




Bison Oil Well Cementing Single Cement Surface Pipe

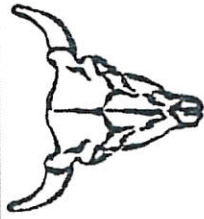
Date: 5/12/2014
Invoice #: 12222
API#: 05-123-38638
Foreman: Calvin Reimers

Customer: Noble
Well Name: Wells Ranch AE 30-62-1AHNA

County: Weld
State: Colorado
Sec: 29
Twp: 6N
Range: 62W
Consultant: Johnny
Rig Name & Number: H&P 343
Distance To Location: 34 Miles
Units On Location: 3104/3212
Time Requested: 830am
Time Arrived On Location: 820am
Time Left Location: 1115pm

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFM III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft) : 582	Cement Yield (cuft) : 1.27
Total Depth (ft) : 638	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 18%
Conductor Length (ft) : 100	Displacement Fluid lb/gal: 8.3
Conductor ID : 16	BBL to Pit: 9.0
Shoe Joint Length (ft) : 42	Fluid Ahead (bbls): 40.0
Landing Joint (ft) : 29	H2O Wash Up (bbls): 20.0
Max Rate: 7	Spacer Ahead Makeup
Max Pressure: 2500	0 bbls H2O+KCL+Dye in 2nd 10bbls

Casing ID	8.921	Casing Grade	J-55 only used
Calculated Results		Displacement: 43.96 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Shoe	18.06 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus	
cuft of Conductor	89.10 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 459.29 PSI	
cuft of Casing	298.90 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing	
Total Slurry Volume	406.06 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 232.87 psi	
bbls of Slurry	72.32 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 32.86 psi	
Sacks Needed	320 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 265.72 psi	
Mix Water	44.84 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 193.57 psi	
		Collapse PSI: 2020.00 psi	
		Burst PSI: 3520.00 psi	
		Total Water Needed: 148.79 bbls	
<div>X </div> <div>Authorization To Proceed</div>			
Customers hereby acknowledge 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

INVOICE #
LOCATION
FOREMAN
Date

12222
Weld
Calvin Reimers
5/12/2014

Customer
Well Name

Noble
Wells Ranch AE 30-62-1AHNA

Treatment Report Page 2

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	917pm														
MIRU	335pm														
CIRCULATE	942pm														
Drop Plug															
1006pm															
M & P															
Time	Sacks														
949pm	320														
1004pm															
% Excess	18%														
Mixed bbls	44.84														
Total Sacks	320														
bbl Returns	9														
Water Temp	53														

Notes:

The day

1/2 bbl back on bleed off

Casing PSI Test 1020pm 1020psi to 1035pm 1040psi

X

X

Title

X

Date

Work Performed