

# HALLIBURTON

iCem<sup>®</sup> Service

**BILL BARRETT CORPORATION-EBUS**

**For:** Date: Wednesday, December 27, 2017

**Anschutz-Williams 5-61-27-3225B Production Liner**

Job Date: Saturday, December 23, 2017

Sincerely,

**Justin Lansdale**

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Anschutz-Williams 5-61-27-3225B** cement **Production Liner** 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 [Fort Lupton]**

**HALLIBURTON**

**Cementing Job Summary**

*The Road to Excellence Starts with Safety*

Sold To #: 343492	Ship To #: 3833826	Quote #:	Sales Order #: 0904516588
Customer: BILL BARRETT CORPORATION E-BILL		Customer Rep: CHRIS	
Well Name: ANSCHUTZ-WILLIAMS	Well #: 5-61-27-3225B	API/UWI #: 05-123-45715-00	
Field: WATTENBERG	City (SAP): ROGGEN	County/Parish: WELD	State: COLORADO
Legal Description: NW SW-27-5N-61W-2378FSL-270FWL			
Contractor: Cade		Rig/Platform Name/Num: Cade 24	
Job BOM: 7525 7525			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srv Supervisor: Robert Davis	

**Job**

Formation Name			
Formation Depth (MD)	Top	6435	Bottom 16206
Form Type			BHST
Job depth MD	16208ft		Job Depth TVD
Water Depth			Wk Ht Above Floor 4
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
Drill Pipe		4	3.34	14			0	99	0	99
Casing		7	6.366	26	LTC	J-55	0	6435	0	6048
Drill Pipe	3	4	2.563				1550	5550	99	5550
Casing		4.5	4	11.6	LTC	P-110	5583	16206	5702	0
Open Hole Section			6.125				6435	16215	6048	6048

**Tools and Accessories**

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	4.5			16208	Top Plug	4.5		HES
Float Shoe	4.5				Bottom Plug	4.5		HES
Float Collar	4.5				SSR plug set	4.5		HES
Insert Float	4.5				Plug Container	4.5		HES
Stage Tool	4.5				Centralizers	4.5		HES

**Fluid Data**

<b>Stage/Plug #: 1</b>									
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	30	bbl	11.5	3.86		4	
		145.18 lbm/bbl BARITE, BULK (100003681)							
		36 gal/bbl FRESH WATER							

**HALLIBURTON**

**Cementing Job Summary**

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	NeoCem Lead	NeoCem TM	550	sack	13.2	2.04		6	9.74
9.74 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Liner Displacement	Liner Displacement	164	bbl	8.33			6	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Drill Pipe Displacement	Drill Pipe Displacement	36	bbl	8.33			6	
<b>Cement Left In Pipe</b>	<b>Amount</b>	58 ft			<b>Reason</b>			Shoe Joint	
<b>Mix Water:</b>	pH 7	<b>Mix Water Chloride:</b>	200 ppm		<b>Mix Water Temperature:</b>			75 °F °C	
<b>Cement Temperature:</b>	## °F °C	<b>Plug Displaced by:</b>	8.33 lb/gal kg/m3 XXXX		<b>Disp. Temperature:</b>			## °F °C	
<b>Plug Bumped?</b>	Yes/No	<b>Bump Pressure:</b>	2000-25000 psi MPa		<b>Floats Held?</b>			Yes/	
<b>Cement Returns:</b>	0 bbl m3	<b>Returns Density:</b>	## lb/gal kg/m3		<b>Returns Temperature:</b>			## °F °C	
<b>Comment</b> BUMPED PLUG @ CALCULATED DISPLACEMENT, FLOATS HELD ½ BBL BACK, RUPTURED PLUG @ 2950 PSI, TEST LINER TO 2000 PSI HELD FOR 10 MIN., 5 BBLs OF SPACER OFF THE TOP OF LINER									

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Rig-Down Completed	Rig-Down Completed	12/23/2017	02:00:00	USER	RIG DOWN COMPLETE
Event	2	Call Out	Call Out	12/23/2017	11:30:00	USER	CALLED OUT FROM FT. LUPTON COLORADO
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	12/23/2017	14:00:00	USER	LEAVE YARD AFTER SAFTEY MEETING
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	12/23/2017	16:00:00	USER	ARRIVED ON LOCATION AND TALKED TO COMPANY MAN ABOUT JOB FIGURES AND THE SPOTTING OF OUR EQUIPMENT
Event	5	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	12/23/2017	16:10:00	USER	ASSESSED LOCATION AN TOOK WATER SAMPLE
Event	6	Rig-Up Equipment	Rig-Up Equipment	12/23/2017	16:30:00	USER	SPOTTED EQUIPMENT AND RIGGED UP TO FLOOR RIG IS RUNNING CASING
Event	7	Other	Other	12/23/2017	16:40:00	USER	Water test=pH: _7___, Cl: 300___, temp _75___degrees Tannin-Lignin: __NEG___; Sulfate: __200___
Event	8	Other	Other	12/23/2017	17:00:00	USER	Rig Circulation: ___ bbls Circulation Rate: ___ bbl/min Mud Density __9.1__ lb/gal Mud YP/PV: _____
Event	9	Other	Other	12/23/2017	17:10:00	USER	Spacer: _30___ bbl TOS __3903___ Lead Cement: __200__ bbl, __550__ sks, TOC __4743__ Tail Cement: _____ bbl, ____ sks, TOC _____ Displacement: __200__ bbCMT left in Pipe __1__ BBL ___ Reason __SHOE___
Event	10	Other	Other	12/23/2017	17:30:00	USER	TD: __16215__ , TP __16208__ , SJ: _58.13___, OH: __6 1/8___, Casing: Size/Weight/Grade: _4.5/11.6#/P110_____, Previous Casing Shoe: __6435___
Event	11	Rig-Up Completed	Rig-Up Completed	12/23/2017	20:00:00	USER	RIG UP COMPLETE SAFETY MEETING WITH

RIG HANDS AND HALLIBURTON ABOUT THE DANGERS OF OUR EQUIPMENT AND WENT OVER JOB FIGURES. READY TO TEST LINES

Event	12	Start Job	Start Job	12/23/2017	21:17:51	COM4	FLOOD LINES W/ 2 BBLs FRESH WATER
Event	13	Test Lines	Test Lines	12/23/2017	21:22:08	COM4	LOW TEST TO 500 PSI, HIGH TEST TO 5000 PSI
Event	14	Pump Spacer 1	Pump Spacer 1	12/23/2017	21:26:40	COM4	20 BBLs FRESH WATER, PUMPED @ 4 BPM @ 1600 PSI
Event	15	Pump Spacer 2	Pump Spacer 2	12/23/2017	21:31:54	COM4	TUNED SPACER, 20 BBLs, @ 11.5 PPG, PUMPED @ 4 BPM @ 1730 PSI, HOS-840, TOS-3903
Event	16	Pump Cement	Pump Cement	12/23/2017	21:35:56	COM4	NEOCEM, 550 SKS @ 13.2 PPG, YIELD @ 2.04, GAL/SK @ 9.74, 1122 FT3, 200 BBLs, 127 BBLs OF WATER TO MIX, PUMPED @ 6 BPM @ 2500 PSI, HOC-11463, TOC - 4743
Event	17	Check Weight	Check weight	12/23/2017	21:38:01	COM4	13.2 PPG
Event	18	Shutdown	Shutdown	12/23/2017	22:10:09	COM4	CLEAN LINES
Event	19	Drop Top Plug	Drop Top Plug	12/23/2017	22:10:14	COM4	WEATHERFORD LINER PLUG
Event	20	Pump Displacement	Pump Displacement	12/23/2017	22:22:52	COM4	FRESH WATER, FIRST 20 MMCR, 200 BBLs OF BIOCIDAL WATER, PUMPED @ 6 BPM @ 2800 PSI, SHEARED PLUG @ 3200 PSI, BACK TO 6 BPM @ 2800 PSI, SLOWED RATE LAST 20 BBLs TO 4 BPM @ 1900 PSI
Event	21	Bump Plug	Bump Plug	12/23/2017	23:06:09	COM4	500 OVER, PUMPED @ 2000 PSI TOOK TO 2500 PSI HELD FOR 5 MIN.
Event	22	Other	Other	12/23/2017	23:06:55	COM4	RUPTED PLUG @ 2950 PSI, PUMP ADDITIONAL 5 BBLs FOR WET SHOE @ 4 BPM @ 1940 PSI, CHECKED FLOATS 1/2 BBL BACK.
Event	23	Pressure Up Well	Pressure Up Well	12/23/2017	23:31:38	COM4	TESTED BACK SIDE TO 2000 PSI HELD FOR 10 MIN.
Event	24	Circulate Well	Circulate Well	12/23/2017	23:48:24	COM4	CIRCULATED WELL, @ 8 BPM @ 1800 PSI, 5 BBLs OF SPACER OFF THE TOP OF LINER

Event	25	End Job	End Job	12/24/2017	00:27:27	COM4	
Event	26	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	12/24/2017	00:30:00	USER	SAFETY MEETING OVER RIGGING DOWN
Event	27	Rig-Down Equipment	Rig-Down Equipment	12/24/2017	00:45:00	USER	RIG DOWN EQUIPMENT AND HOSES
Event	28	Safety Meeting - Departing Location	Safety Meeting - Departing Location	12/24/2017	01:15:00	USER	SAFETY MEETING OVER DEPARTURE AND JOURNEY HOME
Event	29	Depart Location for Home	Depart Location for Home	12/24/2017	01:30:00	USER	LEAVE LOCATION

3.0 Attachments

3.1 Job Chart



