




Bison Oil Well Cementing Single Cement Surface Pipe

Date: 1/17/2015
Invoice #: 65058
API#: AFE 200462
Foreman: Lee Sharp

Customer: Noble Energy Inc.
Well Name: Wells Ranch AE 19-649

County: Weld
State: Colorado
Sec: 20
Twp: 6
Range: 62
Consultant: Bo
Rig Name & Number: H&P 330
Distance To Location: 23
Units On Location: 4027-3106
Time Requested: 5:30
Time Arrived On Location: 4:40
Time Left Location:

WELL DATA	Cement Data
Casing Size OD (in): 8.925	Cement Name: BEN III
Casing Weight (lb): 29.15	Cement Density (lb/gal): 14.4
Casing Depth (ft): 710	Cement Yield (cuft): 1.49
Total Depth (ft): 720	Gallons Per Sack: 7.48
Open Hole Diameter (in.): 13.50	% Excess: 0%
Conductor Length (ft): 100	Displacement Fluid lb/gal: 8.3
Conductor ID: 4.5	BBL to Pit:
Shoe Joint Length (ft): 45	Fluid Ahead (bbls): 45.6
Landing Joint (ft): 0	H2O Wash Up (bbls): 20.0
Max Rate: 5000	Spacer Ahead Makeup
Max Pressure: 10F 10D 20F	

Casing ID: 8.921	Casing Grade: J-55 only used
Calculated Results	Pressure of cement in annulus
cuft of Shoe: 19.32 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 51.45 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor: 80.51 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 523.77 PSI
cuft of Casing: 298.13 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume: 397.95 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 286.95 psi
bbls of Slurry: 70.87 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 32.83 psi
Sacks Needed: 76.7 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total: 319.78 psi
Mix Water: 47.57 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 203.99 psi
	Collapse PSI: 7020.00 psi
	Burst PSI: 3520.00 psi
	Annular Pressure: 100.00 psi
 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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Wells Ranch AE 19-649

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FOREMAN
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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	10:20															
MIRU	10:00															
CIRCULATE	11:00	0	11:47		0			0			0			0		
Drop Plug		10	11:51	110	10			10			10			10		
11:51		20	11:53	190	20			20			20			20		
		30	11:55	270	30			30			30			30		
		40	11:58	190	40			40			40			40		
M & P		50	12:01	680	50			50			50			50		
Time	Sacks	60			60			60			60			60		
11:11-11:47	349	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		
% Excess	11	120			120			120			120			120		
Mixed bbls	63	130			130			130			130			130		
Total Sacks 354	65.1	140			140			140			140			140		
bbl Returns	10	150			150			150			150			150		
Water Temp	100															

Notes:

The day

Job completed with no issue.

P

X

Work Reformed

X

Title

X

Date