



BISON

Invoice

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

Date	Invoice #
4/16/2014	12181

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	WELLS RANCH AE30-66-1AHNC	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	314	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	10	oz		
Discount 15%	Discount 15%				
	Subtotal of Materials				

Please Remit Payment To:

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

Subtotal	
Sales Tax	
Total	
Balance	



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/16/2014

Invoice #: 12181

API#

Foreman: kirk

Customer: noble

Well Name: wells ranch ae 30-66-1 ahnc

County: weld

State: Colorado

Sec: 29

Twp: 6n

Range: 62w

Consultant: mike

Rig Name & Number: h&p 322

Distance To Location:

Units On Location: 3103-3210

Time Requested: 630 pm

Time Arrived On Location: 530 om

Time Left Location: 7:30 pm

WELL DATA

Casing Size OD (in): 9.625
 Casing Weight (lb): 36.00
 Casing Depth (ft): 627
 Total Depth (ft): 664
 Open Hole Diameter (in.): 13.75
 Conductor Length (ft): 100
 Conductor ID: 15.5
 Shoe Joint Length (ft): 43
 Landing Joint (ft): 28

Max Rate:

Max Pressure:

Cement Data

Cement Name: BFN III
 Cement Density (lb/gal): 15.2
 Cement Yield (cuft): 1.27
 Gallons Per Sack: 5.89
 % Excess: 30%
 Displacement Fluid lb/gal: 8.3
 BBL to Pit:
 Fluid Ahead (bbbls): 50.0
 H2O Wash Up (bbbls): 15.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.66 cuft
 (Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 80.51 cuft
 (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 277.14 cuft
 (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 376.31 cuft
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbbls of Slurry 87.13 bbbls
 (Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 385 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 54.02 bbbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 47.31 bbbls
 (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 495.08 PSI

Pressure of the fluids inside casing

Displacement: 251.81 psi

Shoe Joint: 33.95 psi

Total 285.76 psi

Differential Pressure: 209.32 psi

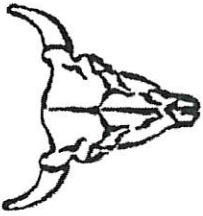
Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 166.33 bbbls

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**

INVOICE # 12181
 LOCATION weld
 FOREMAN kirk
 Date 4/16/2014

Customer noble
 Well Name wells ranch ae 30-66-1 ahnc

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	Displace 1		Displace 2		Displace 3		Displace 4		Displace 5	
	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time	BBLs	Time
Safety Meeting	737pm									
MIRU	654pm									
CIRCULATE	758pm									
Drop Plug										
	827 pm									
M & P										
Time										
808 pm										
824 pm stop										
% Excess										
Mixed bbls										
Total Sacks										
bbl Returns										
Water Temp										

Notes:
 bumped plug at 839 pm 450 psi 71 bbls slurry
 casing test 1000 psi for 15 min

X Title

X 4-16-14 Date