

Rig: **JOIDES Resolution** Country: **USA**

FMS Micro-Resistivity

Elev.:	K.B.	11.00 m
	G.L.	-603.00 m
	D.F.	11.00 m

Permanent Datum:	<u>Mean Sea Level</u>	Elev.:	<u>0.00 m</u>
Log Measured From:	<u>Drill Floor</u>	11.00 m	above Perm. Datum
Drilling Measured From:	Drill Floor		

Ocean:	Max. Well Deviation	Longitude	Latitude
Atlantic	0 deg	N 75° 42' 21.85"	W 65° 43' 46.32"

Logging Date	20-Sep-2012
Run Number	2
Depth Driller	303.6 m
Schlumberger Depth	258.5 m
Bottom Log Interval	252.3 m
Top Log Interval	47.7 m
Casing Driller Size @ Depth	7.000 in @ 33 m
Casing Schlumberger	31 m
Bit Size	9.875 in
Type Fluid In Hole	Seawater

MUD	Density	Viscosity	1.05 g/cm3	
	Fluid Loss	PH		
	Source Of Sample		N/A	
	RM @ Measured Temperature		@	
	RMF @ Measured Temperature		@	
	RMC @ Measured Temperature		@	

Source RMF	RMC	N/A	N/A
RM @ MRT	RMF @ MRT	@ 9	@ 9
Maximum Recorded Temperatures		9 degC	
Circulation Stopped	Time	20-Sep-2012	14:00
Logger On Bottom	Time	20-Sep-2012	17:20
Unit Number	Location	625003	Houston
Recorded By		C. Furman	
Witnessed By		G. Guerin, H. Evans	

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Driller Size @ Depth	@
Casing Schlumberger	
Bit Size	
Type Fluid In Hole	

MUD	Density	Viscosity		
	Fluid Loss	PH		
	Source Of Sample			
	RM @ Measured Temperature			@
	RMF @ Measured Temperature			@
	RMC @ Measured Temperature			@

Source RMF	RMC		
RM @ MRT	RMF @ MRT	@	
Maximum Recorded Temperatures			
Circulation Stopped	Time		
Logger On Bottom	Time		
Unit Number	Location		
Recorded By			
Witnessed By			

Run 2

R

Run 4

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 OF 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.

OS1:	HRLA
OS2:	HLDS
OS3:	DSI
OS4:	HNGS
OS5:	MSS

Site U0070A, client designation USC 070, was cored for exploration using the RCB system.

This site is subcontracted to Shell from LDEO, not a standard USIO/IODP site!

Tools were not able to reach TD due to hole obstruction; maximum depth was 258.5mbsf.

Tools run without centralization to reduce sticking risk during a period of icebergs potentially forcing a rapid pull-out.

FMS Caliper used for applicable hole size corrections on up log; bit sized used for downlog.

Tools conveyed to hole on wireline through drill pipe, as is standard for this riser-less operation.

Logs recorded from Drill Floor, but played back with zero reference at sea bed for compatibility with core data.

Original sea bed, as measured from drill floor, was 603.0m uncorrected measured depth below drill floor.

Heave compensation was not required due to exceptionally calm sea state and favorable weather during logging.

Maximum depth reached was approximately 252.3m due to hole obstruction: main logs recorded from there up to 47.7m.

Calipers closed at 47.7m to avoid pulling into pipe with them open, as per SOP.

Main logs terminated prior to pulling tool back into drill pipe in order to avoid sticking risk.

STOP

RUN 2

GSR-U 616008
WITM (EDTS)-A

LEH-MT
LEH-MT 101

15.41

MDSB_EDTC
Mud Tempe

14.45

14.45



EDTH-B 8528
EDTC-B 8529
EDTG-A/B 77693

CTEM
Gamma Ray
EFTB DIAG
TelStatus
EDTCB Ele

13.38
12.81
12.47

HNGS-BA
HNGS-BA 194
HNSH-BA 205

Upper_1
Lower_2

11.77
11.56

12.47

HNGC-B
HNGH-A 115
HNGC-B 300

HNGC Stat

9.44

9.97

DTA-A
ECH-KE 8451
DTA-A 8259

8.90

MEST-B
MEAH-B 769
MEAC-A 875
MEPH-A 702
GPIC-A 719
MEPC-AB 807
MEDS-B 724

7.68

MEDR MEAC
MEPC MEDS-B
HV DF ACCZ
Tension GPIT

0.46
0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Client: LDEO / Shell
Well: USC 70
Field: Baffin Bay
State:
Country: Greenland

Rig Name: JOIDES Resolution
Reference Datum: Sea Floor
Elevation: -603.0 m

Drawing Date: 9/23/2012
API #:

Production String		Well Schematic		Casing String	
(in)	(m)	(in)	(m)	(in)	(m)
OP	ID	MD		MD	OP

	CD	ID	MD		MD	CD	ID	
<div> <div>Kelly Bushing Elevation</div> <div>Derrick Floor Elevation</div> <div>Mean Sea Level</div> </div>			<div> <div>-603.0</div> <div>-603.0</div> <div>-592.0</div> </div>		<div> <div>0.0</div> <div>33.0</div> <div>303.6</div> </div>	<div> <div>5.500</div> <div>9.875</div> </div>		<div> <div>Sea Floor</div> <div>Pipe Shoe</div> <div>Total Depth – Driller</div> </div>



First Pass

MAXIS Field Log

Company: Lamont Doherty Earth ObservatoryWell: Expedition 344S, U0080A (USC70)

Input DLIS Files

DEFAULT	FMS_NGS_019LUP	FN:24	PRODUCER	20-Sep-2012 23:43	857.3 M	650.0 M
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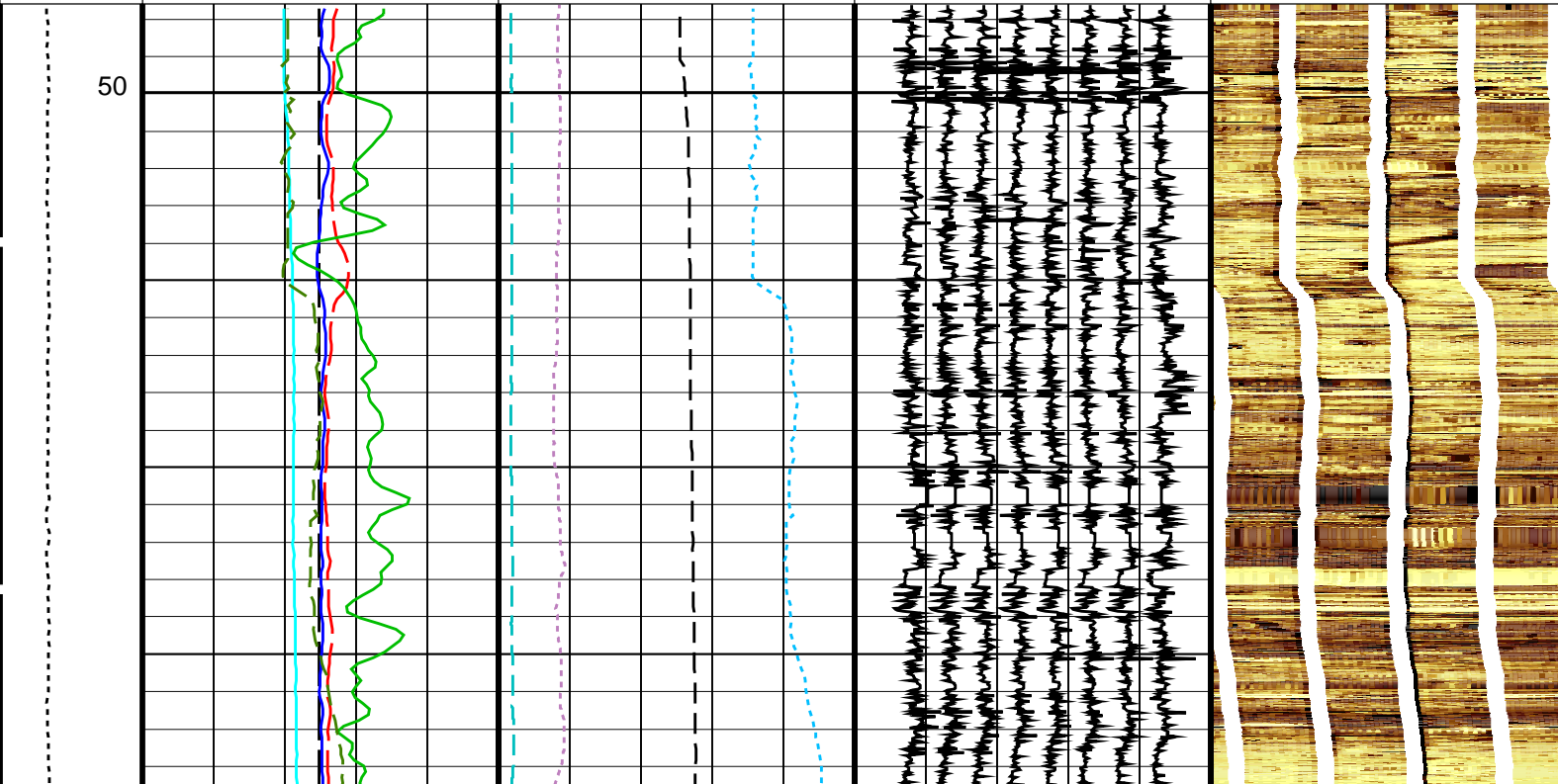
Output DLIS Files

DEFAULT	FMS_NGS_043PUP	FN:51	PRODUCER	23-Sep-2012 04:30	253.7 M	47.5 M
CLIENT	FMS_NGS_043PUC	FN:52	CUSTOMER	23-Sep-2012 04:30	253.7 M	47.5 M

OP System Version: 19C0-187

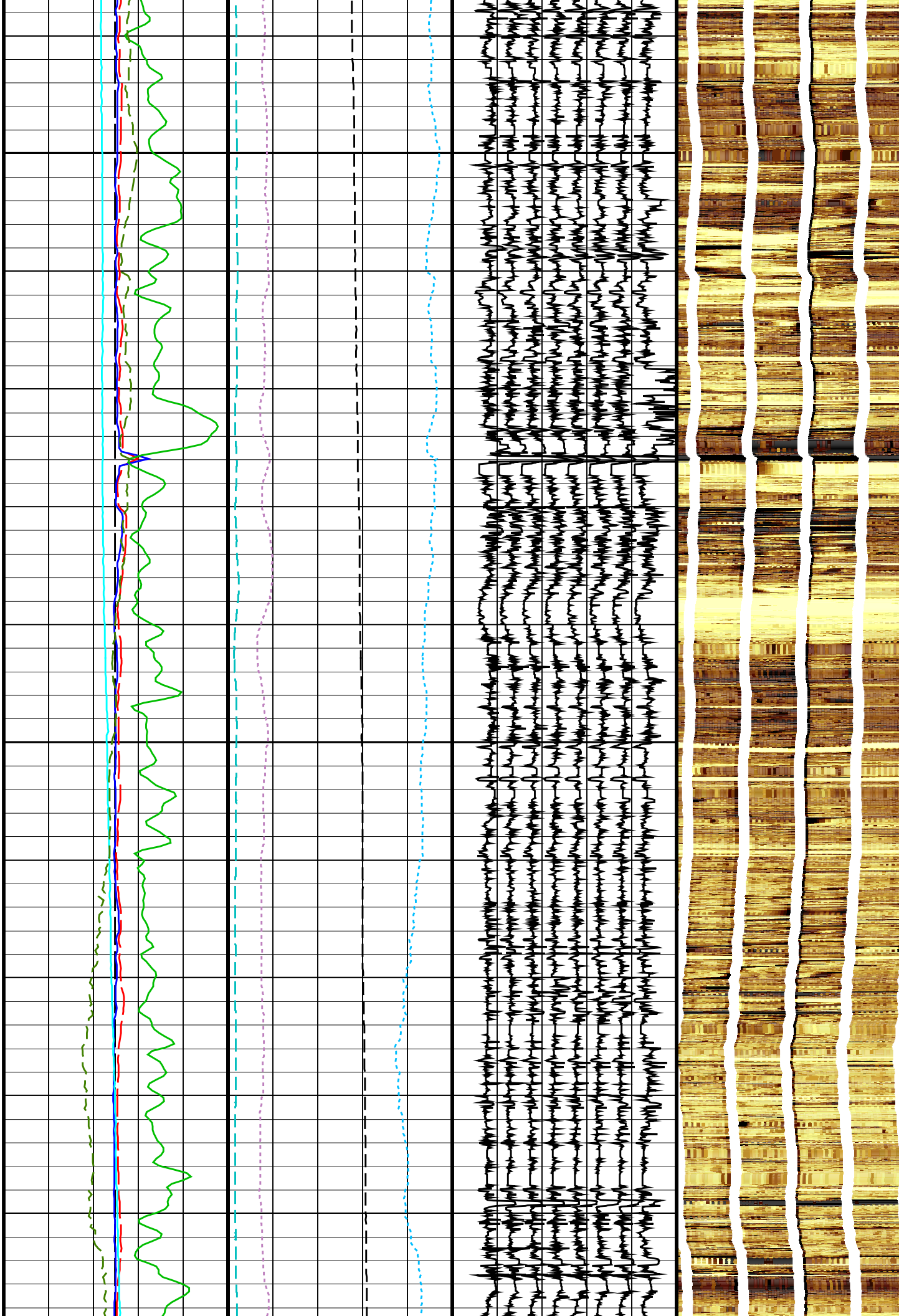
MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Time Mark Every 60 S



75

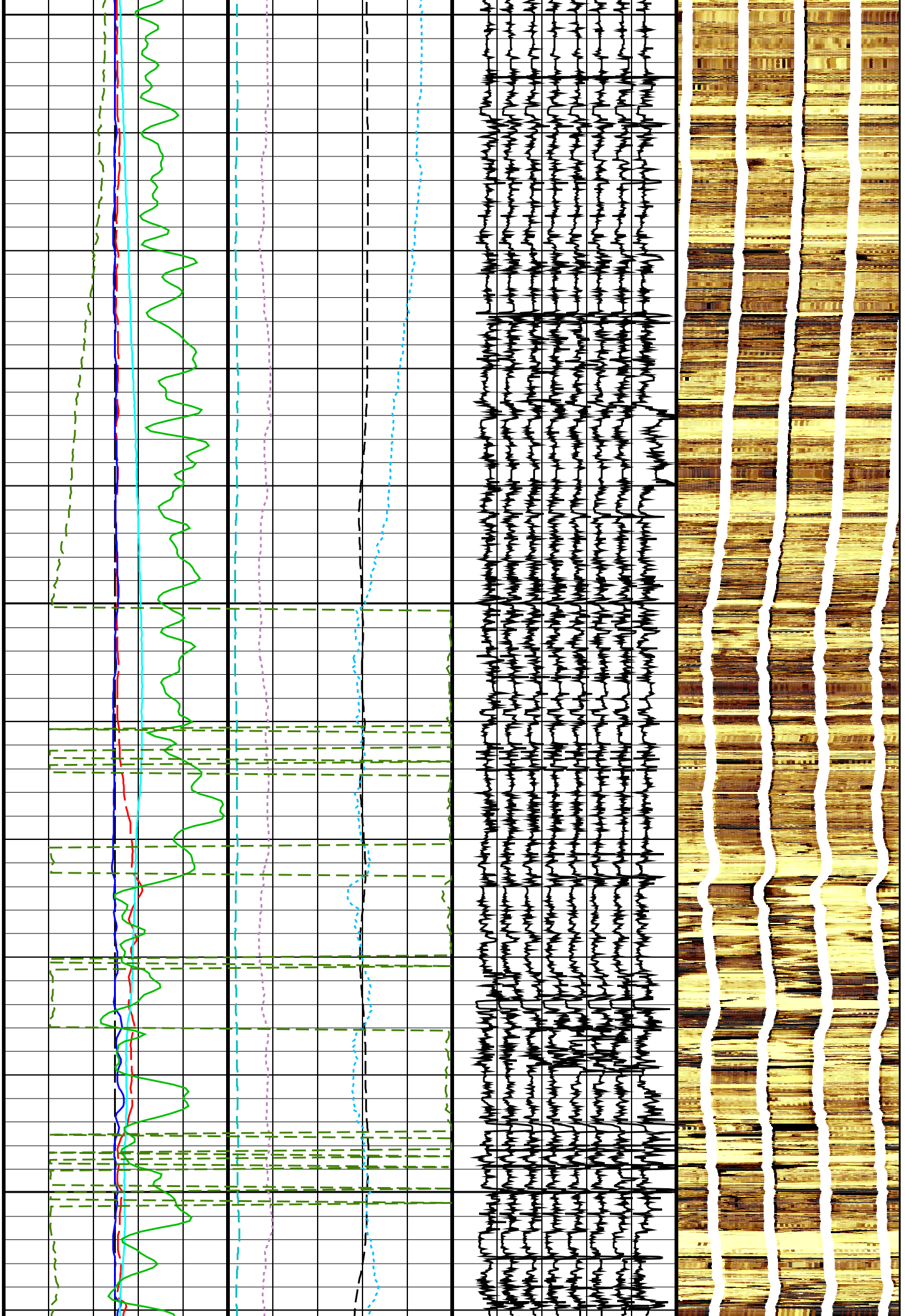
100



125

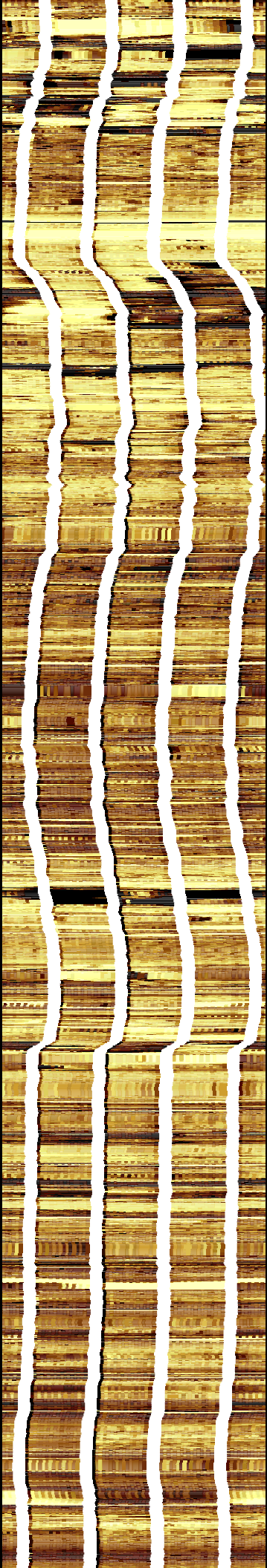
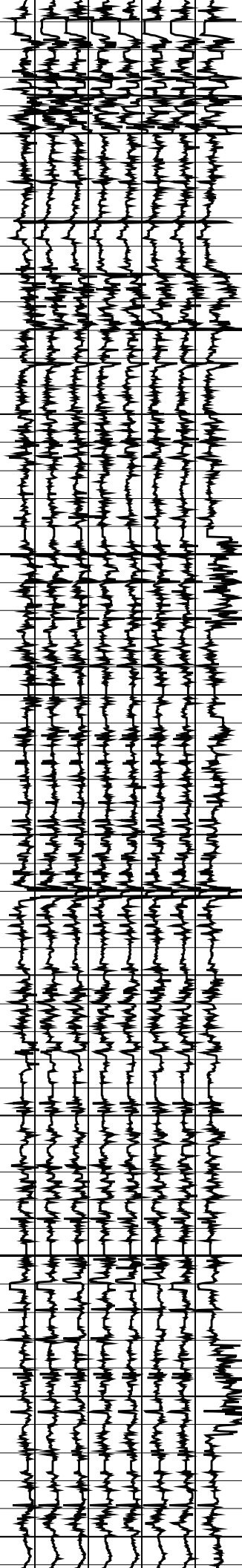
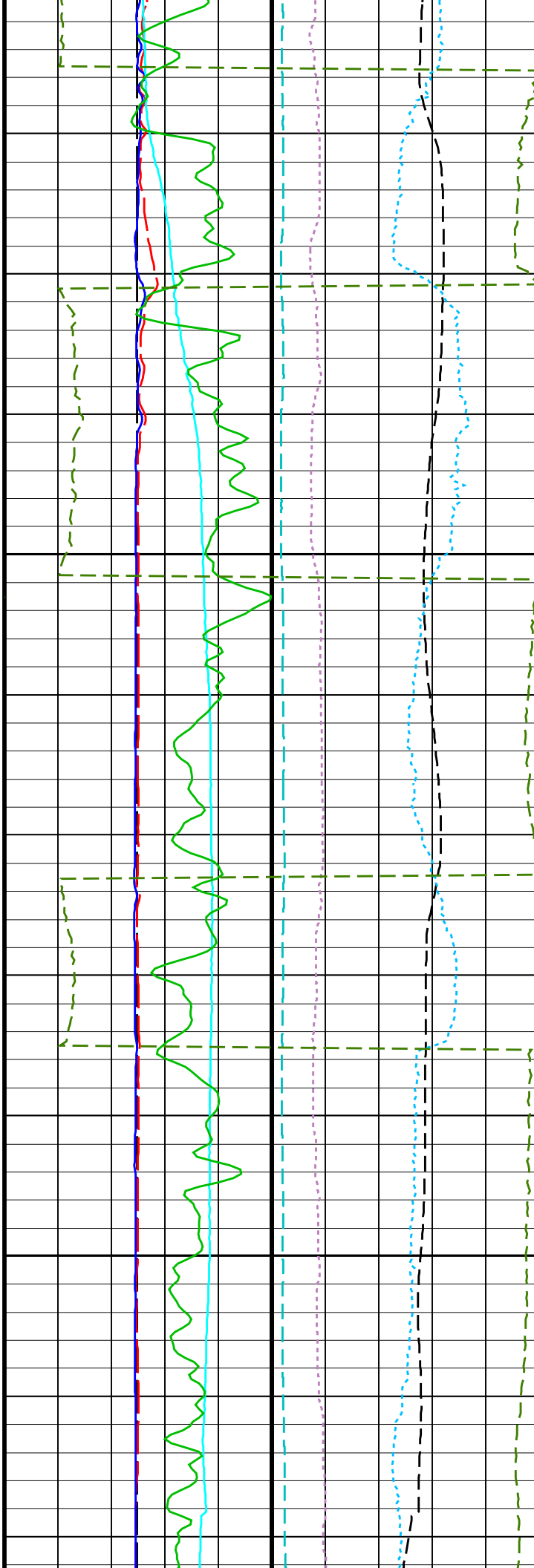
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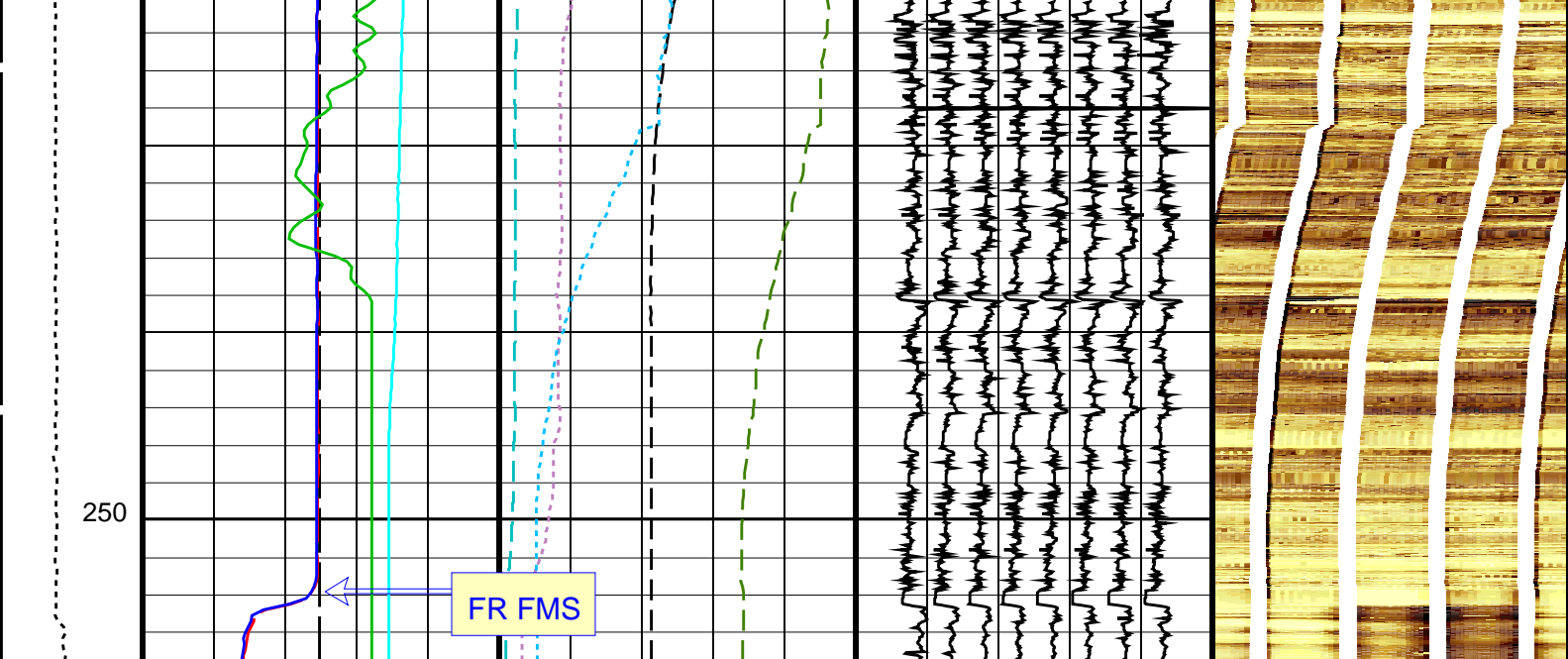
175



200

225





Tension (TENS) (LBF) 05000	Bit Size (BS) (IN) 020		EMEX Voltage (EV) (V) 050	Data Button 1 – Varies with RBS (U-MEST_RB1) -10 (----) 90	2.8560 3.8054 4.3329 4.6494 4.9659 5.1769 5.3879 5.5989 5.8099 6.0209 6.3373 6.6538 6.9703 7.3923 7.9198 9.0802 MEST_PADA (U-MEST_RESISTIVITY_PADA_DS) (----)
	Caliper 1 (C1) (IN) 020		EMEX Intensity (EI) (AMPS) 010	Data Button 2 – Varies with RBS (U-MEST_RB2) -20 (----) 80	2.8560 3.8054 4.3329 4.6494 4.9659 5.1769 5.3879 5.5989 5.8099 6.0209 6.3373 6.6538 6.9703 7.3923 7.9198 9.0802 MEST_PADB (U-MEST_RESISTIVITY_PADB_DS) (----)
	Caliper 2 (C2) (IN) 020			Data Button 3 – Varies with RBS (U-MEST_RB3) -30 (----) 70	2.8560 3.8054 4.3329 4.6494 4.9659 5.1769 5.3879 5.5989 5.8099 6.0209 6.3373 6.6538 6.9703 7.3923 7.9198 9.0802 MEST_PADC (U-MEST_RESISTIVITY_PADC_DS) (----)
	Deviation (DEVIM) (DEG) 010			Data Button 4 – Varies with RBS (U-MEST_RB4) -40 (----) 60	2.8560 3.8054 4.3329 4.6494 4.9659 5.1769 5.3879 5.5989 5.8099 6.0209 6.3373 6.6538 6.9703 7.3923 7.9198 9.0802 MEST_PADD (U-MEST_RESISTIVITY_PADD_DS) (----)
	Gamma Ray (GR_EDTC) (GAPI) 0150			Data Button 5 – Varies with RBS (U-MEST_RB5) -50 (----) 50	
	Hole Azimuth (HAZIM) (DEG) -40360			Data Button 6 – Varies with RBS (U-MEST_RB6) -60 (----) 40	
	Pad One Azimuth (P1AZ_MEST) (DEG) -40360			Data Button 7 – Varies with RBS (U-MEST_RB7) -70 (----) 30	
	Relative Bearing (RB_MEST) (DEG) -40360			Data Button 8 – Varies with RBS (U-MEST_RB8) -80 (----) 20	

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
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MEST-B: Micro Electrical Scanner – B (Slim)	Accelerometer Filtering Mode	MOVING_AVERAGE	
AFMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION	
ICMO	Magnetic Field Declination	-46.3728	DEG
MDEC	MEST Logging Mode	SCAN1800	
MLM	Resistivity Button Selection	AUTO	
RBS	Gain	GAIN_2	
XGAI	Offset	OFFSET_0	
XOFF	System and Miscellaneous		
BS	Bit Size	9.875	IN
DO	Depth Offset for Playback	-602.4	M
PP	Playback Processing	RECOMPUTE	


Format: MEST_C_WRAP_BY_P1AZ

Vertical Scale: 1:200

Graphics File Created: 23-Sep-2012 04:30

OP System Version: 19C0-187			
MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Input DLIS Files						
DEFAULT	FMS_NGS_019LUP	FN:24	PRODUCER	20-Sep-2012 23:43	857.3 M	650.0 M
Output DLIS Files						
DEFAULT	FMS_NGS_043PUP	FN:51	PRODUCER	23-Sep-2012 04:30		
CLIENT	FMS_NGS_043PUC	FN:52	CUSTOMER	23-Sep-2012 04:30		



Second Pass

MAXIS Field Log

Company: Lamont Doherty Earth Observatory

Well: Expedition 344S, U0080A (USC70)

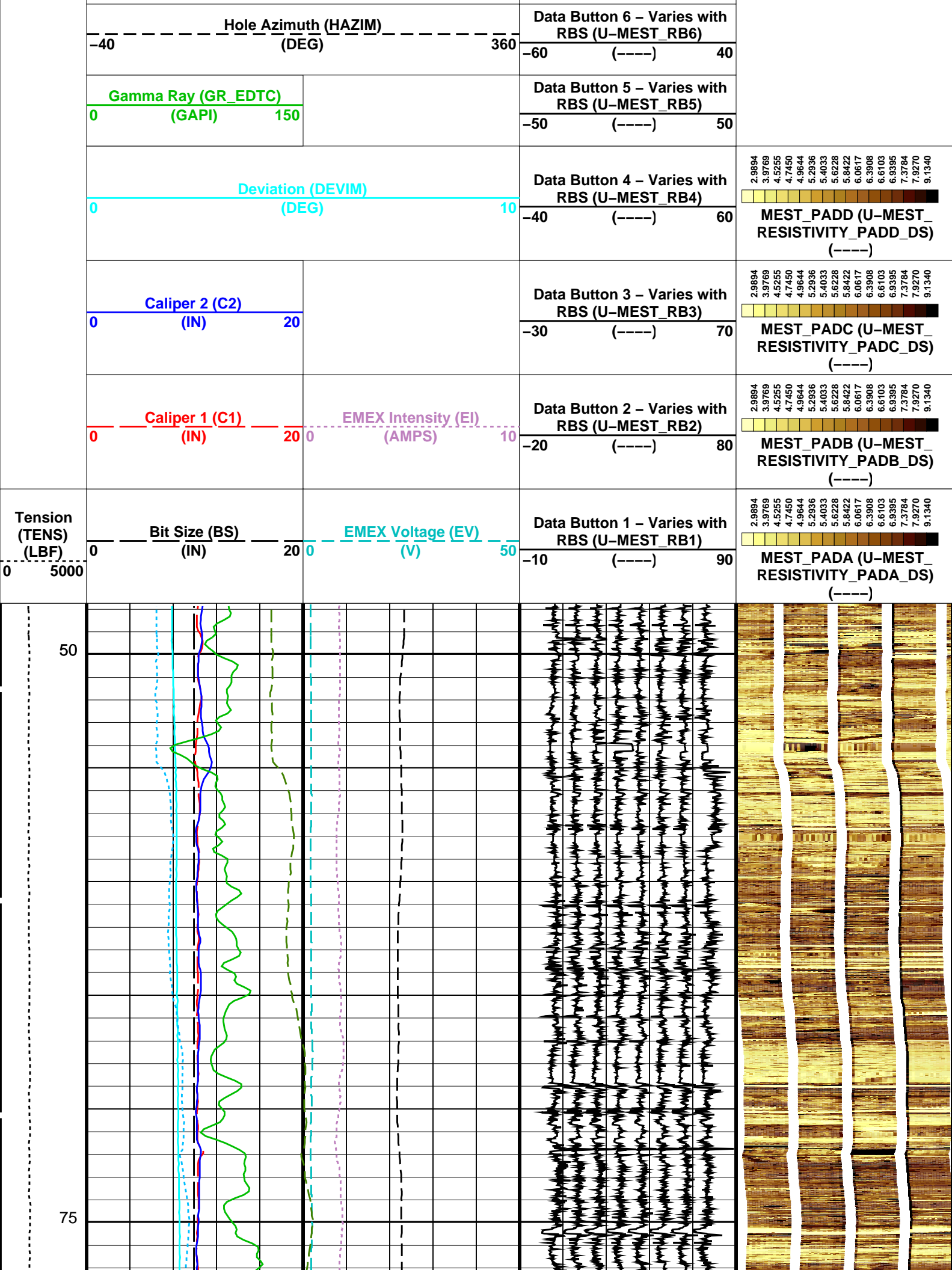
Input DLIS Files						
DEFAULT	FMS_NGS_020LUP	FN:26	PRODUCER	21-Sep-2012 00:22	855.0 M	650.0 M
Output DLIS Files						
DEFAULT	FMS_NGS_045PUP	FN:55	PRODUCER	23-Sep-2012 04:34	253.7 M	47.7 M
CLIENT	FMS_NGS_045PUC	FN:56	CUSTOMER	23-Sep-2012 04:34	253.7 M	47.7 M

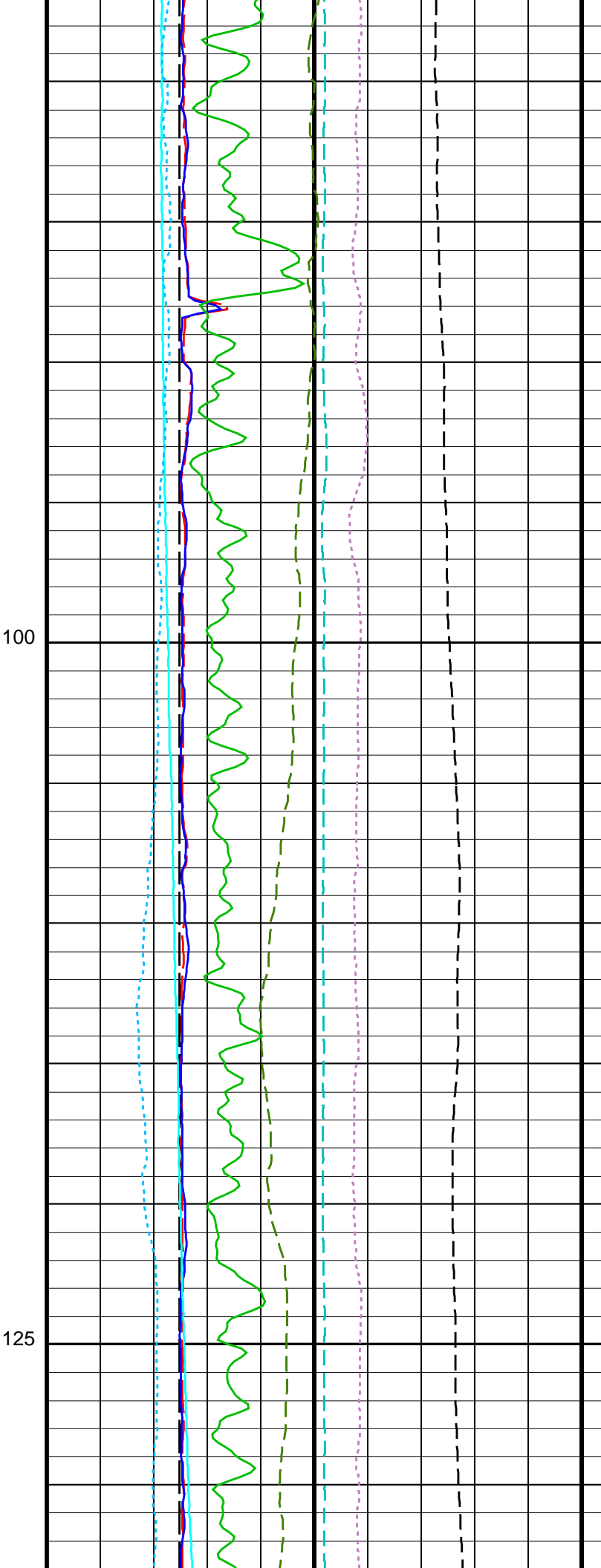
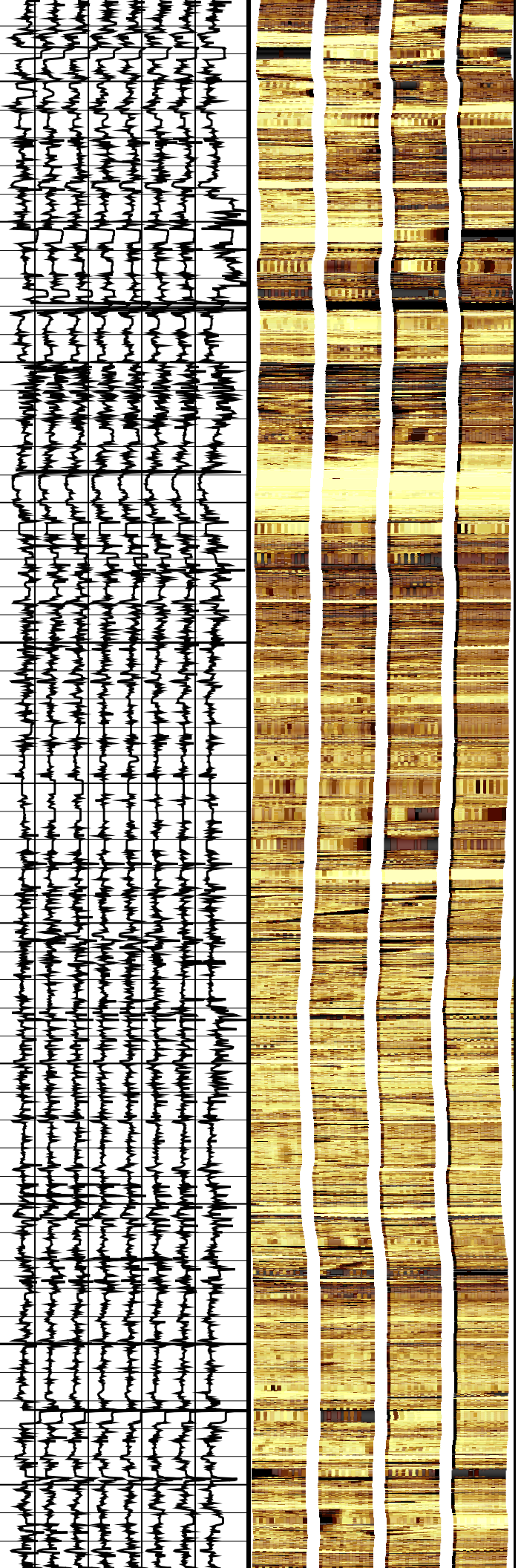
OP System Version: 19C0-187			
MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

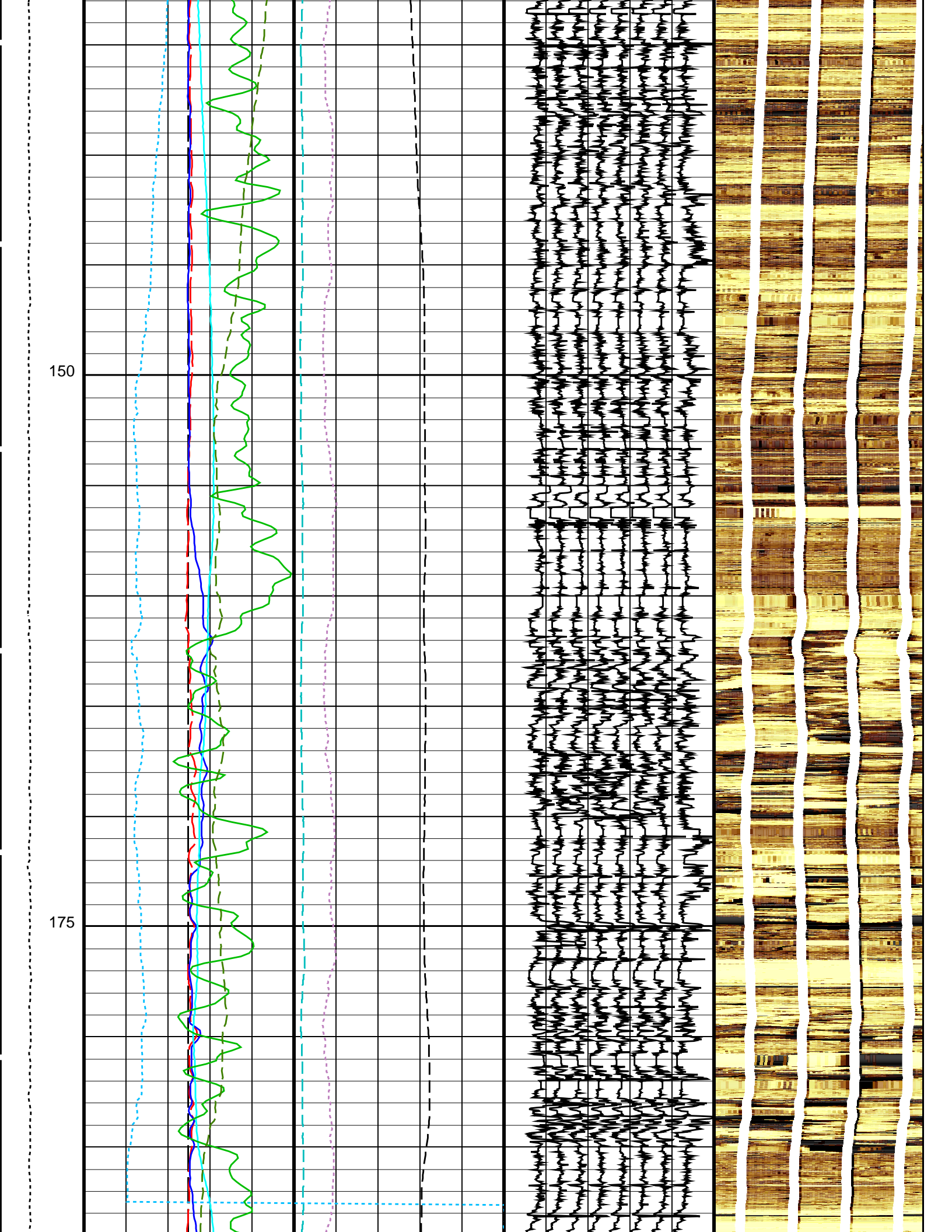
PIP SUMMARY

Time Mark Every 60 S

	Relative Bearing (RB_MEST)		Data Button 8 – Varies with RBS (U-MEST_RB8)	
	-40	360	-80	20
	Pad One Azimuth (P1AZ_MEST)		Data Button 7 – Varies with RBS (U-MEST_RB7)	
	-40	360	-70	30

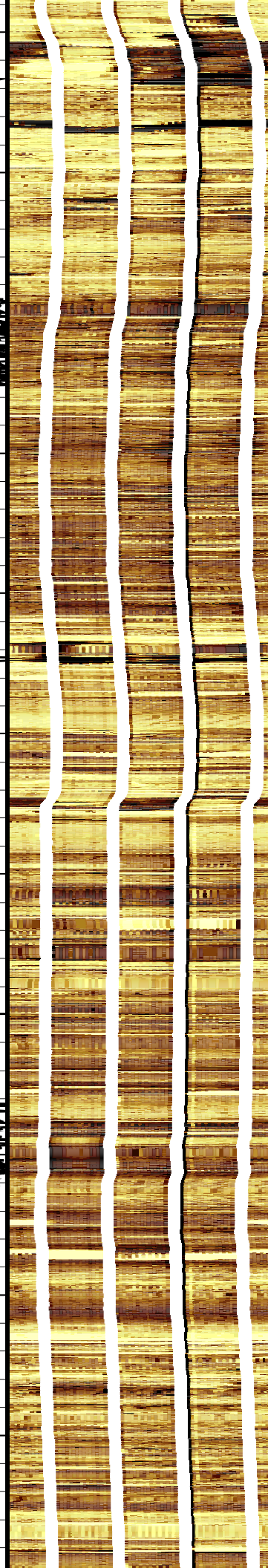
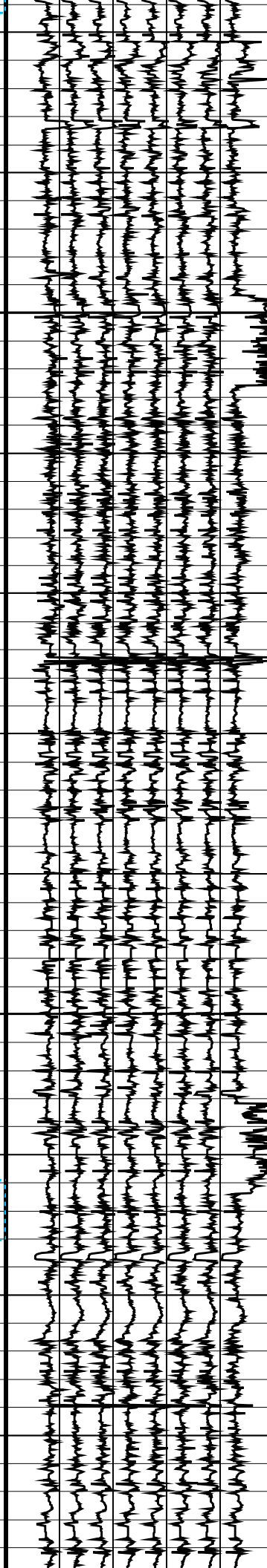
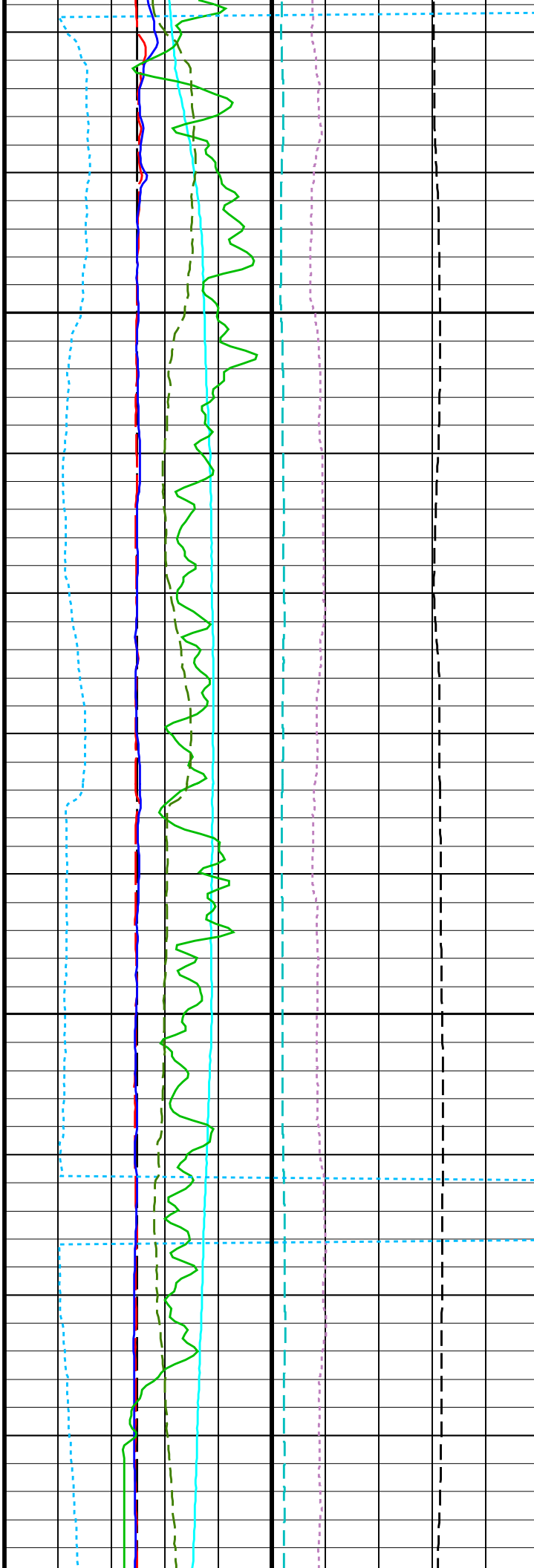


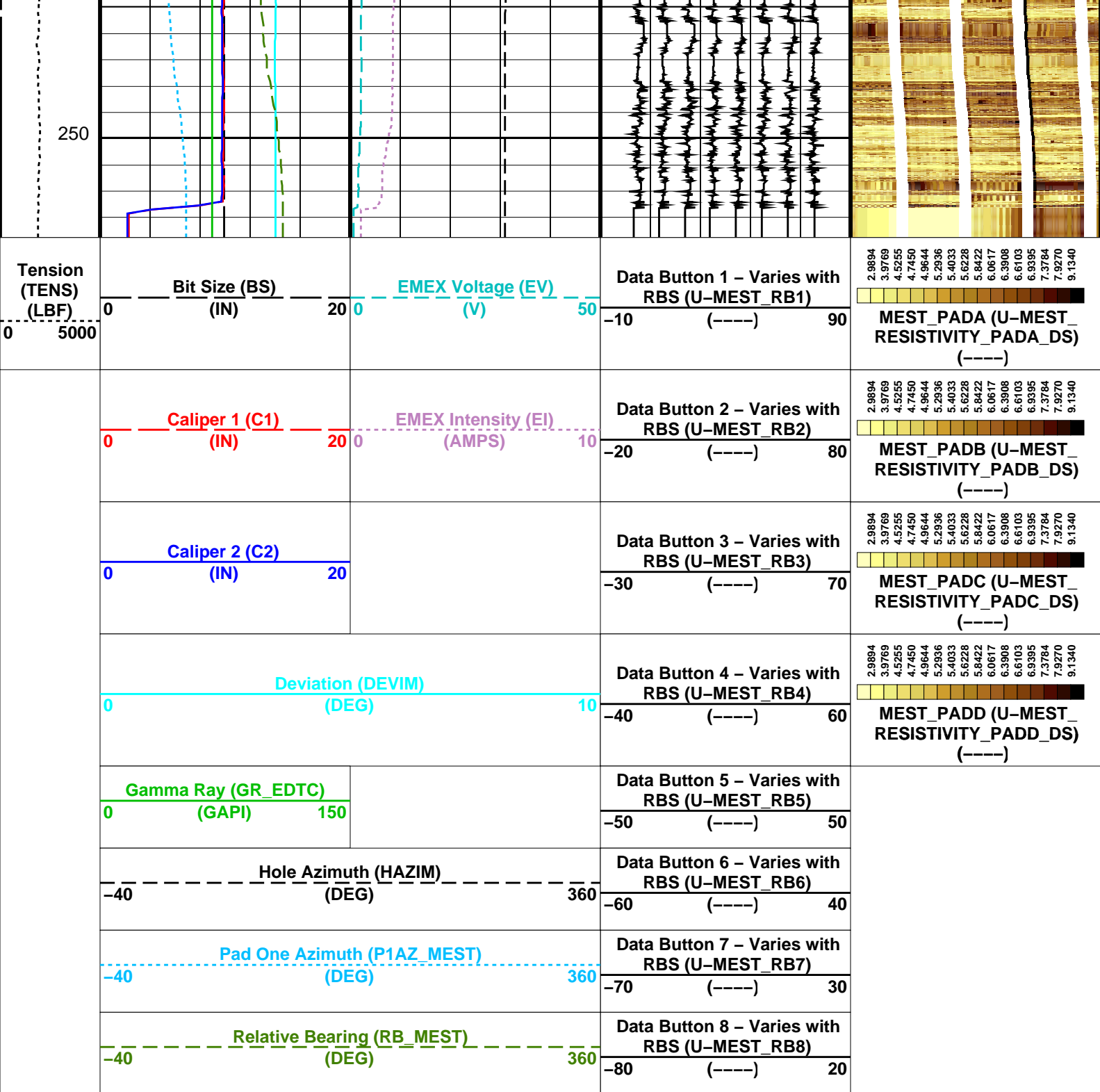




200

225





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
MEST-B: Micro Electrical Scanner - B (Slim)		
AFMO	Accelerometer Filtering Mode	MOVING AVERAGE
ICMO	Inclinometry Computation Mode	AUTOMATIC_SELECTION
MDEC	Magnetic Field Declination	-46.3728 DEG
MLM	MEST Logging Mode	SCAN1800
RBS	Resistivity Button Selection	AUTO
XGAI	Gain	GAIN_2
XOFF	Offset	OFFSET_0
System and Miscellaneous		
BS	Bit Size	9.875 IN
DO	Depth Offset for Playback	-602.3 M
PP	Playback Processing	RECOMPUTE

OP System Version: 19C0-187

MEST-B	19C0-187	DTA-A	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

Input DLIS Files

DEFAULT	FMS_NGS_020LUP	FN:26	PRODUCER	21-Sep-2012 00:22	855.0 M	650.0 M
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Output DLIS Files

DEFAULT	FMS_NGS_045PUP	FN:55	PRODUCER	23-Sep-2012 04:34
CLIENT	FMS_NGS_045PUC	FN:56	CUSTOMER	23-Sep-2012 04:34



Calibrations

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Micro Electrical Scanner – B (Slim) Wellsite Calibration – Caliper Calibration							
Before: Calibration out of date 23-Jul-2012 14:22							
Caliper 1 Zero Measurement	12.00	N/A	12.70	N/A	N/A	N/A	IN
Caliper 2 Zero Measurement	12.00	N/A	12.52	N/A	N/A	N/A	IN
Caliper 1 Plus Measurement	15.19	N/A	15.83	N/A	N/A	N/A	IN
Caliper 2 Plus Measurement	15.19	N/A	15.63	N/A	N/A	N/A	IN
Micro Electrical Scanner – B (Slim) Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY							
Before: 20-Sep-2012 22:34							
TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	99	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	743	N/A	N/A	N/A	
Micro Electrical Scanner – B (Slim) Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY							
Before: 20-Sep-2012 22:34							
TEMPERATURE REFERENCE :	N/A	N/A	23	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	3	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	9	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	507	N/A	N/A	N/A	
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check							
Master: 15-Jul-2012 1:37 Before: 21-Sep-2012 1:23 After: 21-Sep-2012 1:28							
Na 511 Peak Loc	40.00	39.55	39.64	39.63	-0.01205	1.000	
Na 511 Peak Res	15.50	15.74	14.62	14.61	-0.01343	2.000	%
High Voltage	1150	1192	1133	1131	-1.140	N/A	V
Na 1785 Peak Loc	142.6	141.9	143.3	142.5	-0.8368	7.000	
Na 1785 Peak Res	8.500	8.399	8.136	7.484	-0.6517	2.000	%
Temperature	15.50	30.02	5.829	5.848	0.01951	N/A	DEGC
Na Count Rate	45.00	18.00	15.48	15.98	0.5035	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check							
Master: 15-Jul-2012 1:37 Before: 21-Sep-2012 1:23 After: 21-Sep-2012 1:28							
Na 511 Peak Loc	40.00	39.55	39.64	39.78	0.1437	1.000	
Na 511 Peak Res	15.50	16.74	16.05	14.99	-1.060	2.000	%
High Voltage	1150	1112	1067	1067	0.09460	N/A	V
Na 1785 Peak Loc	142.6	142.2	141.8	141.9	0.09863	7.000	

Na 1785 Peak Res	8.500	9.140	8.464	9.198	0.7344	2.000	%
Temperature	15.50	30.92	6.453	6.596	0.1431	N/A	DEGC
Na Count Rate	45.00	18.43	15.49	16.22	0.7288	8.000	CPS
Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2							
Master: 15-Jul-2012 1:37 Before: 21-Sep-2012 1:23 After: 21-Sep-2012 1:28							
Coincidence Count Rate Ratio	1.000	0.9742	0.9968	0.9870	-0.009778	0.05000	
Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration							
Before: 20-Sep-2012 18:08							
EDTC Z-Axis Acceleration	9.810	N/A	9.852	N/A	N/A	N/A	M/S2
Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration							
Before: 20-Sep-2012 18:08 After: Calibration out of date 21-Aug-2012 20:57							
Gamma Ray (Jig – Bkg)	159.7	N/A	159.7	162.5	2.831	14.52	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	167.9	2.925	15.00	GAPI

Micro Electrical Scanner – B (Slim) / Equipment Identification

Primary Equipment:

MEST Sonde – B	MEDS – B	724
MEST Preamplifier Cartridge – AB	MEPC – AB	807
GPIT Cartridge – A	GPIC – A	719
MEST Acquisition Cartridge – A	MEAC – A	875

Auxiliary Equipment:

MEST-B Preamplifier Cartridge Housing	MEPH – A	702
MEST Acquisition Cartridge Housing (Slim)	MEAH – B	769

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment:

HNGC Cartridge	HNGC – B	300
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Auxiliary Equipment:

HNGC Housing	HNGH – A	115
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Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:





















HNGS Sonde	HNGS – BA	194
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Auxiliary Equipment:

HNGS Sonde Housing	HNSH – BA	205
Gamma Source Radioactive	GSR – U	616008




Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check


Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.55	Master		15.74	Master		1192
Before		39.64	Before		14.62	Before		1133
After		39.63	After		14.61	After		1131
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		141.9	Master		8.399	Master		30.02
Before		143.3	Before		8.136	Before		5.829
After		142.5	After		7.484	After		5.848
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		18.00						
Before		15.48						




After		15.98
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	
Master: 15-Jul-2012 1:37 Before: 21-Sep-2012 1:23 After: 21-Sep-2012 1:28		




Hostile Natural Gamma Ray Sonde Wellsite Calibration											
Detector 2 Check											
Phase	Na 511 Peak Loc		Value	Phase	Na 511 Peak Res %		Value	Phase	High Voltage V		Value
Master			39.55	Master			16.74	Master			1112
Before			39.64	Before			16.05	Before			1067
After			39.78	After			14.99	After			1067
37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)				12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)				900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)			
Phase	Na 1785 Peak Loc		Value	Phase	Na 1785 Peak Res %		Value	Phase	Temperature DEGC		Value
Master			142.2	Master			9.140	Master			30.92
Before			141.8	Before			8.464	Before			6.453
After			141.9	After			9.198	After			6.596
135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)				7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)				-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)			
Phase	Na Count Rate CPS		Value								
Master			18.43								
Before			15.49								
After			16.22								
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)											
Master: 15-Jul-2012 1:37				Before: 21-Sep-2012 1:23				After: 21-Sep-2012 1:28			

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9742
Before		0.9968
After		0.9870
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 15-Jul-2012 1:37		
Before: 21-Sep-2012 1:23		
After: 21-Sep-2012 1:28		

Enhanced DTS Cartridge / Equipment Identification		
Primary Equipment:		
EDTC Gamma Ray Detector	EDTG – A/B	77693
Enhanced DTS Cartridge	EDTC – B	8529
Auxiliary Equipment:		
EDTC Housing	EDTH – B	8528

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.852
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	
Before: 20-Sep-2012 18:08		

Enhanced DTS Cartridge Wellsite Calibration								
Detector Calibration								
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig – Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		4.007	Before		159.7	Before		165.0

After		4.001	After		162.5	After		167.9
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	145.2 (Minimum)	159.7 (Nominal)	174.2 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)
Before: 20-Sep-2012 18:08			After: Calibration out of date 21-Aug-2012 20:57					

Company: **Lamont Doherty Earth Observatory**
Shell
Well: **Expedition 344S, U0070A (USC70)**
Field: **Baffin Bay**
Rig: **JOIDES Resolution**
Country: **USA**

Schlumberger

FMS Micro-Resistivity