

HALLIBURTON

iCem[®] Service

BISON OIL & GAS II-EBUS

Ross 8-60 18-7-8 Production

Job Date: Saturday, May 21, 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 18-7-8** 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 #: 9121102		Quote #:		Sales Order #: 0907875739				
Customer: BISON OIL & GAS II-EBUS					Customer Rep: Jose Torres					
Well Name: ROSS 8-60 18-7-8,WELD			Well #: 9121102			API/UWI #:				
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: Steven Markovich					
Job										
Formation Name										
Formation Depth (MD)		Top				Bottom				
Form Type				BHST						
Job depth MD		15930ft		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	40			0	1964	0	0
Casing		5.5	4.892	17			0	15930	0	0
Open Hole Section			8.5				1964	15930	0	0
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			15930		Top Plug	5.5		HES	
Float Shoe	5.5					Bottom Plug	5.5		HES	
Float Collar	5.5					SSR plug set	5.5		HES	
Insert Float	5.5					Plug Container	5.5		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	Tuned Prime Cement Spacer	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.74	1775	6		

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	4689	8	8.3
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	555	sack	13	1.55	4007	8	7.22
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	1395	sack	13.2	1.59	10825	8	7.76
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	368	bbl	8.33	0	15456	9.25	
Cement Left In Pipe		Amount	44.64 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		0 ppm		Mix Water Temperature:		63 °F °C
Cement Temperature:		55 °F °C	Plug Displaced by:		8.33 lb/gal kg/m3 XXXX		Disp. Temperature:		## °F °C
Plug Bumped?		Yes	Bump Pressure:		2333 psi MPa		Floats Held?		Yes
Cement Returns:		51 bbl m3	Returns Density:		## lb/gal kg/m3		Returns Temperature:		## °F °C
Comment Spacer to surface at 267bbls away, cement to surface at 317bbls away bringing 51bbls of cement to surface. Final lift pressure was 2333psi. After 5 mins pressure was 2910psi. After 3.5bbls back floats held. Estimated Top of Tail Cement 6274’ Estimated Top of Lead Cement 2519’. 875bbls mix water total used.									

2.0 Real-Time Job Summary

2.1 Job Event Log

Seq No.	Activity	Graph Label	Date	Time	Dwnhole Density (ppg)	Cmb Pump Rate (bbl/min)	Pump A Pressure (psi)	Cmb Stg Total (bbl)	Comments
1	Check Floats	Call Out	5/21/2022	06:00:00					Job called out with an on location time of 12:00
2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/21/2022	10:00:00					JSA with HES crew on driving safety and route to rig.
3	Arrive at Location from Service Center	Arrive at Location from Service Center	5/21/2022	11:30:00					Arrived on location, rig was still running casing. 7500' to run.
4	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	5/21/2022	11:45:00					JSA and Hazard hunt with HES crew.
5	Rig-Up Equipment	Rig-Up Equipment	5/21/2022	11:50:00					Rigged up HES lines and equipment.
6	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/21/2022	17:45:00	8.30	0.00	2.17	0.00	JSA with HES and rig crew on job safety and procedure.
7	Start Job	Start Job	5/21/2022	17:58:12	8.29	0.00	2.33	0.00	
8	Test Lines	Test Lines	5/21/2022	18:01:53	8.08	0.00	43.98	2.38	Set kick outs to 500psi and check low pressure kick outs. Then Bring pressure up to 4500psi and hold.
9	Drop Bottom Plug	Drop Bottom Plug	5/21/2022	18:08:00	8.14	0.00	22.94	2.42	Plug pre loaded into HES Head. Plug loaded and dropped in front of company rep.
10	Pump Spacer 1	Pump Spacer 1	5/21/2022	18:09:47	8.15	0.00	23.54	0.00	Pump 50bbls of 11.5ppg Tuned Spacer. Pumped at 6bbl/min 290psi.
11	Check Weight	Check Weight	5/21/2022	18:13:49	11.47	6.14	245.48	19.11	Weight verified by pressurized scales.

12	Pump Cap Cement	Pump Cap Cement	5/21/2022	18:19:25	11.77	6.24	198.77	0.10	Pump 167bbls (565sks) of 13ppg 1.66yield Cap Cement. Pumped at 8bbl/min 490psi.
13	Check Weight	Check Weight	5/21/2022	18:22:38	13.42	7.98	584.91	20.39	Weight verified by pressurized scales.
14	Check Weight	Check Weight	5/21/2022	18:36:00	12.93	7.93	483.40	126.48	Weight verified by pressurized scales.
15	Pump Lead Cement	Pump Lead Cement	5/21/2022	18:41:28	12.68	4.20	105.93	0.04	Pump 153bbls of 13ppg 1.55yield Lead Cement. Pumped at 8bbl/min 600psi.
16	Check Weight	Check Weight	5/21/2022	18:45:31	13.08	7.26	600.16	29.32	Weight verified by pressurized scales.
17	Check Weight	Check Weight	5/21/2022	18:49:26	13.02	7.31	618.94	57.23	Weight verified by pressurized scales.
18	Pump Tail Cement	Pump Tail Cement	5/21/2022	19:02:00	12.70	6.05	394.87	0.05	Pump 395bbls (1395sks) of 13.2ppg 1.59yield Tail Cement. Pumped at 9bbl/min 630psi.
19	Check Weight	Check Weight	5/21/2022	19:05:26	13.20	8.07	535.46	27.42	Weight verified by pressurized scales.
20	Check Weight	Check Weight	5/21/2022	19:10:56	13.07	9.06	604.18	76.93	Weight verified by pressurized scales.
21	Check Weight	Check Weight	5/21/2022	19:15:02	12.90	9.13	577.06	114.08	Weight verified by pressurized scales.
22	Check Weight	Check Weight	5/21/2022	19:18:46	13.25	9.00	583.88	147.75	Weight verified by pressurized scales.
23	Check Weight	Check Weight	5/21/2022	19:36:44	13.20	8.92	586.61	303.51	Weight verified by pressurized scales.
24	Shutdown	Shutdown	5/21/2022	19:51:43	10.29	0.00	53.98	413.41	Shutdown and clean pumps and lines.
25	Drop Top Plug	Drop Top Plug	5/21/2022	20:04:26	8.01	0.00	2.90	429.40	Plug loaded into HES head. Plug loaded and dropped in front of company rep.
26	Pump Displacement	Pump Displacement	5/21/2022	20:04:28	8.01	0.00	2.82	0.00	Pump 368.5bbls of H2O. First 20bbls with MMCR. Pumped at 10bbl/min and slowed rate with pressure increase. Spacer to surface at 267bbls away, cement to surface at 317bbls away bringing 51bbls of cement to surface.

27	Bump Plug	Bump Plug	5/21/2022	20:44:42	8.33	4.14	2333.73	366.49	Bumped plug at 368bbbls away. Final circulating pressure was 2333psi. Took pressure 500psi over and held. After 5 mins pressure was 2910psi.
28	Check Floats	Check Floats	5/21/2022	20:47:39	8.37	0.00	2909.93	366.98	Opened release line to check floats. After 3.5bbbls back floats held.
29	End Job	End Job	5/21/2022	20:49:38	8.22	0.00	4.44	0.00	Thank you Steve Markovich and crew,

3.0 Attachments

3.1 Real Time iCem Job Chart

