

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Friday, September 08, 2017

HFE 7 Production

Job Date: Wednesday, August 23, 2017

Sincerely,

Bryce Hinsch

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **HFE 7** 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 48 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 [Fort Lupton]

The Road to Excellence Starts with Safety

Sold To #: 369404		Ship To #: 3800427		Quote #:		Sales Order #: 0904251747				
Customer: EXTRACTION OIL & GAS				Customer Rep: Jose Torres						
Well Name: HFE			Well #: 7		API/UWI #: 05-123-44773-00					
Field: WATTENBERG		City (SAP): MEAD		County/Parish: WELD		State: COLORADO				
Legal Description: SW SW-22-4N-68W-1125FSL-1047FWL										
Contractor: CYCLONE				Rig/Platform Name/Num: CYCLONE 37						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Steven Markovich						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		11687ft		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	1593	0	1593
Casing		5.5	4.778	20			0	11687	0	0
Open Hole Section			8.5				1593	11707	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			11687		Top Plug	5.5		HES	
Float Shoe	5.5					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	3.73		6		
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
149.34 lbm/bbl		BARITE, BULK (100003681)								

35 gal/bbl		FRESH WATER							
0.50 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 (TM) SYSTEM	1950	sack	13.2	1.57		6	7.53
7.53 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	Displacement	Displacement	258	bbl	8.33			8	
Comment Cement to surface at 210bbbls away bringing 48bbbls of cement to surface. Plug burst at 4194psi then pumped 5bbl wet shoe at 5bbl/min									

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	8/23/2017	17:00:00	USER					Job called out at 17:00 with an on location time of 22:00
Event	2	Arrive at Location from Service Center	Arrive at Location from Service Center	8/23/2017	21:30:00	USER					Arrived on location, rig still running casing. Approx 3500'
Event	3	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	8/23/2017	21:45:00	USER					JSA and Hazard hunt with HES crew.
Event	4	Rig-Up Equipment	Rig-Up Equipment	8/23/2017	22:00:00	USER					Rigged up HES lines and equipment
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	8/24/2017	01:30:00	USER	8.32	-5.00	0.00	0.00	JSA with HES and rig crew on job procedure.
Event	6	Start Job	Start Job	8/24/2017	01:51:40	COM4	8.32	-6.00	0.00	0.00	TD 11707' TP 11687' FC 11682' 5 1/2" 20# Production casing. 9 5/8" Surface casing 1593' 8 1/2" Open hole.
Event	7	Test Lines	Test Lines	8/24/2017	01:57:00	COM4	8.42	1428.00	0.00	4.00	500psi kick out test, kick outs worked, re set kick outs to 4700psi and then hold.
Event	8	Check Weight	Check weight	8/24/2017	02:07:31	COM4	8.33	-9.00	0.00	4.00	Weight verified by pressurized scales.
Event	9	Pump Spacer 1	Pump Spacer 1	8/24/2017	02:09:49	COM4	8.50	169.00	2.70	0.60	Pump 50bbbls of 11.5ppg 3.73yield Tuned Spacer. Added 25 gallons of Musol-A and Dual Spacer-B on the fly. Pumped at 5bbl/min 100psi

Event	10	Check Weight	Check weight	8/24/2017	02:20:27	COM4	11.69	140.00	5.00	37.20	Weight verified by pressurized scales.
Event	11	Pump Lead Cement	Pump Lead Cement	8/24/2017	02:23:16	COM4	13.02	181.00	5.00	51.20	Pump 545bbls (1950sks) of 13.2ppg 1.57yield Cement. Pumped at bbl/min 483psi
Event	12	Check Weight	Check weight	8/24/2017	02:25:45	COM4	13.68	487.00	7.90	15.50	Weight verified by pressurized scales.
Event	13	Check Weight	Check weight	8/24/2017	02:27:20	COM4	13.20	520.00	8.00	28.00	Weight verified by pressurized scales.
Event	14	Check Weight	Check weight	8/24/2017	02:30:07	COM4	13.21	445.00	8.00	50.20	Weight verified by pressurized scales.
Event	15	Check Weight	Check weight	8/24/2017	03:26:50	COM4	13.25	440.00	8.00	502.40	Weight verified by pressurized scales.
Event	16	Shutdown	Shutdown	8/24/2017	03:36:01	COM4	12.31	56.00	0.00	553.10	Shutdown and clean pumps and lines.
Event	17	Drop Top Plug	Drop Top Plug	8/24/2017	03:50:00	COM4	0.03	-11.00	0.00	564.90	Plug loaded into HES head, plug drop verified by company rep.
Event	18	Pump Displacement	Pump Displacement	8/24/2017	03:50:04	COM4	-0.09	-11.00	0.00	564.90	Pump 258bbls of H2O, Pumped at 11bbl/min and slowed down with pressure increase. Spacer interface at 146bbls away good spacer at 160bbls. Cement to surface at 210bbls away bringing 48bbls of cement to surface.
Event	19	Bump Plug	Bump Plug	8/24/2017	04:22:22	COM4	8.39	2435.00	5.10	257.80	Bumped plug at 258bbls away. Final lift pressure was 2448psi. took pressure 500 over and held.
Event	20	Other	Other	8/24/2017	04:24:02	USER	8.42	3239.00	1.50	258.60	Pressure came up to 3248psi. Kicked pumps on at 2bbl/min to burst plug.

Event	21	Other	Other	8/24/2017	04:24:26	USER	8.46	4128.00	1.90	259.30	Plug Burst at 4194psi, brought rate up to 5bbl/min for 5 bbls, for 5bbl wet shoe.
Event	22	End Job	End Job	8/24/2017	04:27:08	COM4					Thank you Steve Markovich and Crew

3.0 Attachments

3.1 Extraction HFE 7 Production Job Chart

