



# BISON

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

## Invoice

Date	Invoice #
5/24/2014	12149

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

Location	Well Name & No.	Terms	Job Type		
Weld CO	STORIS E24-76-IHN	Net 30	Surface Pipe		
Item	Description	Qty	U/M	Rate	Amount
Pump surface	PUMP Charge-surface pipe	1			155.00
Discount 15%	Discount 15%				-23.25
MILEAGE	Mileage charge	360			144.00
Discount 15%	Discount 15%				-21.60
Data Acquisition ...	Data Acquisition Charge	1			150.00
Discount 15%	Discount 15%				-22.50
Service Charge	Casing PSI test	1			80.00
HOURS	Wait Time	1.5			75.00
	Subtotal of Services				150.00
BFN III Summer ...	BFN III Blend	387	Sack		240.00
Discount 15%	Discount 15%				-36.00
KCL Mud Flush	(BHS 117)	5	qt		10.00
Discount 15%	Discount 15%				-1.50
Dye - 4880	Dye (Hot Pink 4880)	16	oz		16.00
Discount 15%	Discount 15%				-2.40
	Subtotal of Materials				240.00

Please Remit Payment To:

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

Subtotal	150.00
Sales Tax	22.50
Total	172.50
Balance Due	172.50



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/24/2014

Invoice # 12149

API# 05-123-38166

Foreman: JASON

Customer: NOBLE

Well Name: STORIS E24-76-1HN

County: Weld County

State: Colorado

Sec: 24

Twp: 6N

Range: 65W

Consultant: MIKE MAGNESS

Rig Name & Number: H&P 330

Distance To Location: 20

Units On Location: 3106, 3203

Time Requested: 1000

Time Arrived On Location: 830

Time Left Location: 1530

## WELL DATA

Casing Size OD (in) : 9.625  
Casing Weight (lb) : 36.00  
Casing Depth (ft) : 732  
Total Depth (ft) : 772  
Open Hole Diameter (in.) : 13.75  
Conductor Length (ft) : 100  
Conductor ID : 16  
Shoe Joint Length (ft) : 45  
Landing Joint (ft) : 34

Max Rate: 7  
Max Pressure: 2500

## Cement Data

Cement Name: BFN III  
Cement Density (lb/gal) : 15.2  
Cement Yield (cuft) : 1.27  
Gallons Per Sack: 5.89  
% Excess: 15%  
Displacement Fluid lb/gal: 8.3  
BBL to Pit: 13.0  
Fluid Ahead (bbls): 50.0  
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

50 BBL H2O+KCL+DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

## Calculated Results

cuft of Shoe 19.57 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 382.25 cuft  
(Open Hole Squared) -(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)  
Total Slurry Volume 490.92 cuft  
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)  
bbls of Slurry 100.55 bbls  
(Total Slurry Volume) X (.1781) X (% Excess Cement)  
Sacks Needed 387 sk  
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)  
Mix Water 54.21 bbls  
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 55.74 bbls

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

## Pressure of cement in annulus

Hydrostatic Pressure: 578.03 PSI

## Pressure of the fluids inside casing

Displacement: 296.21 psi

Shoe Joint: 35.60 psi

Total 331.81 psi

Differential Pressure: 246.22 psi

Collapse PSI: 2020.00 psi

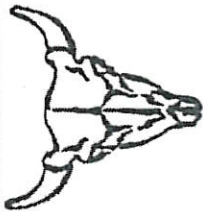
Burst PSI: 3520.00 psi

Total Water Needed: 179.95 bbls

*x Michael Magness*  
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  
STORIS E24-76-1HN

INVOICE #  
LOCATION  
FOREMAN  
Date

12149  
Weld County  
JASON  
5/24/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 1348 M & P Time	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
1240	0	1348	0	0			0			0			0		
1120	10	1350	120	10			10			10			10		
	20	1352	180	20			20			20			20		
	30	1354	280	30			30			30			30		
	40	1356	330	40			40			40			40		
	50	1358	260	50			50			50			50		
	60	1407	280	60			60			60			60		
	70	BUMP	450	70			70			70			70		
	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		
	130			130			130			130			130		
	140			140			140			140			140		
	150			150			150			150			150		
% Excess	15.8%														
Mixed bbls	54.2														
Total Sacks	386														
bbl Returns	13														
Water Temp	73														

Notes:

The day

PUMPED 50 BBL H2O AHEAD, MIX AND PUMP 387 SKS AT 15.2, 87.5 BBLs OF SLURRY, CASING PRESSURE TEST TO 1000 PSI FOR 15 MINUTES, .5 BBL

BACK ON BLEED OFF.

X *Michael Mayes*

X Title

X Date