

Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 3973944		Quote #: 0022639144		Sales Order #: 0906043025					
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep:							
Well Name: FARLEY			Well #: 23-4HZ			API/UWI #: 05-123-50194-00					
Field: WATTENBERG		City (SAP): PLATTEVILLE		County/Parish: WELD		State: COLORADO					
Legal Description: SW SW-23-3N-66W-676FSL-481FWL											
Contractor: AKITA DRLG				Rig/Platform Name/Num: AKITA 522							
Job BOM: 7523 7523											
Well Type: HORIZONTAL GAS											
Sales Person: HALAMERICA\HX41066				Srvc Supervisor: Nicholas Cummins							
Job											
Formation Name											
Formation Depth (MD)		Top	1886ft	Bottom		11466ft					
Form Type				BHST							
Job depth MD		11458 ft		Job Depth TVD		7146ft					
Water Depth				Wk Ht Above Floor		3ft					
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	1886	0	1886	
Casing		5.5	4.892	17	LTC	HCP110	0	11458	0	7162	
Open Hole Section			7.875				1886	11466	1886	7162	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5	1	WTHR	11458		Top Plug	5.5	1	WTHR		
Float Shoe	5.5					Bottom Plug	5.5	1	WTHR		
Wet Shoe Sub	5.5	1	WTHR	11449		SSR plug set	5.5				
Insert Float	5.5					Plug Container	5.5	1	HES		
Stage Tool	5.5					Centralizers	5.5				
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	TUNED PRIME CEMENT SPACER SYS			60	bbl	10.5	6.17	39.6	5	2162
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

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2	Tuned Prime (No Surfactants)	TUNED PRIME CEMENT SPACER SYS	55	bbl	10.5	6.19	41.4	5	2065
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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Gasstop B1	GASSTOP (TM) SYSTEM	640	sack	13.2	1.56	7.61	6	4870

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
4	EconoCem	ECONOCER (TM) SYSTEM	380	sack	13.5	1.69	8.08	6	3071

Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
5	Biocide Water and MMCR	Biocide Water and MMCR	20	bbl	8.34			8	
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/min	Total Mix Fluid Gal
6	Displace	Fresh Water	246	bbl	8.34			8	

Cement Left In Pipe	Amount	5 ft	Reason				Shoe Joint		
Mix Water:	pH 7	Mix Water Chloride:	<400ppm			Mix Water Temperature:	65 °F		
Cement Temperature:	N/A	Plug Displaced by:	## lb/gal kg/m ³ XXXX			Disp. Temperature:	65 °F		
Plug Bumped?	Yes	Bump Pressure:	2100psi-3000psi			Floats Held?	Yes		
Cement Returns:	0 bbl	Returns Density:	N/A			Returns Temperature:	N/A		

Comment

115 bbls Spacer

178 bbls Lead

114 bbls Tail

266 bbls Displacement with MMCR in the first 20 and Biocide Throughout till the last 50 bbls

Bump calculated bump pressure 2,100 psi-3,000 psi

Floats held 2 bbls back to truck

Estimated 17 bbls of spacer to surface

Estimated top of Lead 2,145'

Estimated top of Tail 7,904'

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comments
Event	1	Call Out	Call Out	10/19/2019	10:00:00	USER	The crew was called out on 10/19/19 at 1000. The customer requested HES on location at 1600 on 10/19/19.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	10/19/2019	14:30:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving. The supervisor called in a journey. The crew departed service center.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	10/19/2019	15:00:00	USER	The crew arrived on location safely. The rig was still running casing. The supervisor met with the Company man and received numbers. TD 11,466', TP 11,458' 5 1/2" 17# P-110, WSS 11,449', PC 1,886' 9 5/8" 36# J-55, TVD 7,146', OH 7 7/8", Mud 9.5 ppg.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	10/19/2019	15:15:00	USER	Crew discussed all potential hazards on location.
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	10/19/2019	15:30:00	USER	Crew held a safety meeting discussing the rig up procedure. Also all potential hazards associated with rigging up all HES equipment and lines.

Event	6	Rig-Up Equipment	Rig-Up Equipment	10/19/2019	15:46:00	USER	The crew rigged up all HES equipment and lines.
Event	7	Rig-Up Completed	Rig-Up Completed	10/19/2019	17:00:00	USER	Rig up completed, no one got hurt.
Event	8	Safety Meeting - Pre Job	Safety Meeting - Pre Job	10/19/2019	17:20:00	USER	The crew and all personal involved with cement job discussed all potential hazards associated with job. Followed by the job procedure to ensure everyone understood the plan of action
Event	9	Start Job	Start Job	10/19/2019	17:43:22	COM1	Started recording data from Elite 11655460. Filled lines with 3 bbls of water 2 bpm pressure was at 600 psi.
Event	10	Test Lines	Test Lines	10/19/2019	17:48:13	COM1	Pressure tested all HES lines to 6,500. The pressure test failed.
Event	11	Test Lines	Test Lines	10/19/2019	17:55:19	USER	Re-pressure tested all HES lines to 6,500. The pressure test passed.
Event	12	Pump Spacer 1	Pump Spacer 1	10/19/2019	17:59:36	COM1	Pumped 60 bbls of Spacer with surfactants at 5 bpm, pressure was at 600 psi. 10.5 ppg 6.17 yield 39.6 gal/sk. Used pressurized scales to verify density.
Event	13	Pump Spacer 2	Pump Spacer 2	10/19/2019	18:11:10	COM1	Pumped 55 bbls of Spacer without surfactants and 1 gal of biocide at 5 bpm, pressure was at 550 psi. 10.5 ppg 6.19 yield 41.4 gal/sk. Used pressurized scales to verify density.

Event	14	Drop Bottom Plug	Drop Bottom Plug	10/19/2019	18:20:07	COM1	Company man witnessed plug leave container.
Event	15	Pump Lead Cement	Pump Lead Cement	10/19/2019	18:21:21	COM1	Pumped 178 bbls (640 sks) of lead cement at 8 bpm, pressure at 580 psi. 13.2 ppg 1.56 yield 7.61 gal/sk. We used pressurized scales to verify density.
Event	16	Pump Tail Cement	Pump Tail Cement	10/19/2019	18:44:46	COM1	Pumped 114 bbls (380sks) of tail cement at 8 bpm, pressure was at 570 psi. 13.5 ppg 1.69 yield 8.08 gal/sk. We used pressurized scales to verify density.
Event	17	Shutdown	Shutdown	10/19/2019	19:01:00	COM1	Shutdown to blow air then water from the rig floor to wash up tank. Pumped 15 bbls of fresh water to clean pumps and lines.
Event	18	Drop Top Plug	Drop Top Plug	10/19/2019	19:10:48	COM1	Company man witnessed plug leave container.
Event	19	Pump Displacement	Pump Displacement	10/19/2019	19:10:51	COM1	Pumped the calculated displacement of 266 bbls. With MMCR in the first 20 bbls and biocide throughout until the last 50 bbls. At 9 bpm we adjusted rate as needed.
Event	20	Displ Reached Cement	Displ Reached Cement	10/19/2019	19:18:13	COM1	Displacement reached cement 56 bbls in.
Event	21	Bump Plug	Bump Plug	10/19/2019	19:46:50	COM1	Bumped the plug, final circulating pressure was 2,100 psi. We brought pressure up to 3,000 psi and shutdown.

Event	22	Shift Tool - Lower	Shift Tool - Lower	10/19/2019	19:59:51	COM1	We pressured up to 4,730 psi at 2 bpm to shift wet shoe sub. The proceeded to pump a 3 bbl wet shoe at 5 bpm. Released pressure back to truck, floats held. 2 bbls back to truck.
Event	23	End Job	End Job	10/19/2019	20:03:23	COM1	Cement job complete. Stopped recording data from Elite 11645460. Estimated 17 bbls of Spacer to surface. Estimated top of Lead 2,145'. Estimated top of Tail 7,904'
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	10/19/2019	20:04:00	USER	Crew held a safety meeting discussing the rig down procedure. Also all potential hazards associated with rigging down all HES equipment and lines.
Event	25	Rig-Down Equipment	Rig-Down Equipment	10/19/2019	20:10:00	USER	The crew rigged down all HES equipment and lines.
Event	26	Rig-Down Completed	Rig-Down Completed	10/19/2019	20:58:12	USER	Rig down completed no one got hurt.
Event	27	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	10/19/2019	21:00:00	USER	The crew held a pre journey safety meeting discussing the route and potential hazards while driving The supervisor called in a journey.
Event	28	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	10/19/2019	21:40:00	USER	Nick Cummins and crew would like to thank you for your business, and choosing Halliburton Cement! Please feel free to call if you have any questions.

3.0 Attachments

3.1 Job Chart



