



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 3/25/2014
 Invoice # 12346
 API# _____
 Foreman: kirk

Customer: noble
 Well Name: wells ranch ae 30-64hnc

County: weld Consultant: jim t
 State: Colorado Rig Name & Number: h&p 321
 Distance To Location: _____
 Sec: 29 Units On Location: 3103-3210
 Twp: 6n Time Requested: 1030 am
 Range: 62w Time Arrived On Location: 915 am
 Time Left Location: 1:45pm

WELL DATA	Cement Data
Casing Size OD (in): <u>9.625</u>	Cement Name: <u>BFN III</u>
Casing Weight (lb): <u>36.00</u>	Cement Density (lb/gal): <u>15.2</u>
Casing Depth (ft): <u>606</u>	Cement Yield (cuft): <u>1.27</u>
Total Depth (ft): <u>645</u>	Gallons Per Sack: <u>5.89</u>
Open Hole Diameter (in.): <u>13.75</u>	% Excess: <u>30%</u>
Conductor Length (ft): <u>100</u>	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID: <u>15.5</u>	BBL to Pit: _____
Shoe Joint Length (ft): <u>43</u>	Fluid Ahead (bbls): <u>40.0</u>
Landing Joint (ft): <u>29</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: _____	Spacer Ahead Makeup _____
Max Pressure: _____	

Calculated Results	Pressure of cement in annulus
cuft of Shoe <u>18.49</u> cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	Displacement: <u>45.80</u> bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor <u>80.51</u> cuft (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: <u>478.50</u> PSI
cuft of Casing <u>266.10</u> cuft (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	Pressure of the fluids inside casing
Total Slurry Volume <u>365.09</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>242.93</u> psi
bbls of Slurry <u>84.53</u> bbls (Total Slurry Volume) X (.1781) X (% Excess Cement)	Shoe Joint: <u>33.64</u> psi
Sacks Needed <u>374</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Total <u>276.56</u> psi
Mix Water <u>52.41</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Differential Pressure: <u>201.93</u> psi
	Collapse PSI: <u>#N/A</u> psi
	Burst PSI: <u>#N/A</u> psi
	Total Water Needed: <u>158.21</u> 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.



**Bison Oil Well Cementing
Single Cement Surface Pipe**

Customer: noble
Well Name: wells ranch ae 30-64hnc

INVOICE # 12346
LOCATION weld
FOREMAN kirk
Date 3/25/2014

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DESCRIPTION OF JOB EVENTS

	Time	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	1156am															
MIRU	1106am															
CIRCULATE	1218pm	0	1248pm	10	0			0			0			0		
Drop Plug		10	1251pm	70	10			10			10			10		
1248 pm		20	1252pm	150	20			20			20			20		
		30	1254pm	210	30			30			30			30		
		40	1257pm	220	40			40			40			40		
M & P		50			50			50			50			50		
Time	Sacks	60			60			60			60			60		
1227 pm	357	70			70			70			70			70		
1245 pm stop		80			80			80			80			80		
		90			90			90			90			90		
		100			100			100			100			100		
		110			110			110			110			110		
% Excess	24%	120			120			120			120			120		
Mixed bbls	50	130			130			130			130			130		
Total Sacks	357	140			140			140			140			140		
bbl Returns	19	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 101 pm 400 psi 80.7 bbls slurry
casing test 1000 psi for 15 min

X _____
Work Performed

X WSS _____
Title

X 3-25-14 _____
Date