



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/16/2015

Invoice # 25128

API# 05-123-40158

Foreman: Calvin Reimers

Customer: Noble Energy Inc.

Well Name: Crow Creek AA 01-766

County: Weld

State: Colorado

Sec: 1

Twp: 6N

Range: 63W

Consultant: Clifford/Darek

Rig Name & Number: H&P 315

Distance To Location: 31 Miles

Units On Location: 4023-3103/4020-3212

Time Requested: 830pm

Time Arrived On Location: 730pm

Time Left Location: 1215am

WELL DATA

Casing Size OD (in): 9.625
Casing Weight (lb): 36.00
Casing Depth (ft): 669
Total Depth (ft): 702
Open Hole Diameter (in.): 13.50
Conductor Length (ft): 100
Conductor ID: 16
Shoe Joint Length (ft): 46
Landing Joint (ft): 30

Max Rate: 7

Max Pressure: 2500

Cement Data

Cement Name: BEN III
Cement Density (lb/gal): 14.2
Cement Yield (cuft): 1.49
Gallons Per Sack: 7.48
% Excess: 20%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 18.0
Fluid Ahead (bbls): 40.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

40bbls H2O+Dye in 2nd 10bbls

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 19.84 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 333.62 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 442.56 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 78.82 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 297 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 52.90 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 50.51 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 493.41 PSI

Pressure of the fluids inside casing

Displacement: 268.68 psi

Shoe Joint: 33.73 psi

Total 302.41 psi

Differential Pressure: 191.00 psi

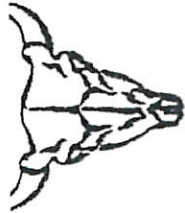
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 163.40 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.



Single Cement Surface Pipe

Customer
Well Name

Noble Energy Inc.
Crow Creek AA 01-766

LOCATION
FOREMAN
Date

Weld
Calvin Reimers
1/16/2015

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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	957pm			0	1057pm	90	0			0			0		
MIRU	920pm			10	1100pm	70	10			10			10		
CIRCULATE	1033pm			20	1102pm	130	20			20			20		
Drop Plug				30	1104pm	230	30			30			30		
1056pm				40	1106pm	290	40			40			40		
				50	1109pm	200	50			50			50		
M & P				60	Bump	1030	60			60			60		
Time	Sacks			70			70			70			70		
1041pm	297			80			80			80			80		
1053pm				90			90			90			90		
				100			100			100			100		
				110			110			110			110		
				120			120			120			120		
% Excess	20%			130			130			130			130		
Mixed bbls	52.9			140			140			140			140		
Total Sacks	297			150			150			150			150		
bbl Returns	18														
Water Temp	75.1														

Notes:

The day

1/2 bbl Back on Bleed Off

Casing PSI Test 1109pm 1030psi to 1124pm 1040psi

X *Zeigand*

X WSS

X 1/17/15

Work Performed