



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 7/14/2014

Invoice # 45002

API# 05-123-39498

Foreman: JASON

Customer: Anadarko Petroleum Corporation

Well Name: CRUICKSHANK 1C-24HZ

County: Weld

State: Colorado

Sec: 24

Twp: 3N

Range: 66W

Consultant: ALLEN

Rig Name & Number: MAJORS 42

Distance To Location: 10

Units On Location: 4031-3106/ 4017-3211

Time Requested: 1100

Time Arrived On Location: 1030

Time Left Location: 1900

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,221
Total Depth (ft) : 1231
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) :
Conductor ID :
Shoe Joint Length (ft) : 42
Landing Joint (ft) : 2

Max Rate: 7
Max Pressure: 2500

Cement Data

Cement Name: BFN III
Cement Density (lb/gal) : 14.2
Cement Yield (cuft) : 1.49
Gallons Per Sack: 7.48
% Excess: 16%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 17.0
Fluid Ahead (bbls): 30.0
H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup
30 BBL H2O, 2ND 10 WITH DYE

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.16 cuft
(Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 0.00 cuft
(Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 690.67 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 708.83 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 126.24 bbls
(Total Slurry Volume) X (.1781)

Sacks Needed 476 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 84.72 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 91.35 bbls

(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 901.05 PSI

Pressure of the fluids inside casing

Displacement: 508.62 psi

Shoe Joint: 30.86 psi

Total 539.48 psi

Differential Pressure: 361.57 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 226.07 bbls

Randy Case
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
CRUICKSHANK 1C-24HZ

INVOICE #
LOCATION
FOREMAN
Date

45002
Weld
JASON
7/14/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 1743 M & P Time 1713-1740 % Excess Mixed bbls Total Sacks bbl Returns Water Temp	1630 1000 1743 M & P Time 1713-1740 % Excess Mixed bbls Total Sacks bbl Returns Water Temp	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
		0	1744	0	0			0			0			0		
		10	1745	50	10			10			10			10		
		20	1747	30	20			20			20			20		
		30	1750	20	30			30			30			30		
		40	1752	110	40			40			40			40		
		50	1756	270	50			50			50			50		
		60	1758	330	60			60			60			60		
		70	1759	400	70			70			70			70		
		80	1801	440	80			80			80			80		
		90	1804	400	90			90			90			90		
		100	1805	430	100			100			100			100		
		110	BUMP	1430	110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		

Notes:

The day

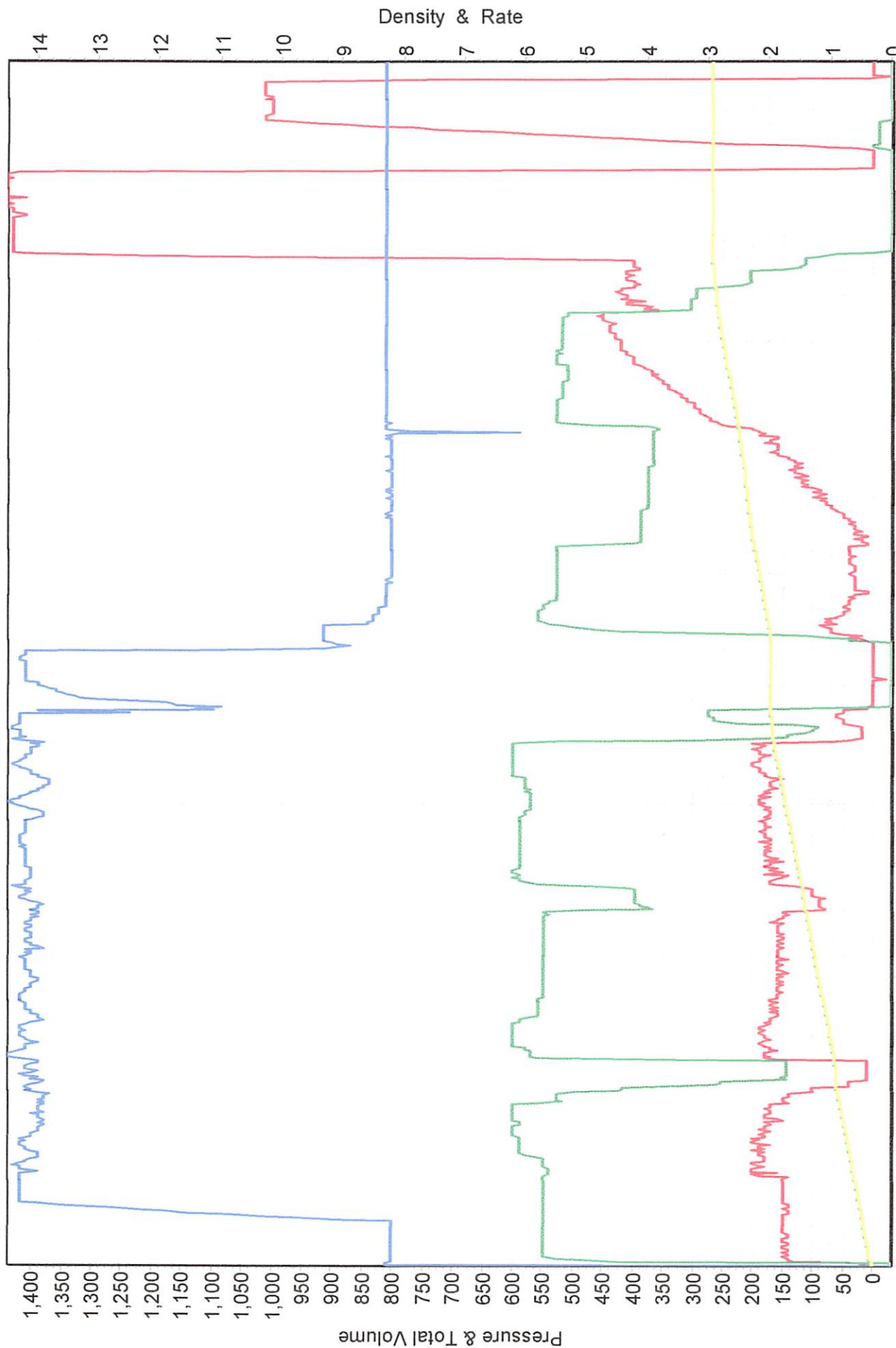
PRESSURE TESTED TO 1500 PSI, PUMPED 30 BBL WATER WITH DYE IN 2ND 10, MIX AND PUMPED 476 SKS AT 14.2, 126.3 BBLs, PLUG LANDED AT 430 PSI AND PRESSURED UP TO 1430 PSI, HELD FOR 2 MINUTES AND RELEASED AND GOT .5 BBL BACK, PRESSURED UP TO 1000 PSI FOR 2 MINUTES AND RELEASED

X *Randy Case*
Work Preformed

X
Title

X
Date

SERIES 2000



7/14/2014 4:12:13 PM 7/14/2014 5:21:49 PM 7/14/2014 5:34:40 PM 7/14/2014 5:47:36 PM 7/14/2014 6:00:31 PM 7/14/2014 6:13:27 PM