

**HALLIBURTON**

*Cementing Job Summary*

*The Road to Excellence Starts with Safety*

Sold To #: 300466		Ship To #: 3765181		Quote #: 0022304492		Sales Order #: 0904033454				
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: Mark Kittrell						
Well Name: BABCOCK			Well #: 23N-33HZ		API/UWI #: 05-123-43805-00					
Field: WATTENBERG		City (SAP): FIRESTONE		County/Parish: WELD		State: COLORADO				
Legal Description: SE NW-4-2N-67W-2137FNL-2145FWL										
Contractor: Precision				Rig/Platform Name/Num: Precision 464						
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HX41066				Srvc Supervisor: Luke Kosakewich						
<b>Job</b>										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		12182ft		Job Depth TVD		7,177FT				
Water Depth				Wk Ht Above Floor						
Perforation Depth (MD)		From		To						
<b>Well Data</b>										
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	1872	0	0
Casing		5.5	4.892	17	LTC	HCP110	0	12172	0	0
Open Hole Section			8.5				1872	12182	0	0
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe					Top Plug	5.5	1	Weatherford		
Float Shoe	5.5			12172	Bottom Plug	5.5	1	Weatherford		
Float Collar	5.5			12125	SSR plug set					
Insert Float					Plug Container	5.5	1	HES		
Stage Tool					Centralizers					
<b>Fluid Data</b>										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Tuned Spacer III	Tuned Spacer III	60	bbl	10.5	6.26		4	40.7	
Stage/Plug #: 2										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	ElastiCem - Cap Cement	ELASTICEM (TM) SYSTEM	150	sack	13.2	1.57		7	7.53	

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	ElastiCem	ELASTICEM (TM) SYSTEM	545	sack	13.2	1.571		8	7.55
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	EconoCem Tail	ECONOCEM (TM) SYSTEM	880	sack	13.5	1.68		6	7.98
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
5	Biocide Water and MMCR	Biocide Water and MMCR	20	bbl	8.34			10	
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
6	Biocide Water	Biocide Water	262	bbl	8.34			8	
Cement Left In Pipe	Amount	ft	Reason					Shoe Joint	
Mix Water:	pH 7.5	Mix Water Chloride:	0 ppm	Mix Water Temperature:			78 °F		
<b>Comment</b> Estimated top of cap cement 1,114'. Estimated top of lead cement 2,010'. Estimated top of tail cement 5,745'. Had full returns throughout the job. Got 6bbbls. of spacer back 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)	DS Pump Press (psi)	DH Density (ppg)	Comments
Event	1	Call Out	Call Out	5/19/2017	15:30:00	USER				Crew called out 15:30 for an on location tim of 20:30
Event	2	Safety Meeting - Departing Location	Safety Meeting - Departing Location	5/19/2017	18:05:00	USER				Held pre journey safety meeting and JSA.
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	5/19/2017	18:15:00	USER				Started journy manegment with dispatch and the crew left the yard.
Event	4	Arrive at Location from Service Center	Arrive at Location from Service Center	5/19/2017	18:45:00	USER				Checked in with the customer. Got numbers needed to calculate the job and discused rig up. Rig was running casing. TD: 12,182' TP: 12,172' FC: 12,125' TVD: 7,177'. 9.625" 36# Surface casing set at 1,872" OH: 8.5". Production casing is 5.5" 17#.
Event	5	Safety Meeting - Pre Rig-Up	Safety Meeting - Pre Rig-Up	5/19/2017	22:00:00	USER				Preformed a hazard hunt and site assessment.Held pre rig up safety meeting and JSA.
Event	6	Rig-Up Equipment	Rig-Up Equipment	5/19/2017	22:15:00	USER				Spotted trucks in and rigged up all iron and hoses for the job.
Event	7	Safety Meeting	Safety Meeting	5/20/2017	01:10:40	USER	0.00	18.00	8.50	Held safety meeting with all personel.
Event	8	Start Job	Start Job	5/20/2017	03:26:40	COM4				Pumped 3 bbl. of fresh water to fill lines.
Event	9	Other	Other	5/20/2017	03:28:49	COM4	0.80	19.00	8.20	Dropped bottom plug

										witness by the customer.
Event	10	Test Lines	Test Lines	5/20/2017	03:32:26	COM4	0.00	69.00	8.66	Pressure tested lines to 4,500 psi. with a 500 psi. electronic kick out test.
Event	11	Pump Spacer 1	Pump Spacer 1	5/20/2017	03:41:42	COM4	0.00	70.00	8.62	Pumped 60 bbls. of tuned spacer III mixed at 10.5 ppg. with surfactants.
Event	12	Pump Lead Cement	Pump Lead Cement	5/20/2017	04:06:03	COM4				Pumped 42 bbls. (150 sks.) of Elasticem mixed at at 13.2 ppg. without Super CBL. Density was verified by pressurized scales. Estimated top of cap cement is 1114'
Event	13	Pump Lead Cement	Pump Lead Cement	5/20/2017	04:12:59	USER	0.00	60.00	20.02	Pumped 153 bbls. (545 sks.) of Elasticem mixed at at 13.2 ppg. with Super CBL. Density was verified by pressurized scales. Estimated top of cement is 2010'
Event	14	Pump Tail Cement	Pump Tail Cement	5/20/2017	04:36:47	COM4				Pumped 264 bbls. (880 sks.) of Econocem mixed at at 13.5 ppg. Density was verified by pressurized scales. Estimated top of tail is 5,745'
Event	15	Shutdown	Shutdown	5/20/2017	05:11:32	COM4				Washed pumps and lines untill clean.
Event	16	Drop Top Plug	Drop Top Plug	5/20/2017	05:19:59	COM4				Dropped top plug witnessed by customer.
Event	17	Pump Displacement	Pump Displacement	5/20/2017	05:20:01	COM4	0.00	24.00	7.93	Pumped 282 bbls. of fresh water with MMCR in the first 20 bbls. and Biocide throughout all of displacment. Full returns throughout displacment.

Event	18	Displ Reached Cement	Displ Reached Cement	5/20/2017	05:25:59	COM4				Caught up to cement 55 bbls. into displacement.
Event	19	Bump Plug	Bump Plug	5/20/2017	05:55:18	COM4				Pressured up on the pug from 2,000 psi to 2,500 psi. and held for three minutes.
Event	20	Pressure Up Well	Pressure Up Well	5/20/2017	05:57:51	COM4				performed a casing test at 3,000 piqnd held for 15 minutes.
Event	21	Check Floats	Check Floats	5/20/2017	06:15:16	USER	0.00	2386.00	8.50	Bled off pressure and floats held. Got 3.5 bbls. back to the truck.
Event	22	End Job	End Job	5/20/2017	06:17:41	COM4				Washed pumps and lines until clean.
Event	23	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	5/20/2017	06:30:00	USER				Held pre rig down safety meeting and JSA.
Event	24	Rig-Down Equipment	Rig-Down Equipment	5/20/2017	06:45:00	USER				Rigged down all lines and hoses.
Event	25	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/20/2017	06:50:00	USER				Held pre journey safety meeting.
Event	26	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	5/20/2017	07:45:00	USER				Started journey manegment and the crew left location.

3.0 Attachments

3.1 Anadarko Babcock 23N-33HZ Production Job Chart.png

