



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 6/19/2014

Invoice # 12269

API#

Foreman: monte

Customer: noble
Well Name: zisch 3c-6h-m368

County: weld
State: colorado

Sec: 6
Twp: 3n
Range: 68w

Consultant: david
Rig Name & Number: ensign 124
Distance To Location: 26
Units On Location: 4028-3102/4017-3211
Time Requested: 2:00pm
Time Arrived On Location: 1:30
Time Left Location: 7:00

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 40.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft.) : 844	Cement Yield (cuft) : 1.27
Total Depth (ft) : 860	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 12.25	% Excess: 50%
Conductor Length (ft) : 93	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.6	BBL to Pit: 0.0
Shoe Joint Length (ft) : 38	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 36	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	20 fresh 10 dye

Calculated Results	Pressure of cement in annulus
cuft of Shoe 16.18 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: 63.84 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor 76.45 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 666.42 PSI
cuft of Casing 352.80 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 445.42 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 347.53 psi Shoe Joint: 30.00 psi Total 377.54 psi
bbls of Slurry 79.33 bbls (Total Slurry Volume) X (.1781)	Differential Pressure: 288.89 psi
Sacks Needed 351 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: 2570.00 psi Burst PSI: 3950.00 psi
Mix Water 49.19 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: 163.03 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.



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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	4:10															
MIRU	3:10															
CIRCULATE	4:41	0	310	0	0			0			0			0		
Drop Plug		10	518	30	10			10			10			10		
5:10		20	516	110	20			20			20			20		
		30	520	160	30			30			30			30		
		40	523	270	40			40			40			40		
M & P		50	526	290	50			50			50			50		
Time	Sacks	60	529	320	60			60			60			60		
4:47-5:10	351	61 70	530	580	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	0%	120			120			120			120			120		
Mixed bbls	49.19	130			130			130			130			130		
Total Sacks	351	140			140			140			140			140		
bbl Returns	24	150			150			150			150			150		
Water Temp	85															

Notes:

safty meeting. Miru, pressure test per company man. Circulate 30 bbls ahead with dye in last 10, mix and pump 351 bbls at 15.2 lb at 50 excess, drop plug and displa bump plug at 5:30 pm at 580 bbls back. Raise to 1500 psi hold 15 min, 24 bbls back to pit

Work Preformed

X
Title

X
Date