



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/28/2014
 Invoice # 45010
 API# 05-123-39425
 Foreman: JASON

Customer: Anadarko Petroleum Corporation
Well Name: SACK 27N-30HZ

County: Weld Consultant: BOB
 State: Colorado Rig Name & Number: MAJORS 42
 Distance To Location: 30
 Sec: 31 Units On Location: 4031-3106/ 4019-3204
 Twp: 1N Time Requested: 1900
 Range: 67W Time Arrived On Location: 1700
 Time Left Location: 130

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>14.2</u>
Casing Depth (ft.) : <u>1,315</u>	Cement Yield (cuft) : <u>1.49</u>
Total Depth (ft) : <u>1325</u>	Gallons Per Sack: <u>7.48</u>
Open Hole Diameter (in.) : <u>13.50</u>	% Excess: <u>26%</u>
Conductor Length (ft) : _____	Displacement Fluid lb/gal: <u>8.3</u>
Conductor ID : _____	BBL to Pit: <u>19.0</u>
Shoe Joint Length (ft) : <u>43</u>	Fluid Ahead (bbls): <u>30.0</u>
Landing Joint (ft) : <u>6</u>	H2O Wash Up (bbls): <u>20.0</u>
Max Rate: <u>7</u>	Spacer Ahead Makeup
Max Pressure: <u>2500</u>	<u>30 BBL H2O, 2ND 10 WITH DYE</u>

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>98.83</u> bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
cuft of Conductor <u>0.00</u> cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	Hydrostatic Pressure: <u>970.08</u> PSI
cuft of Casing <u>807.85</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>826.34</u> cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	Displacement: <u>548.63</u> psi Shoe Joint: <u>31.43</u> psi Total <u>580.06</u> psi
bbls of Slurry <u>147.17</u> bbls (Total Slurry Volume) X (.1781)	Differential Pressure: <u>390.01</u> psi
Sacks Needed <u>555</u> sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	Collapse PSI: <u>2020.00</u> psi Burst PSI: <u>3520.00</u> psi
Mix Water <u>98.77</u> bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	Total Water Needed: <u>247.60</u> bbls

X [Signature]
 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
Well Name

Anadarko Petroleum Corporation
SACK 27N-30HZ

INVOICE #
LOCATION
FOREMAN
Date

45010
Weld
JASON
7/28/2014

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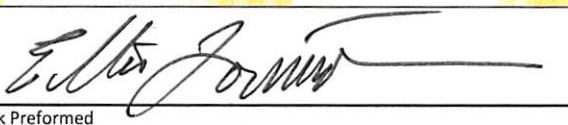
DESCRIPTION OF JOB EVENTS

		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	1845															
MIRU	1700															
CIRCULATE	2326	0	5	0	0			0			0			0		
Drop Plug		10	7	50	10			10			10			10		
5		20	9	30	20			20			20			20		
		30	12	60	30			30			30			30		
		40	16	60	40			40			40			40		
M & P		50	17	270	50			50			50			50		
Time	Sacks	60	19	340	60			60			60			60		
2333-0001	555	70	21	400	70			70			70			70		
		80	22	460	80			80			80			80		
		90	24	470	90			90			90			90		
		100	30	460	100			100			100			100		
		110	BUMP	1020	110			110			110			110		
% Excess	26%	120			120			120			120			120		
Mixed bbls	98.8	130			130			130			130			130		
Total Sacks	555	140			140			140			140			140		
bbl Returns	19	150			150			150			150			150		
Water Temp	72															

Notes:

The day

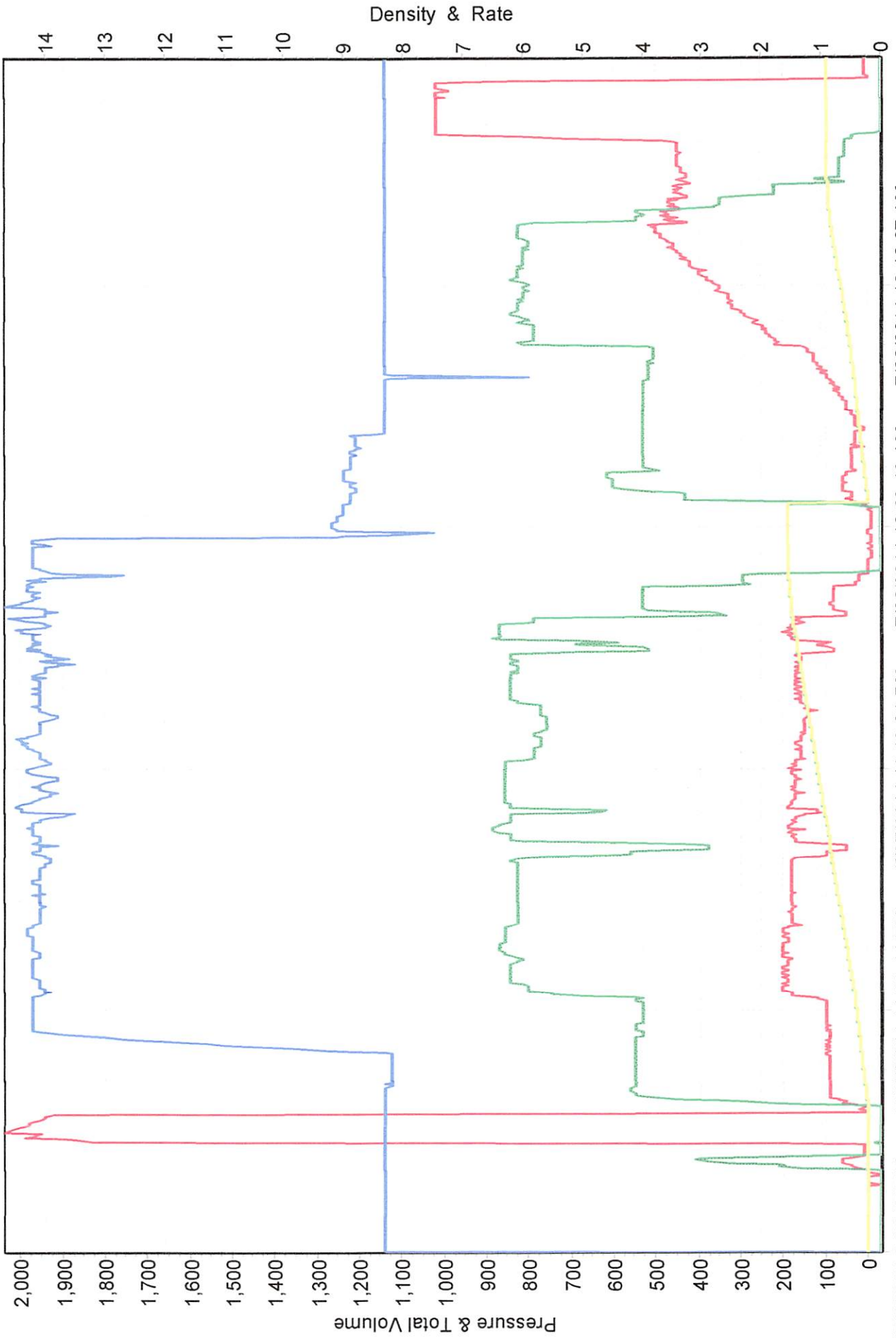
PRESSURE TESTED TO 2000 PSI @ 2323, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 @ 2326, MIX AND PUMPED 555 SKS AT 14.2, 147.2 BBLS AT 2333, STARTED DISPLACEMENT AT 0005, PLUG LANDED AT 460 PSI AT 0030 AND PRESSURED UP TO 1020 PSI AND HELD FOR 2 MINUTES, RELEASED PRESSURE AND GOT .5 BBL BACK

X 
Work Performed

X _____
Title

X _____
Date

SERIES 2000



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