

HALLIBURTON

iCem[®] Service

MALLARD EXPLORATION LLC-EBUS

For: Hans Cary

Date: Sunday, July 31, 2022

HUNT FED 8-60 19-24-3

HUNT FED 8-60 19-24-3

Job Date: Sunday, July 31, 2022

Sincerely,

Nick Roles and Crew

Legal Notice

Disclaimer:

All information in this report is provided subject to the terms and conditions which govern the services provided by Halliburton. Halliburton personnel use their best efforts in gathering information and their best judgment in interpreting it, but any interpretation, research, analysis or recommendation furnished by Halliburton are opinions based upon inferences from measurements and empirical relationships and assumptions, which inferences and empirical relationships and assumptions are not infallible, and with respect to which professionals in the industry may differ. iCem 3D Displacement results are used to understand how fluids intermix during a cement job. Simulation and 3D displacement results are not intended as and should not be used as a replacement for bond logs in determining top of cement. Current 3D model calculations are known to model more volume than the input volume for standard cases due to known calculation improvements required. For rotational cases, the modeled volume will be impacted by the same calculations impacting the standard cases, as well as additional constraints imposed to make the calculation time required operationally feasible. Therefore, until further notice, 3D displacement results should not be used for replacement of a bond log, or used as an identifier of top of cement. HALLIBURTON IS UNABLE TO GUARANTEE THE ACCURACY OF ANY CHART INTERPRETATION, RESEARCH ANALYSIS, OR JOB RECOMMENDATION and any interpretation or recommendation is not for use of or reliance upon by any third party. The customer has full responsibility for any of its decisions which are based on the information provided in this report.

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the HUNT FED 8-60 19-24-3 9.625" SURFACE 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 35bbls 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

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq	Activity	Graph Label	Date	Time	Source	DH Density	Comb Pump Rate	DS Pump Press	Pump Stg Tot	Comments
	No.						(ppg)	(bbl/mi n)	(psi)	(bbl)	
Event	1	Call Out	Call Out	7/31/20 22	00:00:00	USER					Called out by service coordinator for OL time of 0600.
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/31/20 22	05:00:00	USER					Discuss all hazards associated with journey, directions to destination, complete journey management if needed, and ensure all convoy is fit for duty.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/31/20 22	05:15:00	USER					Depart from service center or other job site.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/31/20 22	05:30:00	USER					Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.

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 Case: HUNT FED 8-60 19-24-3 | SO#: 908019808

Held pre rig up JSA for hazards, hazard hunt with crew, and discussed plan for spotting equipment and rigging up lines for job. Discussed muster points and closest emergency location as well as coordinates.

Event 5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/31/20 22	05:30:00	USER						
Event 6	Rig-Up Equipment	Rig-Up Equipment	7/31/20 22	05:40:00	USER						
Event 7	Other	Other	7/31/20 22	05:45:00	USER						
Event 8	Rig-Up Completed	Rig-Up Completed	7/31/20 22	06:00:00	USER	8.00	0.00	0.00	8.60		Complete rig up for job to nearest point before red zone.
Event 9	Safety Meeting - Pre Job	Safety Meeting - Pre Job	7/31/20 22	06:10:00	USER	8.00	0.00	-4.00	0.00		Held job specific hazards as well as confirming job procedure with co man and rest of crew associated with job.
Event 10	Start Job	Start Job	7/31/20 22	06:20:07	COM10	7.23	0.00	-6.00	0.00		TD-1940' 13.5", TP-1944' 9.625" 40#, FC-1904', Mud-9#
Event 11	Test Lines	Test Lines	7/31/20 22	06:21:53	COM10	8.32	0.00	58.00	3.90		Pumped 3bbls to fill lines, established

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circulation, shutdown
 and closed manifold,
 performed 500psi k/o
 function test,
 continued with 5th
 gear stall at 1850psi
 proceeded to bring
 pressure to 3500psi.
 Pressure stabilized
 and held with no
 leaks.

Event 12	Pump Spacer 1	Pump Spacer 1	7/31/20 22	06:24:5 2	COM10	8.29	0.00	22.00	0.00	Pumped 10bbls fresh water with 1/3btl green Dye at 4.5bpm 120psi.
Event 13	Pump Spacer 2	Pump Spacer 2	7/31/20 22	06:27:3 7	COM10	8.30	5.00	219.00	0.00	Pumped 10bbls fresh water at 4.5bpm 120psi.
Event 14	Pump Cement	Pump Cement	7/31/20 22	06:31:1 5	COM10	8.31	0.00	87.00	0.00	Pumped 900sk or 211.6bbls 13.5# 1.32y 6.94g/s Swiftcem at 8bpm 310psi. Mix Water=6246gal.
Event 15	Check Weight	Check Weight	7/31/20 22	06:45:2 3	COM10	13.47	8.90	331.00	107.30	Weight verified with pressurized mud scales.
Event 16	Shutdown	Shutdown	7/31/20 22	06:57:0 1	COM10	14.07	0.00	42.00	199.80	
Event 17	Drop Top Plug	Drop Top Plug	7/31/20 22	06:57:5 6	COM10	33.52	0.00	-30.00	199.80	Dropped by HES supervisor, witnessed

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by company man.

Event 18	Pump Displacement	Pump Displacement	7/31/20 22	06:57:58	COM10	33.66	0.00	-30.00	0.00	Pumped 144bbls of fresh water at 9bpm 550psi.
Event 19	Bump Plug	Bump Plug	7/31/20 22	07:25:36	COM10	8.28	0.00	1163.00	147.70	Slowed down to 4bpm at 130bbls away, final circulating pressure - 550psi. Bumped at 1050psi.
Event 20	Other	Other	7/31/20 22	07:26:47	COM10	8.28	0.00	1219.00	147.70	Released pressure to check floats, got 0.5bbls back. Floats held.
Event 21	End Job	End Job	7/31/20 22	07:27:36	USER	8.29	0.00	0.00	147.70	Est. 35bbls cement to surface.
Event 22	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/31/20 22	07:30:00	USER	8.32	9.70	249.00	150.70	Held safety meeting with crew prior to rig down, discussed possibility of trapped pressure, swing radius, slips trips and falls, pinch points and risks associated with rig down.
Event 23	Rig Down Lines	Rig Down Lines	7/31/20 22	07:35:00	USER	8.30	0.00	116.00	164.80	Begin rig down
Event 24	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	7/31/20 22	08:00:00	USER					Held safety meeting with convoy, discussed trip hazards,

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directions and all crew
fit for duty prior to
departure.

Rig down complete
with no injuries, spills
or damage to
equipment.

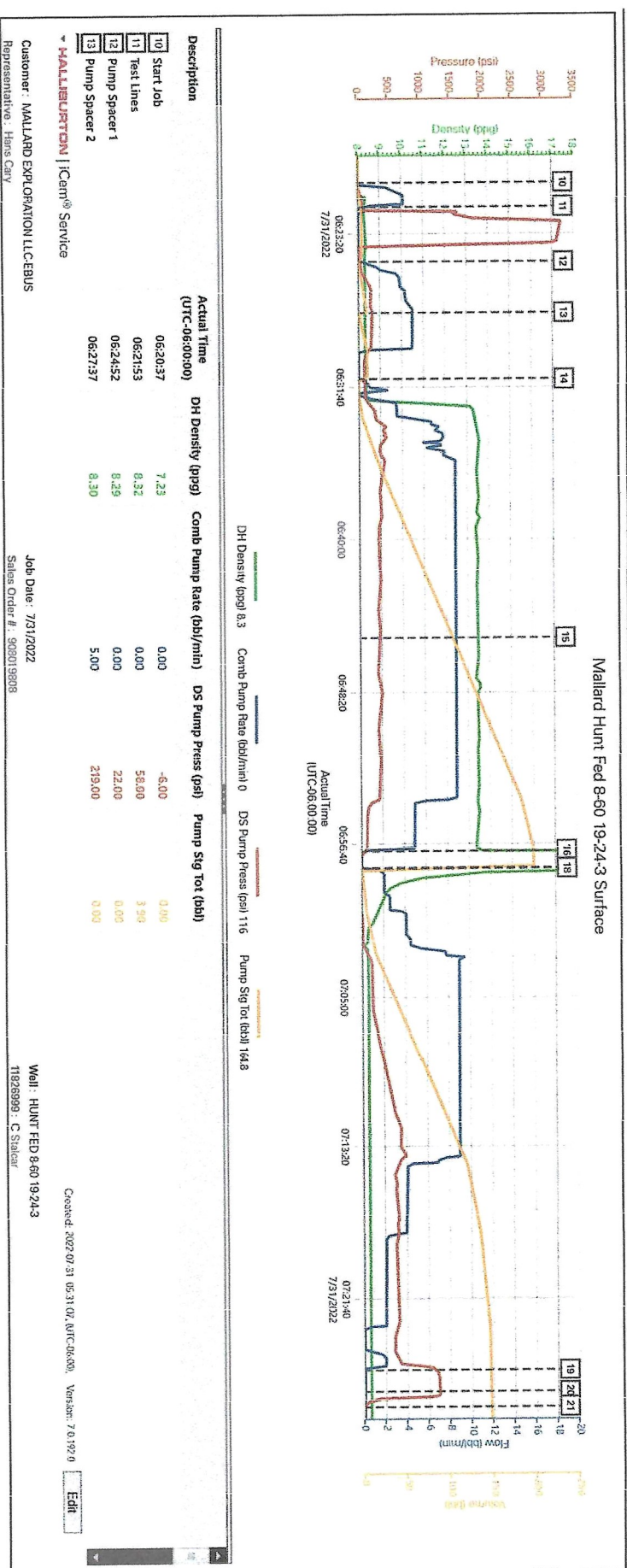
Event	25	Rig-Down Completed	Rig-Down Completed	7/31/20 22	08:00:0 0	USER	
Event	26	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/31/20 22	08:15:0 0	USER	Depart location, if applicable journey will be submitted.

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3.0 Attachments

3.1 HUNT FED 8-60 19-24-3 -Custom Results (1).png



Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 380921	Ship To #: 3872517	Quote #:	Sales Order #: 0908019808
Customer: MALLARD EXPLORATION LLC-EBUS		Customer Rep: Hans Cary	
Well Name: HUNT FED 8-60	Well #: 19-24-3	API/UWI #: 05-123-46707-00	
Field:	City (SAP): BRIGGS DALE	County/Parish: WELD	State: COLORADO
Legal Description: SE NE-19-8N-60W-1729FNL-510FEL			
Contractor:		Rig/Platform Name/Num: Cartel 11	
Job BOM: 7521 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB41307		Srv Supervisor: Nicholas Roles	
Job			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type			BHST
Job depth MD	1944ft		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		16	15.376	55			0	80		80
Casing		9.625	8.835	40	BTC	J-55	0	1944		1944
Open Hole Section			13.5				80	1940	80	1940

Tools and Accessories

Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make
Guide Shoe	9.625				Top Plug	9.625	1	
Float Shoe	9.625			1944	Bottom Plug	9.625		HES
Float Collar	9.625			1904	SSR plug set	9.625		HES
Insert Float	9.625				Plug Container	9.625	1	HES
Stage Tool	9.625				Centralizers	9.625		HES

Fluid Data

Stage/Plug #: 1

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Fresh Water	Fresh Water	20	bbl	8.33			6	

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	SwiftCem	SBM SWIFTCCEM CEMENT SYSTEM CEM	900	sack	13.5	1.32		9	9
		POLY-E-FLAKE (101216940)							
		FRESH WATER							
		0.1250 lbm							
		6.94 Gal							

Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement Fluid	Displacement Fluid	144	bbl	8.34			10	

Cement Left In Pipe	Amount	40 ft	Reason	Shoe Joint
Mix Water:	pH 7	Mix Water Chloride:	>3000 ppm	Mix Water Temperature:
Cement Temperature:	## °F °C	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:
Plug Bumped?	Yes	Bump Pressure:	1050 psi MPa	Floats Held?
Cement Returns:	35 bbl m3	Returns Density:	## lb/gal kg/m3	Returns Temperature:
Comment Est. 35bbls cement to surface.				