

# HALLIBURTON

iCem® Service

## **BISON OIL & GAS II LLC-EBUS**

**Grotheer 5-61 11A-2-3 Production**

Job Date: Sunday, August 14, 2022

Sincerely,

**Meghan Van Zyl**

## Legal Notice

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### Disclaimer:

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## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Grotheer 5-61 11A-2-3** 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 54 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**

<b>Sold To #:</b> 324725		<b>Ship To #:</b> 9051840		<b>Quote #:</b>		<b>Sales Order #:</b> 0908049056				
<b>Customer:</b> BISON OIL & GAS II LLC-EBUS					<b>Customer Rep:</b> Ryan Buford					
<b>Well Name:</b> GROTHEER 5-61			<b>Well #:</b> 11A-2-3			<b>API/UWI #:</b> 05-123-51228-00				
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> KERSEY		<b>County/Parish:</b> WELD			<b>State:</b> COLORADO			
<b>Legal Description:</b> SW SW-11-5N-61W-460FSL-1181FWL										
<b>Contractor:</b> ENSIGN DRLG					<b>Rig/Platform Name/Num:</b> ENSIGN 140					
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HX41066					<b>Srv Supervisor:</b> Brandon Parker					
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>				<b>Bottom</b>				
<b>Form Type</b>						<b>BHST</b>				
<b>Job depth MD</b>		16358ft		<b>Job Depth TVD</b>		6235				
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>		4				
<b>Perforation Depth (MD)</b>		<b>From</b>				<b>To</b>				
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing		9.625	8.921	36			0	1975	0	1975
Casing		5.5	4.892	17			0	16346	0	6235
Open Hole Section			8.5				1975	16358	1975	6235
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	5.5					Top Plug	5.5	1	citadel	
Float Shoe	5.5	1	citadel	16348		Bottom Plug	5.5	1	HES	
Float Collar	5.5	1	citadel	16343		SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5	1	HES	
Stage Tool	5.5					Centralizers	5.5	233		
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	ElastiCem	SBM CEM ELASTICEM™ SYS	565	sack	13	1.66	8.3	9	4689
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
3	IsoBond	SBM CEM FDP-C1371 SYS	540	sack	13	1.55	7.22	9	3898
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
4	ElastiCem	SBM CEM ELASTICEM™ SYS	1480	sack	13.2	1.59	7.76	9	11484
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
5	MMCR Displacement	MMCR Displacement	20	bbl	8.33			10	840
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
6	Displacement	Displacement	343	bbl	8.33			9	14406
<b>Comment</b> 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 Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Call Out	8/13/2022	16:00:00					crew called out to 5.5" production casing for Civitas on location time 13:30
2	Pre-Convoy Safety Meeting	8/13/2022	17:00:00					meeting with crew to discuss safety/hazards associated with traveling
3	Depart from Service Center or Other Site	8/13/2022	18:00:00					
4	Arrive at Location from Service Center	8/13/2022	22:00:00					met with Mr. Jose with Civitas and went over job numbers, water sources and iron placement
5	Assessment Of Location Safety Meeting	8/13/2022	22:01:00					hazard hunt, check location, bulk and water volumes, temp 83, ph 6, chlo 0, td 16358, tp 16346, fc 16343, sj 5, oh 8.5", sp 1975, 9.625 36# surface casing, 5.5" 20# production casing, mw, 10, fe Citadel, top and bottom plug Citadel, cnt 233, kop 5582, eob 6554, tvd 6235
6	Safety Meeting - Pre Rig-Up	8/13/2022	22:55:00					meeting with hes personnel to discuss safety/hazards associated with rigging up
7	Rig-Up Equipment	8/13/2022	23:00:00					rig in iron to red zone, water and bulk
8	General Standby Start	8/13/2022	23:45:00					hes went into standby mode while rig ran casing
9	Other	8/14/2022	00:45:00	0.06	0.00	-16.86	0.00	
10	Casing on Bottom	8/14/2022	01:00:00	0.06	0.00	-16.88	0.00	rig landed casing, TRK casing crew on location

11	Other	8/14/2022	01:03:00	0.06	0.00	-17.08	0.00	stabbed hes plug container
12	Circulate Well	8/14/2022	01:11:00	0.06	0.00	-17.35	0.00	rig circulated at 12.4bpm, 1153psi and pumped 15000strokes
13	Start Job	8/14/2022	02:41:17	0.06	0.00	-17.46	0.00	prime pumping unit
14	Break Circulation	8/14/2022	02:59:00	8.48	0.00	-16.23	13.92	ko rig pumps, run hose to hes stand pipe
15	Pre-Job Safety Meeting	8/14/2022	03:00:00	8.48	0.00	-16.83	13.92	meeting with all personnel on location to discuss safety/hazards associated with job, also covered job procedures. all personnel signed jsa
16	Start Job	8/14/2022	03:08:23	8.70	0.00	-14.94	0.00	start recording real time data
17	Drop Bottom Plug	8/14/2022	03:09:09	8.49	0.00	8.44	0.00	plug pre loaded prior to filling lines with FW, loaded by Mr. Ryan Burfrod and witnessed by HES supervisor. bottom plug departed plug container
18	Pump Water - End	8/14/2022	03:09:20	8.52	0.00	10.28	0.00	pumped 3bbls of fw at 3bpm and top psi was 312
19	Test Lines	8/14/2022	03:11:19	8.31	0.00	102.12	0.00	test eko ko at 900, 5th gear stall 1860 and high test 5586
20	Pump Spacer 1	8/14/2022	03:24:00					pumped 50bbls of tuned prime spacer, 11.5ppg, yield 3.74, 23.65 gal/sk pumped at 6bpm and average psi was 380. weight confirmed using pressurized mud scales. calculated all 50bbls of spacer to surface well
21	Pump Cap Cement	8/14/2022	03:32:00	11.51	6.10	397.20	49.09	pumped 167bbls of cap cmt, 565sks, 13.0ppg, yield 1.66, 8.30 gal/sk pumped at 9bpm and average psi was 600. weight confirmed using pressurized mud scales. calculated 451.43ft below surface shoe(18.4), calculated 52bbls of cap to surface well. MW 4690, 70BC 6:09
22	Other	8/14/2022	03:38:06	13.15	9.11	424.08	42.69	shutdown lost prime on 4x4 centrifigaul pump
23	Check Weight	8/14/2022	03:50:21	12.91	9.43	435.66	129.65	



24	Pump Lead Cement	8/14/2022	03:55:07	12.88	7.76	326.48	173.32	pumped 149bbls of lead cmt(latex), 540 sks, 13ppg, 1.55 yield, 7.22 gal/sk pumped at 9bpm and average psi was 660. weight confirmed using pressurized mud scales. calculated top of lead cmt at 2426.43ft. MW 3899, 70BC 6:11hrs
25	Pump Tail Cement	8/14/2022	04:11:55	12.96	8.39	455.91	0.35	pumped 419.1bbls of tail cmt, 1480sks, 13.2ppg, yield 1.59, 7.78gal/sk pumped at 9bpm and average psi 700. weight confirmed using pressurized mud scales. calculated top of tail cmt at 6078.39ft. MW 11514, 70BC 4:33hrs
26	Check Weight	8/14/2022	04:14:39	13.30	9.29	466.67	23.65	
27	Shutdown	8/14/2022	04:58:40	13.07	8.71	992.17	429.81	done pumping cmt
28	Other	8/14/2022	05:03:47	13.23	1.60	-5.95	0.03	clean lines and pumps to 4sided tank below shakers. pumped 22bbls . load top plug
29	Shutdown	8/14/2022	05:10:37	7.98	0.27	163.58	21.49	
30	Drop Top Plug	8/14/2022	05:13:36	7.93	0.00	3.10	0.00	top plug preloaded while hes was cleaning lines and pumps. loaded by Mr. Ryan Buford, witnessed by HES supervisor. (plug left plug container)
31	Pump Displacement	8/14/2022	05:13:50	7.91	0.00	18.70	0.00	FC set at 16343 X .0222(5.5"20# factor)= 362.8bbls. 10 gallons MMCR first 20bbls
32	Other	8/14/2022	05:17:02	8.40	0.99	414.52	20.17	replace cap seal on hes plug container. 20bbls away
33	Resume Pumping	8/14/2022	05:19:15	8.33	1.59	-3.81	20.19	back online with displacement
34	Other	8/14/2022	05:54:36	8.38	4.97	2566.54	349.89	slow rate from 9bpm 2900 psi to 4bpm 2225psi
35	Bump Plug	8/14/2022	05:58:22	8.37	4.02	2656.77	365.28	plug bumped at calculated 362.8bbls, psi 2200ko pumps at 2800. psi climbed to 2970
36	Other	8/14/2022	06:01:16	8.38	0.00	2990.15	0.00	Citadel floats held 4bbls back to the pump trk

37	End Job	8/14/2022	06:02:54	8.20	0.00	-19.66	0.00	job complete
38	Other	8/14/2022	06:06:00	8.19	0.00	-17.95	0.00	pumped 30bbls of sugar water through the rigs stack (100lbs)
39	Shutdown	8/14/2022	06:12:00	1.76	5.95	13.09	29.02	
40	Spacer Returns to Surface	8/14/2022	06:13:00	0.47	5.95	0.38	34.86	50bbls tuned prime to surface
41	Cement Returns to Surface	8/14/2022	06:14:00	1.40	5.93	-3.93	40.90	54bbls of cap cmt to surface
42	Pre-Rig Down Safety Meeting	8/14/2022	06:15:00	1.29	5.96	52.40	46.84	meeting to discuss safety/hazards associated with rigging down
43	Rig-Down Equipment	8/14/2022	06:20:00					
44	Depart Location for Service Center or Other Site	8/14/2022	07:45:00					
45	Other	8/14/2022	07:46:00					Thank You for Choosing Halliburton Cement. Parker and Crew. (970)397-4969

3.0 Attachments

3.1 Real Time iCem Job Chart

