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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Mab 15-9HZ** 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.

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 #: 300466		Ship To #: 3932317		Quote #: 0022573795		Sales Order #: 0905656037					
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: Terry Hackford							
Well Name: MAB			Well #: 15-9HZ		API/UWI #: 05-123-49237-00						
Field: WATTENBERG		City (SAP): IONE		County/Parish: WELD		State: COLORADO					
Legal Description: SW SE-15-1N-66W-608FSL-2171FEL											
Contractor:				Rig/Platform Name/Num: Akita 522							
Job BOM: 7523 7523											
Well Type: HORIZONTAL GAS											
Sales Person: HALAMERICA/HX41066				Srv Supervisor: Nicholas Roles							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		18991ft		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	8.921	36		J-55	0	1891	0	1891	
Casing		5.5	4.892	17	LTC	HCP110	0	18991	0	7637	
Open Hole Section			7.875				1894	18991	1891	7637	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			18991		Top Plug	5.5	1	WTF		
Float Shoe	5.5					Bottom Plug	5.5	1	WTF		
Float Collar	5.5			18977		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	FDP-C1337-18	SBM FDP-C1337-18 CEMENT SPACER SYS			80	bbl	10.5	6.14		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	Gasstop B1	GASSTOP (TM) SYSTEM		640	sack	13.2	1.56		8	7.71	
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	EconoCem	ECONOCEM (TM) SYSTEM		1190	sack	13.5	1.68		8	7.99	
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	Biocide Water and MMCR	Biocide Water and MMCR		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	
5	Biocide Water	Biocide Water		420	bbl	8.34			8		
Cement Left In Pipe		Amount	0ft			Reason			Wet Shoe		
Mix Water:		pH 7	Mix Water Chloride:			0 ppm		Mix Water Temperature:		55 °F °C	
Cement Temperature:		°F °C		Plug Displaced by:			8.33 lb/gal		Disp. Temperature:		55 °F °C
Plug Bumped?		Yes		Bump Pressure:			3000 psi MPa		Floats Held?		Yes
Cement Returns:		0 bbl m3		Returns Density:			lb/gal kg/m3		Returns Temperature:		°F °C
Comment Got 0bbls spacer back to pits. Estimated TOT-7470' , TOL-1765' , TOS-95'											

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	4/29/2019	13:00:00	USER	Called out by Service Coordinator for O/L at 1900
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/29/2019	18:15:00	USER	Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	4/29/2019	18:30:00	USER	Journey Management prior to departure
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	4/29/2019	18:45:00	USER	Upon arrival met with company man to discuss job details and calculations, performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/29/2019	19:00:00	USER	Discussed rigging up hazards and procedure according to HMS.
Event	6	Other	Other	4/29/2019	19:30:00	USER	Water test- PH-6, Chlor-0, Temp-65. Cement temp-70.
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/29/2019	22:00:00	USER	Held safety meeting with all job associated personnel to discuss job procedure, hazards and stop work authority.
Event	8	Start Job	Start Job	4/29/2019	23:08:30	COM4	TD-19001', TP-18991' 5.5" 17#, WS-18977', TVD-7637', OH-7.875", SURF-1891' 9.625" 36#, MUD-9.5#

Event	9	Test Lines	Test Lines	4/29/2019	23:10:51	COM4	Pumped 5bbls fresh water to fill lines, shutdown, closed manifold, performed 500psi k/o function test, continued with 5th gear stall at 2100psi, proceeded to bring pressure to 6500psi. Pressure stabilized and held with no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	4/29/2019	23:19:36	COM4	Pumped 80bbls of 10.5# 6.14Y 39.4g/s FDP Spacer with 60g Musol A, 60g Dual Spacer B, 20g D-Air and 1 gallon of biocide at 6bpm 350psi.
Event	11	Pump Lead Cement	Pump Lead Cement	4/29/2019	23:35:00	COM4	Pumped 640sk or 178bbls of 13.2# 1.56y 7.61g/s Gasstop with 64G of D-Air at 8bpm 566psi.
Event	12	Check Weight	Check Weight	4/29/2019	23:50:57	COM4	Weight verified with pressurized mud scales.
Event	13	Pump Tail Cement	Pump Tail Cement	4/30/2019	00:12:45	COM4	Pumped 1190sk or 356bbls of 13.5# 1.68Y 7.99G/S Econocem at 8bpm 805psi.
Event	14	Check Weight	Check Weight	4/30/2019	00:16:14	COM4	Weight verified with pressurized mud scales.
Event	15	Check Weight	Check Weight	4/30/2019	00:44:37	COM4	Weight verified with pressurized mud scales.
Event	16	Shutdown	Shutdown	4/30/2019	01:01:15	COM4	Shutdown, rig blew down iron with air, followed with 5bbls fresh water through pumps and lines.
Event	17	Drop Top Plug	Drop Top Plug	4/30/2019	01:11:08	COM4	Dropped by HES supervisor, witnessed by company man.
Event	18	Pump Displacement	Pump Displacement	4/30/2019	01:11:12	COM4	Pumped 440bbls fresh water with 10g MMCR in first 20bbls, followed with 4g biocide throughout at 10bpm.

Event	19	Bump Plug	Bump Plug	4/30/2019	02:11:49	COM4	Slowed down at 410bbbls away to 3bpm, Final Circulating Pressure- 2287psi, Bump Pressure- 2910psi. Once pressure lined out brought pressure up to 3000psi and held for 15min test.
Event	20	Pressure Up Well	Pressure Up Well	4/30/2019	02:26:10	COM4	Pressured up with fresh water to 5096psi to shear pins and pumped 3bbbls at 3bpm 2450psi, for wet shoe.
Event	21	Other	Other	4/30/2019	02:29:26	COM4	Released pressure and got 3bbbls back to truck. Floats held.
Event	22	End Job	End Job	4/30/2019	02:30:46	COM4	Got 0bbbls spacer back to pits. Estimated TOT-7470', TOL-1765', TOS-95'
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/30/2019	02:35:00	USER	Discussed rigging down hazards and procedure according to HMS with all HES personnel
Event	24	Safety Meeting - Departing Location	Safety Meeting - Departing Location	4/30/2019	03:45:00	USER	Held meeting with all personnel in convoy to discuss directions and hazards associated with drive, all fit to drive.
Event	25	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	4/30/2019	04:00:00	USER	Pre journey management prior to departure.

3.0 Attachments

3.1 Job Chart

Custom Results

