

HALLIBURTON

iCem[®] Service

BONANZA CREEK ENERGY RESOURCES, LLC

For:

Date: Thursday, August 21, 2014

STATE SEVENTY HOLES A-E-6HNB

Case 1

Sincerely,

Joshua Prudhomme

Table of Contents

1.1	Executive Summary	3
1.2	Cementing Job Summary	4
1.3	Planned Pumping Schedule	6
1.4	Job Overview	7
1.5	Water Field Test	8
1.6	Job Event Log	9
2.0	Custom Graphs	11
2.1	Custom Graph	11

1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **State Seventy Holes A-E-6-HNB** cement **Intermediate** 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	8-20	10:00	MTN
On Location	8-20	14:00	MTN
Job Started	8-20	21:31	MTN
Job Completed	8-20	23:52	MTN
Departed Location	8-21	01:00	MTN

1.2 Cementing Job Summary

Sold To #: 324725		Ship To #: 3545506		Quote #:		Sales Order #: 0901595540				
Customer: BONANZA CREEK ENERGY				Customer Rep: LEE						
Well Name: STATE SEVENTY HOLES		Well #: A-E-6HNB		API/UWI #: 05-123-39858-00						
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO				
Legal Description: 6-4N-62W-788FNL-1680FWL										
Contractor:				Rig/Platform Name/Num: Cade 26						
Job BOM: 7522										
Well Type: HORIZONTAL OIL										
Sales Person: HALAMERICA\HX46524				Srv Supervisor: Brandon Nielson						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		7023ft		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			0	483	0	483
Casing		7	6.276	26			0	7023	0	0
Open Hole Section			8.75				483	7033	483	6280
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	7	1		7000		Top Plug	7	1	HES	
Float Shoe	7	1				Bottom Plug	7	1	HES	
Float Collar	7	1				SSR plug set	7	1	HES	
Insert Float	7	1				Plug Container	7	1	HES	
Stage Tool	7	1				Centralizers	7	1	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 ft ³ /sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal	
1	Mud Flush III (Powder)	Mud Flush III	20	bbl	8.4			6		
42 gal/bbl		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
2	Lead Cement	ECONOCHEM (TM) SYSTEM	529	sack	12.5	1.89			10.23
10.23 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	Tail Cement	EXPANDACHEM (TM) SYSTEM	261	sack	14.6	1.451		22	6.04
6.04 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	Displacement	Displacement	266.7	bbl	8.33				
Cement Left In Pipe		Amount 40 ft			Reason		Shoe Joint		
Comment 20 BBL CEMENT TO SURFACE									

1.3 Planned Pumping Schedule**BONANZA CREEK STATE SEVENTY HOLES A-E-6HNB**

901595540

- 1) TEST LINES TO 4000 PSI
- 2) 10 BBLS FRESH WATER
- 3) 24 BBL MUD FLUSH
- 4) 10 BBLS FRESH WATER
- 5) 178 BBL OR 529 SKS ECONOCHEM @ 12.5 PPG
- 6) 67.4 BBL OR 261 SKS EXPANDACHEM @ 14.6 PPG
- 7) SHUTDOWN
- 8) DROP TOP PLUG
- 9) 266.7 BBLS MUD DISP
- 10) LAST 10BBLS SLOW TO 3BPM
- 11) BUMP PLUG AND TAKE 500PSI OVER
- 12) CASING TEST AT 2500PSI
- 13) CHECK FLOATS
- 14) END JOB

PRESSURE TO BUMP PLUG 1384

TOTAL WATER FOR JOB 250+/-

1.4 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	72
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	9.5
4	Time circulated before job	HH:MM	1:30
5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	6
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	342
9	Time from end mud circulation to start of job	HH:MM	:15
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	266.7
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	
14	Annular flow after job	Y/N	
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	N

1.5 Water Field Test

Item	Recorded Test Value	Units	Max. Acceptable Limit	Potential Problems in Exceeding Limit
pH	6	----	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	0	ppm	300 ppm	High concentrations will accelerate the set of the cement
Temperature	71.4	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by: _____ **BRANDON NIELSON** _____

1.6 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	DS Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	8/20/2014	10:00:00	USER				
Event	2	Crew Leave Yard	Crew Leave Yard	8/20/2014	13:00:00	USER				
Event	3	Arrive At Loc	Arrive At Loc	8/20/2014	14:30:00	USER				
Event	4	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	8/20/2014	14:45:00	USER				DID HAZARD HUNT WITH CREW. RIG HAD 57 JOINTS OF CASING TO RUN AND CASING TRUCK WAS BROKE DOWN UPON ARRIVAL.
Event	5	Casing on Bottom	Casing on Bottom	8/20/2014	19:30:00	USER				
Event	6	Rig-up Lines	Rig-up Lines	8/20/2014	20:15:00	USER				
Event	7	Rig-Up Completed	Rig-Up Completed	8/20/2014	20:45:00	USER	-1.00	-0.09	0.00	
Event	8	Start Job	Start Job	8/20/2014	21:09:32	COM8	2.00	8.41	0.00	
Event	9	Test Lines	Test Lines	8/20/2014	21:33:53	COM8	1154.00	8.33	0.00	TESTED LINES TO 4000 PSI NO VISIBLE LEAKS
Event	10	Pump Spacer 1	Pump Spacer 1	8/20/2014	21:38:26	COM8	43.00	8.28	0.00	10 BBL FRESH WATER PUMPED AT 3 BPM AND 250 PSI
Event	11	Pump Spacer 2	Pump Spacer 2	8/20/2014	21:44:00	COM8	246.00	8.30	3.00	20 BBL MUD FLUSH PUMPED AT 3 BPM AND 270 PSI
Event	12	Pump Spacer 1	Pump Spacer 1	8/20/2014	21:52:08	COM8	283.00	8.29	3.00	10 BBL FRESH WATER PUMPED AT 3 BPM AND 285 PSI
Event	13	Pump Lead Cement	Pump Lead Cement	8/20/2014	21:55:37	COM8	290.00	8.27	3.00	529 SKS OR 178 BBL ECONOCEM MIXED @ 12.5 PPG WITH FRESH WATER. PUMPED AT 5 BPM AND 89 PSI
Event	14	Pump Tail Cement	Pump Tail Cement	8/20/2014	22:37:10	COM8	68.00	13.12	4.80	261 SKS OR 67.4 BBL EXPANDACEM MIXED @ 14.6 PPG WITH FRESH WATER. PUMPED AT 5.5

										BPM AND 213 PSI
Event	15	Shutdown	Shutdown	8/20/2014	22:55:08	COM8	20.00	10.82	0.00	
Event	16	Drop Top Plug	Drop Top Plug	8/20/2014	22:56:50	COM8	10.00	13.32	0.90	PLUG PRE LOADED WITNESSED BY COMPANY REP.
Event	17	Pump Displacement	Pump Displacement	8/20/2014	22:56:59	COM8	15.00	14.57	0.90	266.7 BBL MUD. PUMPED AT 7.5 BPM AND 1400 PSI. CEMENT RETURNED TO SURFACE 247 BBL INTO LEAVING US WITH 20 BBL BACK TO THE PIT.
Event	18	Bump Plug	Bump Plug	8/20/2014	23:39:51	COM8				PLUG BUMPED AT 1839 PSI
Event	19	Other	Check Floats	8/20/2014	23:41:36	COM8				FLOATS HELD WITH 1.75 BBL BACK TO THE TRUCK
Event	20	Pressure Up Well	Pressure Up Well	8/20/2014	23:44:04	COM8	10.00	9.07	0.00	10 MINUTE 2500 PSI CASING TEST.
Event	21	Other	Other	8/20/2014	23:55:21	COM8				RELEASED PRESSURE AT 2565 PSI. TEST WAS SUCCESSFUL
Event	22	End Job	End Job	8/20/2014	23:57:58	COM8				

2.0 Custom Graphs

2.1 Custom Graph



