

HALLIBURTON

iCem[®] Service

GREAT WESTERN OIL & GAS LLC

For:

Date: Wednesday, August 27, 2014

Spaur Brothers EH 31-382HN Surface

Great Western

Sincerely,

Derek Trier

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Spaur Brothers EH 31-382HN** 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

	Date	Time	Time Zone
Called Out	8-26	1900	MST
On Location	8-26	1125	MST
Job Started	8-27	0043	MST
Job Completed	8-27	0207	MST
Departed Location	8-27	0300	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 #: 3277961		Quote #:		Sales Order #: 0901611190				
Customer: GREAT WESTERN OIL & GAS LLC - eBUS				Customer Rep: Great Western Rep						
Well Name: SPAUR BROTHERS -EH-		Well #: 31-382HN		API/UWI #: 05-123-38746-00						
Field: WATTENBERG		City (SAP): GALETON		County/Parish: WELD		State: COLORADO				
Legal Description: SE SE-31-7N-63W-262FSL-210FEL										
Contractor:				Rig/Platform Name/Num: Craig 7						
Job BOM: 7521										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HB21661				Srv Supervisor: Nathan McBride						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		1060ft		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	STC	J-55	0	1044	0	1044
Open Hole Section			13.5				0	1060	0	1060
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft	Type	Size in	Qty	Make		
Guide Shoe	9.625			1044	Top Plug	9.625	1	HES		
Float Shoe	9.625				Bottom Plug	9.625		HES		
Float Collar	9.625				SSR plug set	9.625		HES		
Insert Float	9.625				Plug Container	9.625	1	HES		
Stage Tool	9.625				Centralizers	9.625		HES		
Miscellaneous Materials										
Gelling Agt		Conc		Surfactant		Conc	Acid Type		Qty	Conc
Treatment Fld		Conc		Inhibitor		Conc	Sand Type		Size	Qty
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	Fresh Water Spacer	Mud Flush III	10	bbl	8.4			6		
Stage/Plug #: 2										
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	SwiftCem B2	SWIFTCM (TM) SYSTEM	420	sack	14.2	1.54		6	7.64	

last updated on 8/26/2014 11:47:02 PM

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Cementing Job Summary

7.64 Gal		FRESH WATER							
Fluid #	Stage Type	Fluid Name	Qty	Qty UoM	Mixing Density lbm/gal	Yield ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	78.3	bbl	8.33			6	
Cement Left in Pipe									
Amount		45 ft			Reason		Shoe Joint		
Comment									

1.3 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	70
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	Water
3	Actual mud density	lb/gal	8.6
4	Time circulated before job	HH:MM	0100
5	Mud volume circulated	Bbls	240
6	Rate at which well was circulated	Bpm	4
7	Pipe movement during hole circulation	Y/N	No
8	Rig pressure while circulating	Psi	190
9	Time from end mud circulation to start of job	HH:MM	0010
10	Pipe movement during cementing	Y/N	No
11	Calculated displacement	Bbls	78.3
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	no
14	Annular flow after job	Y/N	no
15	Length of rat hole	Ft	15
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	

1.4 Water Field Test

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	----	6.0 - 8.0	Chemicals in the water can cause severe retardation
Chlorides	0	ppm	3000 ppm	Can shorten thickening time of cement
Sulfates	200	ppm	1500 ppm	Will greatly decrease the strength of cement
Total Hardness		ppm	500 mg/L	High concentrations will accelerate the set of the cement
Calcium		ppm	500 ppm	High concentrations will accelerate the set of the cement
Total Alkalinity		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all (typically occurs @ pH ≥ 8.3).
Bicarbonates		ppm	1000 ppm	Cement is greatly retarded to the point where it may not set up at all
Potassium		ppm	5000 ppm	High concentrations will shorten the pump time of cement (indicates the presence of chlorides, therefore if Potassium levels are measured as high, so should the chlorides)
Iron	Pass	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	70	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

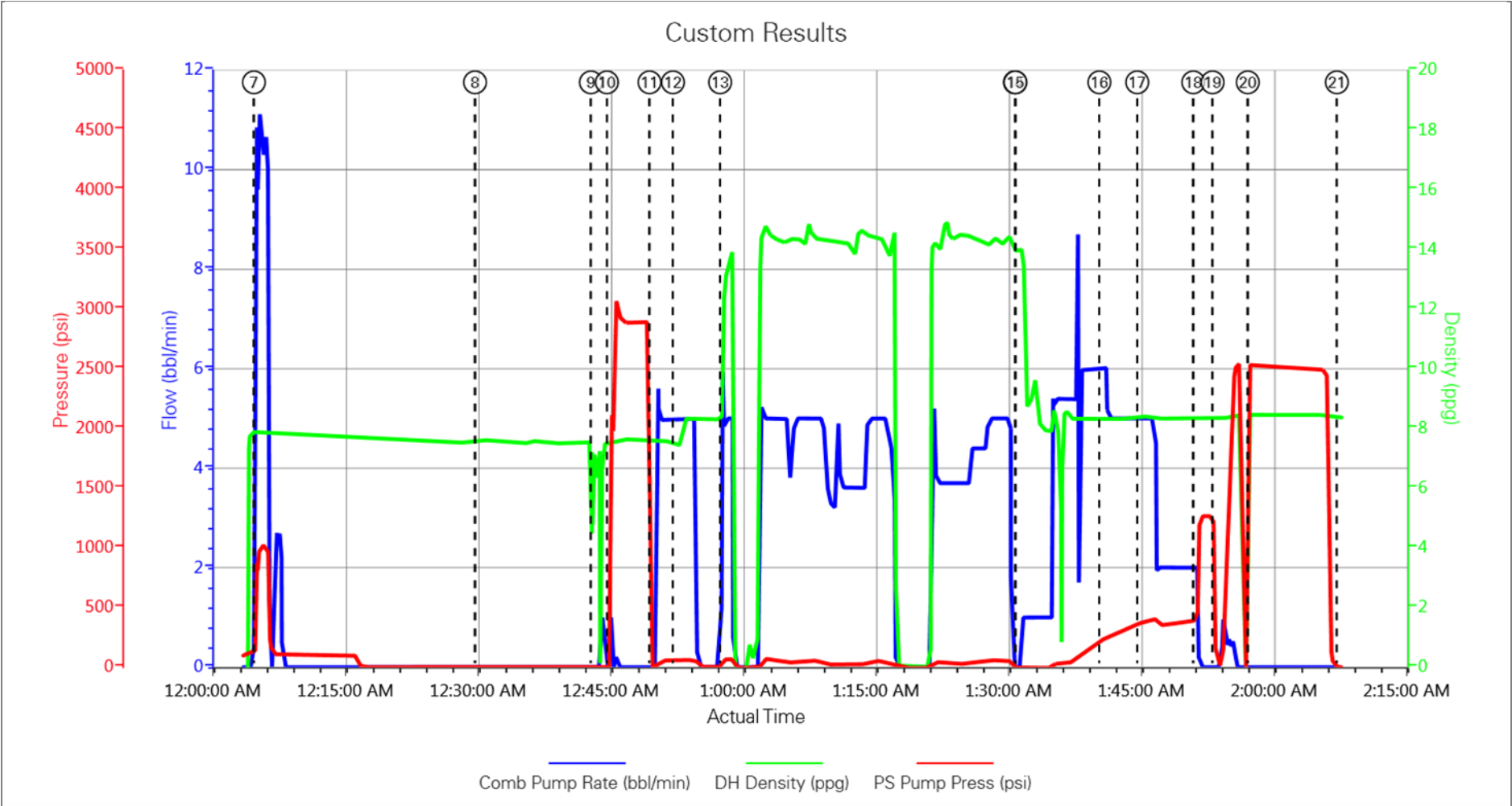
Submitted Respectfully by: Nathan McBride

1.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate (bbl/min)	DH Density (ppg)	PS Pump Press (psi)	Recirc Density (ppg)	Mix Water Rate (bbl/min)	Comment
Event	1	Other	Rig Up Equipment	8/26/2014	00:03:45	USER						
Event	2	Other	Arrive at Location	8/26/2014	23:25:00	USER						Requested on Location 2300
Event	3	Other	Casing on Bottom	8/26/2014	23:27:00	USER						
Event	4	Other	Circulate Well	8/26/2014	23:28:00	USER						Circulate 1hr
Event	5	Other	Assessment of Location	8/26/2014	23:30:00	USER						Hazard Hunt, Discuss 3rd party activities
Event	6	Other	Pre Rig Up Safety Meeting	8/26/2014	23:35:00	USER						Discuss fluid sources and rig up lay out
Event	7	Other	Rig Up Completed	8/27/2014	00:05:00	USER	9.80	7.95	824.00	0.00	0.00	10bbls Mud Flush
Event	8	Other	Pre Job Safety Meeting	8/27/2014	00:30:00	USER	0.00	7.61	0.00	8.11	0.00	With customer and parties involved
Event	9	Start Job	Start Job	8/27/2014	00:43:06	COM6	0.00	6.96	-3.00	8.11	0.00	
Event	10	Test Lines	Test Lines	8/27/2014	00:44:54	COM6	1.00	7.46	1.00	8.11	0.00	
Event	11	Pump Spacer 1	Mud Flush	8/27/2014	00:49:43	COM6	0.00	7.54	-2.00	8.11	0.00	3000psi Test
Event	12	Pump Spacer 2	Pump Spacer 2	8/27/2014	00:52:22	COM6	5.00	7.30	48.00	8.11	5.60	
Event	13	Pump Cement	Pump Cement	8/27/2014	00:57:42	COM6	4.90	12.36	59.00	14.14	2.98	420sk 115bbls @ 14.2ppg
Event	14	Drop Top Plug	Drop Top Plug	8/27/2014	01:31:02	COM6						
Event	15	Pump Displacement	Pump Displacement	8/27/2014	01:31:06	COM6						78.3bbls FW w/ Biocide
Event	16	Other	Spacer to Surface	8/27/2014	01:40:35	COM6						35bbls Displaced
Event	17	Other	Other	8/27/2014	01:44:52	COM6						59bbls Displaced 19bbls cement to surface
Event	18	Other	Bump Plug	8/27/2014	01:51:12	USER	2.00	8.38	394.00	0.00	0.00	1030psi
Event	19	Other	Check Floats	8/27/2014	01:53:23	USER	0.00	8.33	69.00	0.00	0.00	Floats Good
Event	20	Other	Test Casing	8/27/2014	01:57:22	USER	0.00	8.42	2529.00	0.00	0.00	2535psi Start Pressure 10 minute test
Event	21	End Job	End Job	8/27/2014	02:07:27	COM6	0.00	8.38	0.00	0.00	0.00	

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix
