HALLIBURTON

iCem® Service

EXTRACTION OIL & GAS-EBUS

Date: Thursday, August 01, 2019

Coyote Trails 33W-15-7N Production

Job Date: Wednesday, July 10, 2019

Sincerely,

Bryce Hinsch

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

© 2019 Halliburton. All rights reserved.

Table of Contents

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Coyote Trails 33W-15-7N** 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 62 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 #:** 3912806	**Quote #:**	**Sales Order #:** 0905825294
Customer: EXTRACTION OIL & GAS-EBUS		**Customer Rep:** Mike Torres	
Well Name: COYOTE TRAILS	**Well #:** 33W-15-7N		**API/UWI #:** 05-123-48248-00
Field: WATTENBERG	**City (SAP):** ERIE	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW SE-28-1N-68W-1150FSL-2373FEL			
Contractor: ENSIGN DRLG		**Rig/Platform Name/Num:** ENSIGN 147	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		**Srvc Supervisor:** Nicholas Cummins	

Job

Formation Name				
Formation Depth (MD)	**Top**	1624ft	**Bottom**	16195ft
Form Type			**BHST**	
Job depth MD	16177ft		**Job Depth TVD**	7950ft
Water Depth			**Wk Ht Above Floor**	4ft
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			0	1624	0	1624
Casing	0	5.5	4.892	17			0	16177	0	7950
Open Hole Section			8.5				1624	16195	1624	7970

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5					**Top Plug**	5.5	1	CATH
Float Shoe	5.5	1	CATH	16177		**Bottom Plug**	5.5	1	CATH
Float Collar	5.5	1	CATH	16172		**SSR plug set**	5.5		
Insert Float	5.5					**Plug Container**	5.5	1	HES
Stage Tool	5.5					**Centralizers**	5.5		

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	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS	50	bbl	12.5	2.74	16.6	6	1710

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	585	sack	13.2	1.6	7.75	8	4534

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	GasStop	ELASTICEM (TM) SYSTEM	615	sack	13.2	1.6	7.71	8	4742

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	13.2# ElastiCem	ELASTICEM (TM) SYSTEM	1400	sack	13.2	1.57	7.66	8	10724
7.66 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
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33			8	
0.50 gal/bbl		**MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)**							

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
6	Displacement	Displacement	355	bbl	8.33			8	

Cement Left In Pipe	**Amount**	0ft	Reason	**Wet Shoe**

Mix Water:	pH 7	**Mix Water Chloride:**	<400 ppm	Mix Water Temperature:	**67 °F**
Cement Temperature:	N/A	**Plug Displaced by:**	8.33 lb/gaL	Disp. Temperature:	**67 °F**
Plug Bumped?	No	**Bump Pressure:**	N/A	Floats Held?	**No**
Cement Returns:	62 bbl	**Returns Density:**	13.2 lb/gal	Returns Temperature:	

Comment

50 bbls Spacer

167 bbls Cap cement

175 bbls Latex cement

392 bbls Tail cement

375bbls displacement first 20 bbls MMCR

Plug Not bumped

Floats did not hold

Estimated 50 bbls of spacer to surface

Estimated 62 bbls of cap cement to surface

Estimated top of Latex Cement 2,280’

Estimated top of Tail Cement 6,569’

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)	Pump Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	7/10/2019	03:00:00	USER					The crew was called out on 1/13/19 at 1200. The customer requested HES on location at 1800 on 1/13/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/10/2019	06:59:00	USER					The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey. The crew departed service center.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	7/10/2019	07:25:00	USER					The crew arrived on location safely. The rig was on bottom and circulatting through the CRT. The supervisor met with the Company man and received numbers. TD 16,195', TP 16,177' 5 1/2" 17# P-110, FC 16,172', PC 1,624' 9 5/8" 36# J-55, TVD 7,950', OH 8 1/2", Mud 10 ppg.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	7/10/2019	07:30:00	USER					Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/10/2019	07:45:00	USER					Crew held a safety meeting discussing the rig up procedure. Also all potential hazards associated with rigging up all HES equipment and lines.

Event	6	Rig-Up Equipment	Rig-Up Equipment	7/10/2019	07:50:00	USER					The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	7/10/2019	09:20:00	USER					Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/10/2019	09:25:00	USER					The crew and all personal involved with cement job discussed all potential hazards associated with job. Followed by the job procedure to ensure everyone understood the plan of action
Event	9	Start Job	Start Job	7/10/2019	10:01:12	COM1	3.00	8.37	0.00	0.00	Started recording data from Elite 11645460.
Event	10	Test Lines	Test Lines	7/10/2019	10:08:36	COM1	397.00	8.27	0.00	2.80	Pressured tested all HES lines to 4,700 psi. The pressure test passed.
Event	11	Pump Spacer 1	Pump Spacer 1	7/10/2019	10:13:07	COM1	6.00	8.31	0.00	0.00	Pumped 50 bbls of spacer a 6 bpm. 12.5 ppg 2.74 yield 16.6 gal/sk. Verified density using pressurized scales.
Event	12	Pump Cap Cement	Pump Cap Cement	7/10/2019	10:24:57	COM1	17.00	13.06	0.00	0.00	Pumped 167 bbls (585sks) of Cap Cement at 8 bpm, pressure was at 500 psi. 13.2 ppg 1.6 yield 7.75 gal/sk. Verified density using pressurized scales.
Event	13	Pump Lead Cement	Pump Lead Cement	7/10/2019	10:49:23	COM1	518.00	13.09	8.70	0.10	Pumped 175 bbls (615 sks) of Lead cement with latex at 8 bpm, pressure was at 630 psi. 13.2 ppg 1.6 yield 7.71 gal/sk. Verified density using pressurized scales.
Event	14	Pump Tail Cement	Pump Tail Cement	7/10/2019	11:13:47	COM1	1060.00	13.19	2.90	0.00	Pumped 392 bbls (1400 sks) of Tail cement at 8 bpm, pressure was at 480 psi. 13.2 ppg 1.6 yield 7.66

											gal/sk. Verified density using pressurized scales.
Event	15	Shutdown	Shutdown	7/10/2019	12:09:21	COM1	32.00	4.54	1.30	416.80	Shutdown and blew air from rig floor to wash up tank. The washed pumps and lines from Elite to wash up tank.
Event	16	Drop Top Plug	Drop Top Plug	7/10/2019	12:23:24	COM1	-4.00	-0.35	0.00	427.70	Company man verified plug left container.
Event	17	Pump Displacement	Pump Displacement	7/10/2019	12:23:35	COM1	-4.00	-0.35	0.00	427.70	Pumped the calculated displacement of 380 bbls with MMCR in the first 20 bbls. We did not bump the plug. Pumped 5 bbls for wet shoe then shutdown.
Event	18	Other	Check Floats	7/10/2019	13:26:17	COM1	1939.00	8.01	0.00	392.10	Released pressure back to truck to check floats. The floats did not hold. Brought 5 bbls back to the truck. Shut the release line pumped 5 bbls back into well then shutdown.
Event	19	Close Valve Surface	Close Valve Surface	7/10/2019	13:33:16	COM1	2031.00	8.02	0.00	398.80	Shut in the manifold on plug container. Rigged up pressure gauge and bleed off valve. The rig will hold 2,000 psi on well for 8 hours. Rigged down floor and washed up stack with 40 bbls of sugar water.
Event	20	End Job	End Job	7/10/2019	14:00:10	COM1	7.00	-0.35	0.00	0.00	Cement job complete. Estimated top 50 bbls of spacer to surface. Estimated 61 bbls of Cap cement to surface. Estimated top of latex cement 2,280'. Estimated top of Tail cement 6,569'.

Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/10/2019	14:01:00	USER	-1.00	7.07	0.00	0.00	Crew held a safety meeting discussing the rig down procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	22	Rig-Down Equipment	Rig-Down Equipment	7/10/2019	14:04:00	USER	2.00	-0.35	0.00	0.00	The crew rigged down all HES equipment and lines.
Event	23	Rig-Down Completed	Rig-Down Completed	7/10/2019	15:45:00	USER					Rig down completed no one got hurt.
Event	24	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/10/2019	15:50:00	USER					The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/10/2019	16:00:00	USER					Nick Cummins and crew would like to thank you for your business, and choosing Halliburton Cement! Please feel free to call if you have any questions.

3.0 Attachments

3.1 Extraction Coyote Trails 33W-15-7N Production Chart