

# HALLIBURTON

iCem<sup>®</sup> Service

**ANADARKO PETROLEUM CORP - EBUS**

**For:**

Date: Wednesday, July 16, 2014

**NRC 27C-8HZ Surface**

Case 1

Sincerely,

**Derek Trier**

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## **1.1 Executive Summary**

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Halliburton appreciates the opportunity to perform the cementing services on the **NRC 27C-8HZ** 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**

	<b>Date</b>	<b>Time</b>	<b>Time Zone</b>
<b>Job Started</b>	04/10	0219	MST
<b>Job Completed</b>	04/10	0939	
<b>Departed Location</b>	04/10	1030	

1.2 Cementing Job Summary**HALLIBURTON****Cementing Job Summary***The Road to Excellence Starts with Safety*

Sold To #: 300466	Ship To #: 3363596	Quote #:	Sales Order #: 0901254333
Customer: ANADARKO PETROLEUM CORP - EBUS		Customer Rep: randy case	
Well Name: NRC	Well #: 27C-8HZ	APVUWI #: 05-123-39094	
Field: WATTENBERG	City (SAP): ION	County/Parish: WELD	State: COLORADO
Legal Description: SW SE-8-1N-67W-350FSL-1810FEL			
Contractor:		Rig/Platform Name/Num: Majors 29	
Job BOM: 7521			
Well Type: HORIZONTAL GAS			
Sales Person: HALAMERICA\HX46524		Srvc Supervisor: Vaughn Oteri	
Job			
Formation Name			
Formation Depth (MD)	Top	Bottom	
Form Type		BHST	
Job depth MD	820ft	Job Depth TVD	
Water Depth		Wk Ht Above Floor	
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		817
Float Shoe	9.625		
Float Collar	9.625		
Insert Float	9.625		
Stage Tool	9.625		
Type	Size in	Qty	Make
Top Plug	9.625		HES
Bottom Plug	9.625		HES
SSR plug set	9.625		HES
Plug Container	9.625		HES
Centralizers	9.625		HES
Miscellaneous Materials			
Gelling Agt	Conc	Surfactant	Conc
Treatment Fld	Conc	Inhibitor	Conc
Fluid Data			
Stage/Plug #: 1			
Fluid #	Stage Type	Fluid Name	Qty
1	Mud Flush III (Powder)	Mud Flush III	10
42 gal/bbl		FRESH WATER	
Fluid #	Stage Type	Fluid Name	Qty

last updated on 4/10/2014 10:15:26 AM

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## HALLIBURTON

*Cementing Job Summary*

2	Lead Cement	SWIFCEM (TM) SYSTEM	434	sack	14.2	1.54		6	7.64
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		bbl	8.33				
Cement Left In Pipe		Amount	42 ft		Reason		Shoe Joint		
Comment 16BBL CEMENT BACK TO SURFACE									

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**1.3 Job Overview**

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		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	
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

## 1.4 Job Event Log

## HALLIBURTON

ANADARKO PETROLEUM CORP - EBUS  
ANADARKO NRC 28C-8HZ SURFACE SO#90125466  
Case 1

## 3.1 Job Event Log

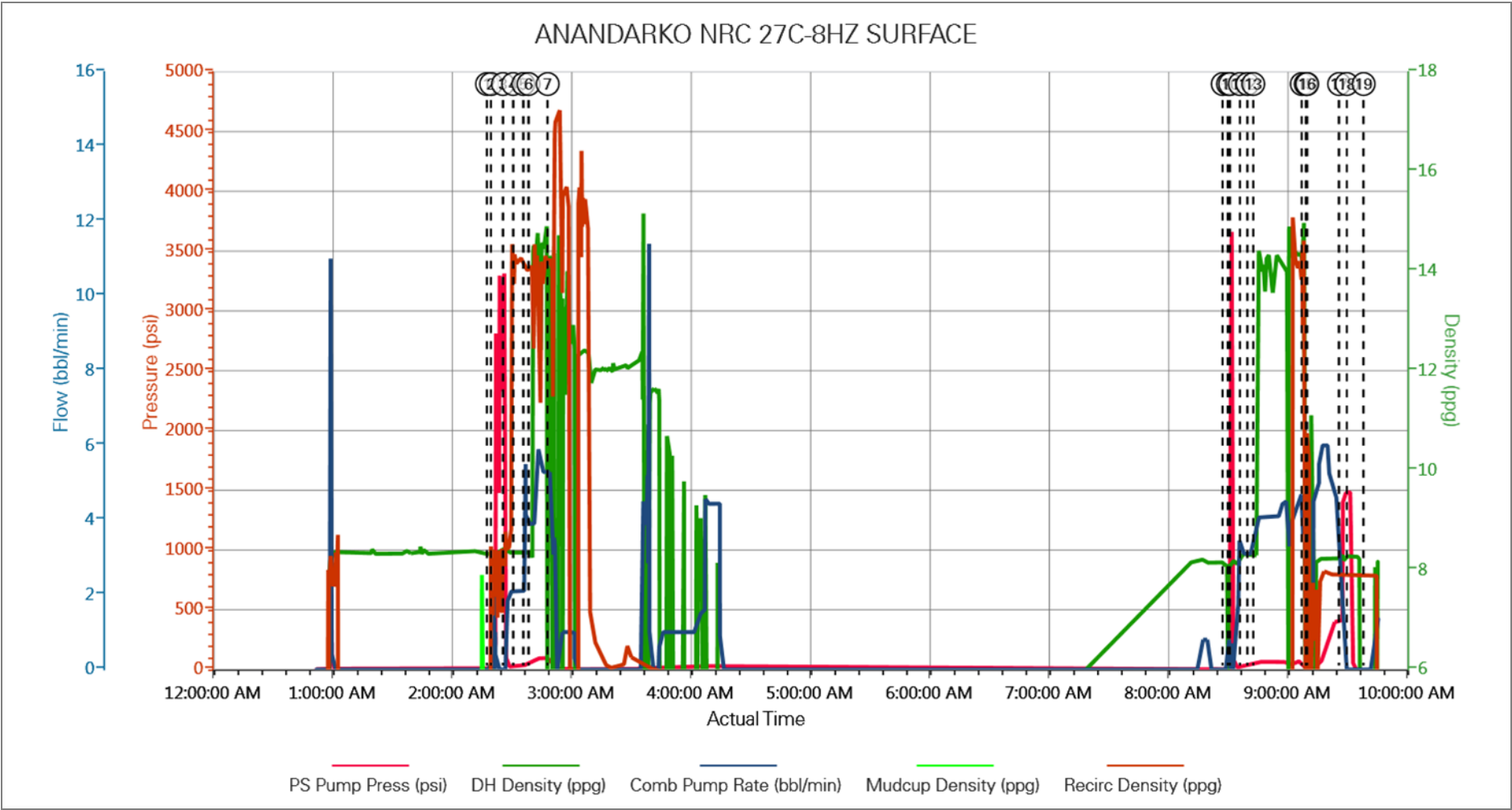
Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	DH Density (ppg)	Comb Pump Rate (bbl/min)	Mudcup Density (ppg)	Redrc Density (ppg)	Comment
Event	1	Start Job	Start Job	4/10/2014	02:19:23	COM6	6.00	8.33	0.00	0.00	8.25	
Event	2	Test Lines	Test Lines	4/10/2014	02:21:23	COM6	9.00	8.37	0.00	0.00	7.49	
Event	3	Pump Spacer 1	Pump Spacer 1	4/10/2014	02:27:20	COM6	17.00	8.35	0.00	0.00	8.46	
Event	4	Pump Spacer 2	Pump Spacer 2	4/10/2014	02:32:29	COM6	25.00	8.34	2.10	0.00	14.26	
Event	5	Pump Spacer 1	Pump Spacer 1	4/10/2014	02:37:36	COM6	54.00	8.32	3.90	0.00	13.99	
Event	6	Pump Cement	Pump Cement	4/10/2014	02:40:13	COM6	59.00	8.25	3.90	0.00	14.10	
Event	7	Start Job	Start Job	4/10/2014	02:49:50	COM6	95.00	14.21	5.30	0.00	14.21	
Event	8	Start Job	Start Job	4/10/2014	08:29:05	COM6	-1.00	8.20	0.00	0.00	0.00	PRELOADED CEMENT HEAD WITH PLUG WITNESSED BY REP
Event	9	Test Lines	Test Lines	4/10/2014	08:31:44	COM6	3605.00	8.21	0.00	0.00	0.00	PRESSURE TESTED PUMPS AND LINES FOUND NO LEAKS AND PRESSURE HELD GOOD
Event	10	Pump Spacer 1	Pump Spacer 1	4/10/2014	08:32:47	COM6	9.00	8.15	0.00	0.00	0.00	PUMPED 10BBL OF FRESH WATER @3BPM 48PSI
Event	11	Pump Spacer 2	Pump Spacer 2	4/10/2014	08:37:42	COM6	34.00	8.33	3.10	0.00	0.00	MIXED 12BBL OF MUD FLUSH @3BPM 52PSI
Event	12	Pump Spacer 1	Pump Spacer 1	4/10/2014	08:41:34	COM6	34.00	8.32	3.10	0.00	0.00	PUMPED 10BBL OF FRESH WATER @4BPM 52PSI
Event	13	Pump Cement	Pump Cement	4/10/2014	08:44:25	COM6	53.00	8.31	3.90	0.00	0.00	MIXED 121BBL OF 14.2PPG SWFTCEM @5BOM 88PSI
Event	14	Shutdown	Shutdown	4/10/2014	09:08:51	COM6	-8.00	0.32	0.00	0.00	10.23	
Event	15	Drop Top Plug	Drop Top Plug	4/10/2014	09:10:49	COM6	-23.00	-0.17	0.00	0.00	-0.78	RELEASE PLUG WITNESSED BY COMPANY REP
Event	16	Pump Displacement	Pump Displacement	4/10/2014	09:11:33	COM6	-22.00	11.17	1.10	0.00	6.70	PUMPED 91BBL OF FRESH WATER
Event	17	Bump Plug	Bump Plug	4/10/2014	09:27:35	COM6	1422.00	8.34	0.00	0.00	7.91	BUMP PLUG 1000PSI OVER FINAL PRESSURE
Event	18	Other	Other	4/10/2014	09:31:27	COM6						RELEASED PRESSURE BACK TO PUMP TRUCK 1BBL

						BACKFLOATS HELD GOOD
Event	19	End Job	End Job	4/10/2014	09:39:54	COM6



2.0 Custom Graphs

2.1 Custom Graph



### 3.0 Appendix

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