



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/25/2014
Invoice #: 45061
API#: 05-123-39439
Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation
Well Name: FRONT RANGE FARMS 37C-14HZ

County: Weld
State: Colorado
Sec: 11
Twp: 1N
Range: 68W

Consultant: RANDY
Rig Name & Number: MAJORS 29
Distance To Location: 29
Units On Location: 4031-3106/ 4024-3203
Time Requested: 2330
Time Arrived: 2200
Time Left Location: 330

WELL DATA

Casing Size OD (in) : 9.625
Casing Weight (lb) : 36.00
Casing Depth (ft) : 1,323
Total Depth (ft) : 1339
Open Hole Diameter (in.) : 13.50
Conductor Length (ft) :
Conductor ID :
Shoe Joint Length (ft) : 40
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: 21%
Displacement Fluid lb/gal: 8.3
BBL to Pit: 20.0
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 17.53 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 779.66 cuft
(Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)
Total Slurry Volume 797.18 cuft
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)
bbls of Slurry 141.98 bbls
(Total Slurry Volume) X (.1781)
Sacks Needed 535 sk
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)
Mix Water 95.29 bbls
(Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 99.76 bbls
(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)

Pressure of cement in annulus

Hydrostatic Pressure: 975.81 PSI

Pressure of the fluids inside casing

Displacement: 552.95 psi

Shoe Joint: 29.79 psi

Total 582.73 psi

Differential Pressure: 393.08 psi

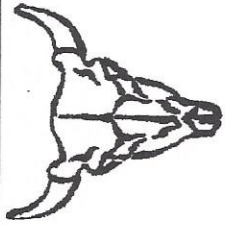
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 245.04 bbls

x 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**

INVOICE #
LOCATION
FOREMAN
Date

45061
Weld
JASON KELEHER
10/25/2014

Customer
Well Name

Anadarko Petroleum Corporation
FRONT RANGE FARMS 37C-14HZ

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 204 M & P Time	1255 2215 125	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	204	0	0			0			0			0		
		10	207	30	10			10			10			10		
		20	210	50	20			20			20			20		
		30	213	100	30			30			30			30		
		40	215	180	40			40			40			40		
		50	216	250	50			50			50			50		
		60	218	340	60			60			60			60		
		70	220	400	70			70			70			70		
		80	222	450	80			80			80			80		
		90	224	450	90			90			90			90		
		100	227	440	100			100			100			100		
		110	BUMP	1460	110			110			110			110		
		120			120			120			120			120		
		130			130			130			130			130		
		140			140			140			140			140		
		150			150			150			150			150		
% Excess	20%															
Mixed bbls	95.2															
Total Sacks	535															
bbl Returns	20															
Water Temp	62															

Notes:

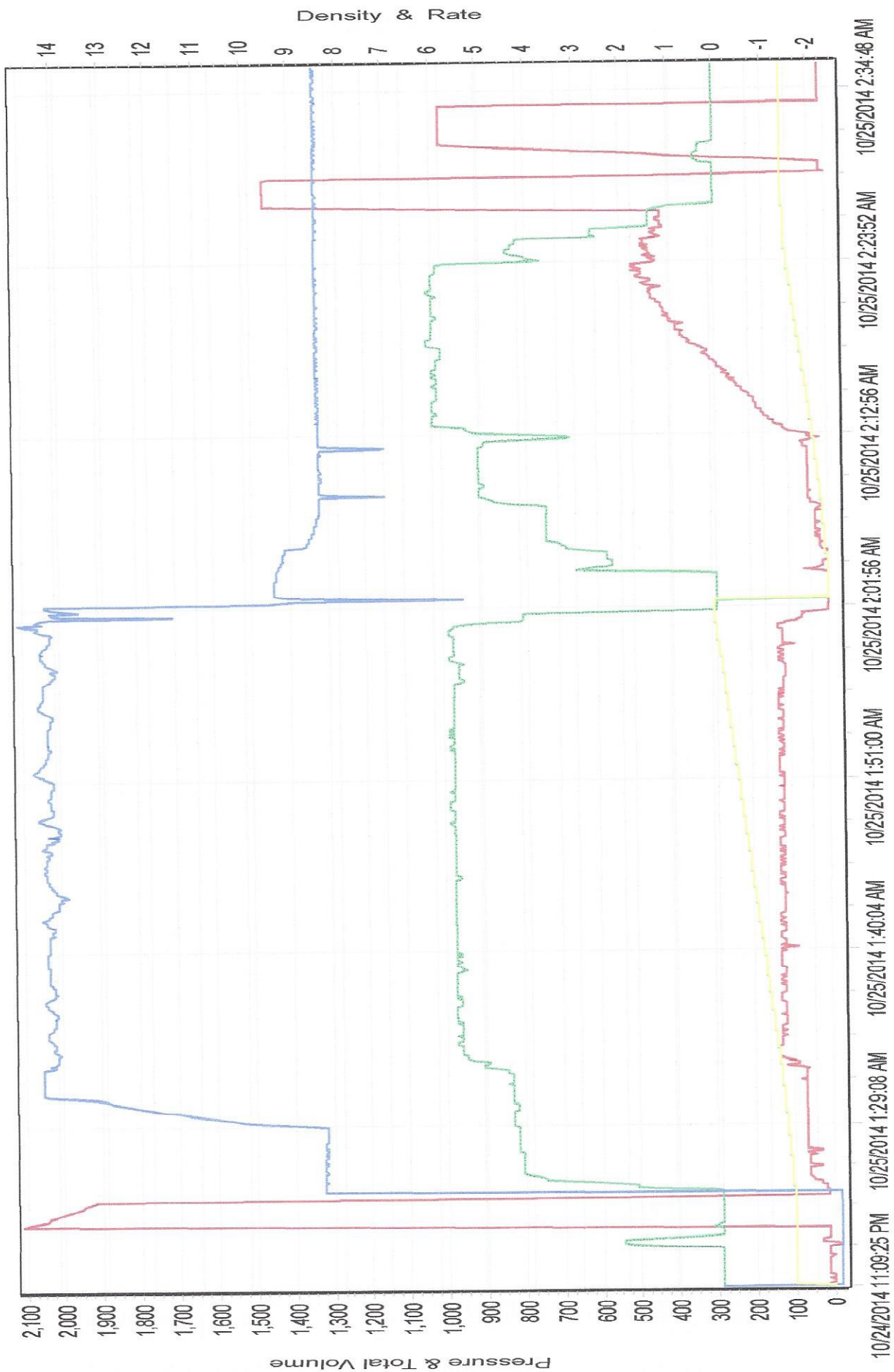
PERFORMED PRESSURE TEST TO 2000 PSI AT 0122, PUMPED 30 BBL WATER DYE IN 2ND 10 AT 0125, MIXED AND PUMPED 535 SKS AT 14.2, 141.9 BBL
AT 0132, SHUT DOWN AT 0201, DROPPED PLUG AT 0204, STARTED DISPLACEMENT AT 0204, LANDED PLUG AT 440 PSI AT 0227 AND PRESSURED UP
TO 1460 PSI AND HELD FOR 2 MINUTES, RELEASED PRESSURE AND GOT .5 BBL BACK, PRESSURED BACK UP TO 1000 PSI FOR 2 MINUTES AND RELEASED

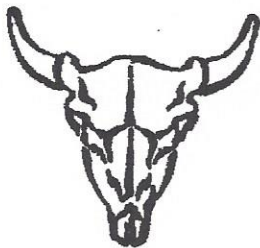
Work Performed
Randy Allen

X *APC Consultants*
Title

X
Date

FRONT RANGE FARMS 37C-14HZ SURFACE





Bison Oil Well Cementing Single Cement Surface Pipe

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X *Randy Case*
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Release and Indemnification

Customer acknowledges and assumes the risks associated with oil well drilling, cementing and acidizing, including, without limitation, destabilization, loss of production, contamination, fracturing and loss of well control. Customer agrees to release Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from any and all liability for any and all damages whatsoever to property of any kind owned by, in the possession of, or leased by customer and those persons or entities customer has the ability to bind by contract. Customer also agrees to indemnify and hold harmless Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from and against any and all liability, claims, costs, expenses, attorneys fees and damages whatsoever for claims, costs, expenses, attorneys fees and damages whatsoever for personal injury, illness, death, property damage and loss resulting from: loss or reduction of production, destabilization loss of oil well control, failure of or contamination by acid stimulation, hydraulic fracturing, cementing, pumping services, incompatible fluid or other processes to stimulate, complete or end production, and/or any other condition. Customer's release, indemnity and hold harmless obligation shall apply even if the liability and claims are caused by the sole, concurrent, active or passive negligence, fault, or strict liability of Bison Oil Well Cementing, Inc. and/or Bison Energy Services, Inc. or any defect in the data, products, supplies, materials or equipment furnished by Bison Oil Well Cementing, Inc. whether in the design, manufacturing, maintenance, or marketing thereof or from failure to warn of such defect. In the event that any portion of this release and indemnity is found by a court of competent jurisdiction to be inoperable or unenforceable, the remaining portions and provisions shall apply, and customer agrees that the contract price herein shall be the limit of Bison Oil Well Cementing, Inc.'s liability, if any.