

HALLIBURTON

iCem[®] Service

Post Job Report

ANADARKO PETROLEUM CORP - EBUS

Date: Friday, June 19, 2014

Barefoot 31C-25HZ

Anadarko - Barefoot# 31C-25HZ - Surface

Sincerely,
Joseph Barras

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Barefoot 31C-25HZ** 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
Requested Time On Location	6/18/14	19:30	MTN
Called Out	6/18/14	14:00	MTN
On Location	6/18/14	17:45	MTN
Job Started	6/19/14	00:22	MTN
Job Completed	6/19/14	01:35	MTN
Departed Location	6/19/14	03:00	MTN

1.2 Cementing Job Summary

The Road to Excellence Starts with Safety

Sold To #: 300466		Ship To #: 3458857		Quote #:		Sales Order #: 0901434349				
Customer: ANADARKO PETROLEUM CORP - EBUS					Customer Rep: Bob Carter					
Well Name: BAREFOOT			Well #: 31C-25 HZ			API/UWI #: 05-123-39191-00				
Field: WATTENBERG		City (SAP): LONGMONT		County/Parish: WELD			State: COLORADO			
Legal Description: NE NE-25-3N-68W-599FNL-514FEL										
Contractor:					Rig/Platform Name/Num: Majors 42					
Job BOM: 7521										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA\HB47901					Srvc Supervisor: Joseph Barras					
Job										
Formation Name										
Formation Depth (MD)		Top			Bottom					
Form Type					BHST					
Job depth MD		1400ft			Job Depth TVD					
Water Depth					Wk Ht Above Floor					
Perforation Depth (MD)					To					
Well Data										
	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		J-55	0	1390	0	
Open Hole Section			13.5				0	1400	0	
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625			1390		Top Plug	9.625	1	HES	
Float Shoe	9.625					Bottom Plug	9.625	1	HES	
Float Collar	9.625					SSR plug set	9.625	1	HES	
Insert Float	9.625					Plug Container	9.625	1	HES	
	9.625					Centralizers	9.625	1	HES	
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	12	barrel	8.4				
42 gal/bbl									
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
2	Lead Cement	SWIFTCEM (TM) SYSTEM	518	sack	14.2	1.54		6	7.64
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
3	Displacement	Displacement	102	barrel	8.33				
ft In Pipe		Amount	43 ft						
Comment									

1.4 Planned Pumping Schedule



Anadarko - Major 42
Barefoot# 31C-25HZ - Surface
Job Procedure

Time	#	Event/Stage	Amount bbls	Rate bpm	Requested Quantity	Density ppg	Yield ft ³ /sk	Water Rq. gal/sk	Total Water bbls	
	1	Start Job	***Pre Pump Iron Inspection. Verify and communicate all valves are lined up to pump***							
	4	Fill Lines	3	2	3 bbls	8.3			3	
	6	Pressure Test	5000 psi	***Reset Kick Outs to Maximum Job Pressure: 1500 psi***						
	9	Pump Water Spacer	10	5	10 bbls	8.3			10	
	10	Pump Mud Flush III	12	5	12 bbls	8.4			12	
	9	Pump Water Spacer	10	5	10 bbls	8.3			10	
	15	Pump Tail Cement	142	5	518 sks	14.2	1.54	7.64	94.2	
	48	Shutdown/Wash Pumps/Drop Plug	Estimated Shutdown Time: 10 Minutes							
	23	Pump Water Displacement	102	6	102 bbls	8.3			102	
	4	Slow Rate	Last 10	3	***Adjust rates as needed for job***					
	26	Pressure to Land Plug	402 psi	***+	500 psi over Final Circulating Pressure***					
	4	Check Floats	Estimated Job Pump Time		1.08 hrs			Total Water For Job (Including Wash Up)	231 bbls	
	2	End Job								

1.5 Job Overview

		Units	Description
1	Surface temperature at time of job	°F	52
2	Mud type (OBM, WBM, SBM, Water, Brine)	-	WBM
3	Actual mud density	lb/gal	9.2
4	Actual mud Plastic Viscosity (PV)	cP	
5	Actual mud Yield Point (YP)	lb _r /100ft ²	
6	Actual mud 30 min Gel Strength	lb _r /100ft ²	
7	Time circulated before job	HH:MM	
8	Mud volume circulated	Bbls	
9	Rate at which well was circulated	Bpm	
10	Pipe movement during hole circulation	Y/N	N
11	Rig pressure while circulating	Psi	
12	Time from end mud circulation to start of job	HH:MM	
13	Pipe movement during cementing	Y/N	N
14	Calculated displacement	Bbls	102
15	Job displaced by	Rig/HES	HES
16	Annular flow before job	Y/N	N
17	Annular flow after job	Y/N	N
18	Length of rat hole	Ft	
19	Units of gas detected while circulating	Units	
20	Was lost circulation experienced at any time?	Y/N	N

1.6 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	70	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	78	°F	50-80 °F	High temps will accelerate; Low temps may risk freezing in cold weather

Submitted Respectfully by: Andrew Ashby

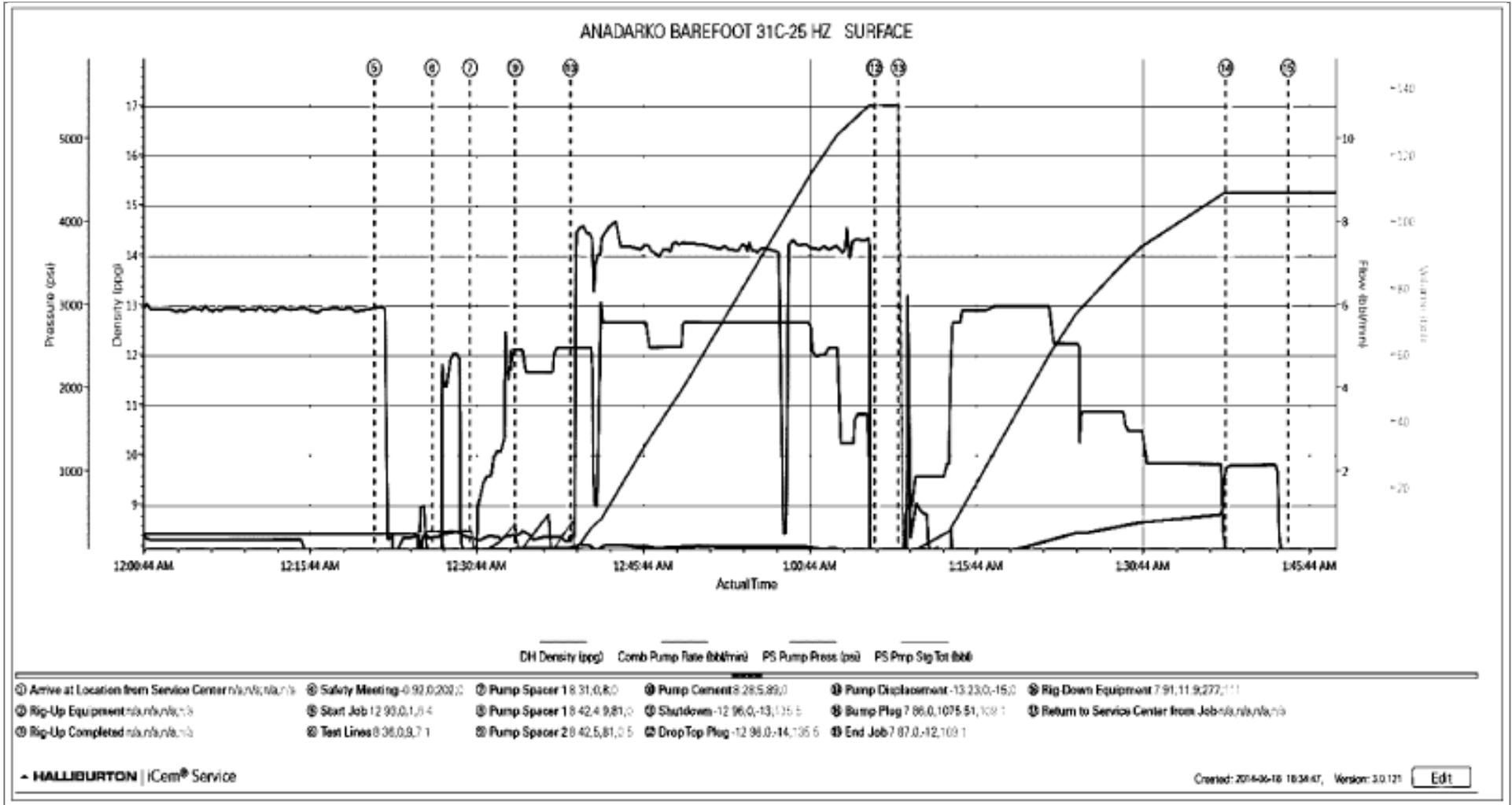
1.7 Job Event Log

1.7 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	DH Density (ppg)	Comb Pump Rate (bbl/min)	PS Pump Press (psi)	PS Pmp Stg Tot (bbl)	Comment
Event	1	Arrive at Location from Service Center	Arrive at Location from Service Center	6/18/2014	17:30:00	USER					
Event	2	Rig-Up Equipment	Rig-Up Equipment	6/18/2014	17:50:00	USER					
Event	3	Rig-Up Completed	Rig-Up Completed	6/18/2014	18:45:00	USER					
Event	4	Safety Meeting	Safety Meeting	6/18/2014	23:45:00	USER	-0.92	0.00	202.00	0.0	
Event	5	Start Job	Start Job	6/19/2014	00:21:43	COM4	12.93	0.00	1.00	6.4	
Event	6	Test Lines	Test Lines	6/19/2014	00:26:56	COM4	8.36	0.00	9.00	7.1	TESTT TO 2500 PSI NO VISIBLE LEAKS
Event	7	Pump Spacer 1	Pump Spacer 1	6/19/2014	00:30:20	COM4	8.31	0.00	8.00	0.0	10 BBL RIG WATER
Event	8	Pump Spacer 1	Pump Spacer 1	6/19/2014	00:34:20	COM4	8.42	4.90	81.00	0.0	12 BBL OF MUD FLUSH
Event	9	Pump Spacer 2	Pump Spacer 2	6/19/2014	00:34:26	COM4	8.42	5.00	81.00	0.5	10 BBL OF WATER
Event	10	Pump Cement	Pump Cement	6/19/2014	00:39:23	COM4	8.28	5.00	89.00	0.0	142 BBL OF SWIFTCEM @ 14.2 PPG/1.53 YIELD/7.63 GAL/SK
Event	11	Shutdown	Shutdown	6/19/2014	01:06:41	COM4	-12.96	0.00	-13.00	135.5	
Event	12	Drop Top Plug	Drop Top Plug	6/19/2014	01:06:48	COM4	-12.98	0.00	-14.00	135.5	PRELOADED
Event	13	Pump Displacement	Pump Displacement	6/19/2014	01:08:56	COM4	-13.23	0.00	-15.00	0.0	RIG WATER WITH CEMENT TO SURFACE @ 102 BBL INTO DISPLACING /498 PSI
Event	14	Bump Plug	Bump Plug	6/19/2014	01:38:24	COM4					1048 PSI
Event	15	End Job	End Job	6/19/2014	01:44:01	COM4					
Event	16	Rig-Down Equipment	Rig-Down Equipment	6/19/2014	01:50:00	USER	7.91	11.90	277.00	111.0	
Event	17	Return to Service Center from Job	Return to Service Center from Job	6/19/2014	03:00:00	USER					

2.0 Attachments

2.1 Anadarko - Barefoot# 30N-25HZ - Surface-Pressure Test.png



3.0 Custom Graphs

4.0 Appendix
