



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 11/27/2014

Invoice # 45080

API# 05-123-40547

Foreman: JASON KELEHER

Customer: Anadarko Petroleum Corporation

Well Name: THOMSEN 2N-31HZ

County: Weld

State: Colorado

Sec: 7

Twp: 2N

Range: 65W

Consultant: RANDY

Rig Name & Number: MAJORS 29

Distance To Location: 18

Units On Location: 4031-3106/ 4024-3203

Time Requested: 500

Time Arrived: 300

Time Left Location: 1000

WELL DATA

Casing Size OD (in) : 9.625
 Casing Weight (lb) : 36.00
 Casing Depth (ft.) : 1,333
 Total Depth (ft) : 1350
 Open Hole Diameter (in.) : 13.50
 Conductor Length (ft) :
 Conductor ID :
 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: 10.0
 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 18.57 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 753.29 cuft
 (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)

Total Slurry Volume 771.86 cuft
 (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)

bbls of Slurry 137.47 bbls
 (Total Slurry Volume) X (.1781)

Sacks Needed 518 sk
 (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)

Mix Water 92.26 bbls
 (Sacks Needed) X (Gallons Per Sack) ÷ 42

Displacement: 100.39 bbls

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

Pressure of cement in annulus

Hydrostatic Pressure: 983.59 PSI

Pressure of the fluids inside casing

Displacement: 556.45 psi

Shoe Joint: 31.57 psi

Total 588.02 psi

Differential Pressure: 395.57 psi

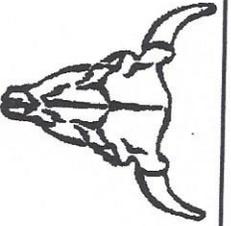
Collapse PSI: 2020.00 psi

Burst PSI: 3520.00 psi

Total Water Needed: 242.65 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.



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Single Cement Surface Pipe**

Customer
Well Name

Anadarko Petroleum Corporation
THOMSEN 2N-31HZ

INVOICE #
LOCATION
FOREMAN
Date

45080
Well
JASON KELEHER
11/27/2014

Treatment Report Page 2

DESCRIPTION OF JOB EVENTS

Safety Meeting MIRU CIRCULATE Drop Plug 847	740 630 810	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
		BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI	BLS	Time	PSI
		0	847	0	0		0		0		0		0		0	
		10	849	10	10		10		10		10		10		10	
		20	852	30	20		20		20		20		20		20	
		30	855	50	30		30		30		30		30		30	
		40	857	110	40		40		40		40		40		40	
		50	859	160	50		50		50		50		50		50	
M & P		60	901	220	60		60		60		60		60		60	
Time	Sacks	70	902	280	70		70		70		70		70		70	
0818-0845	518	80	904	380	80		80		80		80		80		80	
		90	906	420	90		90		90		90		90		90	
		100	911	430	100		100		100		100		100		100	
		110	BUMP	1400	110		110		110		110		110		110	
% Excess	16%	120			120		120		120		120		120		120	
Mixed bbls	92.3	130			130		130		130		130		130		130	
Total Sacks	518	140			140		140		140		140		140		140	
bbl Returns	10	150			150		150		150		150		150		150	
Water Temp	77															

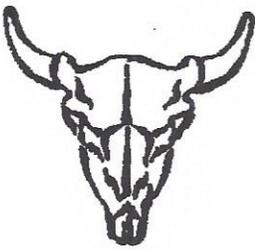
Notes:

PERFORMED PRESSURE TEST TO 2000 PSI AT 0807, PUMPED 30 BBL WATER WITH DYE IN 2ND 10 AT 0810, MIXED AND PUMPED 518 SKS AT 14.2
 137.5 BBL AT 0818, SHUT DOWN AT 0845, STARTED DISPLACEMENT AT 0847, BUMPED PLUG AT 430 PSI AT 0911 AND PRESSURED UP TO 1400 PSI,
 HELD FOR 2 MINUTES, RELEASED PRESSURE, FLOATS HELD, GOT .5 BBL BACK, REPRESSURE TO 1000 PSI FOR 2 MINUTES AND RELEASED

X *[Signature]*

X *[Signature]*
Title

X *[Signature]*
Date



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X
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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.