

HALLIBURTON

iCem[®] Service

EXTRACTION OIL & GAS-EBUS

State Pronghorn Fed 14-44-30HNB Production

Job Date: Saturday, December 11, 2021

Sincerely,

Meghan Van Zyl

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 **State Pronghorn Fed 14-44-30HNB 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 45 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

Sold To #: 369404		Ship To #: 9058995		Quote #:		Sales Order #: 0907554377				
Customer: EXTRACTION OIL & GAS-EBUS						Customer Rep: Tim Joel				
Well Name: STATE PRONGHORN FEDERAL			Well #: 14-44-30HNB			API/UWI #: 05-123-51325-00				
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD			State: COLORADO			
Legal Description: 30-5N-61W-2200FSL-617FWL										
Contractor: PATTERSON-UTI ENERGY					Rig/Platform Name/Num: PATTERSON 345					
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX41066					Srv Supervisor: Michael Loughran					
Job										
Formation Name										
Formation Depth (MD)		Top				Bottom				
Form Type				BHST						
Job depth MD		11596ft		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	1637	0	1637
Casing		5.5	4.892	17			0	11528	0	6009
Open Hole Section			7.875				1637	11529	1637	6009
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	CITADEL	
Float Shoe	5.5			11528		Bottom Plug	5.5	1	CITADEL	
Float Collar	5.5			11523		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	Tuned Prime	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.74		5		
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	Cap	SBM CEM ELASTICEM™ SYS	525	sack	13	1.66		9	8.29	
0.30 %		SCR-100, 1200 LB BAG - (1126328)								
8.29 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
3	FDP-C1371 SYS	SBM CEM FDP-C1371 SYS	430	sack	13	1.55		9	7.21	
7.21 Gal		FRESH WATER								
5 %		CHANNELFIX, 44 LB BAG - (1107429)								
0.25 %		SCR-100, 1200 LB BAG - (1126328)								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
4	ElastiCem	SBM CEM ELASTICEM™ SYS	430	sack	13.2	1.59		9	7.76	
0.65 %		HR-5, 50 LB SK (100005050)								
7.76 Gal		FRESH WATER								
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal	
5	Displacement	Displacement	255.5	bbl	8.33			8		
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint		
Mix Water:		pH 7	Mix Water Chloride:		LESS 200 ppm		Mix Water Temperature:		50 °F	
Cement Temperature:			Plug Displaced by:		8.33 lb/gal		Disp. Temperature:			
Plug Bumped?		Yes	Bump Pressure:		2800 psi		Floats Held?		Yes	
Cement Returns:			Returns Density:				Returns Temperature:			
Comment 45 BBLS CEMENT TO SURFACE										

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	Dnwhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/10/2021	16:45:00					CREW DISCUSSED ROUTES, HAZARDS, AND COMMUNICATION WITH CREW.
2	Crew Leave Yard	Crew Leave Yard	12/10/2021	17:00:00					CREW LEAVES YARD
3	Call Out	Call Out	12/10/2021	22:00:00					CREW CALLED OUT AT 2200 HRS. REQUESTED ON LOCATION 0400 HRS.
4	Arrive At Loc	Arrive At Loc	12/11/2021	02:30:00					MEET WITH CO. MAN TO DISCUSS JOB. 20# P-110 11528', TD 11529', TVD 6009', F/C 11529', 9.625" 36# 1637', HOLE 7.825", MUD 9.2#, MAX PRESSURE 2800 PSI, WATER 50 DEGREES, PH7, CHLORIDES LESS 200 PPM. RIG CIRCS 10 BPM/960PSI
5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	12/11/2021	02:40:00					HAZARD HUNT. DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH LOCATION, RIG UP, AND WEATHER.
6	Rig-Up Equipment	Rig-Up Equipment	12/11/2021	02:50:00					CREW STAGED EQUIPMENT AND RIGGED UP BULK, IRON AND WATER HOSES TO PERFORM JOB.
7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/11/2021	07:00:00	-0.95	0.00	-10.68	0.00	SAFETY MEETING WITH HALLIBURTON, AND RIG PERSONNEL. CREW COMMUNICATED POTENTIAL SAFETY HAZARDS, AND JOB DETAILS.
8	Start Job	Start Job	12/11/2021	07:26:28	8.34	0.00	-11.39	0.00	BEGIN RECORDING DATA_RIG CIRCS 10 BPM/960 PSI

9	Drop Bottom Plug	Drop Bottom Plug	12/11/2021	07:31:17	8.54	0.00	285.68	3.41	BOTTOM PLUG VERIFIED BY FRANK
10	Test Lines	Test Lines	12/11/2021	07:31:23	8.54	0.00	289.10	3.41	TEST LINES 800 PSI
11	Pump Spacer 1	Pump Spacer 1	12/11/2021	07:38:36	8.38	0.00	173.64	0.00	50 BBLS TUNED PRIME SPACER 11.5 PPG, 3.74 YIELD, 23.63 GAL/SACK, D-AIR ON FLY
12	Pump Cap Cement	Pump Cap Cement	12/11/2021	07:49:53	13.08	0.82	66.47	0.01	525 SACKS SBM CEM ELASTICEM CAP CEMENT, 155.21 BBLS, 13 PPG, 1.66 YIELD, 8.29 GAL/SACK_TOCC=0'
13	Pump Lead Cement	Pump Lead Cement	12/11/2021	08:20:26	13.04	9.23	272.98	0.15	430 SACKS FDP-C1371 SYS SBM CEM LEAD CEMENT. 118.70 BBLS 13 PPG, 1.55 YIELD, 7.21 GAL/SACK_ESTIMATED TOLC=2416'
14	Pump Tail Cement	Pump Tail Cement	12/11/2021	08:45:25	13.27	8.40	531.27	0.14	575 SACKS SBM CEM ELASTICEM TAIL CEMENT, 162.83 BBLS, 13.2 PPG, 1.59 YIELD, 7.76 GAL/SACK. OPERATOR SENT TAIL EVENT APPROX 45 BBLS LATE_ESTIMATED TOTC=6258'
15	Shutdown	Shutdown	12/11/2021	09:04:31	15.68	0.00	141.10	149.91	SHUTDOWN
16	Clean Lines	Clean Lines	12/11/2021	09:06:06	14.05	0.00	41.18	0.00	CLEAN PUMPS AND LINES.
17	Shutdown	Shutdown	12/11/2021	09:10:37	7.78	0.00	66.58	18.58	SHUTDOWN
18	Drop Top Plug	Drop Top Plug	12/11/2021	09:11:59	7.45	0.00	29.67	18.58	TOP PLUG VERIFIED BY FRANK
19	Pump Displacement	Pump Displacement	12/11/2021	09:12:01	7.45	0.00	29.90	0.00	255.5 BBLS FRESH WATER DISPLACEMENT. 1ST 10 BBLS HAS 5 GALLONS MICRO MATRIX RETARDER
20	Bump Plug	Bump Plug	12/11/2021	09:50:44	8.24	4.05	2299.60	271.45	FCP 2350 PSI/4 BPM_BUMP 2800 PSI_45 BBLS GOOD CEMENT TO SURFACE
21	Check Floats	Check Floats	12/11/2021	09:53:06	8.29	0.00	2894.17	272.17	RELEASE PRESSURE_FLOATS HOLD_3 BBLS BACK TO PUMP TRUCK

22	End Job	End Job	12/11/2021	09:54:20	8.09	0.00	51.89	0.00	STOP RECORDING DATA_FLUSH RIGS STACK WITH MINIMUM 30 BBLS WATER W/50 LBS SUGAR
23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	12/11/2021	10:00:00					DISCUSSED POSSIBLE HAZARDS ASSOCIATED WITH WEATHER, LOCATION AND RIGGING DOWN IRON AND HOSES.
24	Rig-Down Equipment	Rig-Down Equipment	12/11/2021	10:10:00					RIG DOWN BULK AND MIXING EQUIPMENT
25	Rig-Down Completed	Rig-Down Completed	12/11/2021	11:00:00					ALL HALLIBURTON ITEMS WERE STOWED FOR TRAVEL, AND LOCATION WAS CLEAN.
26	Crew Leave Location	Crew Leave Location	12/11/2021	11:30:00					THANK YOU FOR USING HALLIBURTON – MIKE LOUGHRAN AND CREW.

3.0 Attachments

3.1 Real Time iCem Job Chart

