Bison Oil Well Cementing
Single Cement Surface Pipe

Date: 6/25/2014
Invoice # 12076
API# 05-123-38863
Foreman: JASON

Customer: NOBLE
Well Name: EAGLE E14-79HN

County: Weld County
State: Colorado
Sec: 14
Twp: 6N
Range: 65W

Consultant: TYLER
Rig Name & Number: PRECISION 829
Distance To Location: 19
Units On Location: 4031-3106, 4007-3210
Time Requested: 1730
Time Arrived On Location: 1700
Time Left Location: 2230

WELL DATA

Casing Size OD (in) :	9.625
Casing Weight (lb) :	36.00
Casing Depth (ft.) :	638
Total Depth (ft) :	667
Open Hole Diameter (in.) :	13.75
Conductor Length (ft) :	80
Conductor ID :	15.25
Shoe Joint Length (ft) :	45
Landing Joint (ft) :	19
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:	30%
Displacement Fluid lb/gal:	8.3
BBL to Pit:	17.0
Fluid Ahead (bbls):	50.0
H20 Wash Up (bbls):	20.0

Spacer Ahead Makeup
59 BBL H2O+KCL+DYE IN 2ND 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 19.35 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 61.05 cuft
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 381.48 cuft
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 461.88 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 82.3 ~~106.94~~ bbls
(Total Slurry Volume) X (.1781) X (% Excess Cement)

Sacks Needed 364 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 51.00 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 47.35 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 503.76 PSI

Pressure of the fluids inside casing
Displacement: 255.87 psi
Shoe Joint: 35.20 psi
Total 291.07 psi

Differential Pressure: 212.69 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi

Total Water Needed: 168.35 bbls

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.

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INVOICE #
LOCATION
FOREMAN
Date
Tr

Customer: NOBLE
Well Name: EAGLE E14-79HN

DESCRIPTION OF JOB EVENTS

Safety Meeting	2015
MIRU	1730
CIRCULATE	
Drop Plug	
2113	
M & P	

Time	Sacks
2051-2111	364
% Excess	30%
Mixed bbls	51
Total Sacks	364
bbl Returns	17
Water Temp	75

Displace 1			Displace 2			Displace 3			Displace 4	
BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time
0	2114	0	0			0			0	
10	2117	90	10			10			10	
20	2119	180	20			20			20	
30	2121	260	30			30			30	
40	2123	300	40			40			40	
50	2126	240	50			50			50	
60	BUMP	620	60			60			60	
70			70			70			70	
80			80			80			80	
90			90			90			90	
100			100			100			100	
110			110			110			110	
120			120			120			120	
130			130			130			130	
140			140			140			140	
150			150			150			150	

Notes:

The day

PRESSURE TEST TO 1500 PSI, PUMPED 50 BBL WATER WITH DYE IN THE 2ND 10, MIXED AND PUMPED 364 SKS AT 15.2, 82.3 BBL, D

PRESSURING UP TO 620 PSI, PERFORMED CASING TEST AT 1000 PSI FOR 15 MINUTES, RELEASED PRESSURE AND GOT .25 BBL BACK

X _____ Tyler B. Hale
Work Preformed

X Well Site Supervisor
Title