + (Cement Yield) X (Shoe Joint Ann) X (.1781) X (% Excess)
(Conductor ID Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	HOC Tail : 223.44 ft
Total Volume of Lead Cement : 847.25 cuft	(Tail Cement Volume) ÷ (OH Ann)
(cuft of Lead Cement) + (Cuft of Conductor)	Sacks of Tail Cement : 100.00 sk
bbls of Lead Cement : 173.53 bbls	(Total Volume of Tail Cement) ÷ (Cement Yield)
(Total cuft of Lead Cement) X (.1781) X (1+%Lead Excess)	bbls of Tail Mix Water : 13.81 bbls
Sacks of Lead Cement : 579.96 sk	(Sacks of Tail Cement X Gallons Per Sack) ÷ 42
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Pressure of cement in annulus
bbls of Lead Mix Water : 122.90 bbls	Hydrostatic Pressure : 585.23 PSI
(Sacks Needed) X (Gallons Per Sack) ÷ 42	Collapse PSI: 2020.00 psi
Displacement : 147.72 bbls	Burst PSI: 3520.00 psi
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)	
Total Water Needed: 334.43 bbls	

X Mary Stapleton
 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	8/4/2018
Well Name	Emmy State H25-751
County	Weld
State	Colorado
SEC	8
TWP	5N
RNG	62W

Invoice Number	200304
API #	0
Job Type	Two Cement
Company Name	Noble Energy Inc.

Supervisor Name: Kirk Kallhoff

Customer Representative: gary

Employee Name (Including Supervisor)
kirk
Terry R.
monte
chris
bryan

Exposure Hours (Per Employee)
7
7
7
7
7
35

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 -

[Signature]
Customer Representative's Signature

DATE: 8-4-18

SERIES 2000

