

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS

Date: Saturday, July 15, 2017

CS-Bittersweet C1-1-13 Production

Job Date: Saturday, July 08, 2017

Sincerely,

Bryce Hinsch

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Table of Contents

1.0 Cementing Job Summary 4

 1.1 Executive Summary4

2.0 Real-Time Job Summary 7

 2.1 Job Event Log7

3.0 Attachments..... 9

 3.1 Extraction CS-Bittersweet C1-1-13 Production Job Chart9

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **CS-Bittersweet C1-1-13** 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 38 bbls 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]

Sold To #: 369404		Ship To #: 3727499		Quote #:		Sales Order #: 0904142909				
Customer: EXTRACTION OIL & GAS						Customer Rep: Kalyn Holgate, Larry Siegal				
Well Name: CS-BITTERSWEET				Well #: C1-1-13		API/UWI #: 05-123-42936-00				
Field: WATTENBERG		City (SAP): GREELEY		County/Parish: WELD		State: COLORADO				
Legal Description: SW SE-36-6N-66W-357FSL-2056FEL										
Contractor: PATTERSON-UTI ENERGY					Rig/Platform Name/Num: PATTERSON 341					
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199					Srv Supervisor: Nathaniel Moore					
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type					BHST					
Job depth MD		21314ft			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			0	1587	0	1585
Casing		5.5	4.67	23			0	21295	0	7115
Open Hole Section			8.5				1587	21314	1585	7115
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5		HES	
Float Shoe	5.5			21295		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 ft3/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	3.78		6		
0.40 gal/bbl		MUSOL A, 330 GAL TOTE – (790828)								
147.42 lbm/bbl		BARITE, BULK (100003681)								
35.10 gal/bbl		FRESH WATER								

0.40 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)							
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	ElastiCem	ELASTICEM™ SYSTEM	3250	sack	13.2	1.57		6	7.53
7.53 Gal		FRESH WATER							
0.35 %		SCR-100 (100003749)							
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	Displacement	Displacement	339.2	bbl	8.33			8	
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint	

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	7/7/2017	18:00:00	USER				OL time 0100
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	7/7/2017	23:00:00	USER				Sign in with customer. Spot in and rig up equipment. TD 21314' 8.5" hole. TP 21295' 5.5" 23# casing. FC 21291'. TVD 7115'. Surface 1585' 9.625" 36# MW 10.2 ppg
Event	3	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/8/2017	09:30:00	USER				Discuss job procedure with HES and rig crew
Event	4	Start Job	Start Job	7/8/2017	09:56:59	COM1	1.00	8.51	0.00	
Event	5	Other	Fill lines	7/8/2017	10:25:56	USER	-2.00	8.51	0.10	3 bbl water
Event	6	Test Lines	Test Lines	7/8/2017	10:28:34	COM1	2471.00	8.42	0.00	500 ps kickout test and 4900 psi pressure test.
Event	7	Pump Spacer 1	Pump Spacer 1	7/8/2017	10:33:08	COM1	14.00	8.45	0.00	50 bbl tuned spacer 11.5 ppg 3.8 ft3/sk 23.8 gal/sk With surfactants.
Event	8	Pump Cement	Pump Cement	7/8/2017	10:45:09	COM1	164.00	12.87	4.00	3250 sks/908 bbl 13.2 ppg ElastiCem 13.2 ppg 1.57 ft3/sk 7.53 gal/sk
Event	9	Check Weight	Check weight	7/8/2017	10:48:42	COM1	848.00	13.17	7.80	13.2 ppg verified with pressurized mud scales.
Event	10	Check Weight	Check weight	7/8/2017	11:45:20	COM1	681.00	13.22	8.00	13.2 ppg
Event	11	Other	Pump wet shoe	7/8/2017	12:56:19	USER	199.00	8.18	6.00	10 bbl MMCR water behind cement for wet shoe.
Event	12	Drop Top Plug	Drop Top Plug	7/8/2017	13:01:27	COM1	9.00	8.38	0.00	KLX 4000 psi rupture disk latchdown plug. Witnessed

										by KLX and company rep.
Event	13	Pump Displacement	Pump Displacement	7/8/2017	13:01:34	COM1	9.00	8.38	0.00	451 bbl water displacement with MMCR in first 10 bbl.
Event	14	Other	Spacer to surface	7/8/2017	13:55:23	COM1	2537.00	8.23	4.00	360 bbl into displacement. 50 bbl back.
Event	15	Other	Cement to surface	7/8/2017	13:57:00	COM1	2542.00	8.24	4.00	412 bbl into displacement. 38 bbl cement to surface.
Event	16	Bump Plug	Bump Plug	7/8/2017	13:59:44	USER	2743.00	8.25	4.00	Pressure climbed 200 psi to 2750. Possibly pumping past plug. Shutdown and pressure dropped off again to 1900.
Event	17	Other	Check floats	7/8/2017	14:06:29	USER	304.00	8.24	0.00	3 bbl back. Floats held. Shut in and ran into plug again at 6 bpm. Pressure climbed to 2800 and kicked out. Bled off again and got 3 bbl back. Floats held.
Event	18	End Job	End Job	7/8/2017	14:10:00	USER	2006.00	8.24	0.00	
Event	19	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/8/2017	14:15:00	USER	4.00	8.22	0.00	
Event	20	Depart Location Safety Meeting	Depart Location Safety Meeting	7/8/2017	16:00:00	USER				

3.0 Attachments

3.1 Extraction CS-Bittersweet C1-1-13 Production Job Chart

