



Bison Oil Well Cementing Single Cement Surface Pipe

Date: 2/1/2015
 Invoice #: 35117
 API#
 Foreman: kirk kallhoff

Customer: Anadarko Petroleum Corporation

Well Name: griswald 26c-11hz

County: Weld
 State: Colorado
 Sec: 11
 Twp: 4n
 Range: 65w

Consultant: toby
 Rig Name & Number: advanced 10
 Distance To Location: 30
 Units On Location: 4038-3103/4024-3203
 Time Requested: 100 pm
 Time Arrived On Location: 1230 pm
 Time Left Location: 3:30pm

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.) :	1,746	Cement Yield (cuft) :	1.49
Total Depth (ft) :	1764	Gallons Per Sack:	7.48
Open Hole Diameter (in.) :	13.50	% Excess:	20%
Conductor Length (ft) :	47	Displacement Fluid lb/gal:	8.3
Conductor ID :	16	BBL to Pit:	
Shoe Joint Length (ft) :	44	Fluid Ahead (bbls):	30.0
Landing Joint (ft) :	8	H2O Wash Up (bbls):	10.0
Max Rate:		Spacer Ahead Makeup	
Max Pressure:			

Calculated Results		Pressure of cement in annulus	
cuft of Shoe	19.10 cuft	Displacement:	132.20 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	41.88 cuft	Pressure of the fluids inside casing	
(Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)		Hydrostatic Pressure:	1288.02 PSI
cuft of Casing	996.42 cuft	Displacement:	733.87 psi
(Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)		Shoe Joint:	32.46 psi
Total Slurry Volume	1057.40 cuft	Total	766.33 psi
(cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)		Differential Pressure:	521.70 psi
bbls of Slurry	188.32 bbls	Collapse PSI:	2020.00 psi
(Total Slurry Volume) X (.1781)		Burst PSI:	3520.00 psi
Sacks Needed	710 sk	Total Water Needed:	298.58 bbls
(Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)			
Mix Water	126.39 bbls		
(Sacks Needed) X (Gallons Per Sack) ÷ 42			

X 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
griswald 26c-11hz

INVOICE #
LOCATION
FOREMAN
Date

35117
Weld
kirk kallhoff
2/1/2015

Treatment Report Page 2

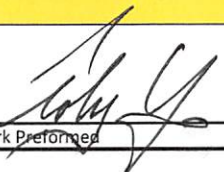
DESCRIPTION OF JOB EVENTS

		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	116pm															
MIRU	1245p															
CIRCULATE	134pm	0	223pm	10	0			0			0			0		
Drop Plug		10	226pm	50	10			10			10			10		
223 pm		20	228pm	70	20			20			20			20		
		30	230pm	70	30			30			30			30		
		40	232pm	110	40			40			40			40		
M & P		50	234pm	170	50			50			50			50		
Time	Sacks	60	236pm	220	60			60			60			60		
140 pm	710	70	238pm	270	70			70			70			70		
220 pm stop		80	240pm	340	80			80			80			80		
		90	242pm	400	90			90			90			90		
		100	244pm	460	100			100			100			100		
		110	246pm	520	110			110			110			110		
% Excess	20%	120	248pm	560	120			120			120			120		
Mixed bbls	126.5	130	252pm	540	130			130			130			130		
Total Sacks	710	140			140			140			140			140		
bbl Returns	24	150			150			150			150			150		
Water Temp																

Notes:

bumped plug at 254 pm 1510 psi

floats held

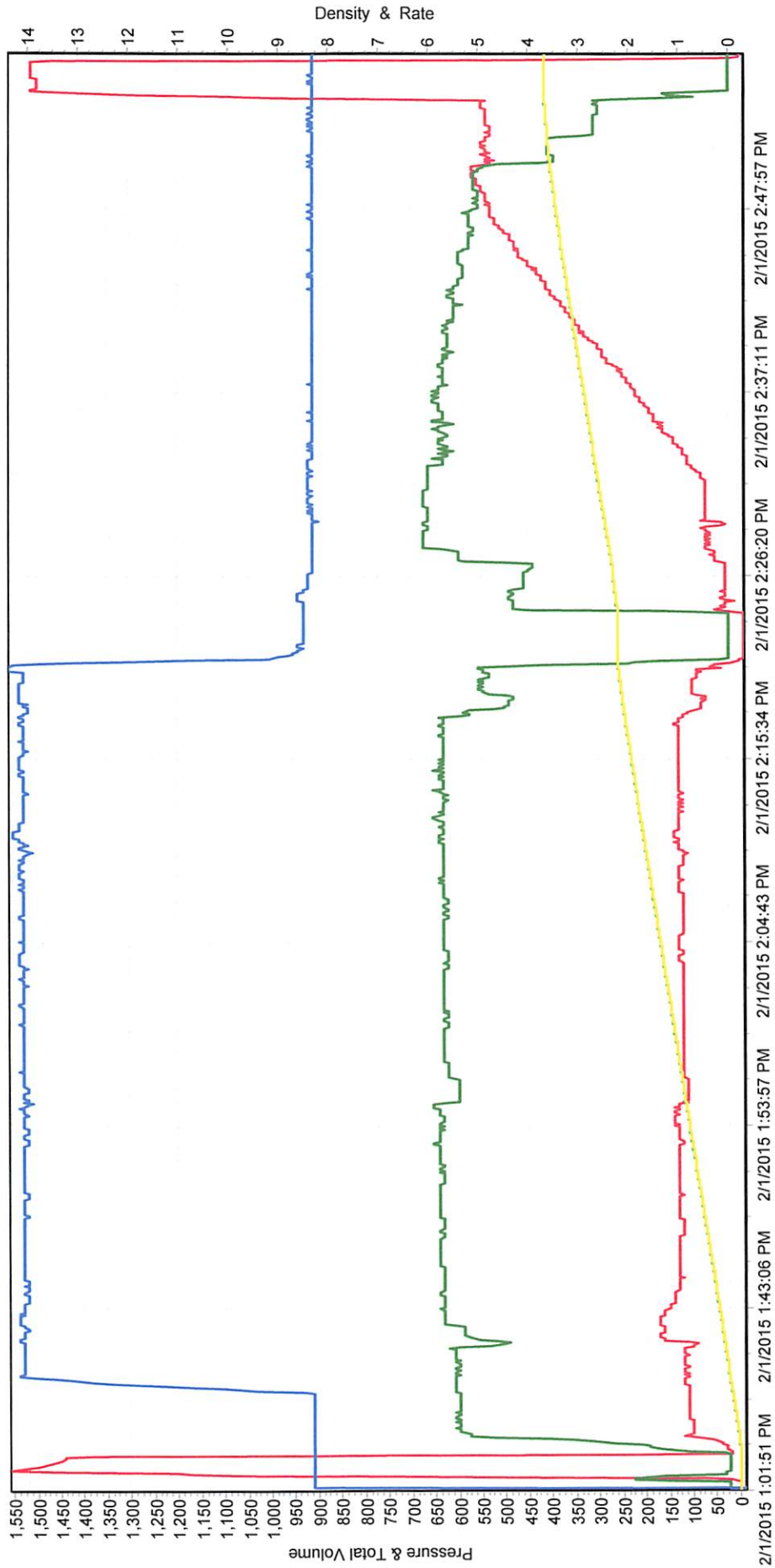
X 
Work Performed

X _____
Title

X 2-1-15
Date

M/D TOTCO 2000 SERIES

— PSI — Barrels / Minute — Barrels — Lbs / Gallon — Stage Volume



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 of 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.