

HALLIBURTON

iCem[®] Service

BONANZA CREEK ENERGY-EBUS

State Antelope W-C-3HN Production

Job Date: Friday, November 04, 2022

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 Antelope W-C-3HN** 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 42 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 #: 324725		Ship To #: 324725		Quote #:		Sales Order #: 0908220525					
Customer: BONANZA CREEK ENERGY-EBUS				Customer Rep: Josh Johnson							
Well Name: State Antelope			Well #: W-C-3HN			API/UWI #: 05-123-51726					
Field:		City (SAP): GILL		County/Parish: WELD			State: COLORADO				
Legal Description:											
Contractor: PATTERSON-UTI ENERGY					Rig/Platform Name/Num: PATTERSON 345						
Job BOM: 7523 7523											
Well Type: OIL & GAS WELL											
Sales Person: HALAMERICA\HX41066					Srvc Supervisor: Steven Markovich						
Job											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type											
BHST											
Job depth MD		11347ft			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	1646	0	0	
Casing	0	5.5	4.778	20			0	11347	0	0	
Open Hole Section			8.5				1646	11351	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			11347		Top Plug	5.5		HES		
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		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 ft³/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Tuned Prime Cement Spacer	TUNED PRIME CEMENT SPACER SYS			50	bbl	11.5	3.74	23.65	6	1775

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	ElastiCem	SBM CEM ELASTICEM™ SYS	555	sack	13	1.66	8.3	8	4606
3	IsoBond(tm)	SBM CEM FDP-C1371 SYS	550	sack	13	1.55	7.14	8	3927
4	ElastiCem	SBM CEM ELASTICEM™ SYS	735	sack	13.2	1.59	7.78	8	5718
5	MMCR Displacement	MMCR Displacement	252	bbl	8.33			8.99	10584
Comment 634bbbls mix water total used.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Check Floats	11/4/2022	09:00:00					Job called out with an on location time of 1500.
2	Pre-Convoy Safety Meeting	11/4/2022	13:00:00					JSA with HES crew on driving safety and route to rig.
3	Arrive at Location from Service Center	11/4/2022	15:00:00					Arrived on location, rig running casing. Approx 1600' to run.
4	Pre-Rig Up Safety Meeting	11/4/2022	15:10:00					JSA and hazard hunt with HES crew.
5	Rig-Up Equipment	11/4/2022	15:30:00					Rig up HES lines and equipment.
6	Pre-Job Safety Meeting	11/4/2022	17:15:00	7.98	0.00	4.59	4.30	JSA with HES and rig crew on job safety and procedure.
7	Check Weight	11/4/2022	17:32:06	7.97	0.00	0.13	0.00	Weight verified by pressurized scales.
8	Start Job	11/4/2022	17:32:43	7.97	0.00	-0.13	0.00	TD 11351' TP 11347' FC 11342' 5 1/2" 20# Production Casing, 9 5/8" 36# Surface Casing set at 1646', 8.5" Open Hole, TVD 6275', Mud# 9.2ppg, Estimated Top of Tail Cement 6248', Estimated Top of Lead Cement 2715'.
9	Drop Bottom Plug	11/4/2022	17:42:29	7.96	0.00	-0.49	0.00	Plug loaded in HES head. Plug loaded and dropped in front of company rep.
10	Test Lines	11/4/2022	17:47:33	8.31	0.00	109.29	4.46	Set kick outs to 500psi and check low pressure kick outs. Then bring pressure up to 6500psi and hold.
11	Pump Spacer 1	11/4/2022	17:52:58	8.23	0.00	77.52	0.00	Pump 50bbls of 11.5ppg 3.74yield Tuned Prime Spacer. Pumped at 6.5bbl/min 500psi.

12	Check Weight	11/4/2022	18:00:23	11.68	4.03	195.93	31.94	Weight verified by pressurized scales.
13	Check Weight	11/4/2022	18:06:18	14.38	0.00	-0.53	5.16	Weight verified by pressurized scales.
14	Pump Cap Cement	11/4/2022	18:07:06	14.39	0.00	-0.85	5.16	Pump 164.08bbls (555sks) of 13ppg 1.66yield Cap Cement. Pumped at 9bbl/min 575psi.
15	Check Weight	11/4/2022	18:11:46	13.08	7.99	524.28	36.39	Weight verified by pressurized scales.
16	Check Weight	11/4/2022	18:13:22	13.17	8.52	644.80	49.92	Weight verified by pressurized scales.
17	Check Weight	11/4/2022	18:14:22	12.92	8.51	577.42	58.43	Weight verified by pressurized scales.
18	Pump Lead Cement	11/4/2022	18:26:34	12.86	4.93	231.97	0.08	Pump 151.8bbls (550sks) of 13ppg 1.55yield Lead Cement. Pumped at 9bbl/min 700psi.
19	Check Weight	11/4/2022	18:29:32	12.78	8.94	906.27	25.44	Weight verified by pressurized scales.
20	Check Weight	11/4/2022	18:30:44	12.96	9.07	886.51	36.19	Weight verified by pressurized scales.
21	Pump Tail Cement	11/4/2022	18:44:40	12.81	4.62	282.84	0.08	Pump 208.1bbls (735sks) of 13.2ppg 1.59yield Tail Cement. Pumped at 9bbl/min 830psi.
22	Check Weight	11/4/2022	18:45:57	13.17	8.89	728.09	9.83	Weight verified by pressurized scales.
23	Check Weight	11/4/2022	18:46:42	13.38	8.85	709.86	16.64	Weight verified by pressurized scales.
24	Check Weight	11/4/2022	18:48:08	13.26	8.91	680.18	29.37	Weight verified by pressurized scales.
25	Check Weight	11/4/2022	18:49:14	13.26	8.89	611.86	39.14	Weight verified by pressurized scales.
26	Check Weight	11/4/2022	18:57:28	13.28	8.86	662.01	112.25	Weight verified by pressurized scales.
27	Check Weight	11/4/2022	18:58:28	13.29	8.87	666.30	120.98	Weight verified by pressurized scales.
28	Shutdown	11/4/2022	19:12:54	13.12	0.00	110.59	228.02	Shutdown and clean pumps and lines.
29	Drop Top Plug	11/4/2022	19:23:28	7.71	0.00	-12.20	14.91	Plug loaded into HES head. Plug loaded and dropped in front of company rep.

30	Pump Displacement	11/4/2022	19:23:30	7.71	0.00	-11.81	14.91	Pump 251.8bbls of H2O. First 20bbls with MMCR. Pumped at 10bbl/min slowed rate with pressure increase. Spacer to surface at 160bbls away, Cement to surface at 210bbls away bringing 42bbls of cement to surface.
31	Bump Plug	11/4/2022	19:52:55	8.36	3.96	2190.90	255.30	Bumped plug at calculated displacement. Final lift pressure was 2190psi. Took pressure 500psi over and held.
32	Check Floats	11/4/2022	19:54:59	8.43	0.00	3089.89	256.00	Pressure was 3089psi when checking floats. After 2 3/4bbls back floats held.
33	End Job	11/4/2022	19:56:12	8.26	0.00	-14.91	0.00	Thank you, Steven Markovich and crew.
34	Safety Meeting	11/4/2022	20:15:00					Pre-rig down JSA
35	Rig-Down Equipment	11/4/2022	20:30:00					Rig down HES lines and equipment.
36	Crew Leave Location	11/4/2022	21:45:00					

3.0 Attachments

3.1 Real Time iCem Job Chart

