

# HALLIBURTON

iCem<sup>®</sup> Service

## **SRC ENERGY INC-EBUS**

Date: Saturday, March 24, 2018

### **Boomerang 28N-3A-L Production**

Job Date: Thursday, February 22, 2018

Sincerely,

**Bryce Hinsch**

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Table of Contents

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1.0    Cementing Job Summary ..... 4

    1.1    Executive Summary .....4

2.0    Real-Time Job Summary ..... 7

    2.1    Job Event Log .....7

3.0    Attachments..... 10

    3.1    SRC Boomerang 28N-3A-L Production Job Chart .....10

## 1.0 Cementing Job Summary

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### 1.1 Executive Summary

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Halliburton appreciates the opportunity to perform the cementing services on the **Boomerang 28N-3A-L** 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 48 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*

<b>Sold To #:</b> 359915		<b>Ship To #:</b> 3843184		<b>Quote #:</b>		<b>Sales Order #:</b> 0904654248				
<b>Customer:</b> SRC ENERGY INC-EBUS				<b>Customer Rep:</b> Lovel Young						
<b>Well Name:</b> BOOMERANG			<b>Well #:</b> 28N-3A-L		<b>API/UWI #:</b> 05-123-45998-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> GREELEY		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> SE NW-5-5N-66W-1526FNL-2327FWL										
<b>Contractor:</b> Precision				<b>Rig/Platform Name/Num:</b> Precision 462						
<b>Job BOM:</b> 7523 7523										
<b>Well Type:</b> HORIZONTAL OIL										
<b>Sales Person:</b> HALAMERICA\HB41307				<b>Srvc Supervisor:</b> Steven Markovich						
<b>Job</b>										
<b>Formation Name</b>										
<b>Formation Depth (MD)</b>		<b>Top</b>		<b>Bottom</b>						
<b>Form Type</b>				<b>BHST</b>						
<b>Job depth MD</b>		17245ft		<b>Job Depth TVD</b>						
<b>Water Depth</b>				<b>Wk Ht Above Floor</b>						
<b>Perforation Depth (MD)</b>		<b>From</b>		<b>To</b>						
<b>Well Data</b>										
<b>Description</b>	<b>New / Used</b>	<b>Size in</b>	<b>ID in</b>	<b>Weight lbm/ft</b>	<b>Thread</b>	<b>Grade</b>	<b>Top MD ft</b>	<b>Bottom MD ft</b>	<b>Top TVD ft</b>	<b>Bottom TVD ft</b>
Casing		9.625	8.921	36	LTC	J-55	0	1802		1802
Casing		5.5	4.778	20	BTC	P-110	0	17245	0	0
Open Hole Section			8.5				1802	17263	1802	6990
<b>Tools and Accessories</b>										
<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	<b>Depth ft</b>		<b>Type</b>	<b>Size in</b>	<b>Qty</b>	<b>Make</b>	
Guide Shoe	5.5			17245		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	
<b>Fluid Data</b>										
<b>Stage/Plug #: 1</b>										
<b>Fluid #</b>	<b>Stage Type</b>	<b>Fluid Name</b>	<b>Qty</b>	<b>Qty UoM</b>	<b>Mixing Density lbm/gal</b>	<b>Yield ft3/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>	
1	Tuned Spacer III	Tuned Spacer III	40	bbl	11.5	3.8		6		
35.10 gal/bbl		<b>FRESH WATER</b>								
0.50 gal/bbl		<b>MUSOL A, 330 GAL TOTE - (790828)</b>								
0.50 gal/bbl		<b>DUAL SPACER SURFACTANT B, 5 GAL PAIL (100003665)</b>								

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	ElastiCem LEAD	ELASTICEM (TM) SYSTEM	1003	sack	13.2	1.57		6	7.54
7.54 Gal		<b>FRESH WATER</b>							
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	1312	sack	13.2	2.04		4	9.77
9.77 Gal		<b>FRESH WATER</b>							
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				
0.1250 gal/bbl		<b>MICRO MATRIX CEMENT RETARDER, 5 GAL PAIL (100003781)</b>							
0.50 gal/bbl		<b>CLA-WEB - BULK (101985043)</b>							
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	358	bbl	8.33				
<b>Comment</b> Spacer to surface at 290bbbls away, cement to surface at 330bbbls away bringing 48bbbls of cement to surface. Estimated Top of Tail Cement 5620'. Kicked in pumps to shear WSS. WSS sheered at 5374psi and we got flow at the shakers, started to pump 6bbl wet shoe but the pressure maintained. Checked floats and got back 5bbbls back. Company mad requested to pump the 5bbbls back in and hold and see where the pressure levels out at. While pumping back in we re gained flow at the shaker. After pressure leveled out we checked floats and after 2.5bbbls back floats held.									

## 2.0 Real-Time Job Summary

## 2.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DS Pump Press (psi)	Comb Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Downhole Density (ppg)	Recirc Density (ppg)	Comments
Event	1	Call Out	Call Out	2/22/2018	02:00:00	USER						Job called out with an on location time of 08:00
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	2/22/2018	06:00:00	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	2/22/2018	07:20:00	USER						Arrived on location, rig still running casing. Rig had 2000' to run.
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	2/22/2018	07:30:00	USER						JSA and hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	2/22/2018	07:40:00	USER						Rigged up HES lines and equipment.
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	2/22/2018	12:30:00	USER	-42.00	0.00	1.3	0.00	0.00	JSA with HES and rig crew on job safety and procedure
Event	7	Start Job	Start Job	2/22/2018	13:03:56	COM4	-50.00	0.00	19.9	0.00	0.52	TD 17263 TP 17245.81' WSS 17138.68' 5 1/2" 20# Production Casing, 8 1/2" Open Hole, 9 5/8 36# Surface Casing at 1802', TVD 6990'
Event	8	Check Weight	Check weight	2/22/2018	13:07:44	COM4	-41.00	0.00	20.0	0.00	11.65	Weight verified by pressurized scales.
Event	9	Other	Other	2/22/2018	13:09:35	COM4	-42.00	0.00	20.0	0.00	11.58	Fill lines.
Event	10	Test Lines	Test Lines	2/22/2018	13:13:32	COM4	1.00	0.00	1.3	0.00	11.65	Set kick outs to 500psi and check kick outs, kick outs good. Then bring pressure up to 5000psi and hold.

Event	11	Pump Spacer 1	Pump Spacer 1	2/22/2018	13:23:51	COM4	-42.00	0.00	0.0	8.40	10.25	Pump 40bbls of 11.5ppg 3.8yield Tuned Spacer. Pumped at 5bbl/min 290psi. Added 20 gallons of Musol A and Dual Spacer B on the fly.
Event	12	Drop Bottom Plug	Drop Bottom Plug	2/22/2018	13:31:52	USER	335.00	5.00	24.8	11.72	11.54	Plug pre loaded into HES head. Plugs were loaded and dropped in front of company rep.
Event	13	Check Weight	Check weight	2/22/2018	13:37:41	COM4	-14.00	0.70	40.4	11.01	13.22	Weight verified by pressurized scales.
Event	14	Pump Lead Cement	Pump Lead Cement	2/22/2018	13:39:28	COM4	232.00	4.00	1.1	11.98	13.30	Pump 280bbls of 13.2ppg 1.57yield Lead Cement. Pumped at 7bbl/min 600psi.
Event	15	Check Weight	Check weight	2/22/2018	13:57:23	COM4						Weight verified by pressurized scales.
Event	16	Check Weight	Check weight	2/22/2018	14:19:21	COM4						Weight verified by pressurized scales.
Event	17	Pump Tail Cement	Pump Tail Cement	2/22/2018	14:27:57	COM4						Pump 476bbls of 13.2ppg 2.04yield Tail Cement. Pumped at 6bbl/min 630psi.
Event	18	Check Weight	Check weight	2/22/2018	14:30:11	COM4						Weight verified by pressurized scales.
Event	19	Check Weight	Check weight	2/22/2018	14:55:57	COM4						Weight verified by pressurized scales.
Event	20	Shutdown	Shutdown	2/22/2018	15:43:24	COM4						Shutdown and clean pumps and lines
Event	21	Drop Top Plug	Drop Top Plug	2/22/2018	15:54:15	COM4						Plug pre loaded into HES head. Plugs were loaded and dropped in front of company rep.
Event	22	Pump Displacement	Pump Displacement	2/22/2018	15:54:19	COM4						Pump 378bbls of H2O. First 20bbs with MMCR then



												358bbls with clay web and biocide added on the fly. Pumped at 8bbl/mn and slowed rate with pressure increase. Spacer to surface at 290bbls away, cement to surface at 330bbls away bringing 48bbls of cement to surface.
Event	23	Other	Other	2/22/2018	16:59:30	COM4	2668.00	4.00	379.6	8.35	-5.79	Bumped plug at 378bbls, final lift pressure was 2678psi. Brought pressure 1000psi over and held.
Event	24	Other	Other	2/22/2018	17:00:25	USER	3596.00	0.50	380.7	8.37	-5.80	Kicked in pumps to heer WSS. WSS sheered at 5374psi and we got flow at the shakers, started to pump 6bbl wet shoe but the pressure maintained. Checked floats and got back 5bbls back.
Event	25	Other	Other	2/22/2018	17:10:44	USER	-22.00	0.20	388.3	8.28	-5.80	Company mad requested to pump the 5bbls back in and hold and see where the pressure levels out at. While pumping back in we re gained flow at the shaker. After pressure leveled out we checked floats and after 2.5bbls back floats held.
Event	26	End Job	End Job	2/22/2018	17:19:29	COM4						Thank you Steve Markovich and crew.

3.0 Attachments

3.1 SRC Boomerang 28N-3A-L Production Job Chart

