

## HALLIBURTON

## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 3819620		Quote #: 0022368242		Sales Order #: 0904401272				
Customer: ANADARKO PETROLEUM CORP-EBUS				Customer Rep: J TRUETT						
Well Name: ROBIN		Well #: 9-17HZ		API/UWI #: 05-123-45249-00						
Field: WATTENBERG		City (SAP): HUDSON		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-9-1N-85W-317FSL-829FEL										
Contractor: NABORS DRLG				Rig/Platform Name/Num: NABORS X22						
Job BOM: 7523 7523										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA/HX41066				Srcv Supervisor: Robert Davis						
Job										
Formation Name										
Formation Depth (MD)		Top 1887		Bottom 18363						
Form Type BHST										
Job depth MD 18353ft		Job Depth TVD								
Water Depth										
Perforation Depth (MD)		From		To		Wk Ht Above Floor 4				
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	1888	0	1888
Casing		5.5	4.892	17	LTC	HCP110	0	18353	0	0
Open Hole Section			7.875				1888	18363	6674	7966
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	5.5			18353		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	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 ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Tuned Spacer III	Tuned Spacer III	80	bbl	10.5	6.25		7.5		
88.91 lbm/bbl		BARITE, BULK (100003681)								
37.58 gal/bbl		FRESH WATER								
0.70 gal/bbl		DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)								
0.70 gal/bbl		MUSOL A, 330 GAL TOTE - (790828)								

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Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
2	ElastiCem	ELASTICEM (TM) SYSTEM	625	sack	13.2	1.57		7.5	7.54
0.10 %		SUPER CBL, 50 LB PAIL (100003668)							
0.30 %		SCR-100 (100003749)							
7.54 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
3	EconoCem	ECONOCEM (TM) SYSTEM	1340	sack	13.5	1.68		7.5	7.98
7.98 Gal		FRESH WATER							
0.40 %		HR-5, 50 LB SK (100005050)							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
4	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 <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/mi n	Total Mix Fluid Gal
5	Biocide Water	Biocide Water	406	bbl	8.34			7	
Cement Left In Pipe		Amount	5 ft		Reason			Shoe Joint	
Mix Water:		pH 7	Mix Water Chloride:		200 ppm		Mix Water Temperature: 70 °F °C		
Cement Temperature:		## °F °C		Plug Displaced by:		8.33 lb/gal kg/m3 XXXX		Disp. Temperature: ## °F °C	
Plug Bumped?		Yes		Bump Pressure:		#2470-3000 psi MPa		Floats Held? Yes	
Cement Returns:		## bbl m3		Returns Density:		## lb/gal kg/m3		Returns Temperature: ## °F °C	
Comment BUMPED PLUG @ CALCULATED DISPLACEMENT, FLOATS HELD 3 BBLs BACK, RUPTURED SHOE @ 5017 PSI, 40 BBLs 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)	DH Density (ppg)	DS Pump Press (psi)	Comments
Event	1	Call Out	Call Out	11/3/2017	05:00:00	USER				CALLED OUT FROM FT. LUPTON COLORADO
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	11/3/2017	10:00:00	USER				LEAVE YARD AFTER SAFTEY MEETING
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	11/3/2017	10:30:00	USER				ARRIVED ON LOCATION AND TALKED TO COMPANY MAN ABOUT JOB FIGURES AND THE SPOTTING OF OUR EQUIPMENT
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	11/3/2017	10:40:00	USER				ASSESSED LOCATION AN TOOK WATER SAMPLE
Event	5	Rig-Up Equipment	Rig-Up Equipment	11/3/2017	10:50:00	USER				SPOTTED EQUIPMENT AND RIGGED UP TO FLOOR RIG IS RUNNING CASING
Event	6	Other	Other	11/3/2017	11:00:00	USER				Water test=pH: 7____, Cl: 150____, temp 70____degrees Tannin-Lignin:_NEG.____; Sulfate: _200____
Event	7	Other	Other	11/3/2017	11:15:00	USER				Rig Circulation: ____ bbls Circulation Rate: 10____ bbl/min Mud Density 9.7____ lb/gal Mud YP/PV: _____
Event	8	Other	Other	11/3/2017	11:30:00	USER				Spacer: _80____ bbl TOS_0____ Lead Cement: __175__ bbl, __625__ sks, TOC __489__ Tail Cement: __400__ bbl, _1340__ sks, TOC __5409____ Displacement: __426__ bblCMT left in Pipe_1/4____ Reason____SHOE____
Event	9	Other	Other	11/3/2017	11:40:00	USER				TD: 18363____, TP __18353.6____, SJ: _3.23____, OH: __7 7/8____, Casing: Size/Weight/Grade: _5.5/17#/P110_____ Previous Casing Shoe: _____
Event	10	Other	Other	11/3/2017	13:30:00	USER	0.00	8.44	-6.00	PUMP TRUCK WENT DOWN WHILE PRIMING UP, RESERULATOR MICRO MOTION NO READING TOLD CUSTOMER AND CALLED FOR ANOTHER PUMP TRUCK.
Event	11	Rig-Up Completed	Rig-Up Completed	11/3/2017	15:30:00	USER				RIG UP COMPLETE SAFETY MEETING WITH RIG HANDS AND HALLIBURTON ABOUT THE DANGERS OF OUR EQUIPMENT AND WENT OVER JOB FIGURES. READY TO TEST LINES

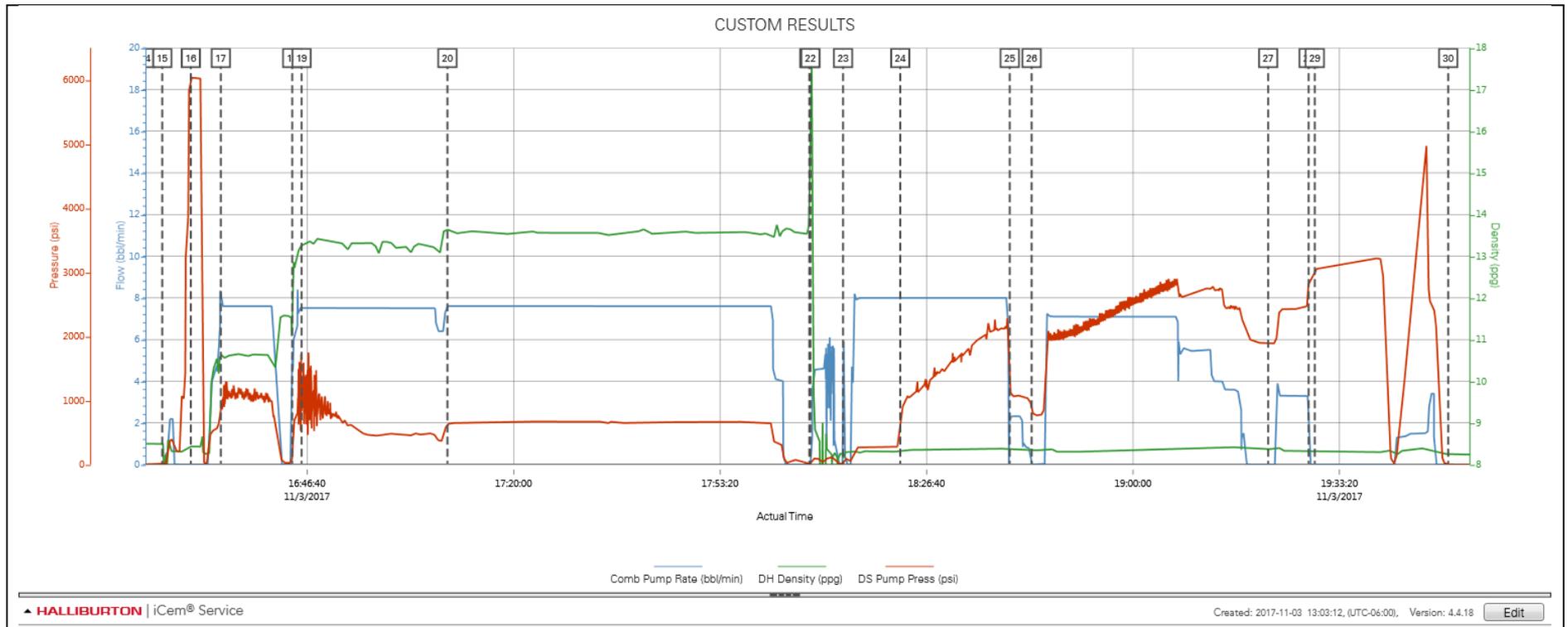
Event	12	Start Job	Start Job	11/3/2017	15:53:07	COM4				
Event	13	Start Job	Start Job	11/3/2017	15:58:43	COM4	0.00	8.50	6.00	
Event	14	Check Weight	Check weight	11/3/2017	16:20:34	COM4	0.00	8.50	0.00	
Event	15	Other	Other	11/3/2017	16:23:17	COM4	0.00	8.50	1.00	FLOOD LINES W/ 2 BBLS
Event	16	Test Lines	Test Lines	11/3/2017	16:27:55	COM4	0.00	8.44	6028.00	LOW TEST TO 500 PSI, HIGH TEST TO 6000 PSI
Event	17	Pump Spacer 1	Pump Spacer 1	11/3/2017	16:32:44	COM4	7.60	10.68	783.00	TUNED SPACER WITH SURFACTANTS @ 10.5 PPG, PUMPED @ 7.5 BPM @ 1100 PSI, HOS-489, TOS-0
Event	18	Drop Bottom Plug	Drop Bottom Plug	11/3/2017	16:44:17	USER	5.30	11.52	264.00	WEATHERFORD BOTTOM PLUG
Event	19	Pump Lead Cement	Pump Lead Cement	11/3/2017	16:45:47	USER	7.50	13.23	828.00	ELASTICEM, 625 SKS @ 13.2 PPG, YEILD @ 1.57, GAL/SK @ 7.54, 981.25 FT3, 175 BBLS, 112 BBLS OF WATER TO MIX, HOL-4920 FT, TOL-489 FT, PUMPED @ 7.5 BPM @ 460 PSI
Event	20	Pump Tail Cement	Pump Tail Cement	11/3/2017	17:09:20	COM4	7.60	13.64	647.00	ECONOCEM,1340 SKS @ 13.5 PPG, YEILD @ 1.68, GAL/SK @ 7.98, 2251.2 FT3, 400 BBLS, 255 BBLS OF WATER TO MIX, HOT-12944 FT, TOT-5409 FT, PUMPED @ 7.5 BPM @ 642 PSI
Event	21	Clean Lines	Clean Lines	11/3/2017	18:07:45	COM4	0.00	14.48	9.00	
Event	22	Drop Top Plug	Drop Top Plug	11/3/2017	18:07:55	COM4	0.00	16.06	6.00	WEATHERFORD TOP PLUG
Event	23	Pump Displacement	Pump Displacement	11/3/2017	18:13:12	COM4	1.20	8.10	16.00	426 BBLS FIRST 20 BBLS MMCR THE REST BIOCID WATER, PUMPED @ 7 BPM @ 2300 PSI SLOWED RATE LAST 20 BBLS @ 3 BPM @ 2400 PSI, 40 BBLS OF SPACER RETURNS TO SURFACE. HAD TROUBLE GETTING WATER 300 BBLS INTO DISPLACEMENT HAD TO SWAP WATER TANKS TWICE TO GET ENOUGH WATER TO FINISH JOB.
Event	24	Displ Reached Cement	Displ Reached Cmnt	11/3/2017	18:22:26	COM4	8.00	8.32	622.00	
Event	25	Other	Other	11/3/2017	18:40:06	COM4	2.30	8.36	1304.00	
Event	26	Other	Other	11/3/2017	18:43:38	COM4	0.00	8.35	863.00	
Event	27	Other	Other	11/3/2017	19:21:49	COM4	0.00	8.37	1893.00	
Event	28	Bump Plug	Bump Plug	11/3/2017	19:28:21	COM4	0.00	8.34	2810.00	500 OVER BUMPED @ 2470 PSI TOOK TO 3000 PSI, HELD FOR 15 MIN FOR CASING TEST., CHECK FLOATS, FLOATS HELD 3 BBLS BACK, RUPTURE WET SHOE SUP @ 5017 PSI
Event	29	Other	Other	11/3/2017	19:29:21	COM4	0.00	8.34	3031.00	

DID NOT CHARGE CUSTOMER ANY ADD HOURS BECAUSE WE WERE LATE TO LOCATION, AND OUR PUMP TRUCK WENT DOWN ON LOCATION RIG HAD TO WAIT ON US ABOUT A HOUR.

Event	30	End Job	End Job	11/3/2017	19:50:53	COM4					
Event	31	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	11/3/2017	20:00:00	USER	0.00	8.22	19.00	SAFETY MEETING OVER RIGGING DOWN	
Event	32	Rig-Down Equipment	Rig-Down Equipment	11/3/2017	20:15:00	USER				RIG DOWN EQUIPMENT AND HOSES	
Event	33	Rig-Down Completed	Rig-Down Completed	11/3/2017	21:00:00	USER				RIG DOWN COMPLETE	
Event	34	Safety Meeting - Departing Location	Safety Meeting - Departing Location	11/3/2017	21:15:00	USER				SAFETY MEETING OVER DEPARTURE AND JOURNEY HOME	
Event	35	Depart Location for Home	Depart Location for Home	11/3/2017	21:30:00	USER				LEAVE LOCATION	

3.0 Attachments

3.1 CUSTOM RESULTS – JOB CHART WITH EVENTS



3.2 CUSTOM RESULTS – JOB CHART WITHOUT EVENTS

