

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Thursday, June 15, 2017

RBF #5 Production

Job Date: Tuesday, May 23, 2017

Sincerely,

Julia Nichols

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Table of Contents

1.0	Cementing Job Summary	4
1.1	Executive Summary	4
2.0	Real-Time Job Summary	7
2.1	Job Event Log	7
3.0	Attachments.....	9
3.1	Custom Results - Job Chart with Events	9
3.2	Custom Results – Job Chart without Events.....	10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **RBF #5 cement Production** 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.

Approximately 50 barrels of cement were returned to surface.

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]

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 389404	Ship To #: 3788367	Quote #:	Sales Order #: 0904044965							
Customer: EXTRACTION OIL & GAS		Customer Rep: Shane								
Well Name: RBF	Well #: 5	API/UWI #: 05-123-44439-00								
Field: WATTENBERG	City (SAP): WINDSOR	County/Parish: WELD	State: COLORADO							
Legal Description: SE NE-22-8N-87W-2009FNL-300FEL										
Contractor: PATTERSON-UTI ENERGY		Rig/Platform Name/Num: PATTERSON 346								
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Nathaniel Moore								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	16995ft	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		9.625	8.921	36		J-55	0	1531	0	1531
Casing		5.5	4.778	20		P-110	0	16988	0	6500
Open Hole Section			8.5				1551	16995	0	6500
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	5.5				Top Plug	5.5	1	KLX		
Float Shoe	5.5			16988	Bottom Plug	5.5		HES		
Float Collar	5.5				SSR plug set	5.5		HES		
Insert Float	5.5				Plug Container	5.5		HES		
Stage Tool	5.5				Centralizers	5.5		HES		
Fluid Data										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	11.5 lb/gal Tuned Spacer III	Tuned Spacer III	50	bbl	11.5	3.74		6		
149.34 lbm/bbl		BARITE, BULK (100003681)								
35.40 gal/bbl		FRESH WATER								
0.30 gal/bbl		MUSOL A, 330 GAL TOTE -- (790828)								
0.30 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								

last updated on 6/15/2017 3:35:43 PM

Page 1 of 2

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Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	ElastiCem Lead	ELASTICEM™ SYSTEM	2700	sack	13.2	1.57		5	7.54
		0.30 % SCR-100 (100003749)							
		7.54 Gal FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	Displacement	Displacement	378	bbl	8.34				
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint	

50 bbl spacer and 50 bbl cement to surface. 5 bbl wet shoe.

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press <i>(psi)</i>	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	Comments
Event	1	Call Out	Call Out	5/22/2017	22:00:00	USER				OL time 0400. Verify equipment and materials
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	5/23/2017	03:00:00	USER				Spot in and rig up equipment. Rig has 4000' of casing to run. TD 16995' 8.5" hole. TP 16988' 5.5" 20# casing. 5' shoe track. MW 9.3 ppg. Surface 1551' 9.635" 36#. KLX rupture plug
Event	3	Event	Pre-Job Safety Meeting	5/23/2017	07:30:00	USER	1.00	8.52	0.00	Discuss job procedure with HES and rig crew. Rig circulated bottoms up.
Event	4	Start Job	Start Job	5/23/2017	07:52:34	COM1	2.00	8.52	0.00	Fill lines 3 bbl water
Event	5	Test Lines	Test Lines	5/23/2017	07:57:20	COM1	5452.00	8.68	0.00	500 psi kickout test and 5000 psi pressure test
Event	6	Check Weight	Check weight	5/23/2017	08:05:10	COM1	16.00	8.55	0.00	11.5 ppg verified with pressurized scales
Event	7	Pump Spacer 1	Pump Spacer 1	5/23/2017	08:07:26	COM1	164.00	11.52	3.90	50 bbl tuned spacer. 11.5 ppg 3.74 ft3/sk 23.7 gal/sk
Event	8	Pump Lead Cement	Pump Lead Cement	5/23/2017	08:16:38	COM1	116.00	12.30	4.10	2700 sks/755 bbl ElastiCem. 13.2 ppg 1.57 ft3/sk 7.54 gal/sk
Event	9	Check Weight	Check weight	5/23/2017	08:21:06	COM1	496.00	13.24	8.00	13.2 ppg
Event	10	Check Weight	Check weight	5/23/2017	08:55:26	COM1	498.00	13.21	8.00	13.2 ppg
Event	11	Shutdown	Shutdown	5/23/2017	10:02:52	USER	195.00	11.38	7.40	Wash pumps and lines. Blow down iron with rig air.
Event	12	Drop Top Plug	Drop Top Plug	5/23/2017	10:13:33	COM1	5.00	-0.03	0.00	KLX latchdown rupture plug. Witnessed by company man.
Event	13	Pump Displacement	Pump Displacement	5/23/2017	10:13:37	COM1	5.00	-0.06	0.00	376 bbl water displacement.
Event	14	Other	Spacer to surface	5/23/2017	10:43:33	COM1	3114.00	8.13	8.60	270 bbl into displacement. 50 bbl spacer back
Event	15	Other	Cement to surface	5/23/2017	10:53:00	USER	2684.00	8.12	4.90	320 bbl into displacement. 50 bbl cement to surface
Event	16	Bump Plug	Bump Plug	5/23/2017	10:59:19	USER	4240.00	8.17	4.80	2650 psi final pump pressure. Pressured up to 3200 psi.
Event	17	Other	Rupture Disk	5/23/2017	11:04:25	USER	4055.00	8.19	5.00	Ruptured at 4300 psi. Pumped 5 bbl wet shoe

Event	18	Other	Check floats	5/23/2017	11:05:21	USER	2046.00	8.15	0.00	3 bbl back. Floats held.
Event	19	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/23/2017	11:05:22	USER	2042.00	8.15	0.00	
Event	20	End Job	End Job	5/23/2017	11:17:08	COM1	8.00	-0.19	5.80	
Event	21	Depart Location Safety Meeting	Depart Location Safety Meeting	5/23/2017	12:30:00	USER				

3.0 Attachments

3.1 Custom Results - Job Chart with Events



3.2 Custom Results – Job Chart without Events

