Schlumberger

Company: **SANDIA TECHNOLOGIES, LLC**

Well: **NYSTA TANDEM LOT 1**
Field: **WILDCAT**
County: **ROCKLAND** State: **NEW YORK**

County: ROCKLAND
Field: WILDCAT
Location: LAT: 41.1036
Well: NYSTA TANDEM LOT 1
Company: SANDIA TECHNOLOGIES, LLC

ULTRA SONIC IMAGER
CEMENT EVALUATION
GAMMA RAY

LOCATION

LAT: 41.1036	Elev.:	K.B.	402.00 ft
LONG: −74.027		G.L.	386.00 ft
		D.F.	402.00 ft

Permanent Datum:	GROUND LEVEL	Elev.:	386.00 ft
Log Measured From:	KELLY BUSHING	16.00 ft	above Perm. Datum
Drilling Measured From:	KELLY BUSHING		

API Serial No.	Section:	Township:
31−087−27016−00−00		CLARKSTOWN

Logging Date		17−Oct−2011					
Run Number		2F					
Depth Driller		6885 ft					
Schlumberger Depth		6870 ft					
Bottom Log Interval		1492 ft					
Top Log Interval		0 ft					
Casing Fluid Type		FRESH WATER GEL					
Salinity		1200 ppm					
Density		9.4 lbm/gal					
Fluid Level		0 ft					
BIT/CASING/TUBING STRING							
Bit Size		8.500 in					
From		6870 ft					
To		1492 ft					
Casing/Tubing Size		9.625 in					
Weight		36 lbm/ft					
Grade		J55					
From		1492 ft					
To		0 ft					
Maximum Recorded Temperatures		108 degF					
Logger On Bottom	Time	17−Oct−2011	17:30				
Unit Number	Location	7052	BRADFORD, PA				
Recorded By		TIM STOEVER					
Witnessed By		B.ARMSTRONG / D. COLLINS					

		Run 1	Run 2	Run
PVT DATA	Oil Density			
	Water Salinity	1200 ppm		
	Gas Gravity			
	Bo			
	Bw			
	1/Bg			
	Bubble Point Pressure			
	Bubble Point Temperature			
	Solution GOR			
	Maximum Deviation	23.8 deg		
	CEMENTING DATA			
	Primary/Squeeze	Primary		
	Casing String No			
	Lead Cement Type	CLASS A		
	Volume	542.75 ft3		
	Density	14.2 lbm/gal		
	Water Loss			
	Additives	SEE REMARKS		
	Tail Cement Type	CLASS A		
	Volume	318.6 ft3		
	Density	15.6 lbm/gal		
	Water Loss			
	Additives	SEE REMARKS		
	Expected Cement Top	0 ft		

Logging Date							
Run Number							
Depth Driller							
Schlumberger Depth							
Bottom Log Interval							
Top Log Interval							
Casing Fluid Type							
Salinity							
Density							
Fluid Level							
BIT/CASING/TUBING STRING							
Bit Size							
From							
To							
Casing/Tubing Size							
Weight							
Grade							
From							
To							
Maximum Recorded Temperatures							
Logger On Bottom	Time						
Unit Number	Location						
Recorded By							
Witnessed By							

Run 3	Run 4

DEPTH SUMMARY LISTING

Date Created: 15−OCT−2011 13:28:23

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW−B	Type:	CMTD−B/A	Type:	7−39P LXS
Serial Number:	6420	Serial Number:	1095	Serial Number:	7052
Calibration Date:	18−JUL−2011	Calibration Date:	04−OCT−2011	Length:	9800 FT
Calibrator Serial Number:		Calibrator Serial Number:	108244	Conveyance Method:	Wireline
Calibration Cable Type:	7−39P LXS	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	−6	Calibration RMS:	14		
Wheel Correction 2:	−4	Calibration Peak Error:	24		

Depth Control Parameters

Log Sequence:	Subsequent Trip To the Well
Reference Log Name:	PLATFORM EXPRESS
Reference Log Run Number:	1
Reference Log Date:	31−AUG−2011
Subsequent Trip Down Log Correction:	

Depth Control Remarks

1. IDW USED AS PRIMARY DEPTH CONTROL
2. Z CHART USED AS SECONDARY DEPTH CONTROL
3.
4.
5.
6.

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 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.

OTHER SERVICES1	OTHER SERVICES2
OS1: RUN 2A: PEX−AIT	OS1:
OS2: RUN 2B: FMI−MSIP	OS2:
OS3: RUN 2C: CMR−ECS−HNGS	OS3:
OS4: RUN 2D: USIT−DSLT	OS4:
OS5: RUN 2E: VSP SEISMIC	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
THANK YOU FOR CHOOSING SCHLUMBERGER!!!	
LEAD ADDITIVES: 10% GYPSUM−60, 4% BENTONITE, 2% CALCIUM CHLORIDE 0.75% AG−350	
0.125 LB/SK SUPER FLAKE, 0.25% AIR OUT. 325 SKS. 1.67 FT3/SK	
TAIL ADDITIVES: 2% CALCIUM CHLORIDE, 0.125 LB/SK SUPER FLAKE, 0.25% AIR−OUT	
270 SKS. 1.18 FT3/SK	

DISPLACED WITH 113 BBLS OF WATER

47.5 BBLS OF CEMENT RETURNED TO SURFACE

RIG: UNION RIG 48

CREW: PAUL REYNOLDS, BRYAN AUSTIN, NAT DORSAY

RUN 1		RUN 2	
SERVICE ORDER #:	BMNA−00055	SERVICE ORDER #:	
PROGRAM VERSION:	19C0−187	PROGRAM VERSION:	
FLUID LEVEL:	0 ft	FLUID LEVEL:	

LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

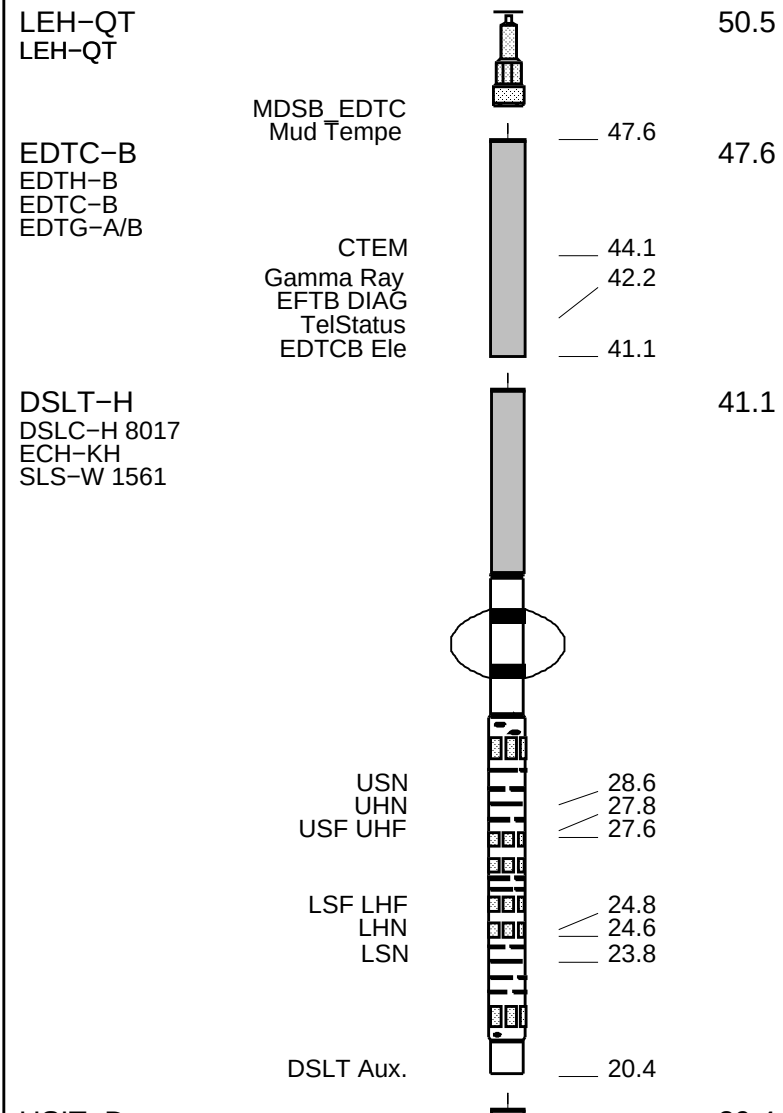
EQUIPMENT DESCRIPTION

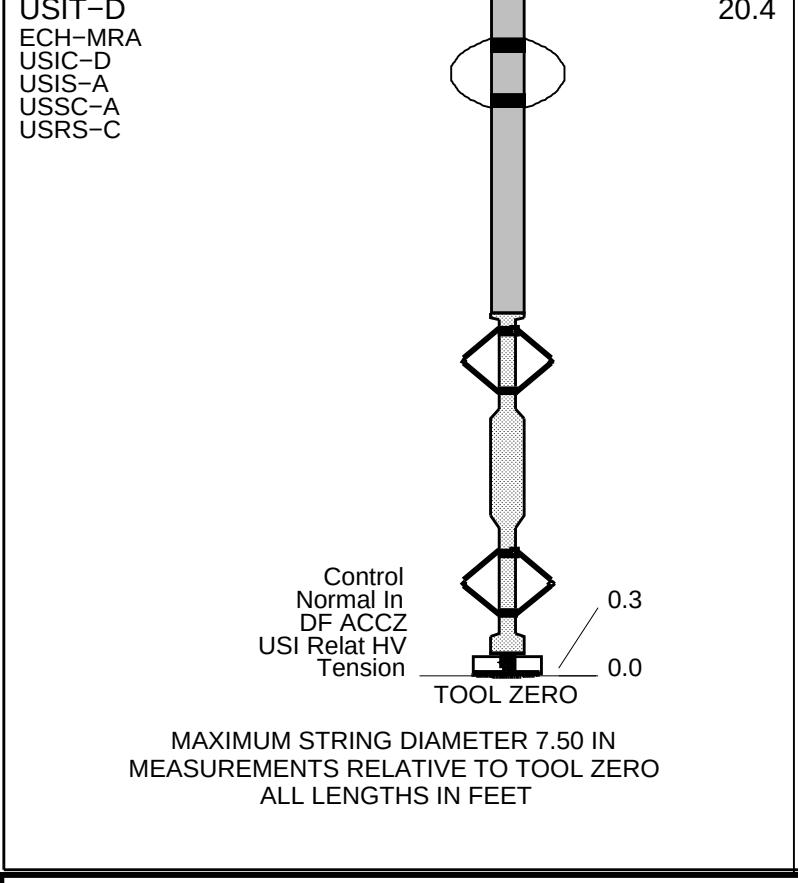
RUN 1 | RUN 2

SURFACE EQUIPMENT

WITM (EDTS)−A

DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 7.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS 5"=100'

MAXIS Field Log

Company: SANDIA TECHNOLOGIES, LLC **Well: NYSTA TANDEM LOT 1**

Input DLIS Files

DEFAULT	USI_SONIC_107LUP	FN:142	PRODUCER	17−Oct−2011 17:18	1490.0 FT	32.6 FT

Output DLIS Files

DEFAULT	USI_SONIC_114PUP	FN:152	PRODUCER	17−Oct−2011 18:12	1490.0 FT	33.0 FT

OP System Version: 19C0−187

USIT−D	19C0−187	DSLT−H	19C0−187
EDTC−B	19C0−187		

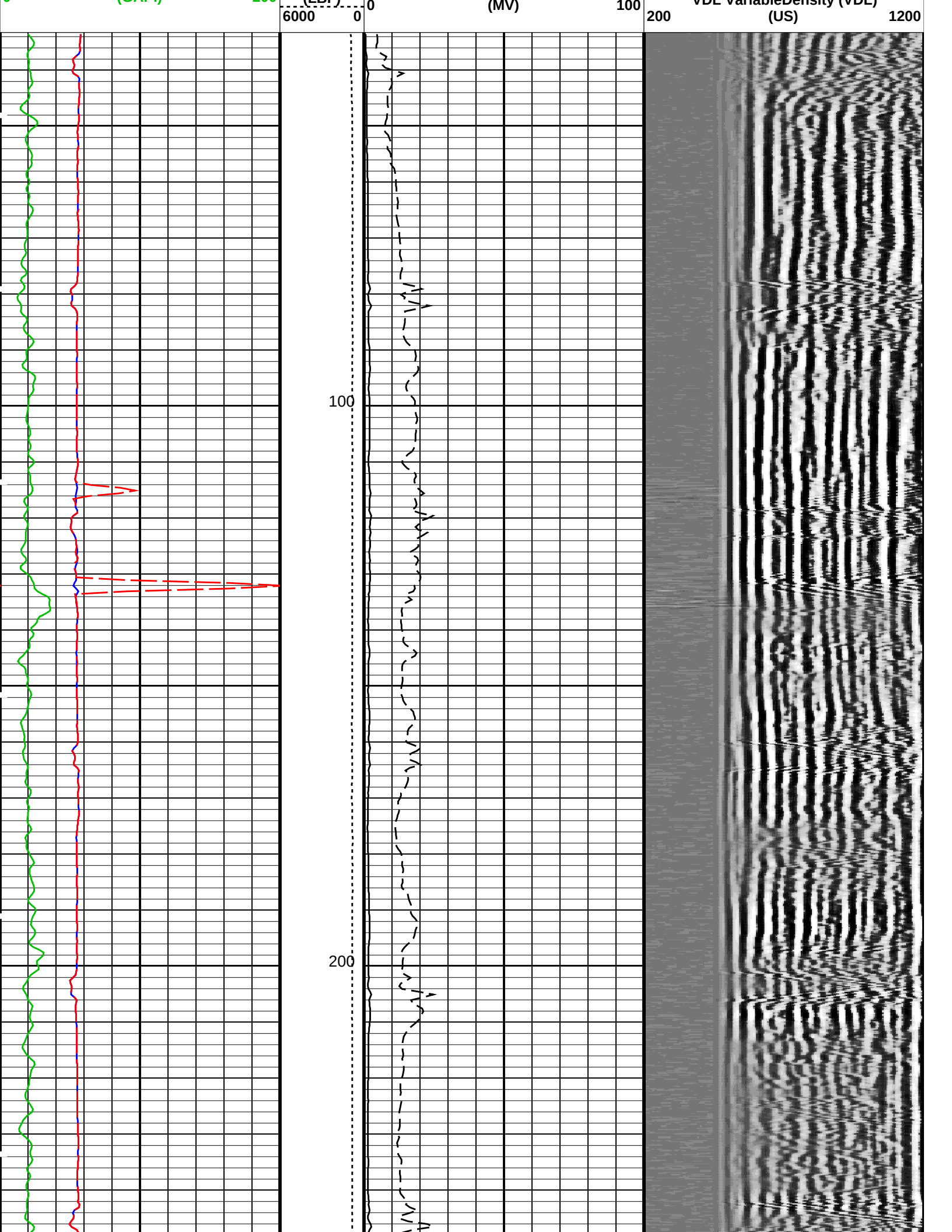
PIP SUMMARY

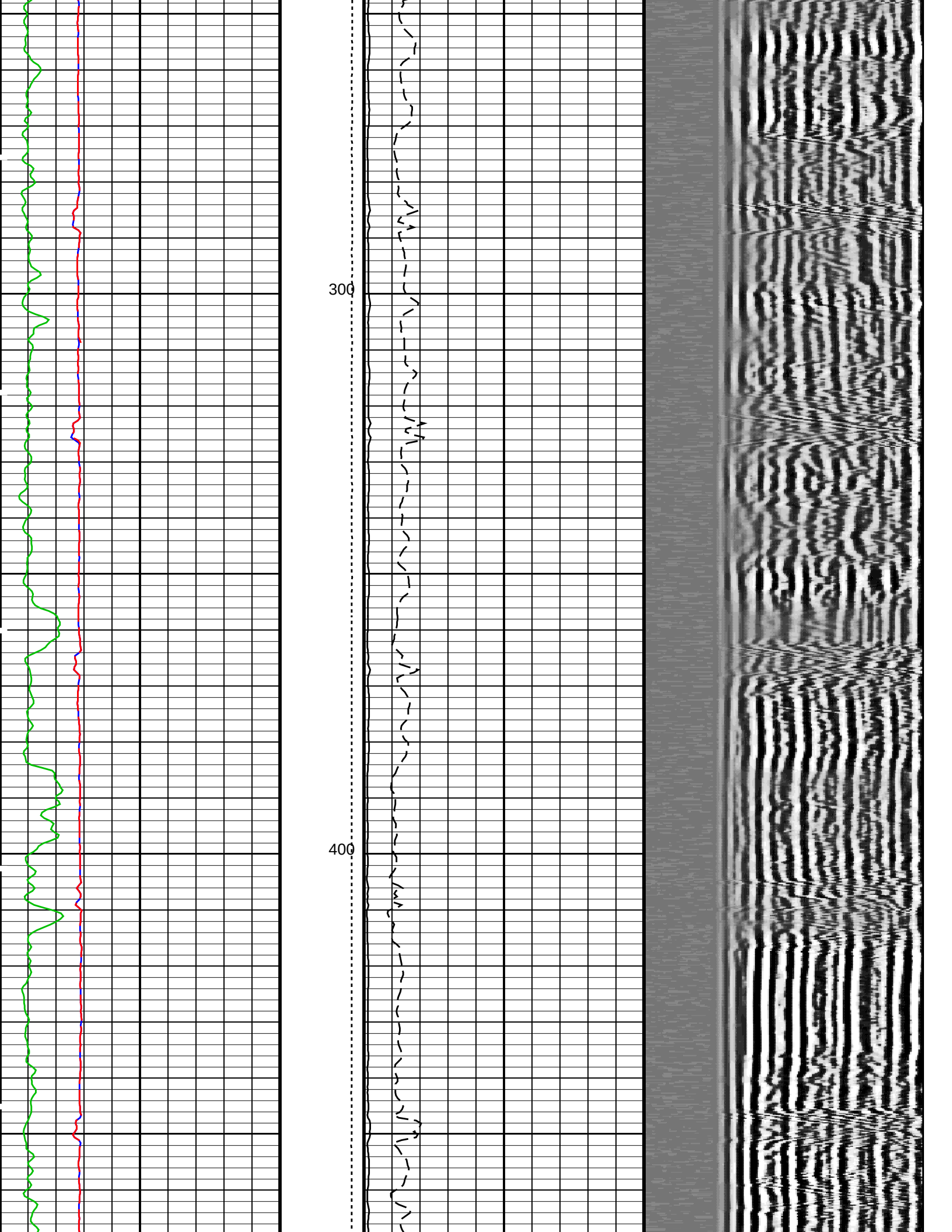
Time Mark Every 60 S

Transit Time (Sliding Gate) (TTSL) 400 (US) 200		
Transit Time (TT) 400 (US) 200		Fluid Compensated CBL Amplitude (CBLF) 0 (MV) 10
Gamma Ray (GR_EDTC) 0 (GAPI) 200	Tension (TENS) (LBF)	Fluid Compensated CBL Amplitude (CBLF)

Min Amplitude Max

VDL VariableDensity (VDL)


(GAPI)
(EDT)
6000
0
0
(MV)
100
VDL VariableDensity (VDL)
200
(US)
1200
100
200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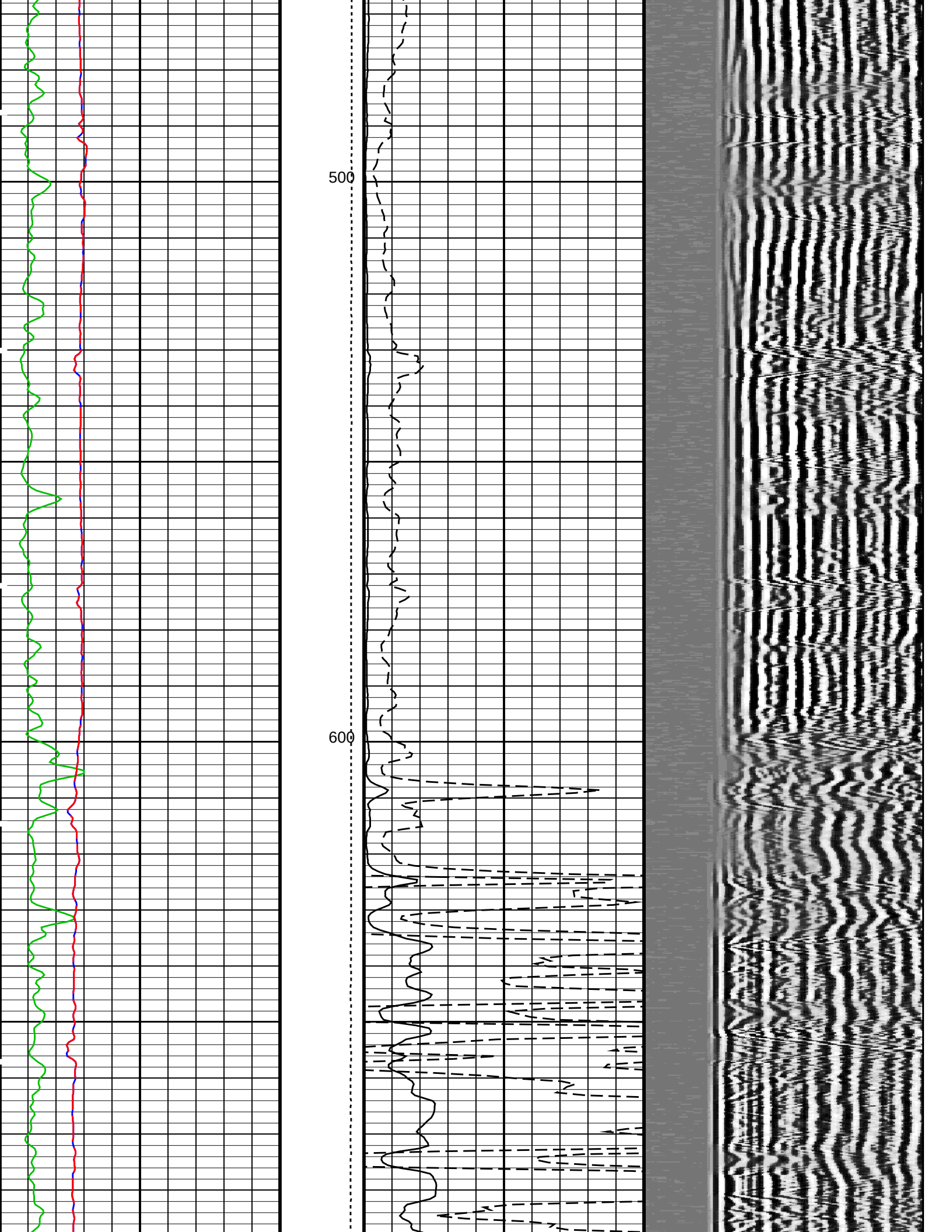
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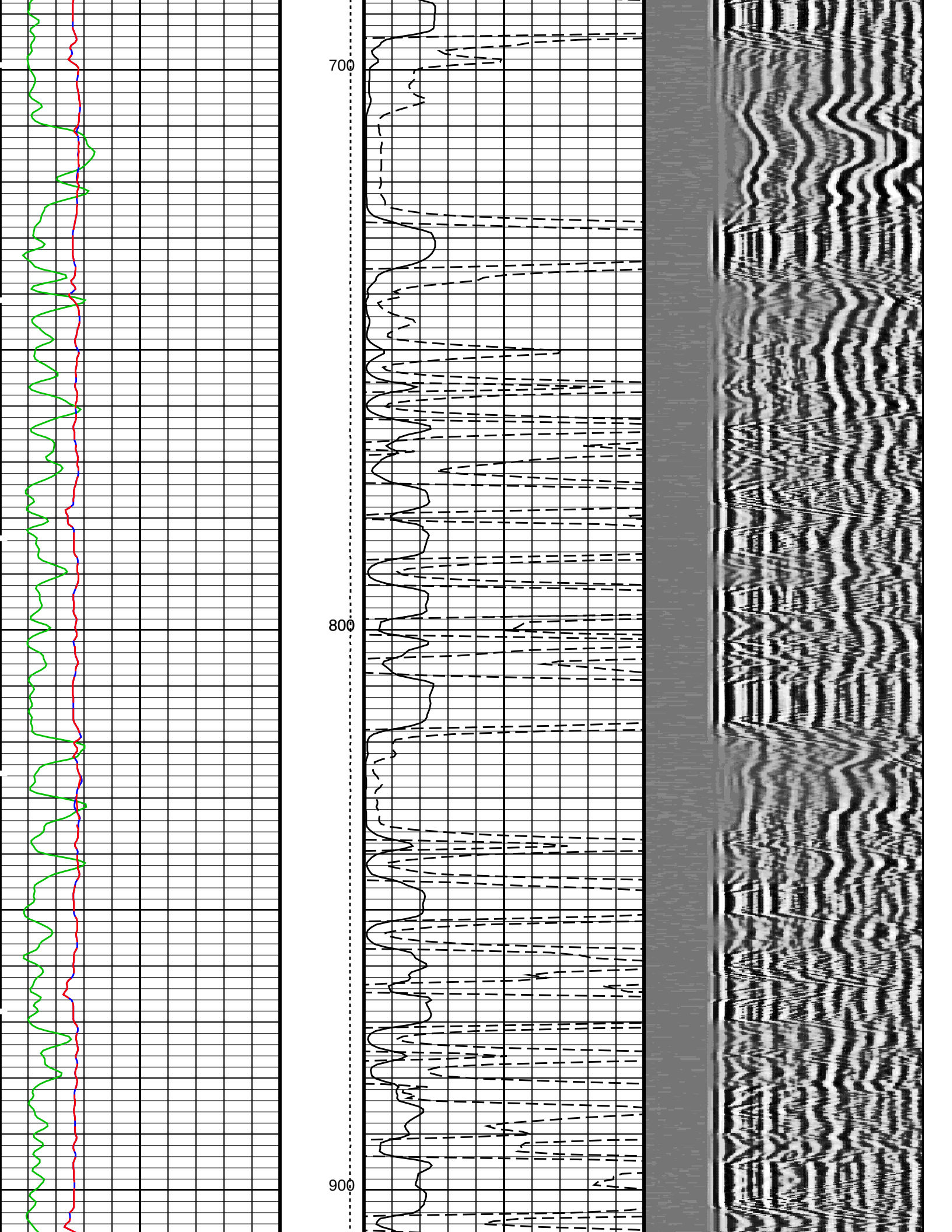
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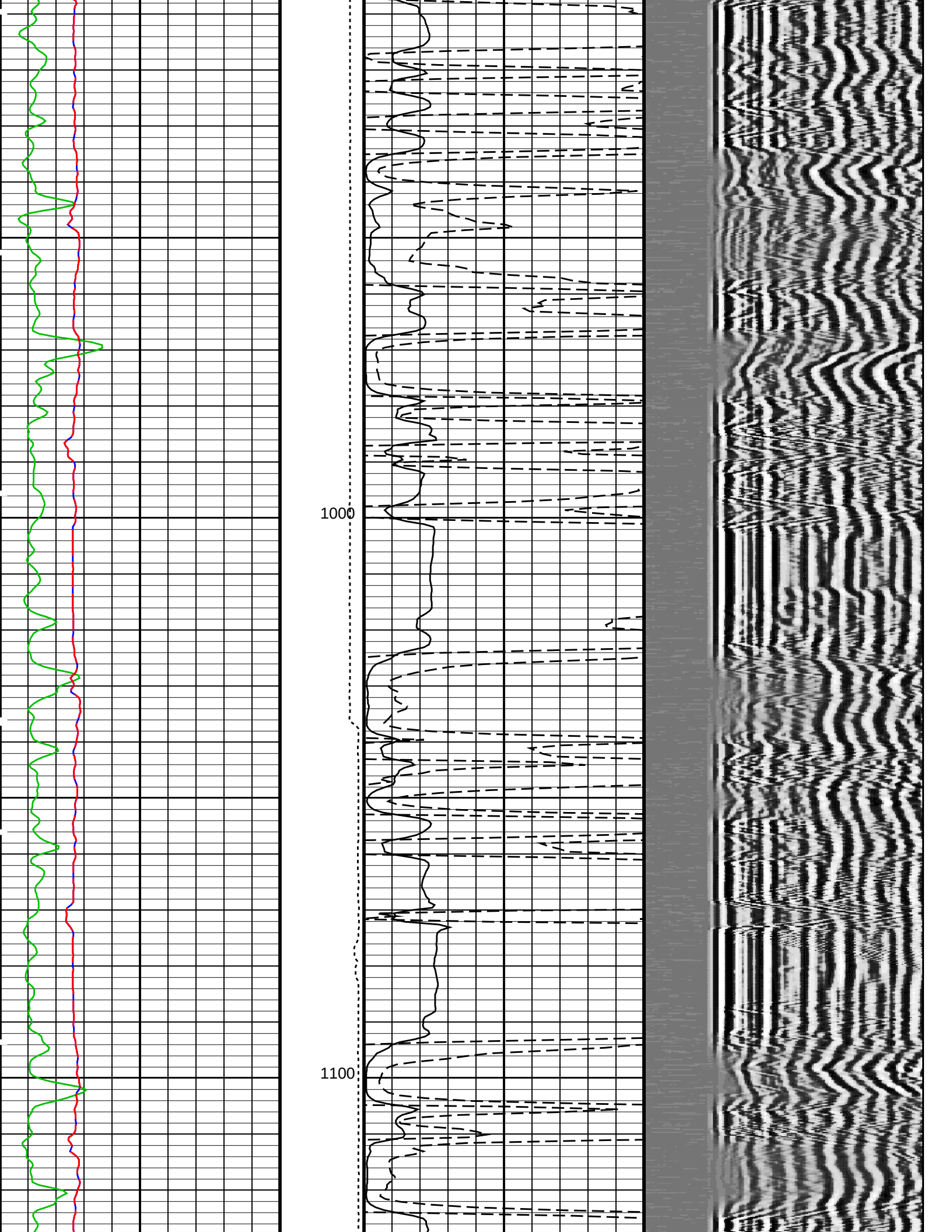
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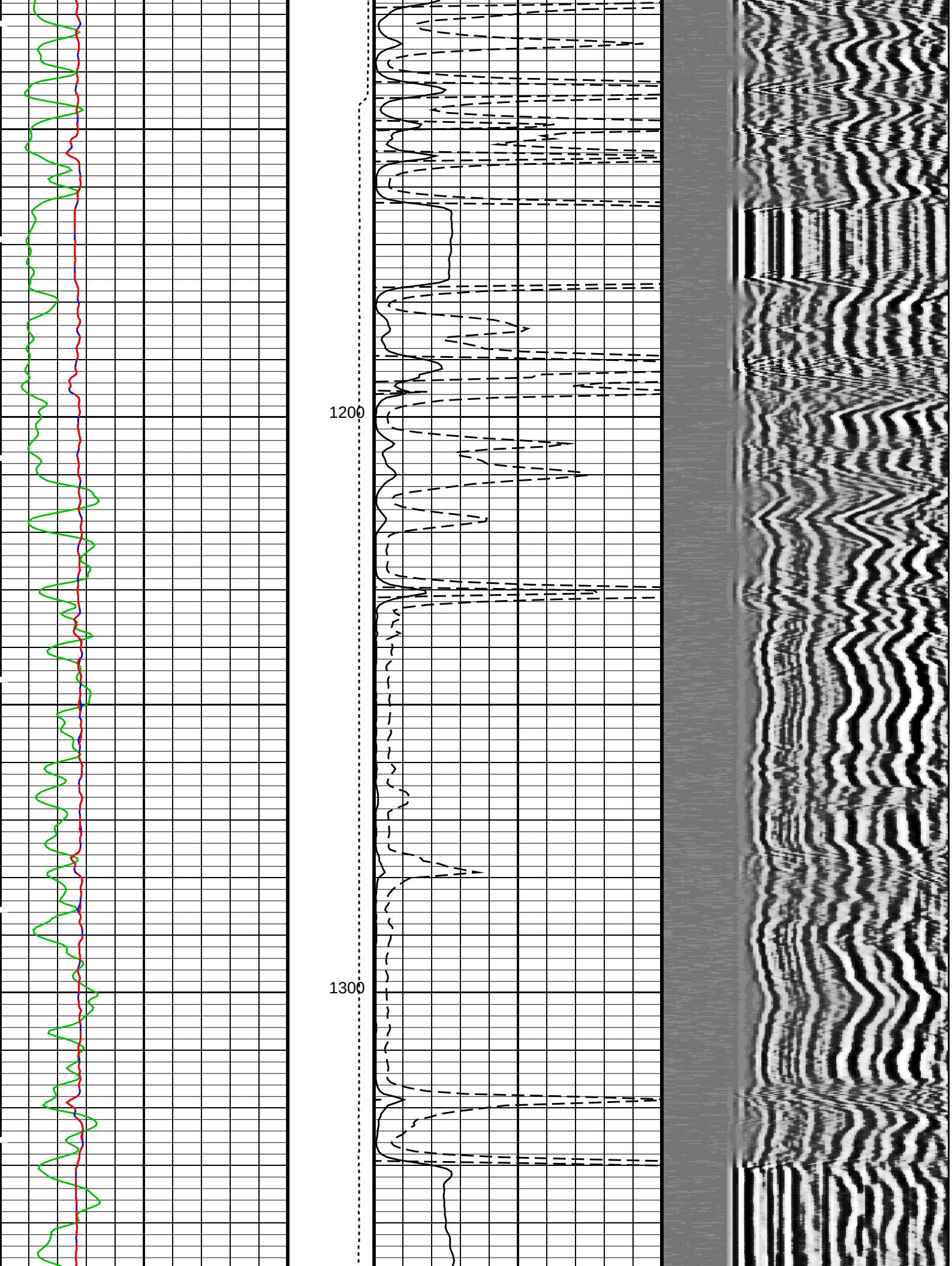
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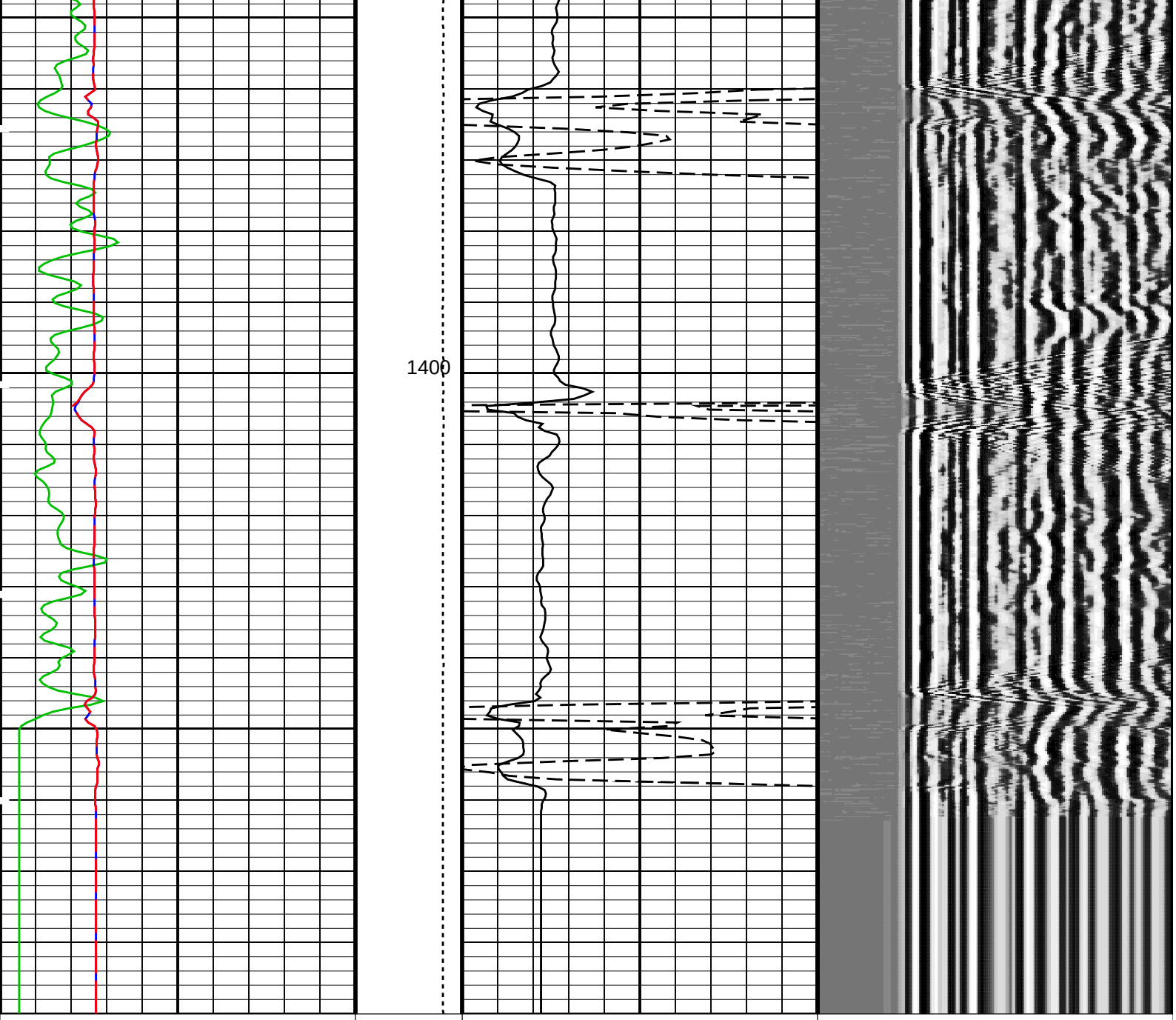


PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 17−Oct−2011 18:12

OP System Version: 19C0−187

USIT−D	19C0−187	DSLT−H	19C0−187
EDTC−B	19C0−187		

Information for DSLT Sonde Status and Casing Features

Sonde Type	Not Recorded
Sonde Serial Number	Not Recorded (0)
Casing Size (CSIZ)	9.62500 IN
Casing Weight (CWEI)	36.0 LB/F
Expected CBL Amplitude in Free Pipe Section (CBRA)	52.0 MV
Minimum Sonic Amplitude (MSA : 100% Cement)	1.16796 MV
Minimum Sonic Amplitude (MSA : 80% Cement)	2.49542 MV
Date of Master Calibration	Not Recorded
CBL Correction Factor (Master Calibration)	2.50000
Depth of Before Calibration (BDEP)	Not Recorded
CBL Adjustment Factor (CBAF : Before Calibration)	1.0

Parameters

DLIS Name	Description	Value	
	USIT−D: Ultrasonic Imaging − D		
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	−0.076	IN
	T^3 Processing Length for FPM	26.648	US
	DSLT−H: Digitizing Sonic Logging Tool		
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	CBL_W	
AMSG	Auxiliary Minimum Sliding Gate	120	US
CBAF	CBL Adjustment Factor	1	
CBLG	CBL Gate Width	45	US
CTHI	Casing Thickness	0.363554	IN
DDEL	Digitizing Delay	0	US
DRCS	DSLT DLIS Recording Size	120	
DSIN	Digitizing Sample Interval	10	
DTF	Delta−T Fluid	189	US/F
DTFS	DSLC Telemetry Frame Size	236	
DWCO	Digitizing Word Count	120	
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.825949	
GAI	Manual Gain	40	
MAHTR	Manual High Threshold Reference	40	
MATT	Maximum Attenuation	11.7722	DB/F
MGAI	Maximum Gain	1000	
MNHTR	Minimum High Threshold Reference	30	
NMSG	Near Minimum Sliding Gate	328	US
NMXG	Near Maximum Sliding Gate	750	US
RATE	Firing Rate	R7	
SFAF	Sonic Formation Attenuation Factor	0	DB/F
SGCL	Sliding Gate Closing Delta−T	250	US/F
SGDT	Sliding Gate Delta−T	57	US/F
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
VDLG	VDL Manual Gain	5	
WAGC	Waveform AGC Allow/Disallow	OFF	
WMOD	Waveform Firing Mode	FULL	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
	System and Miscellaneous		
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_SONIC_107LUP	FN:142	PRODUCER	17−Oct−2011 17:18	1490.0 FT	32.6 FT

Output DLIS Files

DEFAULT	USI_SONIC_114PUP	FN:152	PRODUCER	17−Oct−2011 18:12

Input DLIS Files

DEFAULT	USI_SONIC_107LUP	FN:142	PRODUCER	17−Oct−2011 17:18	1490.0 FT	32.6 FT

Output DLIS Files

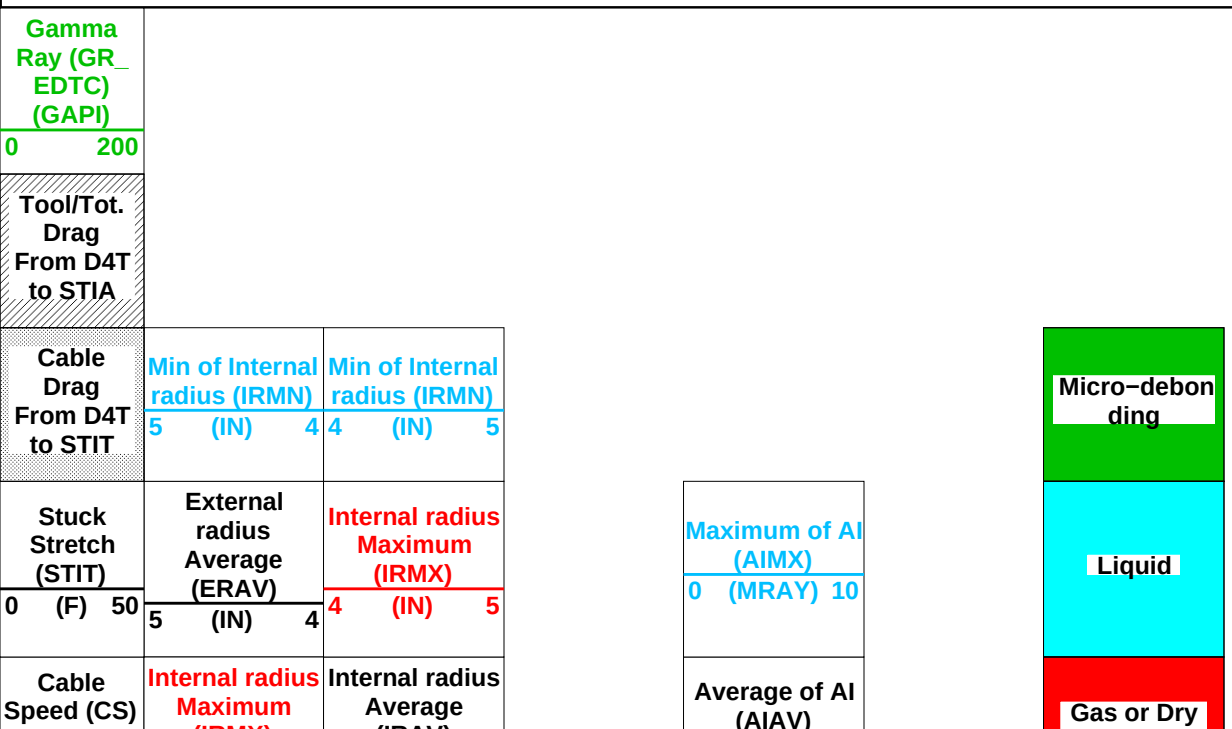
DEFAULT	USI_SONIC_114PUP	FN:152	PRODUCER	17−Oct−2011 18:12	1490.0 FT	33.0 FT

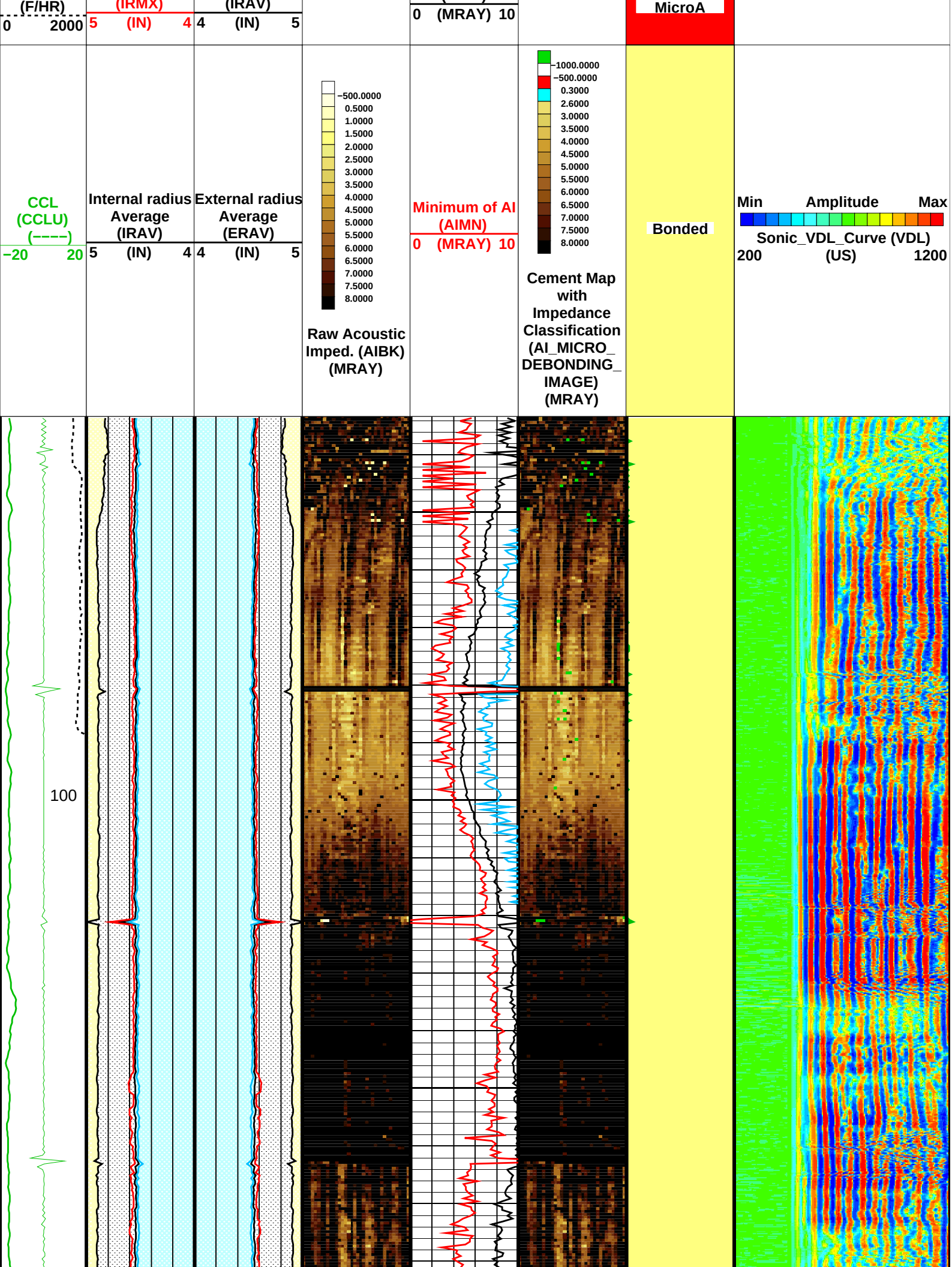
OP System Version: 19C0−187

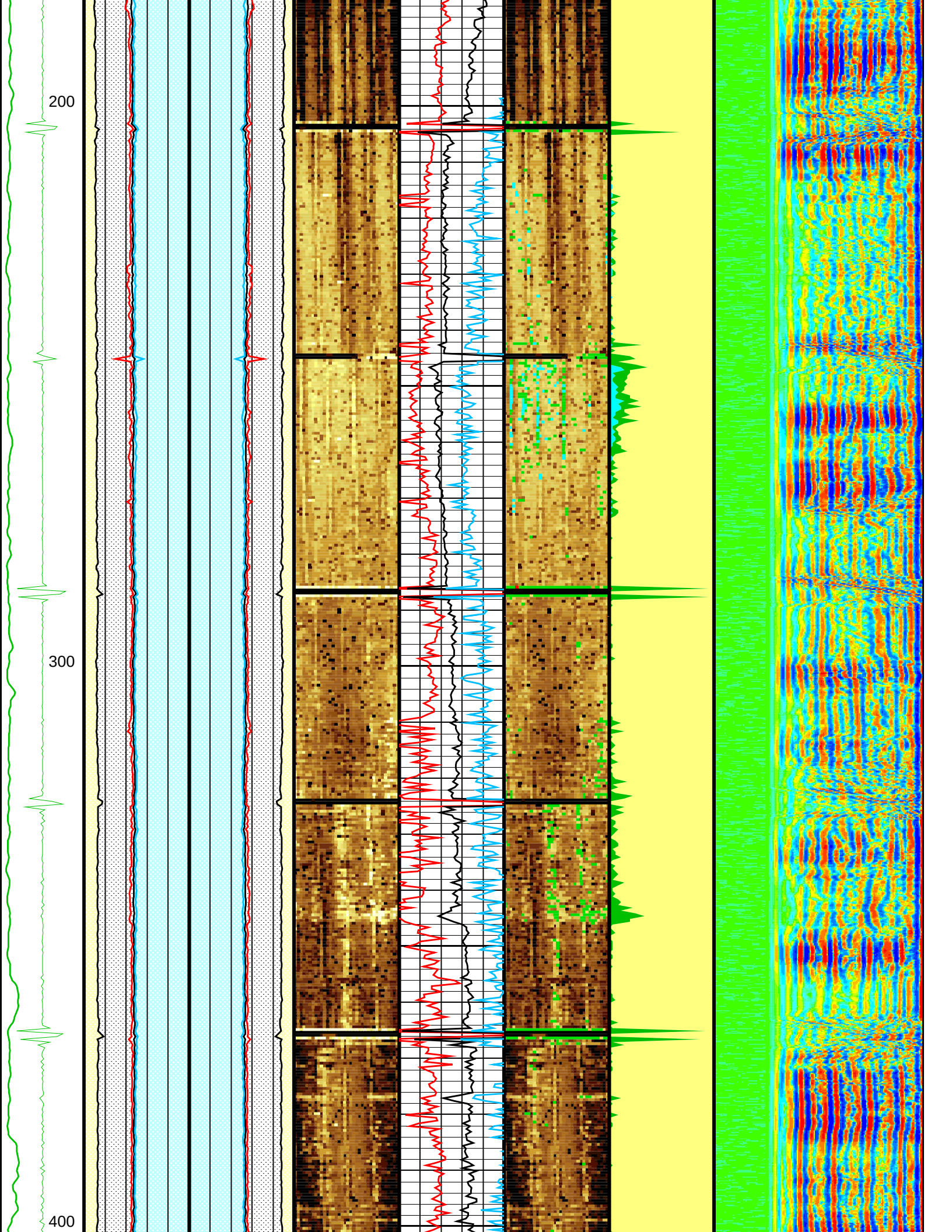
USIT−D	19C0−187	DSLT−H	19C0−187
EDTC−B	19C0−187		

Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
1500.00	202.07	1.70
1000.00	202.94	1.69
500.00	203.83	1.68




(F/HR)
0 2000
(IRMX)
5 (IN) 4
(IRAV)
4 (IN) 5
0 (MRAY) 10
MicroA
CCL
(CCLU)
(----)
-20 20
Internal radius
Average
(IRAV)
5 (IN) 4
External radius
Average
(ERAV)
4 (IN) 5
-500.0000
0.5000
1.0000
1.5000
2.0000
2.5000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000
7.5000
8.0000
Raw Acoustic
Imped. (AIBK)
(MRAY)
Minimum of AI
(AIMN)
0 (MRAY) 10
-1000.0000
-500.0000
0.3000
2.6000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000
7.5000
8.0000
Cement Map
with
Impedance
Classification
(AI_MICRO_
DEBONDING_
IMAGE)
(MRAY)
Bonded
Min
Amplitude
Max
Sonic_VDL_Curve (VDL)
200
(US)
1200
100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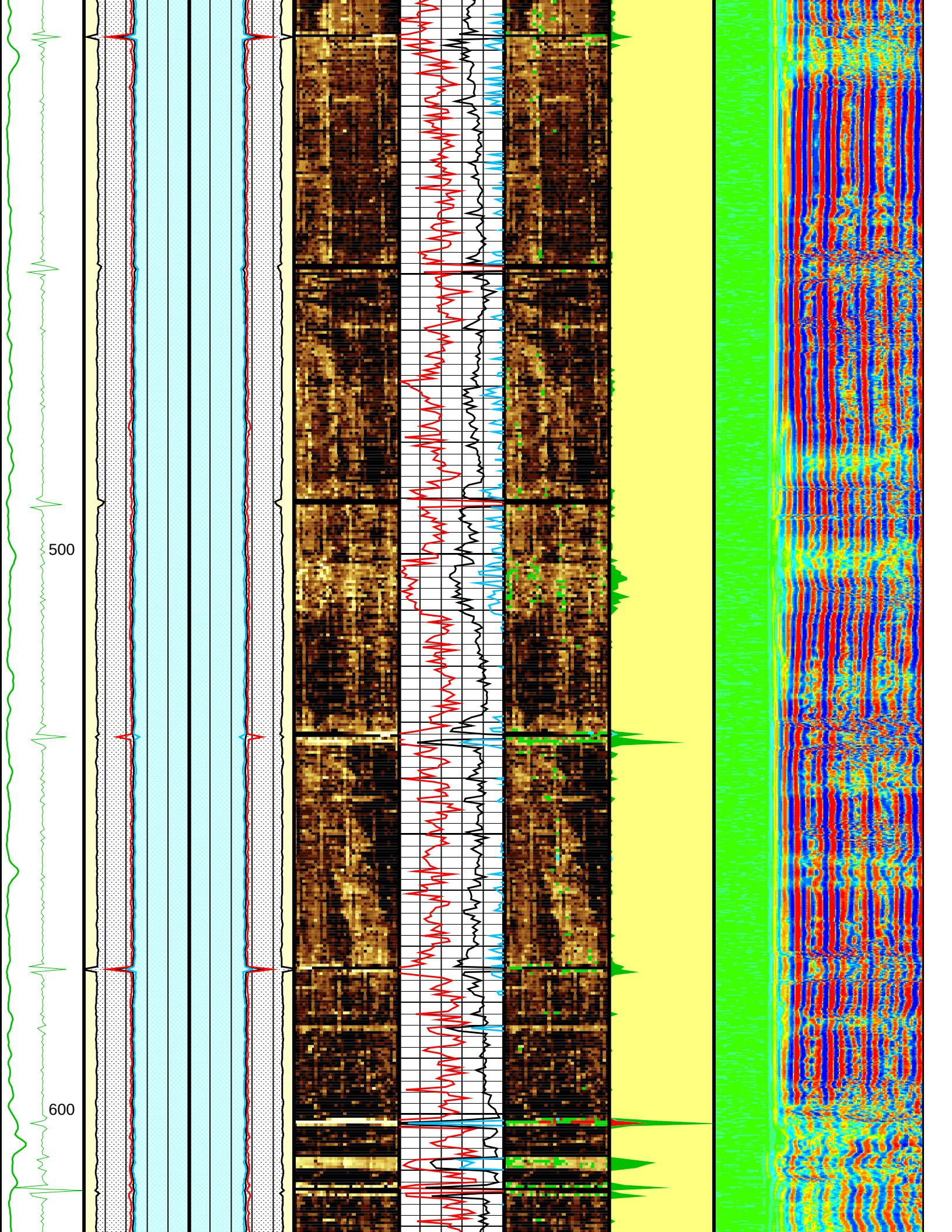
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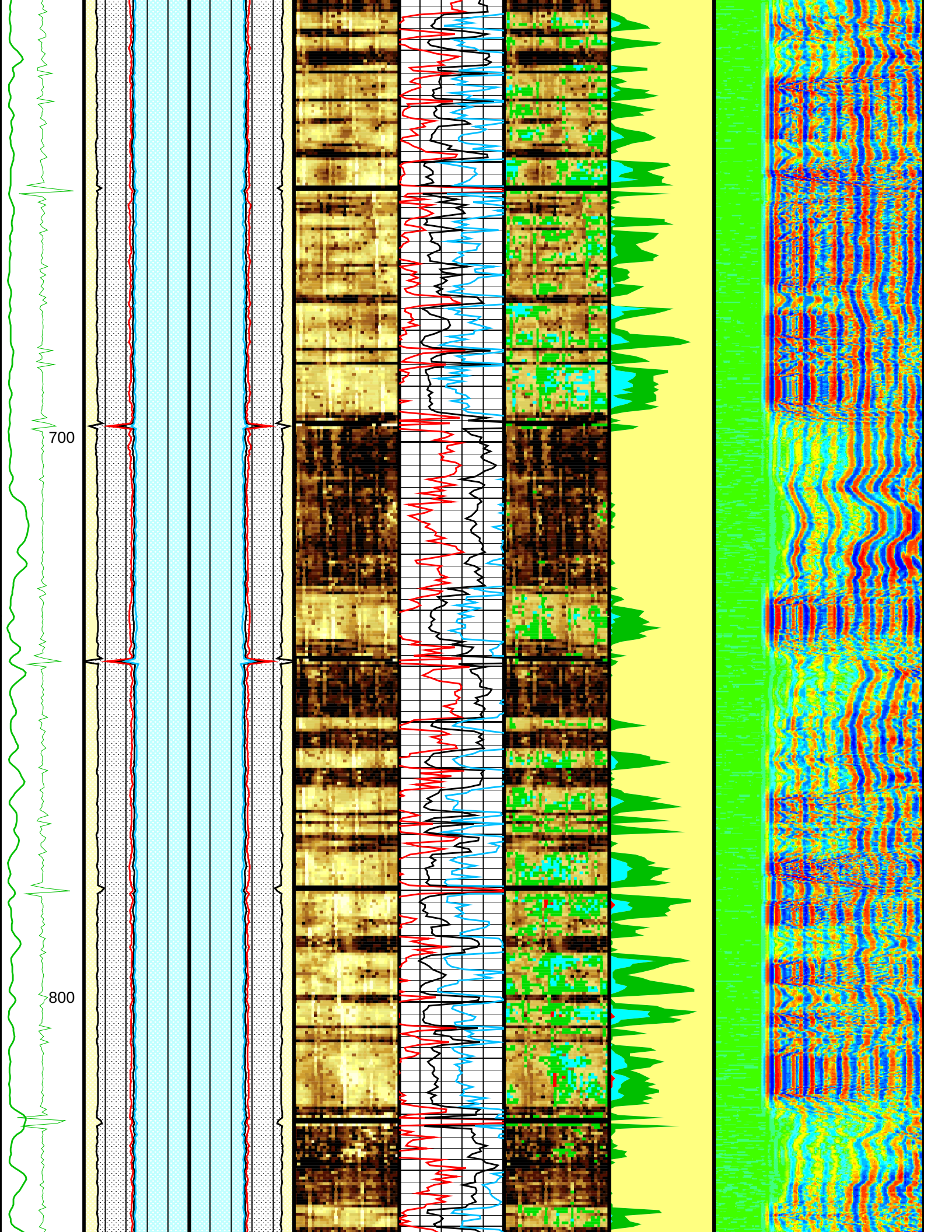
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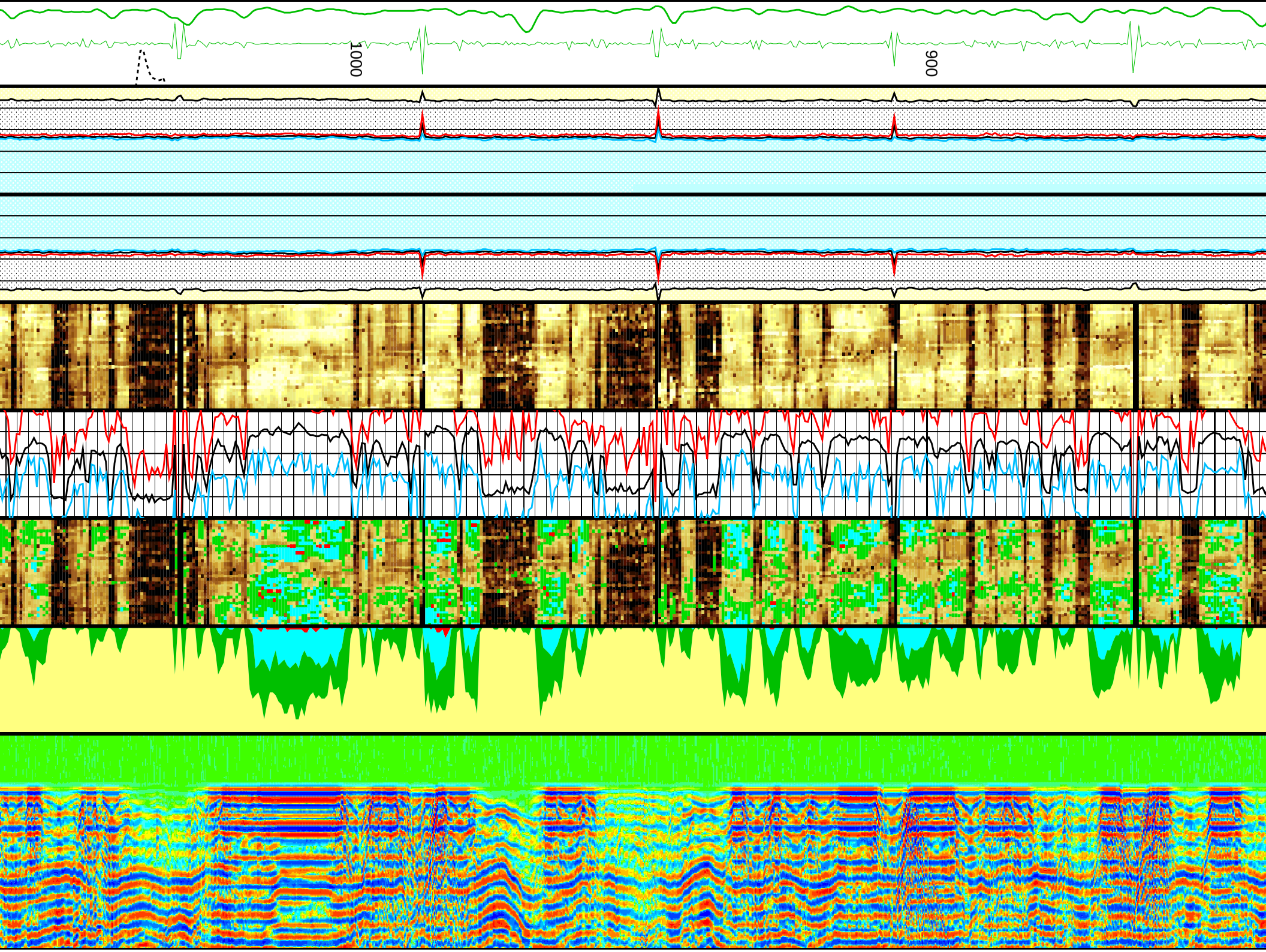
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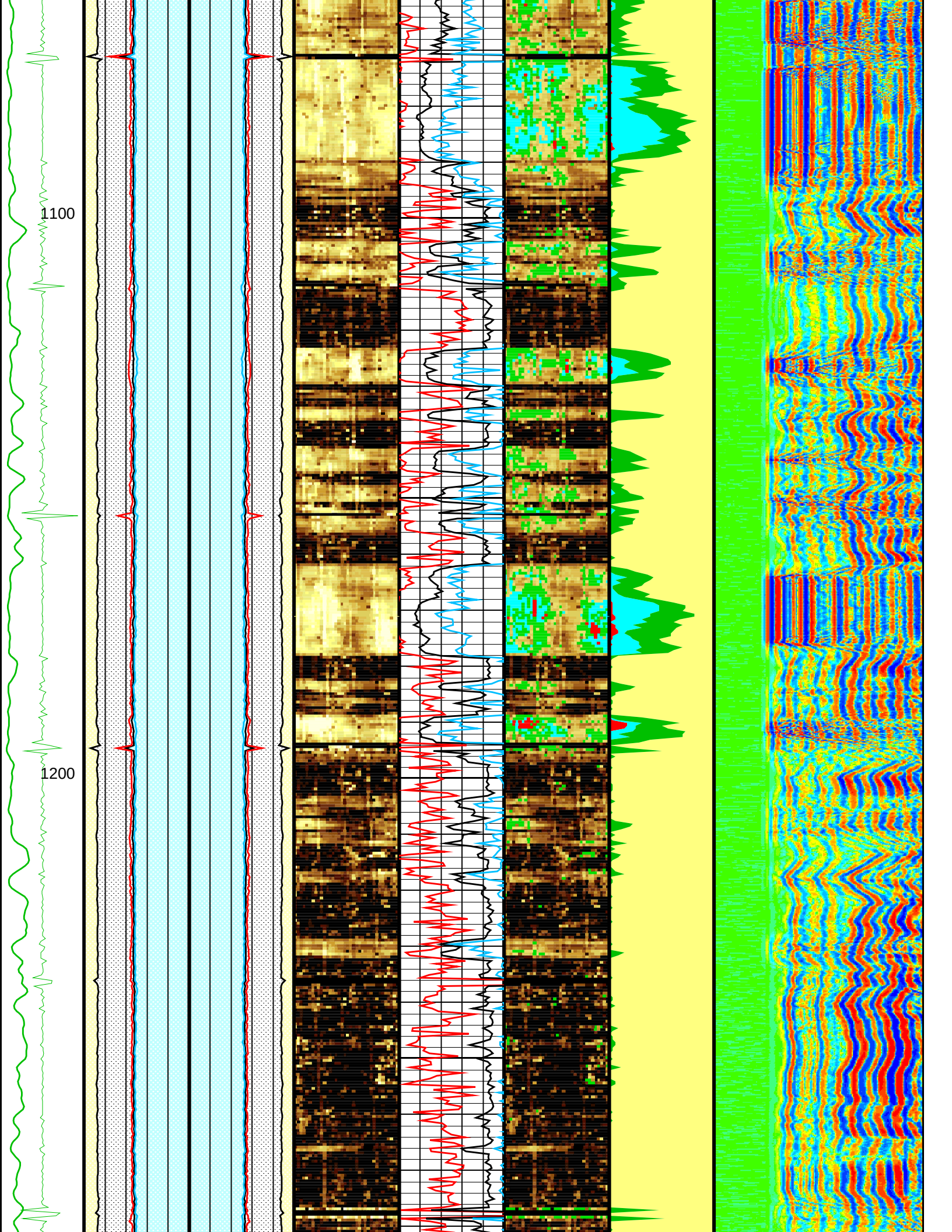
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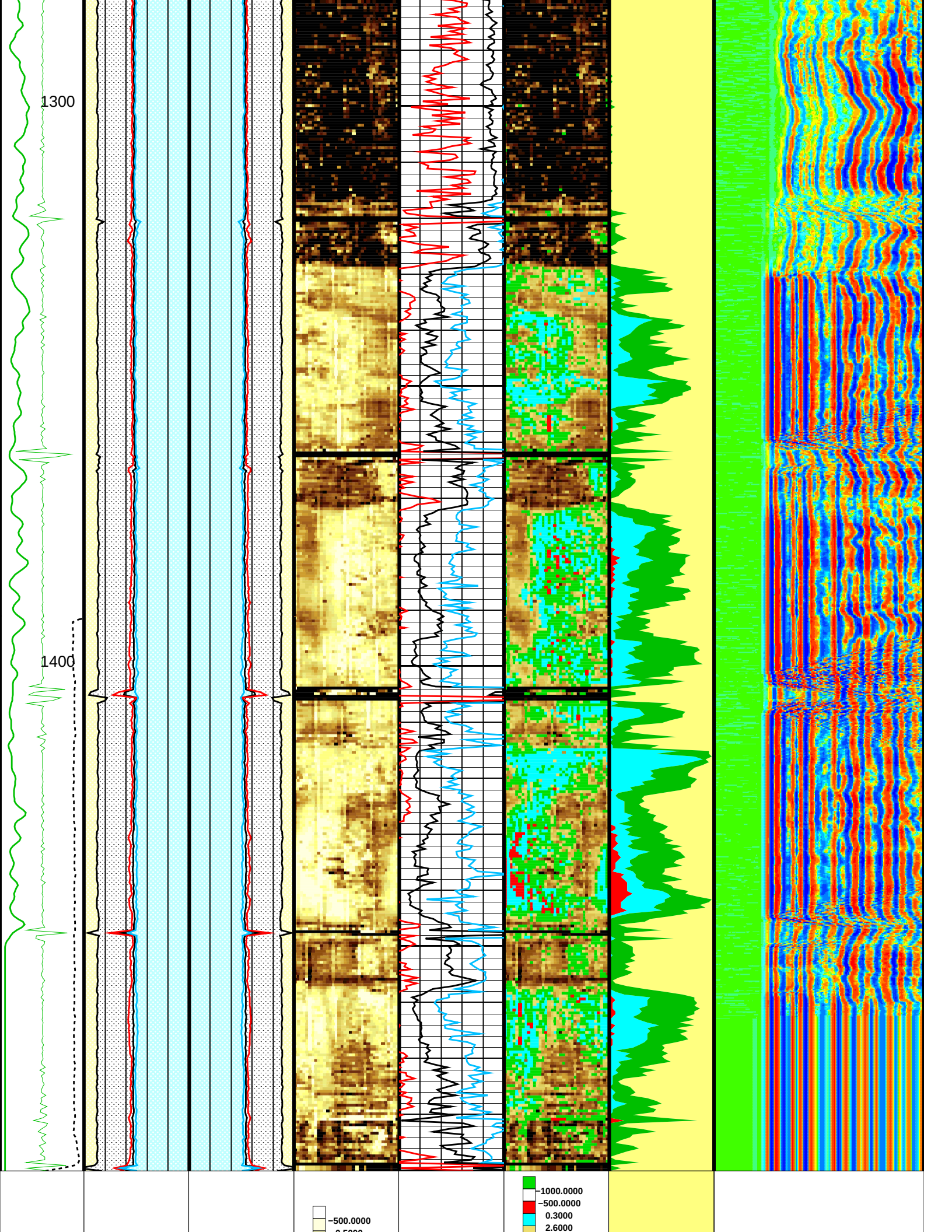
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−500.0000
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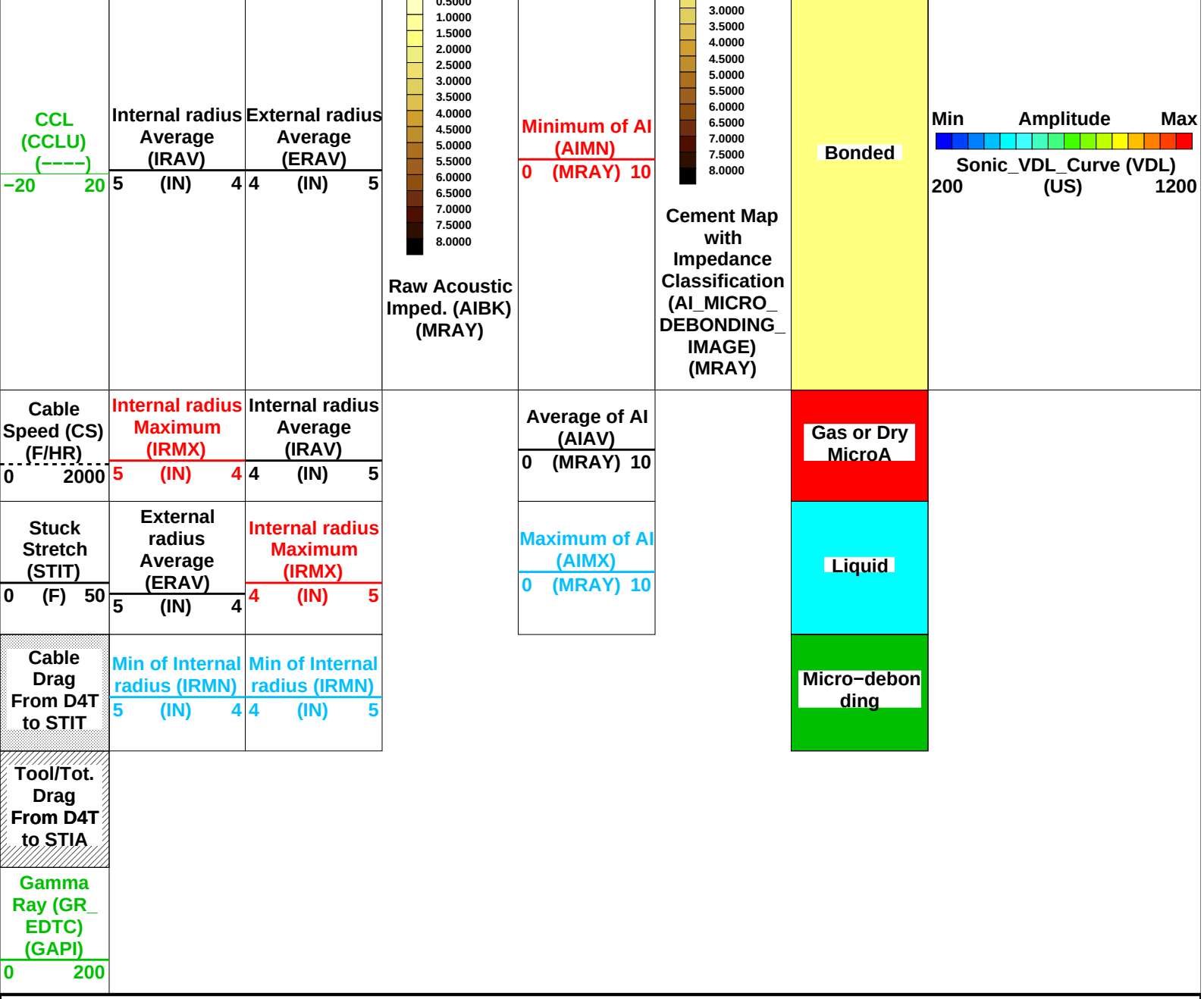
2.6000



Format: USI_VDLCement Vertical Scale: 5" per 100' Graphics File Created: 17-Oct-2011 18:12

OP System Version: 19C0-187

USIT-D	19C0-187	DSLT-H	19C0-187
EDTC-B	19C0-187		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
USIT-D: Ultrasonic Imaging - D			
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	-0.076	IN
	T^3 Processing Length for FPM	26.648	US

AGMN	Minimum Gain of Cartridge	−4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	9.625	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	8.921	IN
DFVL	Default Fluid Velocity	202	US/F
DOT	Diameter of Transducer Sensor	4.874	IN
EMXV	EMEX Voltage	100	V
FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.37795	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro−debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro−debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro−debonding	0.3	
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.352	IN
UMAO	USIT Measurement Angular Offset	−10	DEG
USTO	Ultrasonic Time Offset	−2	US
USUB	Ultrasonic Subassembly Identifier	Sub_9_58_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_60U_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.1081	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	−1	MRAY
ZMUD	Acoustic Impedance of Mud	1.48	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
DSLT−H: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	CBL_W	
DDEL	Digitizing Delay	0	US
DRCS	DSLT DLIS Recording Size	120	
DWCO	Digitizing Word Count	120	
VDLG	VDL Manual Gain	5	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	6885.00	FT
TDL	Total Depth − Logger	6870.00	FT
System and Miscellaneous			
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_SONIC_107LUP	FN:142	PRODUCER	17−Oct−2011 17:18	1490.0 FT	32.6 FT

Output DLIS Files

DEFAULT	USI_SONIC_114PUP	FN:152	PRODUCER	17−Oct−2011 18:12

Schlumberger

REPEAT PASS 5"=100’

MAXIS Field Log

Company: SANDIA TECHNOLOGIES, LLC

Well: NYSTA TANDEM LOT 1

Input DLIS Files

DEFAULT	USI_SONIC_106LUP	FN:140	PRODUCER	17−Oct−2011 17:02	1490.0 FT	1182.0 FT

Output DLIS Files

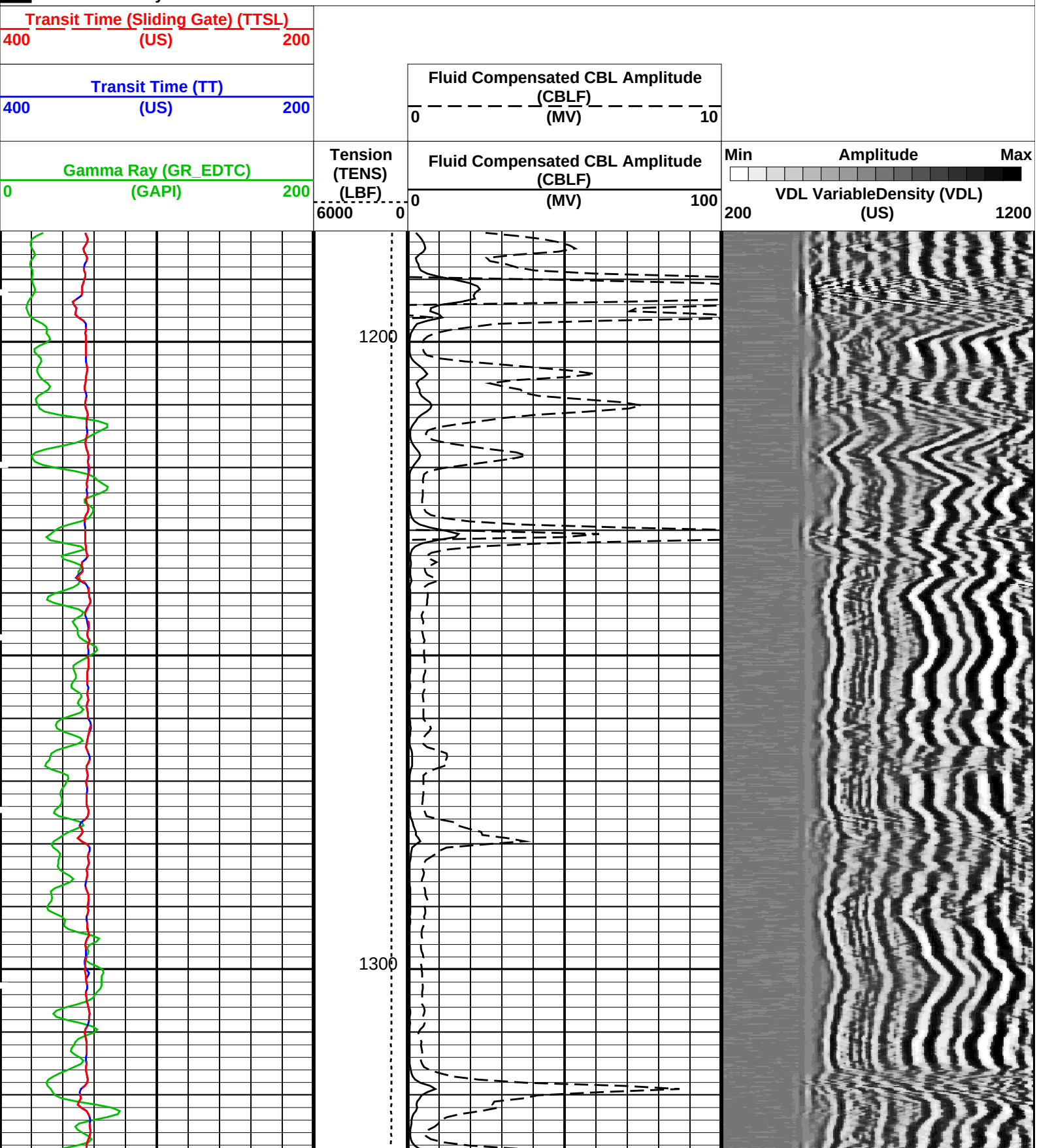
DEFAULT	USI_SONIC_113PUP	FN:151	PRODUCER	17−Oct−2011 18:11	1490.0 FT	1182.0 FT

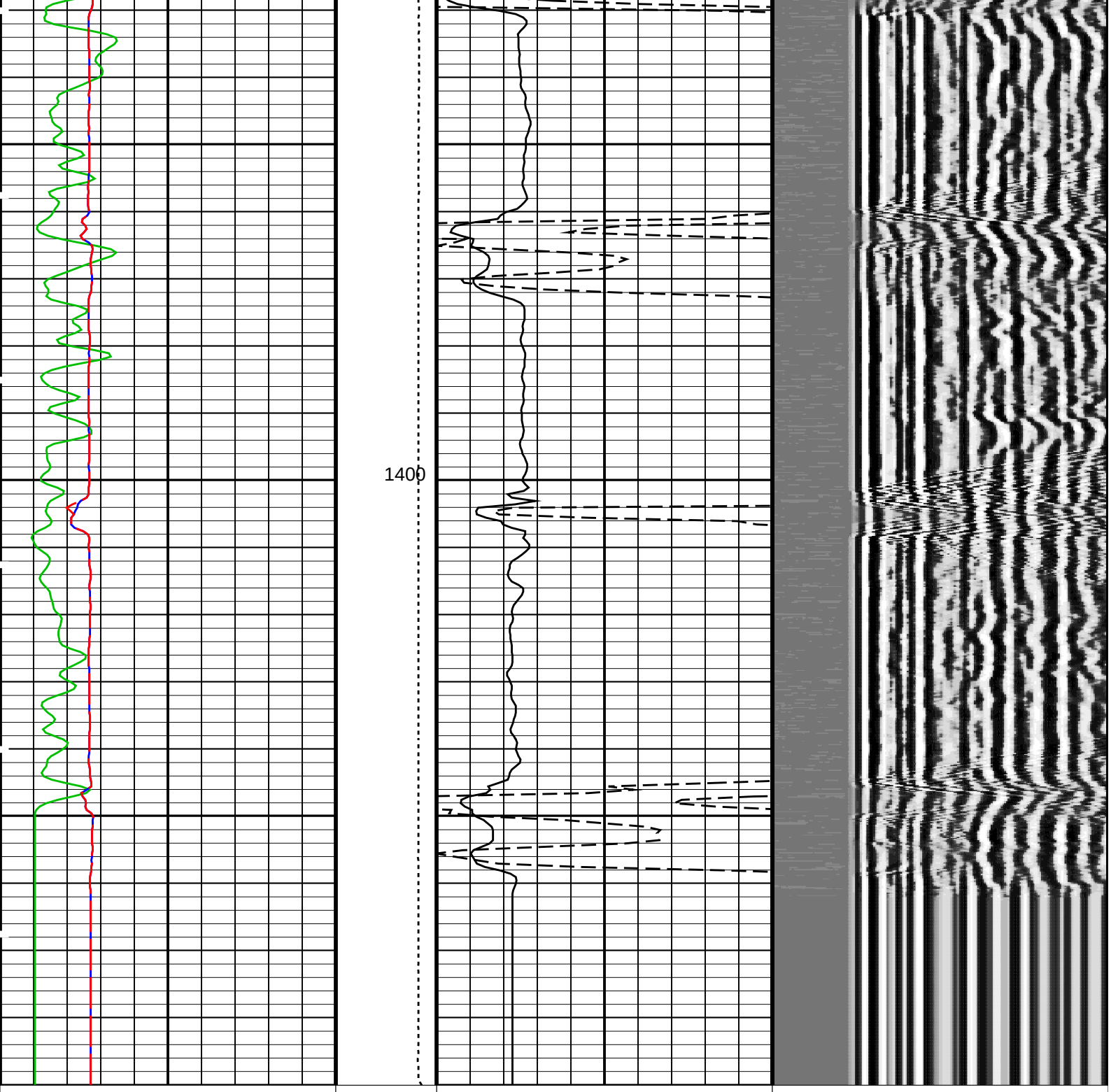
OP System Version: 19C0−187

USIT−D	19C0−187	DSLT−H	19C0−187
EDTC−B	19C0−187		

PIP SUMMARY

Time Mark Every 60 S





Gamma Ray (GR_EDTC)	Tension (TENS)	Fluid Compensated CBL Amplitude (CBLF)	Amplitude
0 (GAPI) 200	(LBF) 6000 0	0 (MV) 100	Min Max
Transit Time (TT)		Fluid Compensated CBL Amplitude (CBLF)	VDL VariableDensity (VDL)
400 (US) 200		0 (MV) 10	200 (US) 1200
Transit Time (Sliding Gate) (TTSL)			
400 (US) 200			

PIP SUMMARY

Time Mark Every 60 S

Format: CBL_VDL Vertical Scale: 5" per 100' Graphics File Created: 17−Oct−2011 18:11

OP System Version: 19C0−187

Information for DSLT Sonde Status and Casing Features

Sonde Type	Not Recorded
Sonde Serial Number	Not Recorded (0)
Casing Size (CSIZ)	9.62500 IN
Casing Weight (CWEI)	36.0 LB/F
Expected CBL Amplitude in Free Pipe Section (CBRA)	52.0 MV
Minimum Sonic Amplitude (MSA : 100% Cement)	1.16796 MV
Minimum Sonic Amplitude (MSA : 80% Cement)	2.49542 MV
Date of Master Calibration	Not Recorded
CBL Correction Factor (Master Calibration)	2.50000
Depth of Before Calibration (BDEP)	Not Recorded
CBL Adjustment Factor (CBAF : Before Calibration)	1.0

Parameters

DLIS Name	Description	Value	
	USIT−D: Ultrasonic Imaging − D		
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	−0.076	IN
	T^3 Processing Length for FPM	26.648	US
	DSLT−H: Digitizing Sonic Logging Tool		
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	CBL_W	
AMSG	Auxiliary Minimum Sliding Gate	120	US
CBAF	CBL Adjustment Factor	1	
CBLG	CBL Gate Width	45	US
CTHI	Casing Thickness	0.363554	IN
DDEL	Digitizing Delay	0	US
DRCS	DSLT DLIS Recording Size	120	
DSIN	Digitizing Sample Interval	10	
DTF	Delta−T Fluid	189	US/F
DTFS	DSLC Telemetry Frame Size	236	
DWCO	Digitizing Word Count	120	
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.825949	
GAI	Manual Gain	40	
MAHTR	Manual High Threshold Reference	40	
MATT	Maximum Attenuation	11.7722	DB/F
MGAI	Maximum Gain	1000	
MNHTR	Minimum High Threshold Reference	30	
NMSG	Near Minimum Sliding Gate	328	US
NMXG	Near Maximum Sliding Gate	750	US
RATE	Firing Rate	R7	
SFAF	Sonic Formation Attenuation Factor	0	DB/F
SGCL	Sliding Gate Closing Delta−T	250	US/F
SGDT	Sliding Gate Delta−T	57	US/F
SGW	Sliding Gate Width	80	US
SLEV	Signal Level for AGC	5000	
VDLG	VDL Manual Gain	5	
WAGC	Waveform AGC Allow/Disallow	OFF	
WMOD	Waveform Firing Mode	FULL	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
	System and Miscellaneous		
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_SONIC_106LUP	FN:140	PRODUCER	17−Oct−2011 17:02	1490.0 FT	1182.0 FT

Output DLIS Files

DEFAULT	USI_SONIC_113PUP	FN:151	PRODUCER	17−Oct−2011 18:11

Company: SANDIA TECHNOLOGIES, LLC — Well: NYSTA TANDEM LOT 1

Input DLIS Files

DEFAULT	USI_SONIC_106LUP	FN:140	PRODUCER	17−Oct−2011 17:02	1490.0 FT	1182.0 FT

Output DLIS Files

DEFAULT	USI_SONIC_113PUP	FN:151	PRODUCER	17−Oct−2011 18:11	1490.0 FT	1182.0 FT

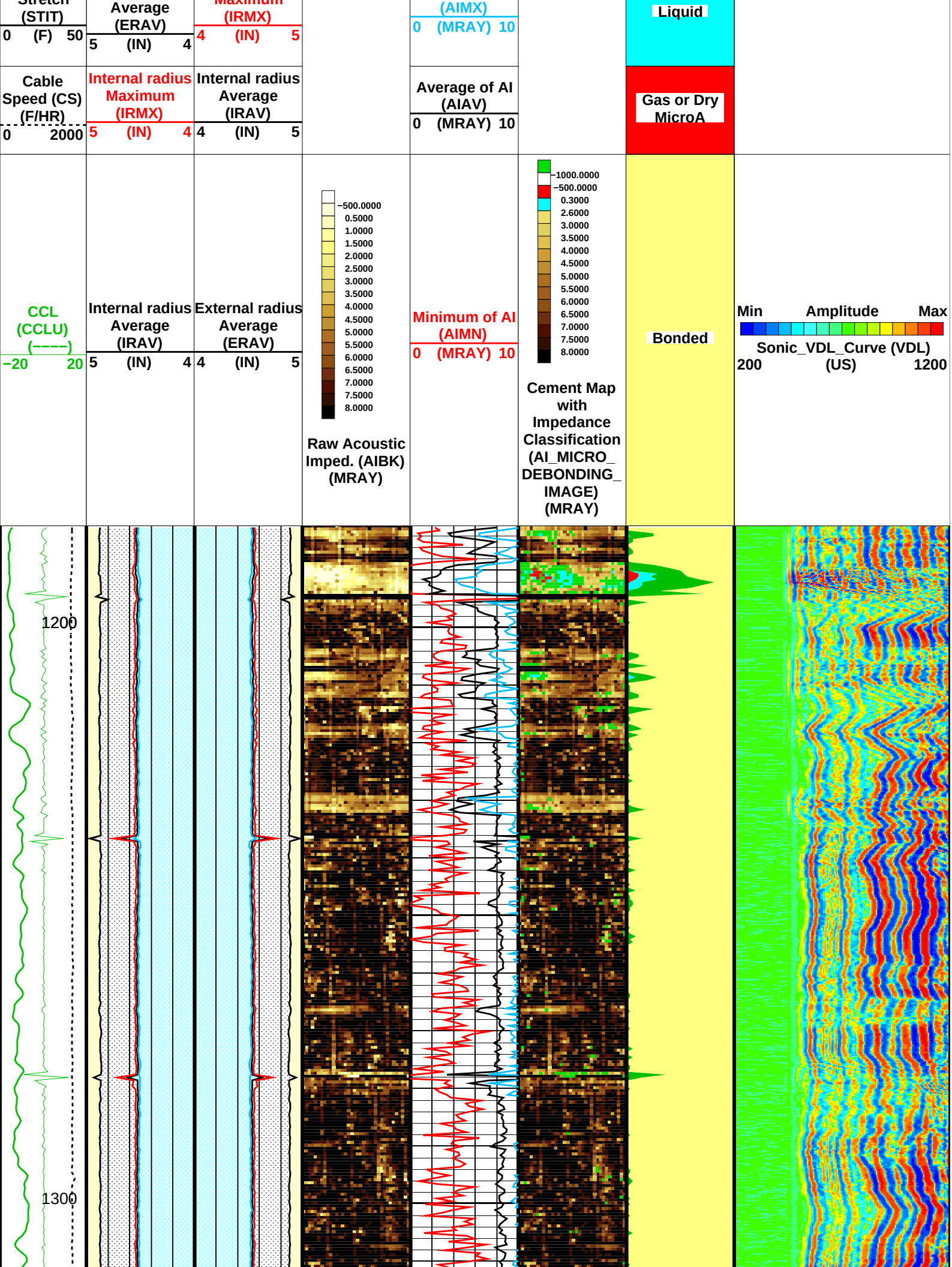
OP System Version: 19C0−187

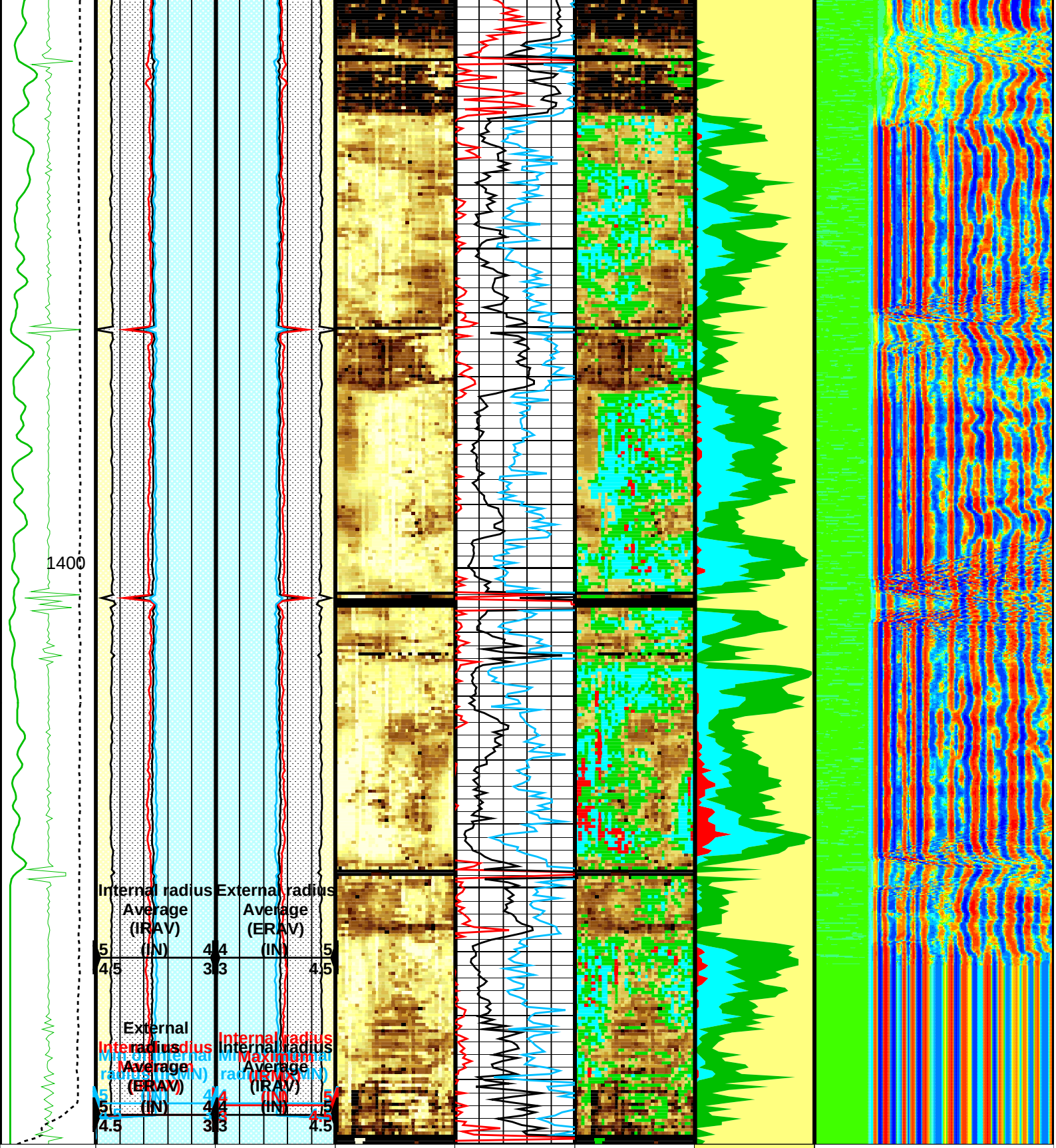
USIT−D	19C0−187	DSLT−H	19C0−187
EDTC−B	19C0−187		

Zoning of Mud Parameters

Depth	Fluid Velocity (DFVL)	Acoustic Impedance (ZMUD)
1500.00	202.07	1.70
1000.00	202.94	1.69
500.00	203.83	1.68

Gamma Ray (GR_EDTC) (GAPI) 0 200				
Tool/Tot. Drag From D4T to STIA				
Cable Drag From D4T to STIT	Min of Internal radius (IRMN) 5 (IN) 4	Min of Internal radius (IRMN) 4 (IN) 5		Micro−debonding
Stuck Stretch	External radius	Internal radius Maximum	Maximum of AI	


Stretch (STIT)
0 (F) 50
Average (ERAV)
5 (IN) 4
Maximum (IRMX)
4 (IN) 5
(AIMX)
0 (MRAY) 10
Liquid
Cable Speed (CS) (F/HR)
0 2000
Internal radius Maximum (IRMX)
5 (IN) 4
Internal radius Average (IRAV)
4 (IN) 5
Average of AI (AIAV)
0 (MRAY) 10
Gas or Dry MicroA
CCL (CCLU) (----)
-20 20
Internal radius Average (IRAV)
5 (IN) 4
External radius Average (ERAV)
4 (IN) 5
-500.0000
0.5000
1.0000
1.5000
2.0000
2.5000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000
7.5000
8.0000
Raw Acoustic Imped. (AIBK) (MRAY)
Minimum of AI (AIMN)
0 (MRAY) 10
-1000.0000
-500.0000
0.3000
2.6000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000
7.5000
8.0000
Cement Map with Impedance Classification (AI_MICRO_DEBONDING_IMAGE) (MRAY)
Bonded
Min Amplitude Max
Sonic_VDL_Curve (VDL)
200 (US) 1200
1200
1300



CCL (CCLU) (----)
−20 20

Internal radius Average (IRAV)
4.5 (IN) 3

External radius Average (ERAV)
3 (IN) 4.5

−500.0000
0.5000
1.0000
1.5000
2.0000
2.5000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000

Minimum of AI (AIMN)
0 (MRAY) 10

−1000.0000
−500.0000
0.3000
2.6000
3.0000
3.5000
4.0000
4.5000
5.0000
5.5000
6.0000
6.5000
7.0000
7.5000
8.0000

Cement Map

Bonded

Min Amplitude Max

Sonic_VDL_Curve (VDL)
200 (US) 1200

			7.5000 8.0000 Raw Acoustic Imped. (AIBK) (MRAY)		Cement Map with Impedance Classification (AI_MICRO_DEBONDING_IMAGE) (MRAY)	
Cable Speed (CS) (F/HR) 0 2000	Internal radius Maximum (IRMX) 4.5 (IN) 3	Internal radius Average (IRAV) 3 (IN) 4.5		Average of AI (AIAV) 0 (MRAY) 10		Gas or Dry MicroA
Stuck Stretch (STIT) 0 (F) 50	External radius Average (ERAV) 4.5 (IN) 3	Internal radius Maximum (IRMX) 3 (IN) 4.5		Maximum of AI (AIMX) 0 (MRAY) 10		Liquid
Cable Drag From D4T to STIT	Min of Internal radius (IRMN) 4.5 (IN) 3	Min of Internal radius (IRMN) 3 (IN) 4.5				Micro−debonding
Tool/Tot. Drag From D4T to STIA						
Gamma Ray (GR_EDTC) (GAPI) 0 200						

Format: USI_VDLCement Vertical Scale: 5" per 100' Graphics File Created: 17−Oct−2011 18:11

OP System Version: 19C0−187

USIT−D	19C0−187	DSLT−H	19C0−187
EDTC−B	19C0−187		

All USI Images are outside views

USI : LOW Frequency Compression Mode Used For Logging.

Recommended casing thickness range for optimum cement impedance measurement : 0.27 to 0.6 IN.

Parameters

DLIS Name	Description	Value	
	USIT−D: Ultrasonic Imaging − D		
	Corrosion range maximum	0.076	IN
	Corrosion range minimum	−0.076	IN
	T^3 Processing Length for FPM	26.648	US
AGMN	Minimum Gain of Cartridge	−4	DB
AGMX	Maximum Gain of Cartridge	20	DB
BERJ	Bad Echo Rejection	ON	
CDIA	Casing Outer Diameter	9.625	IN
CSDE	Casing Density	486.94	LBCF
CSID	Casing Inner Diameter	8.921	IN
DFVL	Default Fluid Velocity	202	US/F
DOT	Diameter of Transducer Sensor	4.874	IN
EMXV	EMEX Voltage	100	V
FDII	FPM Data Interpolation Interval	0	FT
IMAR	Image Rotation	OFF	
MW	Mud Weight	9.4	LB/G

MW	Mud Weight	9.4	LB/G
RCOD	Reference Calibrator Outer Diameter	7	IN
RCSO	Reference Calibrator Standoff	1.37795	IN
RCTH	Reference Calibrator Thickness	0.2952	IN
SDNV	Number of Vertical Samples used for Micro−debonding Computation	5	
SDTHOR	Acoustic Impedance STD Horizontal Threshold for Micro−debonding	0.5	
SDTVER	Acoustic Impedance STD Vertical Threshold for Micro−debonding	0.3	
TCUB	T^3 Processing Level	Vax_Loop	
THDH	Maximum Search Thickness (percentage of nominal)	130	
THDL	Minimum Search Thickness (percentage of nominal)	70	
THDP	Thickness Detection Policy	Fundamental	
THNO	Nominal Thickness of Casing	0.352	IN
UMAO	USIT Measurement Angular Offset	−10	DEG
USTO	Ultrasonic Time Offset	−2	US
USUB	Ultrasonic Subassembly Identifier	Sub_9_58_inch	
UWKM	Ultrasonic Working Mode	10DEG_6IN_60U_LF	
VCAS	Ultrasonic Transversal Velocity in Casing	51.4	US/F
WLEN	T^3 Processing Length	21.1081	US
ZCAS	Acoustic Impedance of Casing	46.25	MRAY
ZINI	Initial Estimate of Cement Impedance	−1	MRAY
ZMUD	Acoustic Impedance of Mud	1.48	MRAY
ZTCM	Acoustic Impedance Threshold for Cement	2.6	MRAY
ZTGS	Acoustic Impedance Threshold for Gas	0.3	MRAY
DSLT−H: Digitizing Sonic Logging Tool			
	Telemetry Mode	DSLC_FTB	
	DSLT Firing Mode	CBL_W	
DDEL	Digitizing Delay	0	US
DRCS	DSLT DLIS Recording Size	120	
DWCO	Digitizing Word Count	120	
VDLG	VDL Manual Gain	5	
STI: Stuck Tool Indicator			
LBFR	Trigger for MAXIS First Reading Label	STI	
STKT	STI Stuck Threshold	2.5	FT
TDD	Total Depth − Driller	6885.00	FT
TDL	Total Depth − Logger	6870.00	FT
System and Miscellaneous			
CWEI	Casing Weight	36.00	LB/F
DO	Depth Offset for Playback	0.0	FT
PP	Playback Processing	NORMAL	

Input DLIS Files

DEFAULT	USI_SONIC_106LUP	FN:140	PRODUCER	17−Oct−2011 17:02	1490.0 FT	1182.0 FT

Output DLIS Files

DEFAULT	USI_SONIC_113PUP	FN:151	PRODUCER	17−Oct−2011 18:11

Schlumberger

CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration							
Before: 15−Oct−2011 18:41							
EDTC Z−Axis Acceleration	32.19	N/A	31.96	N/A	N/A	N/A	F/S2
Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration							
Before: 14−Oct−2011 12:27							
Gamma Ray (Jig − Bkg)	145.5	N/A	145.5	N/A	N/A	13.22	GAPI
Gamma Ray (Calibrated)	160.0	N/A	160.0	N/A	N/A	15.00	GAPI

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:	
EDTC Gamma Ray Detector	EDTG − A/B
Enhanced DTS Cartridge	EDTC − B
Auxiliary Equipment:	
EDTC Housing	EDTH − B

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration F/S2	Value
Before		31.96
31.53 (Minimum)	32.19 (Nominal)	32.84 (Maximum)

Before: 15−Oct−2011 18:41

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		51.68	Before		145.5	Before		160.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	132.2 (Minimum)	145.5 (Nominal)	158.7 (Maximum)	145.0 (Minimum)	160.0 (Nominal)	175.0 (Maximum)

Before: 14−Oct−2011 12:27

Company: **SANDIA TECHNOLOGIES, LLC**

Schlumberger

Well: **NYSTA TANDEM LOT 1**
Field: **WILDCAT**
County: **ROCKLAND**
State: **NEW YORK**

ULTRA SONIC IMAGER
CEMENT EVALUATION
GAMMA RAY