

HALLIBURTON

iCem[®] Service

VERDAD RESOURCES LLC

Timbro 9-59 8B-9-1 Production

Sincerely,
Meghan Jacobs

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 **Timbro 9-59 8B-9-1** 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 15 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

The Road to Excellence Starts with Safety

Sold To #: 380688		Ship To #: 3898966		Quote #:		Sales Order #: 0905718841				
Customer: VERDAD RESOURCES LLC				Customer Rep: Jason Hansen						
Well Name: TIMBRO 9-59			Well #: 8B-9-1		API/UWI #: 05-123-47568-00					
Field: WILDCAT		City (SAP): KEOTA		County/Parish: WELD		State: COLORADO				
Legal Description: NW SW-8-9N-59W-1443FSL-600FWL										
Contractor: H & P DRLG				Rig/Platform Name/Num: H & P 290						
Job BOM: 7523 7523										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX38199				Srv Supervisor: Nicholas Cummins						
Job										
Formation Name										
Formation Depth (MD)	Top	1863ft		Bottom	16378ft					
Form Type				BHST						
Job depth MD	16347ft			Job Depth TVD	6162ft					
Water Depth				Wk Ht Above Floor	3ft					
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	1863	0	1863
Casing		5.5	4.778	20			0	16347	0	0
Open Hole Section			8.5				1863	16378	1863	6162
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5	1	WTHR	16347		Top Plug	5.5	1	WTHR	
Float Shoe	5.5					Bottom Plug	5.5	1	WTHR	
Wet Shoe Sub	5.5	1	WTHR	16242		SSR plug set	5.5			
Insert Float	5.5					Plug Container	5.5	1	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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS	50	bbl	12.5	2.79	16.5	4	1667
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	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS	50	bbl	12.5	2.71	16	7.5	1664
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	ElastiCem	ELASTICEM (TM) SYSTEM	935	sack	13.2	1.57	7.55	8	7059
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	NeoCem	NeoCem TM	445	bbl	13.2	2.04	9.75	8	12480
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	8.34			10	
0.50 gal/bbl		MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)							
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		340	bbl	8.34				
Cement Left In Pipe		Amount	0 ft			Reason		Wet Shoe	

Mix Water:	pH 7	Mix Water Chloride:	<400 ppm	Mix Water Temperature:	57 °F
Cement Temperature:	57 °F	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:	57 °F
Plug Bumped?	Yes	Bump Pressure:	2100 psi	Floats Held?	Yes
Cement Returns:	15 bbl	Returns Density:	13.2 lb/gal	Returns Temperature:	
Comment 100 bbls spacer 261 bbls Lead Cement 465 bbls Tail Cement 360 bbls Displacement 2.5 bbls back to truck floats held Estimated 100 bbls Spacer to surface Estimated 15 Lead cement to surface Estimated top of Tail cement 4,964'					

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Comments
Event	1	Call Out	Call Out	5/30/2019	04:00:00	USER				The crew was called out on 5/30/19 at 0400. The customer requested HES on location at 1000 on 5/30/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	5/30/2019	08:30:00	USER				The crew held a pre journey safety meeting discussing the route and potential hazards while driving. The supervisor called in a journey. The crew departed service center.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	5/30/2019	10:50:00	USER				The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 16,378', TP 16,347' 5 1/2" 20# P-110, WSS 16,242', PC 1,863' 9 5/8" 36# J-55, TVD 6,162', OH 8 1/2", Mud 10.2 ppg.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	5/30/2019	10:55:00	USER				Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	5/30/2019	11:10:00	USER				Crew held a safety meeting discussing the rig up procedure. Also all potential hazards associated with rigging up all HES equipment and lines.
Event	6	Rig-Up Equipment	Rig-Up Equipment	5/30/2019	11:20:00	USER				The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	5/30/2019	12:30:00	USER				Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	5/31/2019	03:30:00	USER	-198.00	8.34	0.00	The crew and all personal involved with cement job discussed all potential hazards associated with job. Followed by the job procedure to ensure everyone understood the plan of action
Event	9	Start Job	Start Job	5/31/2019	04:05:48	COM1	-5.00	8.29	0.00	Started recording data from Elite 11512092. Filled lines with 3 bbls of water at 2 bpm, pressure was at 183 psi.
Event	10	Test Lines	Test Lines	5/31/2019	04:15:28	COM1	69.00	8.34	0.00	Pressure tested all HES lines 6,500 psi. The pressure test passed.

Event	11	Pump Spacer 1	Pump Spacer 1	5/31/2019	04:23:04	COM1	25.00	8.32	0.00	Pumped 50 bbls of Spacer with liquid surfactants at 4 bpm, pressure was at 286 psi. 12.5 ppg 2.71 yield 16.5 gal/sk. Used pressurized scales to verify density.
Event	12	Pump Spacer 2	Pump Spacer 2	5/31/2019	04:34:28	COM1	110.00	12.41	4.10	Pumped 50 bbls of Spacer with dry surfactants at 7.5 bpm, pressure was at 319 psi. 12.5 ppg 2.79 yield 16 gal/sk. Used pressurized scales to verify density.
Event	13	Drop Bottom Plug	Drop Bottom Plug	5/31/2019	04:41:46	COM1	103.00	12.78	3.80	Company man verified plug left container.
Event	14	Pump Lead Cement	Pump Lead Cement	5/31/2019	04:43:06	COM1	103.00	12.57	3.80	Pumped 261 bbls (935 sks) of Lead cement at 8 bpm, pressure was at 520 psi. 13.2 ppg 1.57 yield 7.55 gal/sk. Used pressurized scales to verify density.
Event	15	Pump Tail Cement	Pump Tail Cement	5/31/2019	05:19:02	COM1	600.00	13.30	8.30	Pumped 445 bbls (1225 sks) of Tail cement at 8 bpm , pressure was at 850 psi. 13.2 ppg 2.04 yield 9.75 gal/sk. Used pressurized scales to verify density.
Event	16	Shutdown	Shutdown	5/31/2019	06:18:31	COM1	29.00	13.36	0.00	Shutdown to wash pumps and lines. Blew air from rig floor to wash up tank. Then washed pumps and lines from truck to wash up tank.
Event	17	Drop Top Plug	Drop Top Plug	5/31/2019	06:31:50	COM1	7.00	8.39	0.00	Driller and cementer verified plug left container.
Event	18	Pump Displacement	Pump Displacement	5/31/2019	06:31:50	COM1	7.00	8.39	0.00	Pumped the calculated displacement of 360 bbls. At 8 bpm per customer request. With MMCR in the first 20 bbls and biocide throughout.
Event	19	Bump Plug	Bump Plug	5/31/2019	07:19:57	COM1	2471.00	8.35	0.00	Bumped the plug final circulating pressure was 2,100 psi. Brought pressure 500 over before shutting pumps down.
Event	20	Shift Tool - Lower	Shift Tool - Lower	5/31/2019	07:23:41	COM1	2566.00	8.35	0.00	Pressured up up at 2 bpm to 4,161 psi to shift wet shoe sub. Pumped at 5 bbl wet shoe at 5 bpm.
Event	21	Other	Check Floats	5/31/2019	07:26:58	COM1	1859.00	8.33	0.00	Bled pressure back to truck to check floats. Floats held 2.5 bbls back,floats held.
Event	22	End Job	End Job	5/31/2019	07:29:35	COM1	6.00	8.37	0.00	Cement job complete. Stopped recording job data from Elite 11512092. Estimated 100 bbls of spacer to surface. Estimated 15 bbls of Lead cement to surface. Estimated top of Tail cement 4,964'.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/31/2019	07:30:00	USER	7.00	8.33	0.00	Crew held a safety meeting discussing the rig down procedure. Also all potential hazards associated with rigging down all HES equipment and lines.

Event	24	Rig-Down Equipment	Rig-Down Equipment	5/31/2019	08:00:00	USER	The crew rigged down all HES equipment and lines.
Event	25	Rig-Down Completed	Rig-Down Completed	5/31/2019	08:50:00	USER	Rig down completed no one got hurt.
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/31/2019	09:15:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	5/31/2019	09:20:00	USER	Nick Cummins and crew would like to thank you for your business, and choosing Halliburton Cement! Please feel free to call if you have any questions.

3.0 Attachments

3.1 Timbro 9-59 8B-9-1 Production – Job Chart

