HALLIBURTON

iCem® Service

BILL BARRETT CORPORATION E-BILL

Date: Sunday, December 20, 2015

Anschutz Equus Farms 4-62-9-4956C2

Intermediate

Job Date: Friday, December 18, 2015

Sincerely,

Lauren Roberts

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Anschutz Equus Farms 4-62-9-4956C2** cement **Intermediate** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton [Ft. Lupton]

Job Times

	Date	Time	Time Zone
Requested Time On Location:	12/18/2015	0930	MTN
Called Out Time:		0400	
Arrived On Location At:		0930	
Job Started At:		1508	
Job Completed At:		1707	
Departed Location At:		1800	

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 343492	**Ship To #:** 3690701	**Quote #:**	**Sales Order #:** 0902988091
Customer: BILL BARRETT CORPORATION E-BILL		**Customer Rep:** Robert Schultz	
Well Name: ANSCHUTZ EQUUS FARMS	**Well #:** 4-62-9-4956C2		**API/UWI #:** 05-123-42156-00
Field: WATTENBERG	**City (SAP):** KERSEY	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW SW-9-4N-62W-1090FSL-250FWL			
Contractor: CADE DRLG		**Rig/Platform Name/Num:** CADE 24	
Job BOM: 7522			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX37727		**Srvc Supervisor:** Kendall Broom	

Job

Formation Name					
Formation Depth (MD)	**Top**		**Bottom**		
Form Type			**BHST**		
Job depth MD	6629ft		**Job Depth TVD**		
Water Depth			**Wk Ht Above Floor**		
Perforation Depth (MD)	**From**		**To**		

Well Data

Description	New / Used	Size in	ID in	Weight lbm/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing	0	9.625	8.921	36	8 RD		0	830		
Casing	0	7	6.276	26	8 RD		0	6609		
Open Hole Section			8.75				830	6629		

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	7	1				Top Plug			
Float Shoe	7	1		6609		Bottom Plug			
Float Collar	7	1				SSR plug set			
Insert Float	7	1				Plug Container			
Stage Tool	7	1				Centralizers			

Miscellaneous Materials

Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty		Conc	
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size		Qty	

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	20	bbl	11.5	3.76			
149.34 lbm/bbl		BARITE, BULK (100003681)							
36.20 gal/bbl		FRESH WATER							

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Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	Lead Cement	ECONOCEM (TM) SYSTEM	415	sack	12.5	1.91		6	10.34
10.34 Gal		FRESH WATER							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Tail Cement	FRACCEM (TM) SYSTEM	175	sack	13.5	1.75		6	8.29
8.29 Gal		FRESH WATER							
47 lbm		CMT - PREMIUM - CLASS G REG OR TYPE V, BULK (100003685)							

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	Displacement	Displacement	252	bbl	8.33				

Cement Left In Pipe	Amount	44.08 ft	Reason	Shoe Joint
Comment				

1.2 Job Overview

		Units	Description
1	Time circulated before job	HH:MM	01:00
2	Mud volume circulated	Bbls	360
3	Rate at which well was circulated	Bpm	6
4	Rig pressure while circulating	Psi	328

1.3 Water Field Test

Item	Recorded Value	Units	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH	6	-	6.0-8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	<400	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness	425	ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium	-	ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity	-	ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates	-	ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium	-	ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	55	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

2.0 Real-Time Job Summary

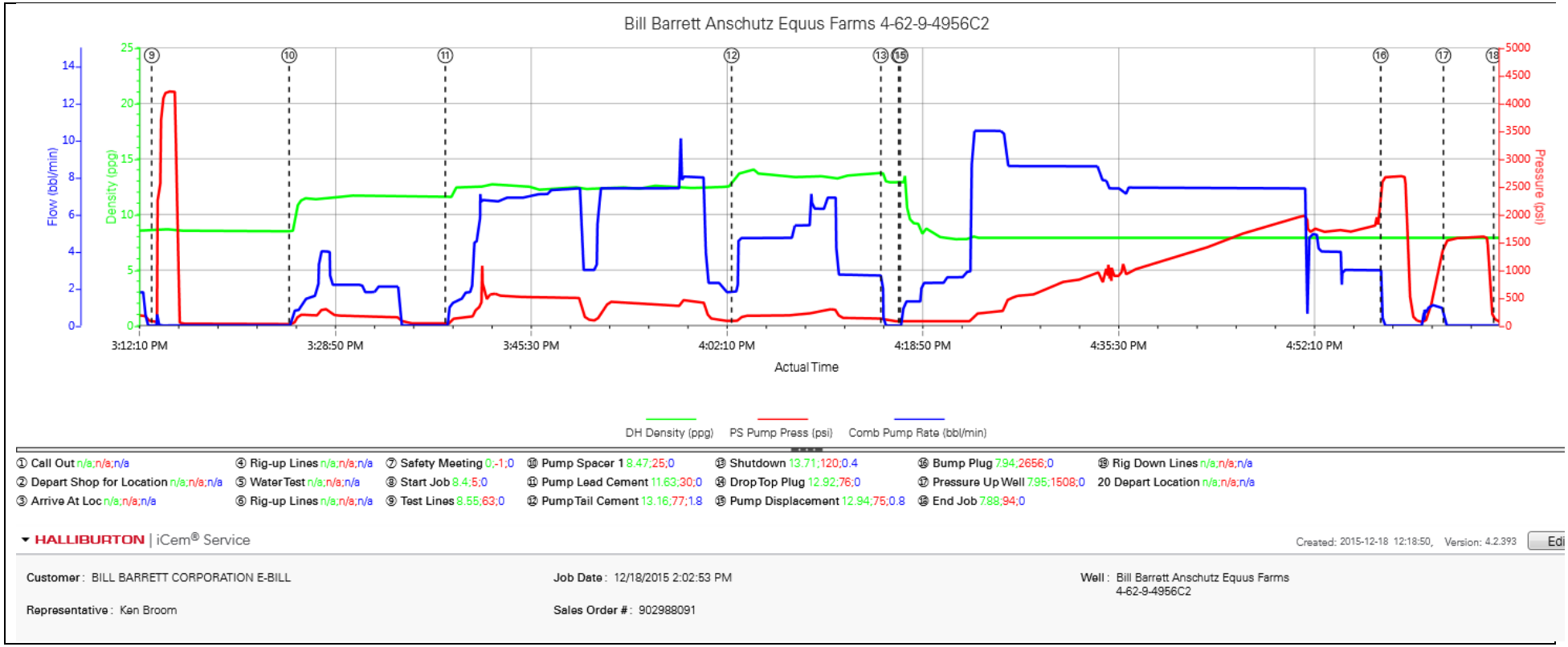
2.1 Job Event Log

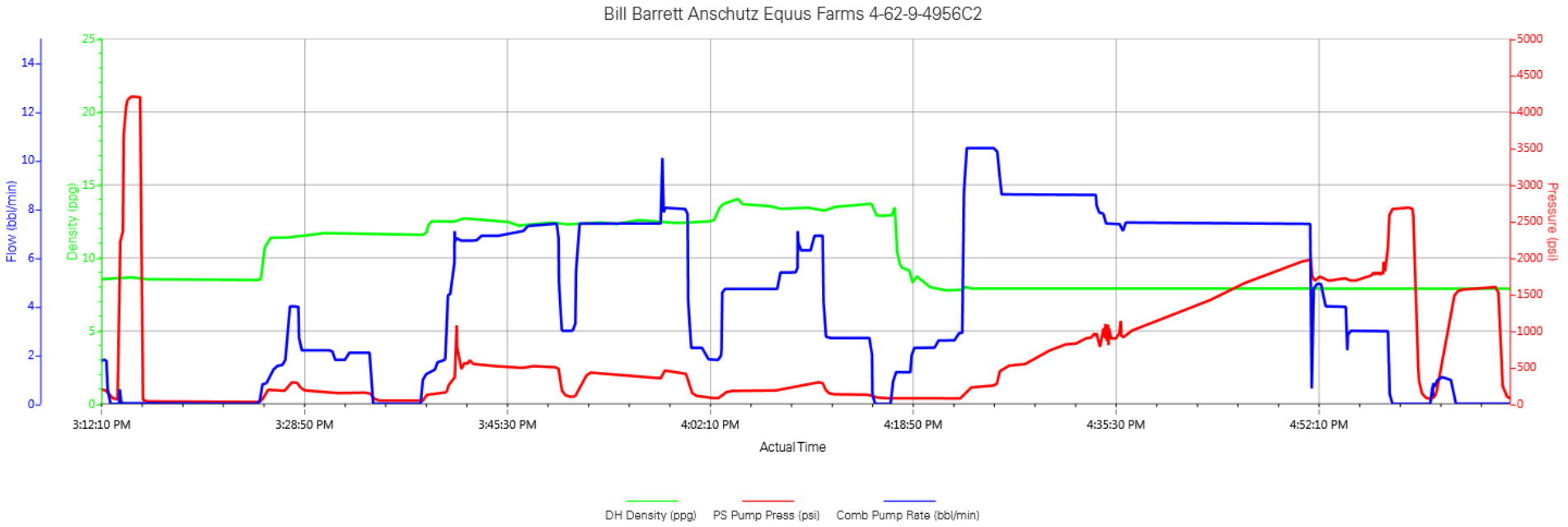
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	12/18/2015	04:00:00	USER				Called crew out to be on location at 0930
Event	2	Depart Shop for Location	Depart Shop for Location	12/18/2015	07:15:00	USER				Held a safety meeting before leaving for location
Event	3	Arrive At Loc	Arrive At Loc	12/18/2015	09:30:00	USER				Arrived on location and met with the company man. Rig still had 30 joints to go
Event	4	Rig-up Lines	Rig-up Lines	12/18/2015	10:30:00	USER				Held a safety huddle before rigging up water lines and bulk lines. EE hit his finger while knocking ice off a valve. Reported it to the company man and axiom. Nurse at axiom said it is a first aid
Event	5	Other	Water Test	12/18/2015	13:00:00	USER				Temp 55, Iron 0, Chloride 0, Hardness 425, PH 6, Sulfate <400
Event	6	Rig-up Lines	Rig-up Lines	12/18/2015	13:30:00	USER				Held a hazard hunt before spotting in trucks and rigging up the lines. Rig is circulating 1 hour before we pump the job. The rig pumped at 6 bpm and 328 psi.
Event	7	Safety Meeting	Safety Meeting	12/18/2015	14:30:00	USER				Held a safety meeting with the rig crew to discuss the operation and safety.
Event	8	Start Job	Start Job	12/18/2015	15:08:30	COM4	8.40	5.00	0.00	Filled lines with 2 bbl water
Event	9	Test Lines	Test Lines	12/18/2015	15:13:25	COM4	8.55	63.00	0.00	Tested lines to 4000 psi
Event	10	Pump Spacer 1	Pump Spacer 1	12/18/2015	15:25:07	COM4	8.47	25.00	0.00	Pumped 20 bbl Tuned Spacer 11.5#, 3.76 yield, 24.2 gal/sk. Pumped 2bpm at 300 psi
Event	11	Pump Lead Cement	Pump Lead Cement	12/18/2015	15:38:24	COM4	11.63	30.00	0.00	Pumped 415 sks 141.17 bbl EconoCem, 12.5#, 1.91 yield, 10.34 gal/sks. Pumped 12.5#, 1.91 yield,10.34 gal/sks. Pumped 7 bpm at 430 psi
Event	12	Pump Tail Cement	Pump Tail Cement	12/18/2015	16:02:46	COM4	13.16	77.00	1.80	Pumped 175 sks, 54.54 bbl FracCem, 13.5#, 1.75 yield, 8.29Gal/sks. Pumped 4.7 bpm at 183 psi

Event	13	Shutdown	Shutdown	12/18/2015	16:15:28	COM4	13.71	120.00	0.40	Shut down and washed up the cement head
Event	14	Drop Top Plug	Drop Top Plug	12/18/2015	16:17:00	COM4	12.92	76.00	0.00	Dropped plug preloaded and witnessed by the company man
Event	15	Pump Displacement	Pump Displacement	12/18/2015	16:17:08	COM4	12.94	75.00	0.80	Pumped 252 bbl water displacement, 7.5 bpm 1500 psi
Event	16	Bump Plug	Bump Plug	12/18/2015	16:58:01	COM4	7.94	2656.00	0.00	Bumped plug at calculated. 2560 psi final lift was 1890 psi
Event	17	Pressure Up Well	Pressure Up Well	12/18/2015	17:03:21	COM4	7.95	1508.00	0.00	Pressured up well to 1500psi for a 15 min casing test. climbed to 1600 psi
Event	18	End Job	End Job	12/18/2015	17:07:38	COM4				
Event	19	Rig Down Lines	Rig Down Lines	12/18/2015	17:14:28	USER				Held a safety meeting before rigging down lines
Event	20	Depart Location	Depart Location	12/18/2015	18:00:00	USER				Held a safety huddle before leaving location

3.0 Attachments

3.1 Bill Barrett Anschutz Equus Farms 4-62-9-4956C2-Custom Results.png





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Created: 2015-12-18 12:18:50, Version: 4.2.393 Edit

Customer: BILL BARRETT CORPORATION E-BILL

Job Date: 12/18/2015 2:02:53 PM

Well: Bill Barrett Anschutz Equus Farms 4-62-9-4956C2

Representative: Ken Broom

Sales Order #: 902988091