



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/17/2015

Invoice # 45128

API# 05-123-40979

Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: MILK STATE 29C-21HZ

County: Weld

State: Colorado

Sec: 21

Twp: 3N

Range: 65W

Consultant: TIM

Rig Name & Number: ADVANCED 10

Distance To Location: 11

Units On Location: 4031-3107, 4022-3213

Time Requested: 1430

Time Arrived On Location: 1330

Time Left Location: 2100

WELL DATA

Casing Size OD (in) : 9.625
 Casing Weight (lb) : 36.00
 Casing Depth (ft.) : 1,207
 Total Depth (ft) : 1222
 Open Hole Diameter (in.) : 13.50
 Conductor Length (ft) : 45
 Conductor ID : 15.25
 Shoe Joint Length (ft) : 43
 Landing Joint (ft) : 5

Max Rate: 6

Max Pressure: 1500

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: 32.0
 Fluid Ahead (bbls): 30.0
 H2O Wash Up (bbls): 20.0

Spacer Ahead Makeup

30 BBL WATER W/ DYE IN 2ND 10

Casing ID

8.921

Casing Grade

J-55 only used

Calculated Results

cuft of Shoe 18.78 cuft
 (Casing ID Squared) X (.005454) X (Shoe Joint ft)

cuft of Conductor 34.34 cuft
 (Conductor Width Squared) - (Casing Size OD Squared) X (.005454) X (Conductor Length ft)

cuft of Casing 684.20 cuft
 (Open Hole Squared) - (Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 737.32 cuft
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 131.32 bbls
 (Total Slurry Volume) X (.1781)

Sacks Needed 495 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 88.13 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 90.34 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 890.25 PSI

Pressure of the fluids inside casing

Displacement: 501.69 psi

Shoe Joint: 31.92 psi

Total 533.61 psi

Differential Pressure: 356.64 psi

Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 228.47 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**

Customer
Well Name

Anadarko Petroleum Corporation
MILK STATE 29C-21HZ

INVOICE #
LOCATION
FOREMAN
Date

45128
Weld
JASON KELEHER
2/17/2015

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	1820															
MIRU	1330															
CIRCULATE	1912	0	1947	0	0			0			0			0		
Drop Plug		10	1949	70	10			10			10			10		
1947		20	1951	90	20			20			20			20		
		30	1953	110	30			30			30			30		
		40	1955	180	40			40			40			40		
M & P		50	1958	220	50			50			50			50		
Time	Sacks	60	2001	320	60			60			60			60		
1920-1945	495	70	2003	370	70			70			70			70		
		80	2005	400	80			80			80			80		
		90	2010	420	90			90			90			90		
		100	BUMP	730	100			100			100			100		
		110			110			110			110			110		
% Excess	21%	120			120			120			120			120		
Mixed bbls	88.15	130			130			130			130			130		
Total Sacks	495	140			140			140			140			140		
bbl Returns	32	150			150			150			150			150		
Water Temp	45															

Notes:

PERFORMED PRESSURE TEST TO 1500 PSI AT 1908, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 AT 1912, MIXED AND PUMPED 495 SKS AT 14.2, 131.4 BBL AT 1920, SHUT DOWN AT 1945, STARTED DISPLACEMENT AT 1947, PLUG LANDED AT 4200 PSI AT 2010 AND PRESSURED UP TO 730, HELD FOR 5 MINUTES AND RELEASED TO CHECK FLOATS, GOT .5 BBL BACK, FLOATS HELD.

x Randy Case
Work Performed

x APC Consultant
Title

x 02/17/2015
Date

MILK STATE 29C-21HZ SURFACE

