

HALLIBURTON

iCem[®] Service

BISON OIL & GAS II LLC-EBUS

Grotheer 5-61 11B-2-5 Production

Job Date: Wednesday, August 17, 2022

Sincerely,

Meghan Van Zyl

Legal Notice

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Table of Contents

Cementing Job Summary 4

 Executive Summary 4

Real-Time Job Summary 7

 Job Event Log..... 7

Attachments..... 10

 Real Time iCem Job Chart 10

1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Grotheer 5-61 11B-2-5** 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 51 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 #: 0908052714				
Customer: BISON OIL & GAS II LLC-EBUS				Customer Rep: JOSH KLIESEN						
Well Name: Grotheer 5-61			Well #: 11B-2-5			API/UWI #: 05-123-51439				
Field: WATTENBERG		City (SAP): Kersey		County/Parish: WELD			State: COLORADO			
Legal Description:										
Contractor: PATTERSON-UTI ENERGY				Rig/Platform Name/Num: PATTERSON 345						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB47954				Srvc Supervisor: Bradley Hinkle						
Job										
Formation Name										
Formation Depth (MD)		Top				Bottom				
Form Type				BHST						
Job depth MD		16377ft		Job Depth TVD		6212ft				
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	1960	0	1960
Casing		5.5	4.892	17			0	16377	0	6212
Open Hole Section			8.5				1960	16381	1960	6212
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	1	Citadel	16377		Bottom Plug	5.5	1	Citadel	
Float Collar	5.5	1	Citadel	16372		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 ft³/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Spacer	Tuned Prime Spacer	50	bbl	11.5	3.74	23.65		1775	
Fluid Data										
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 Cement	ElastiCem	455	sack	13	1.66	8.3	8	3776	

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	Lead Cement	IsoBond	595	sack	13	1.55	7.22	8	4295
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
4	Tail Cement	ElastiCem	1530	sack	13.2	1.59	7.78	8	11903
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
5	Displacement	Fresh Water	364	bbl	8.33	0	0	10	15288
Comment 882bbbls mix water total used.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Pump A Pressure (psi)	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Cmb Stg Total (bbl)	Comments
1	Call Out	8/16/2022	09:00:00					Crew called for an on location of 2000. Crew was Bradley Hinkle, Cody Stalcar, Daniel Sandoval and Jason Hamilton.
2	Depart Shop for Location	8/16/2022	17:30:00					Pre-journey safety meeting. Discuss directions, traffic and wildlife.
3	Arrive at Location from Service Center	8/16/2022	19:00:00					Arrive on location, sign-in and perform a site assessment.
4	Other	8/16/2022	19:10:00					TD: 16381 TP: 16377 FC: 16372 - 5.5" 20# casing inside an 8.5" OH. TVD: 6212. 9.625" 36# surface casing set at 1960. Mud weight: 9.3 ppg.
5	Safety Meeting - Pre Job	8/16/2022	23:55:00	0.06	8.70	0.00	0.00	Pre-job safety meeting with all personnel on location. Discuss safety protocols and job procedure.
6	Start Job	8/17/2022	00:18:12	6.13	0.66	0.00	0.00	Fill lines with 3 bbls fresh water.
7	Drop Bottom Plug	8/17/2022	00:18:45	245.76	8.58	3.19	1.13	Drop top plug. Witnessed by customer.
8	Test Lines	8/17/2022	00:19:51	132.22	8.32	0.00	3.38	Pressure test lines to 4500 psi with a 500 psi electronic kick-out test.
9	Pump Spacer 1	8/17/2022	00:26:31	8.95	8.23	0.00	0.00	Pump 50 bbls Tuned Prime Spacer mixed at 11.5 ppg. Density verified by pressurized scales. Total mix water at 1,775 gallons.

10	Pump Cap Cement	8/17/2022	00:35:56	372.99	12.22	7.65	0.13	Pump 134 bbls (455 sacks, 1.66 yield, 8.3 gal/sk) ElastiCem mixed at 13 ppg. Density verified by pressurized scales. Total mix water at 3,776 gallons.
11	Check Weight	8/17/2022	00:39:43	199.65	13.03	5.38	25.17	Cement weighed at 13 ppg.
12	Pump Lead Cement	8/17/2022	00:52:09		12.96			Pump 165 bbls (595 sacks, 1.55 yield, 7.22 gal/sk) IsoBond mixed at 13 ppg. Density verified by pressurized scales. Total mix water at 4,295 gallons.
13	Check Weight	8/17/2022	00:56:49	741.72	13.34	9.23	43.22	Cement weighed at 13 ppg.
14	Pump Tail Cement	8/17/2022	01:10:32	662.21	12.99	8.59	0.14	Pump 433 bbls (1530 sacks, 1.56 yield, 7.78 gal/sk) ElastiCem mixed at 13.2 ppg. Density verified by pressurized scales. Total mix water at 11,903 gallons.
15	Check Weight	8/17/2022	01:22:18	532.01	13.23	9.30	101.95	Cement weighed at 13.2 ppg.
16	Shutdown	8/17/2022	02:02:41	135.54	13.44	0.00	445.68	Shutdown and line up wash-up. Wash pumps and lines until clean.
17	Pump Displacement	8/17/2022	02:13:09	4.04	7.92	0.00	0.00	Pump 364 bbls (first 20 with MMCR added) fresh water. Good returns throughout. 50 bbls spacer and 51 bbls of cement to surface. Estimated top of lead cement at 1752 feet. Estimated top of tail cement at 5769 feet. Total water used 15,288 gallons.
18	Bump Plug	8/17/2022	02:53:37	2771.24	8.36	0.00	366.94	Final circulating pressure at 2287 psi with a bump at 2785 psi. Hold and pressure climbed to 2910 psi before releasing.
19	Check Floats	8/17/2022	02:56:00	2850.67	8.35	0.00	366.94	Floats held. 3.5 bbls back.
20	End Job	8/17/2022	02:57:18	-2.22	8.31	0.00	366.94	
21	Pre-Rig Down Safety Meeting	8/17/2022	03:00:00					Pre-rig down safety meeting.
22	Depart Location for Service Center or Other Site	8/17/2022	04:00:00					Pre-journey safety meeting. Discuss fit for duty status, nighttime driving and wildlife.

3.0 Attachments

3.1 Real Time iCem Job Chart

