

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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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 ft ³ /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 #	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	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/mi n	Total Mix Fluid Gal
3	Lead Cement	IsoBond	595	sack	13	1.55	7.22	8	4295
4	Tail Cement	ElastiCem	1530	sack	13.2	1.59	7.78	8	11903
5	Displacement	Fresh Water	364	bbl	8.33	0	0	10	15288
Comment 882bbls 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

