

DISCLAIMER

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OTHER SERVICES1

OS1: DIT
OS2: HNGS

REMARKS: RUN NUMBER 1

Logs run in third hole ("C" hole) of drilling site U1354 to aid in depth correlation of core data collected in surface labs.
Average heave during the run was 0.2m; Active Heave Compensator used below 280mbrf.
TD was found at 505mbrf - with the pipe (bit) at 231mBRF. Sea Bed given as 125mBRF.
Tools run slick in order to fit through drill pipe, as is standard practice on this project.
DSI run with MP=Std, UD=Std, and LD=LF.

Depth "Zero" reference adjusted to Sea Bed picked by client.

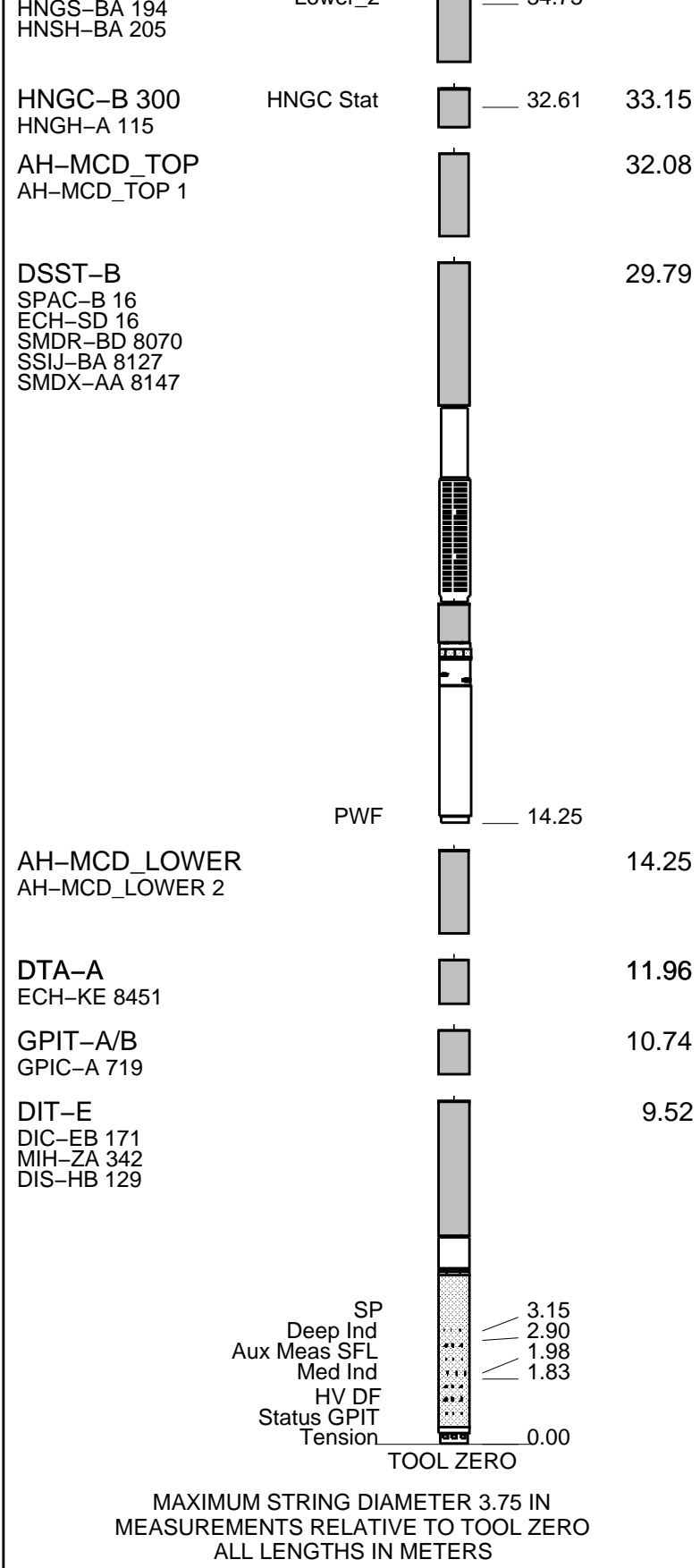
Depths shown are measured depth below sea floor, as per client request.

Table with columns for RUN 1 and RUN 2, including SERVICE ORDER #, PROGRAM VERSION, FLUID LEVEL, LOGGED INTERVAL, START, and STOP.

EQUIPMENT DESCRIPTION

Table for SURFACE EQUIPMENT with columns for RUN 1 and RUN 2.

Table for DOWNHOLE EQUIPMENT listing items like LEH-QT, DTC-H, HNGS-BA with associated status and depth values.



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

Production String	(in) (m)	Well Schematic	(m) (in)	Casing String
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Kelly Bushing Elevation

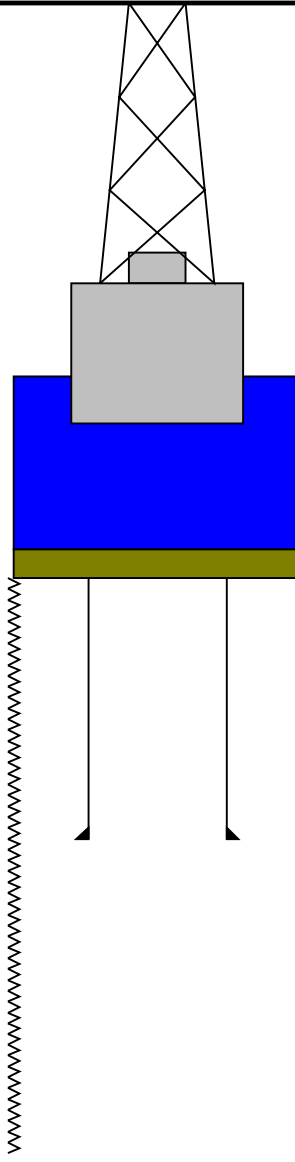
Derrick Floor Elevation

Mean Sea Level

0.0

0.0

11.0



125.0

Sea Bed

231.0

5.500

Bit Depth

509.0

11.438

Total Depth - Driller

Schlumberger

Main Pass

MAXIS Field Log

Company: Lamont Doherty

Well: Expedition 317 Site U1354C

Input DLIS Files

DEFAULT	PI_DSI_NGS_011LUP	FN:10	PRODUCER	02-Jan-2010 13:56	505.2 M	78.0 M
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Output DLIS Files

DEFAULT	PI_DSI_NGS_024PUP	FN:23	PRODUCER	02-Jan-2010 14:10	384.0 M	-44.0 M
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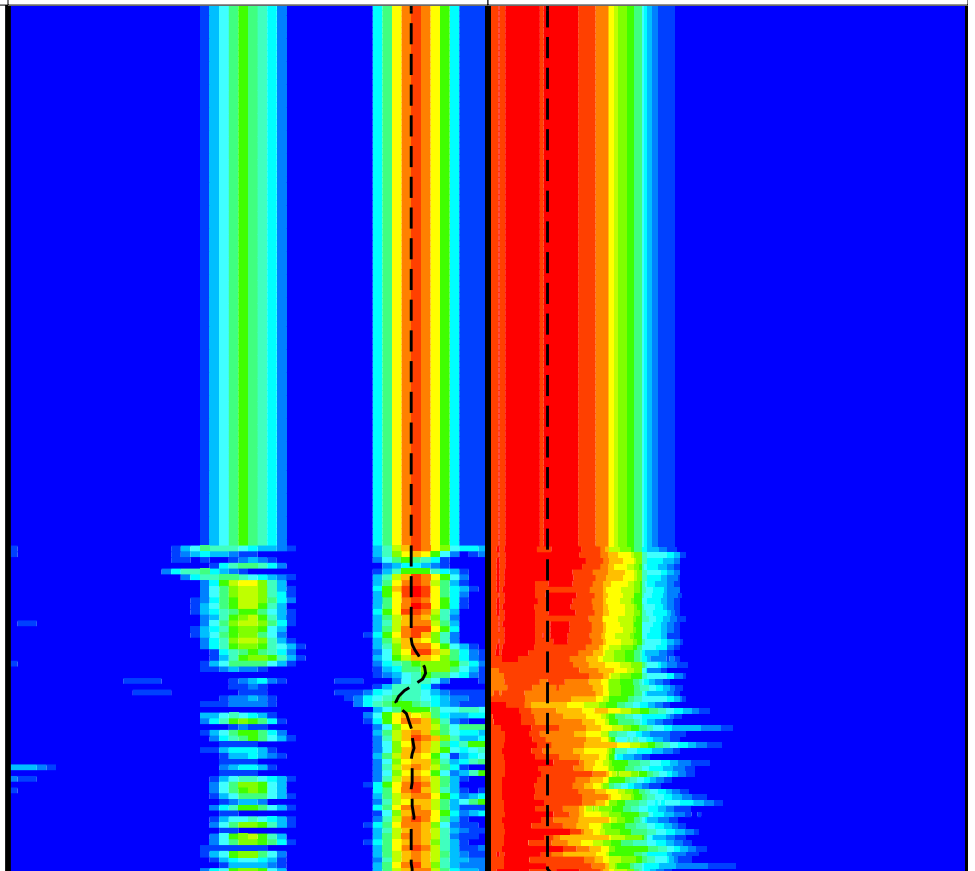
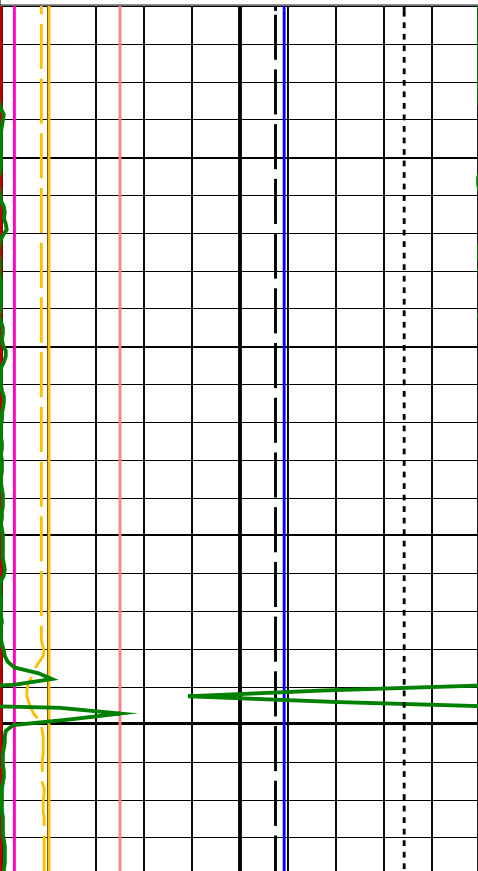
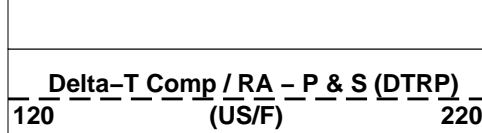
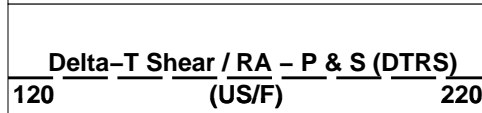
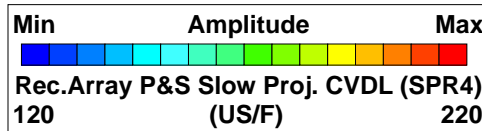
OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3870_Q3_2009_OP17_V3_b
DTA-A	17C0-154	DSST-B	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

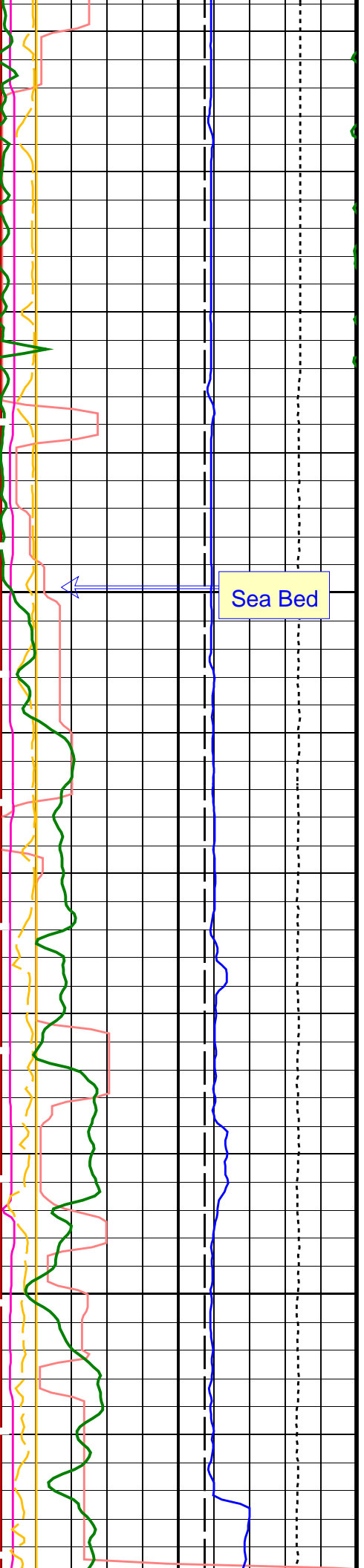
PIP SUMMARY

Time Mark Every 60 S

Waveform Data Copy Indicator 4 – Monopole P&S (WCI4)		
0	(-----)	10
Peak Coherence / RA – P & S Shear (CHRS)		
-1	(-----)	9
Peak Coherence / RA – P & S Comp (CHRP)		
0	(-----)	10
Peak Coherence / RA – Upper Dipole (CHR2)		
0	(-----)	10
HNGS Computed Gamma Ray (HCGR)		
0	(GAPI)	100
Tension (TENS)		
10000	(LBF)	0
Delta-T Shear – P & S (DT4S)		
440	(US/F)	40
Delta-T Comp – P & S (DT4P)		
440	(US/F)	40
Delta-T Shear – Upper Dipole (DT2)		
440	(US/F)	40
Bit Size (BS)		
0	(IN)	20

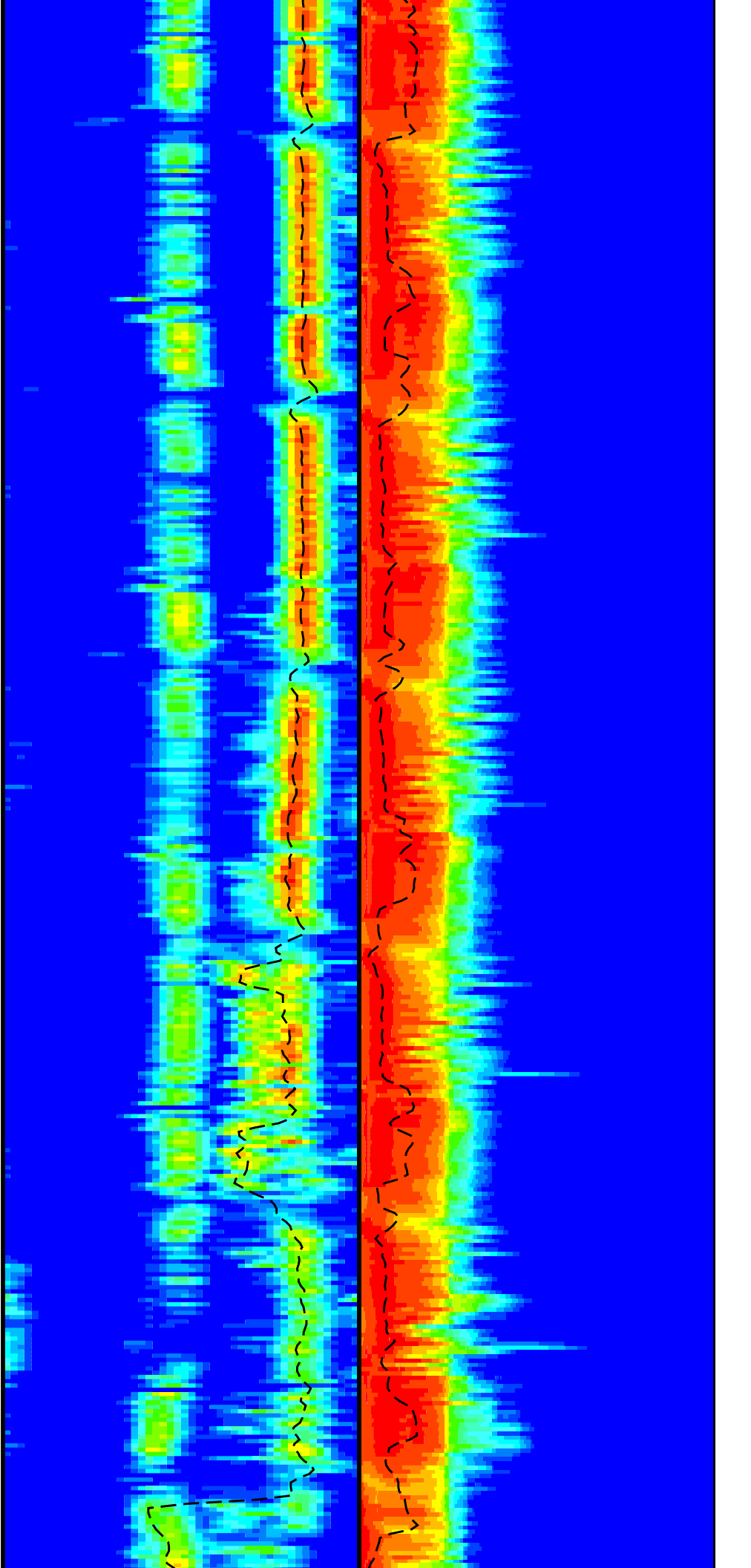


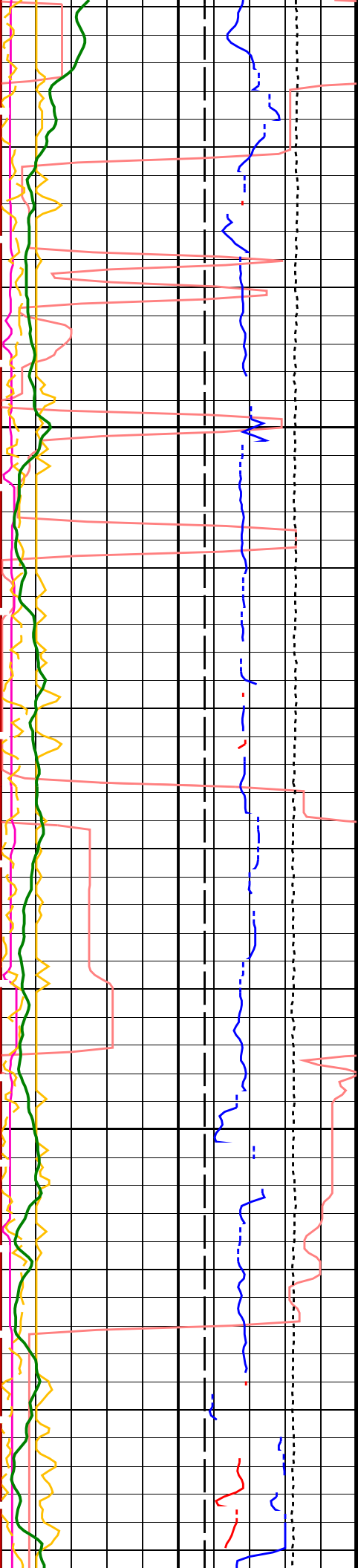
-25



0

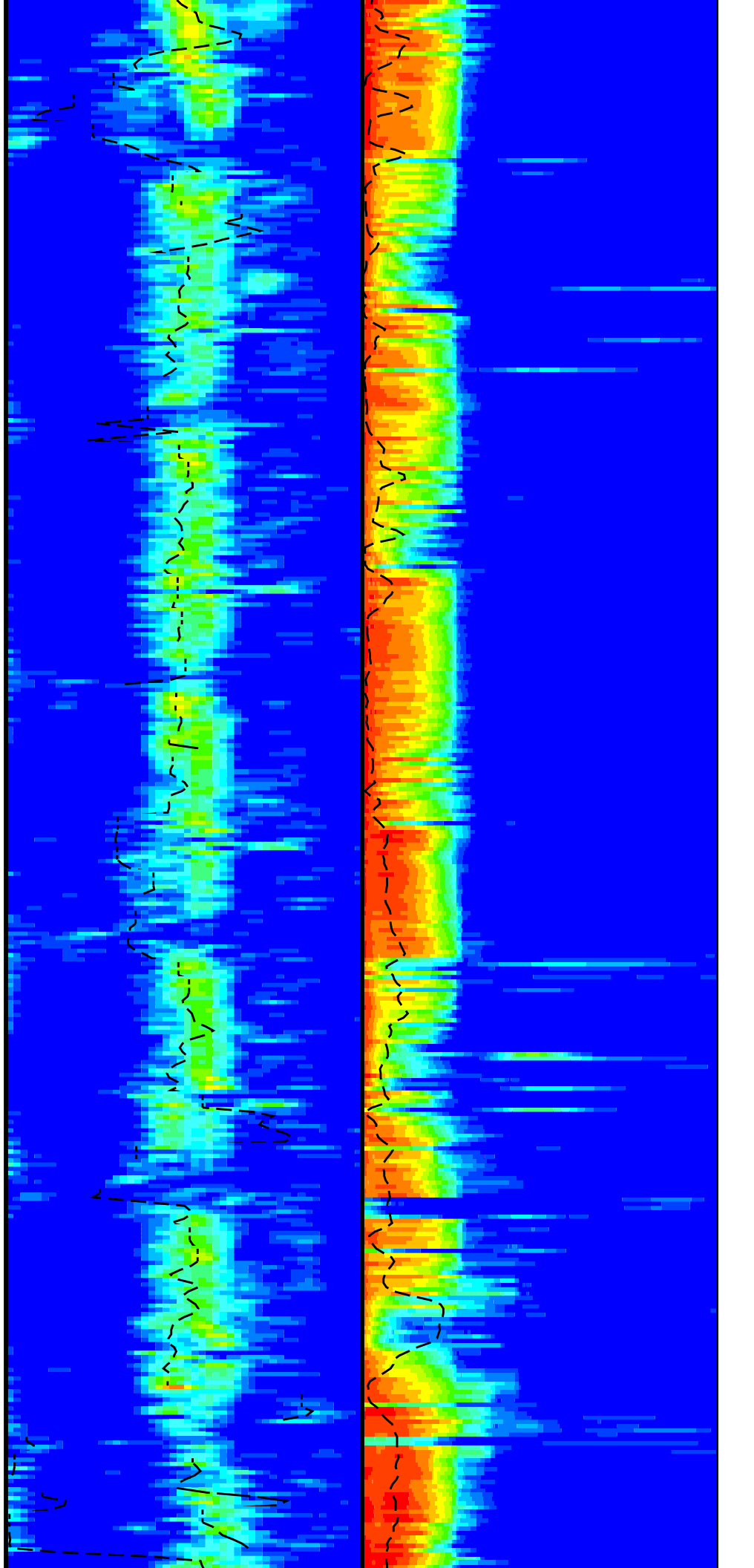
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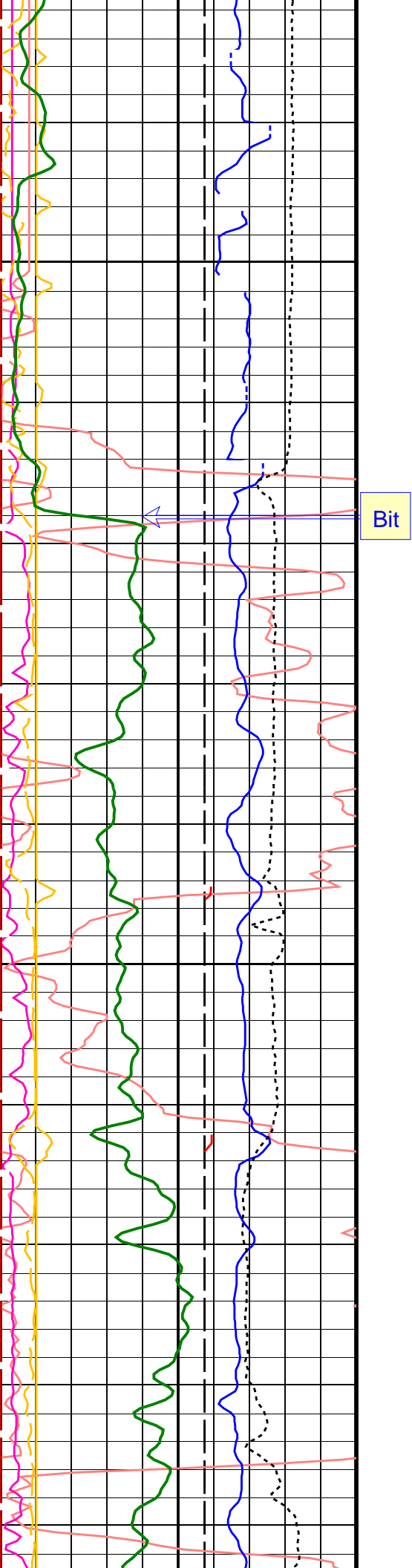




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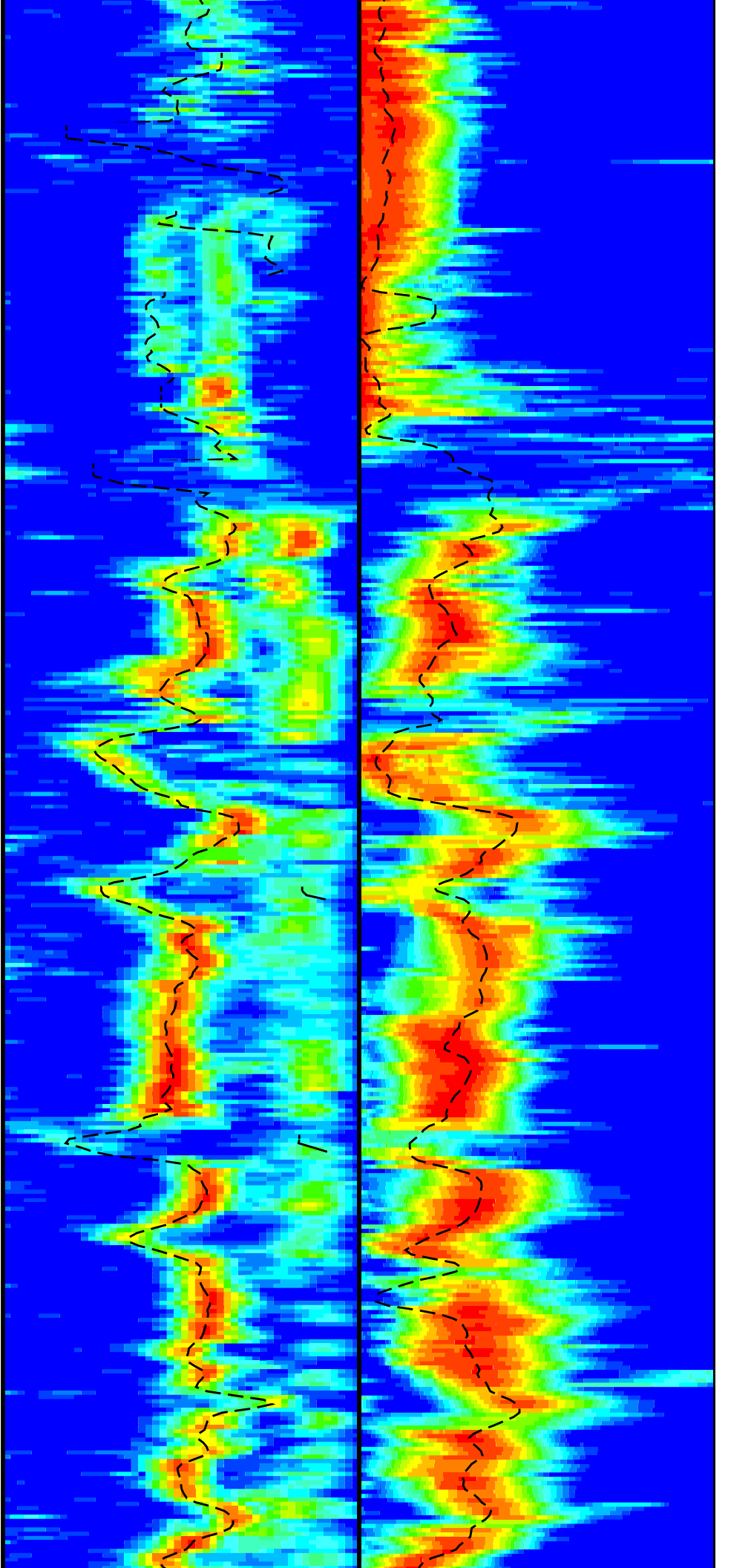
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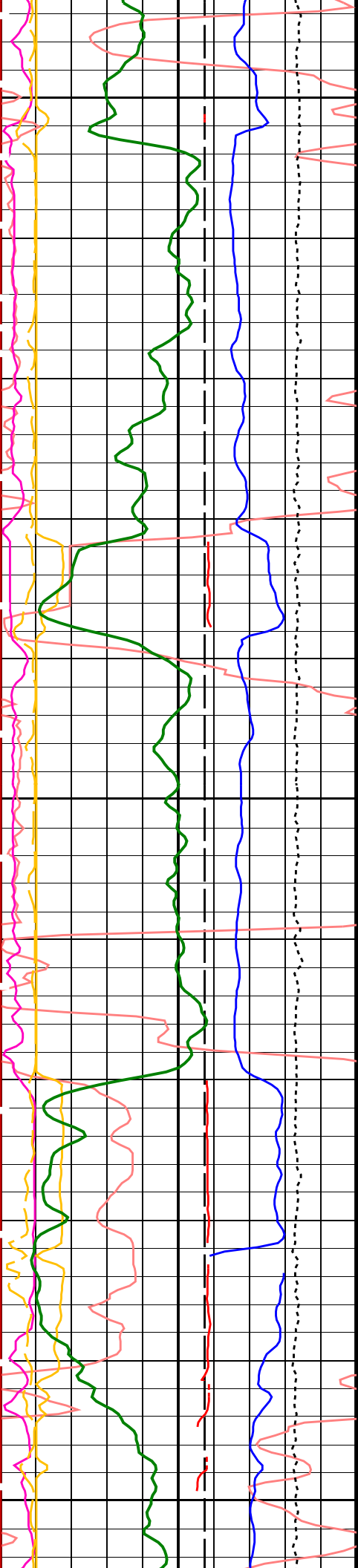




100

125

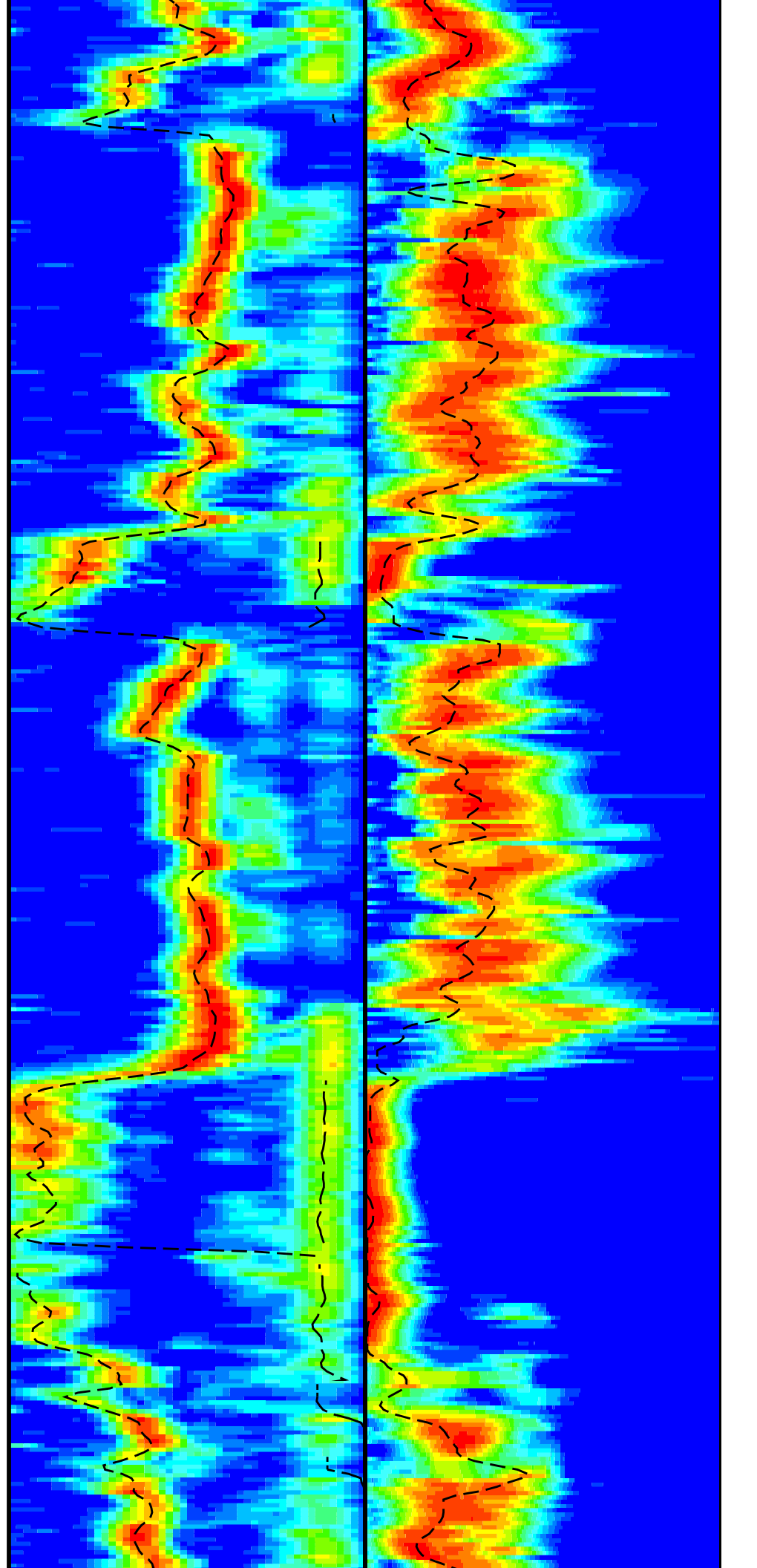


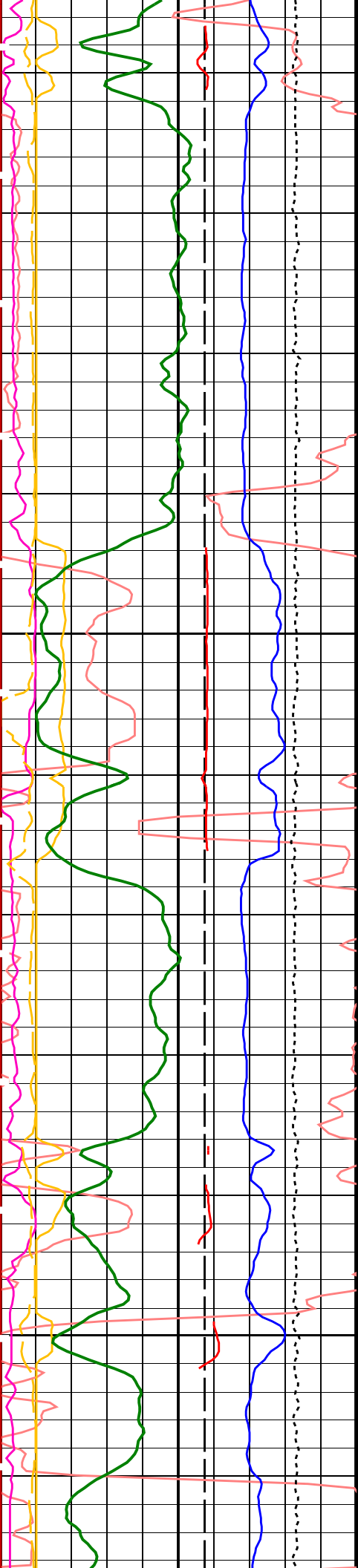


150

175

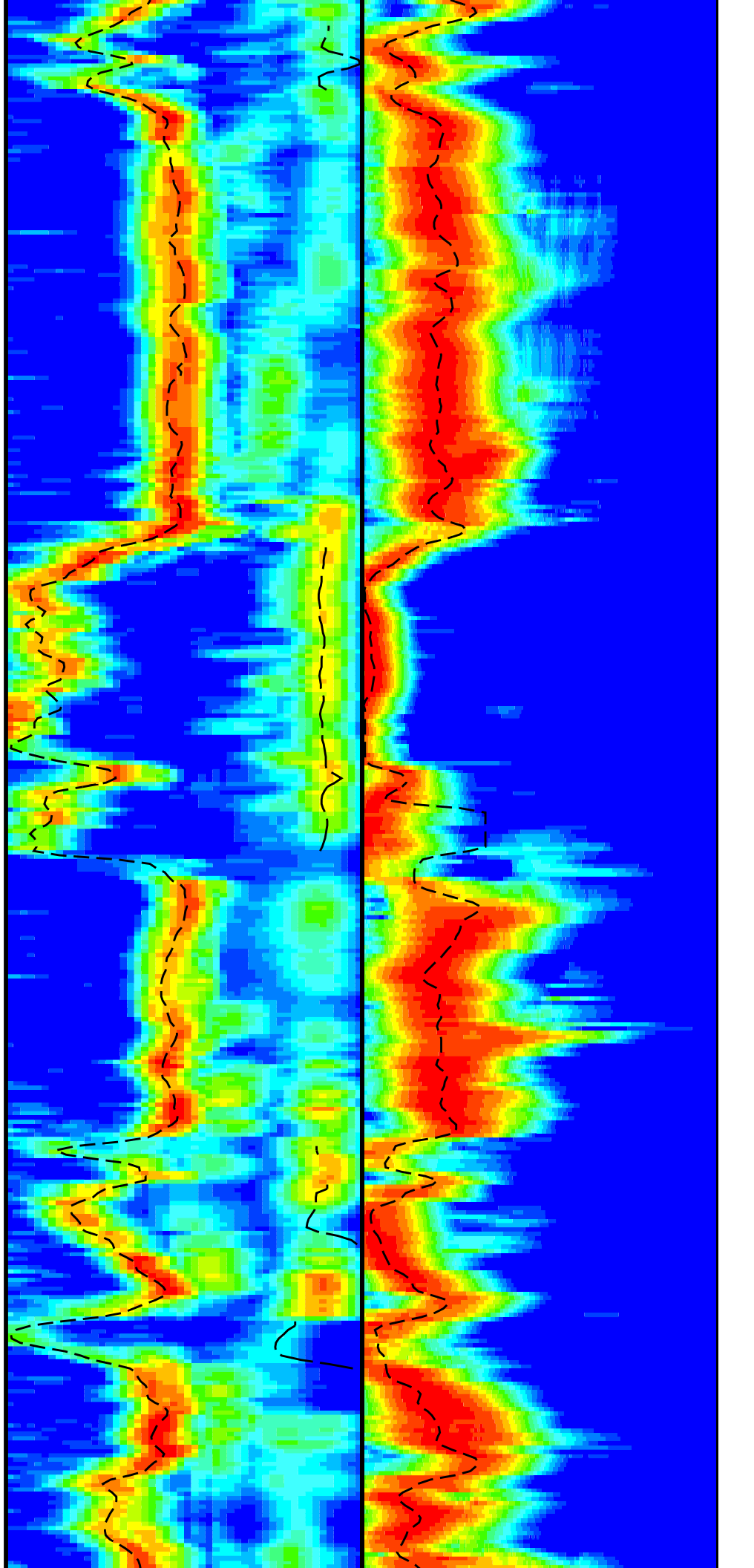
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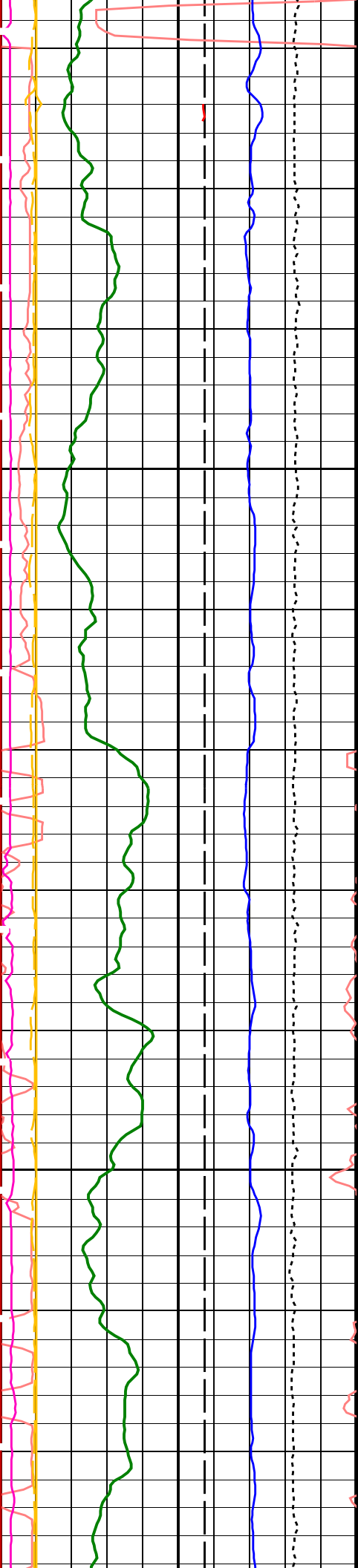




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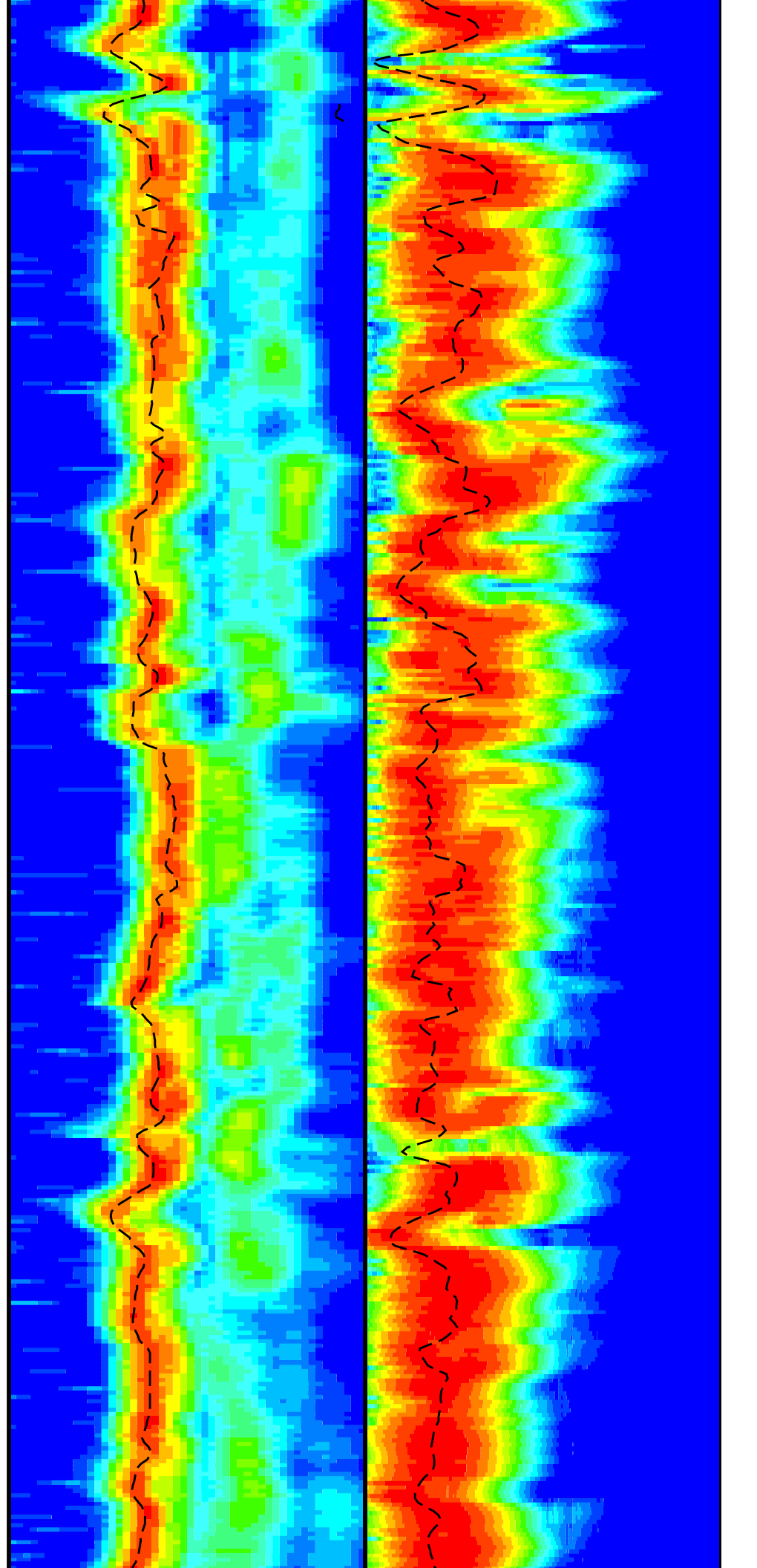
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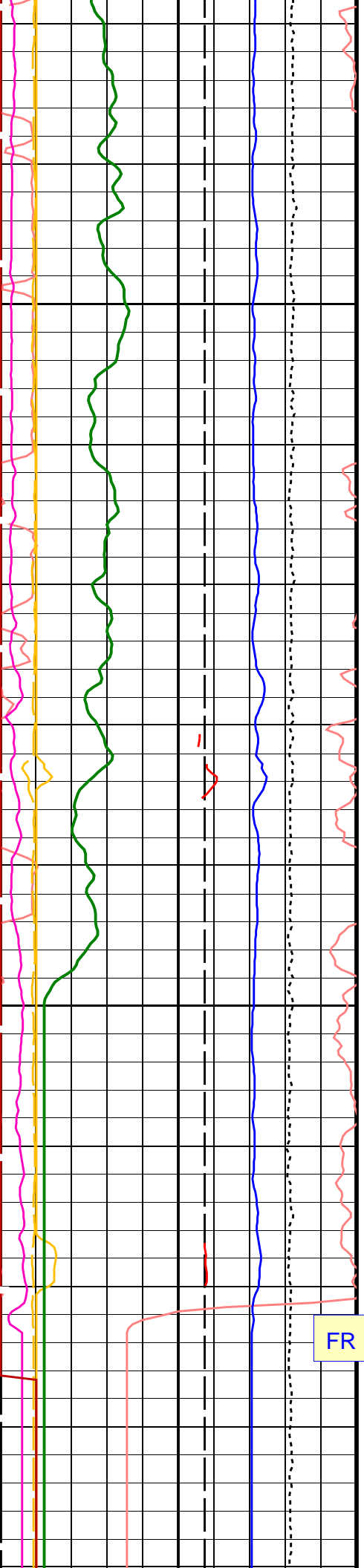




275

300

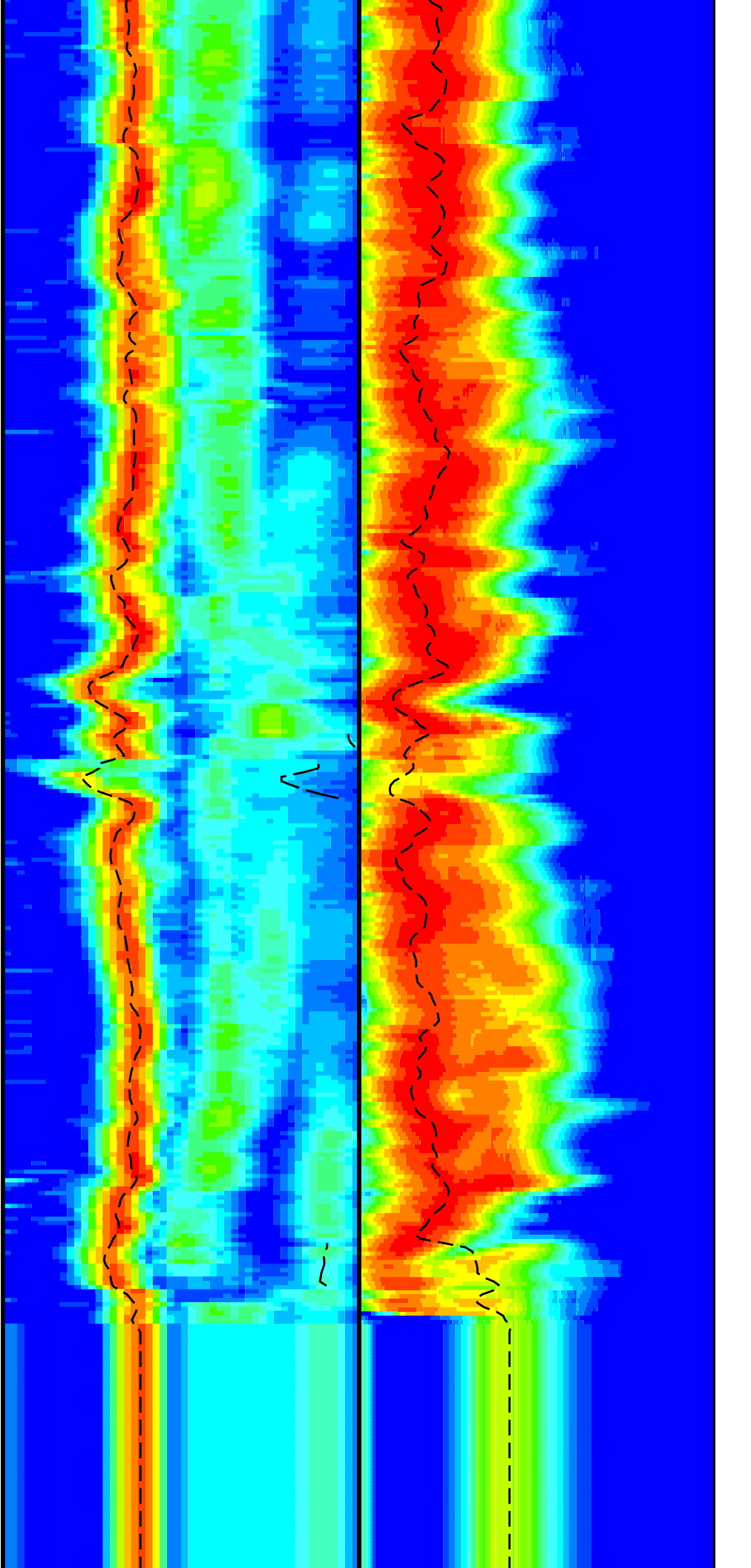


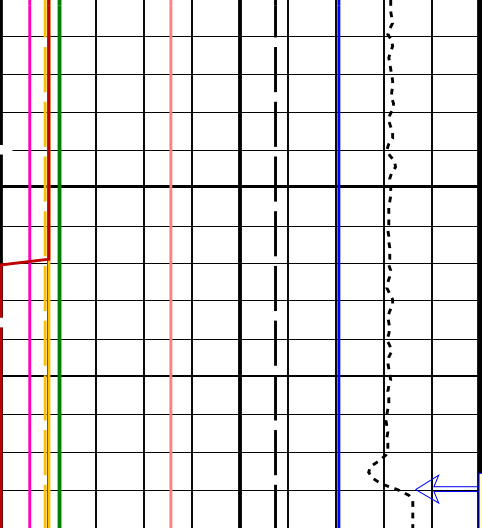


325

350

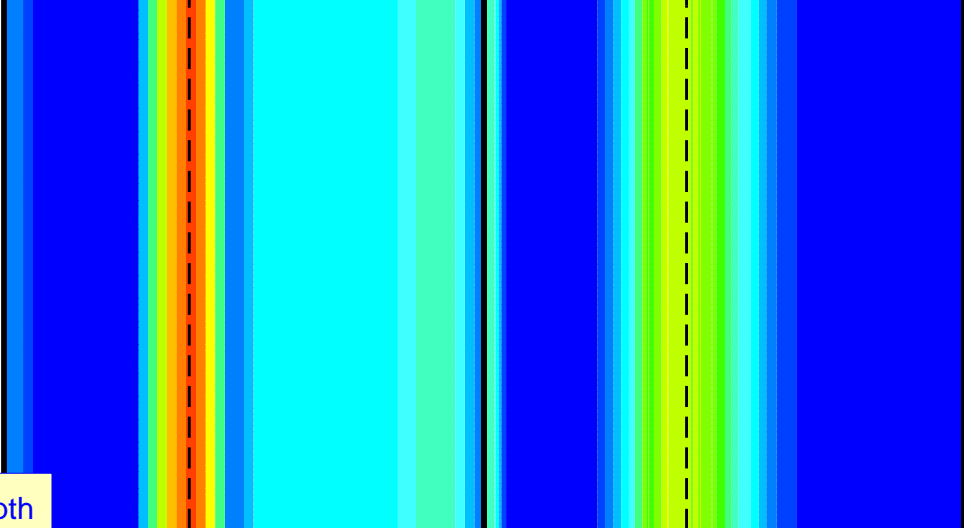
FR DSI





375

Total Depth



Bit Size (BS)		
0	(IN)	20
Delta-T Shear - Upper Dipole (DT2)		
440	(US/F)	40
Delta-T Comp - P & S (DT4P)		
440	(US/F)	40
Delta-T Shear - P & S (DT4S)		
440	(US/F)	40
Tension (TENS)		
10000	(LBF)	0
HNGS Computed Gamma Ray (HCGR)		
0	(GAPI)	100
Peak Coherence / RA - Upper Dipole (CHR2)		
0	(----	10
Peak Coherence / RA - P & S Comp (CHRP)		
0	(----	10
Peak Coherence / RA - P & S Shear (CHRS)		
-1	(----	9
Waveform Data Copy Indicator 4 - Monopole P&S (WCI4)		
0	(----	10

Delta-T Comp / RA - P & S (DTRP)		
120	(US/F)	220
Delta-T Shear / RA - P & S (DTRS)		
120	(US/F)	220
Min Amplitude Max Rec.Array P&S Slow Proj. CVDL (SPR4) (US/F)		
120	(US/F)	220

Delta-T Shear / RA - Lower Dipole (DT1R)		
300	(US/F)	1600
Min Amplitude Max Rec.Array L.Dipole Slow Proj. CVDL (SPR1) (US/F)		
300	(US/F)	1600

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	BS
DSST-B: Dipole Shear Imager - B		
BHS	Borehole Status	OPEN
CASF	Label Casing Function - Monopole P&S	50
COLL	Label Slowness Lower Limit - Monopole P&S Compressional	120 US/F
COUL	Label Slowness Upper Limit - Monopole P&S Compressional	220 US/F

DDE1	Digitizing Delay 1	0	US
DDE4	Digitizing Delay 4	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source – Dipole Shear	USE	
DSHL	Label Slowness Lower Limit – Dipole Shear	300	US/F
DSHU	Label Slowness Upper Limit – Dipole Shear	900	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSI4	Digitizer Sample Interval 4	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta-T Source for DTCS Channel	PS_COMP	
DTF	Delta-T Fluid	204.5	US/F
DWC1	Digitizer Word Count 1	512	
DWC4	Digitizer Word Count 4	512	
DWCX	Digitizer Word Count X	512	
FILG	Label Fill Gap Control – Monopole P&S	COMP_SHEAR	
GCSE	Generalized Caliper Selection	BS	
LFC	Label Formation Character – Monopole P&S	DYNAMIC	
LTXG	Lower Dipole Transmitter Geometry	156	IN
MCS	Mean Casing Slowness	57	US/F
MTXG	Monopole Transmitter Geometry	186	IN
NWI1	Number Waveform Items 1	8	
NWI2	Number Waveform Items 2	8	
NWI4	Number Waveform Items 4	8	
NWIX	Number Waveform Items X	0	
RSMN	Label Shear/Compressional Minimum Ratio – Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio – Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 – Lower Dipole Mode	LFD_EVEN	
SAM4	DSST Sonic Acquisition Mode 4 – High Frequency Monopole Mode for P&S	ODD	
SAMX	DSST Sonic Acquisition Mode X – Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status – Lower Dipole	255	
SAS2	STC Sonic Array Status – Upper Dipole	255	
SAS4	STC Sonic Array Status – Monopole P&S	255	
SBO1	STC Search Band Offset – Lower Dipole	3000	US
SBO4	STC Search Band Offset – Monopole P&S	500	US
SBR4	STC Baseline Removal – Monopole P&S	ON	
SBW1	STC Search Bandwidth – Lower Dipole	8000	US
SBW4	STC Search Bandwidth – Monopole P&S	2000	US
SFC1	STC Formation Character – Lower Dipole	SELECTABLE	
SFC4	STC Formation Character – Monopole P&S	SELECTABLE	
SFM1	STC Filter – Lower Dipole	B.3–1.5K	
SFM2	STC Filter – Upper Dipole	B1–2K	
SFM4	STC Filter – Monopole P&S	B3–20K	
SHLL	Label Slowness Lower Limit – Monopole P&S Shear	120	US/F
SHUL	Label Slowness Upper Limit – Monopole P&S Shear	220	US/F
SLL1	STC Slowness Lower Limit – Lower Dipole	300	US/F
SLL4	STC Slowness Lower Limit – Monopole P&S	120	US/F
SST1	STC Slowness Step – Lower Dipole	4	US/F
SST4	STC Slowness Step – Monopole P&S	2	US/F
SSW1	STC Source Waveform – Lower Dipole	WF_SAM1	
SSW2	STC Source Waveform – Upper Dipole	WF_SAM2	
SSW4	STC Source Waveform – Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit – Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit – Monopole Stoneley	780	US/F
SUL1	STC Slowness Upper Limit – Lower Dipole	1600	US/F
SUL4	STC Slowness Upper Limit – Monopole P&S	220	US/F
SWD1	STC Slowness Width – Lower Dipole	40	US/F
SWD4	STC Slowness Width – Monopole P&S	10	US/F
TBF1	STC Time for Baseline Fill – Lower Dipole	0	US
TBF4	STC Time for Baseline Fill – Monopole P&S	300	US
TLL1	STC Time Lower Limit – Lower Dipole	2450	US
TLL4	STC Time Lower Limit – Monopole P&S	580	US
TST1	STC Time Step – Lower Dipole	200	US
TST4	STC Time Step – Monopole P&S	50	US
TUL1	STC Time Upper Limit – Lower Dipole	20440	US
TUL4	STC Time Upper Limit – Monopole P&S	3480	US
TWD1	STC Time Width – Lower Dipole	2000	US
TWD4	STC Time Width – Monopole P&S	1000	US
TWI1	STC Integration Time Window – Lower Dipole	1600	US
TWI2	STC Integration Time Window – Upper Dipole	1600	US
TWI4	STC Integration Time Window – Monopole P&S	500	US
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFM4	Waveform Mode 4	W1	
BAR1	HNGS–BA: Hostile Natural Gamma Ray Sonde		
	HNGS Detector 1 Barite Constant	1	

BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	0	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00678649	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.934033	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.970293	
	System and Miscellaneous		
BS	Bit Size	11.438	IN
DO	Depth Offset for Playback	-122.0	M
PP	Playback Processing	NORMAL	

Format: DSST_P_S_LOWER_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 02-Jan-2010 14:10

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3870_Q3_2009_OP17_V3_b
DTA-A	17C0-154	DSST-B	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

Input DLIS Files

DEFAULT	PI_DSI_NGS_011LUP	FN:10	PRODUCER	02-Jan-2010 13:56	505.2 M	78.0 M
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Output DLIS Files

DEFAULT	PI_DSI_NGS_024PUP	FN:23	PRODUCER	02-Jan-2010 14:10		
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MAXIS Field Log

Company: Lamont Doherty Well: Expedition 317 Site U1354C

Input DLIS Files

DEFAULT	PI_DSI_NGS_010LUP	FN:9	PRODUCER	02-Jan-2010 13:57	505.2 M	403.3 M
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Output DLIS Files

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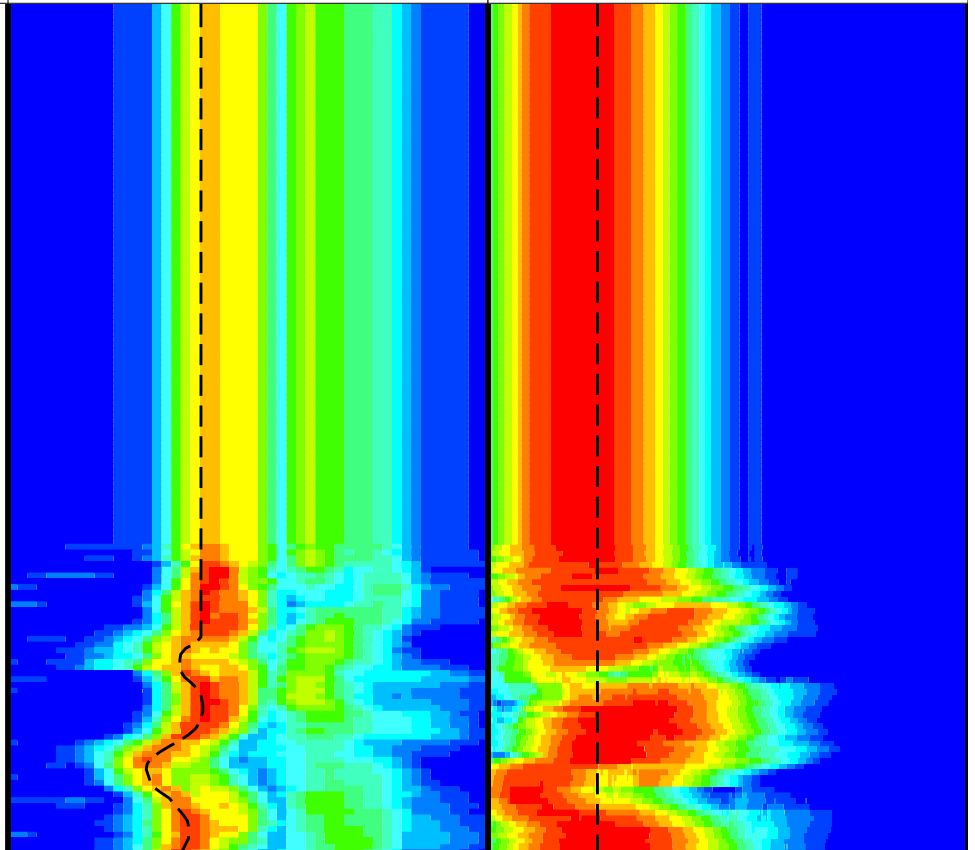
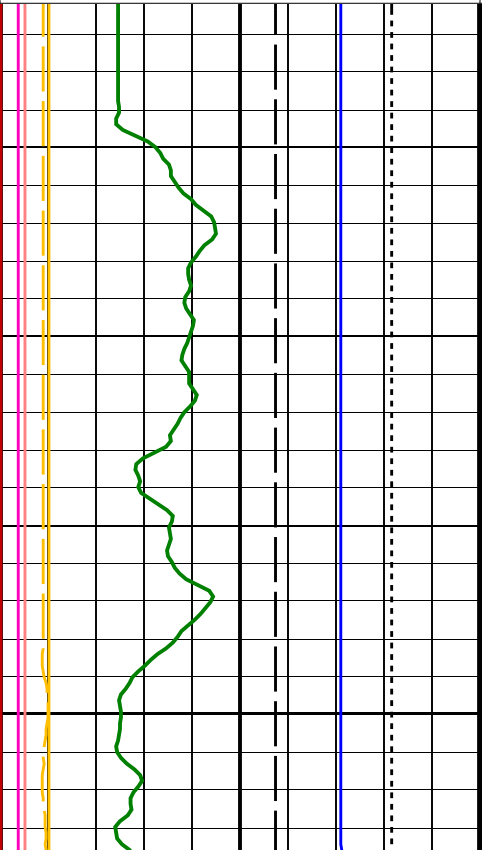
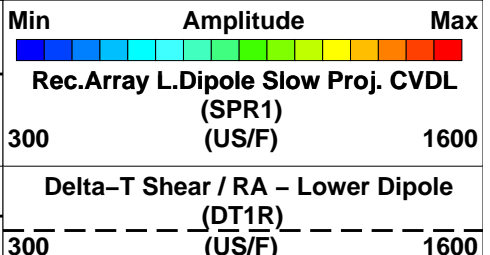
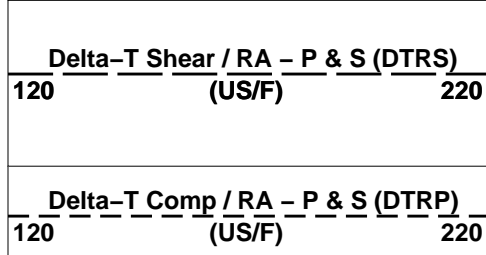
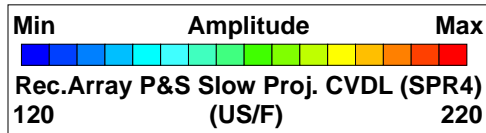
OP System Version: 17C0-154

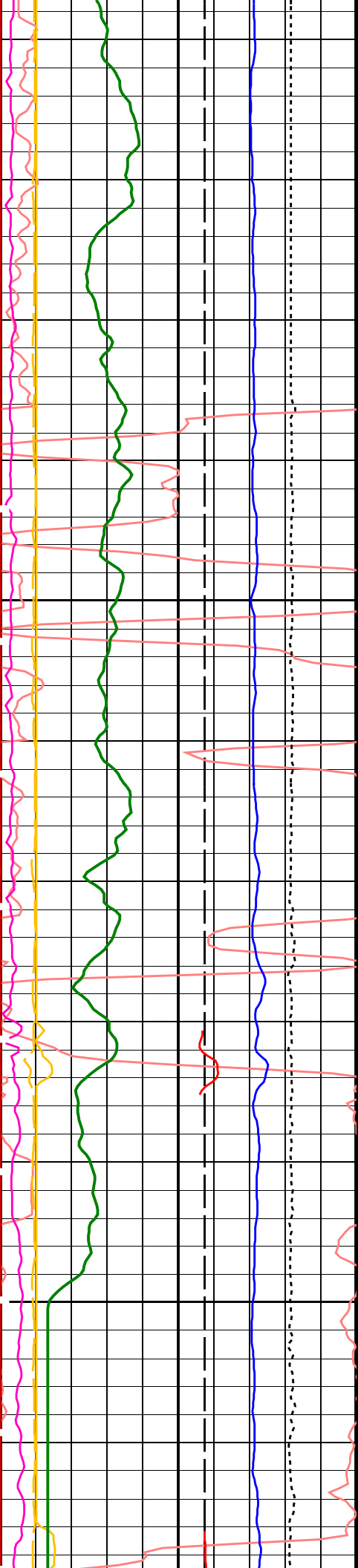
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DTA-A	17C0-154	DSST-B	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

PIP SUMMARY

Time Mark Every 60 S

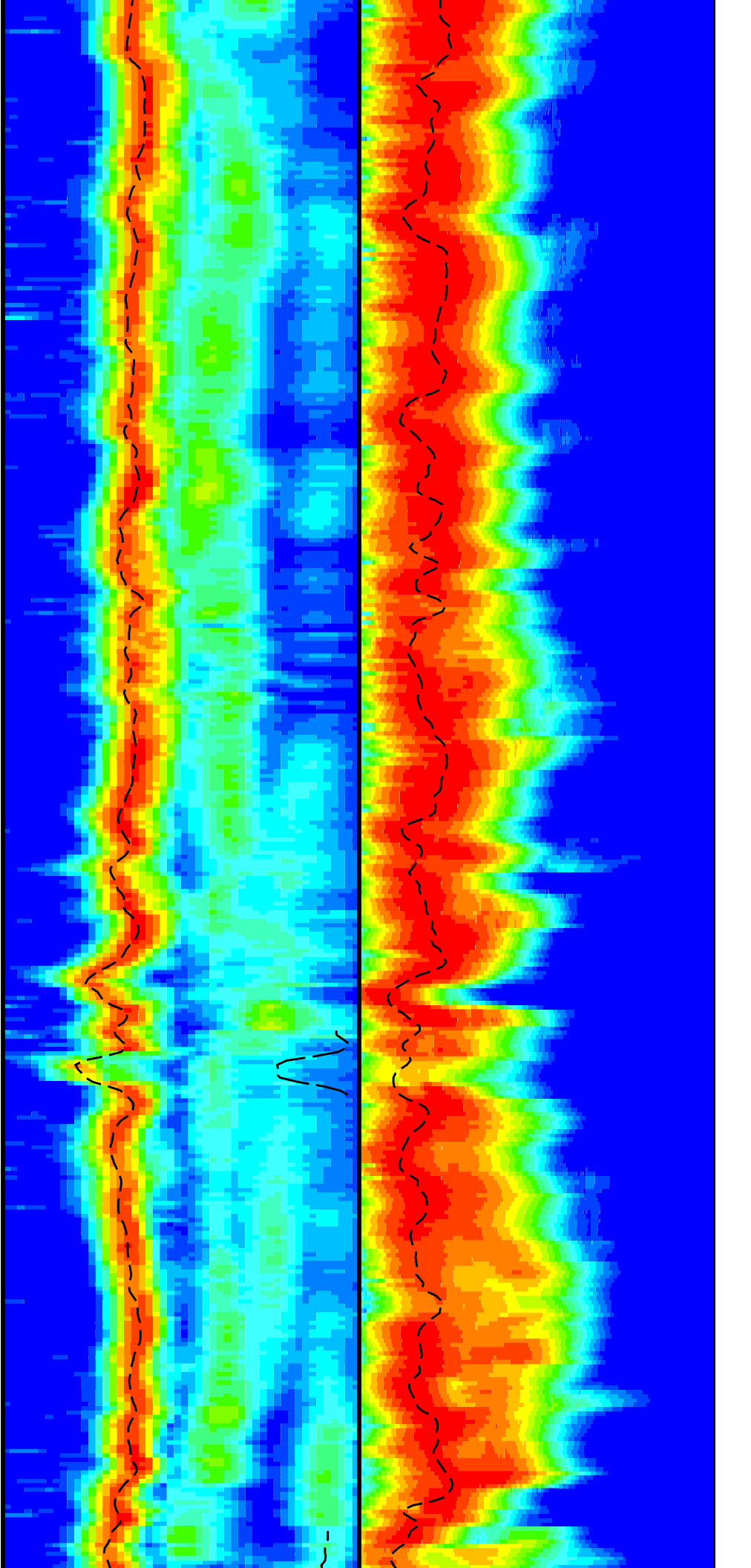
Waveform Data Copy Indicator 4 – Monopole P&S (WCI4)		
0	(----)	10
Peak Coherence / RA – P & S Shear (CHRS)		
-1	(----)	9
Peak Coherence / RA – P & S Comp (CHRP)		
0	(----)	10
Peak Coherence / RA – Upper Dipole (CHR2)		
0	(----)	10
HNGS Computed Gamma Ray (HCGR)		
0	(GAPI)	100
Tension (TENS)		
10000	(LBF)	0
Delta-T Shear – P & S (DT4S)		
440	(US/F)	40
Delta-T Comp – P & S (DT4P)		
440	(US/F)	40
Delta-T Shear – Upper Dipole (DT2)		
440	(US/F)	40
Bit Size (BS)		
0	(IN)	20

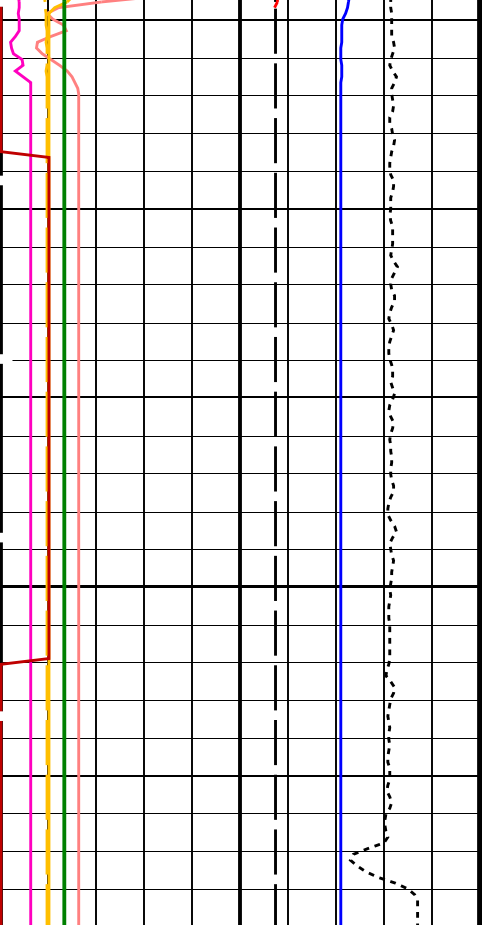




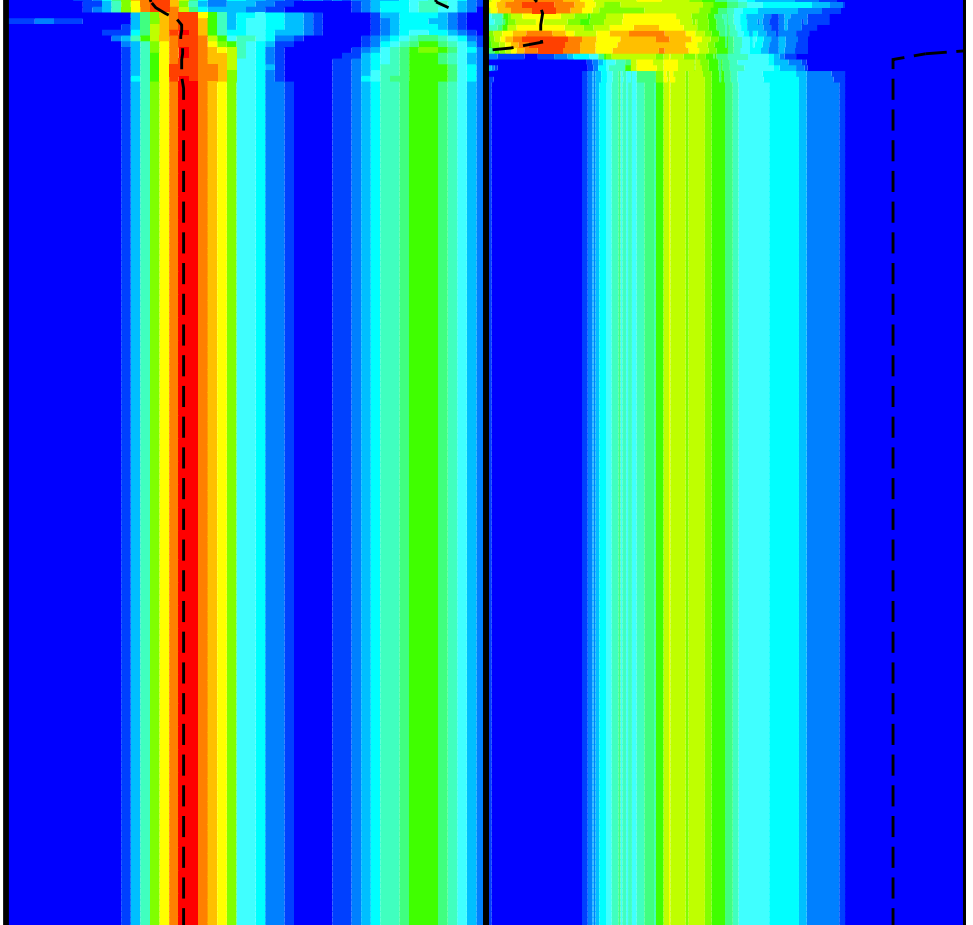
325

350





375



Bit Size (BS)
0 (IN) 20

Delta-T Shear - Upper Dipole (DT2)
440 (US/F) 40

Delta-T Comp - P & S (DT4P)
440 (US/F) 40

Delta-T Shear - P & S (DT4S)
440 (US/F) 40

Tension (TENS)
10000 (LBF) 0

HNGS Computed Gamma Ray (HCGR)
0 (GAPI) 100

Peak Coherence / RA - Upper Dipole (CHR2)
0 (----) 10

Peak Coherence / RA - P & S Comp (CHRP)
0 (----) 10

Peak Coherence / RA - P & S Shear (CHRS)
-1 (----) 9

Waveform Data Copy Indicator 4 - Monopole P&S (WCI4)
0 (----) 10

Delta-T Comp / RA - P & S (DTRP)
120 (US/F) 220

Delta-T Shear / RA - P & S (DTRS)
120 (US/F) 220

Min Amplitude Max
Rec.Array P&S Slow Proj. CVDL (SPR4)
120 (US/F) 220

Delta-T Shear / RA - Lower Dipole (DT1R)
300 (US/F) 1600

Min Amplitude Max
Rec.Array L.Dipole Slow Proj. CVDL (SPR1)
300 (US/F) 1600

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction – E			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
DSST-B: Dipole Shear Imager – B			
BHS	Borehole Status	OPEN	
CASF	Label Casing Function – Monopole P&S	50	
COLL	Label Slowness Lower Limit – Monopole P&S Compressional	120	US/F
COUL	Label Slowness Upper Limit – Monopole P&S Compressional	220	US/F
DDE1	Digitizing Delay 1	0	US
DDE4	Digitizing Delay 4	0	US
DDEX	Digitizing Delay X	0	US
DLCS	Label Compressional Source – Dipole Shear	USE	
DSHL	Label Slowness Lower Limit – Dipole Shear	300	US/F
DSHU	Label Slowness Upper Limit – Dipole Shear	900	US/F
DSI1	Digitizer Sample Interval 1	40	US
DSI4	Digitizer Sample Interval 4	10	US
DSIX	Digitizer Sample Interval X	40	US
DTCS	Compressional Delta-T Source for DTCS Channel	PS_COMP	
DTF	Delta-T Fluid	204.5	US/F
DWC1	Digitizer Word Count 1	512	
DWC4	Digitizer Word Count 4	512	
DWCX	Digitizer Word Count X	512	
FILG	Label Fill Gap Control – Monopole P&S	COMP_SHEAR	
GCSE	Generalized Caliper Selection	BS	
LFC	Label Formation Character – Monopole P&S	DYNAMIC	
LTXG	Lower Dipole Transmitter Geometry	156	IN
MCS	Mean Casing Slowness	57	US/F
MTXG	Monopole Transmitter Geometry	186	IN
NWI1	Number Waveform Items 1	8	
NWI2	Number Waveform Items 2	8	
NWI4	Number Waveform Items 4	8	
NWIX	Number Waveform Items X	0	
RSMN	Label Shear/Compressional Minimum Ratio – Monopole P&S	1.4	
RSMX	Label Shear/Compressional Maximum Ratio – Monopole P&S	2.12	
RX1G	Receiver 1 Geometry	294	IN
RX2G	Receiver 2 Geometry	300	IN
RX3G	Receiver 3 Geometry	306	IN
RX4G	Receiver 4 Geometry	312	IN
RX5G	Receiver 5 Geometry	318	IN
RX6G	Receiver 6 Geometry	324	IN
RX7G	Receiver 7 Geometry	330	IN
RX8G	Receiver 8 Geometry	336	IN
SAM1	DSST Sonic Acquisition Mode 1 – Lower Dipole Mode	LFD_EVEN	
SAM4	DSST Sonic Acquisition Mode 4 – High Frequency Monopole Mode for P&S	ODD	
SAMX	DSST Sonic Acquisition Mode X – Both Dipoles or Monopole Mode for Expert	OFF	
SAS1	STC Sonic Array Status – Lower Dipole	255	
SAS2	STC Sonic Array Status – Upper Dipole	255	
SAS4	STC Sonic Array Status – Monopole P&S	255	
SBO1	STC Search Band Offset – Lower Dipole	3000	US
SBO4	STC Search Band Offset – Monopole P&S	500	US
SBR4	STC Baseline Removal – Monopole P&S	ON	
SBW1	STC Search Bandwidth – Lower Dipole	8000	US
SBW4	STC Search Bandwidth – Monopole P&S	2000	US
SFC1	STC Formation Character – Lower Dipole	SELECTABLE	
SFC4	STC Formation Character – Monopole P&S	SELECTABLE	
SFM1	STC Filter – Lower Dipole	B.3-1.5K	
SFM2	STC Filter – Upper Dipole	B1-2K	
SFM4	STC Filter – Monopole P&S	B3-20K	
SHLL	Label Slowness Lower Limit – Monopole P&S Shear	120	US/F
SHUL	Label Slowness Upper Limit – Monopole P&S Shear	220	US/F
SLL1	STC Slowness Lower Limit – Lower Dipole	300	US/F
SLL4	STC Slowness Lower Limit – Monopole P&S	120	US/F
SST1	STC Slowness Step – Lower Dipole	4	US/F
SST4	STC Slowness Step – Monopole P&S	2	US/F
SSW1	STC Source Waveform – Lower Dipole	WF_SAM1	
SSW2	STC Source Waveform – Upper Dipole	WF_SAM2	
SSW4	STC Source Waveform – Monopole P&S	WF_SAM4	
STLL	Label Slowness Lower Limit – Monopole Stoneley	180	US/F
STUL	Label Slowness Upper Limit – Monopole Stoneley	780	US/F
SUL1	STC Slowness Upper Limit – Lower Dipole	1600	US/F
SUL4	STC Slowness Upper Limit – Monopole P&S	220	US/F
SWD1	STC Slowness Width – Lower Dipole	40	US/F
SWD4	STC Slowness Width – Monopole P&S	10	US/F
TBF1	STC Time for Baseline Fill – Lower Dipole	0	US
TBF4	STC Time for Baseline Fill – Monopole P&S	300	US

TLL1	STC Time Lower Limit - Lower Dipole	2450	US
TLL4	STC Time Lower Limit - Monopole P&S	580	US
TST1	STC Time Step - Lower Dipole	200	US
TST4	STC Time Step - Monopole P&S	50	US
TUL1	STC Time Upper Limit - Lower Dipole	20440	US
TUL4	STC Time Upper Limit - Monopole P&S	3480	US
TWD1	STC Time Width - Lower Dipole	2000	US
TWD4	STC Time Width - Monopole P&S	1000	US
TWI1	STC Integration Time Window - Lower Dipole	1600	US
TWI2	STC Integration Time Window - Upper Dipole	1600	US
TWI4	STC Integration Time Window - Monopole P&S	500	US
TWSX	Transmitter Waveform Select X	0	
UTXG	Upper Dipole Transmitter Geometry	162	IN
WFM4	Waveform Mode 4	W1	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00678649	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.934033	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.970293	
System and Miscellaneous			
BS	Bit Size	11.438	IN
DO	Depth Offset for Playback	-122.0	M
PP	Playback Processing	NORMAL	

Format: DSST_P_S_LOWER_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 02-Jan-2010 14:09

OP System Version: 17C0-154

DIT-E	17C0-154	GPIT-A/B	SRPC-3870_Q3_2009_OP17_V3_b
DTA-A	17C0-154	DSST-B	17C0-154
HNGC-B	17C0-154	HNGS-BA	17C0-154
DTC-H	17C0-154		

Input DLIS Files

DEFAULT	PI_DSI_NGS_010LUP	FN:9	PRODUCER	02-Jan-2010 13:57	505.2 M	403.3 M
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Output DLIS Files

DEFAULT	PI_DSI_NGS_023PUP	FN:22	PRODUCER	02-Jan-2010 14:09		
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Schlumberger

Calibrations

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
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General Purpose Inclinometer Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY

Before: 2-Jan-2010 1:35

TEMPERATURE REFERENCE :	N/A	N/A	20	N/A	N/A	N/A	DEGC
YEAR OF CALIBRATION :	N/A	N/A	92	N/A	N/A	N/A	
MONTH OF CALIBRATION :	N/A	N/A	10	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	448	N/A	N/A	N/A	

General Purpose Inclinometer Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY

Before: 2-Jan-2010 1:35

TEMPERATURE REFERENCE :	N/A	N/A	19	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	12	N/A	N/A	N/A	
SERIAL NUMBER :	N/A	N/A	428	N/A	N/A	N/A	

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check

Master: 31-Oct-2009 23:09 Before: 2-Jan-2010 1:40 After: 2-Jan-2010 5:18

Na 511 Peak Loc	40.00	39.48	39.67	39.72	0.04616	1.000	
Na 511 Peak Res	15.50	16.07	14.82	15.27	0.4481	2.000	%
High Voltage	1150	1200	1161	1165	3.382	N/A	V
Na 1785 Peak Loc	142.6	142.5	141.9	142.6	0.6960	7.000	
Na 1785 Peak Res	8.500	8.076	7.754	8.313	0.5586	2.000	%
Temperature	15.50	36.12	23.15	23.01	-0.1431	N/A	DEGC
Na Count Rate	45.00	34.81	32.95	32.21	-0.7386	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 31-Oct-2009 23:09 Before: 2-Jan-2010 1:40 After: 2-Jan-2010 5:18

Na 511 Peak Loc	40.00	39.63	39.70	39.67	-0.02727	1.000	
Na 511 Peak Res	15.50	15.54	15.34	15.05	-0.2919	2.000	%
High Voltage	1150	1123	1095	1097	2.693	N/A	V
Na 1785 Peak Loc	142.6	142.2	142.0	142.5	0.4145	7.000	
Na 1785 Peak Res	8.500	8.652	8.016	8.632	0.6154	2.000	%
Temperature	15.50	36.37	23.53	24.25	0.7186	N/A	DEGC
Na Count Rate	45.00	35.36	33.02	32.20	-0.8173	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2

Master: 31-Oct-2009 23:09 Before: 2-Jan-2010 1:40 After: 2-Jan-2010 5:18

Coincidence Count Rate Ratio	1.000	0.9839	0.9978	1.001	0.003223	0.05000	
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Dual Induction – E / Equipment Identification

Primary Equipment:

Dual Induction Sonde	DIS – HB	129
Dual Induction Cartridge	DIC – EB	171

Auxiliary Equipment:

Mass Isolated Housing	MIH – ZA	342
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Dual Induction – E Wellsite Calibration

Induction Electronics (10 kHz)

Phase	ID Elect Real Offset 10 kHz MM/M	Value	Phase	ID Elect Real Gain 10 kHz	Value	Phase	ID Elect Phase 10 kHz DEG	Value
Before		30.87	Before		0.9369	Before		8.980
	-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-10.00 (Minimum) 0 (Nominal) 10.00 (Maximum)	
Phase	ID Elect Quad Offset 10 kHz MM/M	Value	Phase	ID Elect Quad Gain 10 kHz	Value	Phase	IM Elect Phase 10 kHz DEG	Value
Before		24.63	Before		0.9526	Before		8.819
	-300.0 (Minimum) 0 (Nominal) 300.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-10.00 (Minimum) 0 (Nominal) 10.00 (Maximum)	
Phase	IM Elect Real Offset 10 kHz MM/M	Value	Phase	IM Elect Real Gain 10 kHz	Value			
Before		83.56	Before		0.9455			
	-550.0 (Minimum) 0 (Nominal) 550.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 10 kHz MM/M	Value	Phase	IM Elect Quad Gain 10 kHz	Value			
Before		44.00	Before		0.9262			
	-550.0 (Minimum) 0 (Nominal) 550.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 2-Jan-2010 2:39

Dual Induction – E Wellsite Calibration

Induction Electronics (20 kHz)

Phase	ID Elect Real Offset 20 kHz MM/M	Value	Phase	ID Elect Real Gain 20 kHz	Value	Phase	ID Elect Phase 20 kHz DEG	Value
Before		12.21	Before		0.9648	Before		4.290
	-125.0 (Minimum) 0 (Nominal) 125.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	ID Elect Quad Offset 20 kHz MM/M	Value	Phase	ID Elect Quad Gain 20 kHz	Value	Phase	IM Elect Phase 20 kHz DEG	Value
Before		9.979	Before		0.9836	Before		4.691
	-125.0 (Minimum) 0 (Nominal) 125.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)	
Phase	IM Elect Real Offset 20 kHz MM/M	Value	Phase	IM Elect Real Gain 20 kHz	Value			
Before		34.33	Before		0.9898			
	-225.0 (Minimum) 0 (Nominal) 225.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 20 kHz MM/M	Value	Phase	IM Elect Quad Gain 20 kHz	Value			
Before		18.19	Before		0.9694			
	-225.0 (Minimum) 0 (Nominal) 225.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 2-Jan-2010 2:40

Dual Induction – E Wellsite Calibration

Induction Electronics (40 kHz)

Phase	ID Elect Real Offset 40 kHz MM/M	Value	Phase	ID Elect Real Gain 40 kHz	Value	Phase	ID Elect Phase 40 kHz DEG	Value
Before		7.958	Before		0.9482	Before		15.28
	-85.00 (Minimum) 0 (Nominal) 85.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-20.00 (Minimum) 0 (Nominal) 20.00 (Maximum)	
Phase	ID Elect Quad Offset 40 kHz MM/M	Value	Phase	ID Elect Quad Gain 40 kHz	Value	Phase	IM Elect Phase 40 kHz DEG	Value
Before		6.653	Before		0.9758	Before		15.08
	-85.00 (Minimum) 0 (Nominal) 85.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)			-20.00 (Minimum) 0 (Nominal) 20.00 (Maximum)	
Phase	IM Elect Real Offset 40 kHz MM/M	Value	Phase	IM Elect Real Gain 40 kHz	Value			
Before		22.08	Before		0.9902			
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				
Phase	IM Elect Quad Offset 40 kHz MM/M	Value	Phase	IM Elect Quad Gain 40 kHz	Value			
Before		11.79	Before		0.9694			
	-130.0 (Minimum) 0 (Nominal) 130.0 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)				

Before: 2-Jan-2010 2:41

Dual Induction – E Wellsite Calibration

SFL Electronics

Phase	SFL Voltage Offset MV	Value	Phase	SFL Voltage Gain	Value
Before		0.1544	Before		0.9974
	-15.00 (Minimum) 0 (Nominal) 15.00 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	
Phase	SFL Current Offset MA	Value	Phase	SFL Current Gain	Value
Before		0.03590	Before		1.009
	-0.6000 (Minimum) 0 (Nominal) 0.6000 (Maximum)			0.8500 (Minimum) 1.000 (Nominal) 1.200 (Maximum)	

Before: 2-Jan-2010 2:42

Dual Induction – E Wellsite Calibration

Electronics Calibration Changes Files/Depth Intervals: 8: 73.2 – 505.7 10: 505.2 – 403.3 11: 505.2 – 78.0

Phase	ID (R > 27 OHM-M) MM/M	Value	Phase	ID (R < 27 OHM-M) %	Value	Phase	SFL (R < 1 OHM-M) OHMM	Value
After		0.2634	After		0.0002187	After		0.0006183
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)			0 (Minimum) 0 (Nominal) 0.02000 (Maximum)	
Phase	IM (R > 27 OHM-M) MM/M	Value	Phase	IM (R < 27 OHM-M) %	Value			
After		0.3532	After		0.0002399			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				
Phase	SFL (R > 27 OHM-M) MM/M	Value	Phase	SFL (R < 27 OHM-M) %	Value			
After		0	After		0.001182			
	0 (Minimum) 0 (Nominal) 0.7500 (Maximum)			0 (Minimum) 0 (Nominal) 2.000 (Maximum)				

General Purpose Inclinomometer / Equipment Identification

Primary Equipment: GPIT Cartridge – A	GPIC – A	719
Auxiliary Equipment: GPIT Housing	GPIH – A	2864

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment: HNGC Cartridge	HNGC – B	300
Auxiliary Equipment: HNGC Housing	HNGH – A	115

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS – BA	194
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH – BA GSR – U	205 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		39.48	Master		16.07	Master		1200
Before		39.67	Before		14.82	Before		1161
After		39.72	After		15.27	After		1165
	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		142.5	Master		8.076	Master		36.12
Before		141.9	Before		7.754	Before		23.15
After		142.6	After		8.313	After		23.01
	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		34.81						
Before		32.95						
After		32.21						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							

Master: 31-Oct-2009 23:09

Before: 2-Jan-2010 1:40

After: 2-Jan-2010 5:18

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		39.63	Master		15.54	Master		1123
Before		39.70	Before		15.34	Before		1095
After		39.67	After		15.05	After		1097
	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		8.652	Master		36.37			
Before		142.0	Before		8.016	Before		23.53			
After		142.5	After		8.632	After		24.25			
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					35.36						
Before					33.02						
After					32.20						
10.00 (Minimum)		45.00 (Nominal)	100.0 (Maximum)								
Master: 31-Oct-2009 23:09				Before: 2-Jan-2010 1:40				After: 2-Jan-2010 5:18			

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9839
Before		0.9978
After		1.001
0.9500 (Minimum)		1.000 (Nominal)
		1.050 (Maximum)
Master: 31-Oct-2009 23:09		
Before: 2-Jan-2010 1:40		
After: 2-Jan-2010 5:18		

DTS Telemetry Tool / Equipment Identification		
Primary Equipment:		
DTC-H Auxiliary Cartridge	DTCH - A	
DTC-H Telemetry Cartridge	DTCH - A	8798
Auxiliary Equipment:		
DTCH Telemetry Cartridge Housing	ECH - KC	2304

Company:	Lamont Doherty	Schlumberger
Well:	Expedition 317 Site U1354C	
Field:	Canterbury Basin	
Rig:	JOIDES Resolution	
Ocean:	Pacific	
Dipole Shear Sonic		