



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 5/20/2014
Invoice #: 12259
API#
Foreman: monte

Customer: noble
Well Name: Reliance E23-79HN

County: weld
State: colorado
Sec: 23
Twp: 6n
Range: 65w

Consultant: erik
Rig Name & Number: percision 829
Distance To Location: 18.2
Units On Location: 4027-3106/4021-3211
Time Requested: 4:00am
Time Arrived On Location: 3:08am
Time Left Location:

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 15.2
Casing Depth (ft.) : 646	Cement Yield (cuft) : 1.27
Total Depth (ft) : 700	Gallons Per Sack: 5.89
Open Hole Diameter (in.) : 13.75	% Excess: 20%
Conductor Length (ft) : 96	Displacement Fluid lb/gal: 8.3
Conductor ID : 15.6	BBL to Pit: 0.0
Shoe Joint Length (ft) : 43	Fluid Ahead (bbls): 50.0
Landing Joint (ft) : 24	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	10 fresh 10 dye 30 fresh

Casing ID 8.921	Casing Grade J-55 only used
Calculated Results	Displacement: 48.47 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Shoe 18.66 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Pressure of cement in annulus
cuft of Conductor 78.91 cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: 510.08 PSI
cuft of Casing 347.08 cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume 444.66 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: 260.00 psi
bbls of Slurry 79.19 bbls (Total Slurry Volume) X (.1781)	Shoe Joint: 33.95 psi
Sacks Needed 350 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total 293.95 psi
Mix Water 49.10 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: 216.13 psi
	Collapse PSI: 2020.00 psi
	Burst PSI: 3520.00 psi
	Total Water Needed: 167.57 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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Single Cement Surface Pipe

Customer
Well Name

noble
Reliance E23-79HN

INVOICE #
LOCATION
FOREMAN
Date

Tre

DESCRIPTION OF JOB EVENTS

		Displace 1			Displace 2			Displace 3			Displace 4		
		BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	
Safety Meeting	9:20												
MIRU	9:00												
CIRCULATE	9:48	0	10:20	0	0			0			0		
Drop Plug		10	10:25	40	10			10			10		
10:19		20	10:27	110	20			20			20		
		30	10:29	170	30			30			30		
		40	10:32	260	40			40			40		
M & P		50	10:37	500	50			50			50		
Time	Sacks	60			60			60			60		
10:07-10:17	350	70			70			70			70		
		80			80			80			80		
		90			90			90			90		
		100			100			100			100		
		110			110			110			110		
% Excess	0%	120			120			120			120		
Mixed bbls	49.1	130			130			130			130		
Total Sacks	350	140			140			140			140		
bbl Returns	9	150			150			150			150		
Water Temp	62												

Notes:

safty meeting, miru, pressure test per company man, circulate 50 bbls ahead with dye in 2nd 10, mix and pump 350 sks cement at 1
bump plug at 7:58am at 530 psi 35 bbls back

X

Work Performed

X

Title