



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 4/2/2015

Invoice # 80067

API#

Foreman: Kirk Kallhoff

Customer: Noble Energy Inc.

Well Name: colt a13-655

County: Weld
State: Colorado

Sec: 17
Twp: 6n
Range: 63w

Consultant: bo

Rig Name & Number: h&p 343

Distance To Location:

Units On Location: 4028-3106/4020-3212

Time Requested: 330 am

Time Arrived On Location: 130 am

Time Left Location: 4:30pm

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 881
Total Depth (ft) : 926
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) : 100
Conductor ID : 16
Shoe Joint Length (ft) : 41
Landing Joint (ft) : 35

Max Rate:

Max Pressure:

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 30%
Displacement Fluid lb/gal: 8.3
BBL to Pit:
Fluid Ahead (bbls): 60.0
H2O Wash Up (bbls): 10.0

Spacer Ahead Makeup

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 17.80 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 496.21 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 603.10 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 107.41 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 405 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 72.09 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 67.64 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 649.91 PSI

Pressure of the fluids inside casing

Displacement: 362.19 psi

Shoe Joint: 30.25 psi

Total 392.44 psi

Differential Pressure: 257.48 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 209.73 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**

Customer
Well Name

Noble Energy Inc.
colt a13-655

INVOICE #
LOCATION
FOREMAN
Date

80067
Weld
Kirk Kallhoff
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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	246am															
MIRU	215am															
CIRCULATE	302am	0	335am	10	0			0			0			0		
Drop Plug		10	337am	80	10			10			10			10		
335 am		20	339am	80	20			20			20			20		
		30	341am	100	30			30			30			30		
		40	343am	220	40			40			40			40		
M & P		50	345am	300	50			50			50			50		
Time	Sacks	60	347am	320	60			60			60			60		
314 am	354	70			70			70			70			70		
332 am stop		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	63	130			130			130			130			130		
Total Sacks	354	140			140			140			140			140		
bbl Returns	15	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 350 am 460 psi

casing test 1000 psi 15 min

X

Work Preformed

X

Title

X

Date