



BISON

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

Invoice

Date	Invoice #
3/21/2014	12131

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Sandau St.K25-62-HIN	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	403	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	5	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	8	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 Due



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/21/2014
Invoice # 12131
API# 05-123-38087
Foreman: LEE SHARP

Customer: NOBLE
Well Name: SANDAU STATE K25-62-1HNO L

County: WELD
State: Colorado
Sec: 25
Twp: 4N
Range: 66W

Consultant: J.W.
Rig Name & Number: PRECISION 829
Distance To Location: 2
Units On Location: 4027-3106; 4018-3203
Time Requested: 2:00 PM
Time Arrived On Location: 1:15 PM
Time Left Location:

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 662
Total Depth (ft) : 667
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 15.5
Shoe Joint Length (ft) : 40
Landing Joint (ft) : 21

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: 10.0
Fluid Ahead (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
50bbl 10; 10dye; 30bbl

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.53 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 295.60 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 393.63 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 91.14 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)
Sacks Needed 403 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 56.51 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 49.66 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 522.79 PSI

Pressure of the fluids inside casing

Displacement: 268.07 psi

Shoe Joint: 31.88 psi

Total 299.96 psi

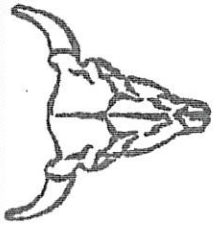
Differential Pressure: 222.84 psi

Collapse PSI: #N/A psi

Burst PSI: #N/A psi

Total Water Needed: 176.16 bbls

X J W I W W
Authorization To Proceed



Bison Oil Well Cementing
Single Cement Surface Pipe

Customer
Well Name

NOBLE
SANDAU STATE K25-62-1HNL

INVOICE #
LOCATION
FOREMAN
Date

12131
WELD
LEE SHARP
3/21/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	16:45 16:30 17:07	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI	BBLs	Time	PSI
Safety Meeting		0	17:47		0			0			0			0		
MIRU		10	17:49	180	10			10			10			10		
CIRCULATE		20	17:51	220	20			20			20			20		
Drop Plug		30	17:53	360	30			30			30			30		
17:45		40	17:55	410	40			40			40			40		
		50	12:58	1010	50			50			50			50		
M & P		60			60			60			60			60		
Time		70			70			70			70			70		
17:16		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
		120			120			120			120			120		
% Excess	30%	130			130			130			130			130		
Mixed bbls	56.51	140			140			140			140			140		
Total Sacks	403	150			150			150			150			150		
bbl Returns	21															
Water Temp	60															

Notes:

The day JOB WENT WELL NO ISSUE CAUSED JOB COMPLETION ISSUES

X. J. Sharp

Work Performed

X W.S.S.

Title

X 3/21/14

Date