

HALLIBURTON

iCem[®] Service

BISON OIL & GAS II LLC-EBUS

Ft. Lupton District, CO

Grotheer 5-61 11B-14-23-1 Production

Job Date: Saturday, August 20, 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-14-23-1** 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 #: 0908060798
Customer: BISON OIL & GAS II LLC-EBUS		Customer Rep: Frank Kenny/Josh Kliesen	
Well Name: Grotheer 5-61		Well #: 11B-14-23-1	API/UWI #: 05-123-51436
Field:	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: OIL & GAS WELL			
Sales Person: HALAMERICA\HB47954		Srvc Supervisor: Michael Loughran	

Job

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	16443ft	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	8.835	36			0	1963	0	1963
Casing		5.5	4.892	17			0	16435	0	6199
Open Hole Section			8.5				1963	16443	1963	6199

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	16435	Bottom Plug	5.5	1	CITADEL
Float Collar	5.5	1	CITADEL	16430	SSR plug set	5.5		
Insert Float	5.5				Plug Container	5.5		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 ft ³ /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	23.65	5	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 Cap Cement	SBM CEM ELASTICEM™ SYS	455	sack	13	1.66	8.3	8	3777
3	IsoBond Lead Cement	SBM CEM FDP-C1371 SYS	615	sack	13	1.55	7.22	8	4440
4	ElastiCem Tail Cement	SBM CEM ELASTICEM™ SYS	1525	sack	13.2	1.59	7.78	8	11864
5	MMCR Displacement	MMCR Displacement	363	bbl	8.33			9.33	15246
Comment 883bbbls mix water total used.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Date	Time	Dwnhole Density (ppg)	Cmb Stg Total (bbl)	Pump B Pressure (psi)	Cmb Pump Rate (bbl/min)	Comments
1	Call Out	8/19/2022	18:00:00					CALLOUT 1800 HRS ON 8/19/2022. REQUESTED ON LOCATION 0300 HRS 8/20/2022
2	Pre-Convoy Safety Meeting	8/19/2022	22:00:00					DISCUSS ROUTE AND JSA SAFE DRIVING
3	Crew Leave Yard	8/19/2022	22:30:00					CREW LEAVES YARD
4	Arrive At Loc	8/20/2022	02:30:00					MEET WITH CUSTOMER, TD 16443', 5.5" 20# P-110 CASING 16435', F/C 16430', 8.5" HOLE, SURFACE CASING 36# J-55 1963', TVD 6199', OBM 9.1 PPG, WATER TEST 74 DEGREES, PH 7, CHLORIDES LESS 200 PPM, MAX PRESSURE 3200 PSI
5	Pre-Rig Up Safety Meeting	8/20/2022	04:30:00					JSA SAFE RIG UP
6	Rig-Up Equipment	8/20/2022	04:40:00					RIG-UP ALL HES EQUIPMENT AND IRON TO BUFFER ZONE
7	Pre-Job Safety Meeting	8/20/2022	06:00:00	8.36	7.70	-0.79	0.00	DISCUSS JOB PROCEDURE. DISCUSS HAZARDS OF JOB AND HES EQUIPMENT. RIG CIRCULATES BOTTOMS UP 11 BPM/900 PSI
8	Start Job	8/20/2022	06:19:43	8.05	0.00	-2.67	0.00	BEGIN RECORDING DATA
9	Drop Bottom Plug	8/20/2022	06:19:50	8.13	0.00	-3.25	0.00	CITADEL BOTTOM PLUG BY FRANK AND JOSH
10	Pump Spacer 1	8/20/2022	06:34:24	8.45	0.00	14.04	0.00	50 BBLs TUNED PRIME SPACER. 11.5 PPG, 3.74 YIELD, 23.65 GAL/SACK. MIX D-AIR ON FLY
11	Other	8/20/2022	06:37:38	11.75	3.67	300.19	2.79	COMPUTER STOPPED RECORDING DATA

12	Pump Cap Cement	8/20/2022	06:45:00					455 SACKS ELASTICEM CAP CEMENT. 134.52 BBLS. 1.66 YIELD, 8.3 GAL/SACK. TOCC=0', 51 BBLS. CEMENT TO SURFACE
13	Resume	8/20/2022	06:57:20	12.87	66.54	474.82	9.17	COMPUTER RESUMES RECORDING DATA
14	Pump Lead Cement	8/20/2022	07:05:10	12.75	0.08	539.38	9.11	615 SACKS ISO BOND LEAD CEMENT. 169.77 BBLS. 13 PPG, 1.55 YIELD, 7.22 GAL/SACK. TOLC=1732' PRE-JOB CALCULATIONS
15	Pump Tail Cement	8/20/2022	07:23:41	13.04	0.08	786.71	9.24	1525 SACKS ELASTICEM TAIL CEMENT. 431.85 BBLS. 13.2 PPG, 1.59 YIELD, 7.78 GAL/SACK. TOTC=5853' PRE-JOB CALCULATIONS
16	Shutdown	8/20/2022	08:20:28	12.93	448.16	47.66	0.00	SHUTDOWN
17	Clean Lines	8/20/2022	08:22:26	12.97	0.00	7.75	0.00	CLEAN PUMPS AND LINES W/19 BBLS FRESH WATER
18	Shutdown	8/20/2022	08:28:08	7.92	18.68	90.44	3.65	SHUTDOWN
19	Drop Top Plug	8/20/2022	08:29:19	7.92	18.79	4.54	0.00	CITADEL TOP PLUG BY FRANK
20	Pump Displacement	8/20/2022	08:29:24	7.93	0.00	4.08	0.00	363.1 BBLS FRESH WATER DISPLACEMENT. 1ST 40 BBLS HAS 20 GALLONS MICRO MATRIX CEMENT RETARDER.
21	Bump Plug	8/20/2022	09:09:40	8.16	361.09	2863.43	0.00	FCP 2200 PSI/4 BPM. BUMP PRESSURE 2900 PSI. 51 BBLS CEMENT TO SURFACE
22	Check Floats	8/20/2022	09:11:16	8.16	361.09	2957.66	0.00	FLOATS HOLD. 4 BBLS BACK
23	End Job	8/20/2022	09:12:45	8.00	361.09	20.98	0.00	STOP RECORDING DATA. FLUSH RIG STACK 30 BBLS WATER W/100 LBS SUGAR. USED 937 BBLS FRESH WATER FOR COMPLETE JOB
24	Pre-Rig Down Safety Meeting	8/20/2022	09:30:00					JSA SAFE RIG-DOWN
25	Rig-Down Equipment	8/20/2022	09:35:00					RIG-DOWN ALL HES EQUIPMENT
26	Rig-Down Completed	8/20/2022	10:15:00					RIG DOWN COMPLETED

27 Crew Leave Location 8/20/2022 11:00:00

CREW LEAVES LOCATION

3.0 Attachments

3.1 Real Time iCem Job Chart

