

HALLIBURTON

iCem[®] Service

EXTRACTION

United States of America, COLORADO

Date: Friday, September 14, 2018

Rinn Valley East N17-20-6N Production

Job Date: Monday, October 01, 2018

Sincerely,

Bryce Hinsch

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 N17-20-6N** 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 47 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 #: 3892410	Quote #:	Sales Order #: 0905128945
Customer: EXTRACTION OIL & GAS		Customer Rep: Danny Herrera	
Well Name: RINN VALLEY EAST		Well #: N17-20-6N	API/UWI #: 05-123-47319-00
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-17-2N-68W-814FSL-1773FEL			
Contractor:		Rig/Platform Name/Num: Patterson 901	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HX38199		Srvc Supervisor: Thomas Haas	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	17354ft	Job Depth TVD	7340'
Water Depth		Wk Ht Above Floor	4'
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		J-55	0	1620	0	1620
Casing	0	5.5	4.778	20	BTC	P-110	0	17354	0	7340
Open Hole Section			8.5				1620	17363	1620	7340

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe					Top Plug	5.5	1	KLX
Float Shoe	5.5	1	KLX	17354	Bottom Plug			
Float Collar	5.5	1	KLX	17345	SSR plug set			
Insert Float					Plug Container	5.5	1	HES
Stage Tool					Centralizers			

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	3.73	23.4	5	1760
149.34 lbm/bbl		BARITE, BULK (100003681)							

35 gal/bbl	FRESH WATER								
0.50 gal/bbl	DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
0.50 gal/bbl	MUSOL(R) A, 5 GAL PAIL (100064220)								
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	2737	sack	13.2	1.57	7.53	8	20610
0.45 %	SCR-100 (100003749)								
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	385	bbl	8.33				
Cement Left In Pipe	Amount	NONE			Reason Wet Shoe			Shoe Joint	
Mix Water:	pH 7	Mix Water Chloride:	<300 ppm		Mix Water Temperature:	67 °F			
Cement Temperature:	N/A	Plug Displaced by:	8.33 lb/gal F.W.		Disp. Temperature:	68 °F			
Plug Bumped?	Yes	Bump Pressure:	#### psi		Floats Held?	Yes			
Cement Returns:	47 bbl	Returns Density:	N/A		Returns Temperature:	N/A			
Comment Pumped calculated displacement, plug bumped at @ 2600 psi, wet shoe disk burst @ 3850 psi, pumped 5 bbl wet shoe, 47 bbl cement back to surface, checked floats, floats held, 3 bbls back to the truck.									

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>	DS Pump Press <i>(psi)</i>	Comb Pump Rate <i>(bbl/min)</i>	Pump Stg Tot <i>(bbl)</i>	Comments
Event	1	Call Out	Call Out	9/13/2018	15:30:00	USER					CREW CALLED OUT AT 15:30 9/13/2018, REQUESTED ON LOCATION 23:00 9/13/2018. CREW PICKED UP CEMENT, CHEMICALS (25 GAL MUSOL, 25 GAL DUAL SPACER B, 10 GAL D-AIR), 100 LBS SUGAR, AND PLUG CONTAINER FROM FORT LUPTON, CO. BODY LOAD: 10248062 IRON TRUCK: 12100990 PUMP ELITE: 11897034/11645460
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/13/2018	20:45:00	USER					DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW
Event	3	Crew Leave Yard	Crew Leave Yard	9/13/2018	21:00:00	USER					STARTED JOURNEY MANAGEMENT.
Event	4	Arrive At Loc	Arrive At Loc	9/13/2018	22:00:00	USER					END JOURNEY MANAGEMENT. MEET WITH CO. MAN TO DISCUSS JOB; SURFACE CASING: 9.625" 36# @ 1620', CASING: 5.5" 20# @ 17354', 9' SHOE JOINT, 8.5" OPEN HOLE, TVD @ 7340', 9.4 PPG WELL FLUID, FRESH WATER DISPLACEMENT.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	9/13/2018	22:10:00	USER					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH

											LOCATION, RIG UP AND WEATHER.	
Event	6	Rig-Up Equipment	Rig-Up Equipment	9/13/2018	22:20:00	USER						CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON, AND WATER HOSES TO PERFORM JOB.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	9/14/2018	03:00:00	USER	8.49	0.00	-2.00	1.00		MEETING WITH HALLIBURTON AND RIG PERSONNEL. COMMUNICATED POTENTIAL SAFETY HAZARDS AND JOB DETAILS.
Event	8	Start Job	Start Job	9/14/2018	03:34:56	COM4	8.29	0.00	-3.00	1.00		START JOB DATA RECORDING.
Event	9	Test Lines	Test Lines	9/14/2018	03:37:20	COM4	8.32	0.00	66.00	3.00		PRESSURE TESTED IRON TO 4600 PSI. KICKOUTS SET @ 500 PSI, KICKED OUT @ 540 PSI, 5TH GEAR STALL OUT @ 1750 PSI.
Event	10	Pump Spacer 1	Pump Spacer 1	9/14/2018	03:47:05	COM4	8.28	0.00	1.00	0.00		PUMP 50 BBLS OF TUNED SPACER @ 11.5 LB/GAL, DENSITY VERIFIED BY PRESSURIZED MUD SCALES. ADDED 25 GAL MUSOL, 25 GAL DUAL SPACER B, AND 10 GAL D-AIR TO SPACER.
Event	11	Pump Lead Cement	Pump Lead Cement	9/14/2018	03:57:08	COM4	12.10	5.00	262.00	44.00		PUMP 2737 SKS OF ELASTICEM @ 13.2 LB/GAL, 1.57 YIELD, 7.53 GAL/SK, 765 BBLS, TOC @ SURFACE, DENSITY VERIFIED BY PRESSURIZED MUD SCALES.
Event	12	Shutdown	Shutdown	9/14/2018	05:46:50	COM4	8.54	0.00	-14.00	402.70		SHUTDOWN TO DROP TOP PLUG.
Event	13	Drop Top Plug	Drop Top Plug	9/14/2018	05:48:59	COM4	8.32	0.00	10.00	402.70		PLUG LEFT PLUG CONTAINER, VERIFIED BY COMPANY MAN.

Event	14	Pump Displacement	Pump Displacement	9/14/2018	05:49:03	COM4	8.31	0.00	9.00	0.00	BEGIN CALCULATED DISPLACEMENT OF 403 BBLs WITH FRESH WATER.
Event	15	Cement Returns to Surface	Cement Returns to Surface	9/14/2018	06:35:25	USER	8.36	6.20	2811.00	359.10	CEMENT RETURNED TO SURFACE 338 BBL INTO DISPLACEMENT, 47 BBL CEMENT TO SURFACE.
Event	16	Bump Plug	Bump Plug	9/14/2018	06:41:13	COM4	8.35	0.00	2998.00	389.70	PLUG BUMPED AT CALCULATED DISPLACEMENT, FINAL CIRCULATING PRESSURE OF 2800 PSI.
Event	17	Other	Rupture Wet Shoe Disk	9/14/2018	06:42:20	USER	8.35	1.70	3178.00	389.80	PRESSURE UP TO RUPTURE WET SHOE DISK, DISK RUPTURED AT 3850 PSI.
Event	18	Other	Wet Shoe	9/14/2018	06:43:08	USER	8.34	5.00	2469.00	391.00	PUMP 5 BBL WET SHOE.
Event	19	Check Floats	Check Floats	9/14/2018	06:44:08	USER	8.34	0.00	2448.00	395.60	RELEASED PRESSURE BACK TO THE TRUCK, RECEIVED 3 BBL BACK.
Event	20	End Job	End Job	9/14/2018	06:46:11	COM4	8.30	0.00	17.00	0.00	
Event	21	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	9/14/2018	06:50:00	USER	8.27	0.00	10.00	0.00	DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
Event	22	Rig-Down Completed	Rig-Down Completed	9/14/2018	08:00:00	USER					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/14/2018	08:15:00	USER					DISCUSSED ROUTES HAZARDS AND COMMUNICATION WITH CREW.
Event	24	Crew Leave Location	Crew Leave Location	9/14/2018	08:30:00	USER					THANK YOU FOR USING HALLIBURTON - THOMAS HAAS AND CREW.

3.0 Attachments

3.1 SRC Lincoln 31C-13-M Production Job Chart

