HALLIBURTON

iCem® Service

SRC ENERGY INC - EBUS

Sanford 5N-30B-M Production

Sincerely,

Meghan Jacobs

Legal Notice

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1.0 Cementing Job Summary

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Sanford 5N-30B-M** cement **Production** casing job. A pre-job safety meeting was held before the job where details of the job were discussed, potential safety hazards were reviewed, and environmental compliance procedures were outlined.

Approximately 11 bbls of cement were returned to surface.

Halliburton maintains a continuous quality improvement process and appreciates any comments or suggestions that you may have. Halliburton again thanks you for the opportunity to perform service work on this well. We hope to be your solutions provider for future projects.

Respectfully,

Halliburton Fort Lupton

The Road to Excellence Starts with Safety

Sold To #: 359915	**Ship To #:** 3953413	**Quote #:** 0022586118	**Sales Order #:** 0905740904
Customer: SRC ENERGY INC-EBUS		**Customer Rep:** Lovel Young	
Well Name: SANFORD	**Well #:** 5N-30B-M		**API/UWI #:** 05-123-49923-00
Field: WATTENBERG	**City (SAP):** GREELEY	**County/Parish:** WELD	**State:** COLORADO
Legal Description: NE NW-29-5N-66W-831FNL-2392FWL			
Contractor: PRECISION DRLG		**Rig/Platform Name/Num:** PRECISION 462	
Job BOM: 7523 7523			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB41307		**Srvc Supervisor:** Steven Markovich	

Job

Formation Name				
Formation Depth (MD)	**Top**		**Bottom**	
Form Type			**BHST**	
Job depth MD	15546ft		**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	LTC	J-55	0	1816		
Casing		5.5	4.778	20		P110IC	0	15546		0
Open Hole Section			8.5				1816	7206		0
Open Hole Section			8.5				7206	15560	0	0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	5.5			15546		**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 Prime Cement Spacer	SBM FDP-C1337-18 CEMENT SPACER SYS	80	bbl	11.5	3.84			

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	1253	sack	13.2	1.54		6	7.66

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	NeoCem	NeoCem TM	871	sack	13.2	2.05		6	9.79

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	MMCR Displacement	MMCR Displacement	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	Water	Water	231	bbl	8.33				
1 gal/Mgal		**CLA-WEB - BULK (101985043)**							

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
6	MMCR Displacement	MMCR Displacement	70	bbl	8.34				
0.50 gal/bbl		**D-AIR 3000L, 5 GAL PAIL (101007444)**							

Cement Left In Pipe	**Amount**	0 ft	Reason	**Wet Shoe**	
Mix Water:	pH 07	**Mix Water Chloride:**	00 ppm	Mix Water Temperature:	**61 °F °C**

Comment Pump 341bbls of H2O. First 20bbls and last 70bbls with MMCR, then 321bbls with biocide and clay web. Pumped at 10bbl/min and slowed with pressure increase. Spacer to surface at 250bbls away, cement to surface at 330 away bringing 11bbls of cement to surface. Bumped plug at 341bbls away. Final lift pressure was 2804psi. Took pressure 500psi over and held. WSS sheered at 5128psi. Increased rate to 5bbl/min and pumped a 6bbl wet shoe. Estimated Top of Tail Cement 7809'.

2.0 Real-Time Job Summary

2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comments
Event	1	Check Floats	Call Out	5/31/2019	10:30:00	USER				Job called out with an on location time of 1500 RTP 1700.
Event	2	Crew Leave Yard	Crew Leave Yard	5/31/2019	16:00:00	USER				JSA with HES crew on driving safety and route to rig.
Event	3	Arrive At Loc	Arrive At Loc	5/31/2019	16:45:00	USER				Arrived on location, rig still running casing. Approx 10 joints.
Event	4	Assessment Of Location Safety Meeting	Assessment of Location Safety Meeting	5/31/2019	16:50:00	USER	0.00	-18.00	0.00	JSA and Hazard hunt with HES crew.
Event	5	Start Job	Start Job	5/31/2019	16:55:13	COM4	0.00	-20.00	0.00	TD 15560' TP 15546' FC 15498' WSS 15440' 5 1/2" 20# Production Casing. 8 1/2" Open Hole, 9 5/8" 36# Surface Casing set at 1816', TVD 7206, Mud # 9.8ppg.
Event	6	Other	Other	5/31/2019	17:22:20	COM4	8.33	-20.00	0.00	Prime up
Event	7	Other	Other	5/31/2019	18:48:29	COM4	7.75	-23.00	0.00	Mix up latex.
Event	8	Pre-Job Safety Meeting	Pre-job Safety Meeting	5/31/2019	19:38:49	COM4	7.76	-2.00	0.00	JSA with HES and rig crew on job safety and procedure.
Event	9	Test Lines	Test Lines	5/31/2019	19:41:53	COM4	8.35	31.00	0.00	Set kick outs to 500psi and check low pressure kick outs. Bring pressure up to 6500psi and hold.
Event	10	Drop Bottom Plug	Drop Bottom Plug	5/31/2019	19:46:46	USER	8.34	16.00	0.00	Plugs pre-loaded into HES head. Plugs loaded and dropped in front of company rep.
Event	11	Pump Spacer 1	Pump Spacer 1	5/31/2019	19:47:01	COM4	8.35	14.00	0.00	Pump 80bbls of 11.5ppg 3.84yied Tuned Prime Spacer. Added 40 gallons of musol and dual spacer on the fly. Pumped at 5bbl/min 120psi.
Event	12	Check Weight	Check Weight	5/31/2019	19:52:40	COM4	11.40	136.00	4.00	Weight verified by pressurized scales.
Event	13	Check Weight	Check Weight	5/31/2019	19:53:30	COM4	11.71	125.00	4.00	Weight verified by pressurized scales.
Event	14	Check Weight	Check Weight	5/31/2019	19:59:32	COM4	11.70	125.00	5.00	Weight verified by pressurized scales.

Event	15	Pump Lead Cement	Pump Lead Cement	5/31/2019	20:06:09	COM4	11.94	114.00	5.30	Pump 343bbls (1253sks) of 13.2ppg 1.54yield Lead Cement mixed with latex. Pumped at 8bbl/min 571psi.
Event	16	Check Weight	Check Weight	5/31/2019	20:08:48	COM4	13.90	424.00	6.50	Weight verified by pressurized scales.
Event	17	Check Weight	Check Weight	5/31/2019	20:09:48	COM4	13.48	536.00	7.90	Weight verified by pressurized scales.
Event	18	Check Weight	Check Weight	5/31/2019	20:11:10	COM4	13.06	517.00	7.90	Weight verified by pressurized scales.
Event	19	Pump Tail Cement	Pump Tail Cement	5/31/2019	20:56:10	COM4	13.34	530.00	7.90	Pump 318bbls of 13.2ppg 2.05yield Tail Cement. Pumped at 8bbl/min 722psi.
Event	20	Shutdown	Shutdown	5/31/2019	21:39:56	COM4	13.11	85.00	0.00	Shutdown and clean pumps and lines.
Event	21	Drop Top Plug	Drop Top Plug	5/31/2019	21:55:37	COM4	6.65	14.00	0.00	Plugs pre-loaded into HES head. Plugs loaded and dropped in front of company rep.
Event	22	Pump Displacement	Pump Displacement	5/31/2019	21:55:44	COM4	7.62	12.00	0.00	Pump 341bbls of H2O. First 20bbls and last 70bbls with MMCR, then 321bbls with biocide and clayweb. Pumped at 10bbl/min and slowed with pressure increase. Spacer to surface at 250bbls away, cement to surface at 330 away bringing 11bbls of cement to surface.
Event	23	Bump Plug	Bump Plug	5/31/2019	22:41:27	COM4	8.37	2965.00	4.00	Bumped plug at 341bbls away. Final lift pressure was 2804psi. Took pressure 500psi over and held.
Event	24	Other	Other	5/31/2019	22:42:31	COM4	8.38	3222.00	0.00	Kicked in pumps at 2bbl/min to sheer WSS.
Event	25	Other	Other	5/31/2019	22:43:47	COM4	8.44	5121.00	2.00	WSS sheered at 5128psi. Increased rate to 5bbl/min and pumped a 6bbl wet shoe.
Event	26	Check Floats	Check Floats	5/31/2019	22:45:04	USER	8.37	2864.00	5.20	Opened release line to check floats, after 2.5bbls back floats held.
Event	27	End Job	End Job	5/31/2019	22:47:10	COM4	8.32	0.00	0.00	Thank you Steve Markovich and crew.

3.0 Attachments

3.1 Sanford 5N-30B-M Production – Job Chart