



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

FIELD INVOICE #

200210

FIELD INVOICE

WELL NO. AND FARM	COUNTY	STATE	DATE	Contractor
bison ridge y22-771	Weld	Colorado	12/19/2017	
CHARGE TO	WELL LOCATION			
Noble Energy Inc.	Section	TWP	RANGE	
Attn: Accounting	16	2n	64w	
1625 Broadway Ste 2000	DELIVERED TO	LOCATION 1	CODE	
Denver, CO 80202	cr 55-20	SHOP		
	SHIPPED VIA	LOCATION 2	CODE	
	4028/4024	LOCATION		
	TYPE AND PURPOSE OF JOB	LOCATION 3	CODE	
	Two Cement	SHOP		
		WELL TYPE	CODE	
		gas		

ITEM	DESCRIPTION	UNITS		UNIT PRICE	AMOUNT
		QTY.	MEAS.		
PUMP CHARGE					\$ -
Two Cement		1		\$ 1,120.00	\$ 1,120.00
					\$ -
					\$ -
MILEAGE CHARGE					\$ -
Pickup	\$1.50 per Mile	76		\$ 1.50	\$ 114.00
Truck/Equipment	\$4.00 per Mile	76		\$ 1.50	\$ 114.00
Truck/Equipment	\$4.00 per Mile	76		\$1.50	\$ 114.00
					\$ -
					\$ -
CEMENT CHARGE:					\$ -
BFN III	Lead	605		\$ 16.28	\$ 9,849.40
N-Gel-12	Tail	100		\$ 15.68	\$ 1,568.00
ADDITIVES CHARGE:					
Dye Hot Pink		16		\$ 12.00	\$ 192.00

FLOAT EQUIPMENT:	RIG NAME & NUMBER:	H&P 517
	WELL NAME & NUMBER:	Bison Ridge Y22-771
	AFE NUMBER	204943
	TASK (DEL, COMP, W/O, P&A)	DRH
	EXP TYPE:	320.10
	ACTG CODE:	0017
	DOLLAR TOTAL BEING APP'VD	\$13,071.40
	FIELD APPROVAL DATE	WH Bm 12/19/17
	ROUTE TO APPROVER	Kim Jorner
	MAIL TO: NOBLE ENERGY INC ATTN: ACCOUNTS PAYABLE 1625 BROADWAY, SUITE 2200 DENVER, CO 80202 NO INVOICE WILL BE PAID W/O ALL ATTACHED SIGNED FIELD TICKETS	

SUB TOTAL	\$ 13,071.40
TAX 2.90%	\$ -
TOTAL	\$ 13,071.40

SUBJECT TO CORRECTION

Customer or Agent

Bison Oil Well Cementing, Inc. Representative

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

Customer: Noble Energy Inc.
Well Name: bison ridge y22-771

Date: 12/19/2017
Invoice #: 200210
API#
Foreman: Kirk Kallhoff

County: Weld
State: Colorado
Sec: 16
Twp: 2n
Range: 64w
Consultant: woody
Rig Name & Number: H&P 517
Distance To Location: 38
Units On Location: 3
Time Requested: 300 pm
Time Arrived On Location: 215 pm
Time Left Location: 6:30 pm

WELL DATA

Casing Size (in) : 9.625
Casing Weight (lb) : 36
Casing Depth (ft.) : 1,998
Total Depth (ft) : 4043 2043
Open Hole Diameter (in) : 13.50
Conductor Length (ft) : 110
Conductor ID : 16
Shoe Joint Length (ft) : 41
Landing Joint (ft) : 35

Sacks of Tail Requested 100
HOC Tail (ft): 0

One or the other, cannot have quantity in both

Max Rate: 8
Max Pressure: 1500

Cement Data

Lead

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

Tail

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

Fluid Ahead (bbls) 30.0
H2O Wash Up (bbls) 20.0

Spacer Ahead Makeup

30BBL WATER DYE IN 2ND 10

Casing ID	8.921	Casing Grade	J-55 only used
Lead Calculated Results		Tail Calculated Results	
HOC of Lead	1629.56 ft	Tail Cement Volume In Ann	127.00 cuft
Casing Depth - HOC Tail		(HOC Tail) X (OH Ann)	
Volume of Lead Cement	796.41 cuft	Total Volume of Tail Cement	109.20 Cuft
HOC of Lead X Open Hole Ann		(HOC Tail X OH Ann) - (Shoe Length X Shoe Joint Ann)	
Volume of Conductor	98.01 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	894.42 cuft	HOC Tail	223.44 ft
(cuft of Lead Cement) + (Cuft of Conductor)		(Tail Cement Volume) ÷ (OH Ann)	
bbls of Lead Cement	183.19 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	605.05 sk	bbls of Tail Mix Water	14.02 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)		(Sacks of Tail Cement X Gallons Per Sack) ÷ 42	
bbls of Lead Mix Water	129.65 bbls	Pressure of cement in annulus	
(Sacks Needed) X (Gallons Per Sack) ÷ 42		Hydrostatic Pressure	
Displacement	153.98 bbls	Collapse PSI:	
(Casing ID Squared) X (.0009714) X (Casing Depth) + (Landing Joint) - (Shoe Length)		Burst PSI:	
Total Water Needed:	347.66 bbls	2020.00 psi	
		3520.00 psi	

X
Authorization To Proceed

X 12-19-17
Date



Bison Oil Well Cementing Tail & Lead

Cementing Customer Satisfaction Survey

Service Date 12/19/2017
Well Name bison ridge y22-771
County Weld
State Colorado
SEC 16
TWP 2n
RNG 64w

Invoice Number 200210
API # 0
Job Type Two Cement
Company Name Noble Energy Inc.

Customer Representative woody

Supervisor Name Kirk Kallhoff

Employee Name (Including Supervisor)
kirk
frank
jose
himi
dave

Exposure Hours (Per Employee)
4.25
4.25
4.25
4.25
4.25
21.25

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:

Good Job

THE INFORMATION HEREIN IS CORRECT -

X
Customer Representative's Signature

DATE:

12-19-17

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

SERIES 2000

