



BISON

Invoice

Date	Invoice #
7/19/2014	35002

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

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	Five Rivers K07-65HN	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	PSI Test	1			
	Subtotal of Services				
BFN III Summer ...	BFN III Blend	346	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 Due



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/19/2014
Invoice #: 35002
API#
Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.
Well Name: five rivers k07-65hn

County: Weld
State: Colorado
Sec: 9
Twp: 4n
Range: 66w
Consultant: steve
Rig Name & Number: h&p 315
Distance To Location: 10
Units On Location: 4030-3103/4018-3204
Time Requested: 130 pm
Time Arrived On Location: 1215 pm
Time Left Location: 5:15pm

WELL DATA

Casing Size OD (in.) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft.) : 626
Total Depth (ft) : 657
Open Hole Diameter (in.) : 13.75
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 40
Landing Joint (ft) : 31

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 (bbls): 50.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.36 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)
cuft of Conductor 89.10 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)
cuft of Casing 359.60 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 466.06 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 83.01 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 367 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 51.46 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 47.70 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 494.29 PSI

Pressure of the fluids inside casing

Displacement: 252.67 psi

Shoe Joint: 31.58 psi

Total 284.26 psi

Differential Pressure: 210.03 psi

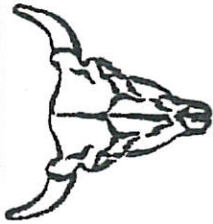
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 169.16 bbls

X 
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 #
LOCATION
FOREMAN
Date

35002
Weld
Kirk Kallhoff
7/19/2014

Customer
Well Name

Noble Energy Inc.
five rivers k07-65hn

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

	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	353pm	10	0			0			0			0		
MIRU	10	355pm	60	10			10			10			10		
CIRCULATE	20	357pm	150	20			20			20			20		
Drop Plug	30	359pm	230	30			30			30			30		
353 pm	40	402pm	270	40			40			40			40		
	50			50			50			50			50		
M & P	60			60			60			60			60		
Time	70			70			70			70			70		
333 pm	80			80			80			80			80		
349 pm stop	90			90			90			90			90		
	100			100			100			100			100		
	110			110			110			110			110		
% Excess	120			120			120			120			120		
Mixed bbls	130			130			130			130			130		
Total Sacks	140			140			140			140			140		
bbl Returns	150			150			150			150			150		
Water Temp															

Notes:

bumped plug at 406 pm 420 psi
casing test 1000 psi for 15 min

78.2 bbls slurry

X *Steve Randall*
Work Performed

X *W.S.S*
Title

X *7-19-14*
Date