

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 3847976		Quote #: 0022440838		Sales Order #: 0904848122					
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: Luke Rains							
Well Name: AZUL			Well #: 13-17HZ			API/UWI #: 05-123-46111-00					
Field: WATTENBERG		City (SAP): HUDSON		County/Parish: WELD		State: COLORADO					
Legal Description: SE SW-13-1N-66W-822FSL-2327FWL											
Contractor: PRECISION DRLG				Rig/Platform Name/Num: PRECISION 464							
Job BOM: 7523 7523											
Well Type: HORIZONTAL GAS											
Sales Person: HALAMERICA\HX41066				Srv Supervisor: Steven Markovich							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		12852 ft		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	1872	0	0	
Casing		5.5	4.892	17	LTC	HCP110	0	12852	0	0	
Open Hole Section			7.875				1872	12862	1872	12862	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	5.5			12852		Top Plug	5.5		HES		
Float Shoe	5.5					Bottom Plug	5.5		HES		
Float Collar	5.5					SSR plug set	5.5		HES		
Insert Float	5.5					Plug Container	5.5		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	6.96			
37.58 gal/bbl		FRESH WATER									
0.70 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)									
0.25 gal/bbl		D-AIR 3000L, 5 GAL PAIL (101007444)									

0.70 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)							
79.92 lbm/bbl		BARITE, BULK (100003681)							
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	Gasstop B1	GASSTOP (TM) SYSTEM	400	sack	13.2	1.6		6	7.7
5.20 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
3	EconoCem	ECONOCEM (TM) SYSTEM	745	sack	13.5	1.68		6	7.99
7.99 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	Biocide Water and MMCR	Biocide Water and MMCR	20	bbl	8.34				
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
5	Biocide Water	Biocide Water	278.5	bbl	8.34				
Mix Water: pH 07		Mix Water Chloride: 00 ppm			Mix Water Temperature: 62 °F °C				
Comment Bumped plug at 298.5bbls away. Final lift pressure was 2772psi. During 15min casing test pressure went from 2954psi-3177psi. Plug burst at 5513psi then pumped a 5bbl wet shoe. Estiamted top of Tail Cement 5646' Estimate Top of Lead Cement 1958' Estimated Top of Spacer 674'.									

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	5/12/2018	05:00:00	USER	Job called out with an on location time of 11:00
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	5/12/2018	08:30:00	USER	JSA with HES crew on driving safety and route to rig.
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	5/12/2018	09:00:00	USER	Arrived on location, rig still running casing. 4000' to run.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	5/12/2018	09:20:00	USER	JSA and Hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	5/12/2018	09:40:00	USER	Rigged up HES lines and equipment.
Event	6	Start Job	Start Job	5/12/2018	12:01:01	COM4	TD 12862' TP 12852' FC 12840' 5 /2" 17# Production Casing, 7 7/8" Open Hole, 9 5/8" 36# Surface casing at 1872', TVD 7484' Mud Weight 9.4ppg. Water PH 7 Chlorides 0 Temp 62 degrees
Event	7	Other	Other	5/12/2018	12:01:05	COM4	Circulate latex water.
Event	8	Test Lines	Test Lines	5/12/2018	15:16:35	COM4	Set kick outs to 500psi and check kick outs, then bring pressure up to 6500psi and hold.
Event	9	Pump Spacer 1	Pump Spacer 1	5/12/2018	15:21:44	COM4	Pump 60bbls of 10.5ppg 6.96yield Tuned Spacer. Added 45 gallons of Musol and Dual Spacer B on the fly. Pumped at

5bbl/min 450pi.

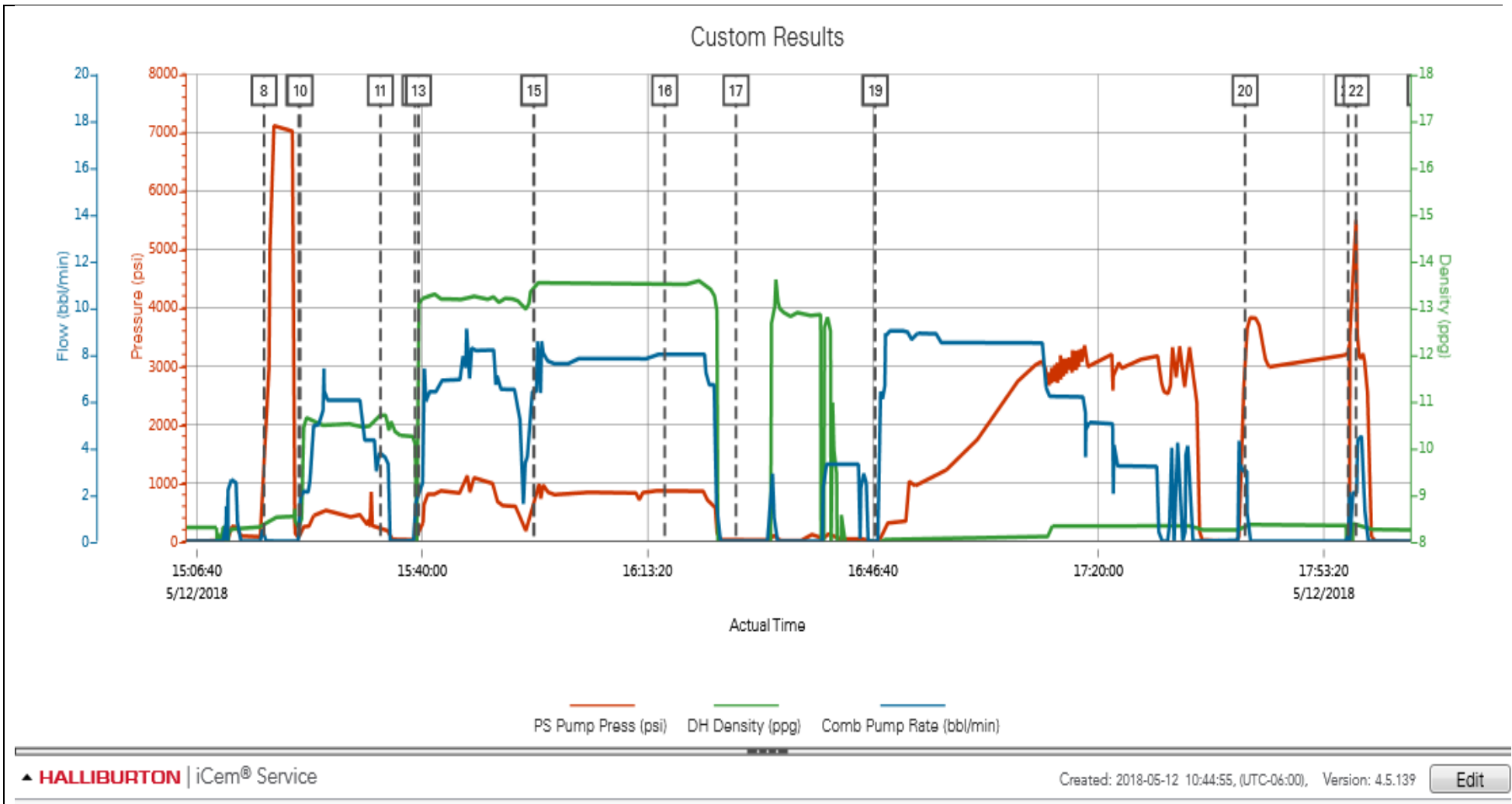
Event	10	Check Weight	Check Weight	5/12/2018	15:21:55	USER	Weight verified by pressurized scales.
Event	11	Drop Bottom Plug	Drop Bottom Plug	5/12/2018	15:33:48	USER	Plug pre loaded into HES head. Plug loaded and dropped in front of company rep.
Event	12	Pump Lead Cement	Pump Lead Cement	5/12/2018	15:38:55	COM4	Pump 114bbls of 13.2ppg 1.6 Lead cement. Mixed with latex mix water. Pumped at 7bbl/min 854psi.
Event	13	Check Weight	Check Weight	5/12/2018	15:39:26	USER	Weight verified by pressurized scales.
Event	14	Pump Tail Cement	Pump Tail Cement	5/12/2018	15:56:27	COM4	Pump 222bbls of 13.5ppg 1.68yield Tail Cement. Pumped at 8bbl/min 807psi.
Event	15	Check Weight	Check Weight	5/12/2018	15:56:31	USER	Weight verified by pressurized scales.
Event	16	Check Weight	Check weight	5/12/2018	16:15:50	COM4	Weight verified by pressurized scales.
Event	17	Shutdown	Shutdown	5/12/2018	16:26:23	COM4	Shutdown and clean pumps and lines.
Event	18	Drop Top Plug	Drop Top Plug	5/12/2018	16:46:55	COM4	Plug pre loaded into HES head. Plug loaded and dropped in front of company rep.
Event	19	Pump Displacement	Pump Displacement	5/12/2018	16:46:59	COM4	Pump 298.5bbls of H2O. First 20bbls with MMCR. Pumped at 9bbl/min and slowed rate with pressure increase.
Event	20	Other	Bump Plug	5/12/2018	17:41:40	COM4	Bumped Plug at 298.5bbls away final lift pressure was 2772psi. Brought pressure 500psi over and held. Lowered pressure to 2954psi for 15min casing test. After

15mins pressure climbed back up to 3177psi.

Event	21	Other	Other	5/12/2018	17:56:55	COM4	Kicked in pumps at 2bbl/min to burst plug.
Event	22	Other	Other	5/12/2018	17:58:06	COM4	Plug burst at 5513psi, then pumped a 5bbl wet shoe at 4.5bbl/min.
Event	23	End Job	End Job	5/12/2018	18:07:34	COM4	Thank you Steve Markovich and crew.

3.0 Attachments

3.1 Job Chart



iCem® Service

(v. 4.5.139)

Created: Monday, May 14, 2018

