

HALLIBURTON

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300486	Ship To #: 3786917	Quote #: 0022324721	Sales Order #: 0904147004							
Customer: ANADARKO PETROLEUM CORP-EBUS		Customer Rep:								
Well Name: BUTTERBALL	Well #: 22C-34HZ	API/UWI #: 05-123-44408-00								
Field: WATTENBERG	City (SAP): IONE	County/Parish: WELD	State: COLORADO							
Legal Description: NE NW-10-2N-87W-819FNL-2175FWL										
Contractor: NABORS DRLG		Rig/Platform Name/Num: NABORS X22								
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX41066		Srvc Supervisor: Aaron Smith								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type		BHST								
Job depth MD	16333ft	Job Depth TVD	7518							
Water Depth		Wk Ht Above Floor	3							
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	1834	0	1834
Casing	0	5.5	4.892	17	LTC	HCP110	0	16321	0	7518
Open Hole Section			7.875				1834	16333	0	7518
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5	1	WMF	
Float Shoe	5.5	1	WCS	16321		Bottom Plug	5.5	1	WMF	
Float Collar	5.5	1	WCS	16318		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	Tuned Spacer III	Tuned Spacer III	60	bbl	10.5	6.43		5		
Fluid Data										
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 - Cap Cement	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		5	7.53	

last updated on 7/14/2017 11:19:40 AM

Page 1 of 2

iCem® Service

(v. 4.4.18)

Created: Friday, July 14, 2017

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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	390	sack	13.2	1.57		5	7.54
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	EconoCem	ECONOCEM (TM) SYSTEM	1100	sack	13.5	1.68		5	7.98
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 and MMCR	Biocide Water and MMCR	20	bbl	8.34				
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	Biocide Water	Biocide Water	358.6	bbl	8.34				
Cement Left In Pipe		Amount	3 ft		Reason			Shoe Joint	
Comment Estimated top of lead 1156', Estimated top of tail 5669' 3 bbls spacer to surface.									

2.0 Real-Time Job Summary

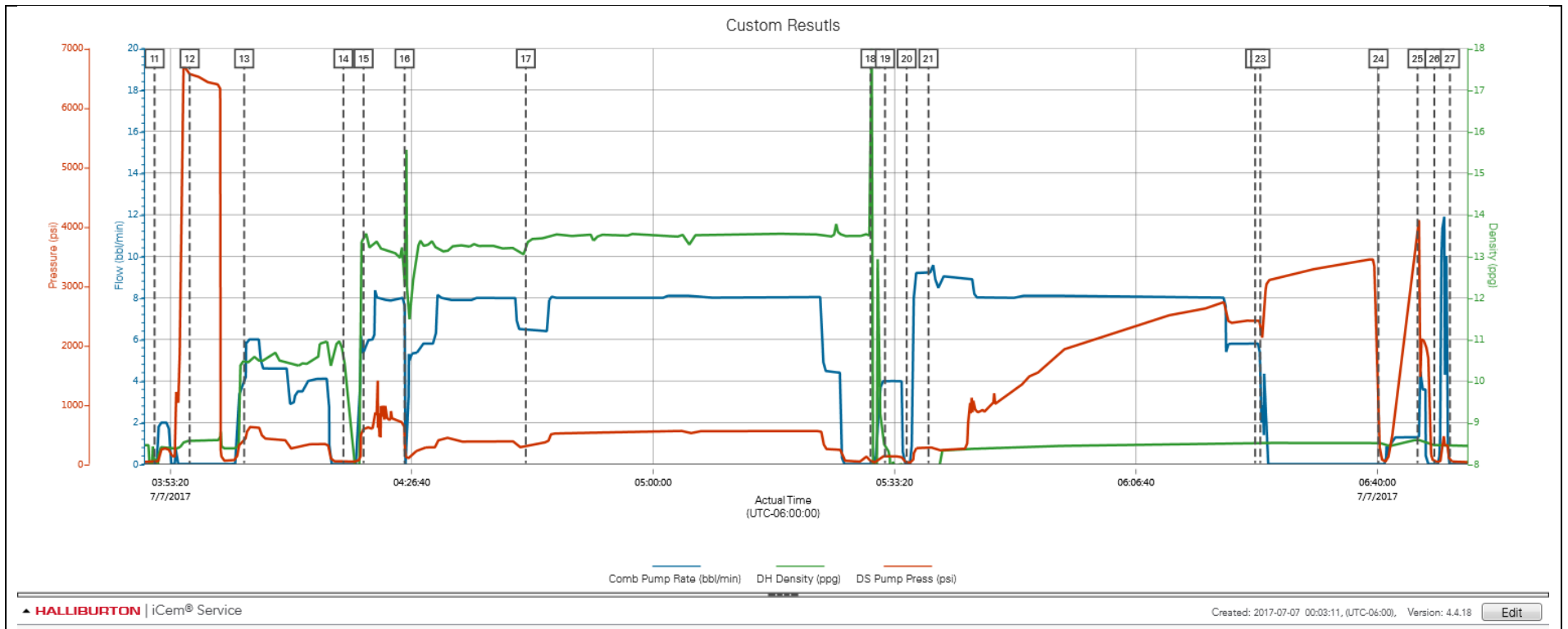
2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	7/6/2017	18:30:00	USER				Crew of Aaron Smith, Randy Blackham, Luis Ramirez, Alfred Montez, and Tyler Riggs, called out by Mark Phillips for on location @ Midnight
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	7/6/2017	22:00:00	USER				Journey management meeting held prior to departure to discuss planned route and hazards of route.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	7/6/2017	22:30:00	USER				Journey called into dispatch, depart yard with all materials and equipment.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	7/6/2017	22:50:00	USER				With all equipment and materials, discussed numbers and job procedure with customer rep, performed hazard hunt, water test, and verified plugs.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	7/6/2017	22:55:00	USER				JSA to discuss planned rig-up and hazards of rig-up.
Event	6	Rig-Up Equipment	Rig-Up Equipment	7/6/2017	23:00:00	USER				Rig-up all surface lines and equipment up to the red zone
Event	7	Casing on Bottom	Casing on Bottom	7/7/2017	00:15:00	USER				landing joint brought to floor and landed
Event	8	Rig-Up Completed	Rig-Up Completed	7/7/2017	00:30:00	USER				After all casing had been ran
Event	9	Circulate Well	Circulate Well	7/7/2017	00:32:00	USER				10 bpm, 3 hrs, 1800 bbls.
Event	10	Pre-Job Safety Meeting	Pre-Job Safety Meeting	7/7/2017	03:30:00	USER				With all essential personnel
Event	11	Start Job	Start Job	7/7/2017	03:51:09	COM5	0.00	8.13	31.00	With water supplied from frac tanks, water tested good to mix cement, Ph7 ClO on high scale, Temp 72
Event	12	Test Lines	Test Lines	7/7/2017	03:55:59	USER	0.00	8.56	6566.00	Tested pumps and lines to 6500 psi, test was good.
Event	13	Pump Spacer 1	Pump Spacer 1	7/7/2017	04:03:31	USER	4.00	10.46	416.00	60 bbls tuned spacer @10.5 ppg, 40 gal musol a, 40 gal dual spacer b, 15 gal d-air.
Event	14	Drop Bottom Plug	Drop Bottom Plug	7/7/2017	04:17:13	USER	0.00	10.62	43.00	Pre-loaded Weatherford bottom plug in plug container, verified by customer rep.

Event	15	Pump Lead Cement	Pump Lead Cement	7/7/2017	04:20:00	USER	5.50	13.45	600.00	150 sks(41.94 bbls) Elasticem @ 13.2 ppg, verified with pressurized scales. 8 BPM 800 psi
Event	16	Pump Lead Cement	Pump Lead Cement	7/7/2017	04:25:40	USER	7.60	12.37	516.00	390 sks(109.05 bbls) Elasticem @ 13.2 ppg, verified with pressurized scales 8 bpm 569 psi
Event	17	Pump Tail Cement	Pump Tail Cement	7/7/2017	04:42:25	USER	6.50	13.34	294.00	1100 sks(329.13 bbls) EconoCem @ 13.5 ppg, verified with pressurized scales. 8 BPM 569 psi.
Event	18	Shutdown	Shutdown	7/7/2017	05:30:00	USER	0.00	15.09	53.00	To blow lines down from the floor.
Event	19	Clean Lines	Clean Lines	7/7/2017	05:32:00	USER	4.00	8.45	138.00	Wash pumps and lines to the pit.
Event	20	Drop Top Plug	Drop Top Plug	7/7/2017	05:35:00	USER	0.00	7.95	27.00	Pre-loaded Weatherford top plug in plug container, verified with pressurized scales.
Event	21	Pump Displacement	Pump Displacement	7/7/2017	05:38:00	USER	9.20	7.94	286.00	378.58 bbls fresh water with 10 gallons MMCR in first 20 bbls, 5 gallons AldiCide throughout.
Event	22	Spacer Returns to Surface	Spacer Returns to Surface	7/7/2017	06:23:07	USER	5.80	8.48	2381.00	@275 bbls displacement, 3 bbls to surface TOLC 1156', TOTC 5669'
Event	23	Bump Plug	Bump Plug	7/7/2017	06:23:50	USER	4.00	8.49	2337.00	@500 psi over final circulating pressure of 1940 psi,
Event	24	Check Floats	Check Floats	7/7/2017	06:40:08	USER	0.00	8.54	1411.00	floats good 4 bbls back
Event	25	Pressure Up	Pressure Up	7/7/2017	06:45:32	USER	1.30	8.59	3891.00	Pressure up to shear pins, pins sheared at 4913 psi, pumped 3 bbls wet shoe.
Event	26	End Job	End Job	7/7/2017	06:47:51	COM5				
Event	27	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	7/7/2017	06:50:00	USER	0.00	8.44	67.00	JSA to discuss the hazards of rig-down
Event	28	Rig-Down Completed	Rig-Down Completed	7/7/2017	07:20:00	USER				With no incidents or injuries
Event	29	Depart Location Safety Meeting	Depart Location Safety Meeting	7/7/2017	07:25:00	USER				Journey management meeting held prior to departure
Event	30	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	7/7/2017	07:30:00	USER				Journey called into dispatch

3.0 Attachments

3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

