



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/15/2014
 Invoice # 25070
 API# 05-123-38982
 Foreman: Calvin Reimers

Customer: Anadarko Petroleum Corporation
 Well Name: Kerr 28N-12HZ

County: Weld
 State: Colorado
 Sec: 13
 Twp: 2N
 Range: 67W

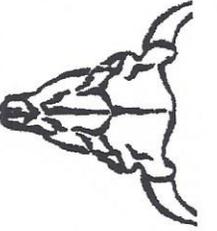
Consultant: Ellis
 Rig Name & Number: Major 29
 Distance To Location: 21 Miles
 Units On Location: 4023-3104/4018-3204
 Time Requested: 1130am
 Time Arrived On Location: 1000am
 Time Left Location: 2:15pm

WELL DATA		Cement Data	
Casing Size OD (in) :	9.625	Cement Name:	BFN III
Casing Weight (lb) :	36.00	Cement Density (lb/gal) :	14.2
Casing Depth (ft.) :	1,053	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1069	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	27%
Conductor Length (ft) :		Displacement Fluid lb/gal:	8.3
Conductor ID :		BBL to Pit:	8
Shoe Joint Length (ft) :	42	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	8	H2O Wash Up (bbls):	20.0
Max Rate:	7	Spacer Ahead Makeup	
Max Pressure:	2500	30bbls H2O+Dye in 2nd 10bbls	

Calculated Results		Pressure of cement in annulus	
Casing ID	8.921	Casing Grade	J-55 only used
cuft of Shoe	18.20	Displacement:	78.76 bbls
(Casing ID Squared) X (.005454) X (Shoe Joint ft)		(Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)	
cuft of Conductor	0.00	Hydrostatic Pressure:	776.64 PSI
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Pressure of the fluids inside casing	
cuft of Casing	652.26	Displacement:	435.86 psi
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint:	30.94 psi
Total Slurry Volume	670.47	Total	466.79 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure:	309.84 psi
bbls of Slurry	119.41	Collapse PSI:	2020.00 psi
(Total Slurry Volume) X (.1781)		Burst PSI:	3520.00 psi
Sacks Needed	450	Total Water Needed:	208.90 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	80.14		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X *Calvin Reimers* Major 29
 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 Ull Well Cementing
Single Cement Surface Pipe**

Customer
Well Name

Anadarko Petroleum Corporation
Kerr 28N-12HZ

INVOICE #
LOCATION
FOREMAN
Date

25U/U
Weld
Calvin Reimers
10/15/2014

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DESCRIPTION OF JOB EVENTS

	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
Safety Meeting	1225pm														
MIRU	1135am														
CIRCULATE	1246pm														
Drop Plug		0	111pm	80	0		0			0			0		
		10	114pm	10	10		10			10			10		
		20	116pm	100	20		20			20			20		
		30	117pm	140	30		30			30			30		
		40	119pm	200	40		40			40			40		
		50	121pm	310	50		50			50			50		
M & P		60	123pm	310	60		60			60			60		
		70	125pm	340	70		70			70			70		
1252pm		80	128pm	310	80		80			80			80		
108pm		90	Bump	1280	90		90			90			90		
		100	Bump	1020	100		100			100			100		
		110			110		110			110			110		
		120			120		120			120			120		
% Excess		130			130		130			130			130		
Mixed bbls		140			140		140			140			140		
Total Sacks		150			150		150			150			150		
bbl Returns															
Water Temp	62.8														

Notes:

The day

1/2 bbl back on bleed off

X *[Signature]*

X

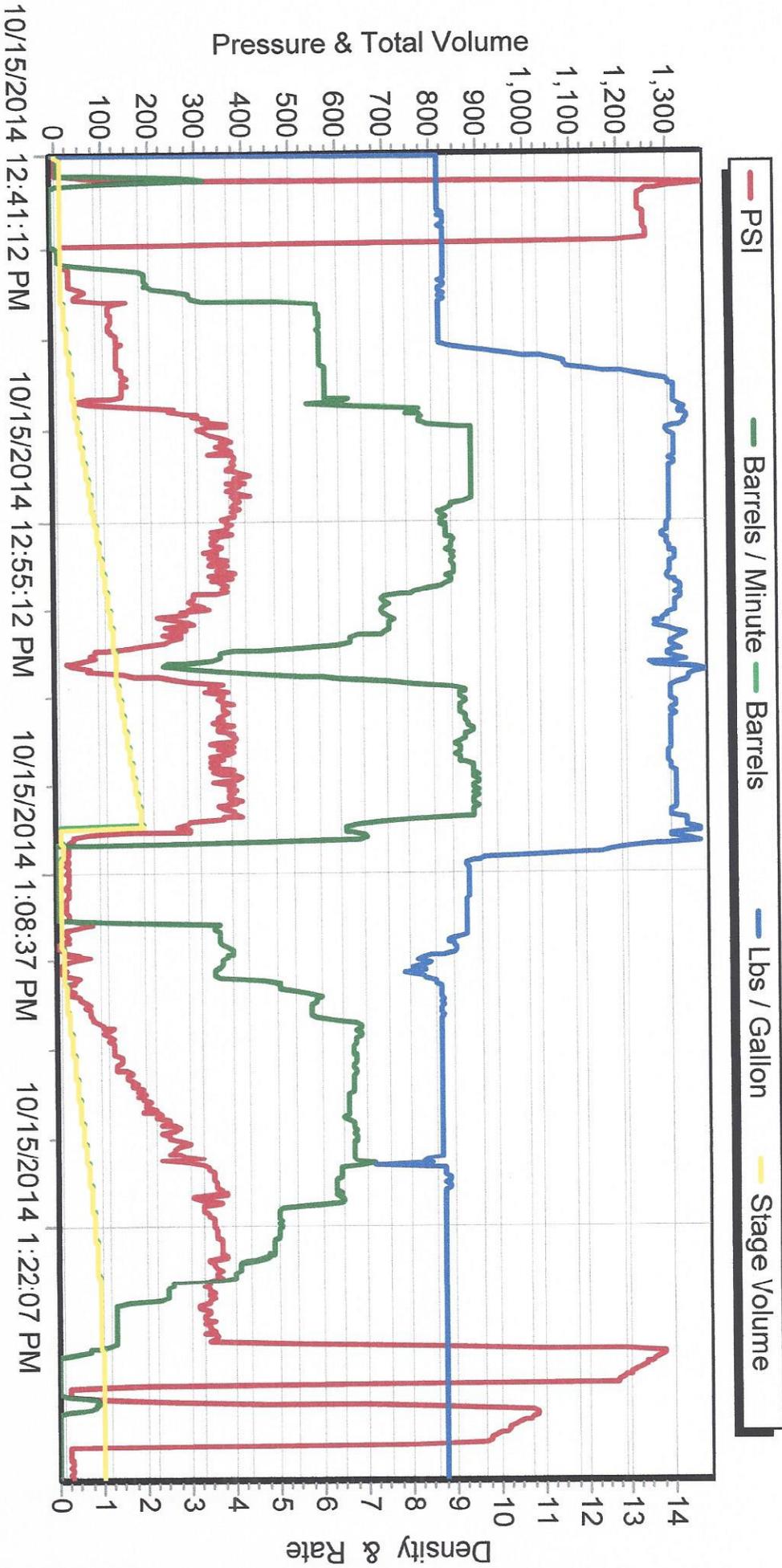
Title

X

Date

Work Performed

SERIES 2000



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.