Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 2/15/2014
Invoice # 12286
API#
Foreman: Kirk

Customer: noble
Well Name: wells ranch aa 35-69-1hnb

County: weld
State: Colorado

Sec: 36
Twp: 6n
Range: 63w

Consultant: jim t
Rig Name & Number: h&p 321
Distance To Location:
Units On Location: 3103-3210
Time Requested: 630 pm
Time Arrived On Location: 515 pm
Time Left Location: 10:00 PM

WELL DATA

Casing Size OD (in) :	9.6250
Casing Weight (lb) :	36
Casing Depth (ft.) :	613
Total Depth (ft) :	648
Open Hole Diameter (in.) :	13.75
Conductor Length (ft) :	100
Conductor ID :	15.5
Shoe Joint Length (ft) :	42
Landing Joint (ft) :	25
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):	
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.23 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 80.51 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 269.78 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 368.52 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 85.32 bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 377 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

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

Displacement: 46.08 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 484.02 PSI

Pressure of the fluids inside casing
Displacement: 246.20 psi
Shoe Joint: 33.16 psi
Total 279.37 psi

Differential Pressure: 204.66 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed 72.90 bbls

X _____
Authorization To Proceed

Customers hereby acknow edges and spec fically 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	noble
Well Name	wells ranch aa 35-69-1hnb

INVOICE #	12286
LOCATION	weld
FOREMAN	Kirk
Date	2/15/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting	737pm
MIRU	640pm
CIRCULATE	823pm
Drop Plug	
854 pm	
M & P	

Time	Sacks
832 pm	378
851 pm stop	

% Excess	30%
Mixed bbls	53
Total Sacks	378
bbl Returns	19

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
0	854	10	0			0			0			0		
10	856	110	10			10			10			10		
20	858	170	20			20			20			20		
30	900	230	30			30			30			30		
40	902	240	40			40			40			40		
50			50			50			50			50		
60			60			60			60			60		
70			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		

Notes:

bumped plug at 906 pm 410 psi 85.3 bbls slurry casing test 1000 psi for 15 min

X _____
Work Preformed

X WSS
Title

X 2-15-14
Date