

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

For: Extraction

Rinn Valley East N17-20-8N Production

Job Date: Tuesday, September 25, 2018

Sincerely,

Ryan Keeran

Legal Notice

Disclaimer:

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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 N17-20-8N** 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 41 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 #: 3892442	Quote #:	Sales Order #: 0905154717
Customer: EXTRACTION OIL & GAS		Customer Rep: Danny Herrera	
Well Name: RINN VALLEY EAST		Well #: N17-20-8N	API/UWI #: 05-123-47314-00
Field: WATTENBERG	City (SAP): FIRESTONE	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-17-2N-68W-758FSL-1775FEL			
Contractor:		Rig/Platform Name/Num: Patterson 901	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HX38199		Srvc Supervisor: Adam Covington	

Job

Formation Name	
Formation Depth (MD)	Top Bottom
Form Type	BHST
Job depth MD	17277ft 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	0	9.625	8.921	36		J-55	0	1618	0	0
Casing	0	5.5	4.778	20	BTC	P-110	0	17277	0	0
Open Hole Section			8.5				1618	17290	0	7250

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	5.5			17277	Top Plug	5.5	1	
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	1	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 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		6	

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
2	ElastiCem	ELASTICEM (TM) SYSTEM	2710	sack	13.2	1.57		8	7.53

7.53 Gal

FRESH WATER

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
3	Displacement	Displacement	383	bbl	8.33			10	

Cement Left In Pipe	Amount	Reason	Shoe Joint
Mix Water:	pH 7	Mix Water Chloride: 0 ppm	Mix Water Temperature: 76 °F
Cement Temperature:	86 °F	Plug Displaced by: 8.33 lb/gal	Disp. Temperature: 8.33 °F
Plug Bumped?	Yes	Bump Pressure: 2680 psi	Floats Held? Yes
Cement Returns:	41 bbl	Returns Density: 13.2 lb/gal	Returns Temperature:

Comment TD-17290' 8.5" OH. TP-17277 5.5" 20#. WSS-17272'. SURFACE CASING- 1618' 9 5/8" 36#. TVD- 7250' MUD- 9.8#. GOT 41 BBLs OF CEMENT BACK TO SURFACE. WATER-- TEMP-76 DEGREES, PH-7 CHLORIDES-0 SULFATE-0. PUMPED 383 BBLs OF FRESH WATER DISPLACEMENT.

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>	Comments
Event	1	Call Out	Call Out	9/24/2018	16:00:00	USER				CALLED OUT BY SERVICE COORDINATOR FOR O/L AT 2200
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/24/2018	18:50:00	USER				HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	3	Depart Shop for Location	Depart Shop for Location	9/24/2018	19:00:00	USER				HELD MEETING WITH ALL PERSONNEL IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	4	Arrive At Loc	Arrive At Loc	9/24/2018	20:00:00	USER				UPON ARRIVAL MET WITH COMPANY MAN TO DISCUSS JOB DETAILS AND CALCULATIONS, PERFORMED HAZARD HUNT AND SITE ASSESSMENT.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	9/24/2018	20:20:00	USER				DISCUSSED RIGGING UP HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	9/24/2018	23:45:00	USER	8.42	1.00	0.00	HELD SAFETY MEETING WITH ALL JOB ASSOCIATED PERSONNEL TO DISCUSS JOB PROCEDURE, HAZARDS AND STOP WORK AUTHORITY. Water test-

Event	Order	Description	Location	Date	Time	Code	Rate	Volume	Cost	Notes
										PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Start Job	Start Job	9/25/2018	00:00:38	COM4	8.42	1.00	0.00	FILLED LINES WITH 3 BBLS OF FRESH WATER. 2.5 BPM, 370 PSI. FULL RETURNS.
Event	8	Test Lines	Test Lines	9/25/2018	00:21:46	COM4	8.31	207.00	0.00	PERFORMED A 5000 PSI PRESSURE TEST AFTER PERFORMING A 500 PSI KICKOUT TEST AND A 5TH GEAR STALL. HELD FOR 2 MINUTES.
Event	9	Pump Spacer 1	Pump Spacer 1	9/25/2018	00:26:58	COM4	11.25	462.00	4.00	PUMPED 50 BBLS OF 11.5#, 3.73y, 23.4wr. TUNED SPACER III WITH 25 GALLONS OF DUAL SPACER B, 25 GALLONS OF MUSOL A AND 10 GALLONS OF D-AIR. 4 BPM, 500 PSI. FULL RETURNS.
Event	10	Check Weight	Check Weight	9/25/2018	00:32:59	COM4	11.59	549.00	5.90	USED PRESSURIZED MUD SCALES TO WEIGH UP SPACER. SPACER WEIGHED UP AT 11.5#.
Event	11	Pump Lead Cement	Pump Lead Cement	9/25/2018	00:35:07	COM4	11.93	576.00	6.50	PUMPED 756 BBLS (2710 SKS) OF 13.2#, 1.57y, 7.53wr. PRIMARY CEMENT AT 8 BPM, 980 PSI.
Event	12	Check Weight	Check Weight	9/25/2018	00:37:51	COM4	13.42	811.00	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#.
Event	13	Check Weight	Check Weight	9/25/2018	01:36:02	COM4	13.19	600.00	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP CEMENT. CEMENT WEIGHED UP AT 13.2#.
Event	14	Check Weight	Check Weight	9/25/2018	02:01:25	COM4	13.11	536.00	8.00	USED PRESSURIZED MUD SCALES TO WEIGH UP

										CEMENT. CEMENT WEIGHED UP AT 13.2#.
Event	15	Shutdown	Shutdown	9/25/2018	02:24:51	COM4	13.63	18.00	0.00	SHUTDOWN AT THE END OF CEMENT TO GET READY TO DROP KLX PLUG.
Event	16	Drop Top Plug	Drop Top Plug	9/25/2018	02:26:24	COM4	13.54	16.00	0.00	KLX HAND (RILEY) DROPPED KLX 5.5" LATCH DOWN PLUG. ADAM COVINGTON, CO. MAN AND DRILLER WITNESSED.
Event	17	Pump Displacement	Pump Displacement	9/25/2018	02:26:28	COM4	13.54	16.00	0.00	PUMPED 383 BBLS OF FRESH WATER DISPLACEMENT. 10 BPM, 340 PSI. PRESSURE CAUGHT AT 20 BBLS AWAY, 1200 PSI.
Event	18	Bump Plug	Bump Plug	9/25/2018	03:12:07	COM4	8.43	2836.00	0.00	BUMPED KLX 5.5" LATCH DOWN PLUG AT 2680 PSI, 5 BPM. HELD FOR A MINUTE. CO. MAN AND KLX HAND WITNESSED.
Event	19	Pressure Up Well	Pressure Up Well	9/25/2018	03:13:05	USER	8.44	3112.00	1.60	PRESSURED UP TO SHIFT SLEEVE. SLEEVE SHIFTED AT 3400 PSI, 1.6 BPM. THEN IMMEDIATELY WENT INTO PUMPING A 6 BBL WET SHOE AT 5 BPM, 2435 PSI.
Event	20	Other	Other	9/25/2018	03:15:36	COM4	8.41	2108.00	0.00	BLED PRESSURE BACK TO THE TRUCK. GOT 3 BBLS OF WATER TO THE TRUCK, INDICATING THAT THE FLOATS HELD.
Event	21	End Job	End Job	9/25/2018	03:18:02	COM4	8.34	3.00	0.00	TD-17290' 8.5" OH. TP-17277 5.5" 20#. WSS-17272'. SURFACE CASING-1618' 9 5/8" 36#. TVD-7250' MUD- 9.8#. GOT 41

BBLs OF CEMENT BACK TO SURFACE. WATER-- TEMP- 76 DEGREES, PH-7 CHLORIDES-0 SULFATE-0.

Event	22	Safety Meeting - Pre Rig-Down	Pre-Rig Down Safety Meeting	9/25/2018	03:30:00	USER	DISCUSSED RIGGING DOWN HAZARDS AND PROCEDURE ACCORDING TO HMS.
Event	23	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	9/25/2018	05:20:00	USER	HELD MEETING WITH ALL HES EMPLOYEES IN CONVOY TO DISCUSS DIRECTIONS AND HAZARDS ASSOCIATED WITH DRIVING, ALL FIT TO DRIVE.
Event	24	Depart Location	Depart Location	9/25/2018	05:30:00	USER	PRE JOURNEY MANAGEMENT PRIOR TO DEPARTURE.

3.0 Job Chart

3.1 Job Chart

