

# HALLIBURTON

iCem<sup>®</sup> Service

## **SRC ENERGY INC-EBUS**

Date: Tuesday, December 19, 2017

## **Falken 31C-14-S Production**

Job Date: Sunday, December 10, 2017

Sincerely,

**Bryce Hinsch**

## Legal Notice

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## 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 **Falken 31C-14-S** 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 10 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> 3815786		<b>Quote #:</b>		<b>Sales Order #:</b> 0904482317				
<b>Customer:</b> SYNERGY RESOURCES CORPORATION				<b>Customer Rep:</b> Kevin						
<b>Well Name:</b> FALKEN			<b>Well #:</b> 31C-14-S		<b>API/UWI #:</b> 05-123-45116-00					
<b>Field:</b> WATTENBERG		<b>City (SAP):</b> GREELEY		<b>County/Parish:</b> WELD		<b>State:</b> COLORADO				
<b>Legal Description:</b> NE SE-11-6N-66W-1649FSL-276FEL										
<b>Contractor:</b> PRECISION DRLG				<b>Rig/Platform Name/Num:</b> PRECISION 562						
<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>		13458ft		<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	1804	0	0
Casing		5.5	4.778	20		P-110	0	13458	0	0
Open Hole Section			8.5				1804	13478	0	0
<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			13458		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		

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	1037	sack	13.2	1.57		6	7.54
7.54 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	NeoCem	NeoCem TM	785	sack	13.2	2.04		4	9.77
9.77 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	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	Cla Web Displacement	Cla Web Displacement	275	bbl	8.33				
Cement Left In Pipe		Amount	0 ft		Reason			Shoe Joint	
Comment Spacer to surface at 244bbbls away cement to surface at 284 away bringing 10bbbls of cement to surface, final lifting pressure was 2321psi. WSS burst at 4622psi and then pumped a 6bbl wet shoe. Estimated top of Tail Cement 6570'									

## 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	Call Out	Call Out	12/10/2017	02:30:00	USER				Job called out with an on location time of 09:00
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	12/10/2017	07:30:00	USER				JSA with HES crew on driving safety and route to location
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	12/10/2017	08:20:00	USER				Arrived on location, rig still running casing approx 2500'
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	12/10/2017	08:45:00	USER				JSA and Hazard hunt with HES crew.
Event	5	Rig-Up Equipment	Rig-Up Equipment	12/10/2017	09:00:00	USER				Rigged up HES lines and equipment
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/10/2017	13:00:00	USER	8.36	7.00	0.00	JSA with HES and rig crew on job safety and procedure.
Event	7	Start Job	Start Job	12/10/2017	13:28:25	COM4	8.82	0.00	0.00	TD 13478' TP 13458' WSS 13328' 5 1/2" 20# production casing 8 1/2" open hole 9 5/8" 36# surface casing @ 1804'
Event	8	Test Lines	Test Lines	12/10/2017	13:32:17	COM4	8.23	1.00	0.00	Set kick outs to 500psi and test kick outs then bring ressure up to 5500psi and hold.
Event	9	Check Weight	Check weight	12/10/2017	13:56:16	COM4	8.37	16.00	0.00	Weight verified by pressurized scales.
Event	10	Pump Spacer 1	Pump Spacer 1	12/10/2017	13:56:38	COM4	8.37	16.00	0.00	Pump 40bbls of 11.5ppg 3.8yield Tuned Spacer. Added 20 gallons of Musol

										A and Dual Spacer B on the fly. Pumped at 4bbl/min 80psi,
Event	11	Check Weight	Check weight	12/10/2017	14:01:46	COM4	11.30	50.00	3.10	Weight verified by pressurized scales.
Event	12	Pump Lead Cement	Pump Lead Cement	12/10/2017	14:16:49	COM4	12.37	30.00	3.30	Pump 290bbls (1037sks) of 13.2ppg 1.57yield Lead Cement. Pumped at 7bbl/min 500psi
Event	13	Check Weight	Check weight	12/10/2017	14:17:13	COM4	13.29	123.00	3.60	Weight verified by pressurized scales.
Event	14	Check Weight	Check weight	12/10/2017	14:21:28	COM4	13.27	563.00	7.30	Weight verified by pressurized scales.
Event	15	Check Weight	Check weight	12/10/2017	14:37:37	COM4	13.19	569.00	8.00	Weight verified by pressurized scales.
Event	16	Check Weight	Check weight	12/10/2017	14:50:16	COM4	13.17	490.00	8.00	Weight verified by pressurized scales.
Event	17	Pump Tail Cement	Pump Tail Cement	12/10/2017	15:01:42	COM4	13.12	613.00	8.10	Pump 285 (785sks) of 13.2ppg 2.04 yield Tail Cement. Pumped at 8bbl/min 718psi.
Event	18	Check Weight	Check weight	12/10/2017	15:02:26	COM4	13.04	649.00	8.00	Weight verified by pressurized scales.
Event	19	Check Weight	Check weight	12/10/2017	15:10:01	COM4	13.12	718.00	8.10	Weight verified by pressurized scales.
Event	20	Shutdown	Shutdown	12/10/2017	15:43:30	COM4	1.19	23.00	0.00	Shutdown and clean pumps and lines.
Event	21	Drop Top Plug	Drop Top Plug	12/10/2017	15:57:00	COM4	8.18	34.00	0.00	Plug pre loaded in HES head. Plug loaded and dropped in front of company rep.
Event	22	Pump Displacement	Pump Displacement	12/10/2017	15:57:04	COM4	8.25	49.00	0.00	Pump 294bbls of H2O. First 20bbls with MMCR then 275 with biocide and clay



web. Pumped at 10bbl/min and slowed down with pressure increase. Spacer to surface at 244bbls away cement to surface at 284 away bringing 10bbls of cement to surface.

Event	23	Bump Plug	Bump Plug	12/10/2017	16:36:53	COM4	8.33	2321.00	2.90	Bumped plug at 294bbs away. Final lifting pressure was 2321psi. took pressure 500psi over and held.
Event	24	Other	Other	12/10/2017	16:39:54	COM4	8.33	2780.00	0.30	Kicked pumps into burst WSS
Event	25	Other	Other	12/10/2017	16:41:07	USER	8.39	4622.00	2.00	WSS burst at 4622psi then pumped a 6 bbl west shoe.
Event	26	End Job	End Job	12/10/2017	16:45:02	COM4				Thank you Steve Markovich and crew.

## 3.0 Attachments

### 3.1 SRC Energy Falken 31C-14-S Production Job Chart

