

## HALLIBURTON

## Cementing Job Summary

*The Road to Excellence Starts with Safety*

Sold To #: 300466		Ship To #: 3747434		Quote #:		Sales Order #: 0903978890					
Customer: ANADARKO PETROLEUM CORP				Customer Rep: Pete Ayotte & James Adkins							
Well Name: CAMENISCH			Well #: 4C-35HZ			API/UWI #: 05-123-43344-00					
Field: WATTENBERG		City (SAP): IONE		County/Parish: WELD		State: COLORADO					
Legal Description: SW SW-2-1N-67W-425FSL-779FWL											
Contractor: NABORS DRLG					Rig/Platform Name/Num: NABORS X22						
Job BOM: 7523 7523											
Well Type: HORIZONTAL GAS											
Sales Person: HALAMERICA\HX41066					Srvc Supervisor: Bradley Hinkle						
<b>Job</b>											
Formation Name											
Formation Depth (MD)		Top			Bottom						
Form Type											
BHST											
Job depth MD		14209ft			Job Depth TVD		7671ft				
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	1852	0	1852
Casing			5.5	4.892	17	LTC	HCP110	0	14209	0	7671
Open Hole Section				8.5				1852	14220	0	7671
<b>Tools and Accessories</b>											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5					Top Plug	5.5	1	Weatherford		
Float Shoe	5.5	1		14209		Bottom Plug	5.5		HES		
Float Collar	5.5	1		14117		SSR plug set	5.5		HES		
Insert Float	5.5					Plug Container	5.5	1	HES		
Stage Tool	5.5					Centralizers	5.5		HES		
<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	10.5 lb/gal Tuned Spacer III	Tuned Spacer III			80	bbl	10.5	6.26	40.6	4	

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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	Cap Cement	ELASTICEM W/O SUPER CBL	150	sack	13.2	1.57		5	7.51	
3	Lead Cement	ELASTICEM W/ SUPER CBL	545	sack	13.2	1.57		5	7.53	
4	Tail Cement	ECONOCEM (TM) SYSTEM	1170	sack	13.5	1.68		5	7.98	
5	Displacement	Fresh Water with MMCR	20	bbl	8.34			5		
6	Displacement	Biocide Water	307	bbl	8.34			5		
Cement Left In Pipe		Amount	92 ft		Reason			Shoe Joint		
Mix Water:	pH 6	Mix Water Chloride:	0 ppm		Mix Water Temperature:	67 °F				
Cement Temperature:	## °F °C	Plug Displaced by:	## lb/gal kg/m3 XXXX		Disp. Temperature:	## °F °C				
Plug Bumped?	Yes	Bump Pressure:	2200 psi		Floats Held?	Yes				
Cement Returns:	## bbl m3	Returns Density:	## lb/gal kg/m3		Returns Temperature:	## °F °C				
<b>Comment</b> Observed interphase of spacer and mud at 240 bbls away and then lost returns at 250 bbls away for duration of displacement.										

## 2.0 Real-Time Job Summary

### 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density <i>(ppg)</i>	Comb Pump Rate <i>(bbl/min)</i>	DS Pump Press <i>(psi)</i>	Comments
Event	1	Call Out	Call Out	4/23/2017	11:30:00	USER				Crew called for an on location of 1530. Crew was Bradley Hinkle, Todd Porter, Knoell Coombs, Luke Kosakewich and William Mix.
Event	2	Depart Yard Safety Meeting	Depart Yard Safety Meeting	4/23/2017	14:30:00	USER				Pre-journey safety meeting.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	4/23/2017	15:00:00	USER				Sign in, perform a site assessment and pre rig-up safety meeting.
Event	4	Discuss Job	Job Numbers	4/23/2017	15:05:00	USER				Check-in with customer, discuss job and get numbers. TD: 14220. TP: 14209. FC: 14117. TVD: 7671. 5.5" 17# casing inside a 8.5" OH. 9.625" 36# surface casing set at 1852. Mud weight at 8.8 ppg.
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/24/2017	00:30:00	USER	8.51	0.00	24.00	Pre-job safety meeting with all personnel on location.
Event	6	Start Job	Start Job	4/24/2017	00:53:55	COM4	8.53	0.00	20.00	
Event	7	Test Lines	Test Lines	4/24/2017	01:11:07	COM4	8.57	0.00	111.00	Pressure test lines with a 500 PSI electronic kick-out test.
Event	8	Pump Spacer 1	Pump Spacer 1	4/24/2017	01:18:37	COM4	8.55	0.00	12.00	Pump 80 bbls Tuned Spacer mixed at 10.5 ppg with surfactants and 30 pounds Tuff-Fiber mixed in. Density

Event	9	Pump Lead Cement	Pump Lead Cement	4/24/2017	01:50:22	COM4	10.60	0.00	3.00	verified by pressurized scales.
Event	10	Check Weight	Check Weight	4/24/2017	01:58:47	COM4	13.32	5.10	242.00	Pump 42 bbls (150 sacks) ElastiCem without Super-CBL mixed at 13.2 ppg with 15 pounds Tuff-Fiber mixed in. Density verified by pressurized scales.
Event	11	Pump Lead Cement	Pump Lead Cement	4/24/2017	02:00:52	COM4	13.30	5.10	332.00	Cement weighed at 13.2 ppg.
Event	12	Pump Tail Cement	Pump Tail Cement	4/24/2017	02:39:00	COM4				Pump 152 bbls (545 sacks) ElastiCem with Super-CBL mixed at 13.2 ppg with 54.5 pounds Tuff-Fiber mixed in. Density verified by pressurized scales.
Event	13	Check Weight	Check Weight	4/24/2017	02:40:41	COM4	13.47	5.00	340.00	Pump 350 bbls (1170 sacks) EconoCem mixed at 13.5 ppg. Density verified by pressurized scales.
Event	14	Shutdown	Shutdown	4/24/2017	03:51:37	COM4	13.18	0.40	70.00	Cement weighed at 13.35 ppg.
Event	15	Clean Lines	Clean Lines	4/24/2017	03:53:26	COM4	13.20	0.00	14.00	Rig blew down lines to wash-up tank and then pump washed pumps and lines until clean.
Event	16	Drop Top Plug	Drop Top Plug	4/24/2017	04:08:23	COM4				Top plug preloaded. Customer witnessed plug drop.
Event	17	Pump Displacement	Pump Displacement	4/24/2017	04:08:24	COM4	8.37	0.00	3.00	Pump 327 bbls, first 20 bbls with cement retarder (MMCR) added and Biocide added throughout rest of displacement. Observed an interphase of spacer and

											<p>mud at 240 bbls away. Good returns throughout displacement until 250 bbls away and then returns stopped. Slowed rate to maintain a constant pressure and try to re-establish returns. Lost about 77 bbls of fluid downhole.</p>
Event	18	Bump Plug	Bump Plug	4/24/2017	05:12:19	COM4	8.35	4.00	2000.00		<p>Bump plug at 2200 PSI and increased pressure to 3000 PSI for a 15 minute casing test.</p>
Event	19	Check Floats	Check Floats	4/24/2017	05:28:42	USER	8.36	0.00	3147.00		<p>Didn't get a good indication of floats holding. Continued to get consistent flow for a quarter of a barrel over about 15 minutes.</p>
Event	20	Bump Plug	Bump Plug	4/24/2017	05:48:27	USER	8.32	3.60	341.00		<p>Bumped plug again and brought pressure to 3000 PSI. Held for 2 minutes.</p>
Event	21	Check Floats	Check Floats	4/24/2017	05:51:04	USER	8.38	0.00	2061.00		<p>Bled off pressure by surging bleed off valve. Floats held with 4 bbls back.</p>
Event	22	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	4/24/2017	05:55:00	USER	8.32	0.00	4.00		<p>Pre rig-down safety meeting.</p>
Event	23	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	4/24/2017	07:30:00	USER					<p>Pre-journey safety meeting.</p>

3.0 Attachments

3.1 Anadarko Camenisch 4C-35HZ Production Job Chart.png

