HALLIBURTON

iCem® Service

GREAT WESTERN OIL & GAS LLC

For:
Date: Sunday, August 17, 2014

Postle IC 11-159HC Surface

Great Western Postle IC 11-159HC Surface

Sincerely,

Derek Trier

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Postle IC 11-159HC** 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	8-17	1100	MST
On Location	8-17	1500	MST
Job Started	8-17	1746	MST
Job Completed	8-17	1912	MST
Departed Location	8-17	2000	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 #:** 3472090	**Quote #:**	**Sales Order #:** 0901593923
Customer: GREAT WESTERN OIL & GAS LLC - eBUS		**Customer Rep:**	
Well Name: POSTLE IC	**Well #:** 11-159HC		**API/UWI #:** 05-123-39322-00
Field: WATTENBERG	**City (SAP):** PLATTEVILLE	**County/Parish:** WELD	**State:** COLORADO
Legal Description: SW NW-11-3N-68W-1555FNL-511FWL			
Contractor:		**Rig/Platform Name/Num:** Craig Rig 7	
Job BOM: 7521			
Well Type: HORIZONTAL OIL			
Sales Person: HALAMERICA\HB60191		**Srvc Supervisor:** Nathan McBride	

Job

Formation Name					
Formation Depth (MD)	Top		Bottom		
Form Type			BHST		
Job depth MD	1025ft		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	1025		
Open Hole Section			12.25				0	1025		0

Tools and Accessories

Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make
Guide Shoe	9.625			1025		Top Plug	9.625		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		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	20	bbl	8.4			6	

Fluid #	Stage Type	Fluid Name Fresh Water	Qty 10	Qty UoM	Mixing Density lbm/gal	Yield ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
2	SwiftCem B2	SWIFTCEM (TM) SYSTEM	420	sack	14.2	1.54		6	7.64

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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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
3	Displacement	Displacement	0	bbl	8.33			6	

Cement Left In Pipe	Amount	45 ft	Reason	Shoe Joint
Comment				

Job Overview

		Units	Description
1	Surface temperature at time of job	°F	90
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	8.7
4	Time circulated before job	HH:MM	0100
5	Mud volume circulated	Bbls	3
6	Rate at which well was circulated	Bpm	180
7	Pipe movement during hole circulation	Y/N	None
8	Rig pressure while circulating	Psi	280
9	Time from end mud circulation to start of job	HH:MM	0010
10	Pipe movement during cementing	Y/N	None
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	10
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	

1.3 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	^{o}F	50-80 ^{o}F	High temps will accelerate; Low temps may risk freezing in cold weather

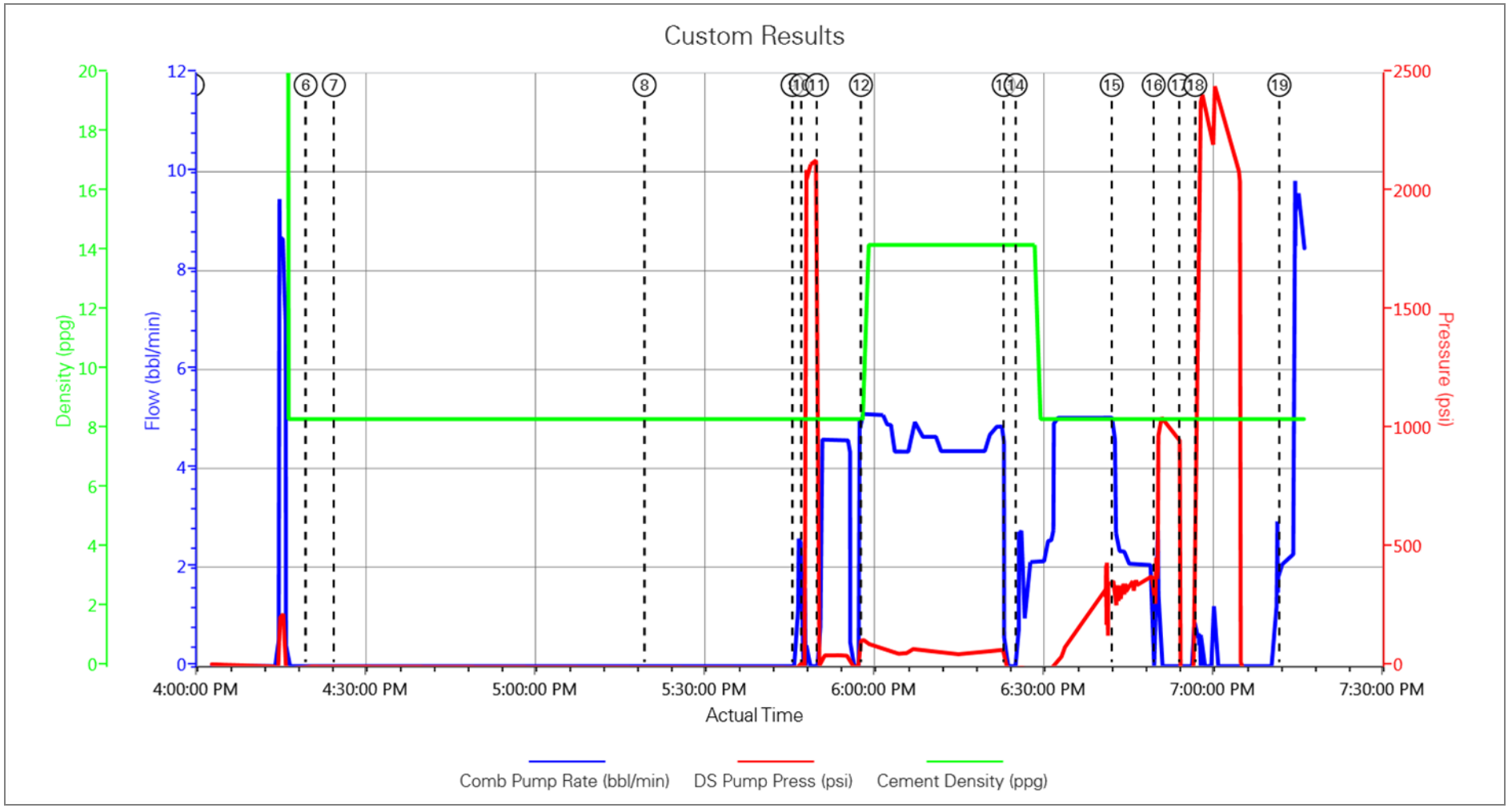
Submitted Respectfully by: _____Nathan McBride_____

1.4 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	Comb Pump Rate *(bbl/min)*	DS Pump Press *(psi)*	Cement Density *(ppg)*	Comment
Event	1	Other	Arrive at Location	8/17/2014	15:00:00	USER				On Location 1500 Rig Running Casing Requested On Location 1630
Event	2	Other	Assessment of Location	8/17/2014	15:05:00	USER				Hazard hunt, Review 3rd Party Activities
Event	3	Other	Pre Rig Up Safety Meeting	8/17/2014	15:10:00	USER				Discuss Fluid Sources and rig up layout
Event	4	Other	Rig Up Equipment	8/17/2014	15:15:00	USER				Rig Up to Red Zone then wait for casing to finish
Event	5	Other	Rig Up Completed	8/17/2014	16:00:00	USER				
Event	6	Other	Casing on Bottom	8/17/2014	16:20:00	USER	0.00	-2.54	8.33	
Event	7	Other	Circulate Well	8/17/2014	16:25:00	USER	0.00	-3.52	8.33	
Event	8	Other	Pre Job Safety Meeting	8/17/2014	17:20:00	USER	0.00	-7.43	8.33	With Customer and 3rd Parties Involved.
Event	9	Start Job	Start Job	8/17/2014	17:46:11	COM6	0.00	-9.38	8.33	
Event	10	Other	Test Lines	8/17/2014	17:47:43	USER	0.00	744.95	8.33	2150
Event	11	Other	Dyed Fresh Water Ahead	8/17/2014	17:50:29	USER	2.06	13.09	8.33	20bbls
Event	12	Other	Pump Cement	8/17/2014	17:58:18	USER	5.07	107.87	14.20	420sks 115bbls @ 14.2ppg
Event	13	Other	Drop Top Plug	8/17/2014	18:23:34	USER	0.00	-16.22	14.20	
Event	14	Other	Pump Displacement	8/17/2014	18:25:41	USER	2.69	7.23	14.20	Fresh Water with Bio Cide
Event	15	Other	Cement to Surface	8/17/2014	18:42:41	USER	3.27	316.97	8.33	60bbls Displaced 18bbls to Pit
Event	16	Other	Bump Plug	8/17/2014	18:50:07	USER	2.74	452.79	8.33	1050 Final Over Pressure 78.3bbls
Event	17	Check Floats	Check Floats	8/17/2014	18:54:40	USER	0.00	-32.83	8.33	Floats Good
Event	18	Other	Casing Test	8/17/2014	18:57:28	USER	0.69	2081.63	8.33	2400psi.....Bleed off due to leak on threads at head.
Event	19	End Job	End Job	8/17/2014	19:12:23	COM6	2.06	-11.33	8.33	

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix