

HALLIBURTON

iCem[®] Service

ANADARKO PETROLEUM CORP - EBUS

For: BOB PORTER

Date: Wednesday, July 16, 2014

Reynolds Cattle 31N-23HZ

REYNOLDS CATTLE 32N-23HZ

Sincerely,

Derek Trier

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Reynolds Cattle 31N-23HZ** 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	04/14	1500	
On Location		1930	
Job Started		2128	
Job Completed		2256	
Departed Location	04/15	0000	

1.2 Cementing Job Summary

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Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466	Ship To #: 3367866	Quote #:	Sales Order #: 0901268051
Customer: ANADARKO PETROLEUM CORP - EBUS		Customer Rep: BOB BULKENBUSH	
Well Name: REYNOLDS CATTLE	Well #: 31N-23 HZ	API/UWI #: 05-123-39136-00	
Field: WATTENBERG	City (SAP): MEAD	County/Parish: WELD	State: COLORADO
Legal Description: NE NE-23-3N-68W-680FN L-155FEL			
Contractor: Bob Balkenbush		Rig/Platform Name/Num: Majors 29	
Job BOM: 7521			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA/HB47901		Srvc Supervisor: Christopher Pickell	
Job			
Formation Name			
Formation Depth (MD)	Top	Bottom	
Form Type		BHST	
Job depth MD	1363 FT	Job Depth TVD	
Water Depth		Wk Ht Above Floor	4 FT
Perforation Depth (MD)	From	To	
Well Data			
Description	New / Used	Size in	ID in
Casing		9.625	8.921
Open Hole Section			13.5
Tools and Accessories			
Type	Size in	Qty	Make
Guide Shoe	9.625		
Float Shoe	9.625	1	HES
Float Collar	9.625	1	HES
Insert Float	9.625		
Stage Tool	9.625		
Top Plug	9.625	1	HES
Bottom Plug	9.625		HES
SSR plug set	9.625		HES
Plug Container	9.625	1	HES
Centralizers	9.625	10	HES
Miscellaneous Materials			
Gelling Agt	Conc	Surfactant	Conc
Treatment Fld	Conc	Inhibitor	Conc
Acid Type	Qty	Conc	
Sand Type	Size	Qty	
Fluid Data			
Stage/Plug #: 1			
Fluid #	Stage Type	Fluid Name	Qty
1	Mud Flush III (Powder)	Mud Flush III	12
42 gal/bbl		FRESH WATER	
Fluid #	Stage Type	Fluid Name	Qty

1.3 Planned Pumping Schedule

1. Pump Water Spacer

- a. Density = 8.33 lb/gal
- b. Volume = 10 bbl
- c. Rate = 2.0 bpm

2. Pump Mud Flush Spacer

- a. Density = 8.4 lb/gal
- b. Volume = 12.0 bbl
- c. Rate = 4.0 bpm

3. Pump Water Spacer

- a. Density = 8.33 lb/gal
- b. Volume = 10 bbl
- c. Rate = 2.0 bpm

4. Drop Bottom Plug**5. Pump SwiftCem**

- a. Density = 14.2 lb/gal
- b. Yield = 1.54 ft³/sk
- c. Water Requirement = 7.76 gal/sk
- d. Volume = 509 sks
- e. Rate = 5.0 bpm

6. Drop Top Plug**7. Start Displacement****8. Pump Displacement Water**

- a. Density = 8.33 lb/gal
- b. Volume = 101.6 bbls
- c. Rate = 5.0 bpm

1.4 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	
4	Time circulated before job	HH:MM	

5	Mud volume circulated	Bbls	
6	Rate at which well was circulated	Bpm	
7	Pipe movement during hole circulation	Y/N	N
8	Rig pressure while circulating	Psi	
9	Time from end mud circulation to start of job	HH:MM	
10	Pipe movement during cementing	Y/N	N
11	Calculated displacement	Bbls	101.6
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	N
14	Annular flow after job	Y/N	N
15	Length of rat hole	Ft	
16	Units of gas detected while circulating	Units	
17	Was lost circulation experienced at any time ?	Y/N	N

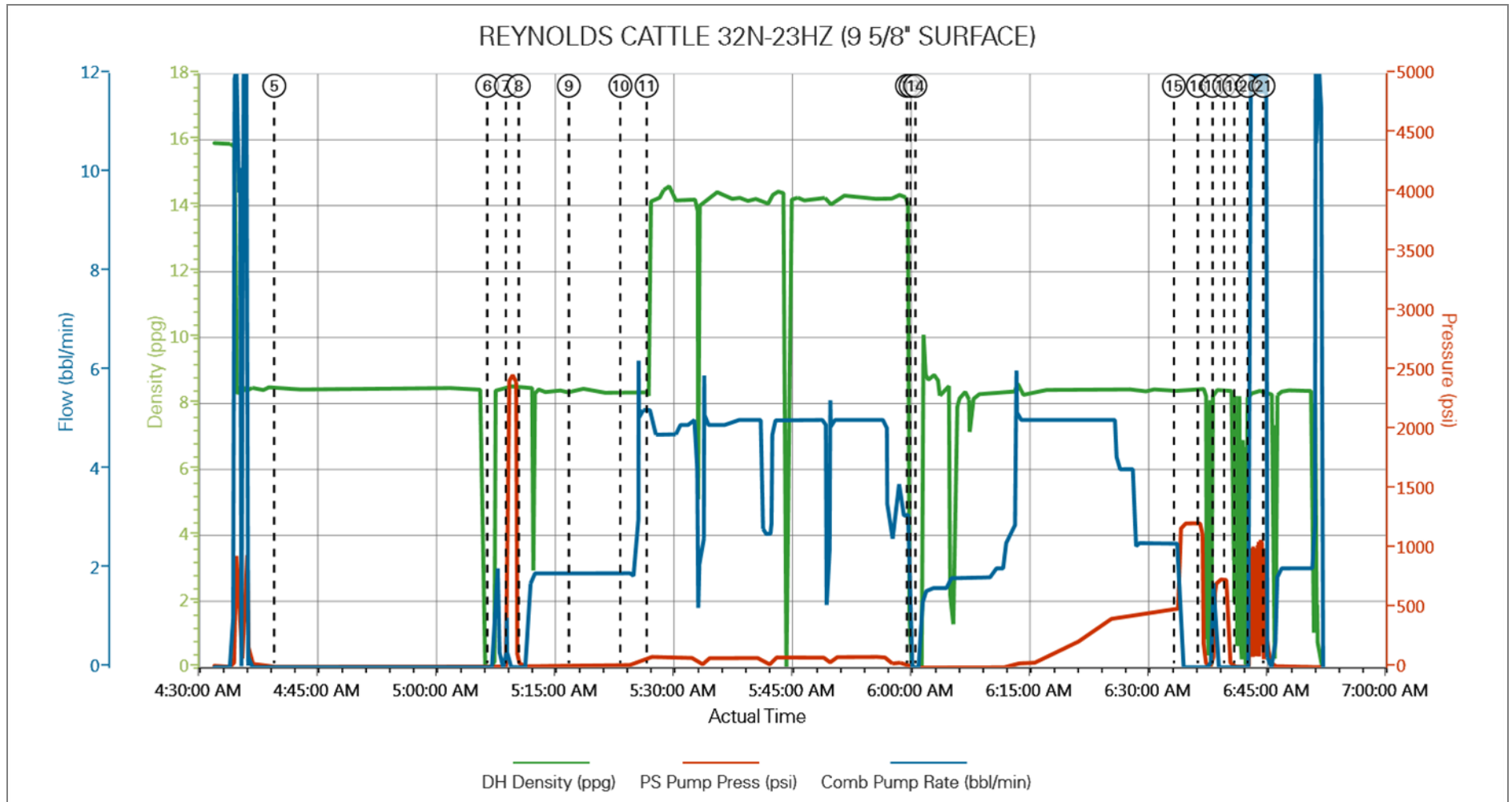
1.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	Comment
Event	1	Call Out	Call Out	4/24/2014	17:30:00	USER				Crew called out at 1730 to be on location at 0000. Crew was Christopher Pickell, Roy Nesbitt, Chuck Mills, Ryan Mastel
Event	2	Depart from Service Center or Other Site	Depart from Service Center or Other Site	4/24/2014	22:30:00	USER				Safety meeting held for journey. Left the yard for Major 29
Event	3	Arrive At Loc	Arrive At Loc	4/24/2014	23:00:00	USER				Arrive at location 1 hour early. Rig was preparing to run casing
Event	4	Rig-up Lines	Rig-up Lines	4/24/2014	23:10:00	USER				Hazard hunt performed. Rig up planned and executed
Event	5	Safety Meeting - Pre Job	Safety Meeting - Pre Job	4/25/2014	04:40:00	USER	8.46	3.00	0.00	Safety meeting held with rig crew to discuss job safety and procedure
Event	6	Start Job	Start Job	4/25/2014	05:06:54	COM5	-0.04	2.00	0.00	Quick latch plug container used on job
Event	7	Test Lines	Test Lines	4/25/2014	05:09:16	COM5	8.56	2471.00	0.00	Pressure test lines to 2500 psi. Check for visible leaks and pressure loss
Event	8	Pump Spacer 1	Pump Spacer 1	4/25/2014	05:10:53	COM5	8.45	9.00	0.00	Pump 10 bbl of water
Event	9	Pump Spacer 1	Pump Spacer 2	4/25/2014	05:17:13	COM5	8.39	17.00	1.90	Pump 12 bbl of mudflush
Event	10	Pump Spacer 1	Pump Spacer 3	4/25/2014	05:23:44	COM5	8.42	18.00	1.90	Pump 10 bbl of water
Event	11	Pump Cement	Pump Cement	4/25/2014	05:27:03	USER	13.99	79.00	5.20	Pump 142.3 bbl Swiftcem Cement 519 sks 14.2 ppg 1.54 cuft/sk 7.76 gal/sk
Event	12	Shutdown	Shutdown	4/25/2014	05:59:57	COM5	-0.14	2.00	0.00	Wash pumps and lines on top of the plug
Event	13	Drop Top Plug	Drop Top Plug	4/25/2014	06:00:24	USER	-0.28	-4.00	0.00	Plug preloaded. Witnessed by company man
Event	14	Pump Displacement	Pump Displacement	4/25/2014	06:01:00	COM5	-0.34	-5.00	0.00	Pump 103.8 bbl water displacement
Event	15	Bump Plug	Bump Plug	4/25/2014	06:33:41	COM5	8.40	487.00	2.50	Calculated pressure to land was 410. Plug landed with 487 psi going 500 psi over
Event	16	Other	Check Floats	4/25/2014	06:36:43	COM5	8.56	1213.00	0.00	Pressure was held for 3 minutes then released. Floats held. 1/2 bbl back to tanks
Event	17	Bump Plug	Bump Plug	4/25/2014	06:38:34	COM5	8.41	717.00	0.00	Re-bump plug at company mans

										request
Event	18	Other	Other	4/25/2014	06:40:01	COM5	8.39	266.00	0.00	Pressure held then was released. Floats held 1/2 bbl back to tanks
Event	19	End Job	End Job	4/25/2014	06:41:18	COM5	8.14	3.00	0.00	All preflush and 9 bbl of cement back to surface
Event	20	Safety Meeting - Pre Rig-Down	Safety Meeting - Pre Rig-Down	4/25/2014	06:43:00	USER	8.27	151.00	12.50	Safety meeting held for rig down
Event	21	Rig Down Lines	Rig Down Lines	4/25/2014	06:45:00	USER	8.41	174.00	0.20	Pump truck was washed up. Lines blown down. Rigged down all equipment
Event	22	Depart Location	Depart Location	4/25/2014	07:30:00	USER				Safety meeting held for journey. Left location for the yard

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix
