

HALLIBURTON

iCem® Service

MALLARD EXPLORATION LLC

For: Hans Cary

Date: Wednesday, January 06, 2021

BLUE TEAL FED 15-3-6HN

BLUE TEAL FED 15-3-6HN

Job Date: Wednesday, January 06, 2021

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.

Table of Contents

Real-Time Job Summary
 Job Event Log
Attachments.....
 BLUE TEAL FED 15-3-6HN -Custom Results.png
Custom Graphs.....
 Custom Graph

HALLIBURTON

Customer: MALLARD EXPLORATION LLC
 Job: BLUE TEAL FED 15-3-6HN 5.5" PRODUCTION
 Case: BLUE TEAL FED 15-3-6HN | SO#: 906902344

1.0 Real-Time Job Summary

1.1 Job Event Log

Type	Seq No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/mi ⁿ)	DS Pump Press (psi)	Pump Stg Tot (bbl)	Water Stg Tot (bbl)	Comments
Event	1	Call Out	Call Out	1/6/2022	08:00:00	USER						Called out by service coordinator for OL time of 1400
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/6/2022	10:45:00	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	1/6/2022	11:00:00	USER						Depart from service center or other job site.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	1/6/2022	12:30:00	USER						Upon arrival to location, signed in with onsite safety personnel. Met with company man and discussed job specific requirements and specifications.

HALLIBURTON

Customer: MALLARD EXPLORATION LLC
 Job: BLUE TEAL FED 15-3-6HN 5.5" PRODUCTION
 Case: BLUE TEAL FED 15-3-6HN | SO#: 906902344

36#, MUD 10#

Event 12	Drop Bottom Plug	Drop Bottom Plug	1/6/2022	16:31:14	COM7	8.47	2.70	252.00	18.90	27.67	Dropped by tool hand, witnessed by company man and HES supervisor.
----------	------------------	------------------	----------	----------	------	------	------	--------	-------	-------	--

Event 13	Test Lines	Test Lines	1/6/2022	16:32:40	COM7	8.42	0.00	360.00	21.00	27.67	Pumped 5bbls fresh water to fill lines at 4bpm 320psi, shut manifold, and performed 500psi k/o function test, followed with 5th gear stall at 1800psi, proceeded to bring pressure to 4500psi, held well and no leaks.
----------	------------	------------	----------	----------	------	------	------	--------	-------	-------	--

Event 14	Pump Spacer 1	Pump Spacer 1	1/6/2022	16:36:06	COM7	8.39	0.00	135.00	21.00	27.67	Pumped 50bbls of 11.5# 3.71y 23.58g/s Tuned Prime Spacer with 10g D-air at 6bpm 447psi.
----------	---------------	---------------	----------	----------	------	------	------	--------	-------	-------	---

Event 15	Pump Cement	Pump Cement	1/6/2022	16:45:27	COM7	12.14	2.20	377.00	45.90	31.29	Pumped 2900sks or 826.4bbls of 13.2# 1.6y 7.65g/s Elasticem at 9bpm 498psi.
----------	-------------	-------------	----------	----------	------	-------	------	--------	-------	-------	---

Event 16	Check Weight	Check Weight	1/6/2022	16:47:22	COM7	13.00	3.60	627.00	5.70	3.33	Weight verified with pressurized mud scales. 13.2#
----------	--------------	--------------	----------	----------	------	-------	------	--------	------	------	--

Event 17	Check Weight	Check Weight	1/6/2022	17:25:29	COM7	13.18	9.10	569.00	312.80	178.36	Weight verified with pressurized mud
----------	--------------	--------------	----------	----------	------	-------	------	--------	--------	--------	--------------------------------------

iCem[®] Service

(v. 6.0.286.0)

Created: Wednesday, January 06, 2021

HALLIBURTON

Customer: MALLARD EXPLORATION LLC
 Job: BLUE TEAL FED 15-3-6HN 5.5" PRODUCTION
 Case: BLUE TEAL FED 15-3-6HN | SO#: 906902344

Event	Description	Date	Time	User	Start	End	Cost	Balance	Notes		
Event 25	Bump Plug	1/6/202	19:33:1	COM7	0	7.91	0.00	2876.00	419.90	414.60	Slowed down at 380bbls away to 4bpm, final circulating pressure-2680psi. Bump pressure-2850psi.
Event 26	Pressure Up	1/6/202	19:34:3	USER	1	7.92	2.00	3663.00	421.00	414.60	Landed plug, brought pressure up to 3818psi to burst, pumped 5bbls at 5bpm 2680psi for wet shoe.
Event 27	Other	1/6/202	19:36:3	COM7	5	7.90	0.00	2181.00	426.50	414.60	Released pressure and got 3bbls back. Floats held.
Event 28	End Job	1/6/202	19:37:2	COM7	7	7.87	0.00	27.00	426.50	414.60	Got 40bbls Cement to surface. Rigged up to rigs stack and pumped 25bbls fresh water with 50lbs of sugar.
Event 29	Pre-Rig Down Safety Meeting	1/6/202	20:00:0	USER	0						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 30	Rig Down Lines	1/6/202	20:15:0	USER							Begin rig down

HALLIBURTON

Customer: MALLARD EXPLORATION LLC
 Job: BLUE TEAL FED 15-3-6HN 5.5" PRODUCTION
 Case: BLUE TEAL FED 15-3-6HN | SO#: 906902344

1 0

Event 31	Rig-Down Completed	Rig-Down Completed	1/6/2022	21:00:00	0	USER
----------	--------------------	--------------------	----------	----------	---	------

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

Event 32	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	1/6/2022	21:15:00	0	USER
----------	---------------------------	---------------------------	----------	----------	---	------

Held safety meeting with convoy, discussed trip hazards, directions and all crew fit for duty prior to departure.

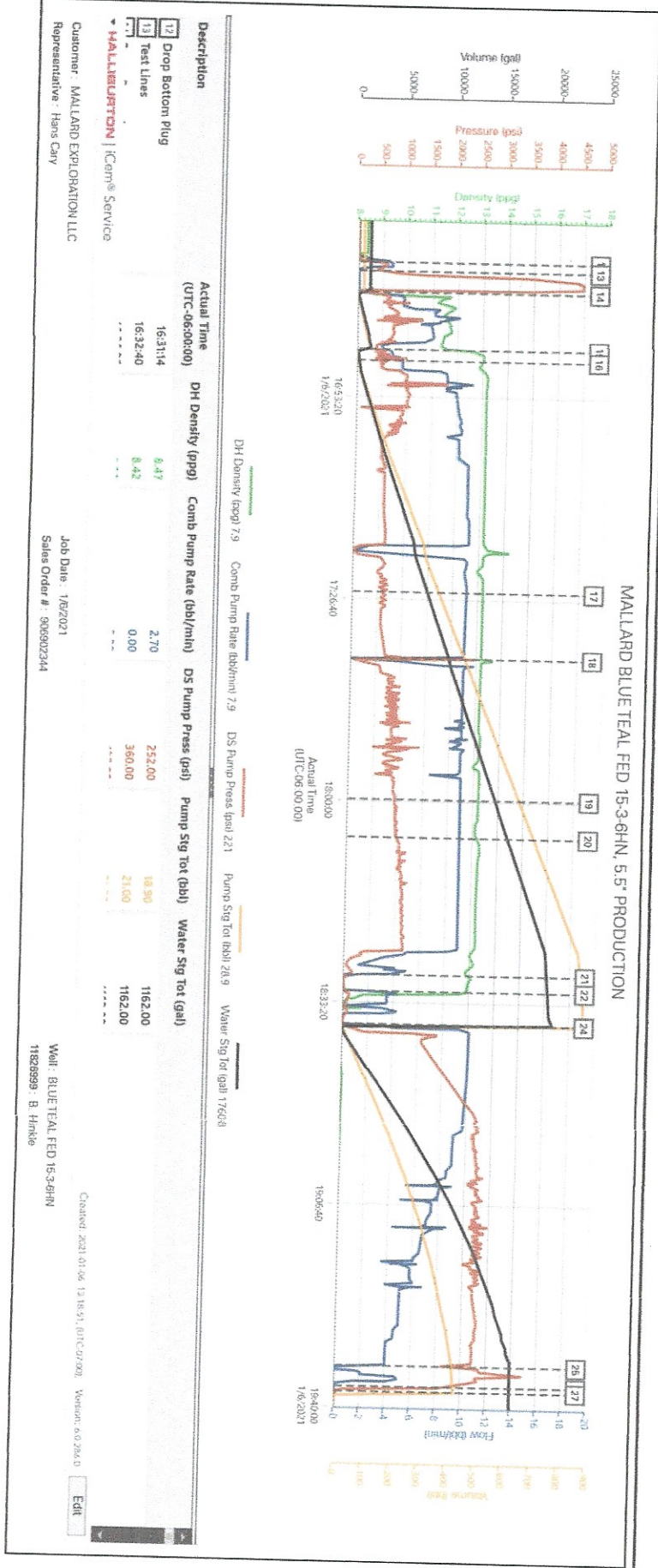
Event 33	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	1/6/2022	21:30:00	0	USER
----------	--	--	----------	----------	---	------

Depart location, if applicable journey will be submitted.

Customer: MALLARD EXPLORATION LLC
 Job: BLUE TEAL FED 15-3-6HN 5.5" PRODUCTION
 Case: BLUE TEAL FED 15-3-6HN | SO#: 906902344

2.0 Attachments

2.1 BLUE TEAL FED 15-3-6HN -Custom Results.png



Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 380921	Ship To #: 3917160	Quote #:	Sales Order #: 0906902344
Customer: MALLARD EXPLORATION LLC-EBUS		Customer Rep: Hans Cary	
Well Name: BLUE TEAL FED	Well #: 15-3-6HN	API/UWI #: 05-123-48415-00	
Field: WILDCAT	City (SAP): RAYMER	County/Parish: WELD	State: COLORADO
Legal Description: NW NE-22-8N-60W-600FNL-2123FEL			
Contractor: CYCLONE		Rig/Platform Name/Num: CYCLONE 37	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA/HB41307		Srvc Supervisor: Nicholas Roles	
Job			

Formation Name			
Formation Depth (MD)	Top		Bottom
Form Type	BHST		
Job depth MD	18687ft		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	0	9.625	8.921	36			0	1949	0	1949
Casing	0	5.5	4.778	20			0	18687	0	6317
Open Hole Section			8.5				1949	18691	1949	6317

Tools and Accessories									
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make	
Guide Shoe	5.5				Top Plug	5.5	1	INNOVEX	
Float Shoe	5.5			18687	Bottom Plug	5.5	1	INNOVEX	
Float Collar	5.5			18683	SSR plug set	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 Base - RKS/SE	TUNED PRIME CEMENT SPACER SYS	50	bbl	11.5	3.71		6		
		FRESH WATER								
		D-AIR 3000L, 5 GAL PAIL (101007444)								

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	2900	sack	13.2	1.6		9	7.65

Cementing Job Summary

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	MMCR Displacement	MMCR Displacement	40	bbl	8.33			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 ft ³ /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	Displacement	Displacement	374	bbl	8.33			10	
Cement Left In Pipe	Amount	0 ft		Reason			Wet Shoe		
Mix Water:	pH 7	Mix Water Chloride:	800 ppm	Mix Water Temperature:		65 °F °C			
Cement Temperature:	## °F °C	Plug Displaced by:	8.33 lb/gal	Disp. Temperature:		85 °F °C			
Plug Bumped?	Yes	Bump Pressure:	2850 psi MPa	Floats Held?		Yes			
Cement Returns:	40bbl	Returns Density:	## lb/gal kg/m ³	Returns Temperature:		## °F °C			
Comment Got 40bbls Cement to surface. Burst top plug at 3818psi. Checked floats and 3bbls returned, floats held.									