

HALLIBURTON

iCem® Service

BISON OIL & GAS II LLC-EBUS

Ross 8-60 18-7-6 Production

Job Date: Sunday, May 29, 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 **Ross 8-60 18-7-6** 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 48 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 #: 9121175		Quote #:		Sales Order #: 0907891627				
Customer: BISON OIL & GAS II-EBUS				Customer Rep: Kris Peterson						
Well Name: ROSS 8-60			Well #: 18-7-6			API/UWI #: 05-123-51445				
Field:		City (SAP): BRIGGSDALE		County/Parish: Weld			State: COLORADO			
Legal Description:										
Contractor: ENSIGN DRLG				Rig/Platform Name/Num: ENSIGN 140						
Job BOM: 7523 7523										
Well Type: OIL										
Sales Person: HALAMERICA\HB47954				Srvc Supervisor: Bradley Hinkle						
Job										
Formation Name										
Formation Depth (MD)		Top				Bottom				
Form Type				BHST						
Job depth MD		15655ft		Job Depth TVD		6487ft				
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	1970	0	1970
Casing		5.5	4.892	17			0	15655	0	6487
Open Hole Section			8.5				1970	15655	1970	6487
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	15655		Bottom Plug	5.5	1	Citadel	
Float Collar	5.5	1	Citadel	15650		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	6	1775	
Fluid #										
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	565	sack	13	1.66	8.3	8	4690	

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	Lead Cement	IsoBond	555	sack	13	1.55	7.22	8	4007
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	Tail Cement	ElastiCem	1355	sack	13.2	1.59	7.76	8	10515
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	Displacement	Fresh Water	363	bbl	8.33	0	0	9.25	15246
Cement Left In Pipe		Amount	2 ft		Reason			Shoe Joint	
Mix Water:		pH 6.5	Mix Water Chloride:		0 ppm		Mix Water Temperature:		59 °F
Plug Bumped?		Yes	Bump Pressure:		3110 psi		Floats Held?		Yes
Cement Returns:		48 bbl							
Comment Approximately 48 bbls cement to surface. Estimated top of lead cement at 2589 feet. Estimated top of tail cement at 6339 feet. 862bbls mix water total used.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	Pump A Pressure (psi)	Dnwhole Density (ppg)	Cmb Pump Rate (bbl/min)	Cmb Stg Total (bbl)	Comments
1	Call Out	Call Out	5/28/2022	17:00:00					Crew called for an on location of 0400. Crew was Bradley Hinkle, Cody Haley and Jacob Chavez.
2	Arrive at Location from Service Center	Arrive at Location from Service Center	5/29/2022	03:00:00					Arrive at location, check-in and perform a site assessment and pre-rig up safety meeting.
3	Other	Job Numbers	5/29/2022	03:05:00					TD: 15655 TP: 15655 FC: 15650 - 5.5" 17# casing inside an 8.5" OH. TVD: 6487. 9.625" 36# surface casing set at 1970. Mud weight: 9.5 ppg.
4	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/29/2022	09:00:00	6.37	8.54	0.00	0.00	Pre-job safety meeting with all personnel on location. Discussed safety protocols and job procedure.
5	Start Job	Start Job	5/29/2022	09:29:02	7.43	8.34	0.00	0.00	Fill lines with 3 bbls of water. 3 bpm at 150 psi.
6	Drop Bottom Plug	Drop Bottom Plug	5/29/2022	09:29:51	23.76	8.39	2.68	0.64	Bottom plug preloaded into plug container. Witnessed by customer.
7	Test Lines	Test Lines	5/29/2022	09:31:54	23.77	8.33	0.00	3.03	Pressure test lines to 4600 psi with a 500 psi electronic kickout test.
8	Pump Spacer 1	Pump Spacer 1	5/29/2022	09:35:58	21.33	8.37	0.00	0.00	Pump 50 bbls Tuned Prime Spacer mixed at 11.5 ppg. Density verified by pressurized scales. Total mix water at 1775 gallons.

9	Pump Cap Cement	Pump Cap Cement	5/29/2022	09:47:20	121.08	11.25	5.28	38.90	Pump 167 bbls (565 sacks, 1.66 yield, 8.3 gal sk) ElastiCem mixed at 13 ppg. Density verified by pressurized scales. Total mix water at 4690 gallons.
10	Pump Lead Cement	Pump Lead Cement	5/29/2022	10:09:20	631.44	12.85	8.88	0.07	Pump 153 bbls (555 sacks, 1.55 yield, 7.22 gal/sk) IsoBond mixed at 13 ppg. Density verified by pressurized scales. Total mix water at 4007 gallons.
11	Pump Tail Cement	Pump Tail Cement	5/29/2022	10:26:53	881.67	13.19	8.83	155.03	Pump 384 bbls (1355 sacks, 1.59 yield, 7.76 gal/sk) ElastiCem mixed at 13.2 ppg. Density verified by pressurized scales. Total mix water at 10515 gallons.
12	Other	Rupture Bottom Plug	5/29/2022	10:30:51	1293.48	13.29	8.99	34.94	Bottom plug rupture at 1294 psi.
13	Check Weight	Check Weight	5/29/2022	10:42:27	702.45	13.16	8.89	137.36	Cement weighed at 13.2 ppg.
14	Shutdown	Shutdown	5/29/2022	11:11:14	174.89	13.15	0.00	384.83	Shutdown and rig up to wash-up. Wash pumps and lines until clean.
15	Drop Top Plug	Drop Top Plug	5/29/2022	11:22:33	11.16	8.25	0.00	12.97	Top plug preloaded. Witnessed by customer.
16	Pump Displacement	Pump Displacement	5/29/2022	11:22:50	10.01	8.25	1.14	0.01	Pump 363 bbls (first 20 with MMCR) fresh water. Good returns throughout. Approximately 48 bbls cement to surface. Estimated top of lead cement at 2589 feet. Estimated top of tail cement at 6339 feet. Total gallons at 15246.
17	Bump Plug	Bump Plug	5/29/2022	12:08:01	3113.04	8.57	0.00	362.84	Final circulating pressure at 2531 psi with a bump pressure at 3110 psi.
18	Check Floats	Check Floats	5/29/2022	12:10:00	3204.97	8.58	0.00	362.84	Final pressure before release at 3212 psi. Floats held. 4 bbls back.
19	End Job	End Job	5/29/2022	12:11:35	5.26	8.49	0.00	0.00	Pump 20 bbls sugar water through stack until clean.

20	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/29/2022	12:15:00	Pre-rig down safety meeting.
21	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	5/29/2022	13:30:00	Pre-journey safety meeting. Discussed incoming thunderstorm and fit for duty status.
22	Depart Shop for Location	Depart Shop for Location	5/29/2022	23:00:00	Pre-journey safety meeting. Discuss wildlife, directions and fit for duty status.

3.0 Attachments

3.1 Real Time iCem Job Chart

