

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

Date: Thursday, September 20, 2018

Rinn Valley East N17-20-7C Production

Job Date: Wednesday, September 19, 2018

Sincerely,
Tyler Hill

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Rinn Valley East N17-20-7C** 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 43 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

The Road to Excellence Starts with Safety

Sold To #: 369404	Ship To #: 3892501	Quote #:	Sales Order #: 0905142407
Customer: EXTRACTION OIL & GAS		Customer Rep: Danny Herrera	
Well Name: RINN VALLEY EAST		Well #: N17-20-7C	API/UWI #: 05-123-47320-00
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-17-2N-68W-786FSL-1774FEL			
Contractor:		Rig/Platform Name/Num: Patterson 901	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HX38199		Srvc Supervisor: Prince Perez	

Job

Formation Depth (MD)	Top	0'	Bottom	15,864'
Job depth MD	17,453'		Job Depth TVD	7,480'
			Wk Ht Above Floor	5'

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		J-55	0	1629	0	1629
Casing	0	5.5	4.778	20	BTC	P-110	0	17453	0	7480
Open Hole Section			8.5				1629	17463	1629	7480

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5	1	KLX	17,453	Top Plug	5.5	1	KLX
Wet Shoe Sub	5.5	1	KLX	17,444				1
					Plug Container	5.5	1	HES
					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	Spacer	Tuned Spacer III	50	bbl	11.5	3.73	23.4	6	1,761	

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	Cement	ELASTICEM (TM) SYSTEM	2,743	sack	13.2	1.57	7.53	8	20,655	
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	Fresh Water	387	bbl	8.34			8		
Cement Left In Pipe		Amount	0 ft		Reason			Wet Shoe		
Mix Water:		pH 7	Mix Water Chloride:		<300 ppm		Mix Water Temperature:			74 °F
Cement Temperature:		°F	Plug Displaced by:		8.34 lb/gal		Disp. Temperature:			74 °F
Plug Bumped?		Yes	Bump Pressure:		2,700 psi		Floats Held?			Yes
Cement Returns:		43 bbls	Returns Density:		13.2 lb/gal		Returns Temperature:			## °F
Comment:										
Pumped 50 bbls of Tuned Spacer III with 25 gallons of Dual B, 25 gallons of Musol and 10 gallons of D-air.										
Pumped 767 bbls of Elasticem.										
Pumped 387 bbls of freshwater displacement.										
43 bbls of cement back to surface.										
Pumped a 5 bbl wet shoe.										
3 bbls back on floats.										

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	PS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	9/19/2018	08:00:00	USER				CREW CALLED OUT AT 08:00, REQUESTED ON LOCATION 12:30. CREW PICKED UP CEMENT, CHEMICALS, AND PLUG CONTAINER FROM FT. LUPTON, CO. BULK 660 10248062, AND PUMP 11189145.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/19/2018	10:20:00	USER				CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
Event	3	Crew Leave Shop	Crew Leave Shop	9/19/2018	10:30:00	USER				STARTED JOURNEY MANAGEMENT.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	9/19/2018	11:15:00	USER				END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING- 9.625" 36 LB/FT @ 1,629', 5.5" CASING: 20 LB/FT TOTAL 117,453', 8 1/2" HOLE, TD 17,463', 9' SHOE TRAC, TVD- 7,480'. PUMP FRESH WATER DISPLACEMENT. CASING LANDED @ 14:30 09/19/2018.
Event	5	Safety Meeting - Assessment of Location	Safety Meeting - Assessment of Location	9/19/2018	11:25:00	USER				HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP AND

										WEATHER.
Event	6	Rig-Up Equipment	Rig-Up Equipment	9/19/2018	11:35:00	USER				RIG UP BULK AND MIXING EQUIPMENT.
Event	7	Rig-Up Completed	Rig-Up Completed	9/19/2018	14:00:00	USER	8.10	0.00	23.00	
Event	8	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/19/2018	15:00:00	USER	8.10	0.00	29.00	MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	9	Start Job	Start Job	9/19/2018	16:03:08	COM4	8.12	0.00	25.00	BEGIN RECORDING JOB DATA.
Event	10	Test Lines	Test Lines	9/19/2018	16:09:40	COM4	8.21	0.00	4990.00	PRESSURE TESTED IRON TO 4,700 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 1,338 PSI, 5TH GEAR STALL OUT @ 1,880 PSI. 4,700 PRESSURE TEST KICKED OUT @ 4,681 PSI
Event	11	Pump Spacer 1	Pump Spacer 1	9/19/2018	16:14:47	COM4	11.11	2.80	380.00	PUMPED 50 BBLS OF TUNED SPACER III @ 11.5 LB/GAL, 3.73 CUFT/SK, 23.4 GALL/SK. 10 GALS D-AIR, 25 GALS DUAL B, 25 GALS OF MUSOL A. 50 BBLS CALCULATED TO RETURN TO SURFACE. DENSITY VERIFIED BY PRESSURIZED MUD SCALES. PUMP RATE 8 BBLS/MIN @ 450 PSI.
Event	12	Pump Cement	Pump Cement	9/19/2018	16:27:58	COM4	13.43	5.70	277.00	PUMPED 2,743 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 FT3/SK, 7.53 GAL/SK. 767 BBLS, 43 BBLS CALCULATED TO RETURN. DENSITY VERIFIED BY PRESSURIZED MUD SCALES.

										PUMP RATE 8 BBLs/MIN @ 750 PSI
Event	13	Drop Top Plug	Drop Top Plug	9/19/2018	18:19:04	COM4	13.86	0.00	25.00	PLUG LEFT CONTAINER, VERIFIED BY CO. MAN.
Event	14	Pump Displacement	Pump Displacement	9/19/2018	18:20:41	COM4	13.77	0.00	23.00	BEGIN CALCULATED DISPLACEMENT OF 387.27 BBLs WITH FRESH WATER. PUMP RATE 9 BPM @ 3,070 PSI
Event	15	Bump Plug	Bump Plug	9/19/2018	19:12:25	COM4	8.23	4.50	2716.00	PLUG BUMPED AT CALCULATED DISPLACEMENT. 2,756 PSI PRESSURED 500 PSI OVER BUMP.
Event	16	Shift Tool - Lower	Shift Tool - Lower	9/19/2018	19:14:06	USER	8.24	2.00	3645.00	TOOL SHIFTED @ 3,912 PSI, FOLLOWED WITH A 5 BBL WET SHOE.
Event	17	Check Floats	Check Floats	9/19/2018	19:16:57	USER	8.20	0.00	465.00	RELEASED PRESSURE, FLOATS HELD, 3 BBLs BACK.
Event	18	End Job	End Job	9/19/2018	19:19:47	COM4	8.17	0.00	2.00	STOP RECORDING JOB DATA.
Event	19	Post-Job Safety Meeting (Pre Rig-Down)	Post-Job Safety Meeting (Pre Rig-Down)	9/19/2018	19:30:00	USER				DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	20	Rig-Down Equipment	Rig-Down Equipment	9/19/2018	19:40:00	USER				RIG DOWN BULK AND MIXING EQUIPMENT.
Event	21	Rig-Down Completed	Rig-Down Completed	9/19/2018	20:40:00	USER				
Event	22	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/19/2018	20:50:00	USER				CREW DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	23	Crew Leave Location	Crew Leave Location	9/19/2018	21:30:00	USER				THANK YOU

Attachments

2.2 Extraction Rinn Valley East N17-20-7C Production.png

