

HALLIBURTON

iCem[®] Service

ANADARKO PETROLEUM CORP - EBUS

Date: Monday, July 14, 2014

Reynolds Cattle 31C-23HZ

Case 1

Sincerely,
Devin Birchell

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1.1 Executive Summary

Halliburton appreciates the opportunity to perform the cementing services on the **Reynolds Cattle 31C-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	4/17/2014	04:00:00	MT
On Location	4/17/2014	09:00:12	MT
Job Started	4/17/2014	10:30:34	MT
Job Completed	4/17/2014	12:15:20	MT
Departed Location	4/17/2014	13:30:00	MT

1.2 Cementing Job Summary

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

Sold To #: 300466		Ship To #: 3367861		Quote #:		Sales Order #: 0901268052				
Customer: ANADARKO PETROLEUM CORP - EBUS				Customer Rep: Bob						
Well Name: REYNOLDS CATTLE		Well #: 31C-23 HZ		API/UWI #: 05-123-39133-00						
Field: WATTENBERG		City (SAP): MEA		County/Parish: WELD		State: COLORADO				
Legal Description: NE NE-23-3N-68W-620FNL-155FEL										
Contractor: Bob Balkenbush				Rig/Platform Name/Num: Majors 29						
Job BOM: 7521										
Well Type: HORIZONTAL GAS										
Sales Person: HALAMERICA/HB47901				Srv Supervisor: Devin Birchell						
Job										
Formation Name										
Formation Depth (MD)		Top		Bottom						
Form Type				BHST						
Job depth MD		1362ft		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		J-55	0	1352		
Open Hole Section			13.5				0	1362		
Tools and Accessories										
Type	Size in	Qty	Make	Depth ft		Type	Size in	Qty	Make	
Guide Shoe	9.625	1	HSE	1352		Top Plug	9.625	1	HES	
Float Shoe	9.625					Bottom Plug	9.625		HES	
Float Collar	9.625	1	HSE	1312		SSR plug set	9.625		HES	
Insert Float	9.625					Plug Container	9.625	1	HES	
Stage Tool	9.625					Centralizers	9.625	9	HES	
Miscellaneous Materials										
Gelling Agt		Conc		Surfactant		Conc		Acid Type		Qty
Treatment Fld		Conc		Inhibitor		Conc		Sand Type		Size
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	Fresh Water Spacer		10	bbl	8.33				
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	SWIFTCM (TM) SYSTEM		487	sack	14.2	1.54		6	7.64

last updated on 4/17/2014 12:43:44 PM

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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	101	bbl	8.33				
Cement Left In Pipe Amount 42 ft Reason Shoe Joint									
Comment									

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*Summary Report*

Crew: _____

Job Start Date: 4/17/2014

Sales Order #: 0901268052

WO #: 0901268052

PO/AFE #: NA

Customer: ANADARKO PETROLEUM CORP - Field: WATTENBERG
 EBUS
 UWI / API Number: 05-123-39133-00 County/Parish: WELD
 Well Name: REYNOLDS CATTLE State: COLORADO
 Well No: 31C-23 HZ Latitude: 40.217120
 Longitude: -104.961308
 Sect / Twn / Rng: 23/3/68

Job Type: CMT SURFACE
 CASING BOM
 Service Supervisor: Devin Birchell

Cust Rep Name: Bob
 Cust Rep Phone #:

Remarks:		
The Information Stated Herein Is Correct	Customer Representative Signature	Date
	Customer Representative Printed Name	4/17/2014
	Bob Balkenbush	

1.3 Planned Pumping Schedule

Stage /Plug #	Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Avg Rate bbl/min	Surface Volume	Downhole Volume
1	1	Spacer	Fresh Water Spacer	8.33	1.7	10.0 bbl	10.0 bbl
1	1	Spacer	Mud Flush	8.40	2.0	12.0 bbl	12.0 bbl
1	1	Spacer	Fresh Water Spacer	8.33	3.0	10.0 bbl	10.0 bbl
1	2	Cement Slurry	SwiftCem B2	14.2	5.5	487.0 sacks	487.0 sacks

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	101.5
12	Job displaced by	Rig/HES	HES
13	Annular before job)?	Y/N	Y
14	Annular flow after job	Y/N	Y
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

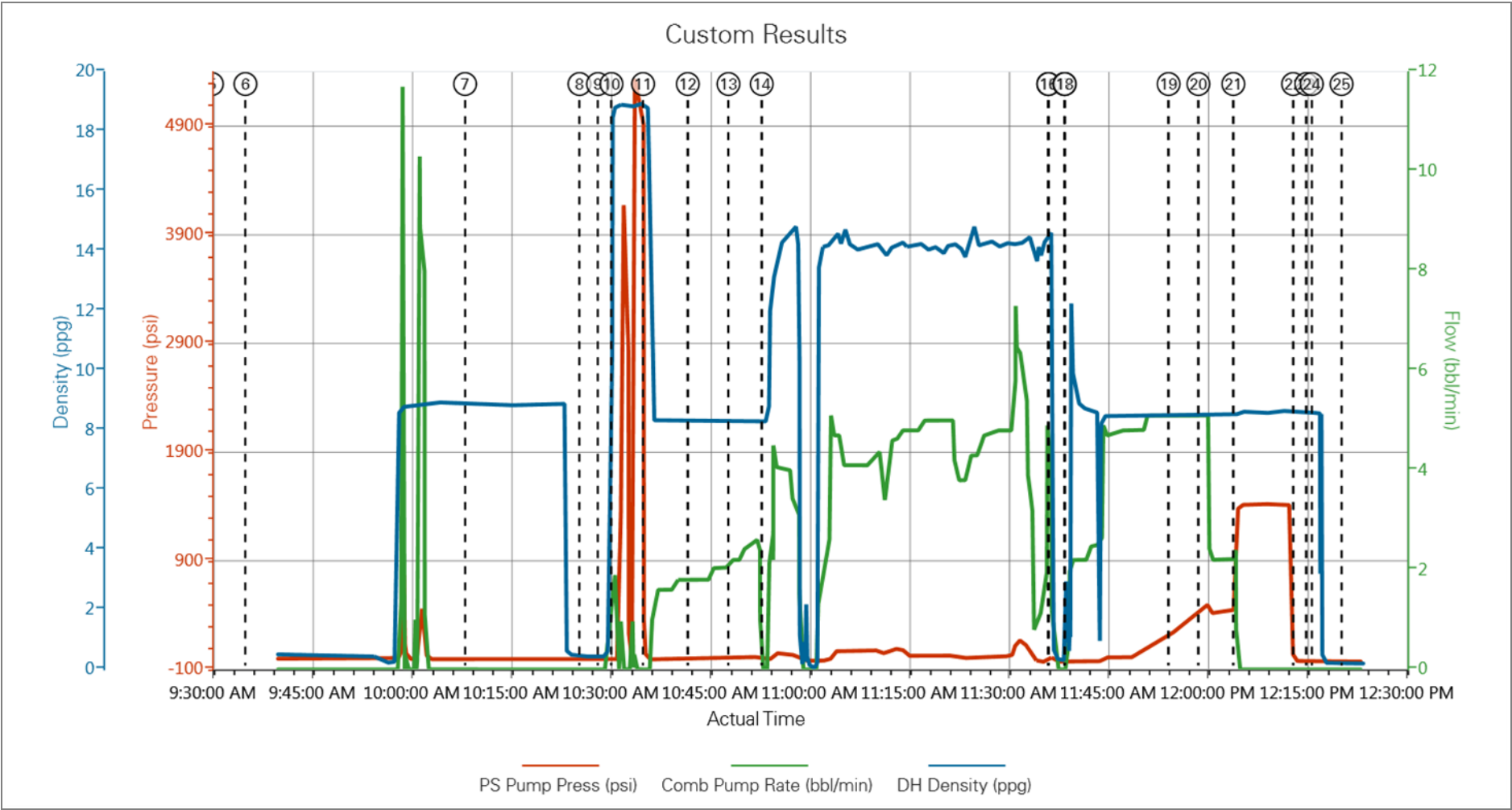
1.5 Job Event Log

Type	Seq. No.	Activity	Graph Label	Date	Time	Source	PS Pump Press (psi)	Comb Pump Rate (bbl/min)	DH Density (ppg)	Comment
Event	1	Call Out	Call Out	4/17/2014	04:00:00	USER				called cement crew for anadarko reynolds cattle 31c-23hz surface
Event	2	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/17/2014	07:50:10	USER				discussed route, other traffic, weather, following distance
Event	3	Depart from Service Center or Other Site	Depart from Service Center or Other Site	4/17/2014	08:00:19	USER				called journey, gate checked and departed for location
Event	4	Arrive At Loc	Arrive At Loc	4/17/2014	09:00:12	USER				called journey, talked to company rep on volumes pressures depth and rates
Event	5	Pre-Rig Up Safety Meeting	Pre-Rig Up Safety Meeting	4/17/2014	09:30:20	USER				discussed hand placement, team lifting and swing path
Event	6	Rig-Up Equipment	Rig-Up Equipment	4/17/2014	09:35:23	USER				rigged up ground iron and hoses
Event	7	Pre-Job Safety Meeting	Pre-Job Safety Meeting	4/17/2014	10:08:30	USER	-8.00	0.00	8.92	discussed with cement and rig crews job procedures, hazards, and emergency planes
Event	8	Rig-Up Completed	Rig-Up Completed	4/17/2014	10:25:45	USER	-12.00	0.00	0.46	rigged up cement head and standpipe
Event	9	Prime Pumps	Prime Pumps	4/17/2014	10:28:32	USER	-13.00	0.00	0.46	primed pump and filled lines to pressure test
Event	10	Pressure Test	Pressure Test	4/17/2014	10:30:34	USER	1.00	1.90	18.81	test pump and lines to 4500 psi
Event	11	Pump Spacer 1	Pump Spacer 1	4/17/2014	10:35:19	COM1	3.00	0.00	18.77	pumped 10 bbls water spacer
Event	12	Pump Spacer 2	Pump Spacer 2	4/17/2014	10:42:04	COM1	0.00	1.80	8.33	pumped 12 bbls mud flush III
Event	13	Pump Spacer 1	Pump Spacer 1	4/17/2014	10:48:12	COM1	8.00	2.20	8.31	pumped 10 bbls water spacer
Event	14	Pump Cement	Pump Cement	4/17/2014	10:53:13	COM1	-10.00	0.00	8.30	pumed 133.5 bbls slurry @ 14.2 ppg

Event	15	Shutdown	Shutdown	4/17/2014	11:36:24	COM1	9.00	1.00	14.17	shutdown to drop plug and wash up on plug
Event	16	Clean Lines	Clean Lines	4/17/2014	11:36:27	COM1	-1.00	1.00	13.87	cleaned pump and lines
Event	17	Drop Top Plug	Drop Top Plug	4/17/2014	11:38:49	COM1				dropped plug with company rep witnessing
Event	18	Pump Displacement	Pump Displacement	4/17/2014	11:38:55	COM1				pumped 101.5 bbls fresh water displacement
Event	19	Spacer Returns to Surface	Spacer Returns to Surface	4/17/2014	11:54:34	USER	236.00	5.10	8.49	with 60 bbls displacement away spacer returns to surface
Event	20	Cement Returns to Surface	Cement Returns to Surface	4/17/2014	11:59:04	USER	451.00	5.10	8.53	with 92 bbls displacement away cement returns to surface
Event	21	Bump Plug	Bump Plug	4/17/2014	12:04:19	COM1	1350.00	0.00	8.57	bumped plug with 490 psi took pressure to 1412 psi
Event	22	Check Floats	Check Floats	4/17/2014	12:13:20	USER	-26.00	0.00	8.57	checked floats, floats held with 1 bbls back to truck
Event	23	End Job	End Job	4/17/2014	12:15:20	USER	-27.00	0.00	8.56	job completed
Event	24	Pre-Rig Down Safety Meeting	Pre-Rig Down Safety Meeting	4/17/2014	12:16:10	USER	-28.00	0.00	8.58	discussed hand placement, team lifting and swing path
Event	25	Rig-Down Equipment	Rig-Down Equipment	4/17/2014	12:20:39	USER	-27.00	0.00	0.22	rig down cement head ground line and hoses
Event	26	Pre-Convoy Safety Meeting	Pre-Convoy Safety Meeting	4/17/2014	13:20:10	USER				discussed route, other traffic, weather, following distance
Event	27	Depart Location for Service Center or Other Site	Depart Location for Service Center or Other Site	4/17/2014	13:30:00	USER				thank you for using halliburton energy services

2.0 Custom Graphs

2.1 Custom Graph



3.0 Appendix

Insert Planned Pump Schedule from Proposal or actual Job Procedure built for job