



BISON

Bison Oil Well Cementing Inc.
1547 Gaylord Street
Denver, CO 80206
303-296-3010

Invoice

Date	Invoice #
5/28/2014	12260

Bill To
Noble Energy Inc. Attn: Accounting 1625 Broadway Ste 2000 Denver, CO 80202

Location	Well Name & No.	Terms	Job Type		
Weld CO	SENECA E15-72-1HC	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1			
Discount 15%	Discount 15%				
MILEAGE	Mileage charge	360			
Discount 15%	Discount 15%				
Data Acquisition ...	Data Acquisition Charge	1			
Discount 15%	Discount 15%				
Service Charge	Casing PSI test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	366	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	oz		
Discount 15%	Discount 15%				
Sugar	Sugar	100	lb		
	Subtotal of Materials				

Please Remit Payment To:

Bison Oil Well Cementing, Inc.
P.O. Box 29671
Thornton, CO 80229

Subtotal

Sales Tax

Total

Balance Due



Bison Oil Well Cementing Single Cement Surface Pipe

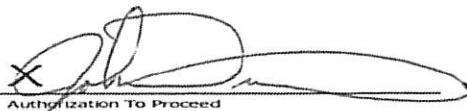
Date: 5/28/2014
Invoice #: 12260
API#:
Foreman: monte

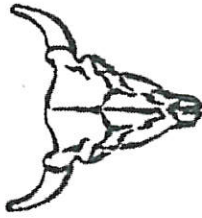
Customer: noble
Well Name: seneca e15-72-1hc

County: weld
State: colorado
Sec: 23
Twp: 6n
Range: 65w

Consultant: erik
Rig Name & Number: percision 829
Distance To Location: 18.2
Units On Location: 4029-3101/4017-3205
Time Requested: 9:00am
Time Arrived On Location: 8:30
Time Left Location:

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft) : 638	Cement Yield (cuft) : 1.27
Total Depth (ft) : 665	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 30%
Conductor Length (ft) : 80	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.6	BBL to Pit: 0.0
Shoe Joint Length (ft) : 41	Fluid Ahead (bbls): 50.0
Landing Joint (ft) : 24	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	10 fresh 10 dye 30 fresh

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 48.01 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	17.80 cuft	Pressure of cement in annulus	
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		Hydrostatic Pressure: 503.76 PSI	
cuft of Conductor	65.76 cuft	Pressure of the fluids inside casing	
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Displacement: 257.42 psi	
cuft of Casing	381.48 cuft	Shoe Joint: 32.37 psi	
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Total 289.79 psi	
Total Slurry Volume	465.03 cuft	Differential Pressure: 213.98 psi	
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Collapse PSI: 2020.00 psi	
bbls of Slurry	82.82 bbls	Burst PSI: 3520.00 psi	
(Total Slurry Volume) X (.1781)		Total Water Needed: 169.36 bbls	
Sacks Needed	366 sk		
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	51.35 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			
 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
Single Cement Surface Pipe

Customer
Well Name

noble
seneca e15-72-1hc

INVOICE #
LOCATION
FOREMAN
Date

12260
weld
monte
5/28/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	11:30 10:45 11:55	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
		BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time
Safety Meeting		0	12:47	0		0		0		0	
MIRU		10	12:50	90		10		10		10	
CIRCULATE		20	12:53	130		20		20		20	
Drop Plug		30	12:55	180		30		30		30	
1:47		40	12:57	170		40		40		40	
M & P		50	1:00	570		50		50		50	
Time	Sacks	60				60		60		60	
12:15-12:45	366	70				70		70		70	
		80				80		80		80	
		90				90		90		90	
		100				100		100		100	
		110				110		110		110	
% Excess	0%	120				120		120		120	
Mixed bbls	51.35	130				130		130		130	
Total Sacks	366	140				140		140		140	
bbl Returns	8	150				150		150		150	
Water Temp	69										

Notes:

safty meeting, miru, pressure test per company man, circulate 50 bbls ahead with dye in 2nd 10, mix and pump 366 sks cement at 15.2 at 30% excess, drop plug and bump plug at 7:58am at 530 psi 35 bbls back

X Co Man

X 5/28/14
Date