

Company: Anadarko E&P Onshore LLC

Well: Murphy 1-31 M

Field: Greenwood

County: Morton State: Kansas

HID									
497.46' FEL & 1335.13' FSL				Elev. K.B.		3538.19 ft			
SW,SE,NE,SW				G.L.		3545.19 ft			
SE/4 SEC.31, T32S-R42W				D.F.					
Permanent Datum:				Mean Sea Level		Elev.:		0.00 ft	
Log Measured From:				Ground Level		3538.19 ft		above Perm.Datum	
Drilling Measured From:				Ground Level					
API Serial No.				Section:		Township:		Range:	
15-129-21957				31		32S		42W	
Logging Date				13-Dec-2013					
Run Number				THREE					
Depth Driller				5255.00 ft					
Schlumberger Depth				5255.00 ft					
Bottom Log Interval									
Top Log Interval									
Casing Driller Size @ Depth				8.625 in @ 1480.00 ft					
Casing Schlumberger				1494 ft					
Bit Size				7.875 in					
Type Fluid In Hole				Fresh Water					
MUD				Density		Viscosity		60 s	
Fluid Loss				PH		6.2 cm3		10.5	
Source of Sample				Active Tank					
RM @ Meas Temp				0.72 ohm.m @		55 degF			
RMF @ Meas Temp				0.62 ohm.m @		55 degF			
RMC @ Meas Temp				1.01 ohm.m @		55 degF			
Source RMF				RMC		Calculated		Calculated	
RM @ BHT				RMF @ BHT		0.32 @ 132.95		0.27 @ 132.95	
Max Recorded Temperatures				132.95 degF		132.95			
Circulation Stopped				Time					
Logger on Bottom				Time					
Unit Number				Location:		2367		Elk City, OK	
Recorded By									
Witnessed By									

Disclaimer

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

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12. MSCT-E General Core Summary Report

13. Tail

THREE

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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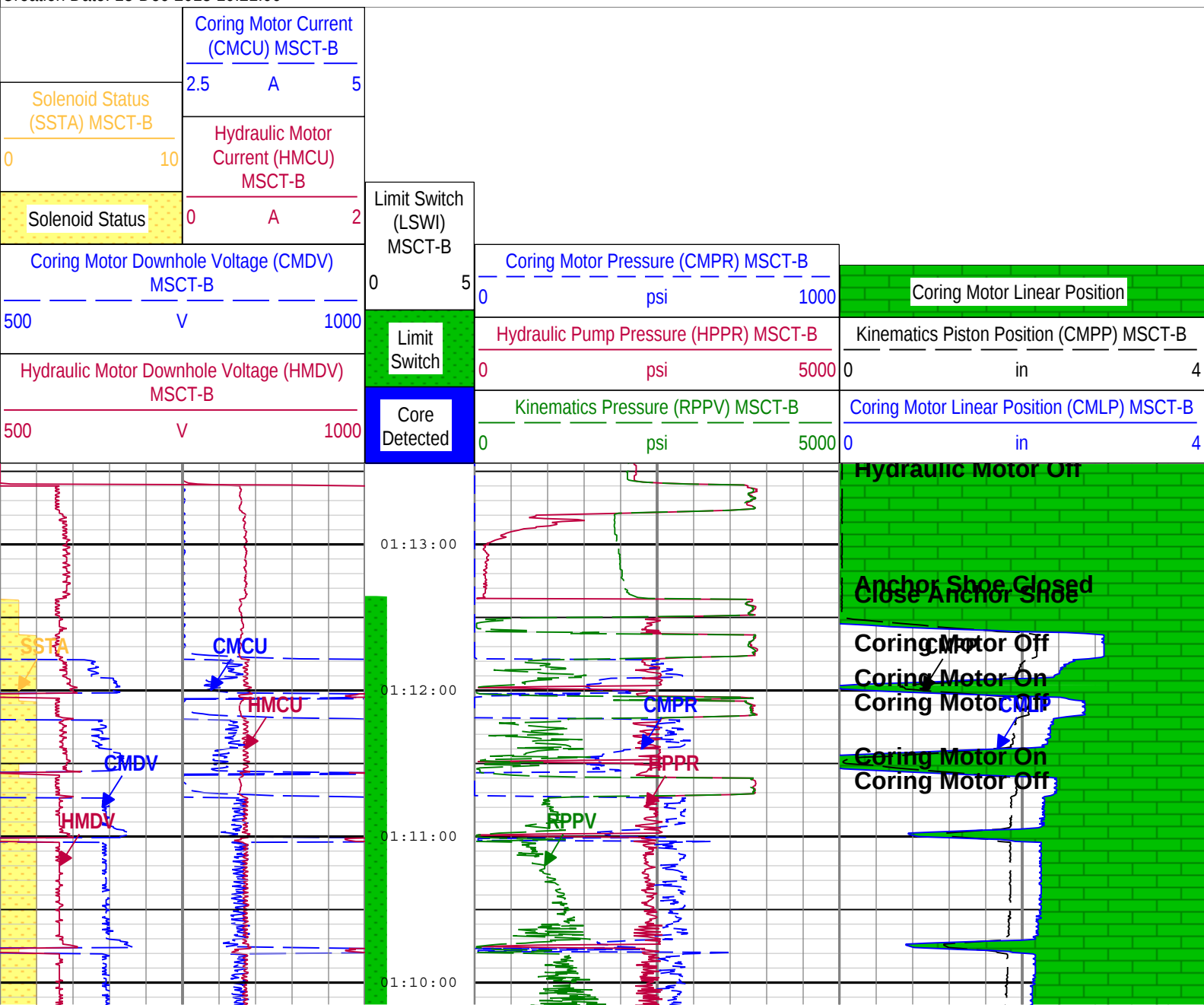
Pass Summary

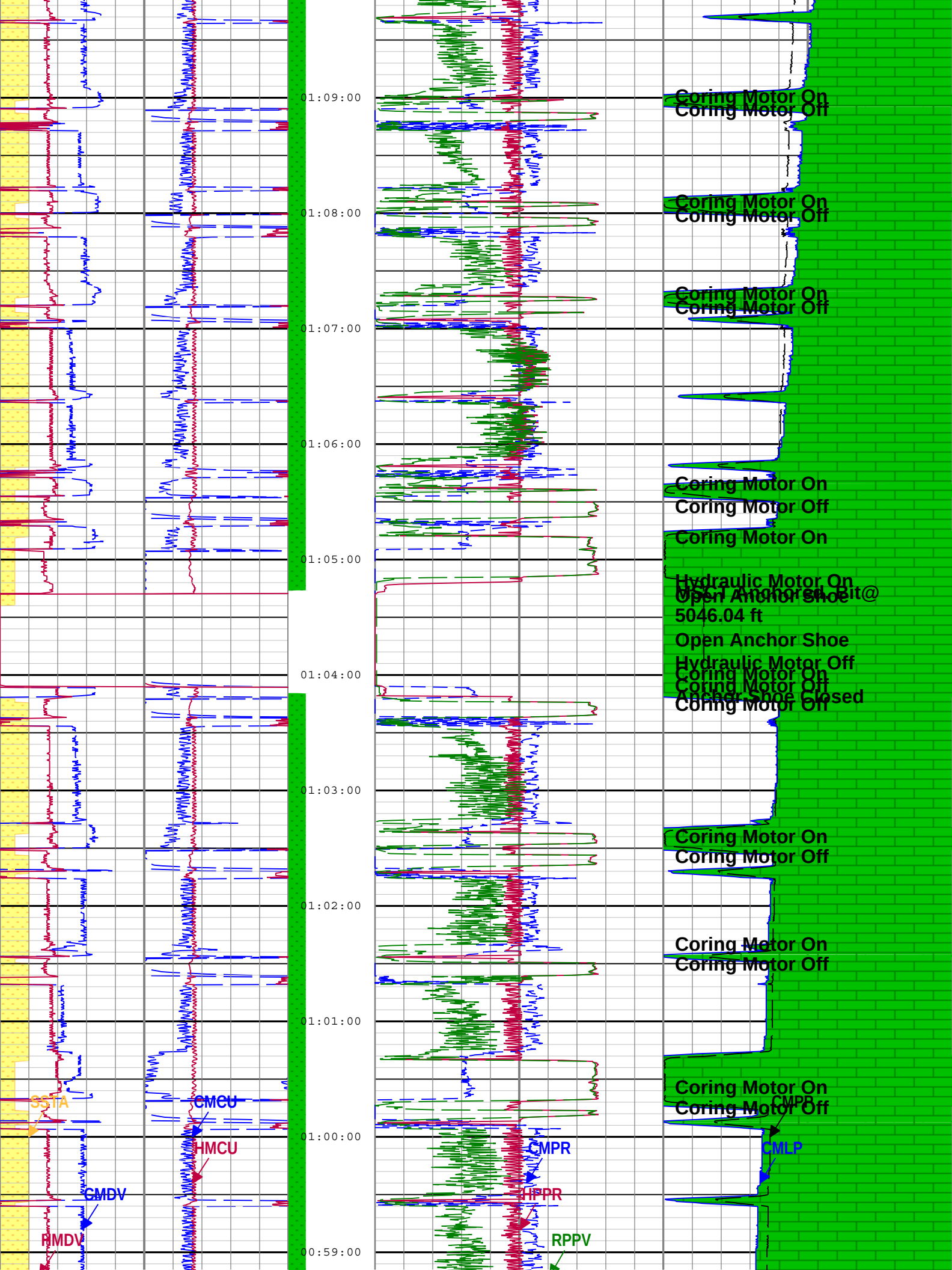
Run Name	Pass Objective	Station Start	Station Stop	Include Parallel Data
THREE	MSCT[5]:Coring:MSCT-B			

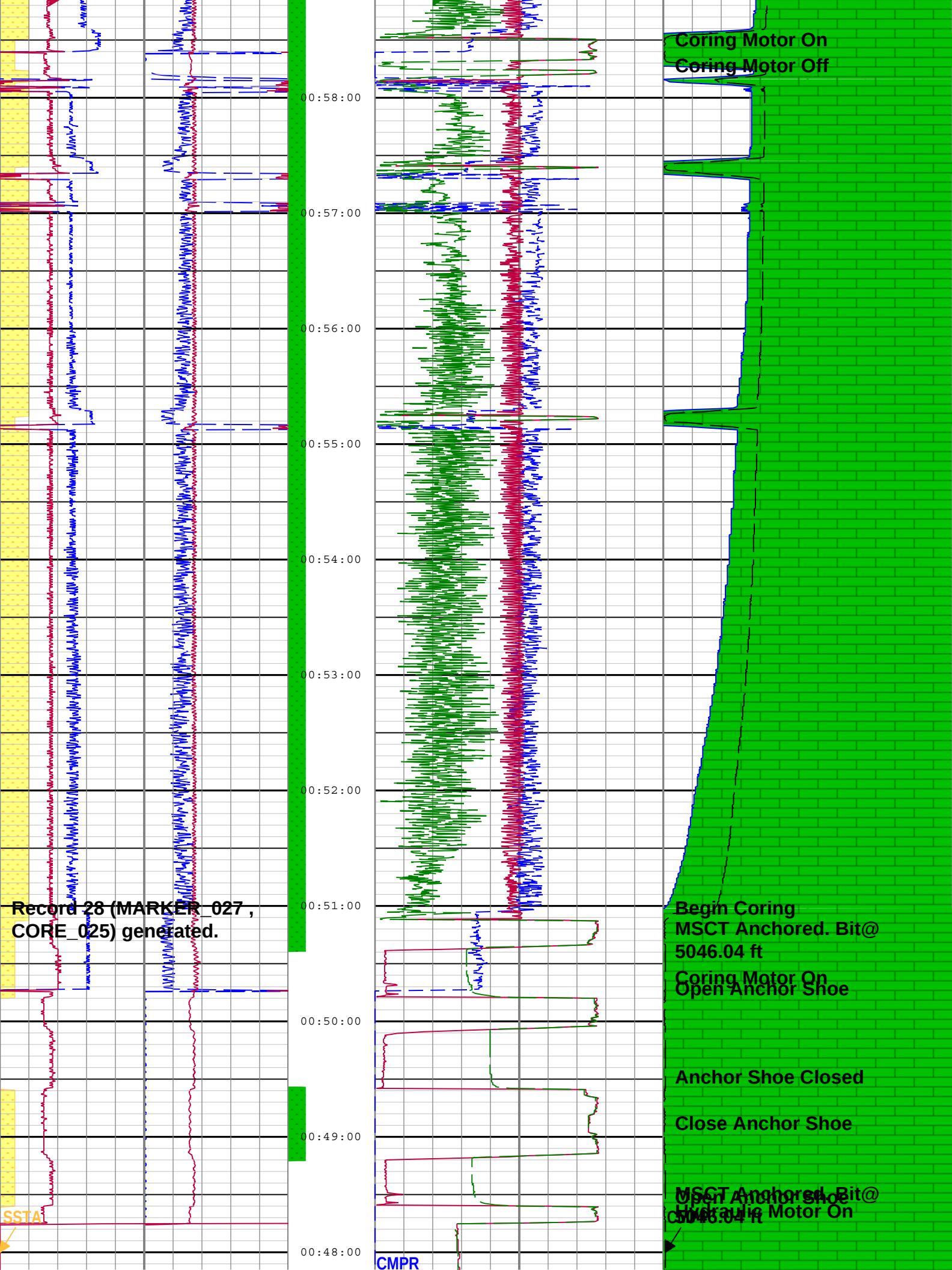
Log

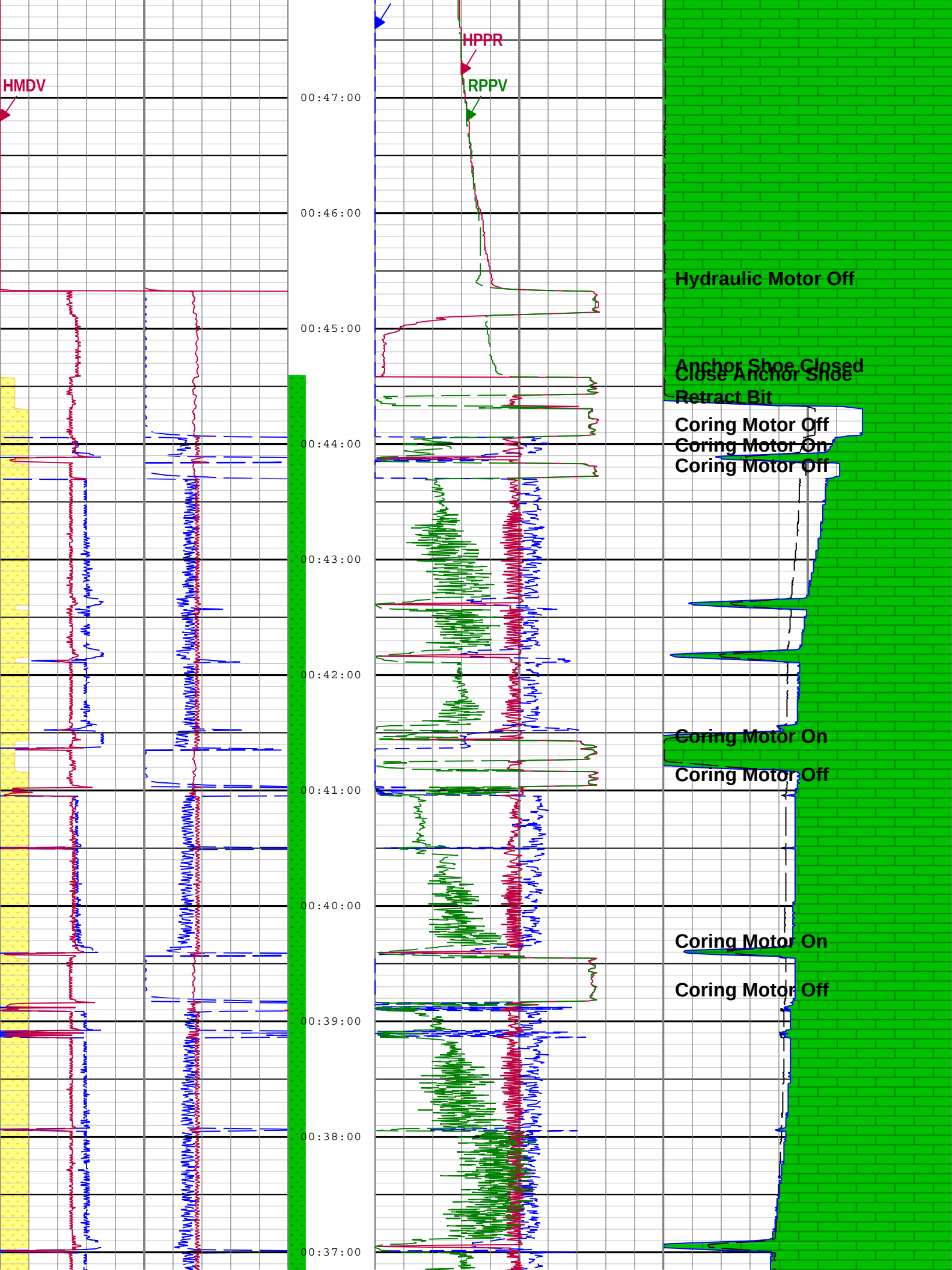
THREE: MSCT[5]:Coring:MSCT-B: 5008.03 (ft)

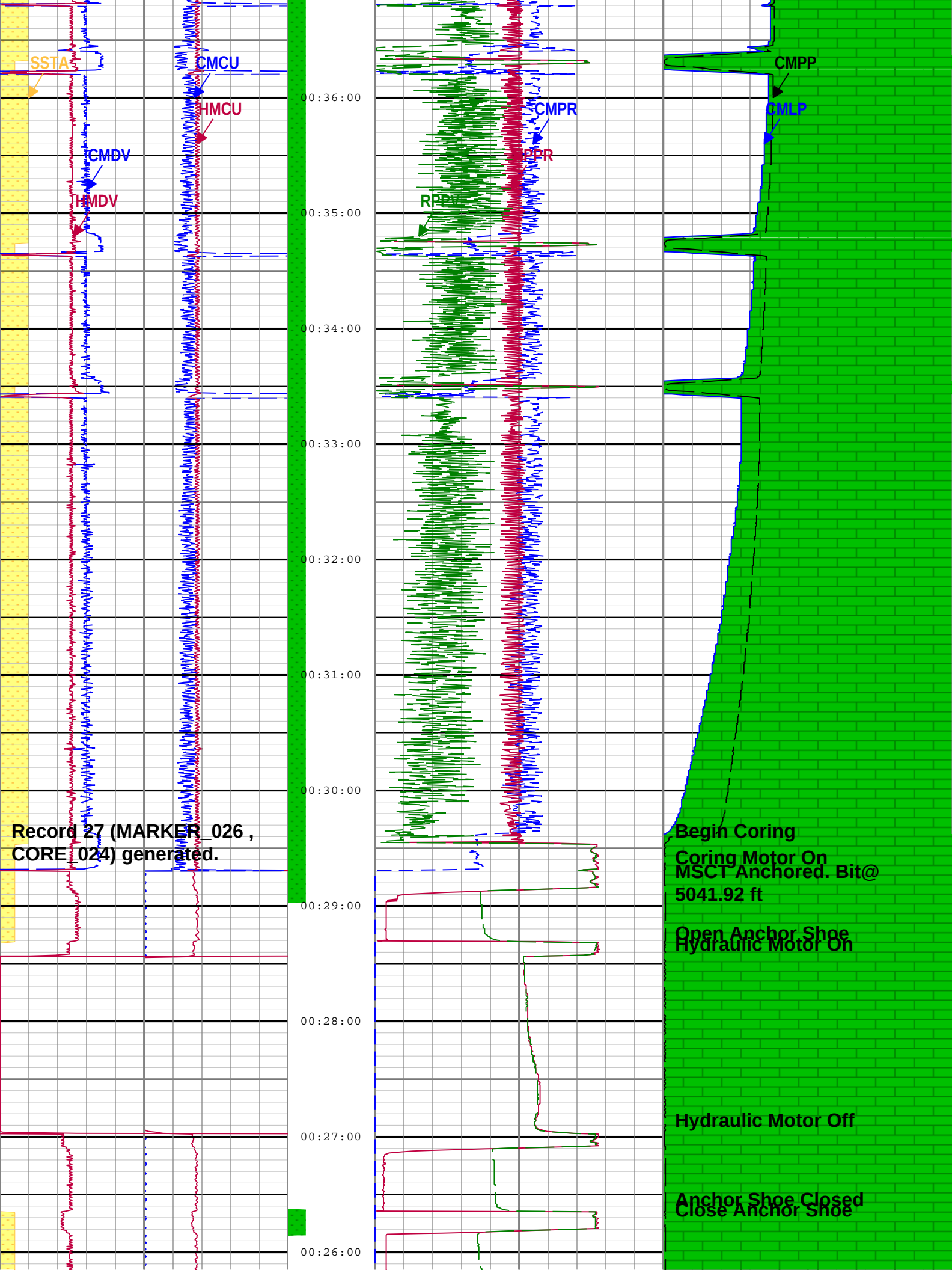
Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:00

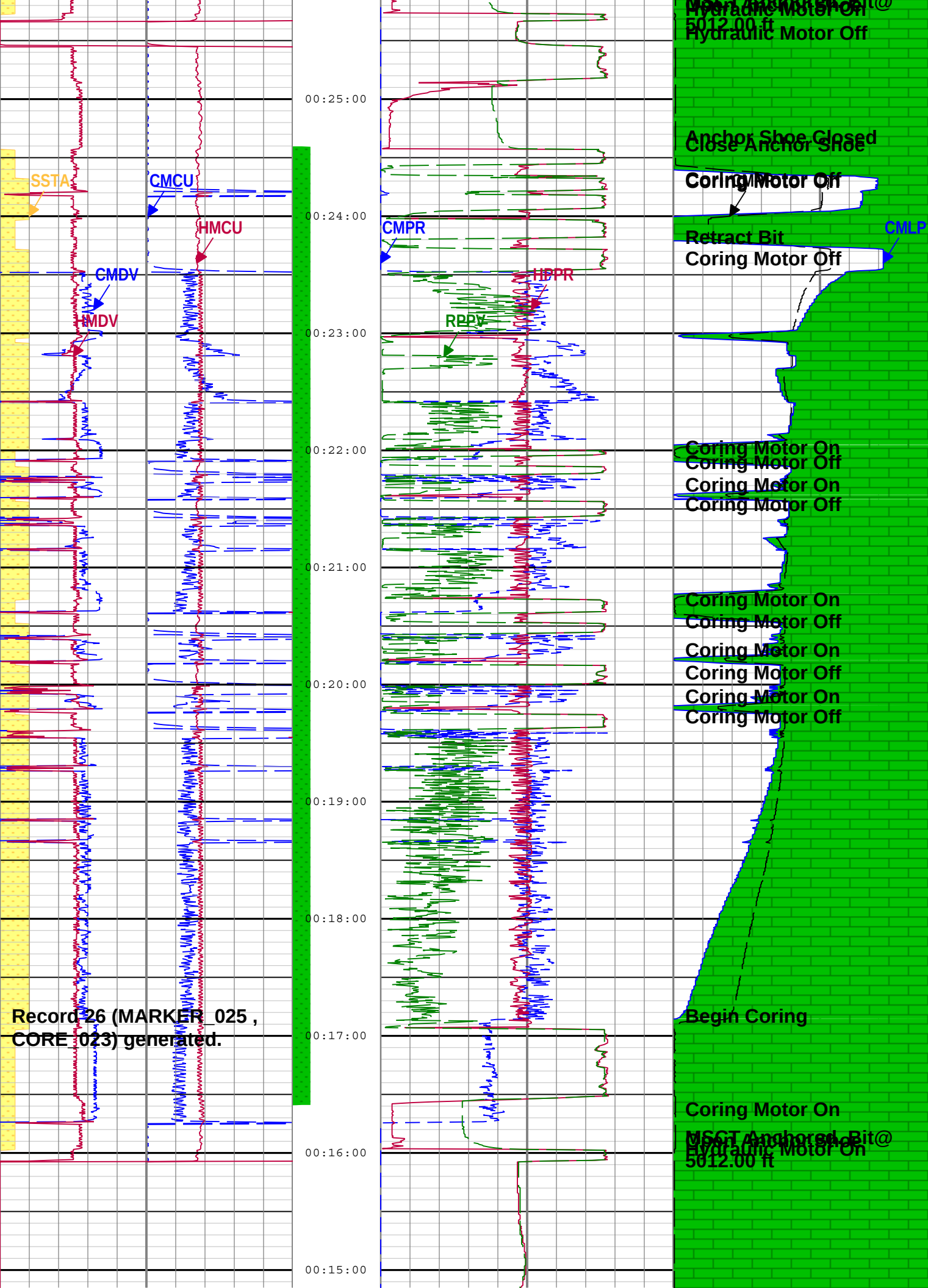


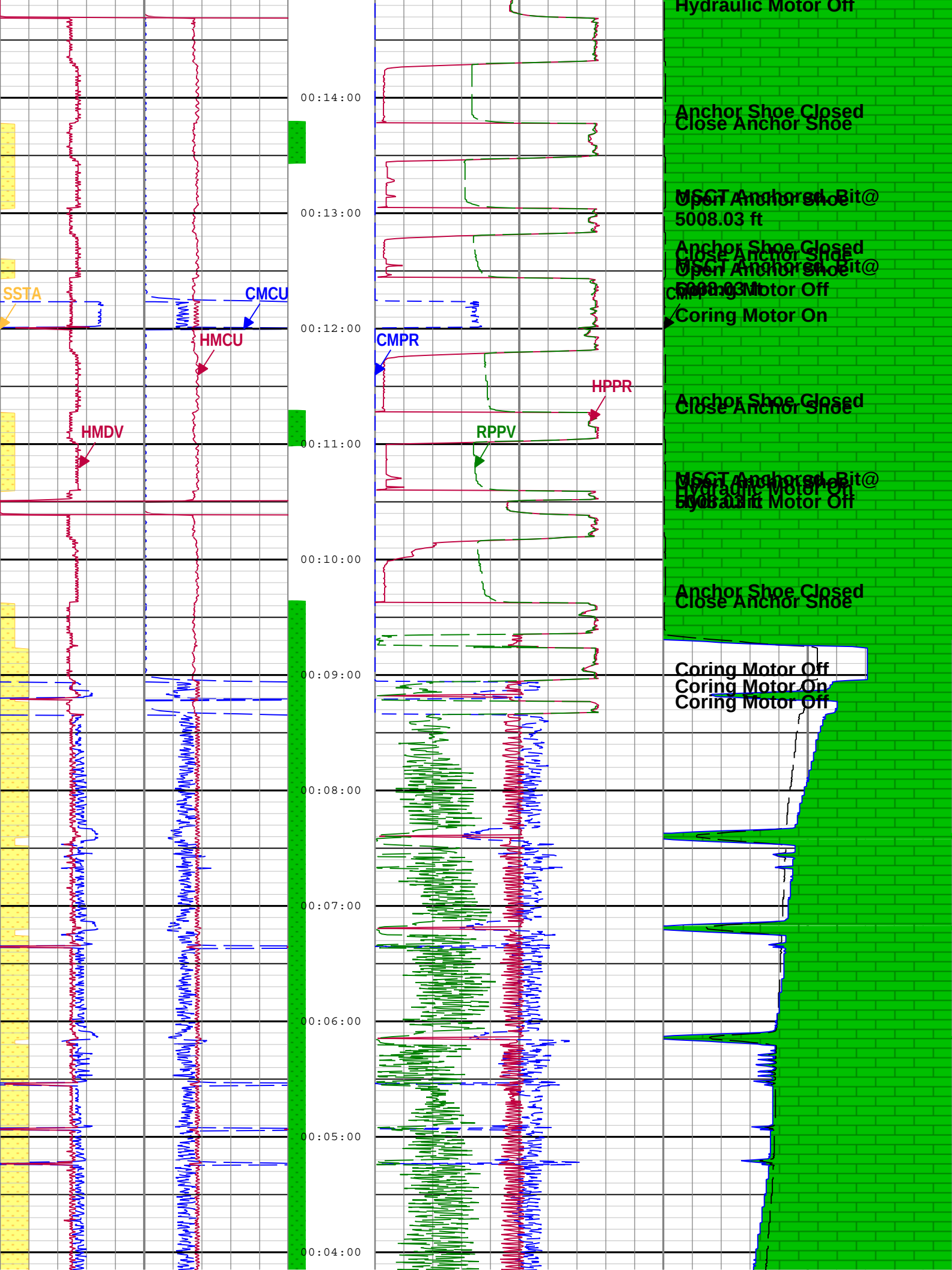


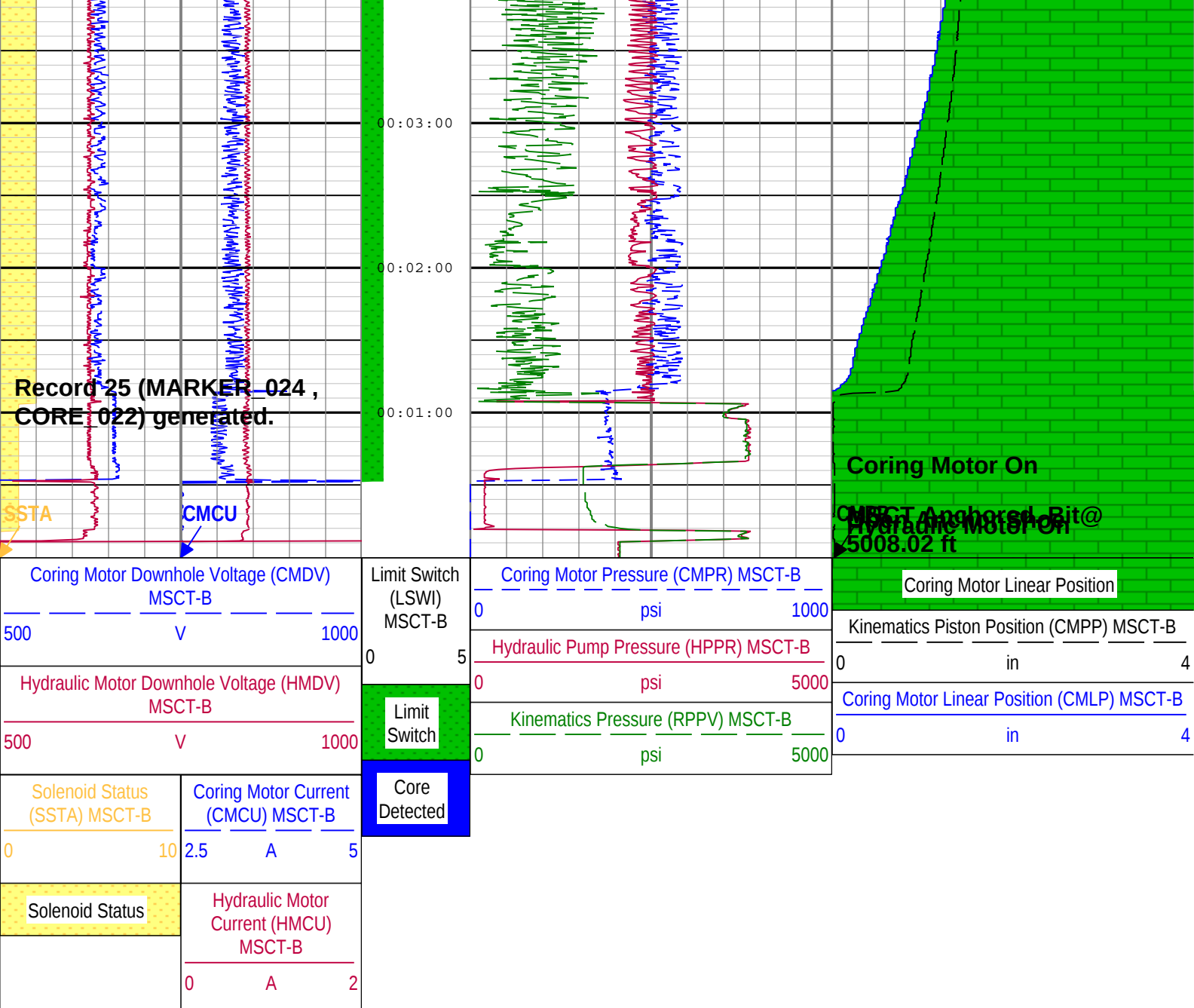












Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:00

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
SOFF	Standoff	MSCT-B	0	in

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
CMPRES_OFFS	Coring Motor Pressure Offset	MSCT-B	0	psi
COLPROT	Collision Protection	MSCT-B	On	
CORING_MODE	Coring Mode	MSCT-B	Time Zoned	
HPRES_OFFS	Hydraulic Pressure Offset	MSCT-B	0	psi
KPRES_OFFS	Kinematics Pressure Offset	MSCT-B	0	psi
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	20000	ft/h

Time Zone Parameters			
Parameter	Value	Start	Stop
CORING_MODE	Manual	13-Dec-2013 06:26:28	13-Dec-2013 06:35:45
CORING_MODE	Semiautomatic	13-Dec-2013 06:35:45	13-Dec-2013 06:36:55

CORING_MODE	Manual	13-Dec-2013 06:36:55	13-Dec-2013 06:42:35
CORING_MODE	Semiautomatic	13-Dec-2013 06:42:35	13-Dec-2013 06:52:06
CORING_MODE	Manual	13-Dec-2013 06:52:06	13-Dec-2013 06:55:07
CORING_MODE	Semiautomatic	13-Dec-2013 06:55:07	13-Dec-2013 07:14:49
CORING_MODE	Manual	13-Dec-2013 07:14:49	13-Dec-2013 07:16:38
CORING_MODE	Semiautomatic	13-Dec-2013 07:16:38	13-Dec-2013 07:30:51
CORING_MODE	Manual	13-Dec-2013 07:30:51	13-Dec-2013 07:40:02

THREE

Integration Summary

Output Channel(s)		Output Description		Input Parameter		Output Value		Unit	
Pass Summary									
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	Depth Shift	Include Parallel Data	
THREE	Log[10]:Up	Up	4981.58 ft	5127.31 ft	13-Dec-2013 6:20:48 AM	13-Dec-2013 6:24:44 AM	0.00 ft		

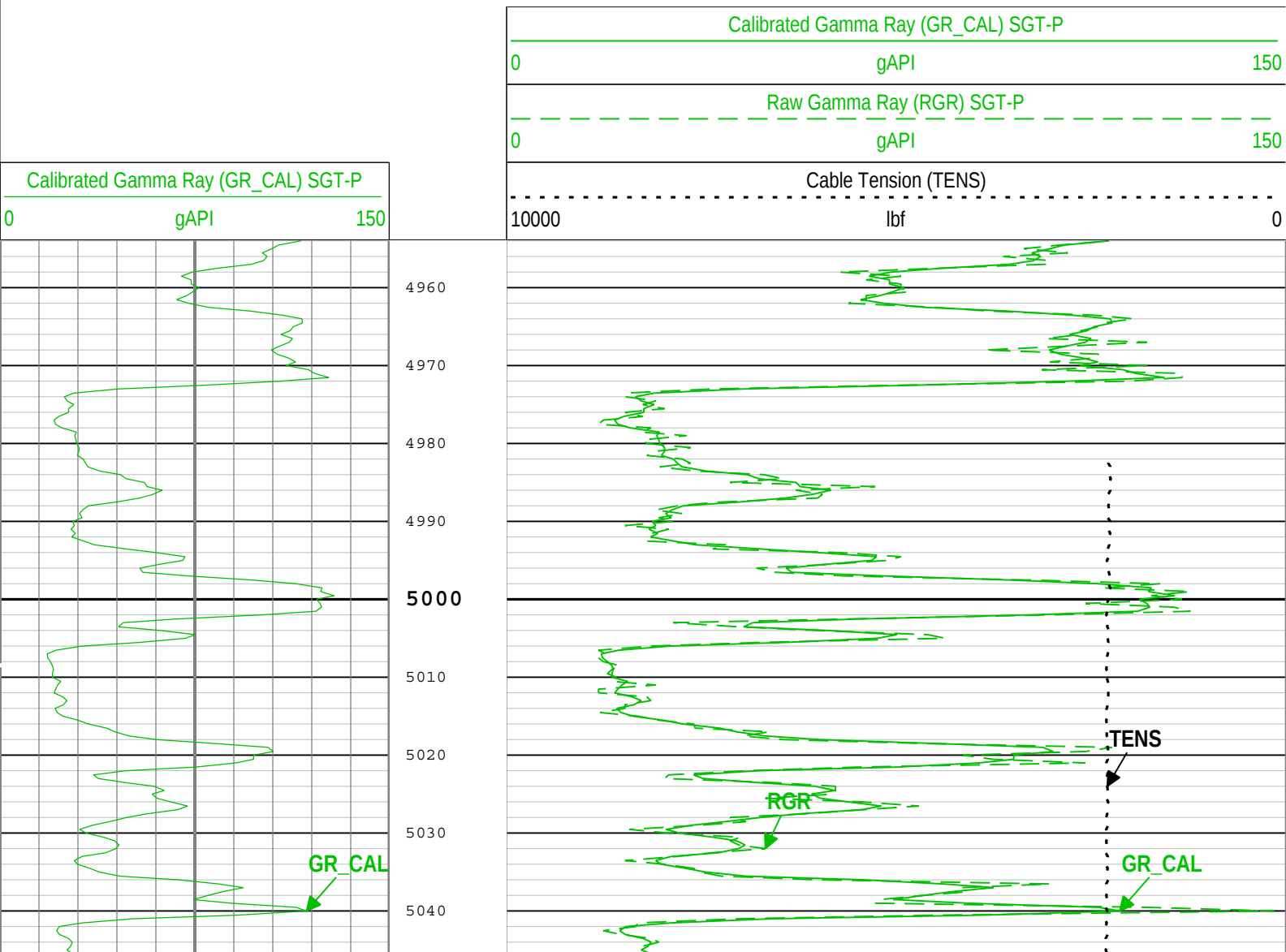
All depths are referenced to toolstring zero

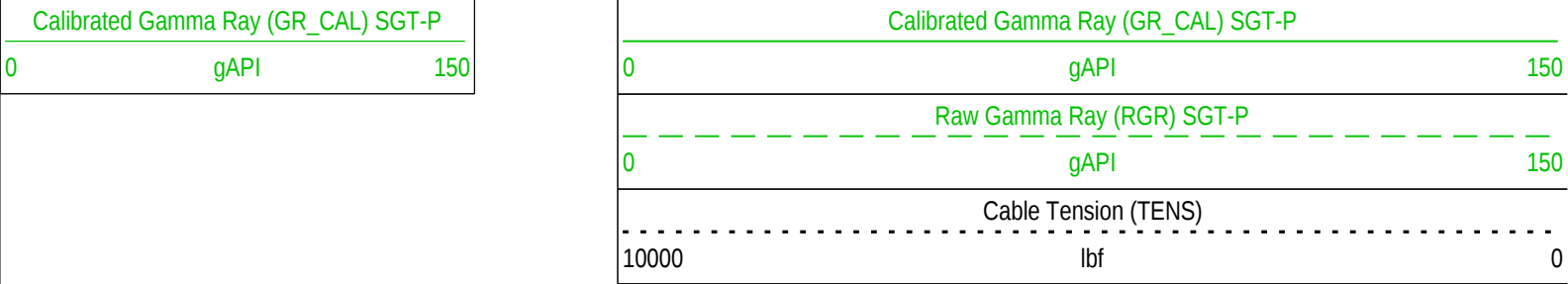
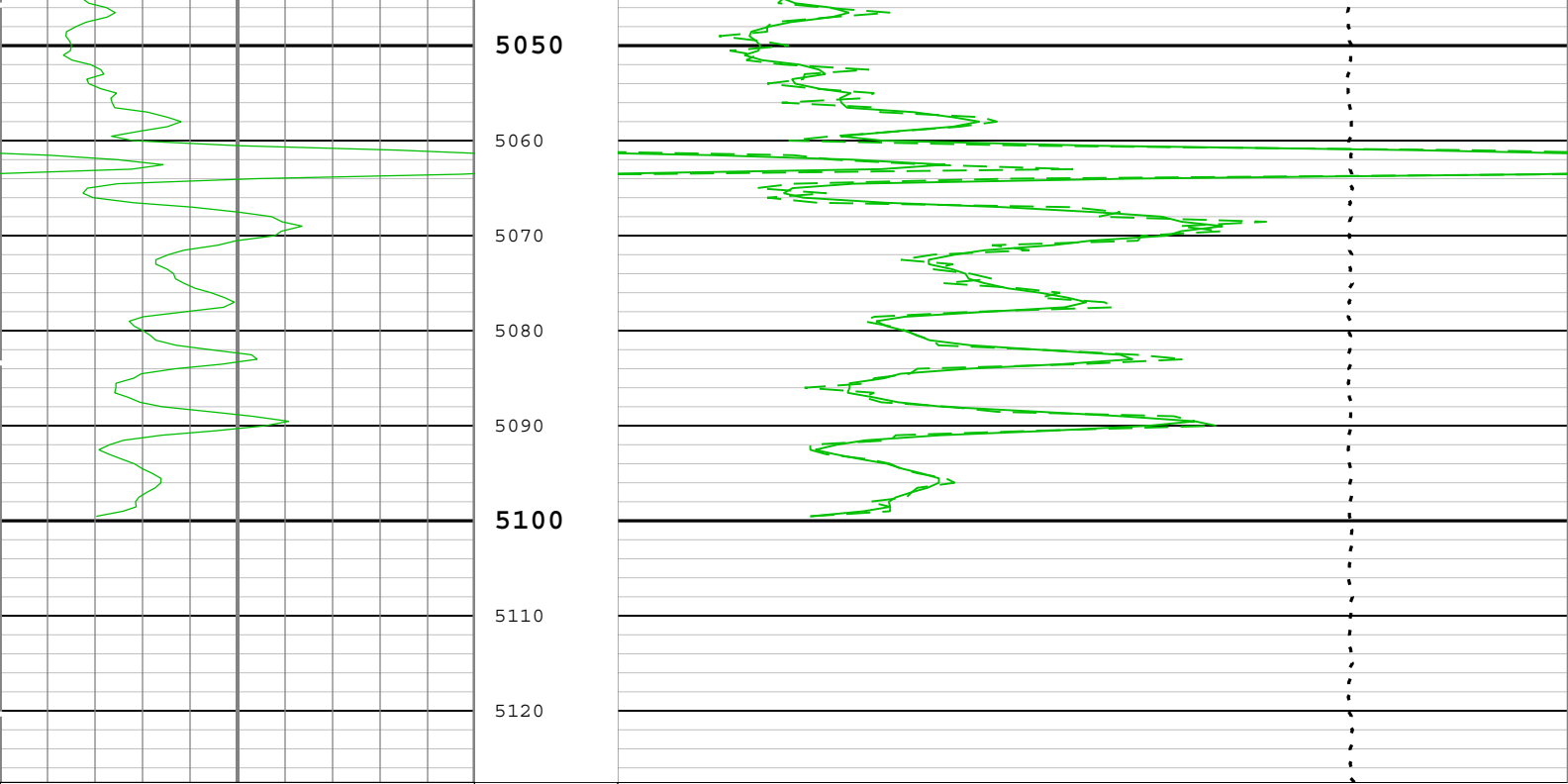
Log

THREE: Log[10]:Up

Description: DEPTH Domain Log for MSCT GR channels Format: Log (MSCT GR) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 13-Dec-2013 10:21:02

TIME_1900 - Time Marked every 60.00 (s)





TIME_1900 - Time Marked every 60.00 (s)

Description: DEPTH Domain Log for MSCT GR channels Format: Log (MSCT GR) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 13-Dec-2013 10:21:02

Channel Processing Parameters

Tool Control Parameters

Parameter	Description	Tool	Value	Unit
COLPROT	Collision Protection	MSCT-B	On	
CORING_MODE	Coring Mode	MSCT-B	Manual	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	20000	ft/h

THREE

Integration Summary

Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
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Pass Summary

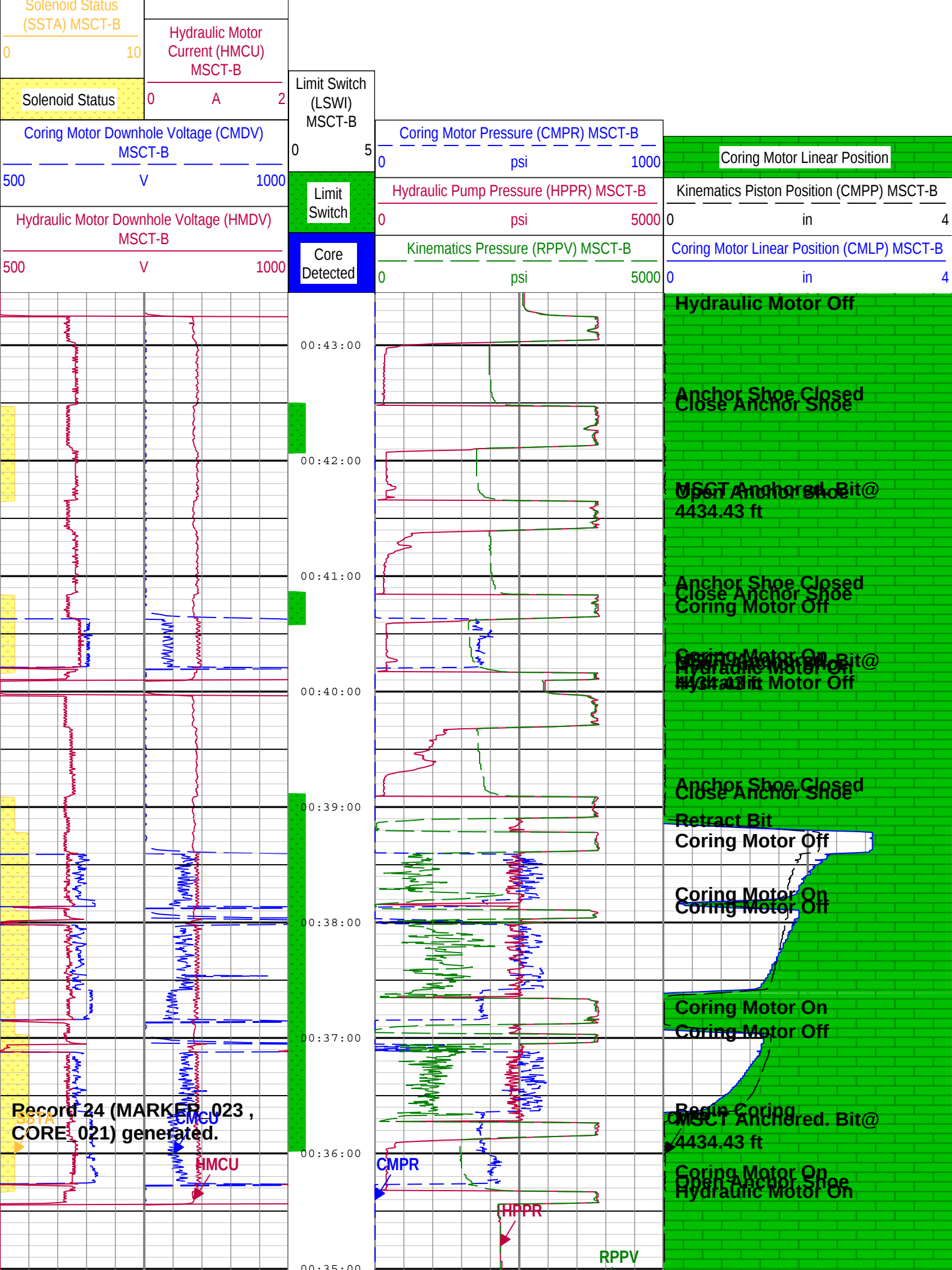
Run Name	Pass Objective	Station Start	Station Stop	Include Parallel Data
THREE	MSCT[4]:Coring:MSCT-B			

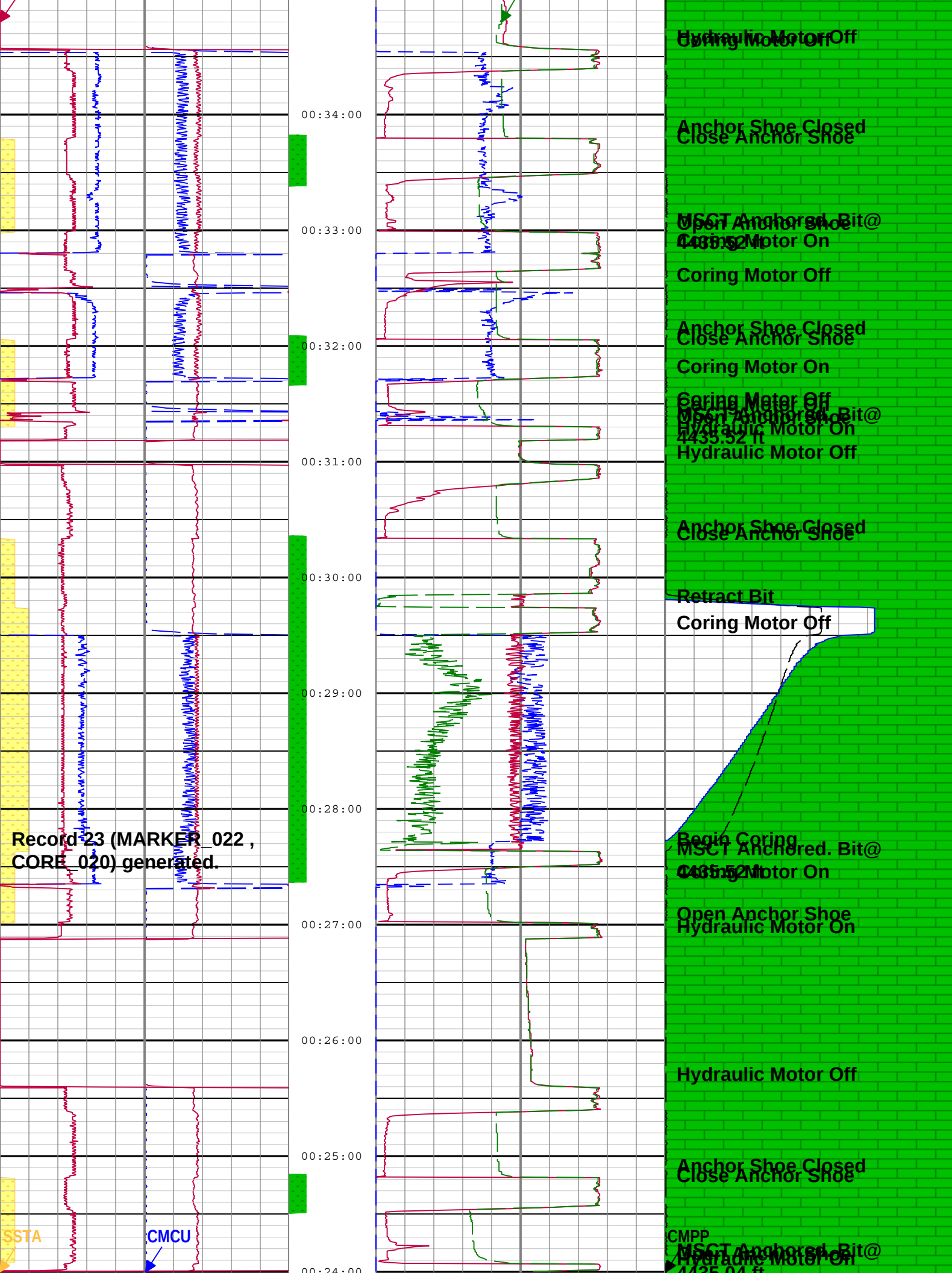
Log

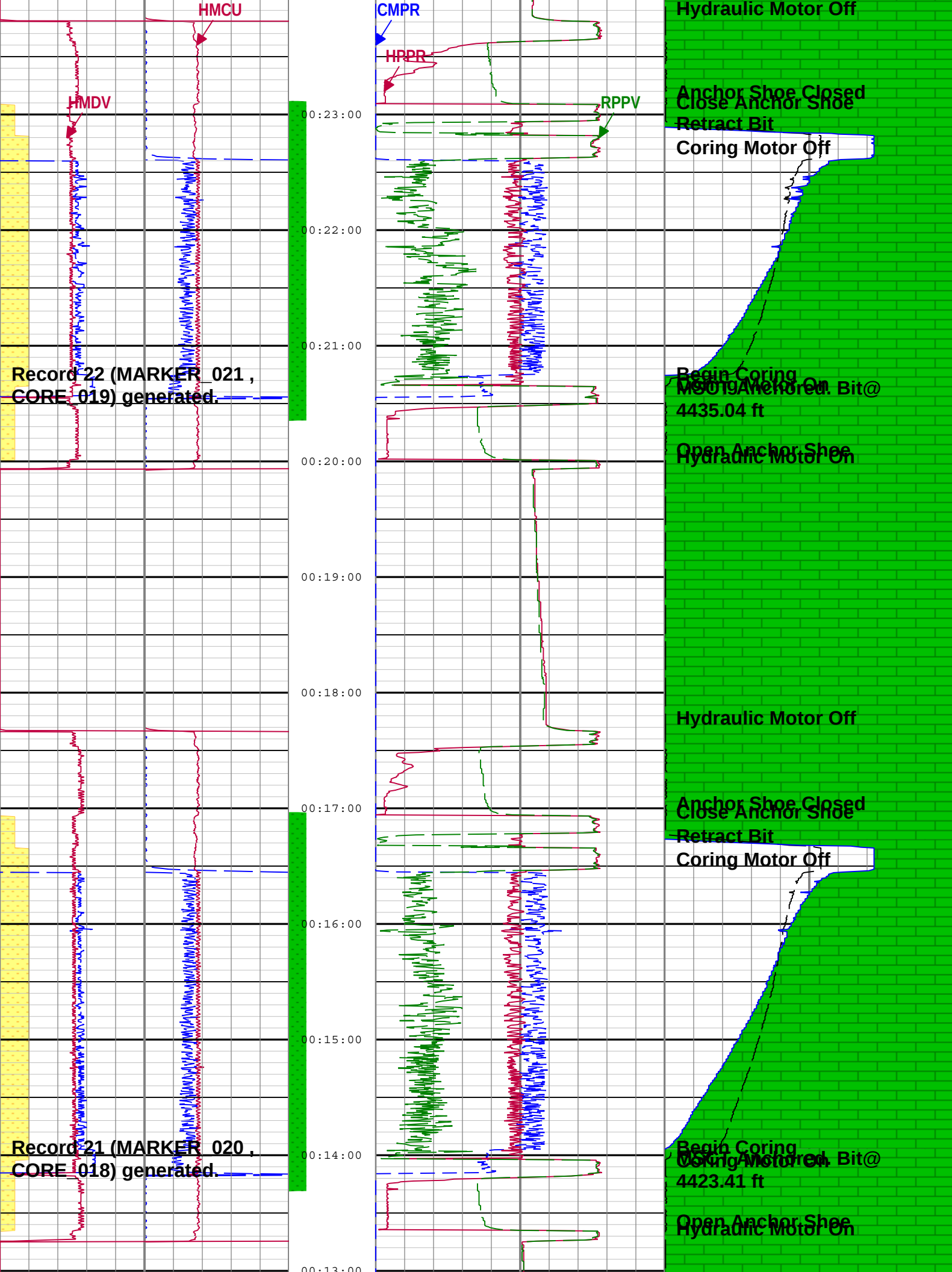
THREE: MSCT[4]:Coring:MSCT-B: 4423.02 (ft)

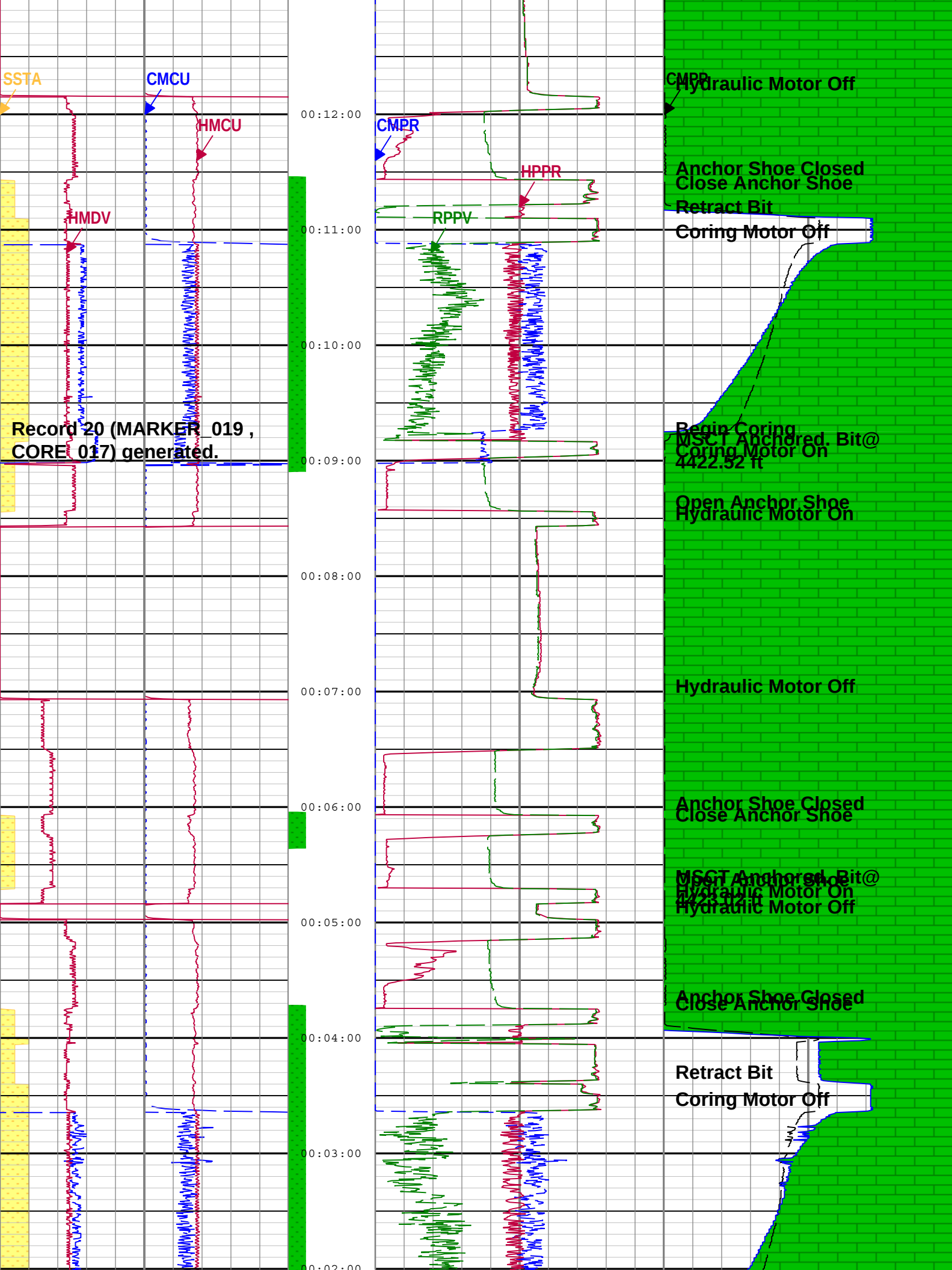
Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:03

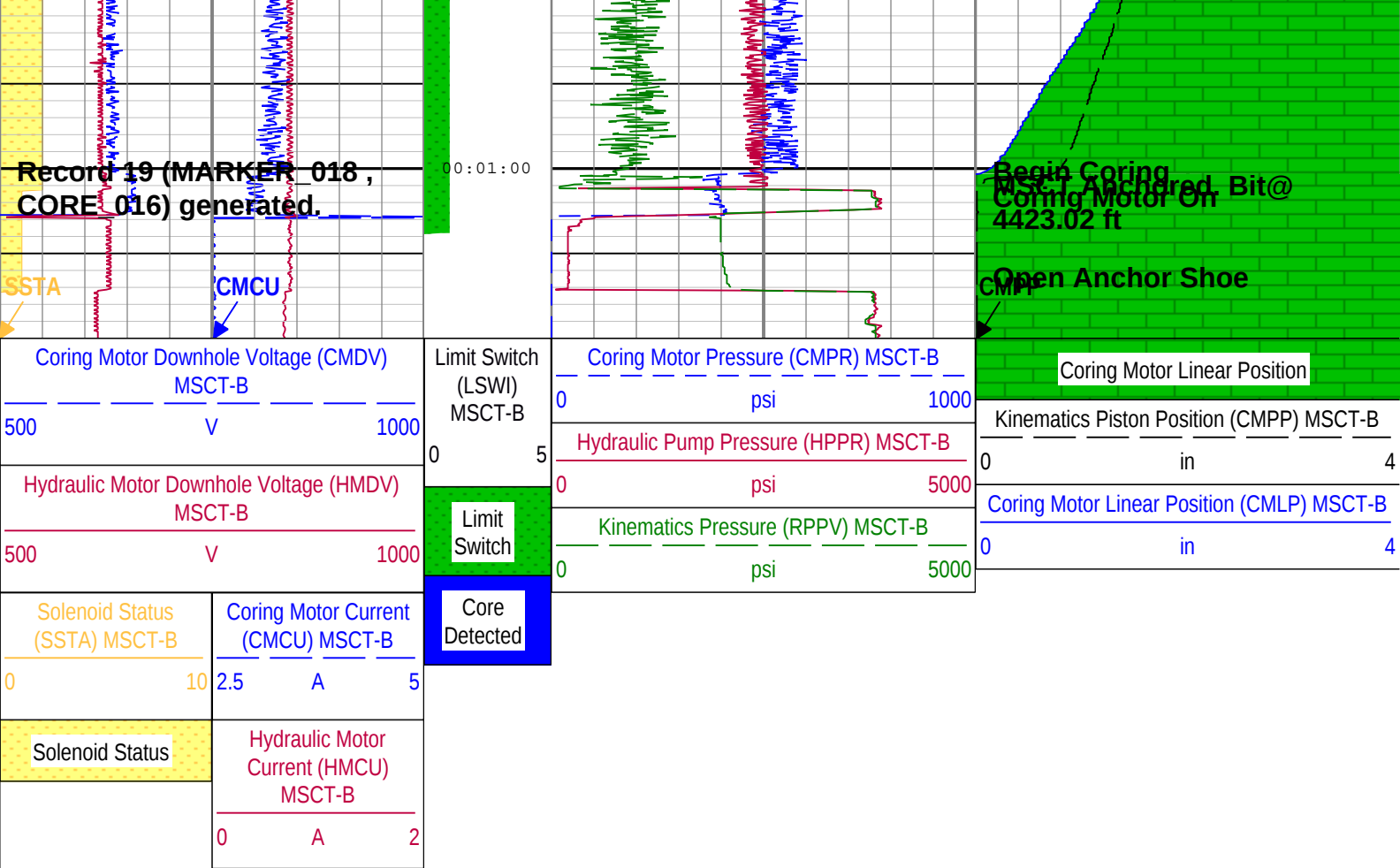
	Coring Motor Current (CMCU) MSCT-B
2.5	A
5	











Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:03

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
SOFF	Standoff	MSCT-B	0	in

Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
CMPRES_OFFS	Coring Motor Pressure Offset	MSCT-B	0	psi
COLPROT	Collision Protection	MSCT-B	On	
CORING_MODE	Coring Mode	MSCT-B	Time Zoned	
HPRES_OFFS	Hydraulic Pressure Offset	MSCT-B	0	psi
KPRES_OFFS	Kinematics Pressure Offset	MSCT-B	0	psi
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	20000	ft/h

Time Zone Parameters			
Parameter	Value	Start	Stop
CORING_MODE	Semiautomatic	13-Dec-2013 05:28:32	13-Dec-2013 05:33:46
CORING_MODE	Manual	13-Dec-2013 05:33:46	13-Dec-2013 05:37:03
CORING_MODE	Semiautomatic	13-Dec-2013 05:37:03	13-Dec-2013 05:52:30
CORING_MODE	Manual	13-Dec-2013 05:52:30	13-Dec-2013 05:55:30
CORING_MODE	Semiautomatic	13-Dec-2013 05:55:30	13-Dec-2013 05:59:39
CORING_MODE	Manual	13-Dec-2013 05:59:39	13-Dec-2013 06:03:11
CORING_MODE	Semiautomatic	13-Dec-2013 06:03:11	13-Dec-2013 06:08:22
CORING_MODE	Manual	13-Dec-2013 06:08:22	13-Dec-2013 06:11:59

4530

The diagram illustrates three stacked horizontal bars representing different data types:

- Top Bar:** Calibrated Gamma Ray (GR_CAL) SGT-P. It is a solid green bar with a scale from 0 to 150 gAPI.
- Middle Bar:** Raw Gamma Ray (RGR) SGT-P. It is a dashed green bar with a scale from 0 to 150 gAPI.
- Bottom Bar:** Cable Tension (TENS). It is a solid black bar with a dashed line and a scale from 10000 to 0 lbf.

TIME 1900 - Time Marked every 60.00 (s)

Description: DEPTH Domain Log for MSCT GR channels Format: Log (MSCT GR) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 13-Dec-2013 10:21:05

Tool Control Parameters

THREE

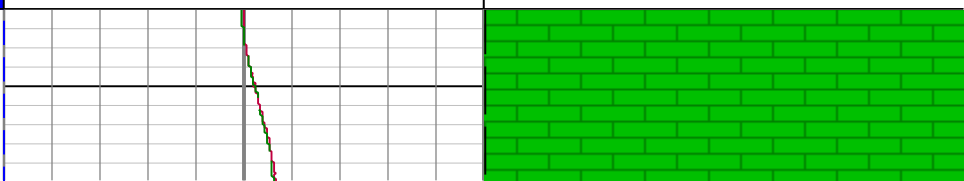
Integration Summary

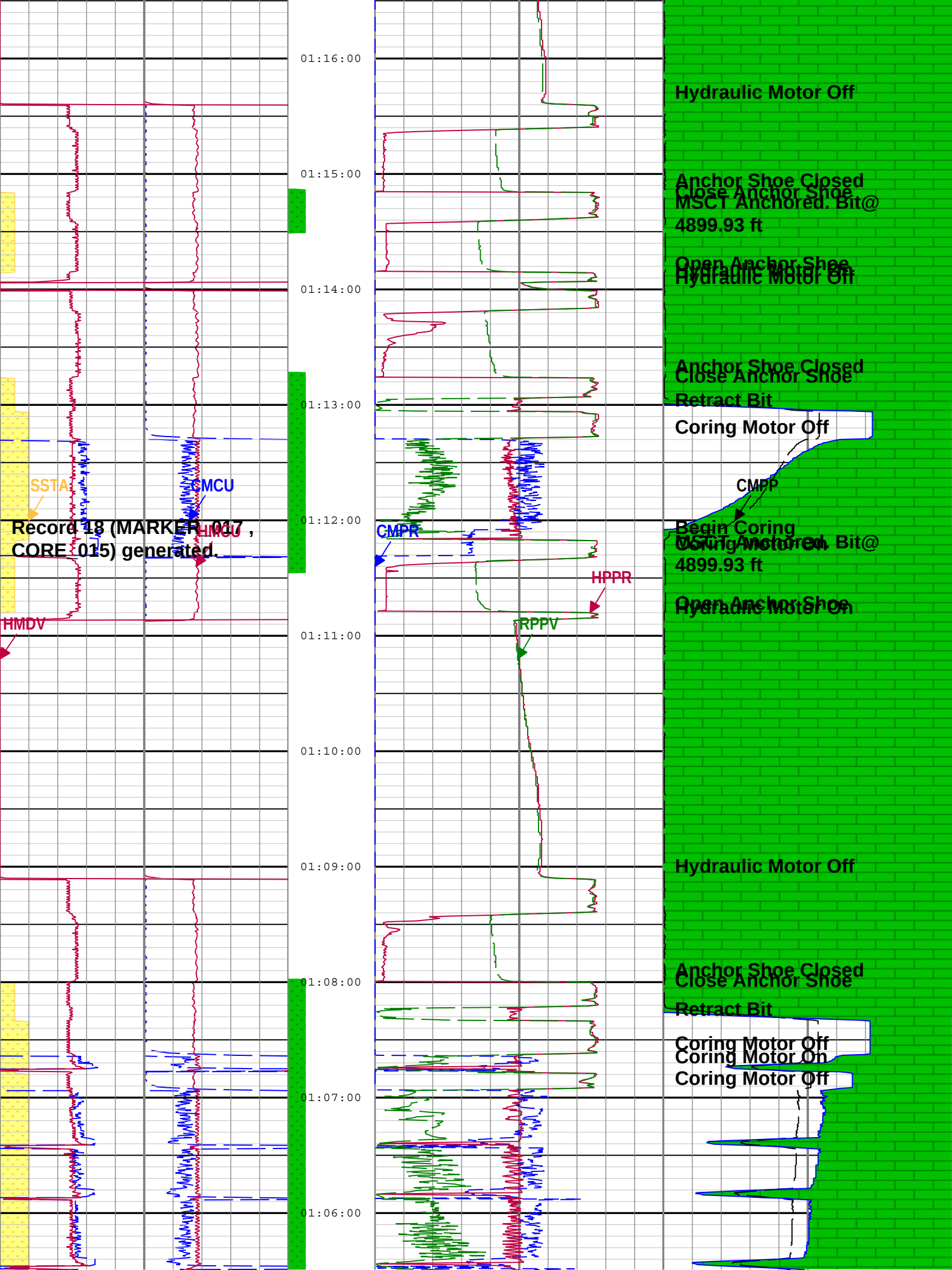
Pass Summary

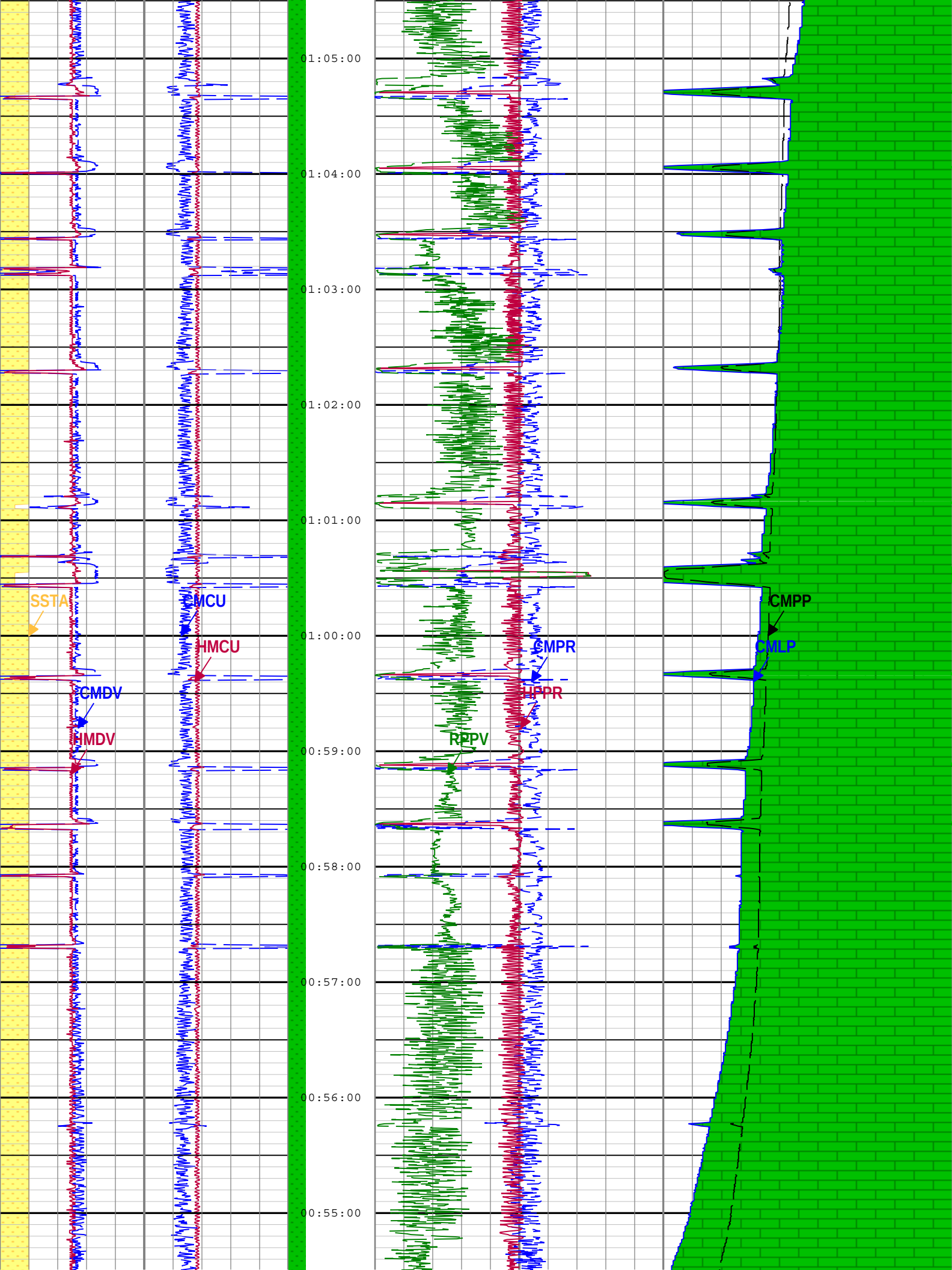
Log

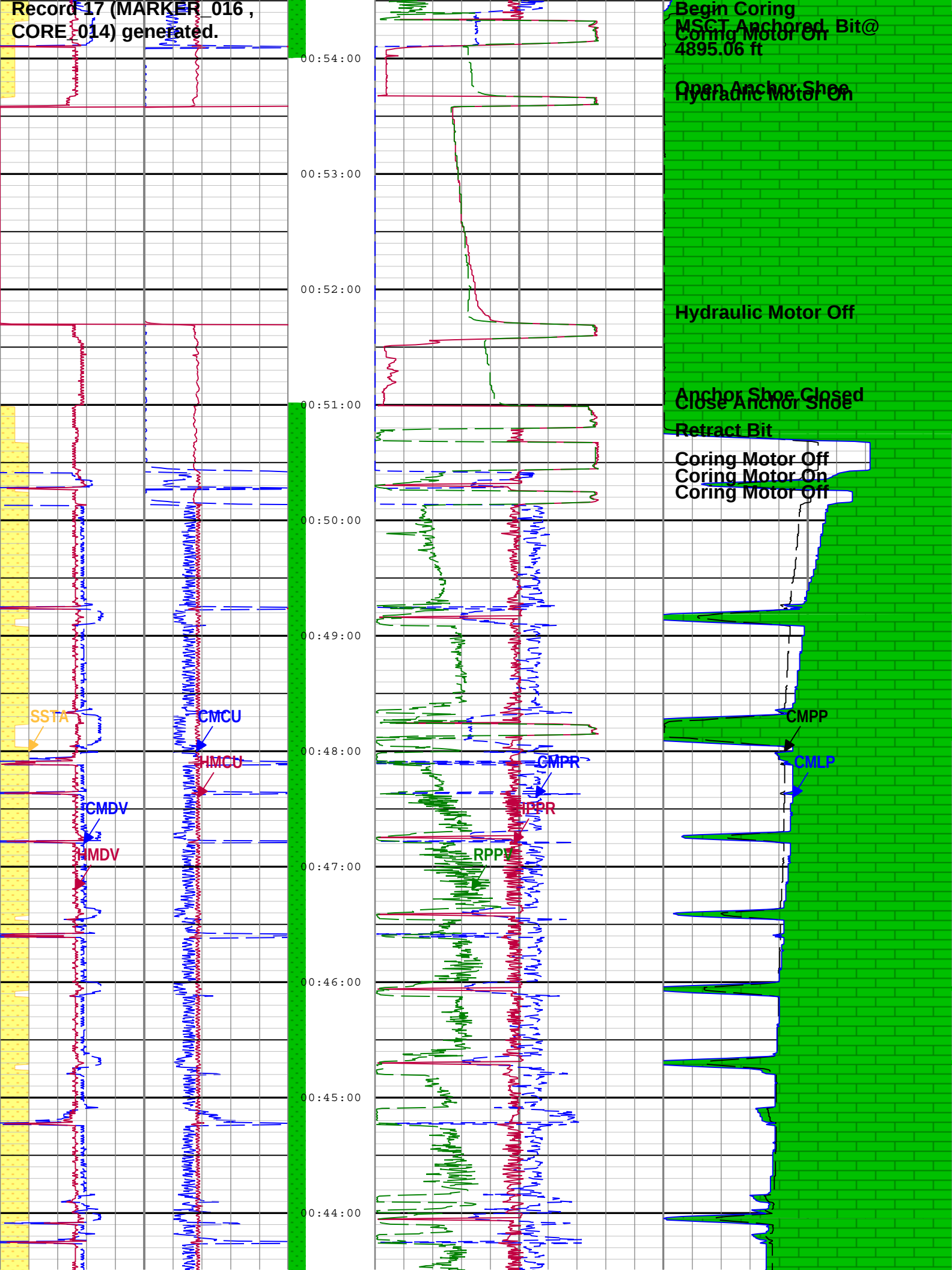
THREE: MSCT[3]:Coring:MSCT-B: 4848.08 (ft)

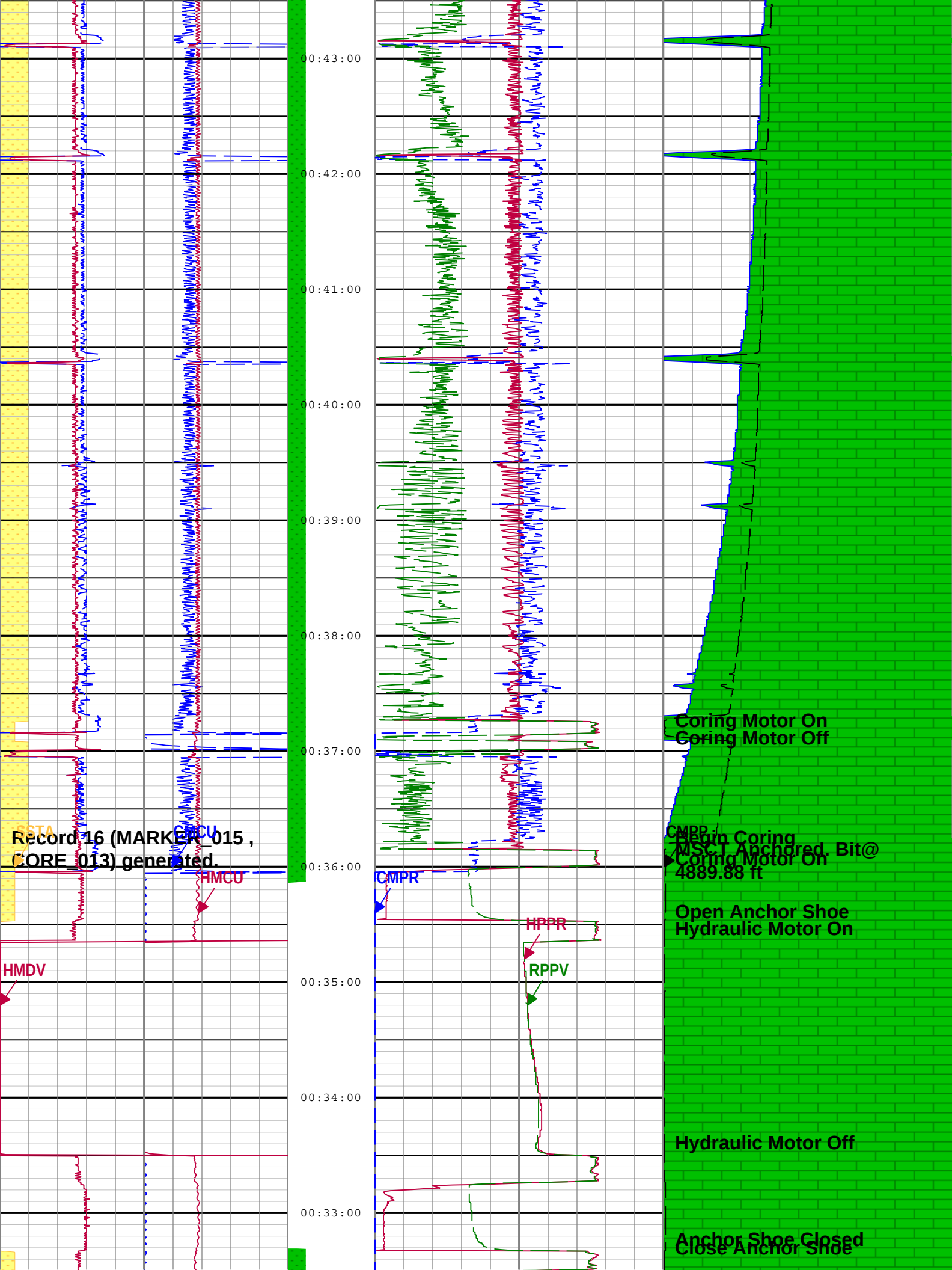
Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:06

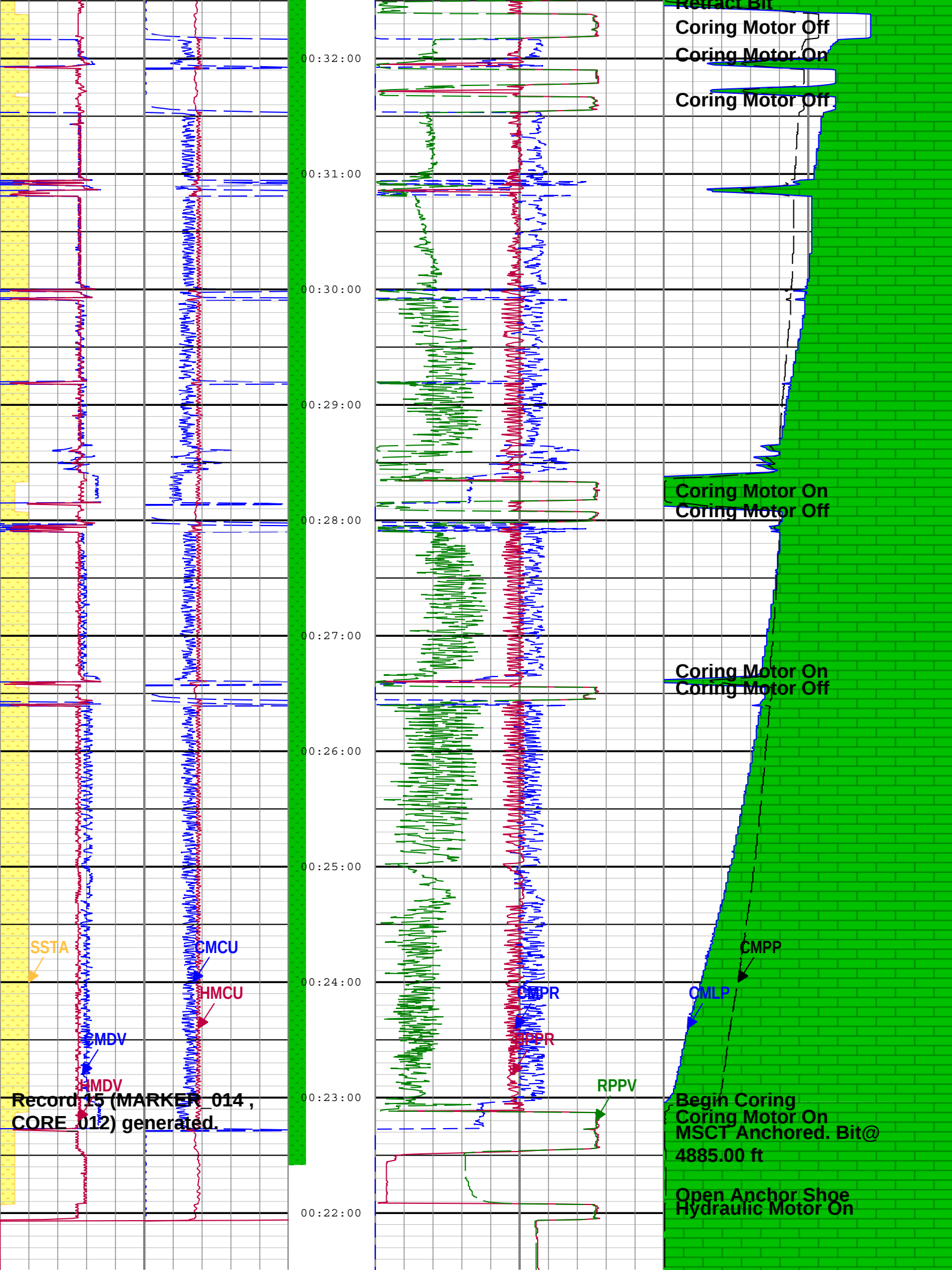
01:17:00

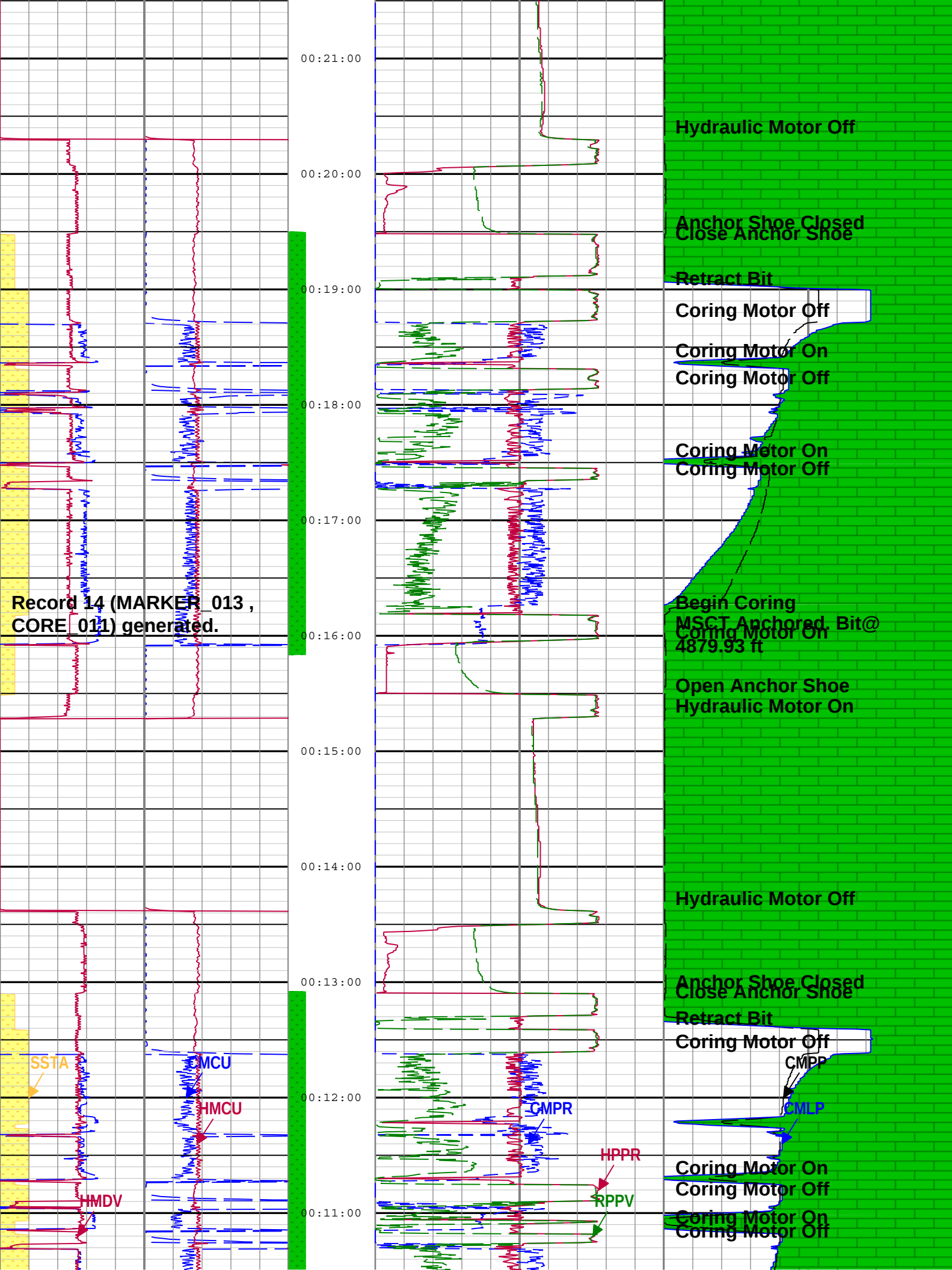


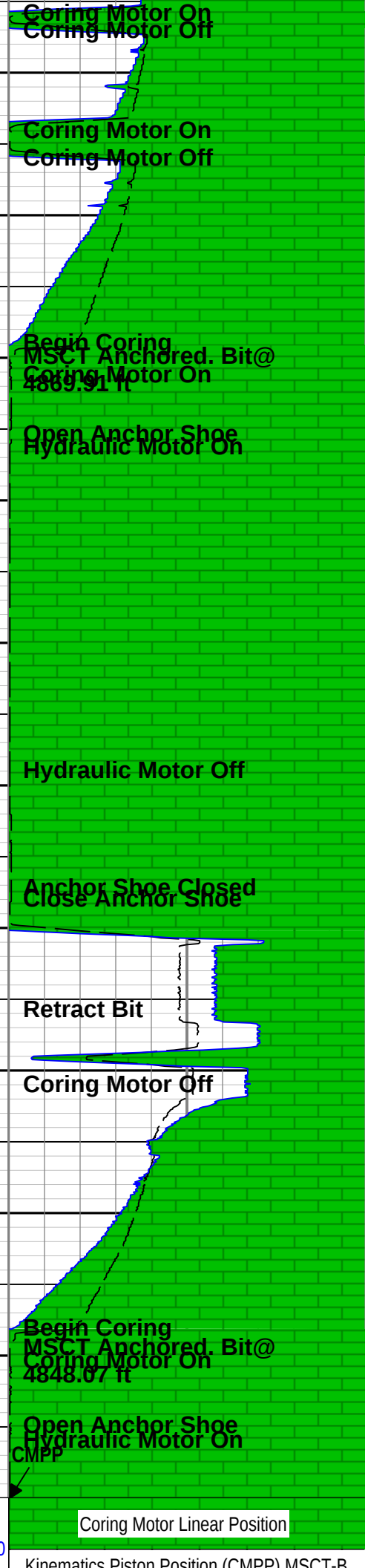












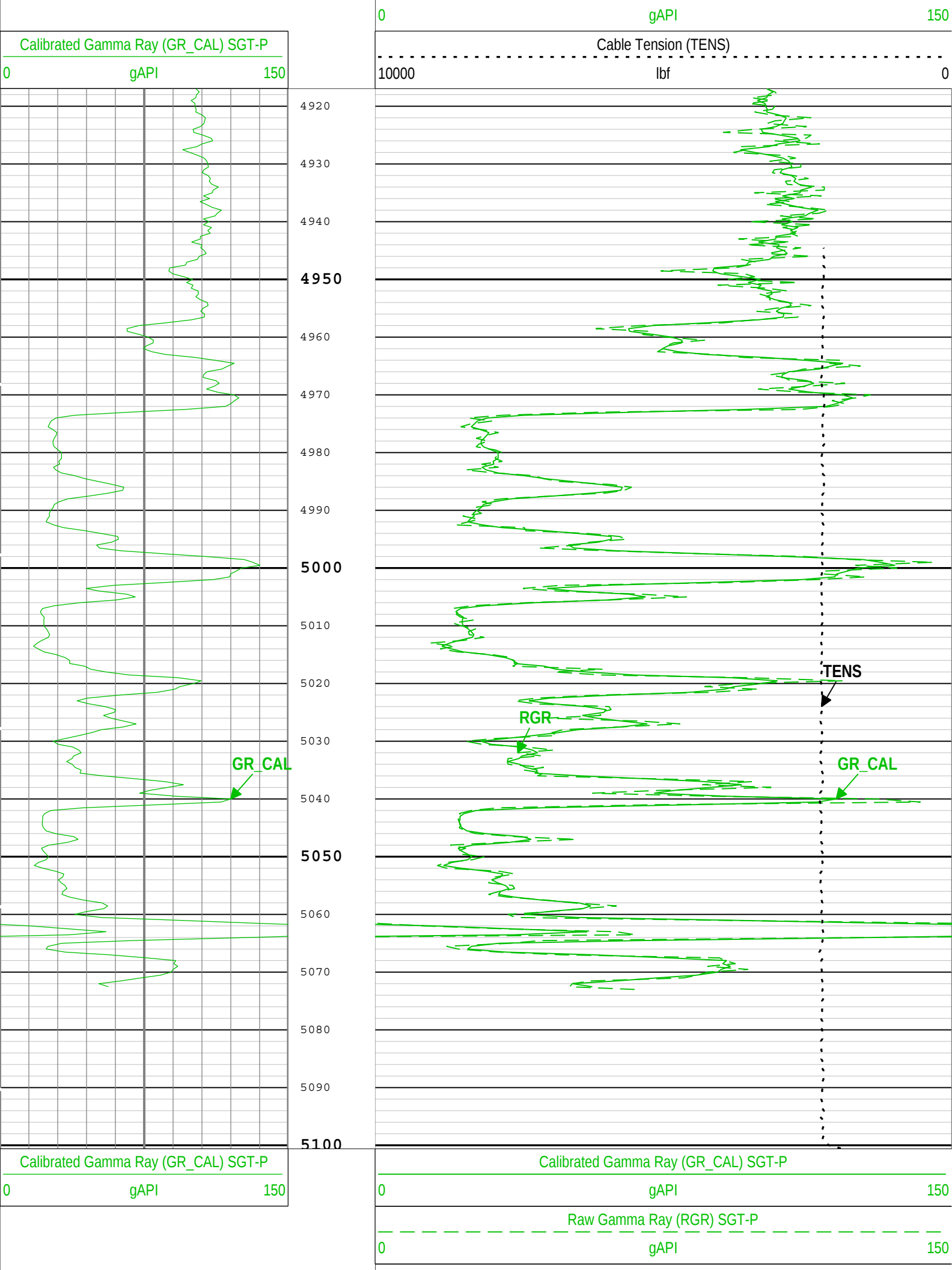
500 V 1000		0	5	Hydraulic Pump Pressure (HPPR) MSCT-B		Kinematics Piston Position (CMLP) MSCT-B	
Hydraulic Motor Downhole Voltage (HMDV) MSCT-B		Limit Switch	0	psi 5000		in 4	
500 V 1000				Kinematics Pressure (RPPV) MSCT-B		Coring Motor Linear Position (CMLP) MSCT-B	
		Core Detected	0	psi 5000		0 in 4	
Solenoid Status (SSTA) MSCT-B	Coring Motor Current (CMCU) MSCT-B						
0 10	2.5 A 5						
Solenoid Status	Hydraulic Motor Current (HMCU) MSCT-B						
	0 A 2						
Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time Creation Date: 13-Dec-2013 10:21:06							

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
SOFF	Standoff	MSCT-B	0	in
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
CMPRES_OFFS	Coring Motor Pressure Offset	MSCT-B	0	psi
COLPROT	Collision Protection	MSCT-B	On	
CORING_MODE	Coring Mode	MSCT-B	Time Zoned	
HPRES_OFFS	Hydraulic Pressure Offset	MSCT-B	0	psi
KPRES_OFFS	Kinematics Pressure Offset	MSCT-B	0	psi
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	20000	ft/h
Time Zone Parameters				
Parameter	Value	Start	Stop	
CORING_MODE	Semiautomatic	13-Dec-2013 03:58:51	13-Dec-2013 05:13:01	
CORING_MODE	Manual	13-Dec-2013 05:13:01	13-Dec-2013 05:14:30	
CORING_MODE	Semiautomatic	13-Dec-2013 05:14:30	13-Dec-2013 05:16:14	
THREE				

Integration Summary										
Output Channel(s)		Output Description			Input Parameter		Output Value		Unit	
Pass Summary										
Run Name	Pass Objective	Direction	Top	Bottom	Start		Stop		Depth Shift	Include Parallel Data
THREE	Log[6]:Up	Up	4944.25 ft	5100.60 ft	13-Dec-2013 3:51:39 AM		13-Dec-2013 3:56:49 AM		0.00 ft	
All depths are referenced to toolstring zero										
Log	THREE: Log[6]:Up									

Description: DEPTH Domain Log for MSCT GR channels Format: Log (MSCT GR) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured Depth Creation Date: 13-Dec-2013 10:21:08

TIME_1900 - Time Marked every 60.00 (s)			
		Calibrated Gamma Ray (GR_CAL) SGT-P	
		0	gAPI 150
		Raw Gamma Ray (RGR) SGT-P	

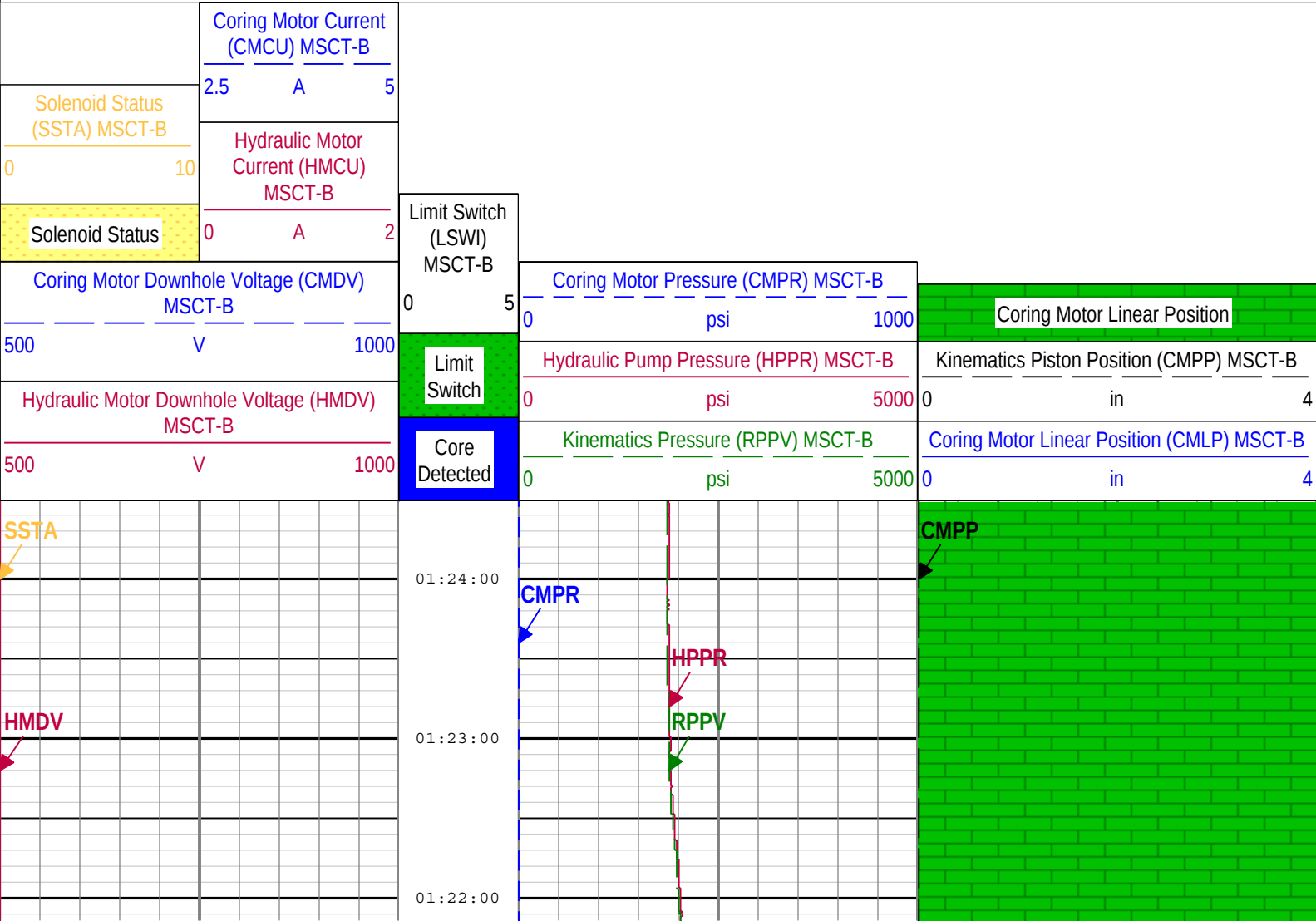


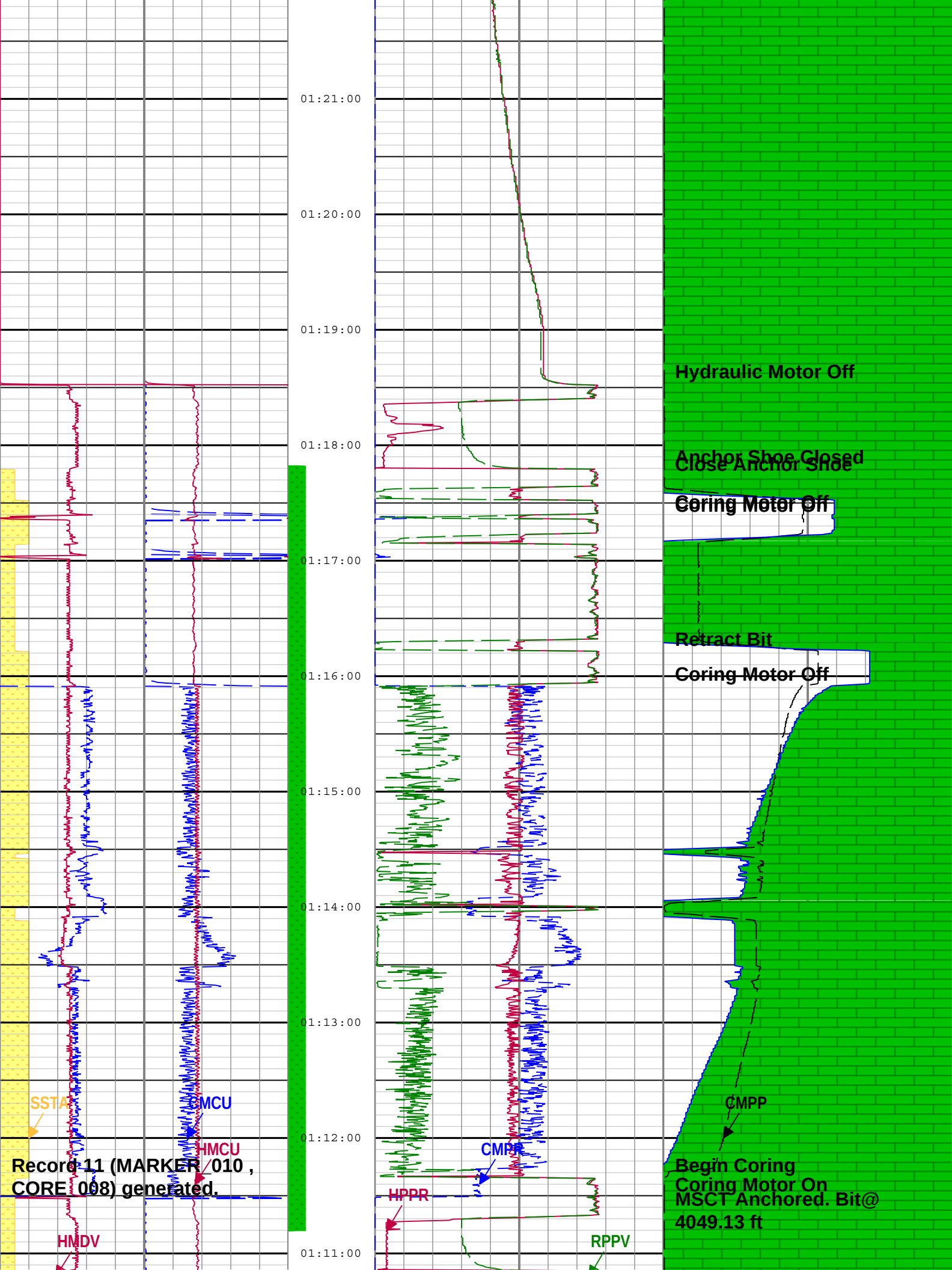
TIME_1900 - Time Marked every 60.00 (s)

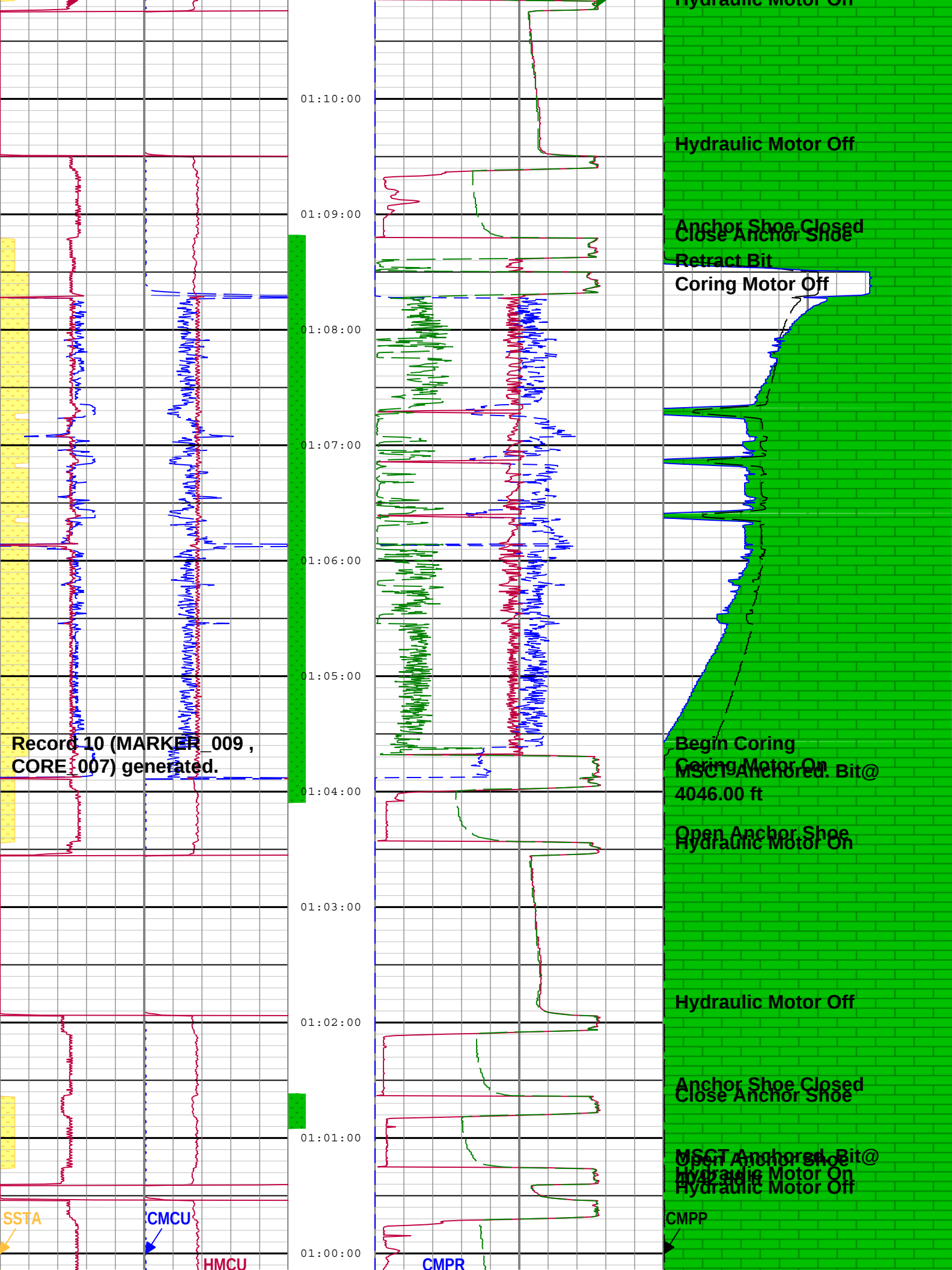
Description: DEPTH Domain Log for MSCT GR channels Format: Log (MSCT GR) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured
Depth Creation Date: 13-Dec-2013 10:21:08

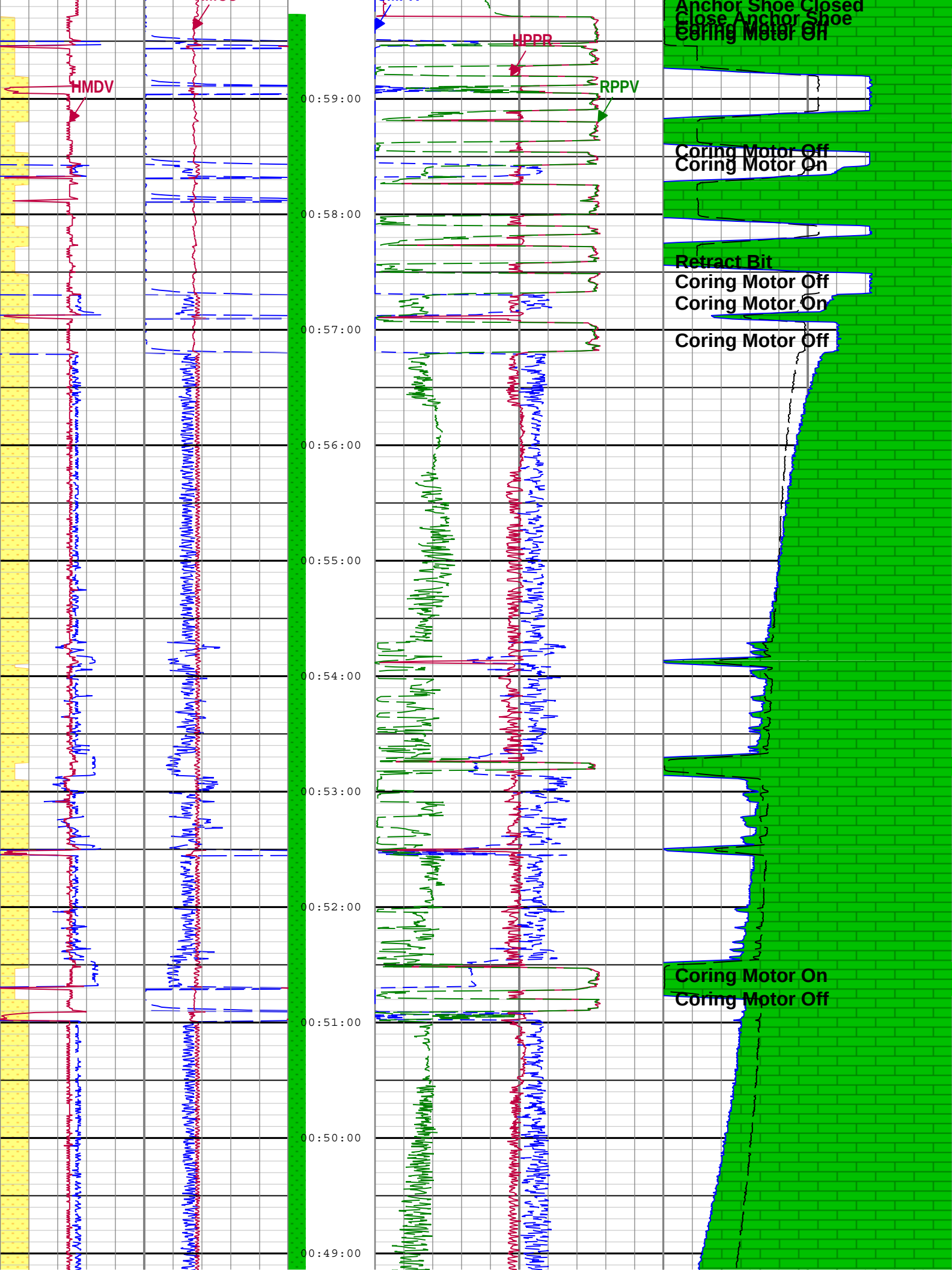
Channel Processing Parameters				
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
COLPROT	Collision Protection	MSCT-B	On	
CORING_MODE	Coring Mode	MSCT-B	Semiautomatic	
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	20000	ft/h
THREE				
Integration Summary				
Output Channel(s)	Output Description	Input Parameter	Output Value	Unit
Pass Summary				
Run Name	Pass Objective	Station Start	Station Stop	Include Parallel Data
THREE	MSCT[2]:Coring:MSCT-B			
Log				
THREE: MSCT[2]:Coring:MSCT-B: 3854.88 (ft)				

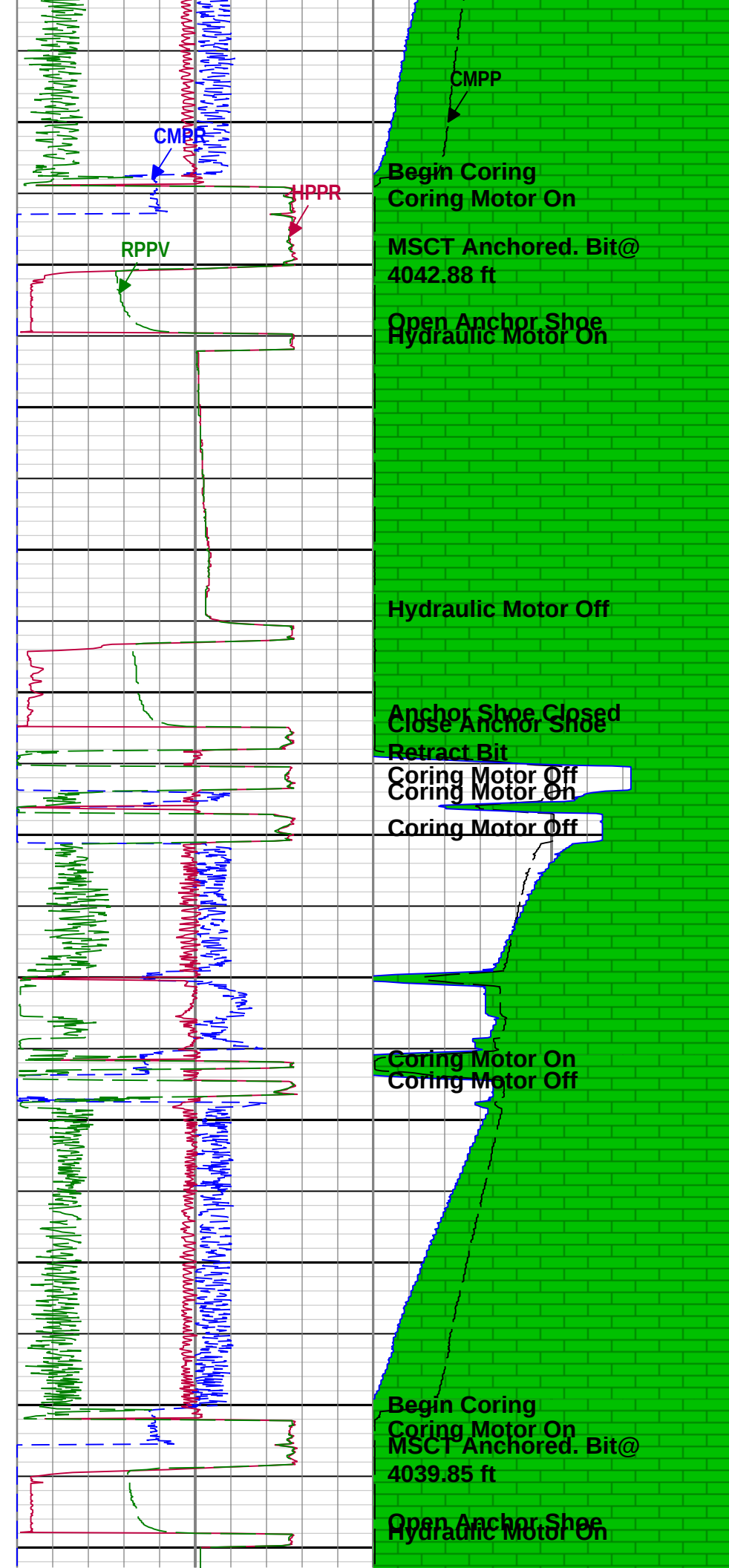
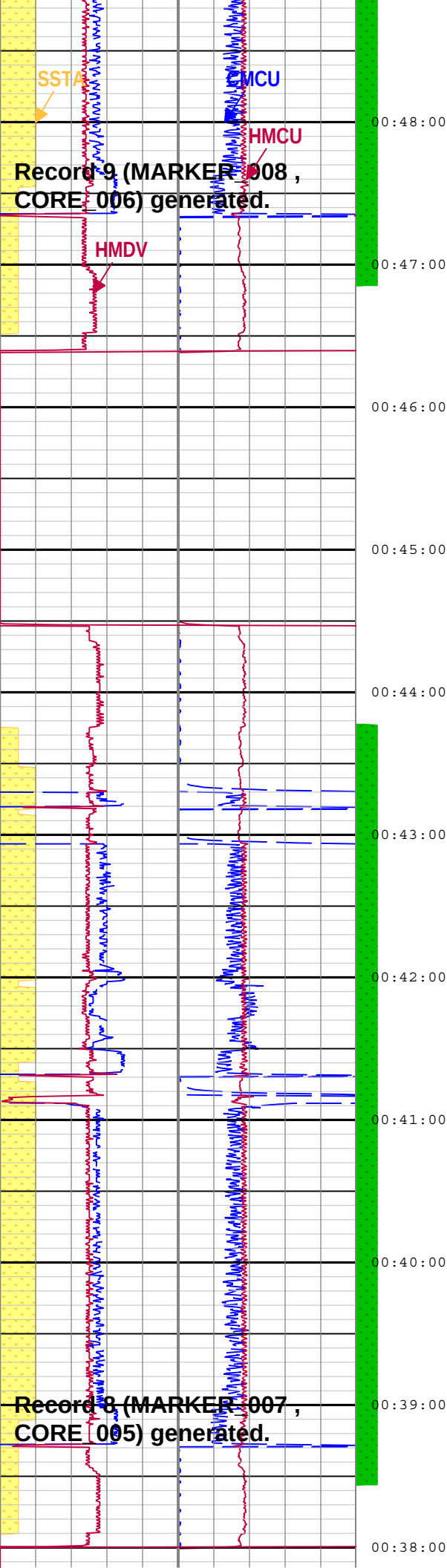
Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:10

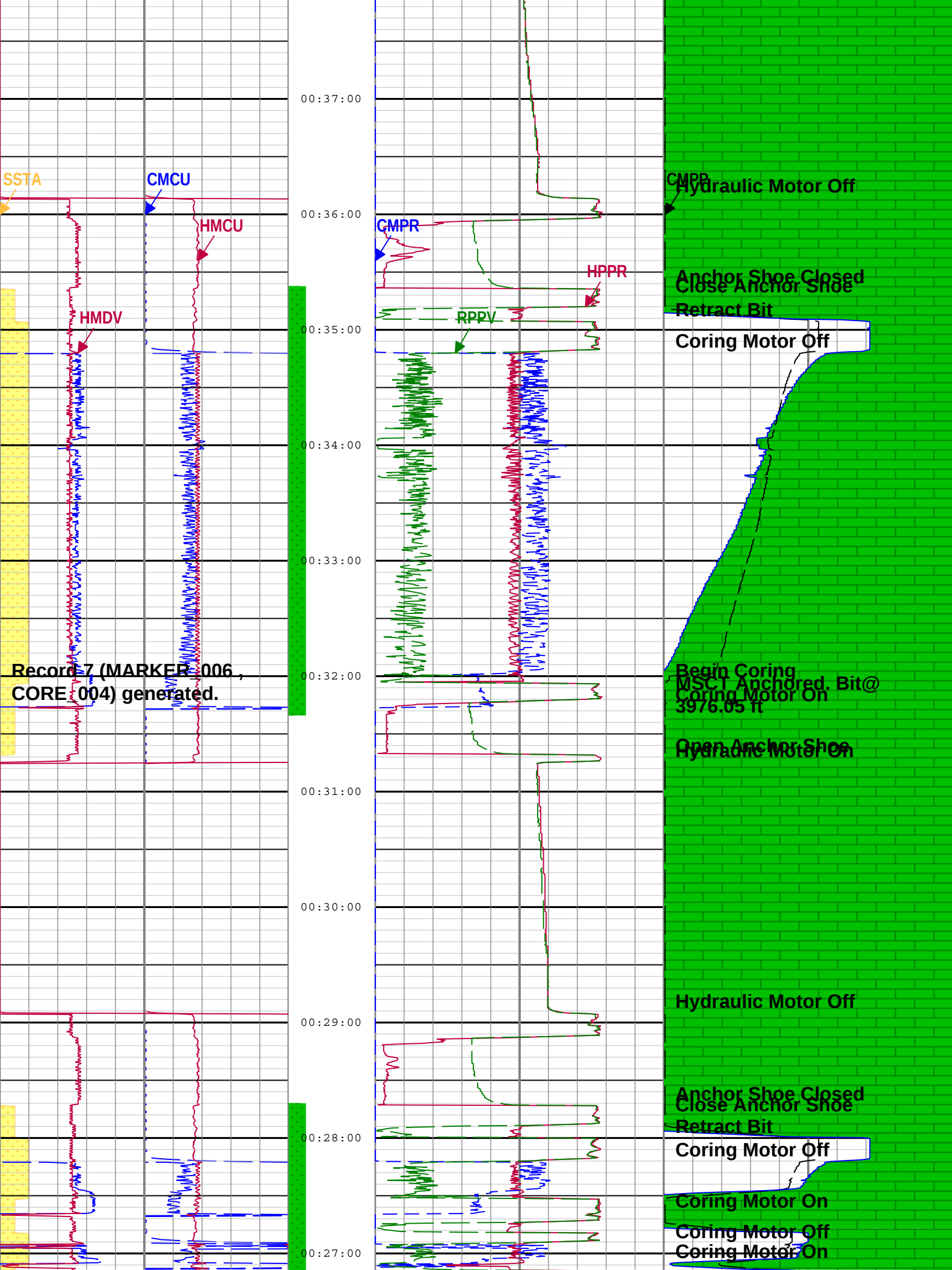


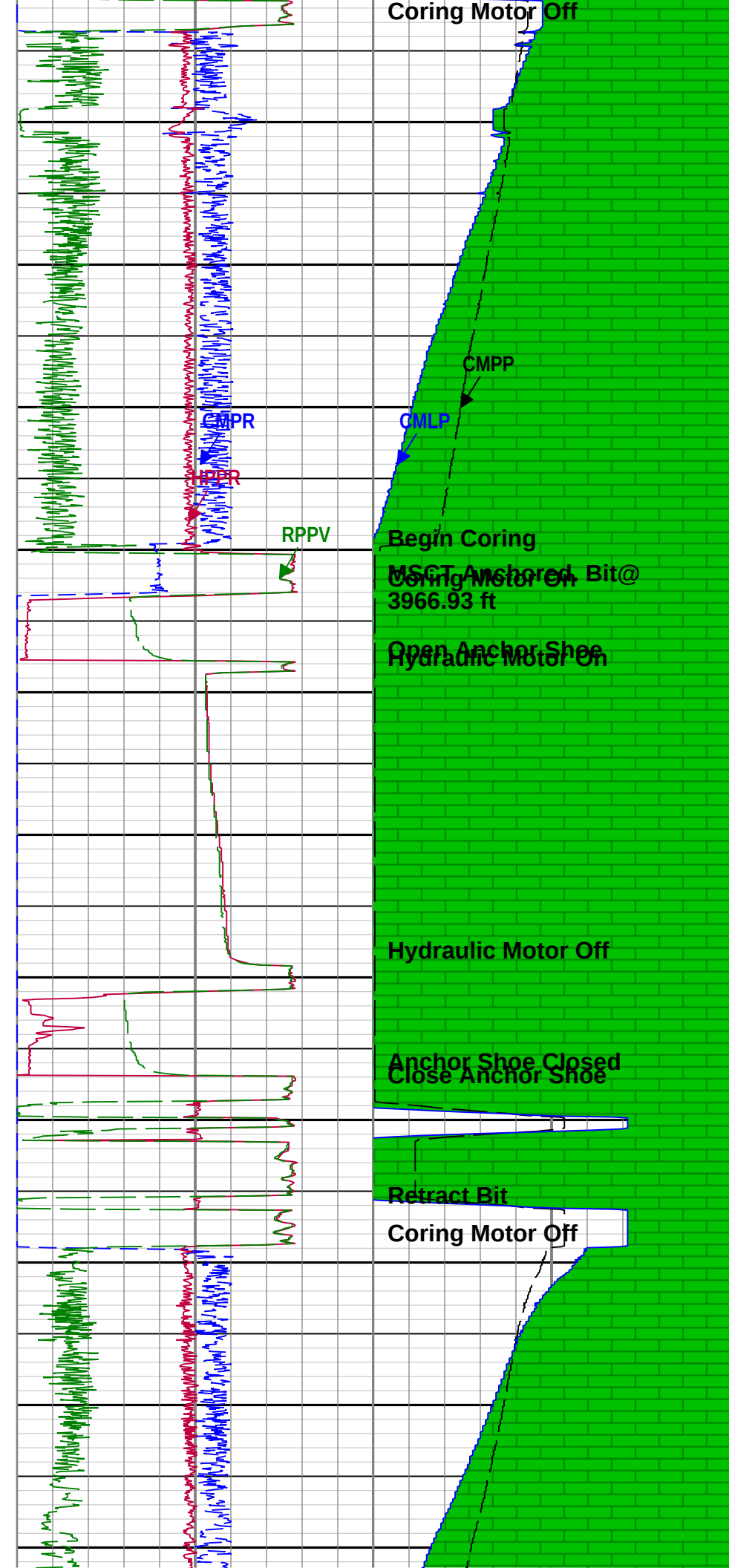
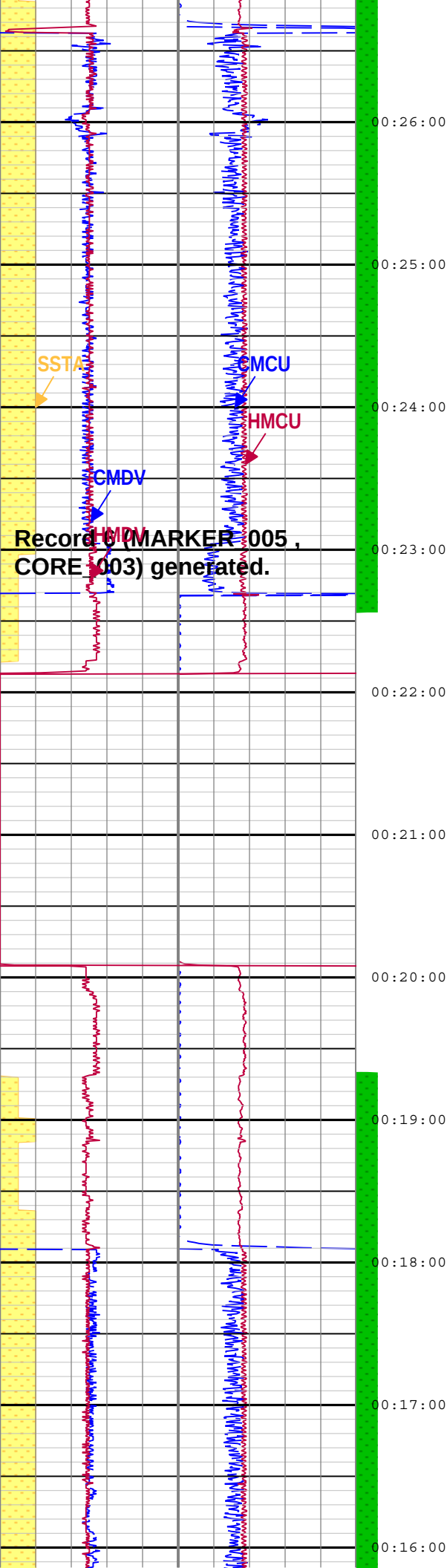




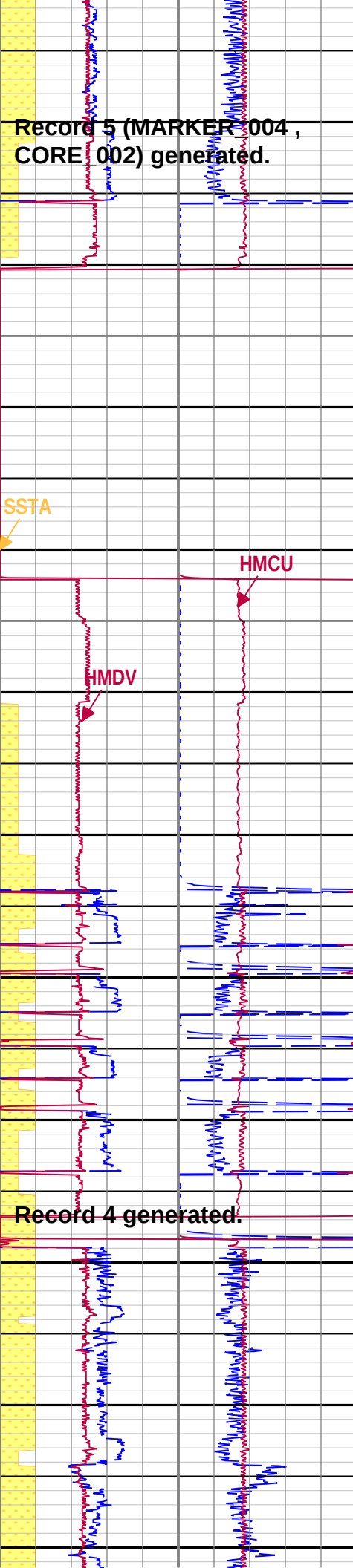




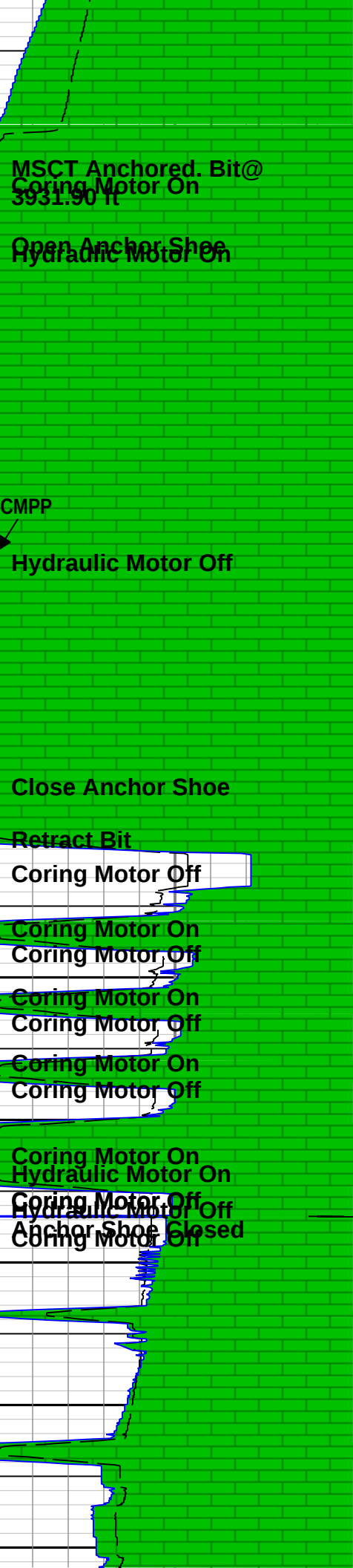
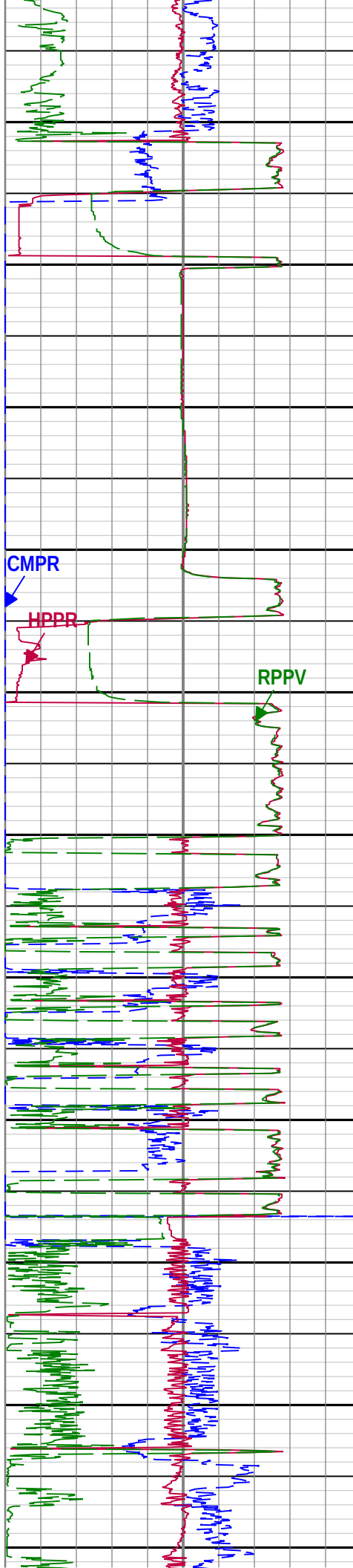




Record 5 (MARKER 004 ,
CORE 002) generated.



00:15:00
00:14:00
00:13:00
00:12:00
00:11:00
00:10:00
00:09:00
00:08:00
00:07:00
00:06:00
00:05:00



MSCT Anchored. Bit@
Coring Motor On
3931.90 ft

Open Anchor Shoe

Hydraulic Motor On

CMPP

Hydraulic Motor Off

Close Anchor Shoe

Retract Bit

Coring Motor Off

Coring Motor On

Coring Motor Off

Coring Motor On

Coring Motor Off

Coring Motor On

Coring Motor Off

Coring Motor On

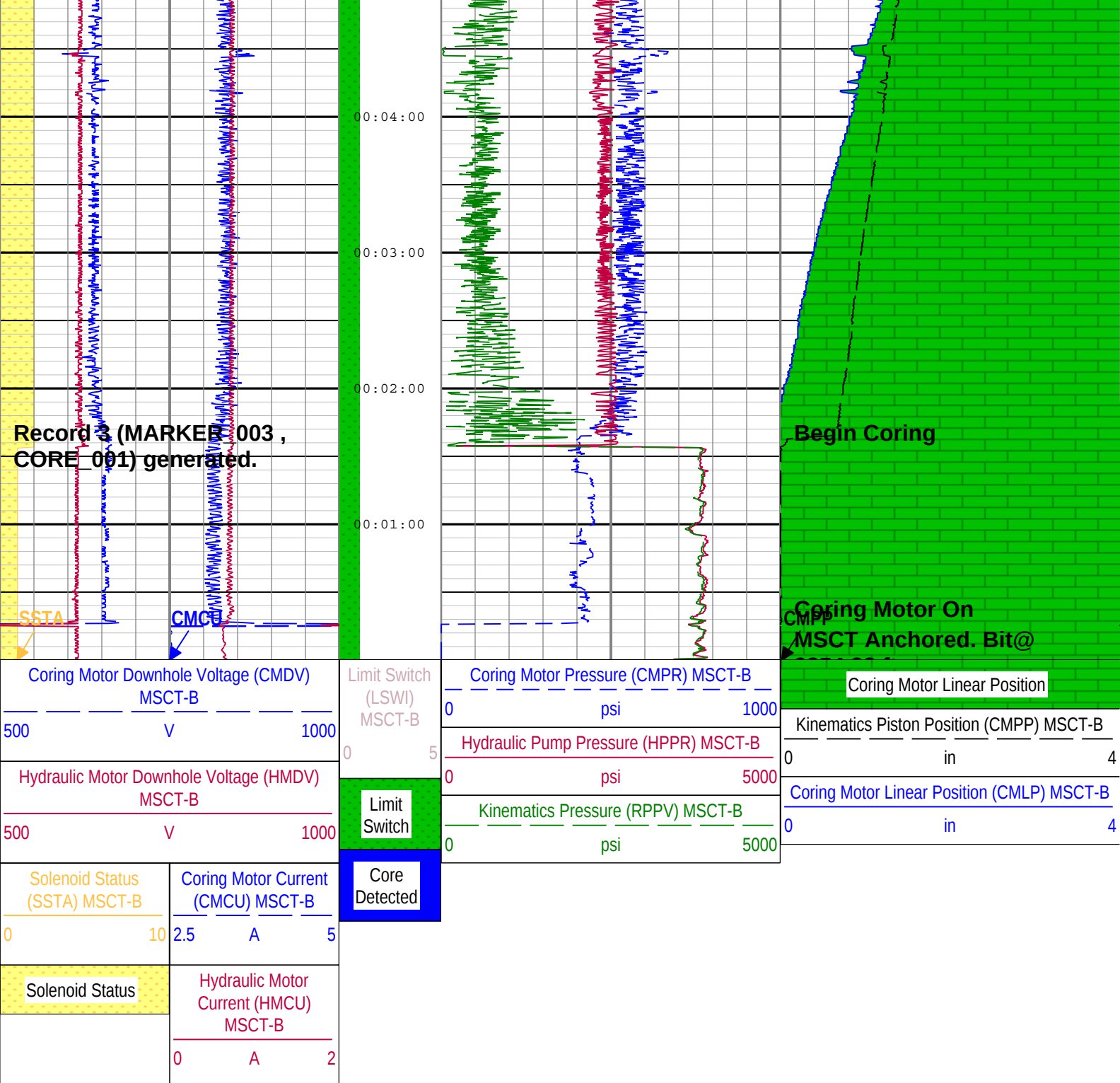
Hydraulic Motor On

Coring Motor Off

Hydraulic Motor Off

Anchor Shoe Closed

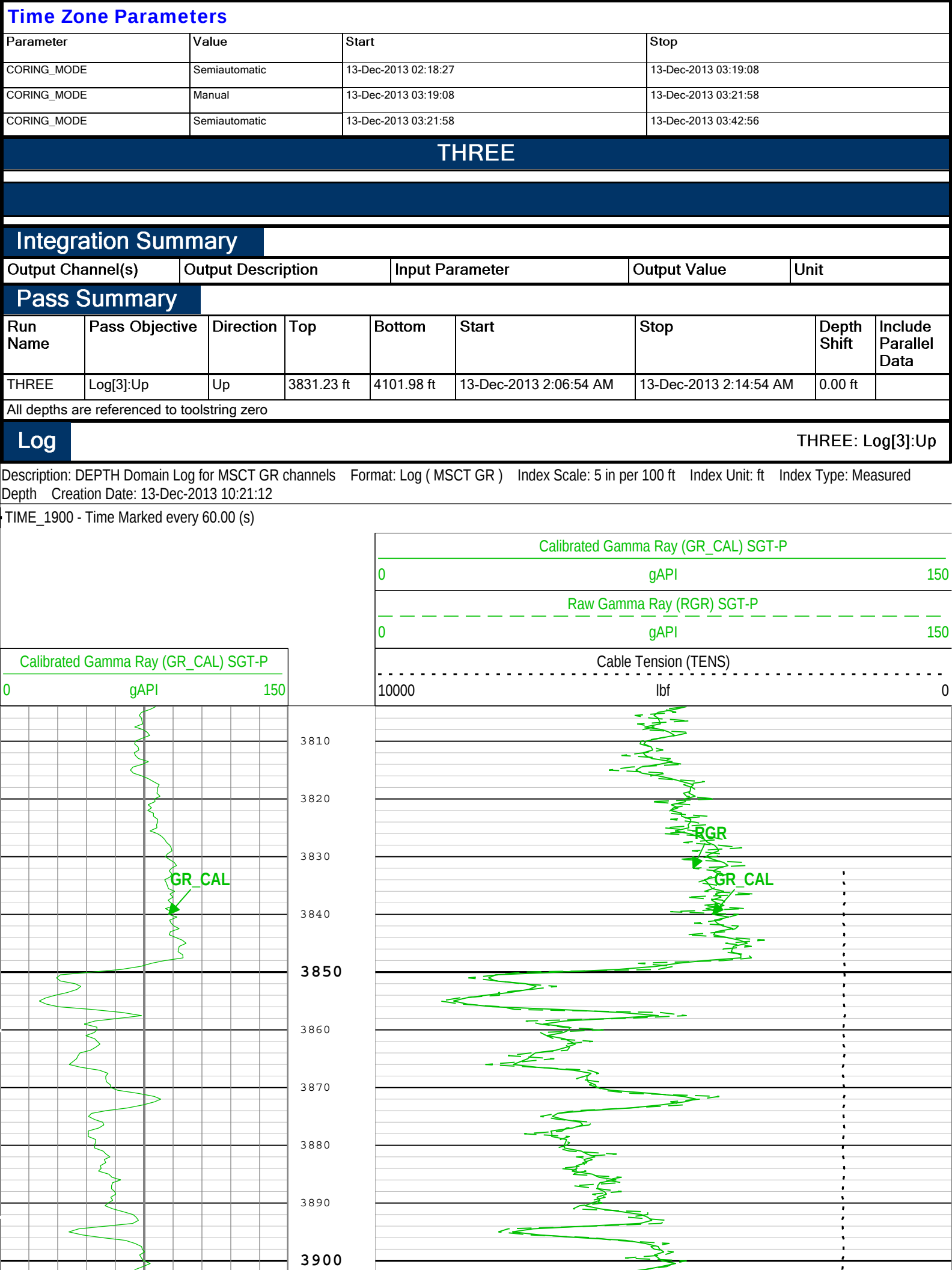
Coring Motor On

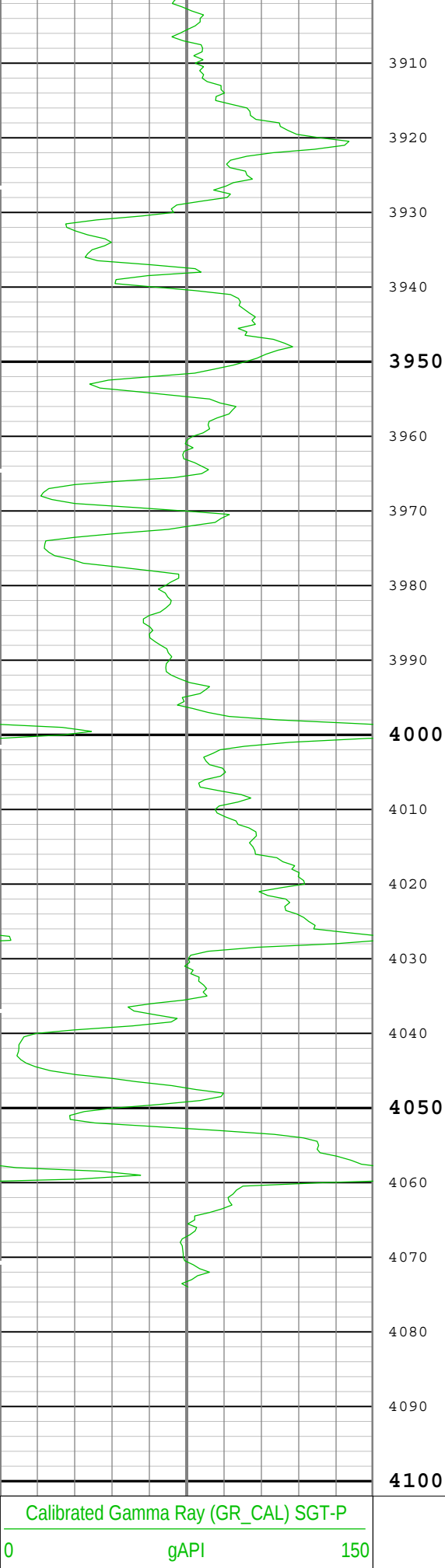


Description: MSCT-D PROPRIETARY ALL Station Format: Log (MSCT-D PROPRIETARY ALL Station) Index Scale: 60 in per 3600 s Index Type: Time
Creation Date: 13-Dec-2013 10:21:10

Channel Processing Parameters				
Parameter	Description	Tool	Value	Unit
SOFF	Standoff	MSCT-B	0	in

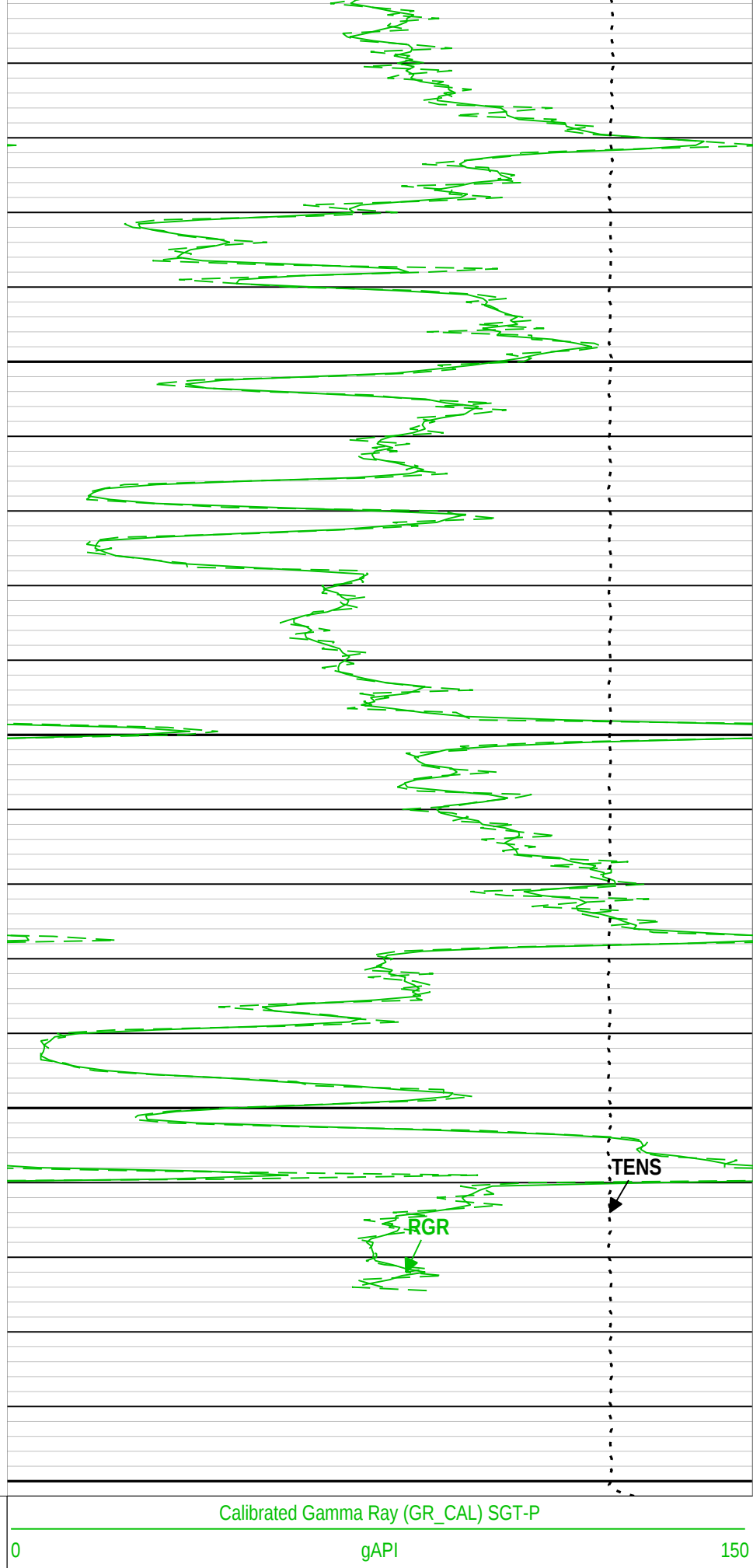
Tool Control Parameters				
Parameter	Description	Tool	Value	Unit
CMPRES_OFFS	Coring Motor Pressure Offset	MSCT-B	0	psi
COLPROT	Collision Protection	MSCT-B	On	
CORING_MODE	Coring Mode	MSCT-B	Time Zoned	
HPRES_OFFS	Hydraulic Pressure Offset	MSCT-B	0	psi
KPRES_OFFS	Kinematics Pressure Offset	MSCT-B	0	psi
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	20000	ft/h





Calibrated Gamma Ray (GR_CAL) SGT-P

0 gAPI 150



Calibrated Gamma Ray (GR_CAL) SGT-P

0 gAPI 150

Raw Gamma Ray (RGR) SGT-P

0 gAPI 150

						Cable Tension (TENS)											

10000						lbf											
						0											
TIME_1900 - Time Marked every 60.00 (s)																	
Description: DEPTH Domain Log for MSCT GR channels Format: Log (MSCT GR) Index Scale: 5 in per 100 ft Index Unit: ft Index Type: Measured																	
Depth Creation Date: 13-Dec-2013 10:21:12																	
Channel Processing Parameters																	
Tool Control Parameters																	
Parameter		Description				Tool		Value		Unit							
COLPROT		Collision Protection				MSCT-B		On									
CORING_MODE		Coring Mode				MSCT-B		Manual									
MAX_LOG_SPEED		Toolstring Maximum Logging Speed				WLSESSION		20000		ft/h							
MSCT General Core Summary Report																	
Run 3 : THREE																	
Toolstring: MSCT																	
Equipment: MSCT-B:MCEC File Code:MCEC-AA Serial Number:42																	
Marker Number	Core Numbe	Descent Number	Core Depth MD(ft)	Drill Start Time	Total Drilling Time(s)	Marker	Core Detected	Core Recover	Remarks								
MARKE R_001	0	1	55.88	01:23:42 13-Dec-2013	26.89	Present											
MARKE R_002	0	1	1400.29	01:41:06 13-Dec-2013	12.79	Present											
MARKE R_003	1	1	3854.88	02:20:02 13-Dec-2013	344.68	Present		Recover ed									
MARKE R_000	0	1	3854.88	02:25:47 13-Dec-2013	151.46	Present											
MARKE R_004	2	1	3931.90	02:33:19 13-Dec-2013	248.74	Present		Recover ed									
MARKE R_005	3	1	3966.93	02:41:26 13-Dec-2013	300.80	Present		Recover ed									
MARKE R_006	4	1	3976.05	02:50:24 13-Dec-2013	187.31	Present		Broken									
MARKE R_007	5	1	4039.85	02:57:21 13-Dec-2013	274.36	Present		Recover ed									
MARKE R_008	6	1	4042.88	03:06:00 13-Dec-2013	698.05	Present		Partial									
MARKE R_009	7	1	4046.00	03:22:46 13-Dec-2013	250.88	Present		Recover ed									
MARKE R_010	8	1	4049.13	03:30:07 13-Dec-2013	351.58	Present		Recover ed									
MARKE R_011	9	1	4848.08	03:59:56 13-Dec-2013	168.55	Present		Recover ed									
MARKE R_012	10	1	4869.91	04:06:51 13-Dec-2013	274.36	Present		Recover ed									
MARKE R_013	11	1	4879.92	04:15:02 13-Dec-2013	168.11	Present		Partial									
MARKE R_014	12	1	4885.00	04:21:43 13-Dec-2013	570.05	Present		Lost									
MARKE R_015	13	1	4889.88	04:34:59 13-Dec-2013	871.29	Present		Recover ed									
MARKE R_016	14	1	4895.06	04:53:10 13-Dec-2013	799.61	Present		Lost									
MARKE R_017	15	1	4899.92	05:10:40 13-Dec-2013	66.13	Present		Lost									
MARKE R_018	16	1	4423.02	05:29:25 13-Dec-2013	186.46	Present		Lost									
MARKE R_019	17	1	4422.52	05:37:42 13-Dec-2013	115.21	Present		Partial									
MARKE R_020	18	1	4423.41	05:42:30 13-Dec-2013	161.28	Present		Partial									
MARKE R_021	19	1	4435.04	05:49:11 13-Dec-2013	129.29	Present		Lost									
MARKE R_022	20	1	4435.52	05:56:10 13-Dec-2013	125.44	Present		Partial									
MARKE R_023	21	1	4434.42	06:04:48 13-Dec-2013	150.19	Present		Lost									
MARKE R_024	22	1	5008.03	06:27:33 13-Dec-2013	489.39	Present		Lost									

R_024				Dec-2013					
MARKE R_025	23	1	5012.00	06:43:32 13- Dec-2013	435.21	Present		Lost	
MARKE R_026	24	1	5041.92	06:56:01 13- Dec-2013	885.38	Present		Lost	
MARKE R_027	25	1	5046.04	07:17:21 13- Dec-2013	772.73	Present		Recover ed	
MARKE R_000	0	1	1.06	08:31:05 13- Dec-2013	4262.12	Present			

Total 29 record(s)

Company:

Anadarko E&P Onshore LLC

Schlumberger

Well:

Murphy 1-31 M

Field:

Greenwood

County:

Morton

State:

Kansas

HID