

## HALLIBURTON

## Cementing Job Summary

### The Road to Excellence Starts with Safety

Sold To #: 300466	Ship To #: 3712344	Quote #: 0022276406	Sales Order #: 0903859881							
Customer: ANADARKO PETROLEUM CORP - EBUS		Customer Rep: James Adkins								
Well Name: PUMA FED	Well #: 13C-35HZ	API/UWI #: 05-123-42566-00								
Field: WATTENBERG	City (SAP): IONE	County/Parish: WELD	State: COLORADO							
Legal Description: SW SW-23-1N-67W-290FSL-706FWL										
Contractor: NABORS DRLG		Rig/Platform Name/Num: NABORS X22								
Job BOM: 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA/HX41066		Srvc Supervisor: Nicholas Roles								
Job										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	18047ft	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	2270	0	2270
Casing		5.5	4.892	17	LTC	HCP110	0	18047	0	6934
Open Hole Section			8.5				2270	18056	2270	6934
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5					Top Plug	5.5		HES	
Float Shoe	5.5			18047		Bottom Plug	5.5		HES	
Float Collar	5.5					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	80	bbl	11	4.64		6		
0.50 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								
35.60 gal/bbl		FRESH WATER								
0.50 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
120.20 lbm/bbl		BARITE, BULK (100003681)								

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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
2	ElastiCem - Cap Cement	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		8	7.57
7.57 Gal		FRESH WATER							
0.85 %		SCR-100 (100003749)							
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	625	sack	13.2	1.6		8	7.69
0.50 %		SCR-100 (100003749)							
7.69 Gal		FRESH WATER							
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	1700	sack	13.5	1.68		8	7.99
7.99 Gal		FRESH WATER							
0.35 %		HR-5, 50 LB SK (100005050)							
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			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	Biocide Water	Biocide Water	396.5	bbl	8.34			10	
Cement Left In Pipe		Amount	93 ft			Reason		Shoe Joint	
Comment Got 53bbbls spacer to surface. Estimated TOT-5645', TOLw/ CBL-1425', TOL w/o CBL-551'									

## 2.0 Real-Time Job Summary

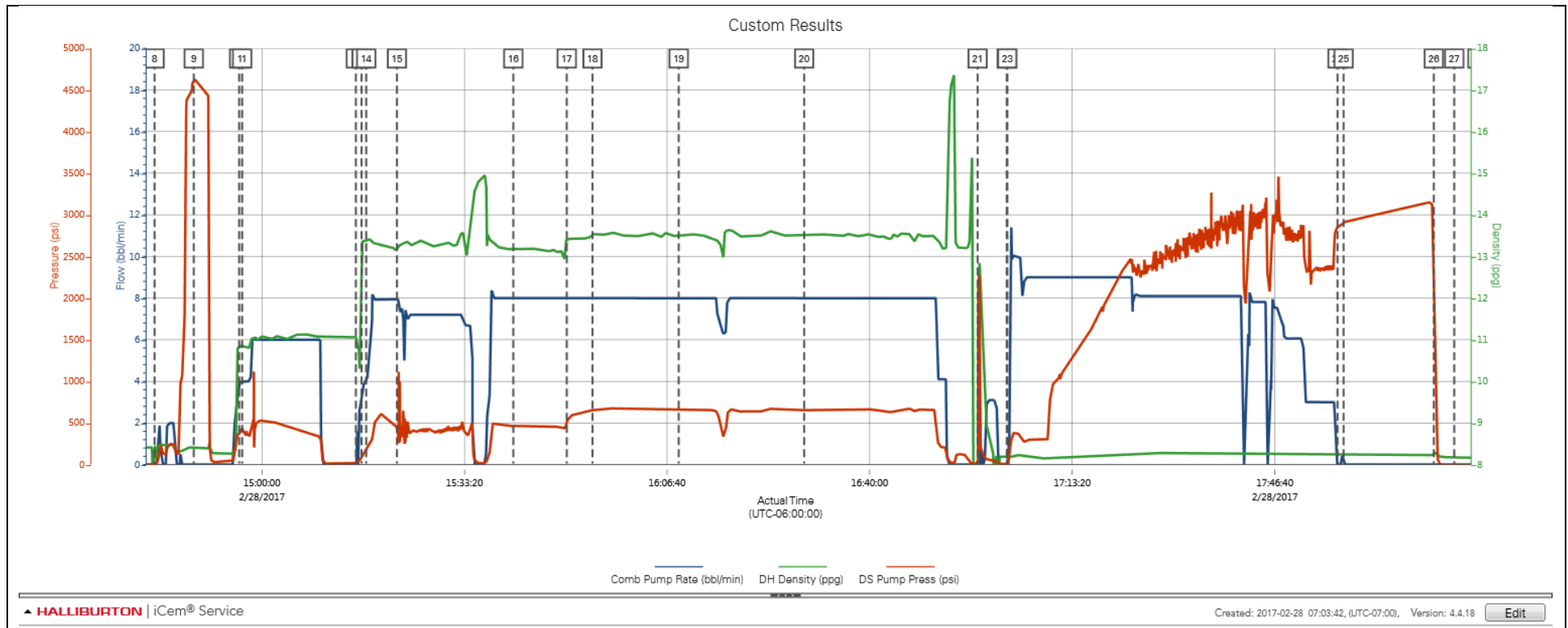
## 2.1 Job Event Log

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	2/28/2017	05:30:00	USER				Crew call out for o/i at 1030
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/28/2017	09:15:00	USER				All crew aware of hazards and directions. All fit to drive.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	2/28/2017	09:30:00	USER				Started journey management.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	2/28/2017	10:00:00	USER				Met with company man to discuss job details and procedure. Performed hazard hunt and site assessment.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	2/28/2017	10:15:00	USER				All hse present. Discussed bulk and iron placement and all red zone areas. Caution taped high pressure zones.
Event	6	Other	Other	2/28/2017	10:30:00	USER				Water Test- PH-6 Chlo-0 Temp-60 Cement temp-70
Event	7	Safety Meeting - Pre Job	Safety Meeting - Pre Job	2/28/2017	14:15:00	USER				Discussed job associated hazards, contingencies and job procedure with all job associated personnel.
Event	8	Start Job	Start Job	2/28/2017	14:42:20	COM1				TD-18056', TP-18047' 5.5" 17#, FC-17954', TVD-6934', SURF-2270' 9.625" 36#, OH-8.5", MUD-9.1#
Event	9	Test Lines	Test Lines	2/28/2017	14:48:47	COM1	0.00	8.42	4640.00	Pumped 5bbls fresh water at 2bpm 235psi, closed manifold and performed 500psi k/o function test, proceeded to bring pressure to 4800psi. Pressure held no leaks.
Event	10	Pump Spacer 1	Pump Spacer 1	2/28/2017	14:56:14	COM1	3.90	10.86	412.00	Pumped 80bbls 11# 4.64Y 29.6g/s Tuned Spacer III at 6bpm 445psi with 40g Musol A, 40g Dual Spacer B and 15g D-air.
Event	11	Check Weight	Check Weight	2/28/2017	14:56:44	COM1	4.00	10.83	419.00	Weight verified with pressurized mud scales.
Event	12	Drop Bottom Plug	Drop Bottom Plug	2/28/2017	15:15:27	COM1				Dropped by HES supervisor witnessed by company man.
Event	13	Pump Lead Cement	Pump Lead Cement	2/28/2017	15:16:23	COM1	3.00	12.94	80.00	Pumped 150sks or 41.9bbls of 13.2# 1.57y 7.57g/s Elasticem w/o CBL at 8bpm 394psi.
Event	14	Check Weight	Check Weight	2/28/2017	15:17:09	COM1				Weight verified with pressurized mud scales.

Event	15	Pump Lead Cement	Pump Lead Cement	2/28/2017	15:22:13	COM1				Pumped 625sks or 178bbbls of 13.2# 1.6y 7.69g/s Elasticem w/CBL at 8bpm 425psi.
Event	16	Check Weight	Check Weight	2/28/2017	15:41:22	COM1				Weight verified with pressurized mud scales.
Event	17	Pump Tail Cement	Pump Tail Cement	2/28/2017	15:50:09	COM1				1700sks or 508bbbls of 13.5# 1.68y 7.95g/s of 13.5# 1.68y 7.99g/s Econocem at 8bpm 670psi.
Event	18	Check Weight	Check Weight	2/28/2017	15:54:23	USER	8.00	13.55	657.00	Weight verified with pressurized mud scales.
Event	19	Check Weight	Check Weight	2/28/2017	16:08:34	COM1				Weight verified with pressurized mud scales.
Event	20	Check Weight	Check Weight	2/28/2017	16:29:12	COM1				Weight verified with pressurized mud scales.
Event	21	Other	Other	2/28/2017	16:57:45	COM1				Shutdown, rig blew air through lines followed with 5bbbls fresh water to clean pumps and lines.
Event	22	Drop Top Plug	Drop Top Plug	2/28/2017	17:02:32	COM1				Dropped by HES supervisor witnessed by company man.
Event	23	Pump Displacement	Pump Displacement	2/28/2017	17:02:39	COM1				Pumped 416.5bbbls fresh water with first 20bbbls 10g of MMCR, Biocide through out. at 10bpm 2655psi.
Event	24	Bump Plug	Bump Plug	2/28/2017	17:56:58	COM1				Slowed down to 3bpm at 400bbbls gone, final circulating pressure-2375psi. Bumped at 2920psi.
Event	25	Other	Other	2/28/2017	17:57:58	COM1				Brought pressure to 3000psi and held for 15min.
Event	26	Check Floats	Check Floats	2/28/2017	18:12:49	USER	0.00	8.26	2276.00	Released pressure and got 5bbbls fresh water back.
Event	27	End Job	End Job	2/28/2017	18:16:11	COM1				Got 53bbbls spacer to surface. Estimated TOT-5645', TOLw/CBL-1425', TOL w/o CBL-551'
Event	28	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	2/28/2017	18:20:00	USER	0.00	8.16	-6.00	All HSE present. Discussed red zone areas and trapped pressure hazards. Watch for suspended loads and rig down procedures, including hand placement, lifting techniques, and swing radius.
Event	29	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/28/2017	19:30:00	USER				All HSE present and fit to drive. Aware of directions and hazards.
Event	30	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	2/28/2017	19:45:00	USER				Pre journey managment prior to departure.

## 3.0 Attachments

### 3.1 Custom Results – Job Chart with Events



3.2 Custom Results – Job Chart without Events

