



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 12/17/2014
 Invoice # 45093
 API# 05-123-40622
 Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
Well Name: GREENLEAF 29C-2HZ

County: Weld
 State: Colorado
 Sec: 2
 Twp: 2N
 Range: 65W

Consultant: RANDY
 Rig Name & Number: MAJORS 42
 Distance To Location: 17
 Units On Location: 4031-3107/ 4022-3213
 Time Requested: 1900
 Time Arrived: 1800
 Time Left Location: 1230

WELL DATA

Casing Size OD (in) : 9.625
 Casing Weight (lb) : 36.00
 Casing Depth (ft.) : 1,270
 Total Depth (ft) : 1286
 Open Hole Diameter (in.) : 13.50
 Conductor Length (ft) : 100
 Conductor ID : 15.25
 Shoe Joint Length (ft) : 43
 Landing Joint (ft) : 8
 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: 35.0
 Fluid Ahead (bbls): 30.0
 H2O Wash Up (bbls): 20.0
 Spacer Ahead Makeup
 30 BBL WATER, DYE IN 2ND 10

Casing ID 8.921 Casing Grade J-55 only used

Calculated Results

cuft of Shoe 18.77 cuft
 (Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 76.31 cuft
 (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 661.50 cuft
 (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 756.58 cuft
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 134.75 bbls
 (Total Slurry Volume) X (.1781)

Sacks Needed 508 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 90.43 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 95.44 bbls
 (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus
Hydrostatic Pressure: 936.76 PSI

Pressure of the fluids inside casing
Displacement: 528.88 psi
Shoe Joint: 31.91 psi
Total 560.79 psi
Differential Pressure: 375.97 psi

Collapse PSI: 2020.00 psi
Burst PSI: 3520.00 psi
Total Water Needed: 235.88 bbls

X
 Authorization To Proceed



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

Customer
Well Name

Anadarko Petroleum Corporation
GREENLEAF 29C-2HZ

INVOICE #
LOCATION
FOREMAN
Date

45093
Weld
JASON KELEHER
12/17/2014

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	2110															
MIRU	1830															
CIRCULATE	2144	0	2253	0	0			0			0			0		
Drop Plug		10	2255	10	10			10			10			10		
2253		20	2259	10	20			20			20			20		
		30	2302	70	30			30			30			30		
		40	2308	300	40			40			40			40		
M & P		50	2310	300	50			50			50			50		
Time	Sacks	60	2313	380	60			60			60			60		
2153-2248	508	70	2317	380	70			70			70			70		
		80	2320	410	80			80			80			80		
		90	2322	450	90			90			90			90		
		100	2324	390	100			100			100			100		
		110	BUMP	1390	110			110			110			110		
% Excess	16%	120			120			120			120			120		
Mixed bbls	90.4	130			130			130			130			130		
Total Sacks	508	140			140			140			140			140		
bbl Returns	35	150			150			150			150			150		
Water Temp	46															

Notes:

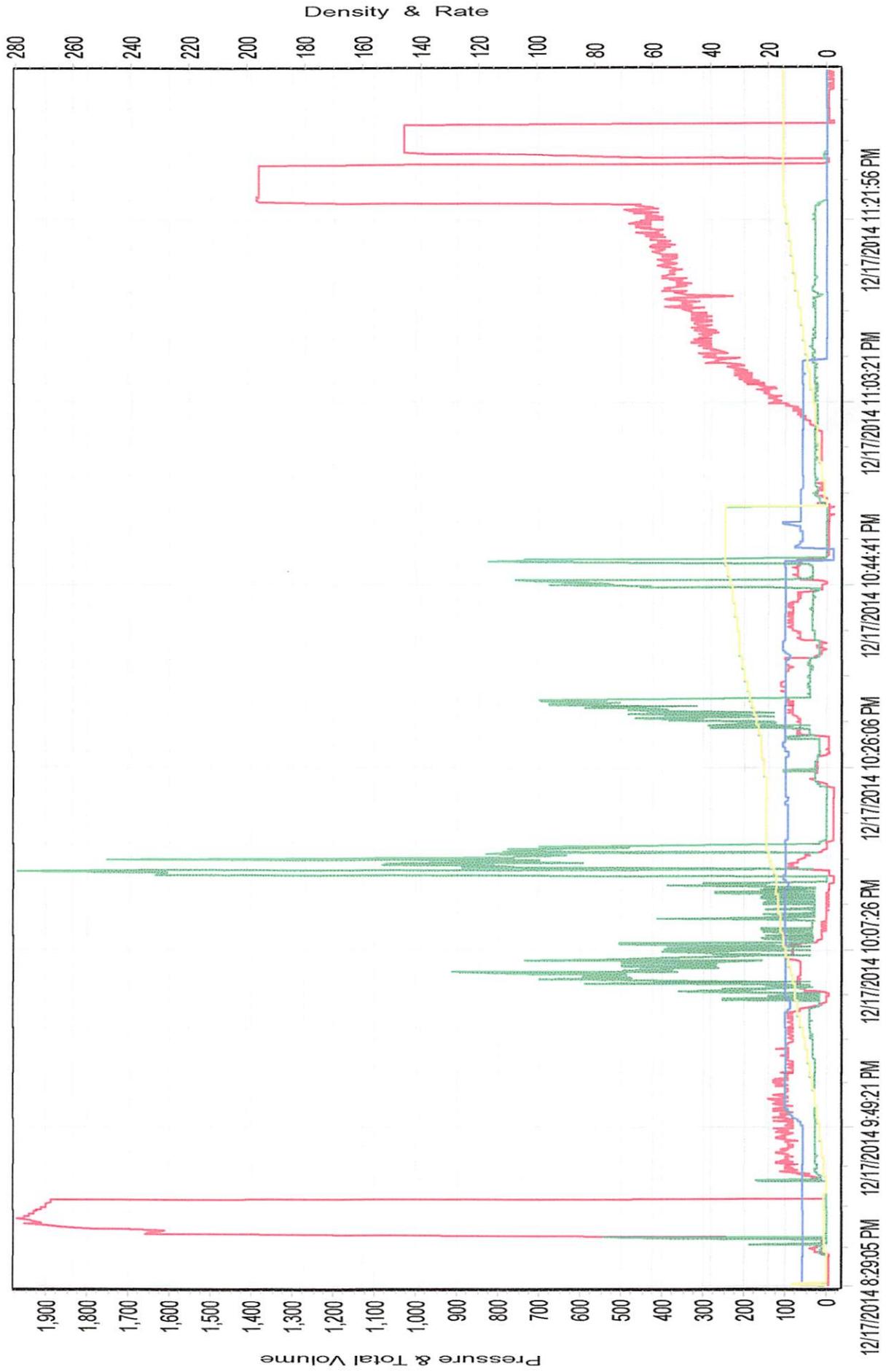
PERFORMED PRESSURE TEST TO 2000 PSI AT 02138, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 AT 2144, MIXED AND PUMPED 508 SKS AT 14.2, 134.8 BBL AT 2153, SHUT DOWN AT 2248, STARTED DISPLACEMENT AT 2253, LANDED PLUG AT 390 PSI AT 2324 AND PRESSURED UP TO 1390 PSI, HELD FOR 2 MINUTES AND RELEASED, FLOATS HELD, GOT .5 BBL BACK, REPRESSURED TO 1000 PSI AND HELD FOR 2 MINUTES AND RELEASED

X Z E Case
Work Preformed

X _____
Title

X _____
Date

GREENLEAF 29C-2HZ SURFACE





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 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.