

HALLIBURTON

RADIAL
CEMENT BOND
LOG

SCALE 1:240

Company HARTMAN OIL
Well HEYEN #1-2
Field GRAY NORTH FIELD
County STAFFORD State KANSAS

Company HARTMAN OIL
Well HEYEN #1-2
Field GRAY NORTH FIELD
County STAFFORD State KANSAS

API No.: 15-185-23886
Location: Serv #: 12
Other Services

Sec: 2 Twp: 24S Rge: 13W
N/A

Permanent Datum
Log Measured From KB , 11 Ft. above perm. datum
Drilling Measured From

Elevation 1897'
K.B. 1908'
D.F. N/A
G.L. 1897'

Elevation

Date @ Time Logged 15 JUL 2014 @ 10:30
Run No. ONE
Depth - Driller 4090'
Depth - Logger 4069'
Bottom - Logged Interval 4066.5'
Top - Log Interval 32'
Max. Recorded Temp. 130 F

Type Fluid in Hole
Density of Fluid
Fluid Level
Cement Top Est. Logged
Equipment / Location
Recorded by
Witnessed by

WATER
8.33
32'
1766'
10971670 /
KENT STRUBE
P.NICHOLS

CEMENTING DATA
Date / Time Cemented
Primary / Squeeze
Expected Compressive Strength
Cement Volume
Cement Type / Weight
Formulation
Mud Type / Mud Wgt.

Surface String
Protection String
Production String
Liner

psi@ hrs
psi@ hrs
psi@ hrs
psi@ hrs
psi@ hrs
psi@ hrs
psi@ hrs

Borehole Record
Run Number Bit From To
ONE
TWO

Size
8.625"
5.5"

Weight
N/A
17#

From To
SURFACE 354'
SURFACE 4090'

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

CORRELATED TO HES DENSITY LOG DATED 03 JUL 2014.

MARKER JOINT @ 3496'
DV TOOL @ 1874'

CREW: HUMISTON.
THANKYOU FOR USING HES.

Service Ticket No.	901506172	API No.	15185238860000	PGM Ver
The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client				
EQUIPMENT DATA				
RCBL		gamma		
Run No.	ONE	Run No.	ONE	Run No.
Serial No.	080640	Serial No.	060738	Serial No.
Model No.	PROBE	Model No.	PROBE	Model No.
Diameter	2.75'	Diameter	2.75"	Diameter
LOGGING DATA				
General Data				
Pass	Depths		Well Head	Speed
No	From	To	Pressure	Ft/Min
Logging Run Comments				

10.0	4069'	32'	N/A	N/A				
	GAMMA RAY		AMPLITUDE		MSG		TRAVEL TIME	
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
	0	120	0	20	200	1200	178	278
	120	240	0	100				
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

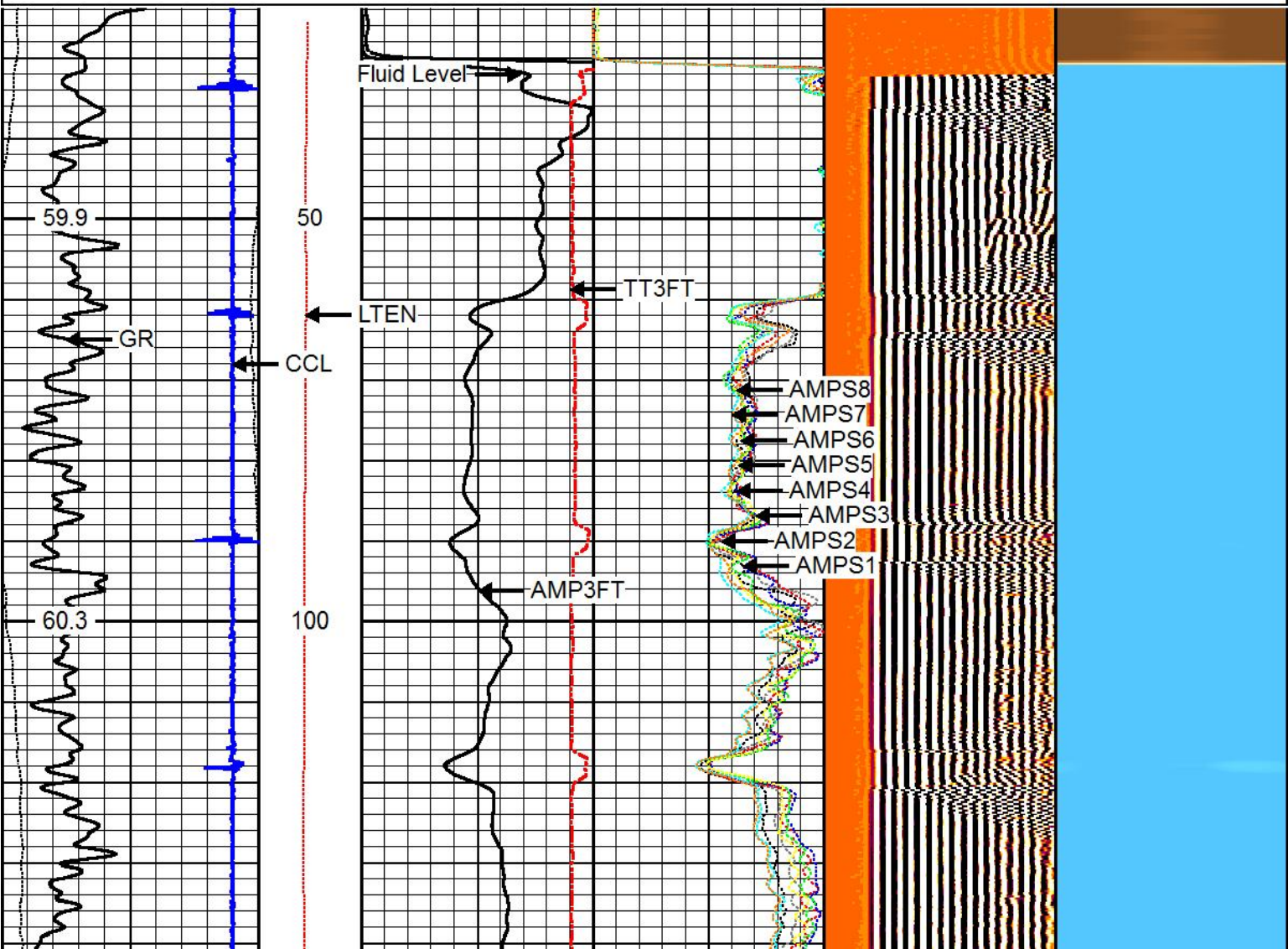
HALLIBURTON

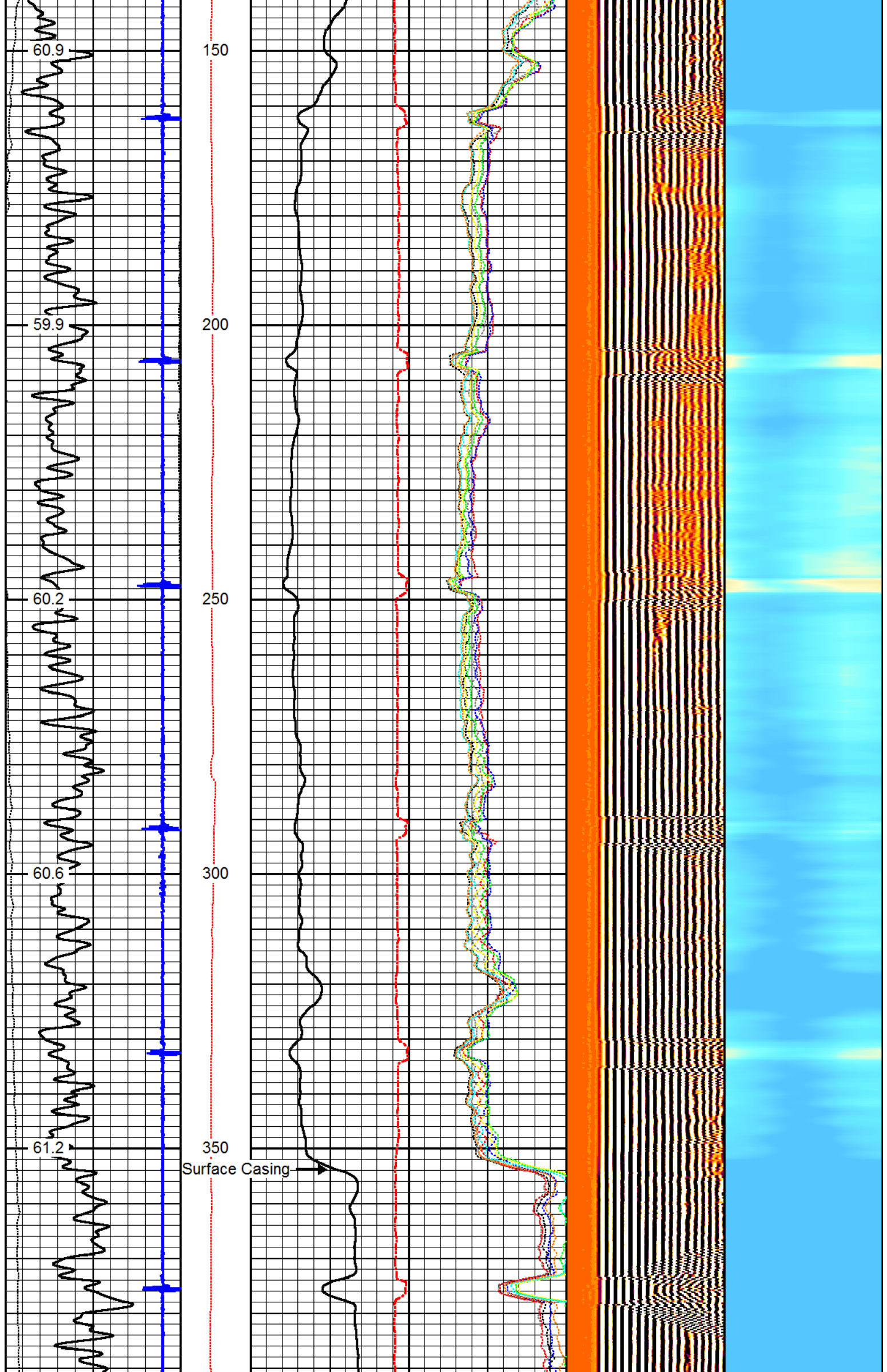
MAIN NLOG SECTION

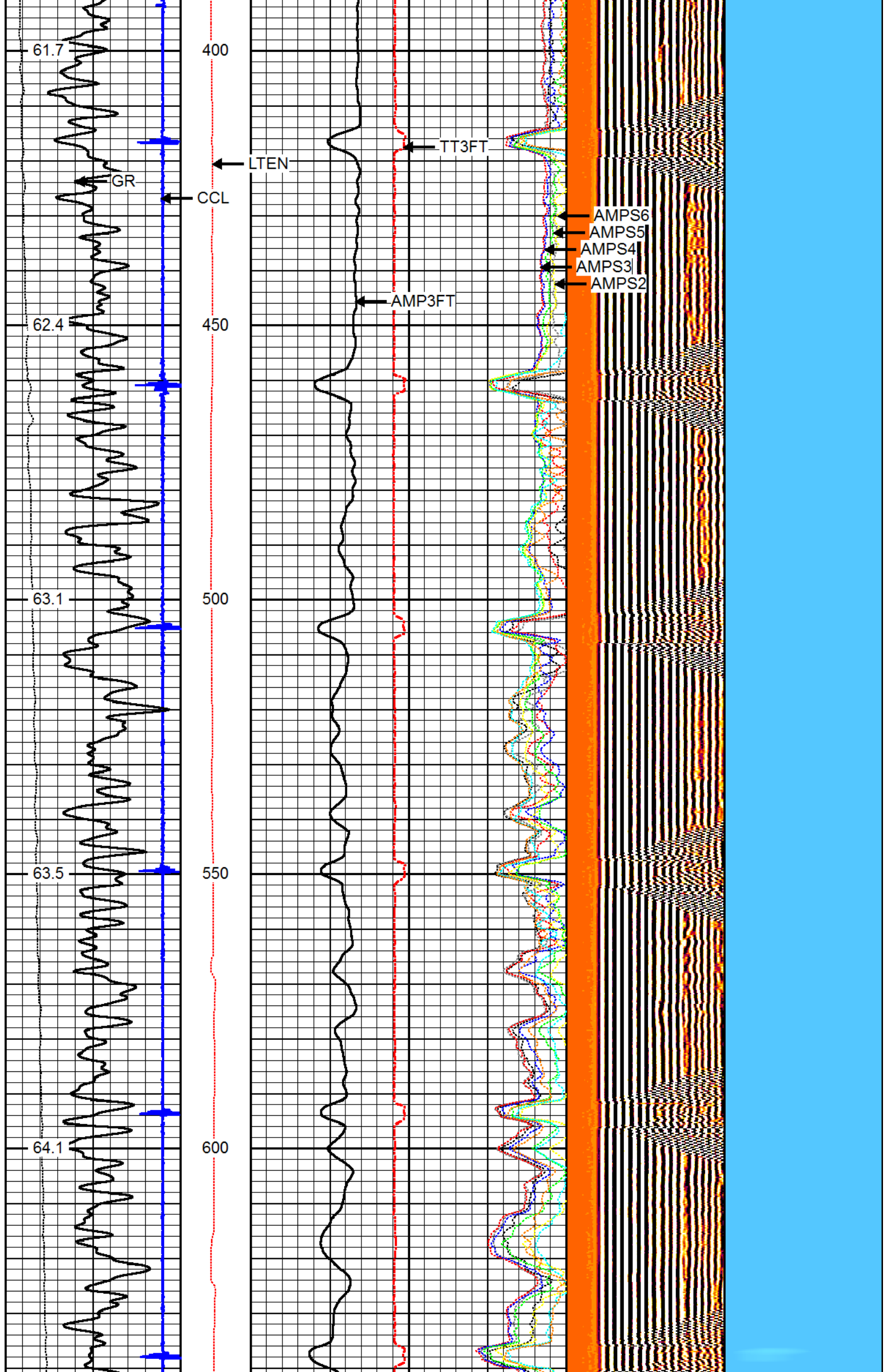
SCALE 1:240

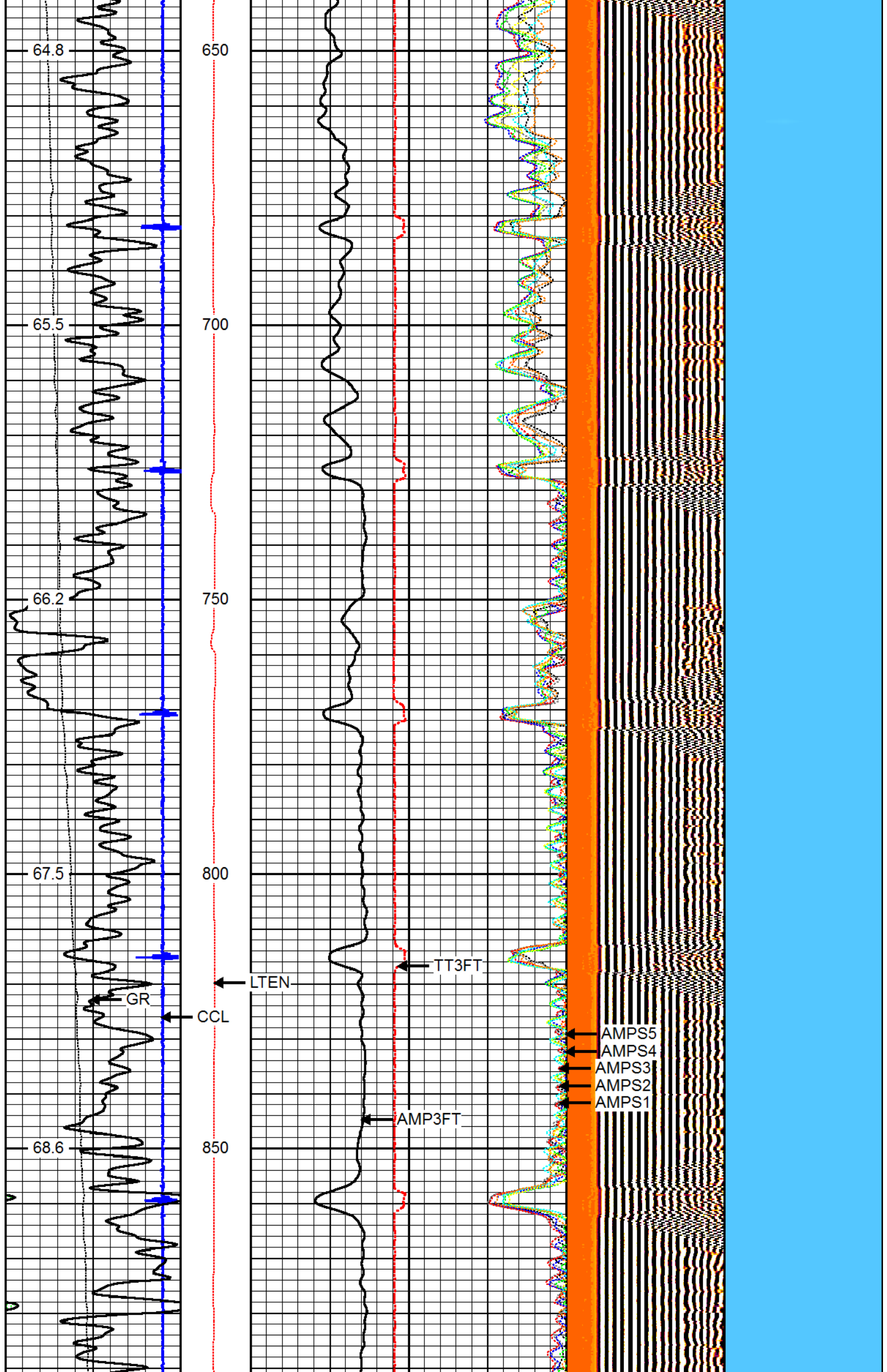
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Dataset Pathname	pass3
Presentation Format	rcbl_tem
Dataset Creation	Tue Jul 15 09:21:38 2014
Charted by	Depth in Feet scaled 1:240

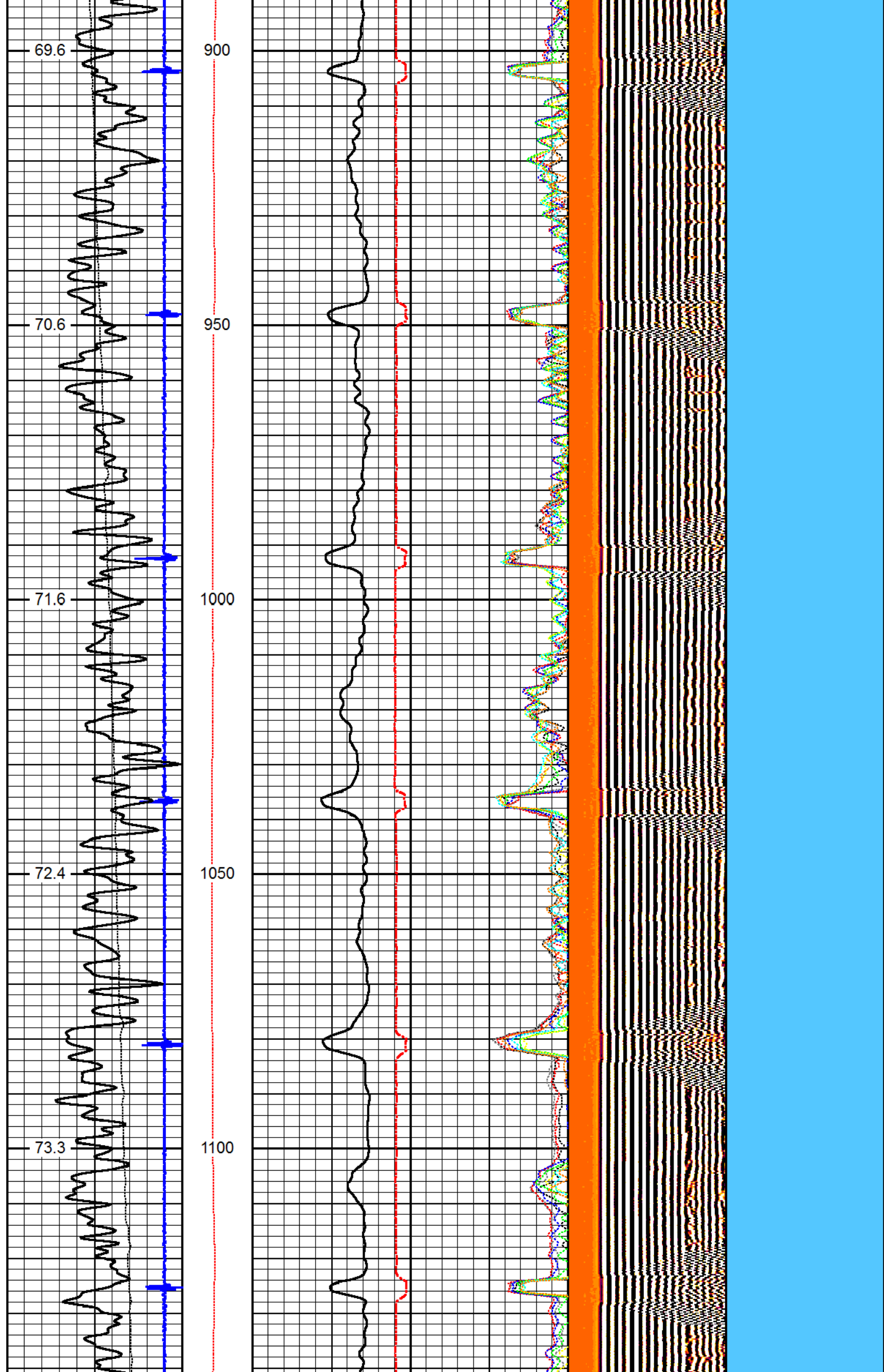
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	GAMMA RAY			0	AAMP (mV)	20	0	AMPS2	100						
0	(GAPI)	120		178	TT (usec)	278	0	AMPS3	100						
120	gr (GAPI)	240					0	AMPS4	100						
80	TEMP (degF)	100					0	AMPS5	100						
	TEMP						0	AMPS6	100						
	(degF)						0	AMPS7	100						
							0	AMPS8	100						

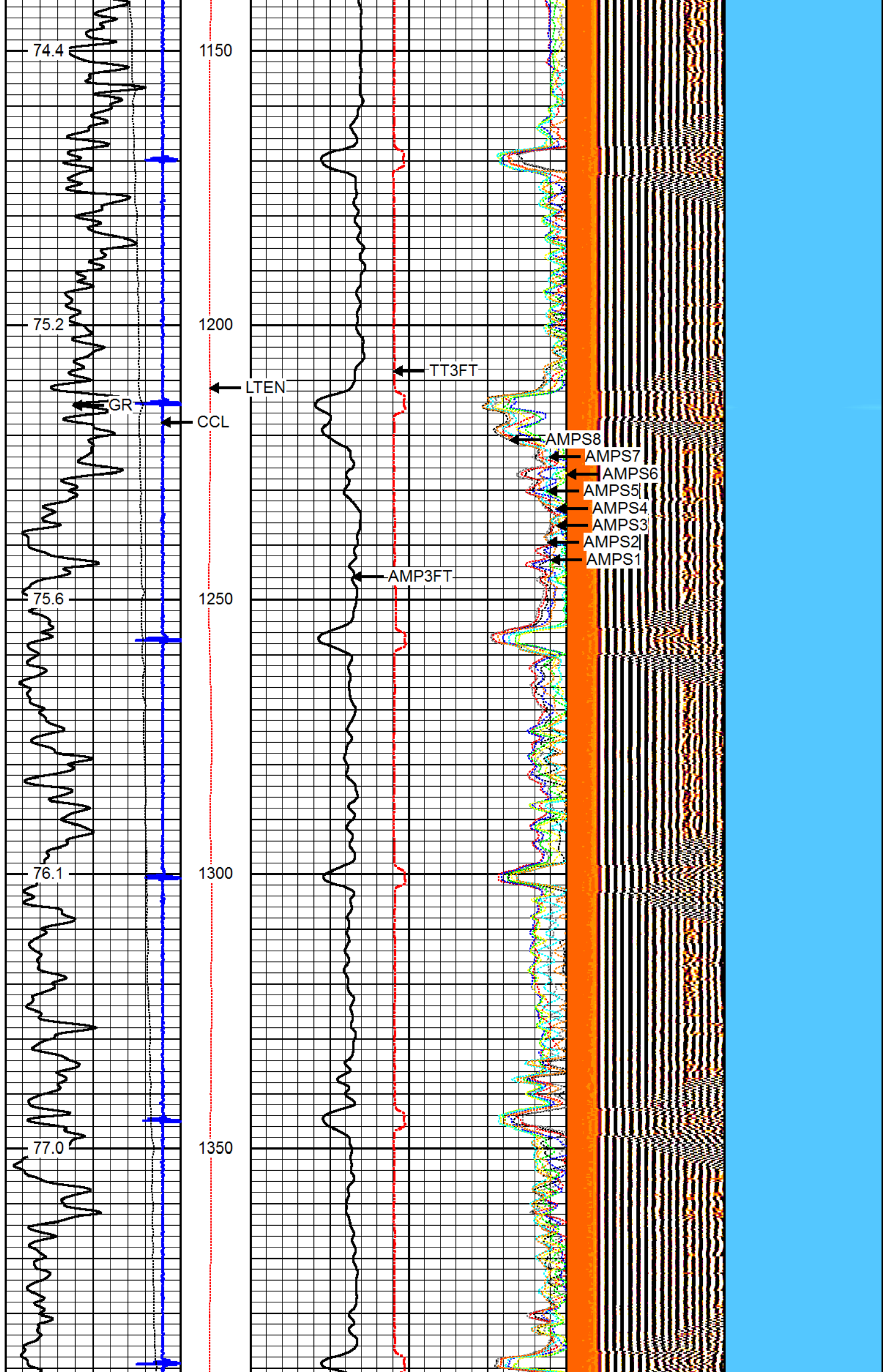


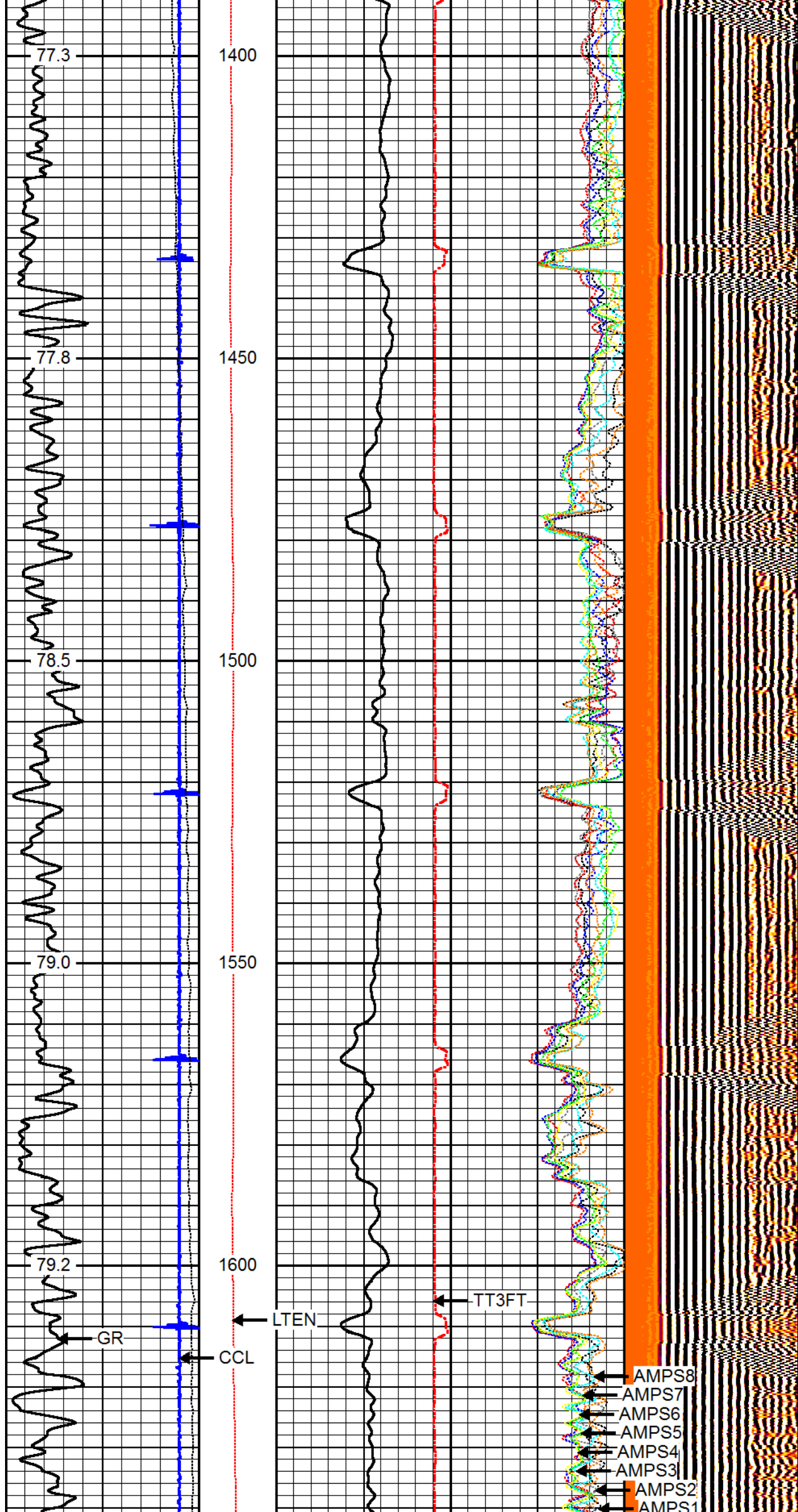












77.3

1400

77.8

1450

78.5

1500

79.0

1550

79.2

1600

GR

CCL

LTEN

TT3FT

AMPS8

AMPS7

AMPS6

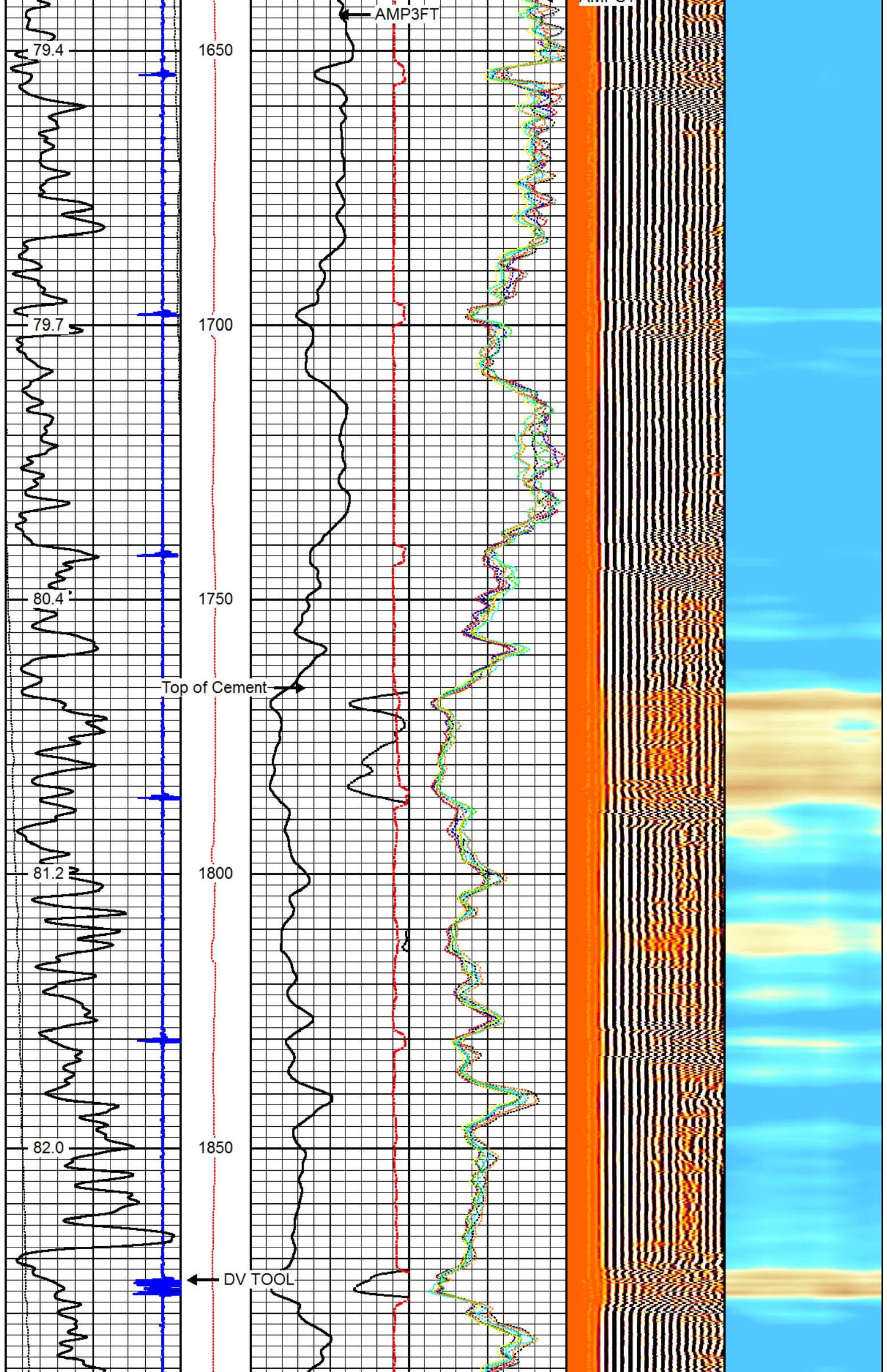
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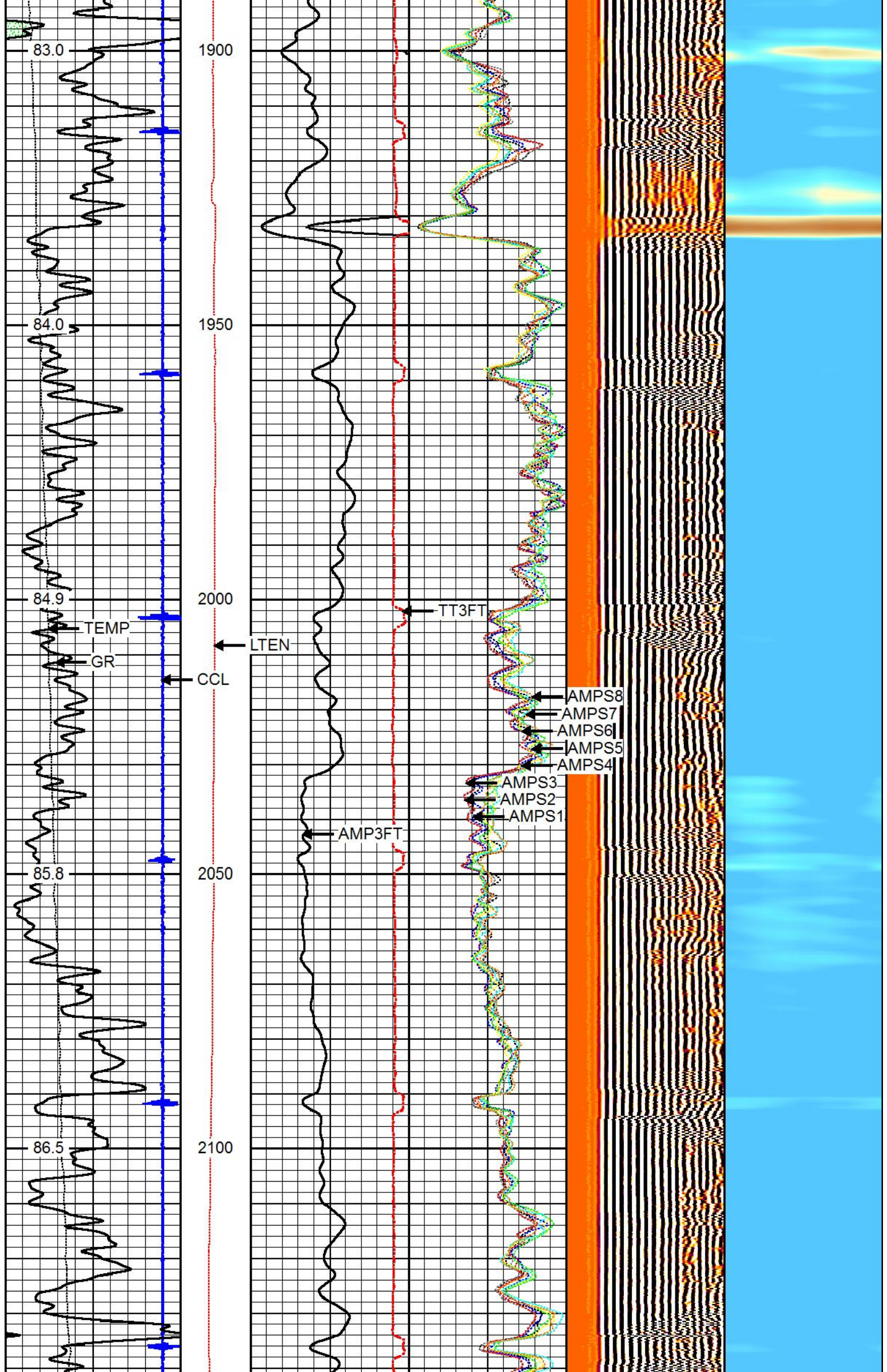
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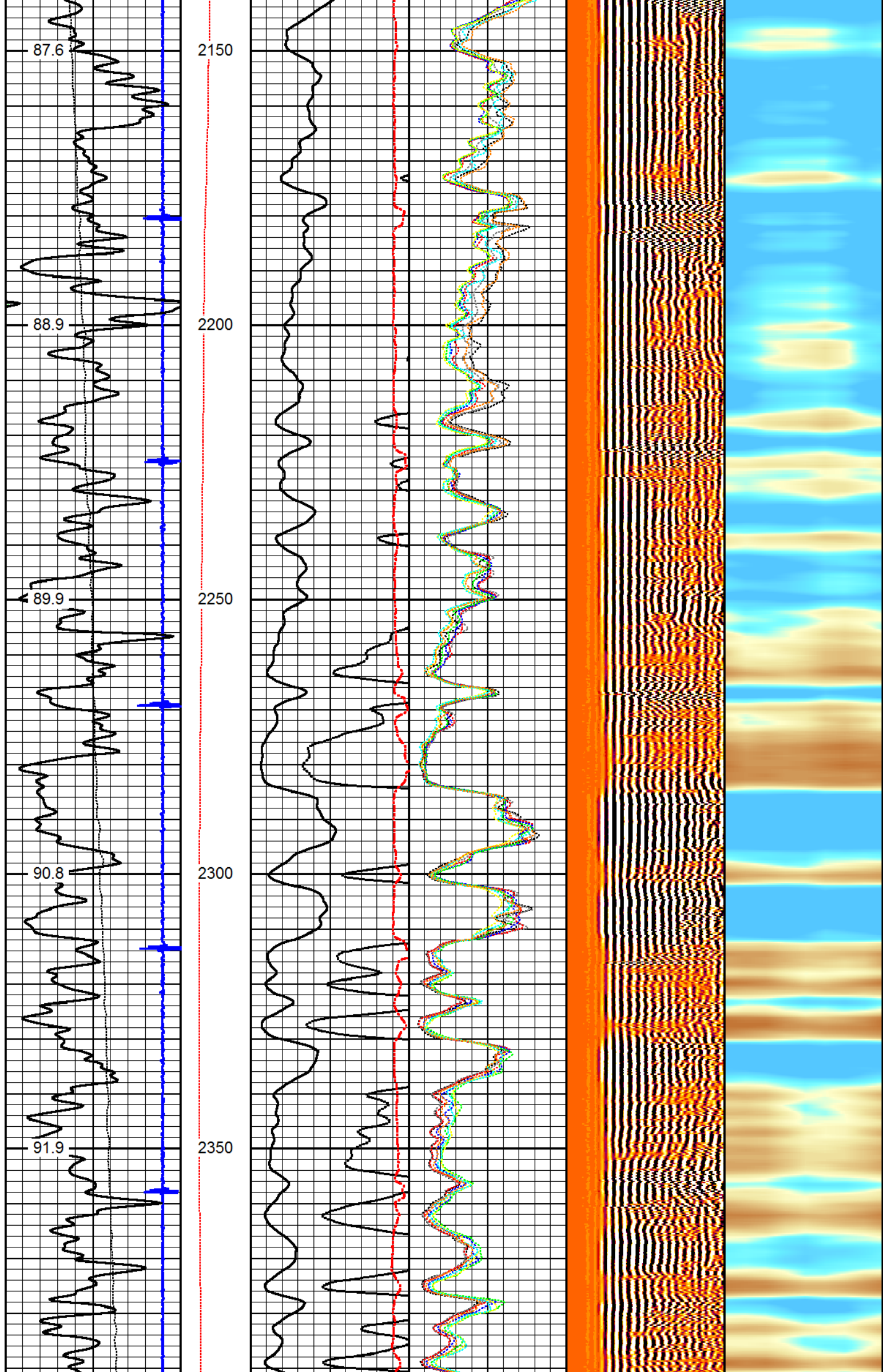
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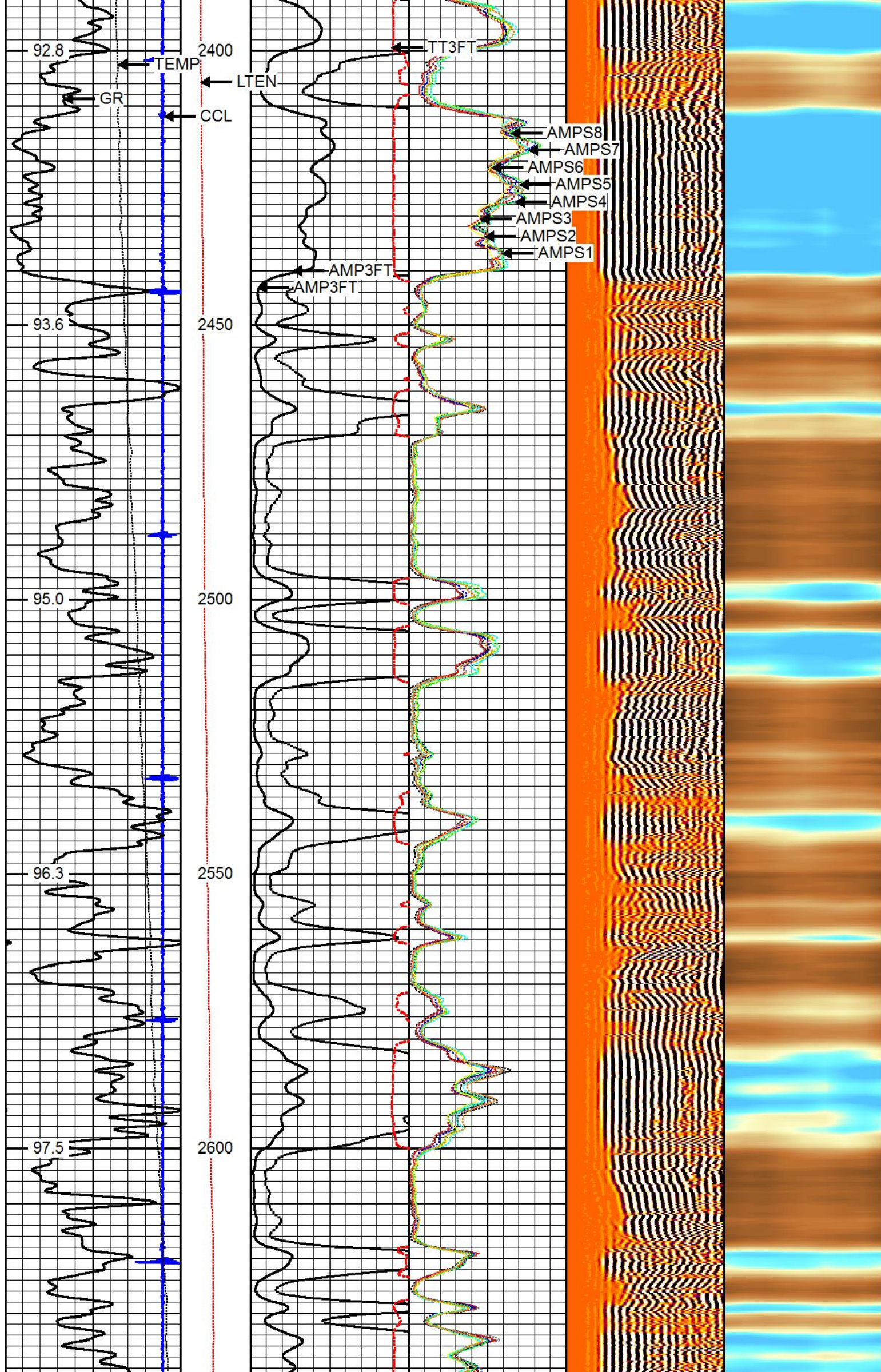
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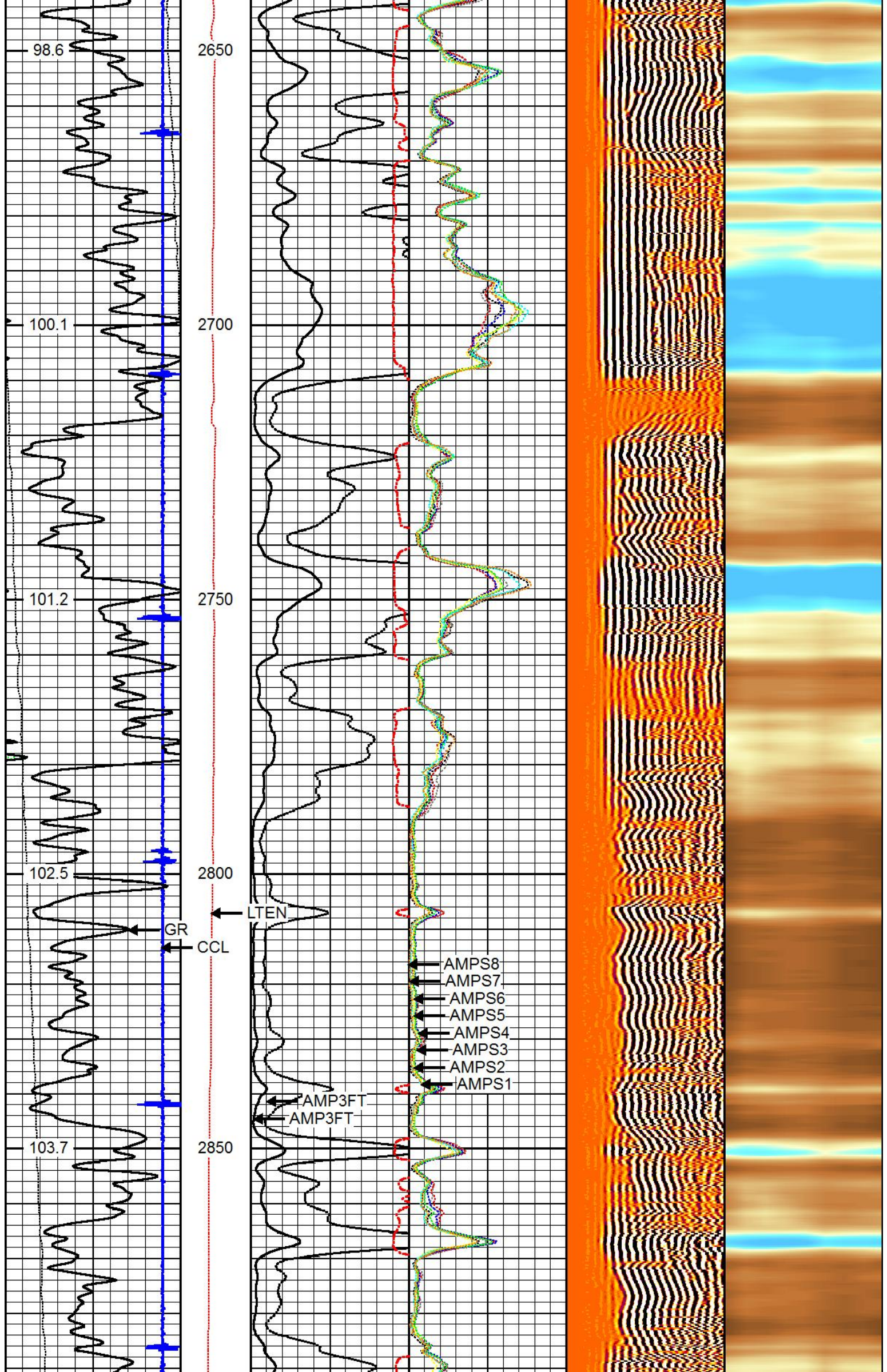
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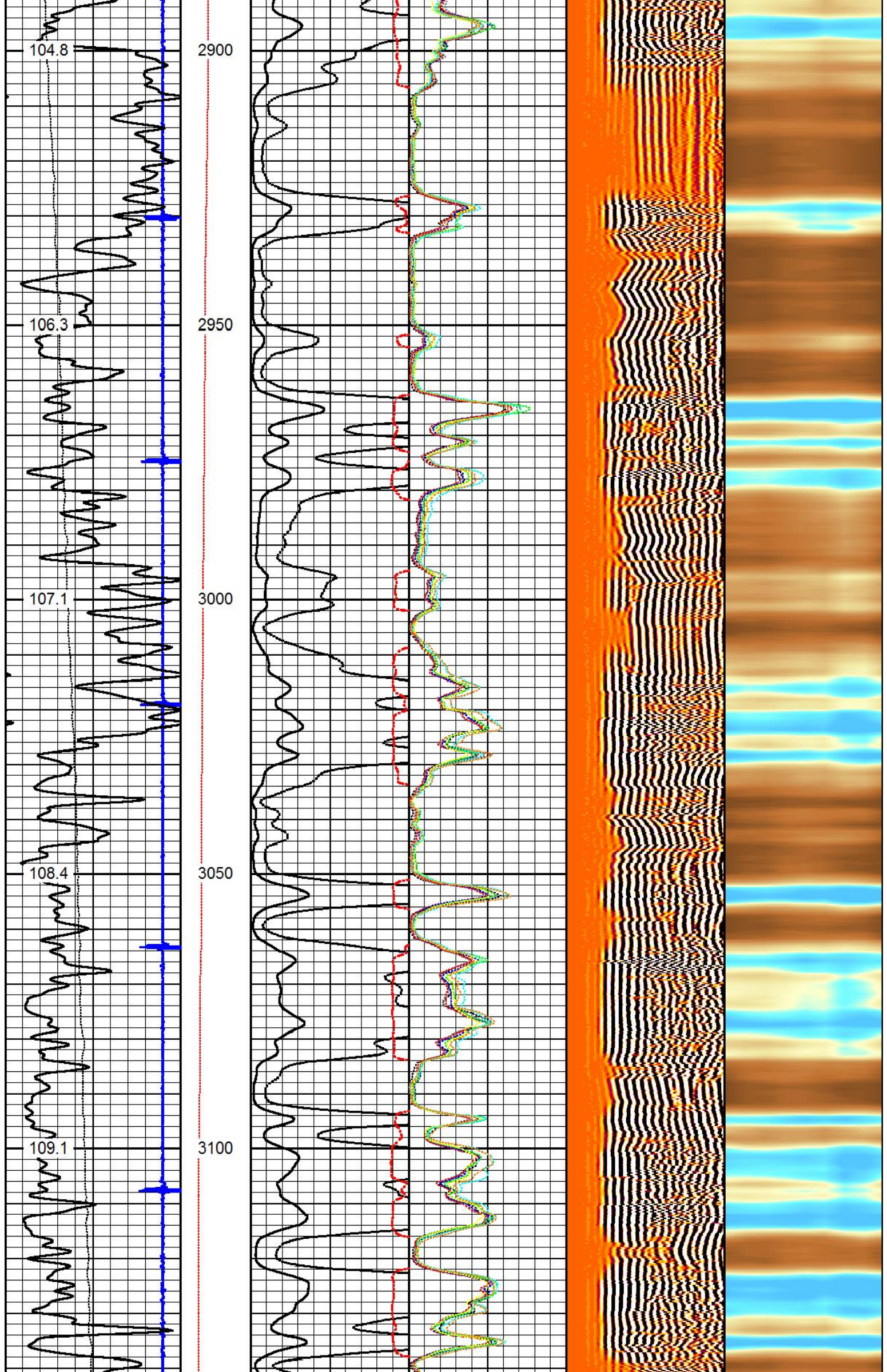


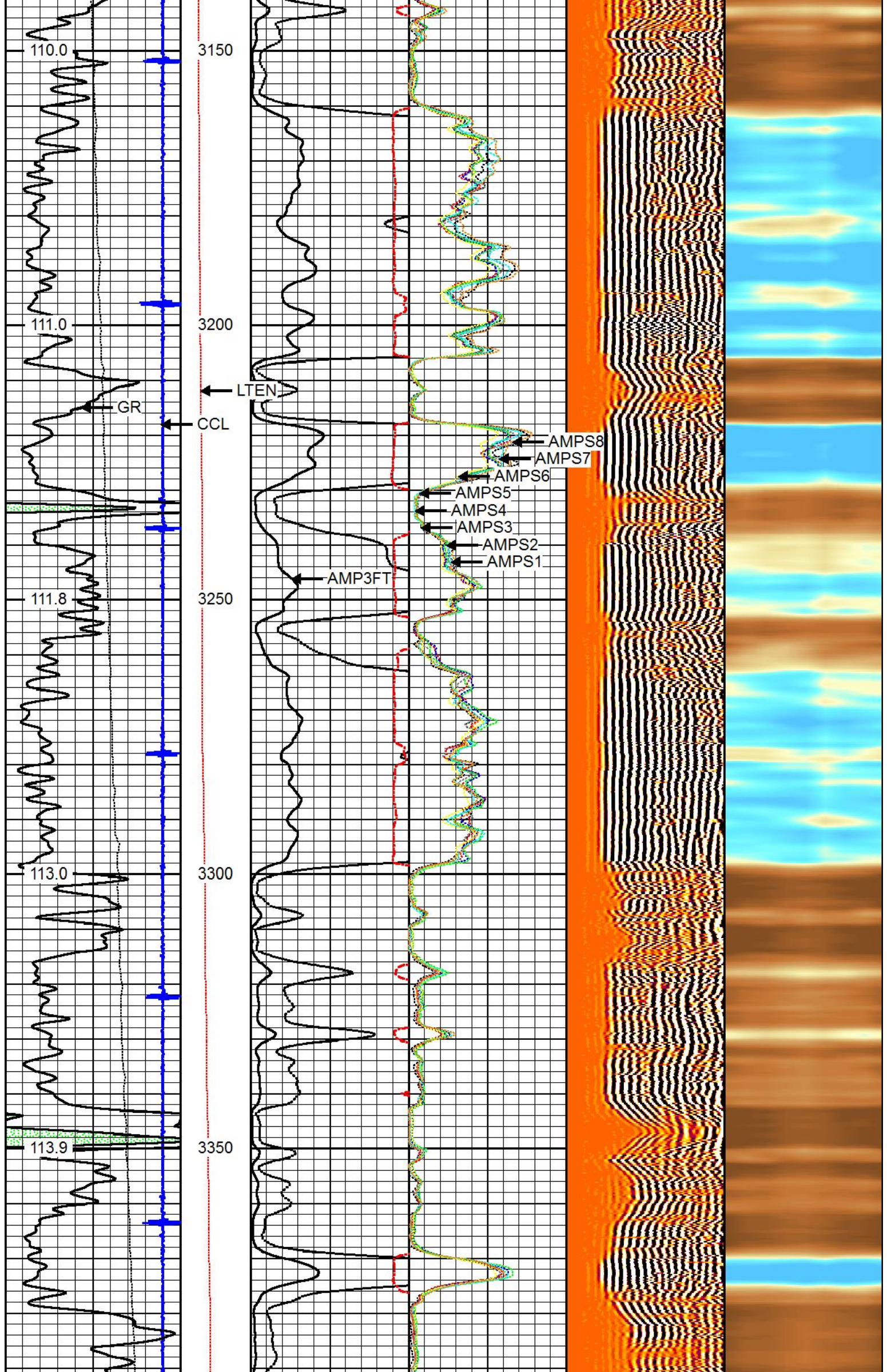


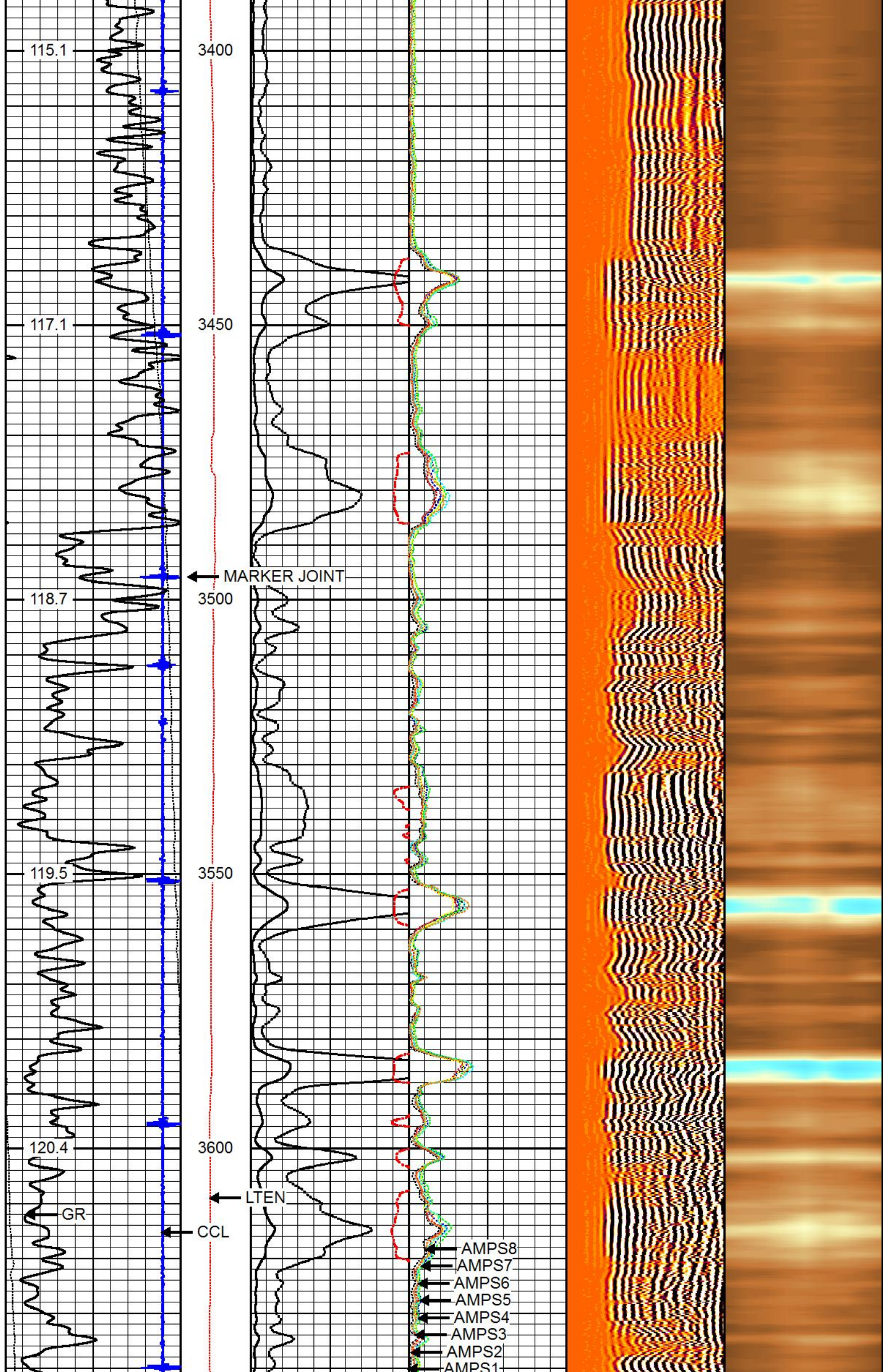


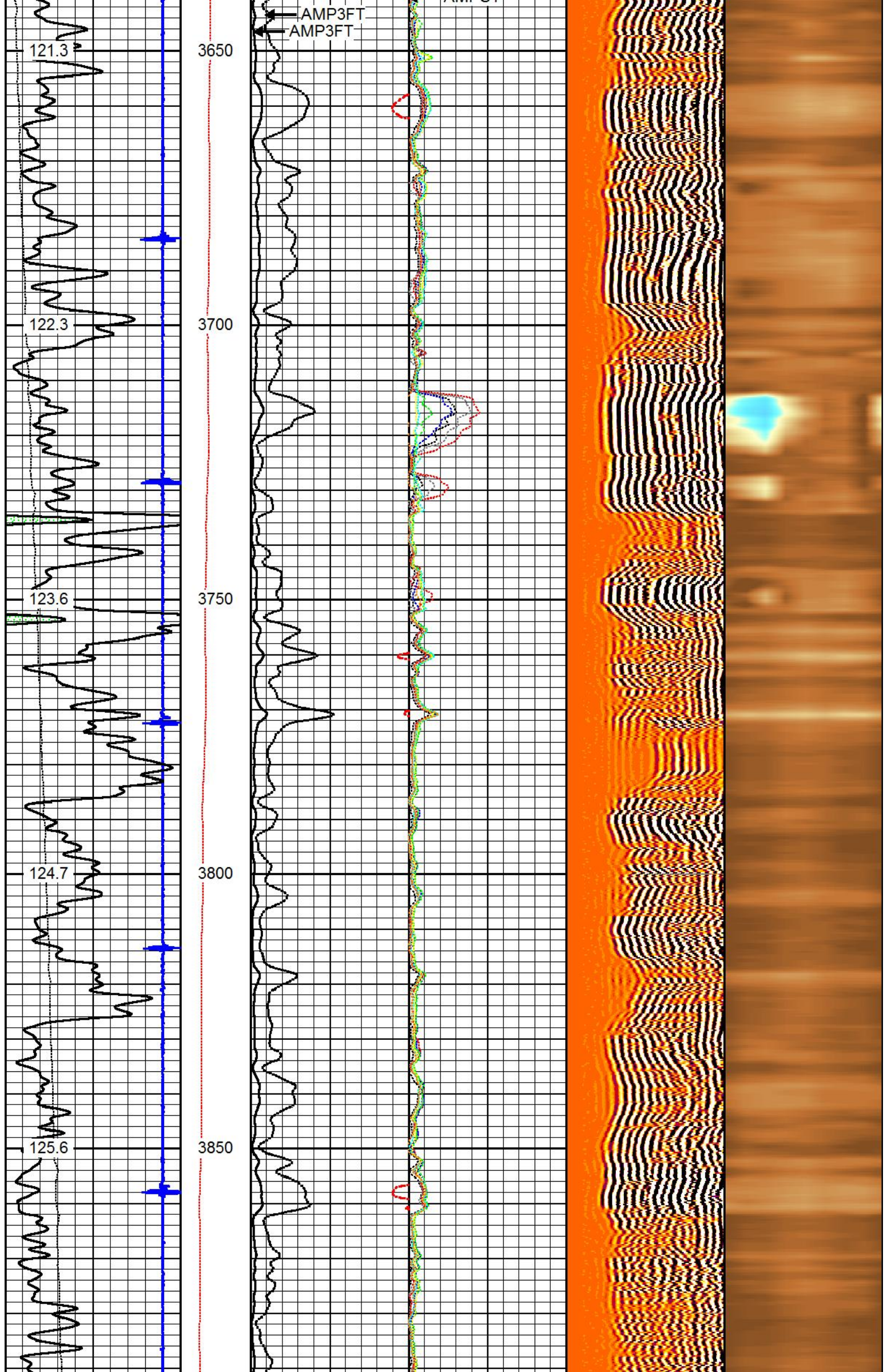


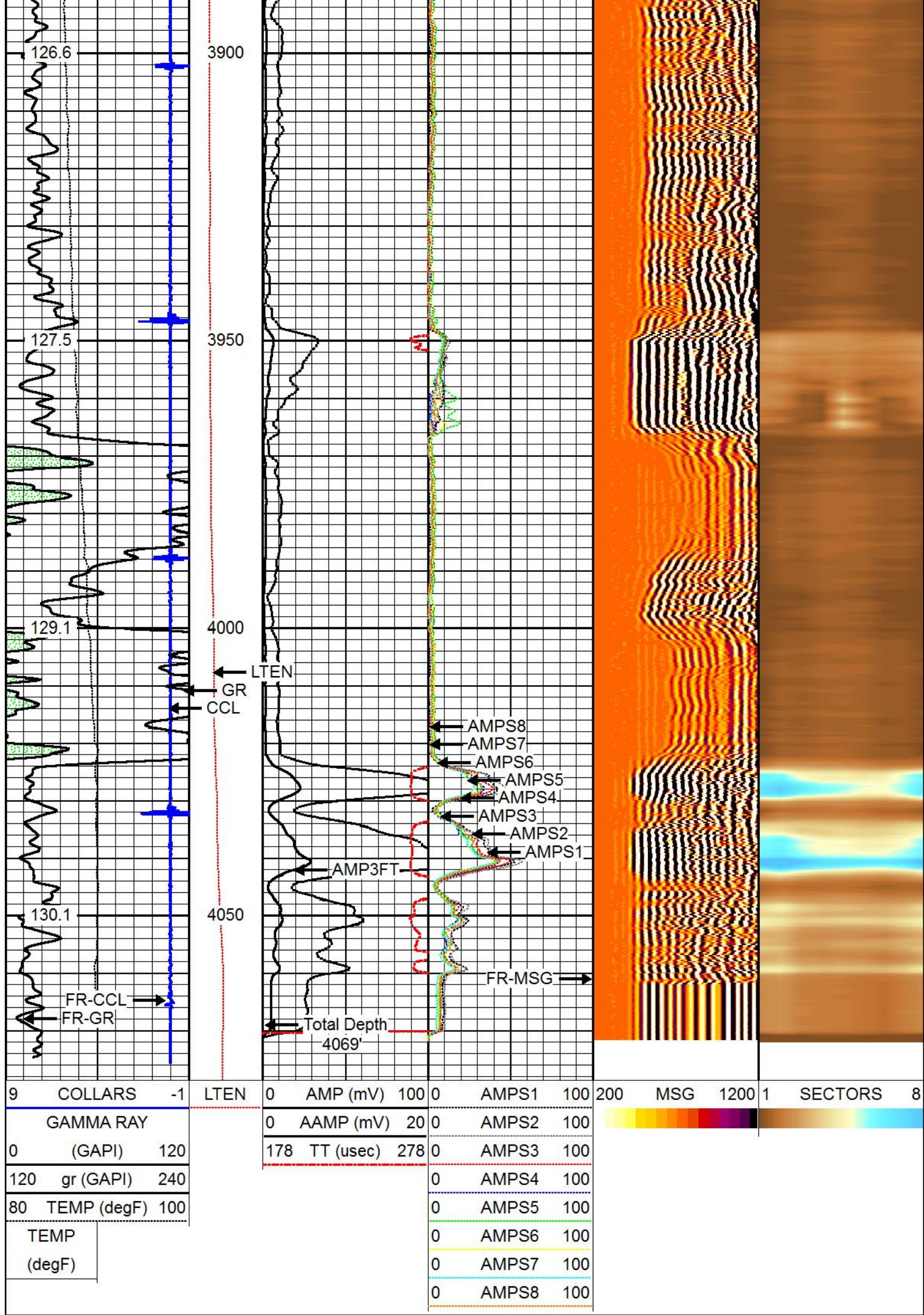








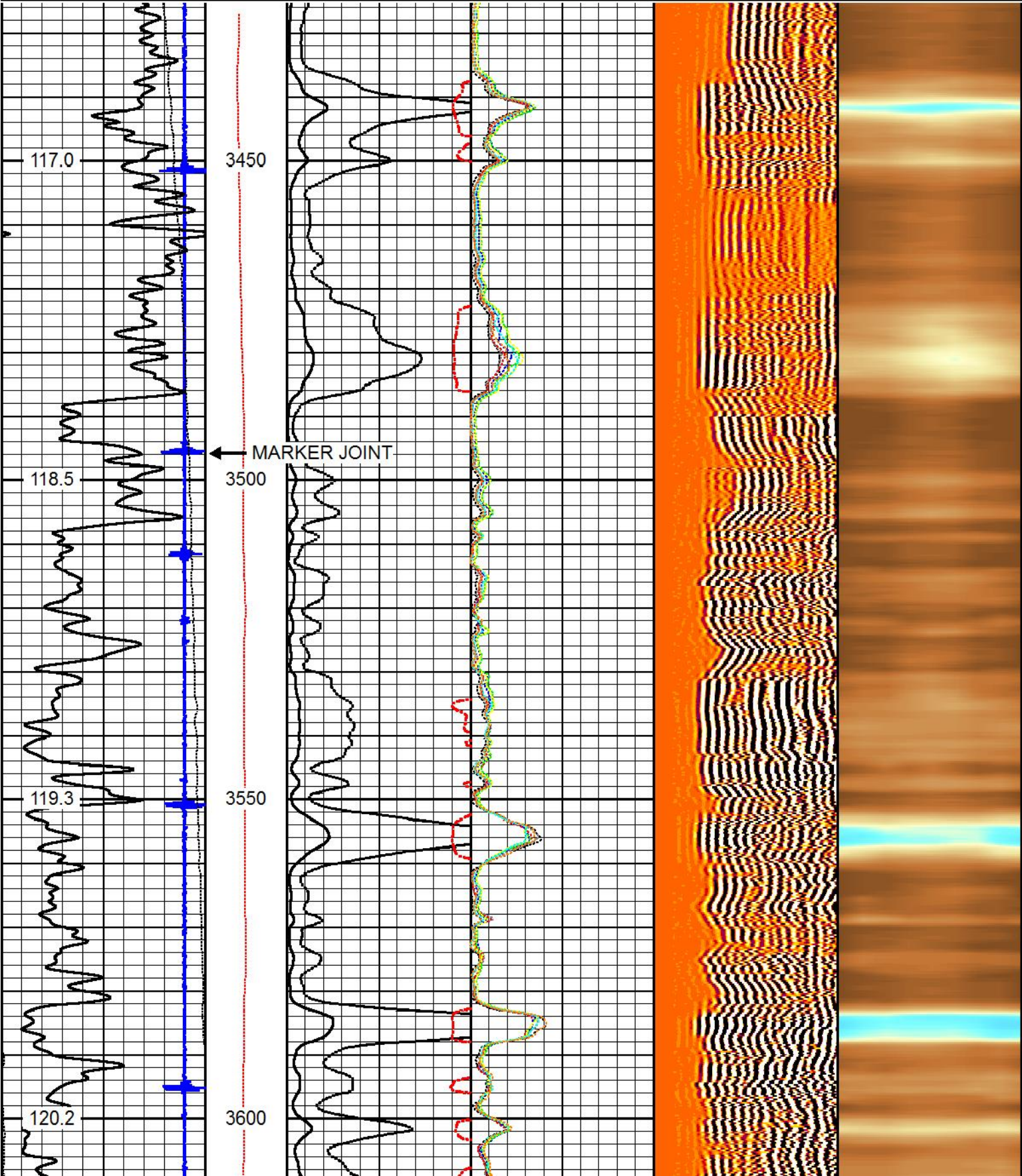


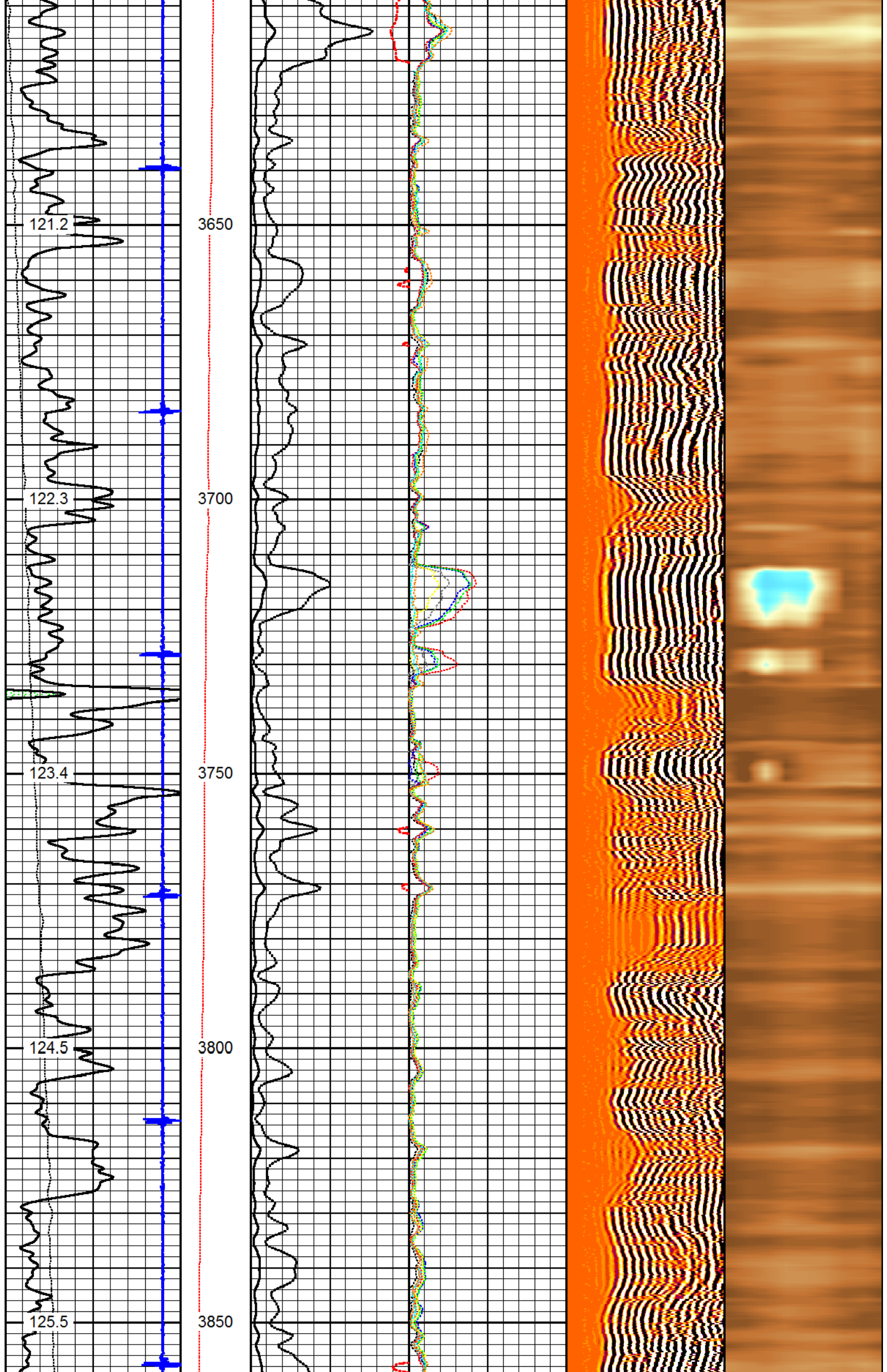


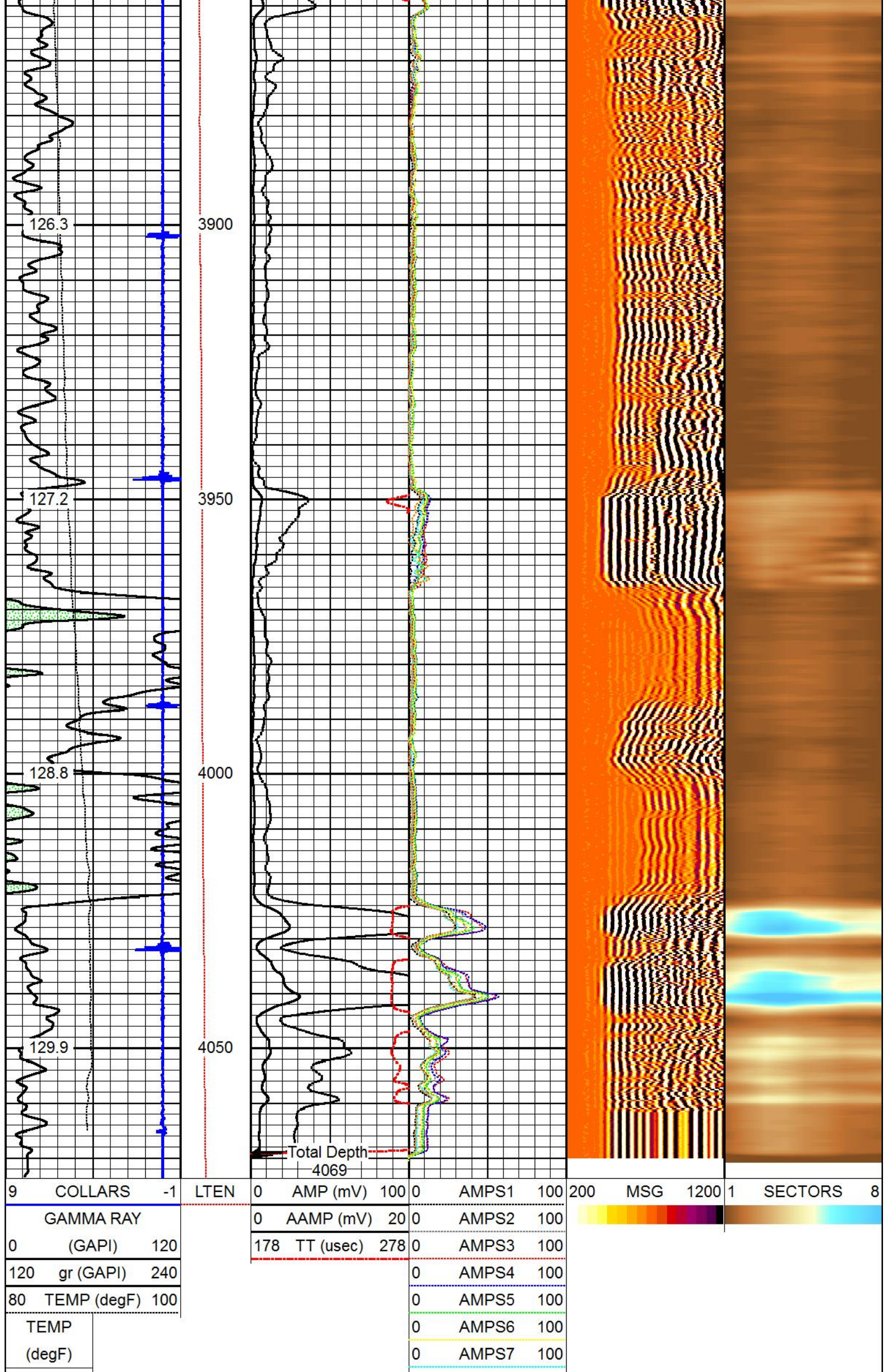
REPEAT SECTION

Database File	15185238860000_hartman_heyen_1_2_cbl.db
Dataset Pathname	pass2
Presentation Format	rcbl_tem
Dataset Creation	Tue Jul 15 08:42:28 2014
Charted by	Depth in Feet scaled 1:240

9	COLLARS	-1	LTEN	0	AMP (mV)	100	0	AMPS1	100	200	MSG	1200	1	SECTORS	8
	GAMMA RAY			0	AAMP (mV)	20	0	AMPS2	100						
0	(GAPI)	120		178	TT (usec)	278	0	AMPS3	100						
120	gr (GAPI)	240					0	AMPS4	100						
80	TEMP (degF)	100					0	AMPS5	100						
	TEMP						0	AMPS6	100						
	(degF)						0	AMPS7	100						
							0	AMPS8	100						





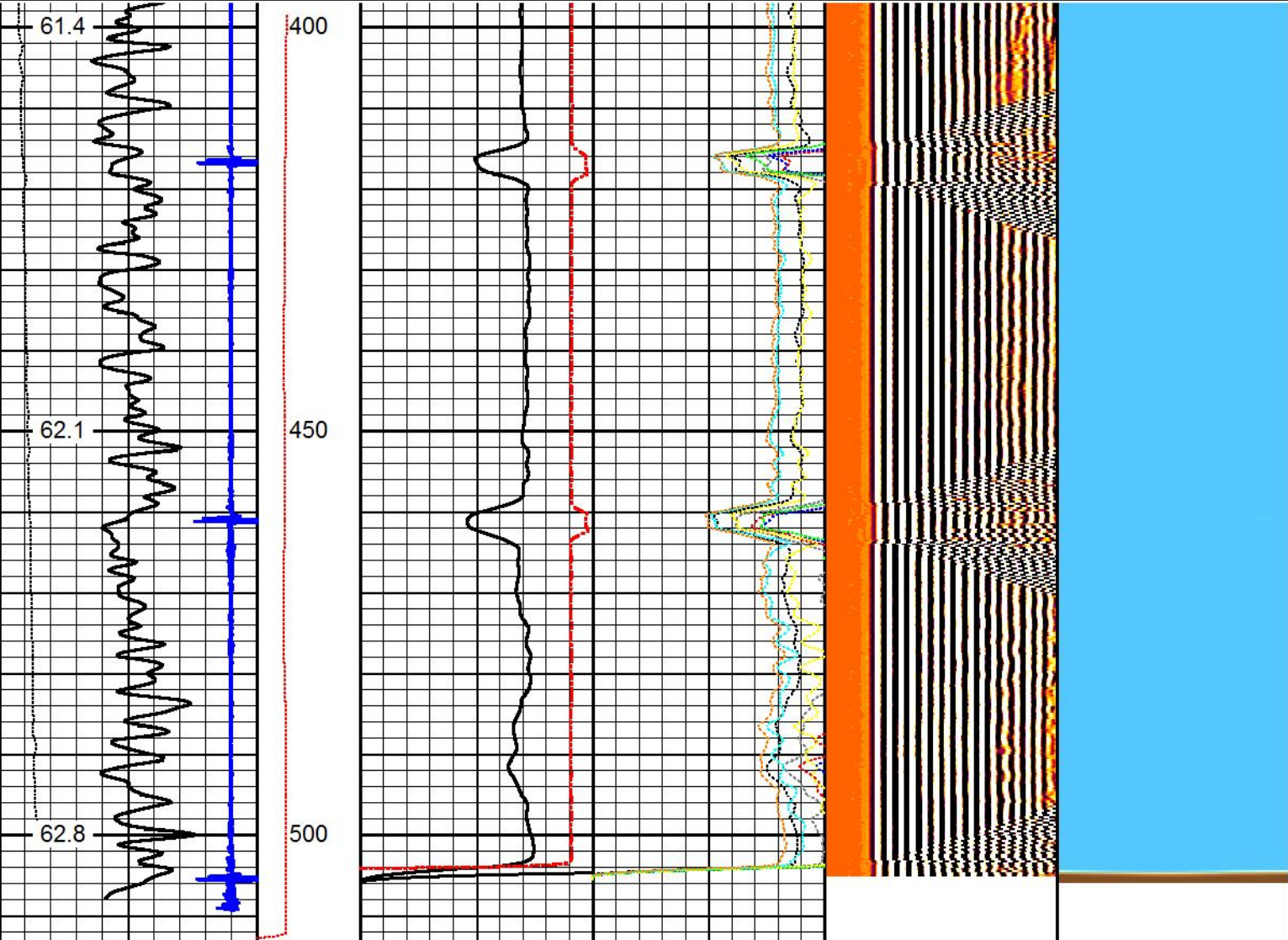


FREE PIPE SECTION

HALLIBURTON

Database File 15185238860000_hartman_heyen_1_2_cbl.db
Dataset Pathname pass1
Presentation Format rcbl_tem
Dataset Creation Tue Jul 15 08:24:50 2014
Charted by Depth in Feet scaled 1:240

9	COLLARS	-1	LTEN	0	AMP (mV)	100	0	AMPS1	100	200	MSG	1200	1	SECTORS	8	
GAMMA RAY				0	AAMP (mV)	20	0	AMPS2	100							
0	(GAPI)	120		178	TT (usec)	278	0	AMPS3	100							
120	gr (GAPI)	240						0	AMPS4							100
80	TEMP (degF)	100						0	AMPS5							100
TEMP								0	AMPS6							100
(degF)								0	AMPS7	100						
							0	AMPS8	100							



9	COLLARS	-1	LTEN	0	AMP (mV)	100	0	AMPS1	100	200	MSG	1200	1	SECTORS	8	
GAMMA RAY				0	AAMP (mV)	20	0	AMPS2	100							
0	(GAPI)	120		178	TT (usec)	278	0	AMPS3	100							
120	gr (GAPI)	240						0	AMPS4							100
80	TEMP (degF)	100						0	AMPS5							100
TEMP								0	AMPS6							100
(degF)								0	AMPS7	100						
							0	AMPS8	100							

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Database File      15185238860000_hartman_heyen_1_2_cbl.db
Dataset Pathname  pass3
Dataset Creation   Tue Jul 15 09:21:38 2014
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Type / Serial: Probe275dig / 060738

	Counts/Sec.	Gain	Offset	Jig	Units
Background	55.2				cps
Calibrator	374.0				cps
		1.3906			GAPI/cps

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Serial Number:	080640	
Tool Model:	Probe	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	809.817	ft

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.010	0.752	0.000	71.921	96.974	-1.003
CAL	0.012	1.060				
5'	0.011	0.735	0.000	71.921	99.335	-1.072
SUM						
S1	0.038	0.798	0.000	100.000	131.575	-4.974
S2	0.015	0.682	0.000	100.000	150.034	-2.309
S3	0.012	0.697	0.000	100.000	145.947	-1.757
S4	0.001	0.713	0.000	100.000	140.582	-0.206
S5	-0.002	0.748	0.000	100.000	133.429	0.204
S6	0.002	0.708	0.000	100.000	141.581	-0.258
S7	0.013	0.828	0.000	100.000	122.591	-1.544
S8	0.016	0.832	0.000	100.000	122.600	-2.004

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.012	1.060	1.000	0.000

Air Zero Calibration performed (Not Performed):

Air Zero Calibration, performed (NOT performed).

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	0.000	0.000	0.000
5'	0.000	0.000	0.000
SUM			
S1	0.000	0.000	0.000
S2	0.000	0.000	0.000
S3	0.000	0.000	0.000
S4	0.000	0.000	0.000
S5	0.000	0.000	0.000
S6	0.000	0.000	0.000
S7	0.000	0.000	0.000
S8	0.000	0.000	0.000

Temperature Calibration Report			
Serial Number:	080640		
Tool Model:	Probe		
Performed:	Mon Jun 10 14:52:07 2013		
	Reference	Reading	
Low Reference:	89.00 degF	101.15 degF	
High Reference:	134.00 degF	144.83 degF	
Gain:	1.03		
Offset:	-16.00		
Delta Spacing	1		

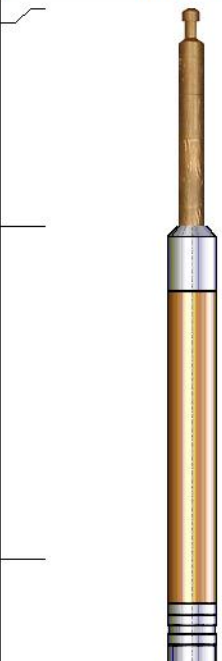
DatabaseC:\ProgramData\Warrior\Data\15185238860000_hartman_heyen_1_2_cbl.db

Dataset field/well/run1/pass3

Log Variables

Top - Bottom

BHTEMP_Src	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF
1	268	17	72	1	0.8	0
MudWgt lb/gal	CASETHCK in	CASEOD in	PERFS	TDEPTH ft	BOTTEMP degF	BITSIZE in
9.5	0	5.5	0	4069	130	7.875

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
STNDCH	15.03		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
RBT_PRB275	13.53					
TEMP	11.24					

Tool Joint	Tool Joint Length (ft)	Tool Joint Weight (lb)	Tool Joint O.D. (in)	Tool Joint Description	Tool Joint Length (ft)	Tool Joint Weight (lb)	Tool Joint O.D. (in)
WVFCAL	9.03			RBT_PRB275-Probe (080640) Probe Radii Bond Tool with Digital Telemetry	8.75	2.75	90.00
GR_PRB275	4.78						
CCL	3.92						
GR	2.54			GR_PRB275-probe275dig (060738) Probe Digital Gamma CCL	4.78	2.75	57.00

Dataset: 15185238860000_hartman_heyen_1_2_cbl.db: field/well/run1/pass3

Total length: 15.03 ft

Total weight: 148.00 lb

O.D.: 2.75 in