

HALLIBURTON

iCem[®] Service

BONANZA CREEK ENERGY

Date: Friday, January 23, 2015

State Seventy Holes 21-24-4 HNB

Intermediate

Job Date: Wednesday, December 31, 2014

Sincerely,

Justin Lansdale

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1 Timeline

1.1 Timeline

	Date	Time (24hr)
Callout:	29-Dec	10:00
On Location:	29-Dec	17:00
Job Started:	31-Dec	13:04
Job Completed:	31-Dec	16:00
Departed Location:	31-Dec	17:30
Verified Ticket With:	Stephanie	

2 Job Summary

2.1 Job Summary

The Road to Excellence Starts with Safety

Sold To #: 324725		Ship To #: 3463655		Quote #:		Sales Order #: 0901970394					
Customer: BONANZA CREEK ENERGY				Customer Rep: Jason Keogh							
Well Name: STATE SEVENTY HOLES			Well #: 21-24-4 HNB		API/UWI #: 05-123-39209-00						
Field: WATTENBERG		City (SAP): KERSEY		County/Parish: WELD		State: COLORADO					
Legal Description: NE NW-4-4N-62W-350FNL-1383FWL											
Contractor: FRONTIER DRLG				Rig/Platform Name/Num: FRONTIER 04							
Job BOM: 7522											
Well Type: HORIZONTAL OIL											
Sales Person: HALAMERICA\HB21661				Srv Supervisor: Steven Markovich							
Job											
Formation Name											
Formation Depth (MD)		Top		Bottom							
Form Type				BHST							
Job depth MD		6679ft		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	450	0	0	
Casing		7	6.276	26		P-110	0	6679	0	0	
Open Hole Section			8.75				450	6689	0	0	
Tools and Accessories											
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make		
Guide Shoe	7	1		6679		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 ft3/sack	Mix Fluid Gal	Rate bbl/min	Total Mix Fluid Gal
1	Fresh Water Spacer	Mud Flush III	0	bbl	8.33			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	ECONOCEM (TM) SYSTEM	530	sack	12.5	1.89		5	10.25
10.25 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	EXPANDACEM (TM) SYSTEM	280	sack	14.6	1.45		5	6.06
6.06 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	256	bbl	8.33				
Cement Left In Pipe		Amount	44 ft		Reason		Shoe Joint		
Comment 5bbls of cement to surface									

3 Job Overview

3.1 Job Overview

Job OverView			
		Units	Description
1	Surface temperature at time of job	°F	-27
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	9.3
4	Time circulated before job	HH:MM	9:30
5	Mud volume circulated	bbls	
6	Rate at which well was circulated	bpm	
7	Pipe movement during circulation	Y/N	N
8	Rig pressure while circulating	psi	
9	Time from end mud circulation to start of job	HH:MM	0:15
#	Pipe movement during cementing	Y/N	N
#	Calculated displacement	bbls	256
#	Job displaced by	Rig/HES	HES
#	Annular before Job	Y/N	N
#	Annular flow after job	Y/N	N
#	Length of rat hole	ft	
#	Units of gas detected while circulating	Units	
#	Was lost circulation experienced at any time?	Y/N	N

4 Water Analysis

4.1 Water Analysis

Cement Mix Water Requirements

Item	Recorded Test Value	Max Acceptable Limit	Potential Problems in Exceeding Limit
pH	7	5 to 8.5	Chemicals in water can cause severe retardation
Chlorides	500	3000 mg/L	Can accelerate the set time on cement 1% ~ 4800 mg/L
Sulfates	200	1500 mg/L	Will greatly decrease its strength to the point where it may not set up at all
Total Hardness or Alkalinity		500 mg/L	Will retard cement and decrease its strength (only occurs @ pH ≥ 8.3)
Calcium		500 mg/L	High concentrations will accelerate the set of cement
Bicarbonates		1000 mg/L	Will greatly decrease its strength to the point where it may not set up at all
Iron	0	300 mg/L	High concentrations will accelerate the set of cement
Potassium		5000 ppm	High concentrations will accelerate the set of cement
Water Temp	65	50F to 80F	High temps will accelerate; Low temps may risk freezing in cold weather

5 Pump Schedule

5.1 Pump Schedule

1.3 Pump Schedule

Description	Stage No.	Density (ppg)	Rate (bbl/min)	Yield (ft ³ /sack)	Water Req. (gal/sack)	Volume (bbl)	Bulk Cement (sacks)	Duration (min)
Bonanza Creek Intermediate Mud	1	10.00	6.00			0.00		0.00
Bottom Plug								
Water	2	8.33	8.00			24.00		3.00
Bonanza Creek Intermediate Lead 12.5 ppg EconoCem	3	12.50	6.00	1.8900	10.260	178.41	530.00	29.74
Bonanza Creek Intermediate Tail 14.6 ppg	4-1	14.60	6.00	1.4600	6.070	59.81	230.00	9.97
Shutdown	4-2			1.4600	6.070		0.00	10.00
Top Plug/Start Displacement								
Bonanza Creek Intermediate Mud	5	10.00	8.00			256.67		32.08
Total:						518.89		84.79

**Pump schedule may include additional rows for displacement if "Automatic Rate Adjustment" was enabled and ECDs approached the fracture gradient.*

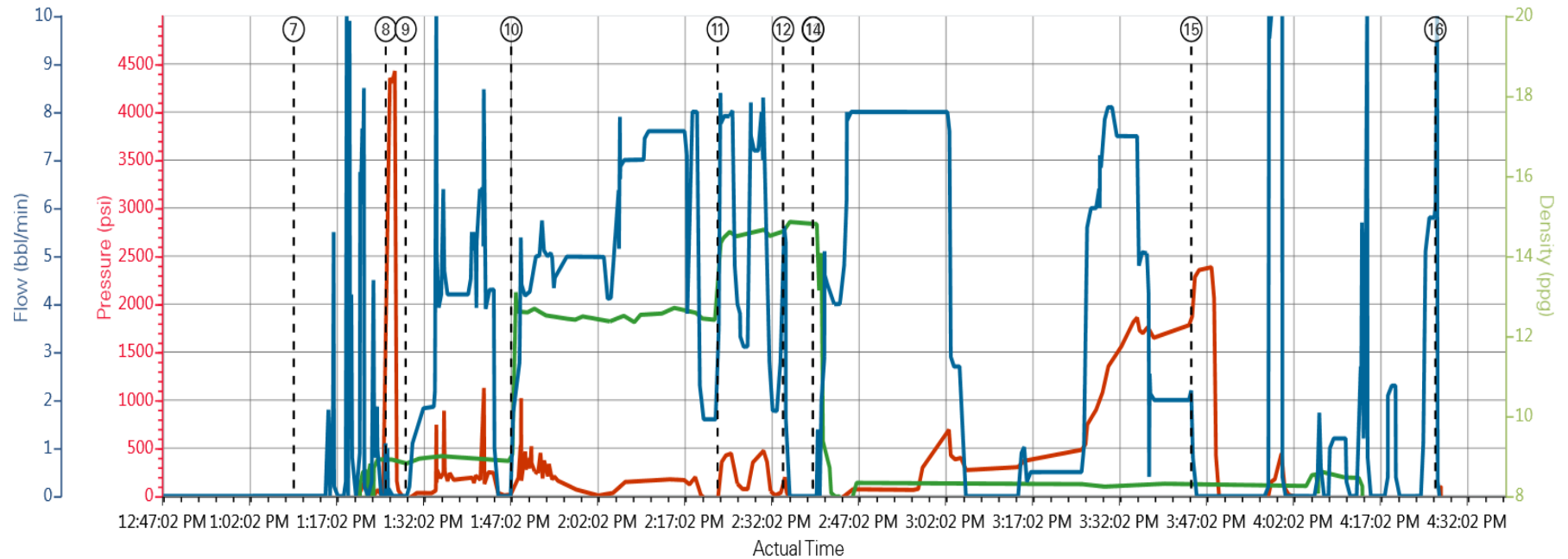
6 Real-Time Job Summary

6.1 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	PS Pump Rate (bbl/min)	Pump Stg Tot (bbl)	Comments
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	12/29/2014	16:30:00	USER					Arrived on location rig still drilling.
Event	2	Assessment Of Location Safety Meeting	Assessment Of Location Safety Meeting	12/29/2014	16:45:00	USER					JSA and hazard hunt with HES crew
Event	3	Rig-Up Equipment	Rig-Up Equipment	12/30/2014	19:45:00	USER					
Event	4	Wait On Weather	Wait On Weather	12/30/2014	22:30:00	USER					With temp being -23 shut down job as we were unable to finish rigging iron up.
Event	5	Wait On Weather - End Time	Wait On Weather - End Time	12/31/2014	09:30:00	USER					Temp got over -20 degrees so we started to rig back up and get equipment ready
Event	6	Pre-Job Safety Meeting	Pre-Job Safety Meeting	12/31/2014	12:15:00	USER	0.19	-27.00	0.00	0.0	JSA with HES and rig crew on job procedure
Event	7	Start Job	Start Job	12/31/2014	13:10:11	COM6	0.26	-31.00	0.00	0.0	
Event	8	Test Lines	Test Lines	12/31/2014	13:26:04	COM6	8.93	4369.00	0.00	1.8	Test lines to 4000psi
Event	9	Pump Spacer 1	Pump Spacer 1	12/31/2014	13:29:28	COM6	8.81	-25.00	0.00	0.0	Pump 20bbls of fresh water
Event	10	Pump Lead Cement	Pump Lead Cement	12/31/2014	13:47:42	COM6	12.77	106.00	2.00	23.4	Pump 178bbls of 12.5ppg Lead Cement
Event	11	Pump Tail Cement	Pump Tail Cement	12/31/2014	14:23:18	COM6	14.47	356.00	7.90	0.1	59.4bbls of 14.6ppg Tail Cement
Event	12	Shutdown	Shutdown	12/31/2014	14:34:34	COM6	14.92	22.00	0.00	59.1	Shutdown
Event	13	Drop Top Plug	Drop Top Plug	12/31/2014	14:39:41	COM6	14.82	-65.00	0.00	59.1	Plug pre loaded in HES

											head
Event	14	Pump Displacement	Pump Displacement	12/31/2014	14:39:46	COM6	14.81	-64.00	0.00	0.0	256bbbls of fresh water. Cement to surface at 251 away giving us 5bbbls of cement to surface
Event	15	Bump Plug	Bump Plug	12/31/2014	15:44:58	COM6	8.29	2288.00	0.00	262.9	bumped plug at 1650 took 500 over and held for 3 mins. checked floats, floats good.
Event	16	End Job	End Job	12/31/2014	16:27:03	COM6	0.31	-86.00	0.00	27.4	Thank you Markovich and crew

Job Graph



PS Pump Press (psi) DH Density (ppg) Comb Pump Rate (bbl/min)

① Arrive at Location from Service Center n/a;n/a;n/a ③ Rig-Up Equipment n/a;n/a;n/a ⑤ Wait On Weather - EndTime n/a;n/a;n/a ⑦ Start Job -31;0.26;0 ⑨ Pump Spacer 1 -25;8.81;0 ⑪ Pump Tail Cemen
② Assessment Of Location Safety Meeting n/a;n/a;n/a ④ Wait On Weather n/a;n/a;n/a ⑥ Pre-Job Safety Meeting -27;0.19;0 ⑧ Test Lines 4369;8.93;0 ⑩ Pump Lead Cement 106;12.77;2 ⑫ Shutdown 22;14.5

