



BISON

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

Invoice

Date	Invoice #
11/22/2013	12588

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	NCLP PC AA04-65-11N	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%				
HOURS	Wait Time	7			
	Subtotal of Services				
BFN III Winter ...	BFN III Blend	398	Sack		
Discount 15%	Discount 15%				
KCL Mud Flush	(BHS 117)	6	qt		
Discount 15%	Discount 15%				
Dye - 4880	Dye (Hot Pink 4880)	16	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: 11/22/2013
Invoice #: 12588
API#: 05-123-37168
Foreman: Calvin Reimers

Customer: Noble
Well Name: NCLP PC AA 04-65-1HN

County: Weld
State: Colorado
Sec: 4
Twp: 6N
Range: 63W
Consultant: Johnny S.
Rig Name & Number: H&P 343
Distance To Location: 31 Miles
Units On Location: 3106/3203
Time Requested: 1000am
Time Arrived On Location: 1000am
Time Left Location: 900pm

WELL DATA		Cement Data	
Casing Size OD (in) :	9.6250	Cement Name:	BEN III
Casing Weight (lb) :	36	Cement Density (lb/gal) :	15.2
Casing Depth (ft) :	768	Cement Yield (cuft) :	1.27
Total Depth (ft) :	798	Gallons Per Sack:	5.89
Open Hole Diameter (in.) :	13.75	% Excess:	10%
Conductor Length (ft) :	100	Displacement Fluid lb/gal:	8.3
Conductor ID :	16	BBL to Pit:	12.0
Shoe Joint Length (ft) :	45	Fluid Ahead (bbls):	
Landing Joint (ft) :	29	H2O Wash Up (bbls):	20.0
Max Rate:	7	Spacer Ahead Makeup	
Max Pressure:	2500	Is H2O with KCL+Dye in 2nd 10bbls	

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 58.09 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	19.58 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus	
cuft of Conductor	89.10 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 606.39 PSI	
cuft of Casing	351.28 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing	
Total Slurry Volume	459.96 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 311.68 psi	
bbls of Slurry	90.11 bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)	Shoe Joint: 35.63 psi	
Sacks Needed	398 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total: 347.31 psi	
Mix Water	55.87 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 259.08 psi	
		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed 75.87 bbls	

X Jim Boyd
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.



INVOICE #	LOCATION	FOREMAN	Date
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12588
Weld
Calvin Rein
11/22/20

Customer	Noble
Well Name	NCLP PC AA 04-65-1HN

DESCRIPTION OF JOB EVENTS

Treatment Report Page 2

	Safety Meeting	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
M & P	625pm	0	741pm	50	0			0			0			0		
	500pm	10	744pm	120	10			10			10			10		
	705pm	20	747pm	160	20			20			20			20		
	CIRCULATE	30	748pm	250	30			30			30			30		
	Drop Plug	40	750pm	320	40			40			40			40		
	740pm	50	752pm	340	50			50			50			50		
M & P	Sacks	60	755pm	290	60			60			60			60		
	715pm	70	Bump	490	70			70			70			70		
	737pm	80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	10%	120			120			120			120			120		
Mixed bbls	55.87	130			130			130			130			130		
Total Sacks	398	140			140			140			140			140		
bbl Returns		150			150			150			150			150		

Notes:

The day

Float Held

✕

Work performed

File

Date _____