

# HALLIBURTON

iCem<sup>®</sup> Service

## **GREAT WESTERN OIL & GAS LLC**

**For:**

Date: Wednesday, August 27, 2014

**Spaur Brothers EH 31-339HC Surface**

Great Western

Sincerely,

**Derek Trier**

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**1.1 Executive Summary**

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Halliburton appreciates the opportunity to perform the cementing services on the **Spaur Brothers EH 31-339HC** cement **Surface** 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.

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 Brighton**

**Job Times**

	<b>Date</b>	<b>Time</b>	<b>Time Zone</b>
<b>Called Out</b>	8/25/2014	0630	MST
<b>On Location</b>	8/25/2014	1045	MST
<b>Job Started</b>	8/25/2014	1159	MST
<b>Job Completed</b>	8/25/2014	1339	MST
<b>Departed Location</b>	8/25/2014	2445	MST

## 1.2 Cementing Job Summary

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## Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 346459	Ship To #: <del>327796</del> 327796	Quote #:	Sales Order #: 0901610559							
Customer: GREAT WESTERN OIL & GAS LLC - eBUS		Customer Rep: Arnold								
Well Name: SPAUR BROTHERS -EH-	Well #: 31-339 HD HC	API/UDI #: 05-123-38748-00								
Field: WATTENBERG	City (SAP): GALETON	County/Parish: WELD	State: COLORADO							
Legal Description: SE SE-31-7N-63W-352FSL-210FEL										
Contractor:		Rig/Platform Name/Num: Craig 7								
Job BOM: 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA/HB21661		Srv Supervisor: Brandon Nielson								
<b>Job</b>										
Formation Name										
Formation Depth (MD)	Top	Bottom								
Form Type	BHST									
Job depth MD	1055ft	Job Depth TVD								
Water Depth	Wk Ht Above Floor									
Perforation Depth (MD)	From	To								
<b>Well Data</b>										
Description	New / Used	Size in	ID in	Weight lbn/ft	Thread	Grade	Top MD ft	Bottom MD ft	Top TVD ft	Bottom TVD ft
Casing		9.625	8.921	36	STC	J-55	0	1044	0	1044
Open Hole Section			13.5				0	1060	0	1060
<b>Tools and Accessories</b>										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	9.625	1		1044	Top Plug	9.625	1	HES		
Float Shoe	9.625	1		44.60	Bottom Plug	9.625	1	HES		
Float Collar	9.625	1		1010.53	SSR plug set	9.625	1	HES		
Insert Float	9.625	1			Plug Container	9.625	1	HES		
Stage Tool	9.625	1			Centralizers	9.625	1	HES		
<b>Miscellaneous Materials</b>										
Gelling Agt		Conc		Surfactant		Conc	Acid Type		Qty	Conc
Treatment Fld		Conc		Inhibitor		Conc	Sand Type		Size	Qty
<b>Fluid Data</b>										
Stage/Plug #: 1										
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbn/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Fresh Water Spacer	Mud Flush III	10	bbl	8.4			6		
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbn/gal	Yield ft <sup>3</sup> /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
2	SwiftCem B2	SWIFTCEM (TM) SYSTEM	420	sack	14.2	1.54	7.64	6	7.64	

last updated on 8/25/2014 2:30:20 PM

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*Cementing Job Summary*

7.64 Gal		FRESH WATER							
<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 ft<sup>3</sup>/sack</b>	<b>Mix Fluid Gal</b>	<b>Rate bbl/min</b>	<b>Total Mix Fluid Gal</b>
3	Displacement	Displacement	78.4	bbl	8.33			6	
<b>Cement Left In Pipe</b>	<b>Amount</b>	45 ft		<b>Reason</b>			Shoe Joint		
<b>Comment</b>									

**1.3 Job Overview**

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		<b>Units</b>	<b>Description</b>
<b>1</b>	Surface temperature at time of job	°F	70
<b>2</b>	Mud type (OBM, WBM, SBM, Water, Brine)	-	Water
<b>3</b>	Actual mud density	lb/gal	8.6
<b>4</b>	Time circulated before job	HH:MM	0100
<b>5</b>	Mud volume circulated	Bbls	240
<b>6</b>	Rate at which well was circulated	Bpm	4
<b>7</b>	Pipe movement during hole circulation	Y/N	No
<b>8</b>	Rig pressure while circulating	Psi	
<b>9</b>	Time from end mud circulation to start of job	HH:MM	
<b>10</b>	Pipe movement during cementing	Y/N	No
<b>11</b>	Calculated displacement	Bbls	78.4
<b>12</b>	Job displaced by	Rig/HES	HES
<b>13</b>	Annular before job)?	Y/N	no
<b>14</b>	Annular flow after job	Y/N	no
<b>15</b>	Length of rat hole	Ft	
<b>16</b>	Units of gas detected while circulating	Units	
<b>17</b>	Was lost circulation experienced at any time ?	Y/N	N

1.4 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	Recirc Density (ppg)	DH Density (ppg)	DS Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	8/25/2014	08:30:00	USER					Call out for Job.
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	8/25/2014	09:30:00	USER					Held Pre convoy safety meeting and left the yard for location
Event	3	Arrive at Location from Service Center	Arrive at Location from Service Center	8/25/2014	10:45:00	USER					Arrive safely at location
Event	4	Rig-up Lines	Rig-up Lines	8/25/2014	10:55:00	USER					Begin Rig Up of all lines
Event	5	Pre-Job Safety Meeting	Pre-Job Safety Meeting	8/25/2014	11:40:00	USER	6.00	0.00	8.30	0.00	Held Pre Job safety meeting with crew, rig crew, and company man to discuss job procedures
Event	6	Start Job	Start Job	8/25/2014	11:59:46	COMB	3.00	8.33	8.17	0.00	
Event	7	Test Lines	Test Lines	8/25/2014	12:01:42	COMB	9.00	8.31	8.36	0.00	Test lines to 3000 psi, good test
Event	8	Pump Spacer 1	Pump Spacer 1	8/25/2014	12:05:15	COMB	6.00	7.85	8.29	0.00	Pump 10 bbl of Mudflush @ 8.4 ppg 20 psi
Event	9	Pump Spacer 2	Pump Spacer 2	8/25/2014	12:11:10	COMB	31.00	14.80	8.37	2.10	Pump 10 bbl of Fresh water spacer @ 8.33 ppg 30 psi
Event	10	Pump Cement	Pump Cement	8/25/2014	12:16:02	COMB	45.00	14.17	8.37	3.00	Mixed and pumped 115 bbl of Swiftcem Cement @ 14.2 ppg 4 bpm 100 psi
Event	11	Shutdown	Shutdown	8/25/2014	12:53:35	COMB	1.00	-0.04	0.59	0.00	
Event	12	Drop Top Plug	Drop Top Plug	8/25/2014	12:55:37	COMB	-1.00	8.39	0.51	0.00	Drop Top Plug
Event	13	Pump Displacement	Pump Displacement	8/25/2014	12:55:40	COMB	0.00	8.39	0.52	0.00	Pump 78 bbl of fresh water displacement. Slow down to 2 bpm last 20 bbl to land plug
Event	14	Bump Plug	Bump Plug	8/25/2014	13:19:10	COMB	1082.00	8.40	8.80	0.00	Landed plug 500 psi over final circulating pressure
Event	15	Pressure Up Well	Pressure Up Well	8/25/2014	13:19:56	COMB	1095.00	8.40	8.81	0.00	Pressure up on well to 2400 psi for 15 min
Event	16	Other	Other	8/25/2014	13:33:59	COMB	2513.00	8.40	8.85	0.00	Bleed off pressure. Floats

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											held, 1 bbl back
Event	17	End Job	End Job	8/25/2014	13:39:58	COM8	4.00	-0.04	8.76	1.20	
Event	18	Rig Down Lines	Rig Down Lines	8/25/2014	13:40:00	USER	4.00	-0.04	8.80	1.20	Rig down all lines and head.
Event	19	Rig-Down Completed	Rig-Down Completed	8/25/2014	14:15:00	USER					Rig Down Completed
Event	20	Depart Location	Depart Location	8/25/2014	14:45:00	USER					Depart location for yard

2.0 Appendix

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