

HALLIBURTON

RADIAL CEMENT BOND LOG

SCALE 1:240

Company HARTMAN OIL COMPANY, INC.
Well GARDEN CITY NO. 1-19
Field DAMME
County FINNEY State KANSAS

Company HARTMAN OIL COMPANY, INC.
Well GARDEN CITY NO. 1-19
Field DAMME
County FINNEY State KANSAS
API No.: 15-055-22013 Serv #: 22
Location: Other Services

NW-NE-SW
2305' FSL & 1529' FWL

PERF
@
4765-4569

Sec: 19 Twp: 22S Rge: 33W

GROUND LEVEL Elevation 2907

Elevation

Permanent Datum
Log Measured From K.B. 11 Ft. above perm. datum
Drilling Measured From K.B.

K.B. 2918
D.F. 2907
G.L.

Date @ Time Logged 29 OCT 2012 @ 10:30

Type Fluid in Hole

WATER

Run No. ONE

Density of Fluid

8.3

Depth - Driller 4870

Fluid Level

498

Depth - Logger 4843

Cement Top Est. Logged

SURFACE

Bottom - Logged Interval 4836

Equipment / Location

10971670 / LIBERAL

Top - Log Interval 498

Recorded by

R. RODRIGUEZ

Max. Recorded Temp. 126.2 deg F

Witnessed by

S. MITCHELL

CEMENTING DATA

Protection

Liner

Date / Time Cemented

String

String

Primary / Squeeze

String

String

Expected

String

String

Compressive Strength

psi@ hrs

psi@ hrs

psi@ hrs

Cement Volume

psi@ hrs

psi@ hrs

psi@ hrs

Cement Type / Weight

psi@ hrs

psi@ hrs

psi@ hrs

Formulation

psi@ hrs

psi@ hrs

psi@ hrs

Mud Type / Mud Wgt.

psi@ hrs

psi@ hrs

psi@ hrs

Borehole Record

psi@ hrs

psi@ hrs

psi@ hrs

Run Number

psi@ hrs

psi@ hrs

psi@ hrs

ONE

psi@ hrs

psi@ hrs

psi@ hrs

TWO

psi@ hrs

psi@ hrs

psi@ hrs

7.875"

psi@ hrs

psi@ hrs

psi@ hrs

355

psi@ hrs

psi@ hrs

psi@ hrs

4870

psi@ hrs

psi@ hrs

psi@ hrs

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

CORRELATED TO LOG-TECH DUAL COMPENSATED POROSITY LOG DATED 17 OCT 2012.

D V TOOL @ 2018'
MARKER JOINT @ 4381'-4396'

FREE PIPE PASS CORRELATED TO MAIN PASS

YOUR HALLIBURTON CREW: COBLE, PAGE.
THANK YOU FOR USING HALLIBURTON ENERGY SERVICES

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client							
EQUIPMENT DATA							
RCBL		GAMMA RAY					
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	080640	Serial No.	080725	Serial No.		Serial No.	
Model No.	PROBE	Model No.	PROBE	Model No.		Model No.	
Diameter	2.75"	Diameter	2.75"	Diameter		Diameter	
LOGGING DATA							
General Data							
Pass	Depths		Well Head	Speed	Logging Run Comments		
No.	From	To	Pressure	Ft/Min			
14	4843	498	0	45	MAIN PASS		
	GAMMA		TRAVEL TIME		AMP		MSG
Pass	Scale		Scale		Scale		Scale
No.	L	R	L	R	L	R	L
ALL	0	120	172	272	0	100	200
	120	240			0	20	
DIRECTIONAL INFORMATION							
Maximum Deviation	N/A	deg. @	N/A	KOP	N/A		

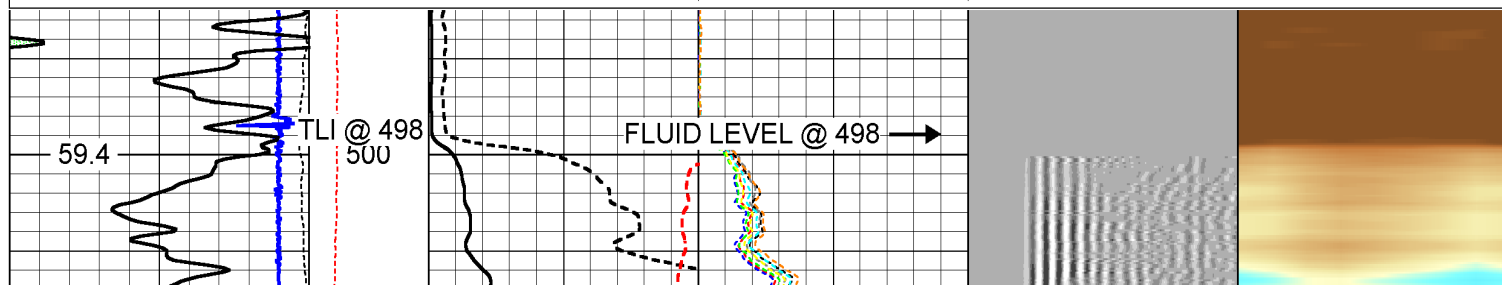
MAIN PASS

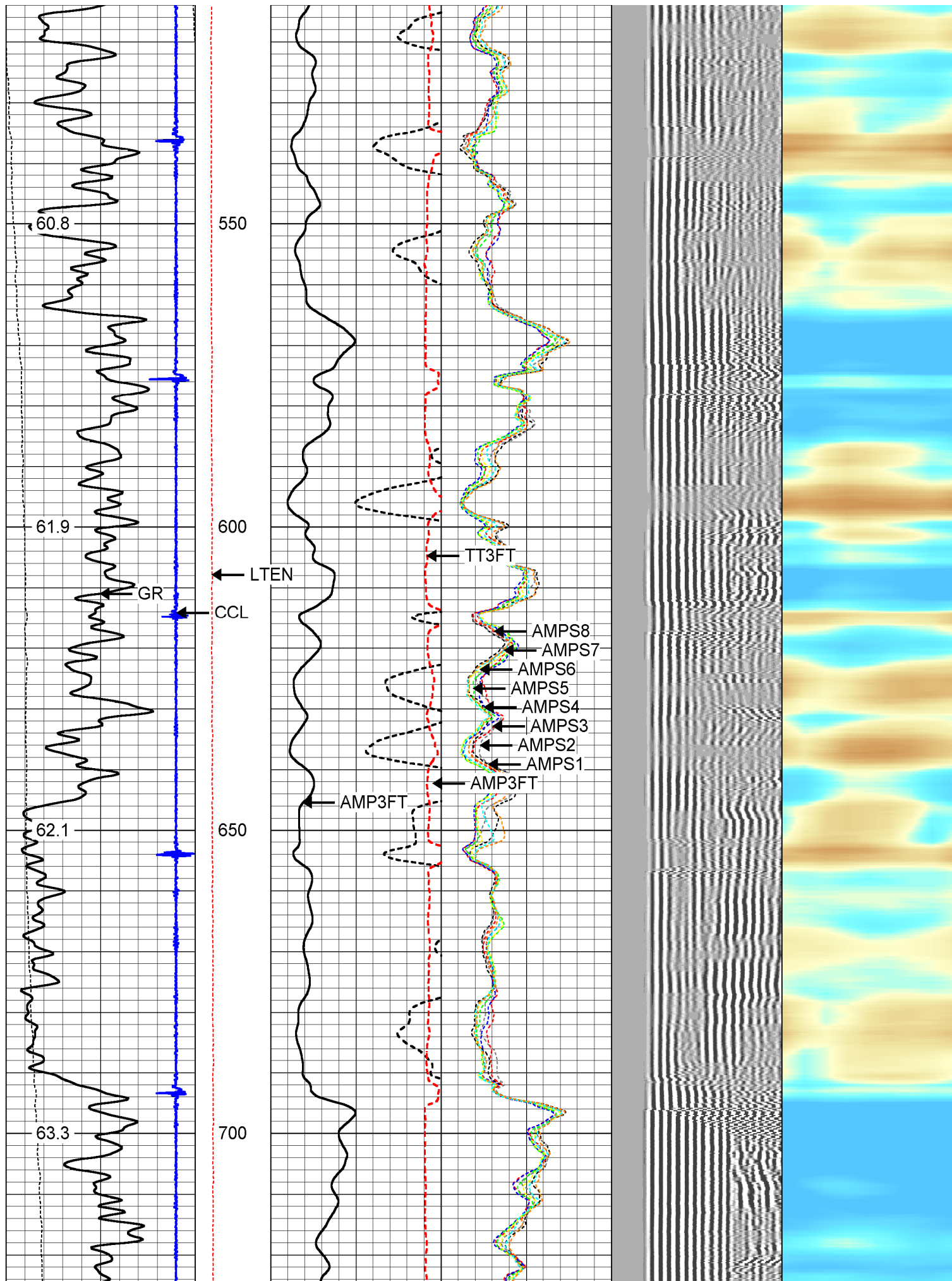
HALLIBURTON

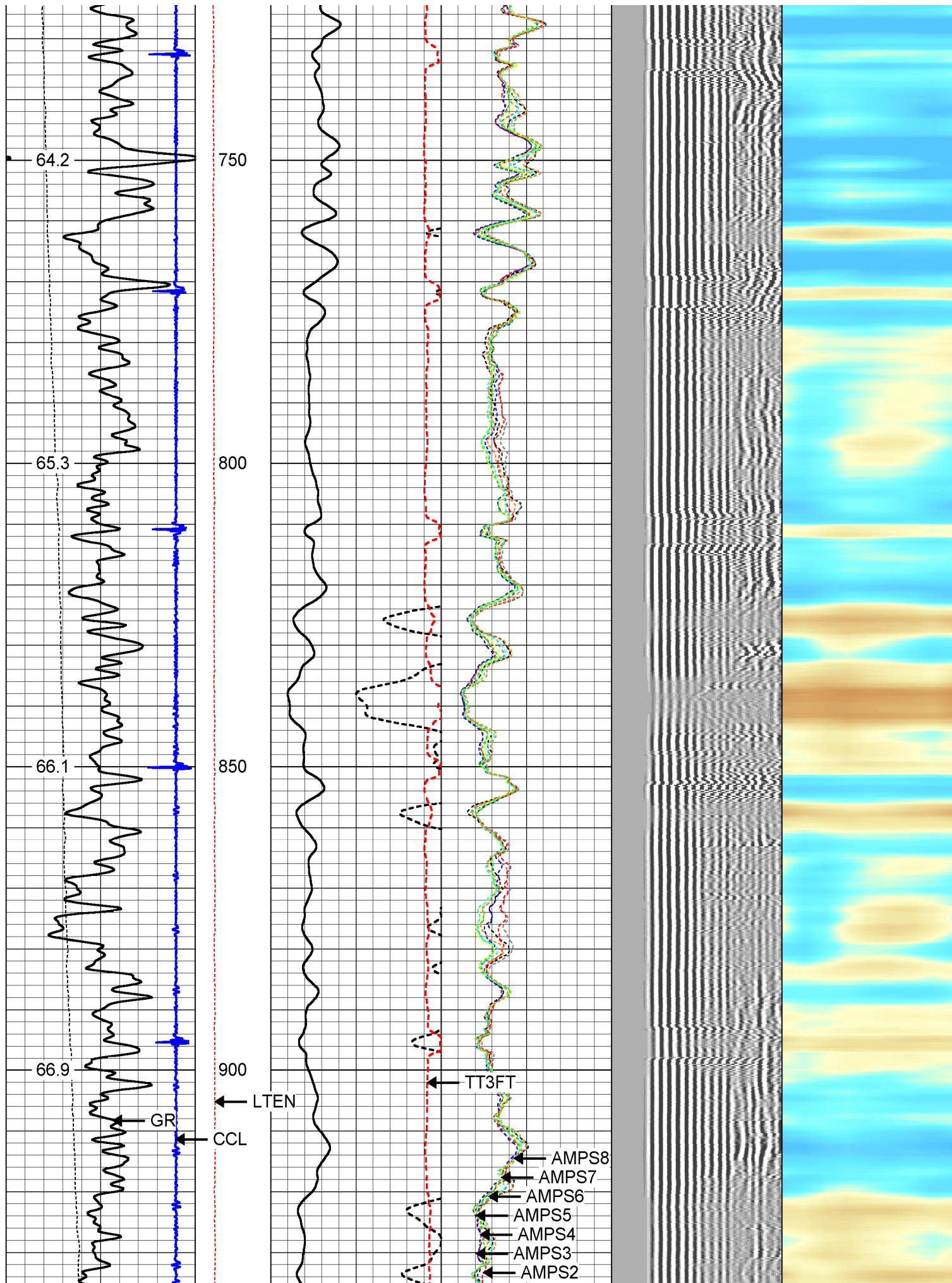
SCALE 1:240

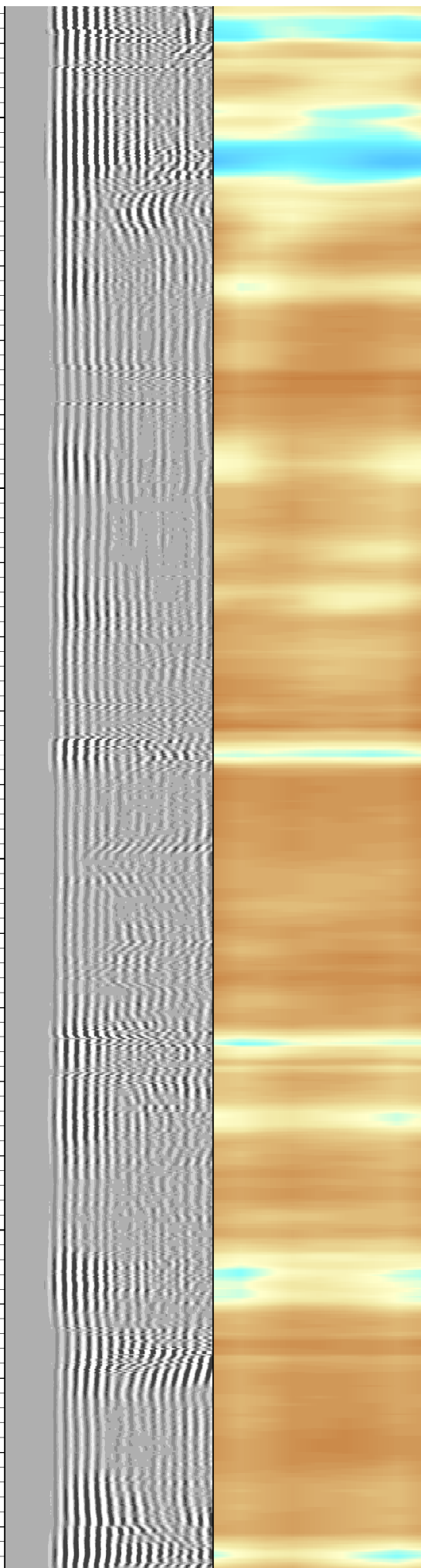
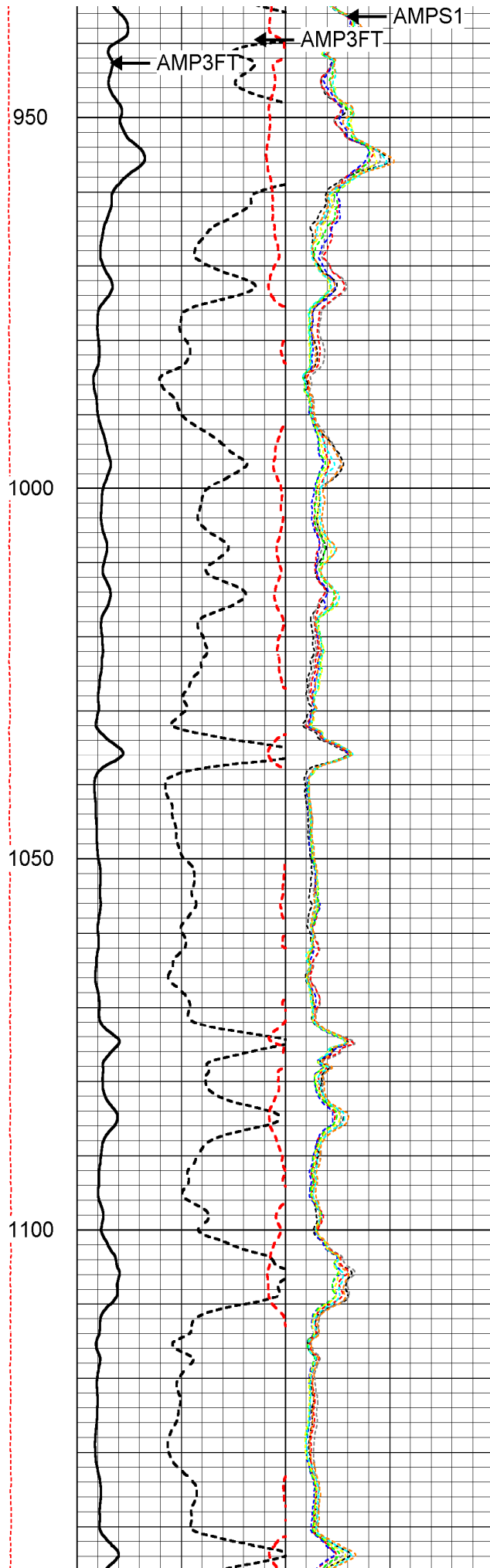
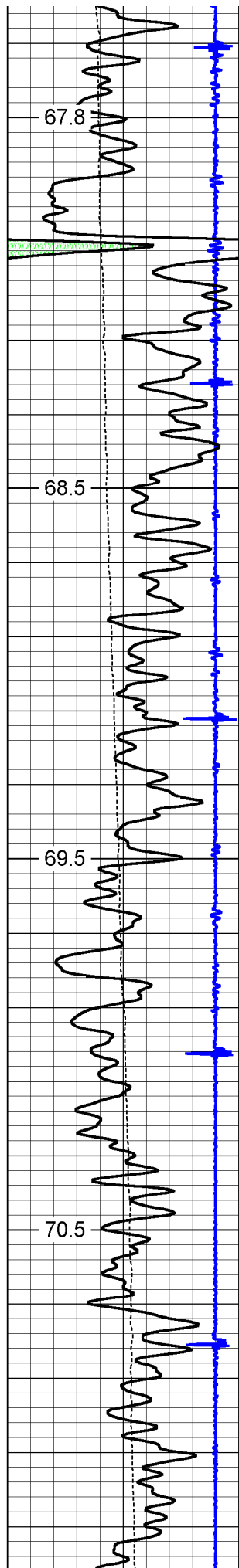
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 Dataset Pathname: pass14
 Presentation Format: rcbl_tem
 Dataset Creation: Mon Oct 29 10:30:48 2012 by Log Halliburton Casedho
 Charted by: Depth in Feet scaled 1:240

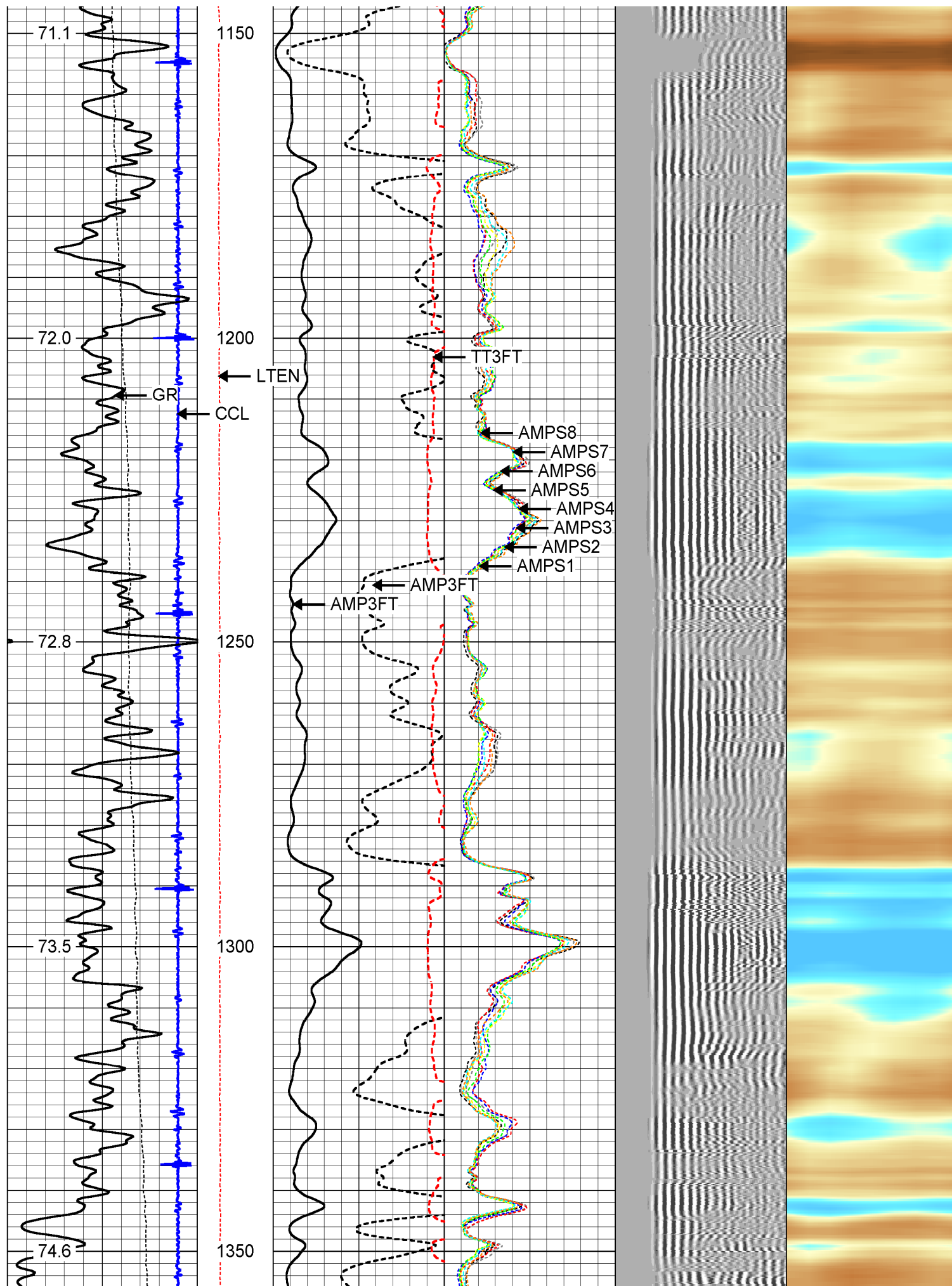
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GAMMA RAY				0	AAMP (mV)	20	0	AMPS2	100						
0	(GAPI)	120		172	TT (usec)	272	0	AMPS3	100						
120	gr (GAPI)	240					0	AMPS4	100						
80	TEMP (degF)	100					0	AMPS5	100						
TEMP							0	AMPS6	100						
(degF)							0	AMPS7	100						
							0	AMPS8	100						

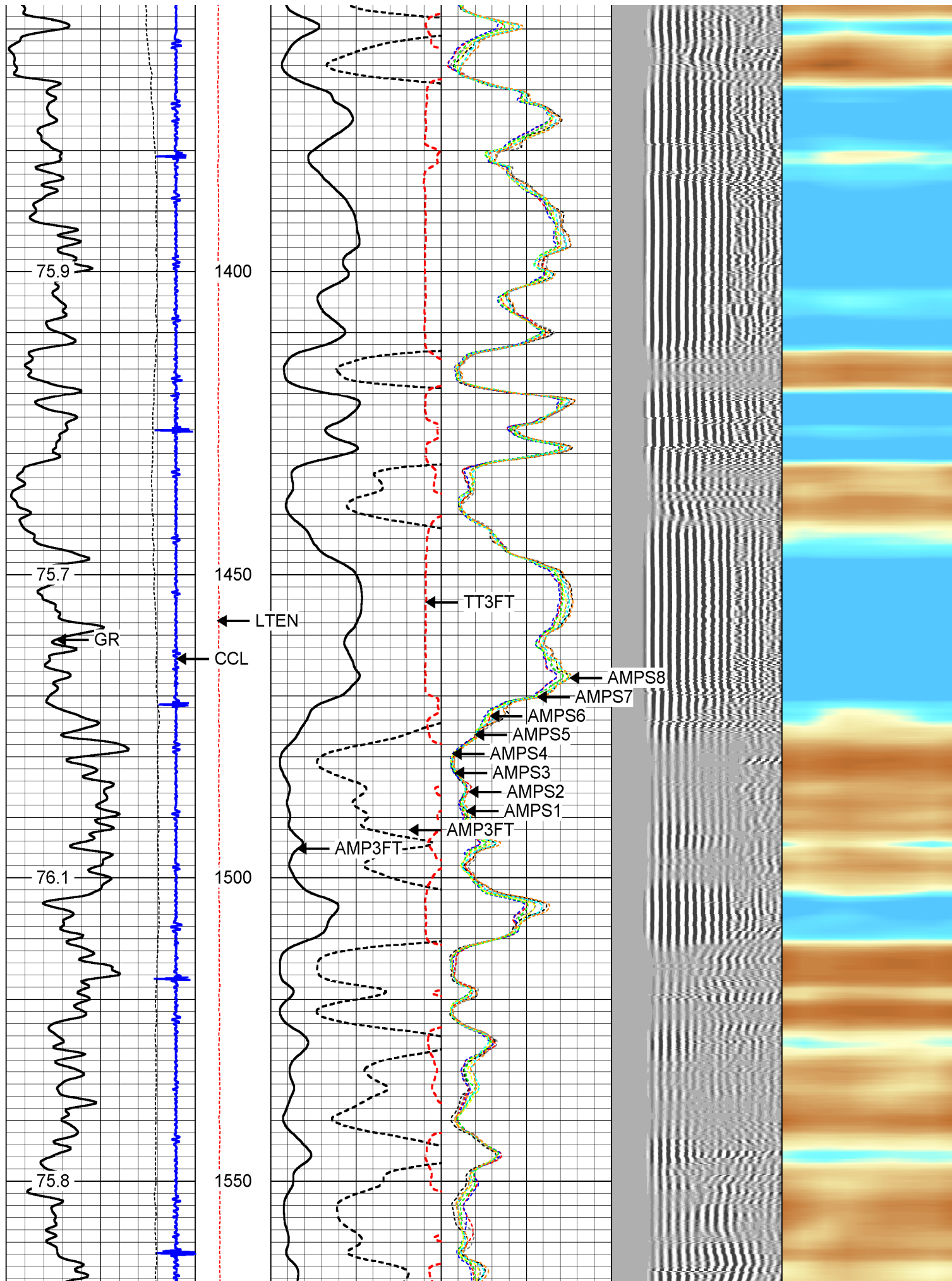


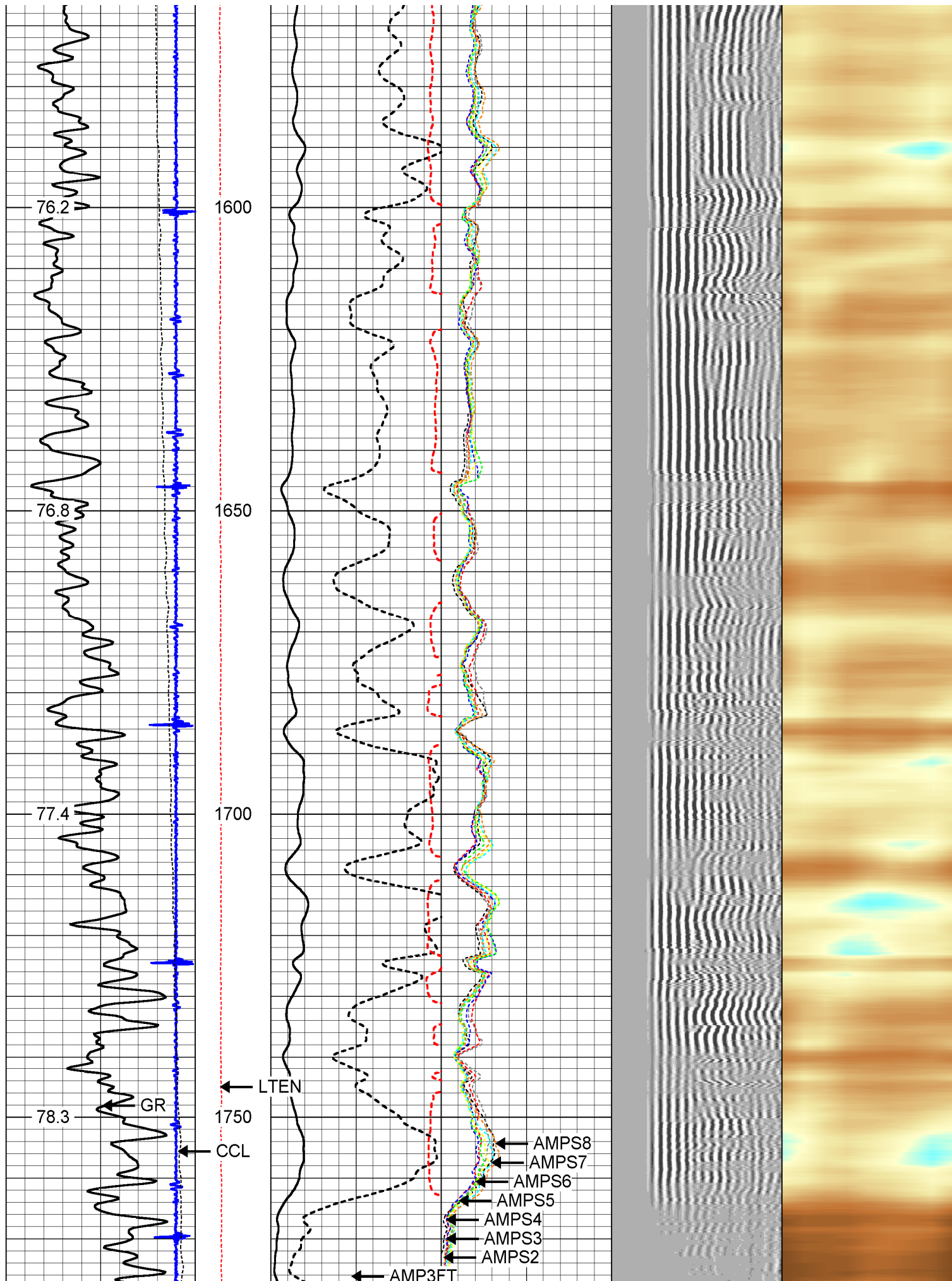


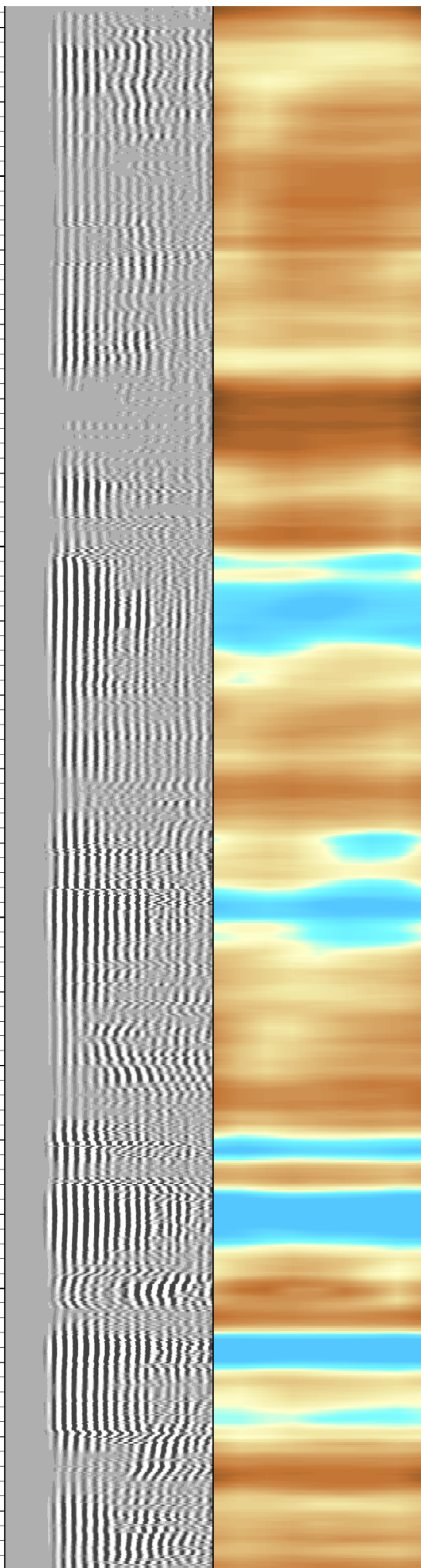
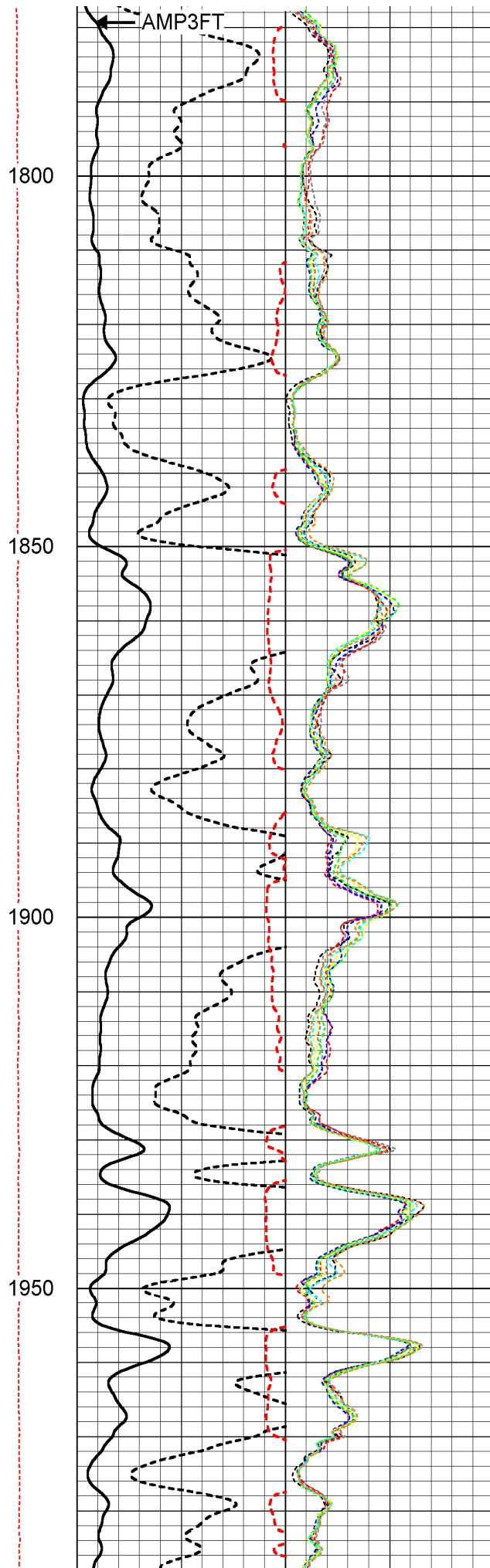
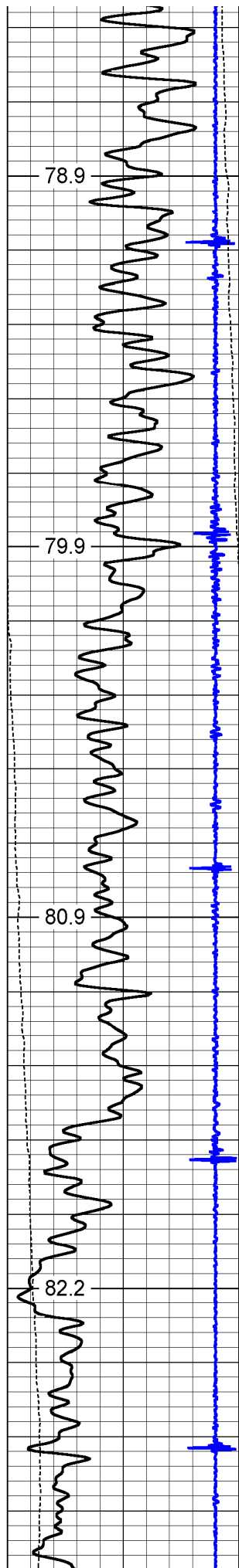


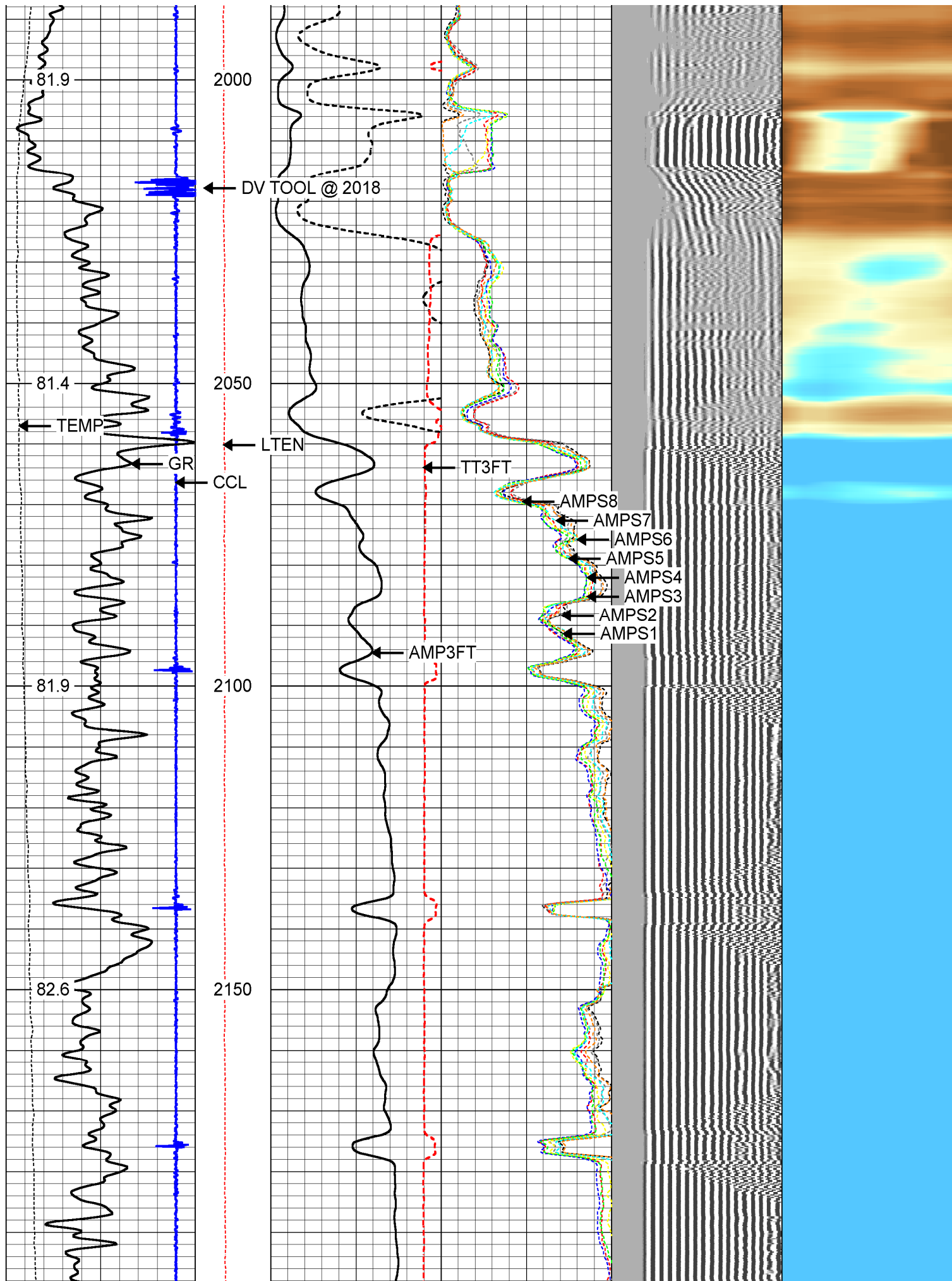


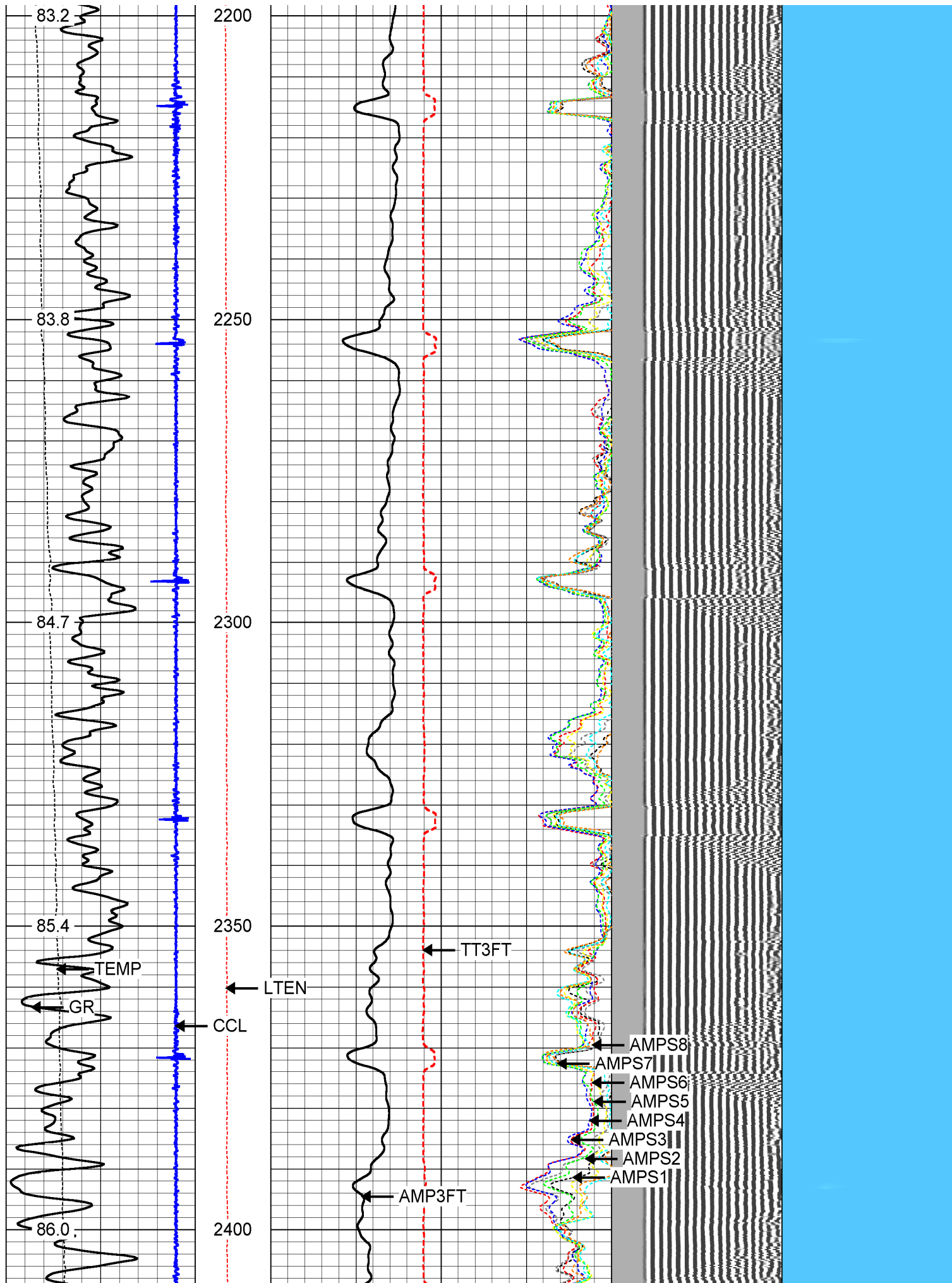


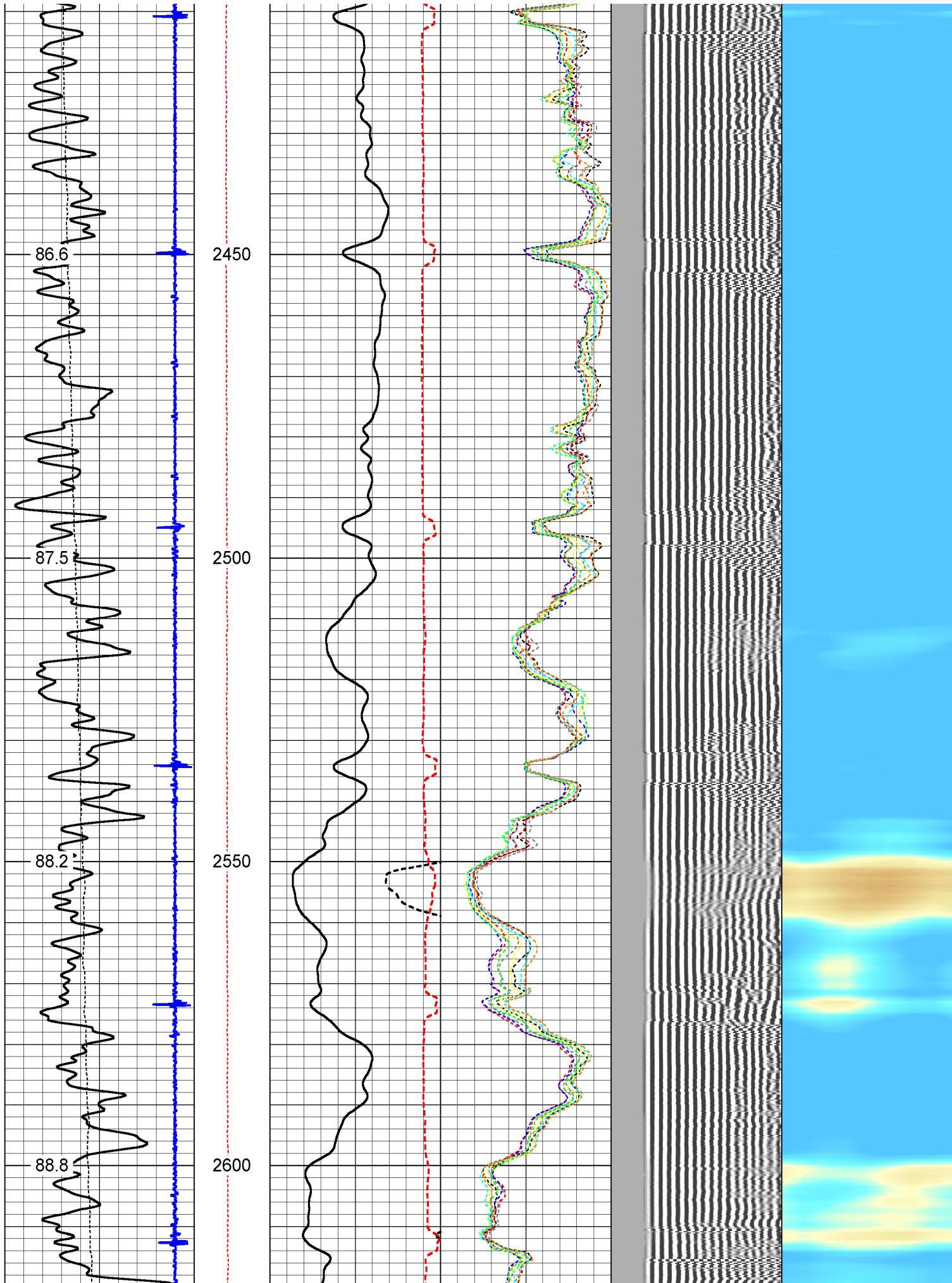


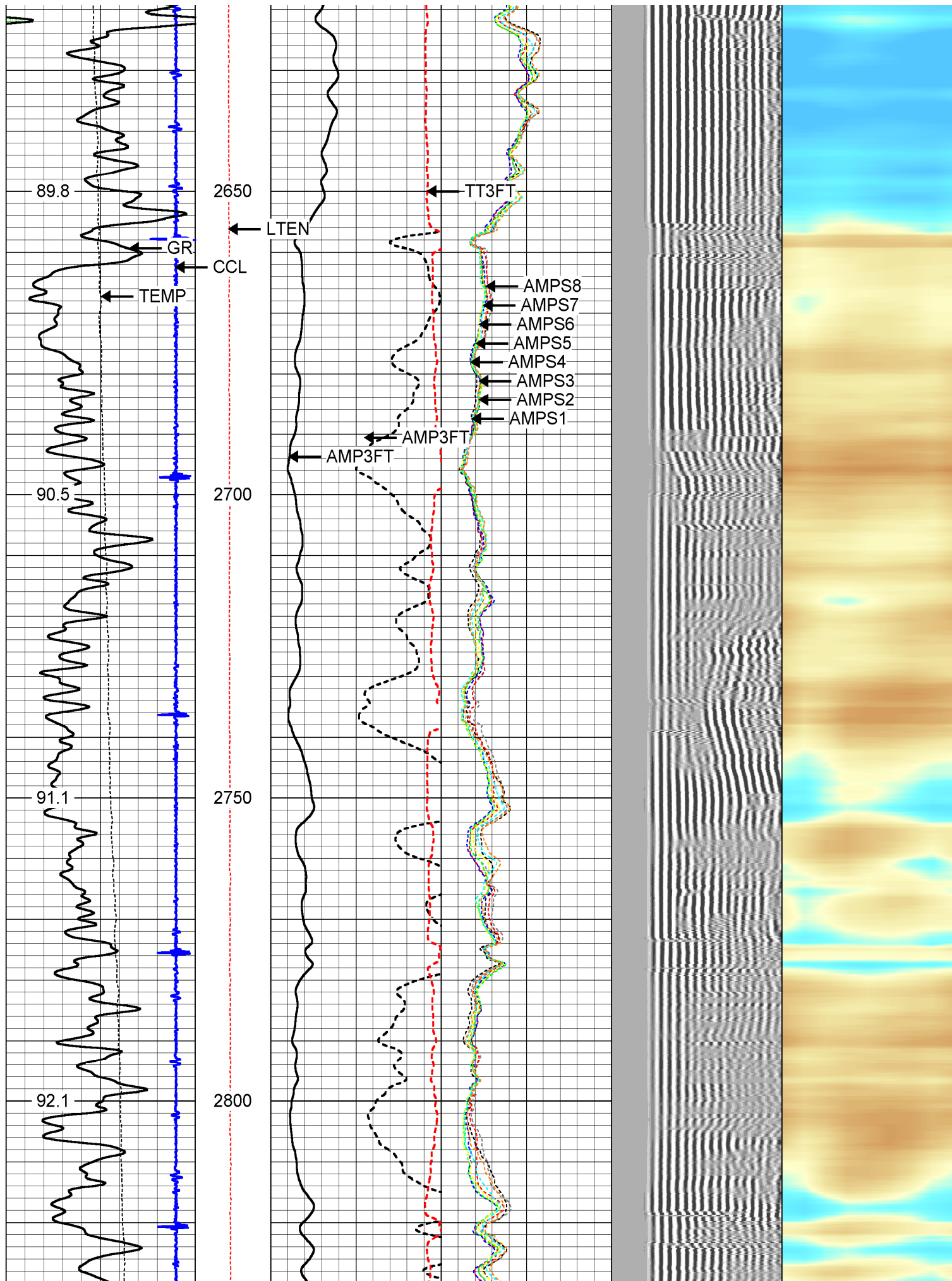


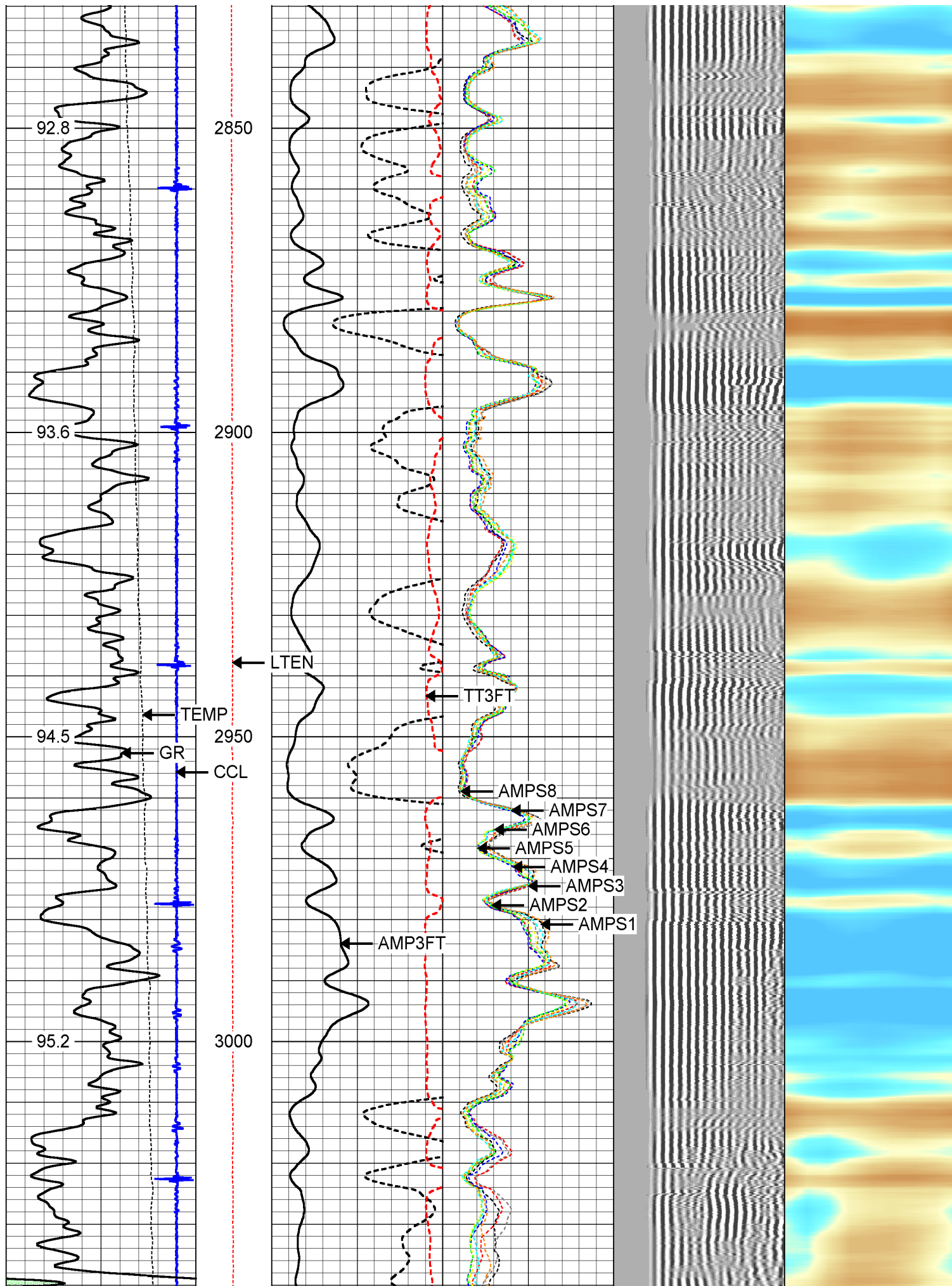


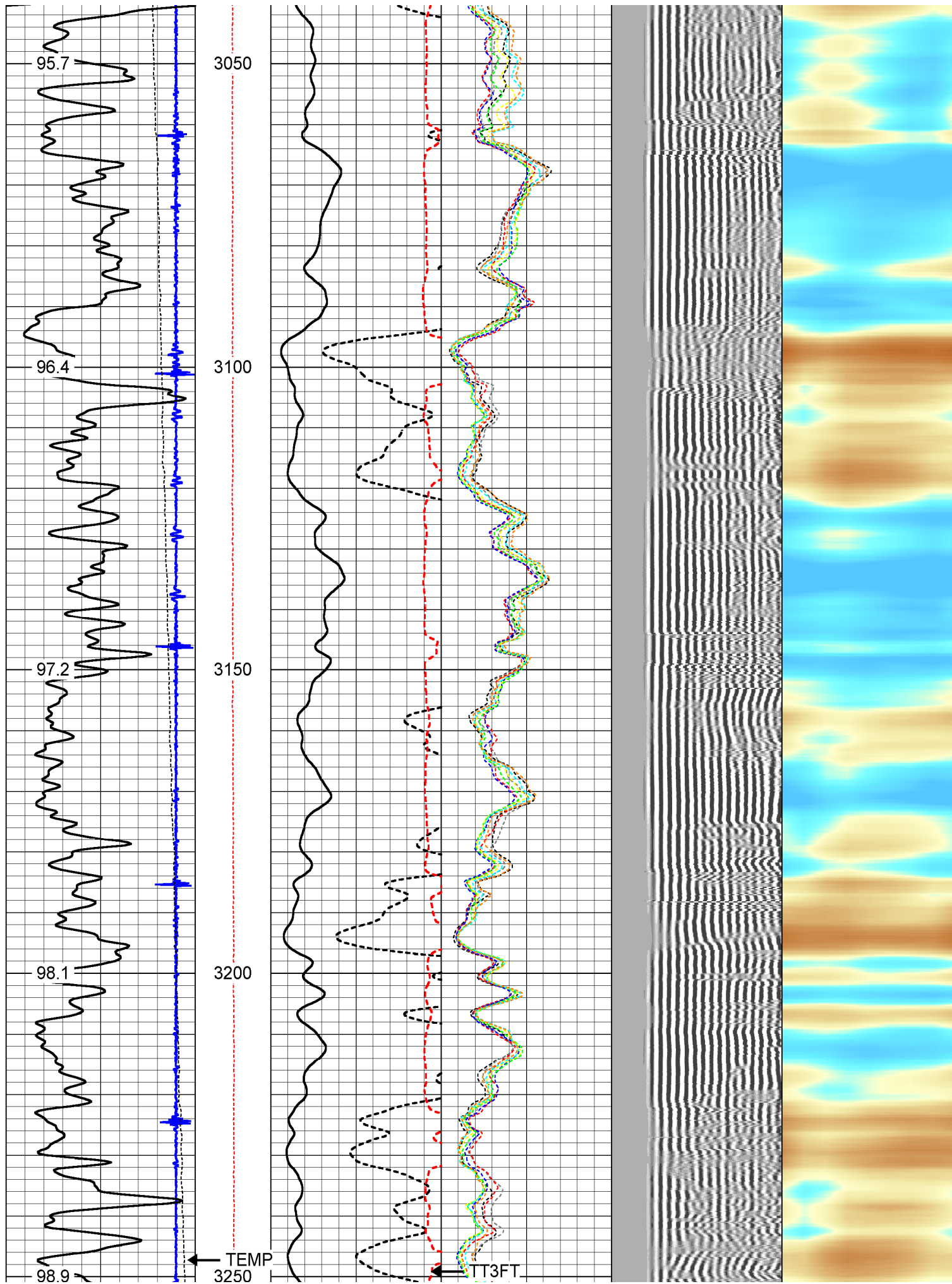


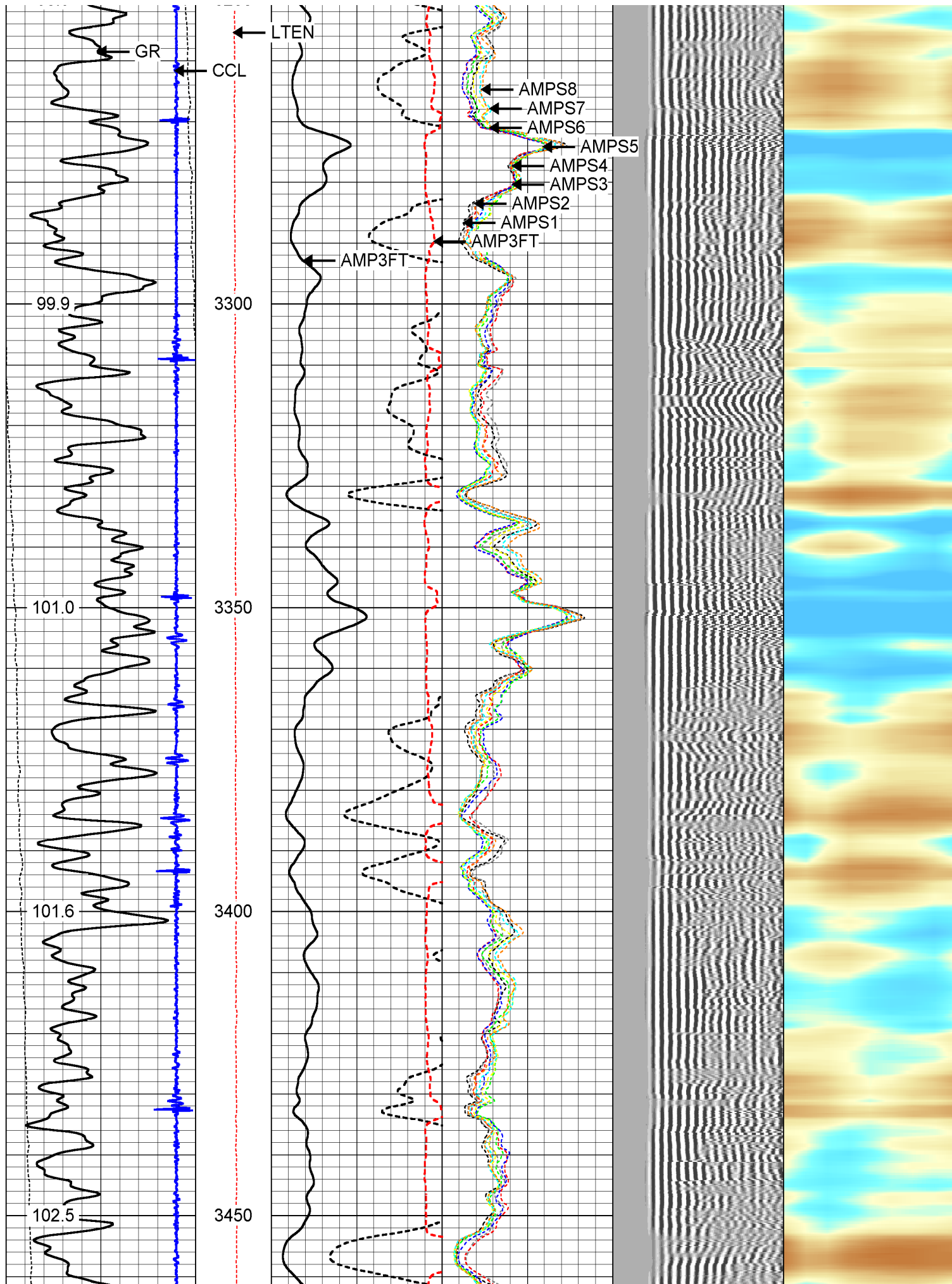


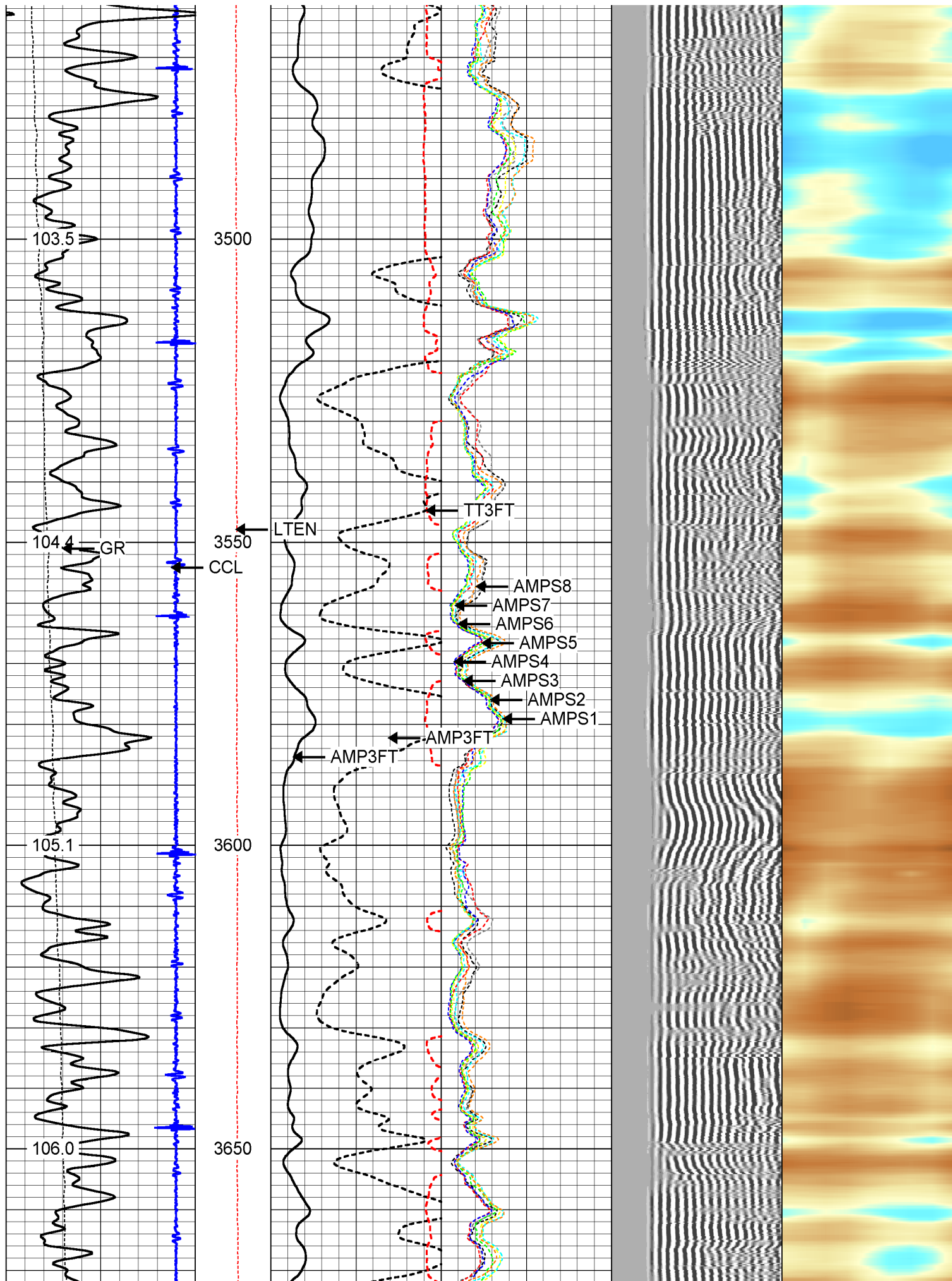


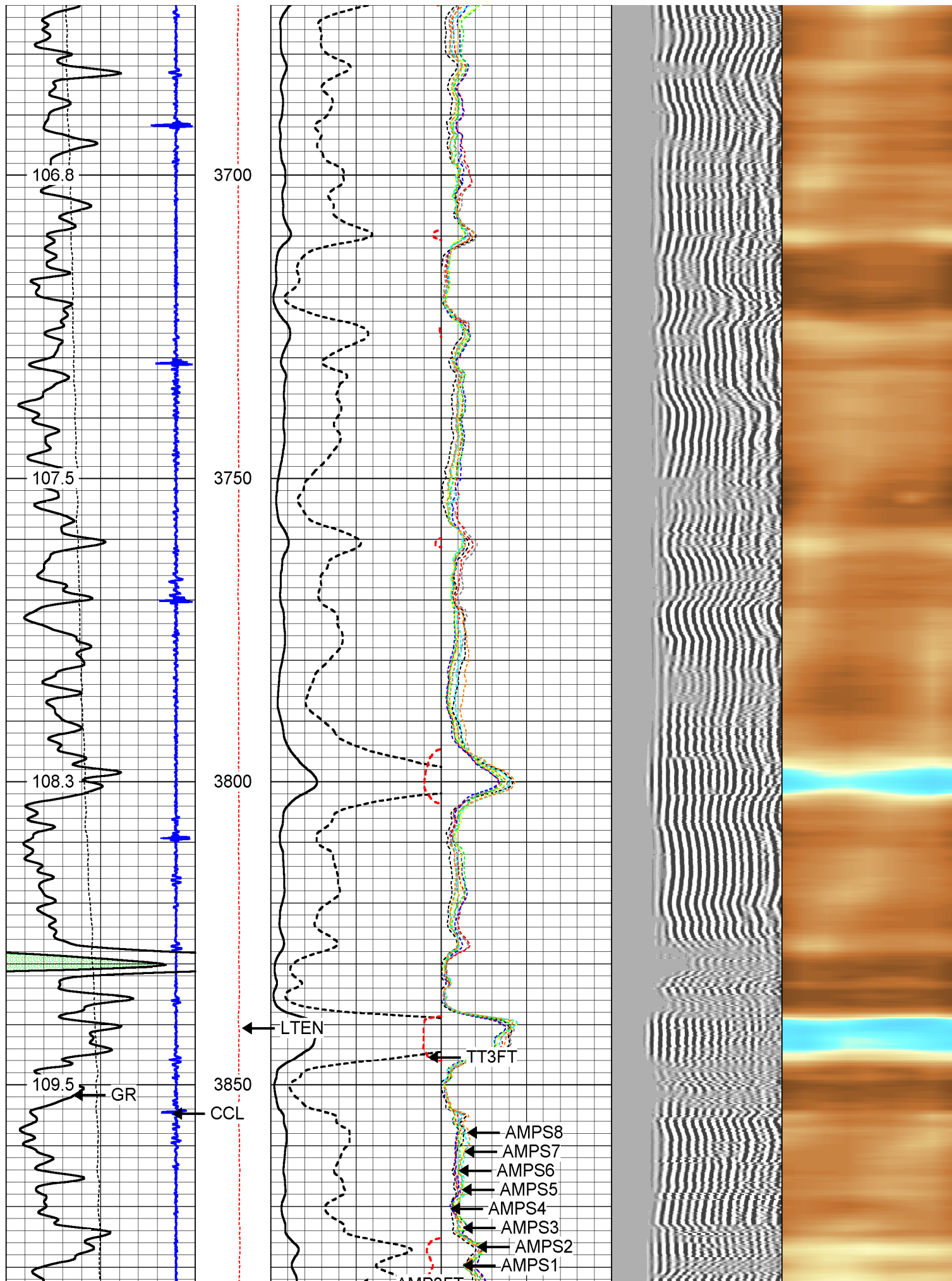


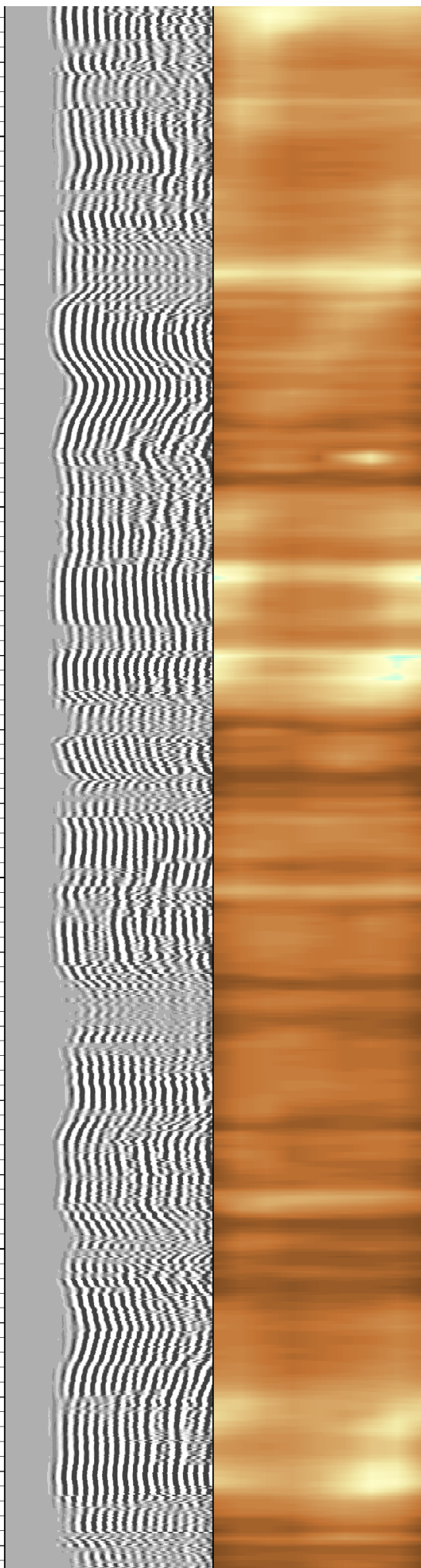
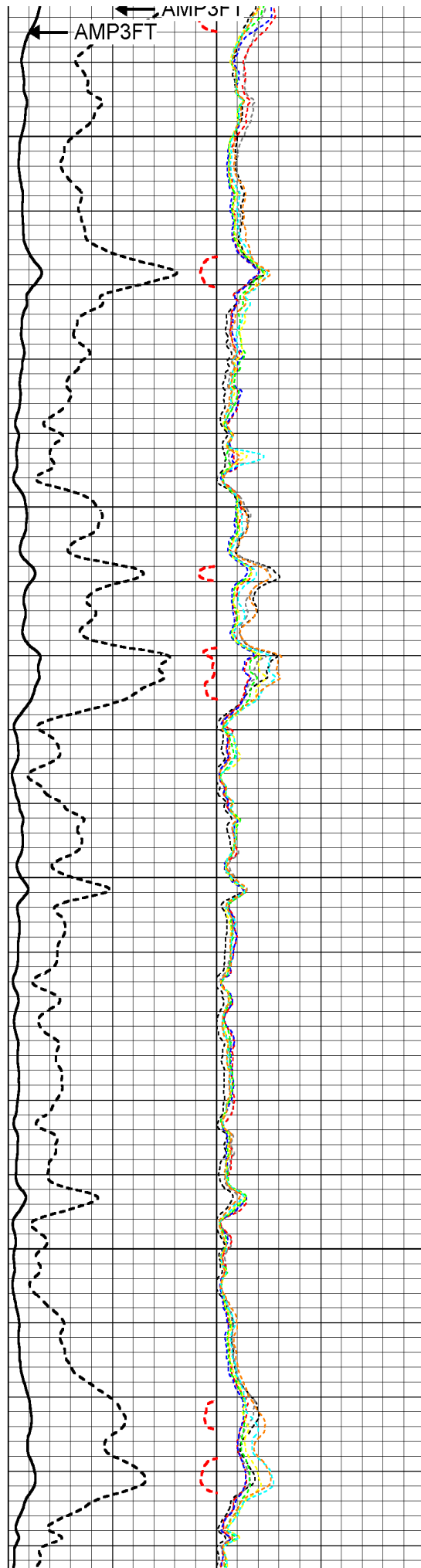
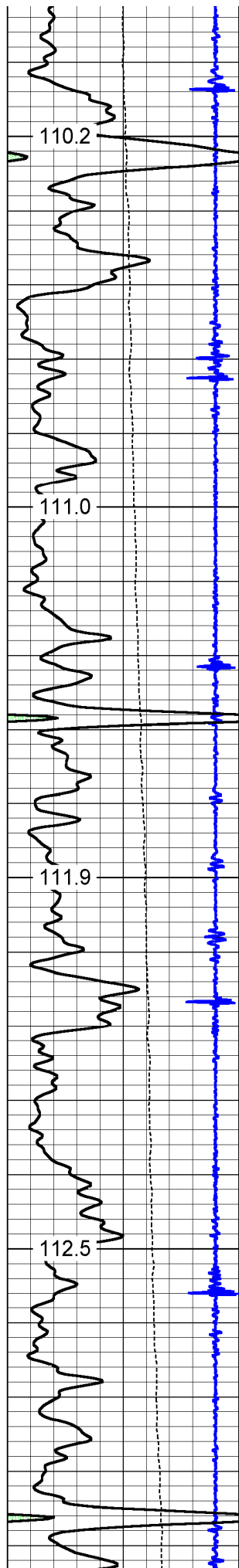


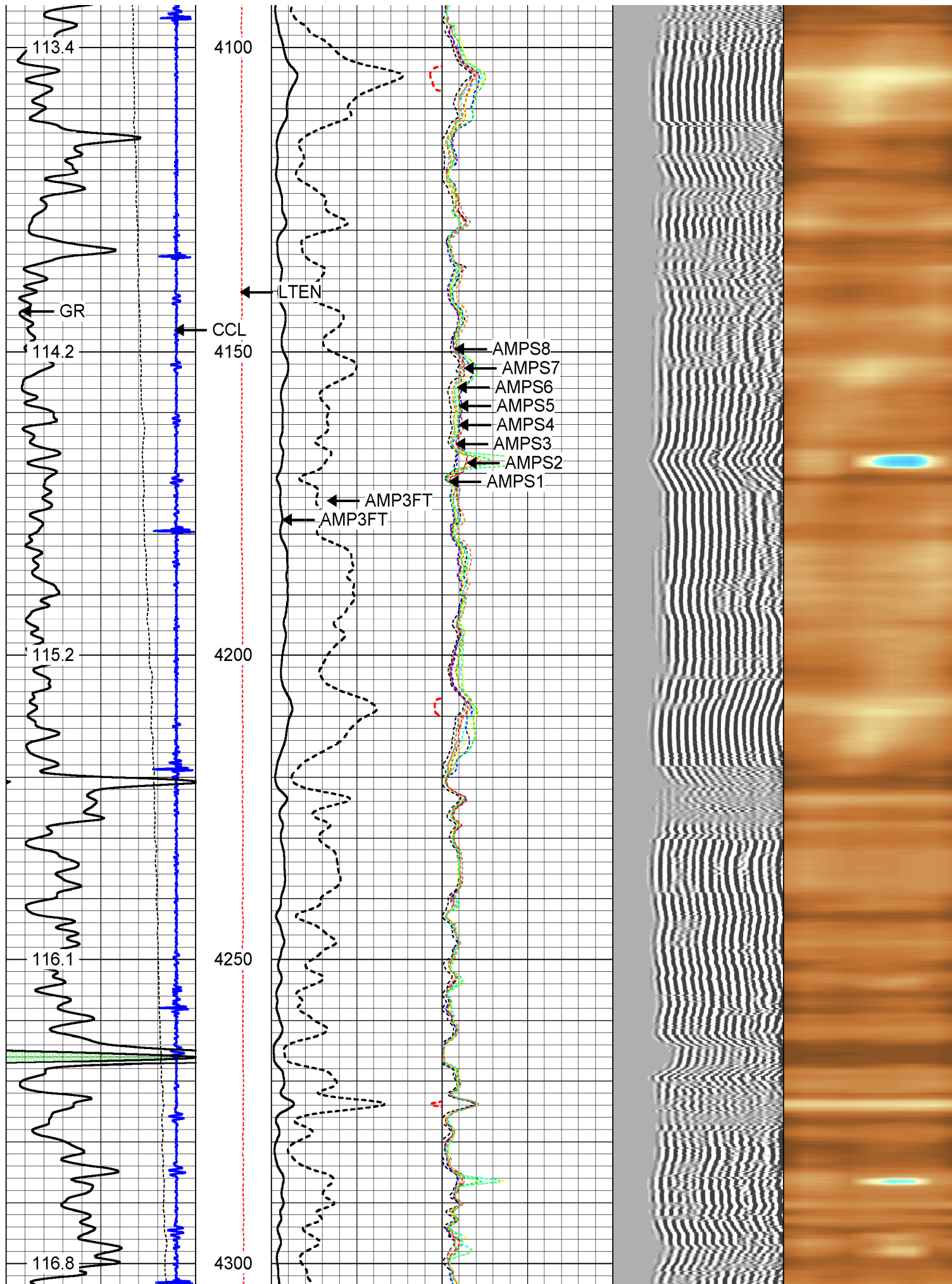


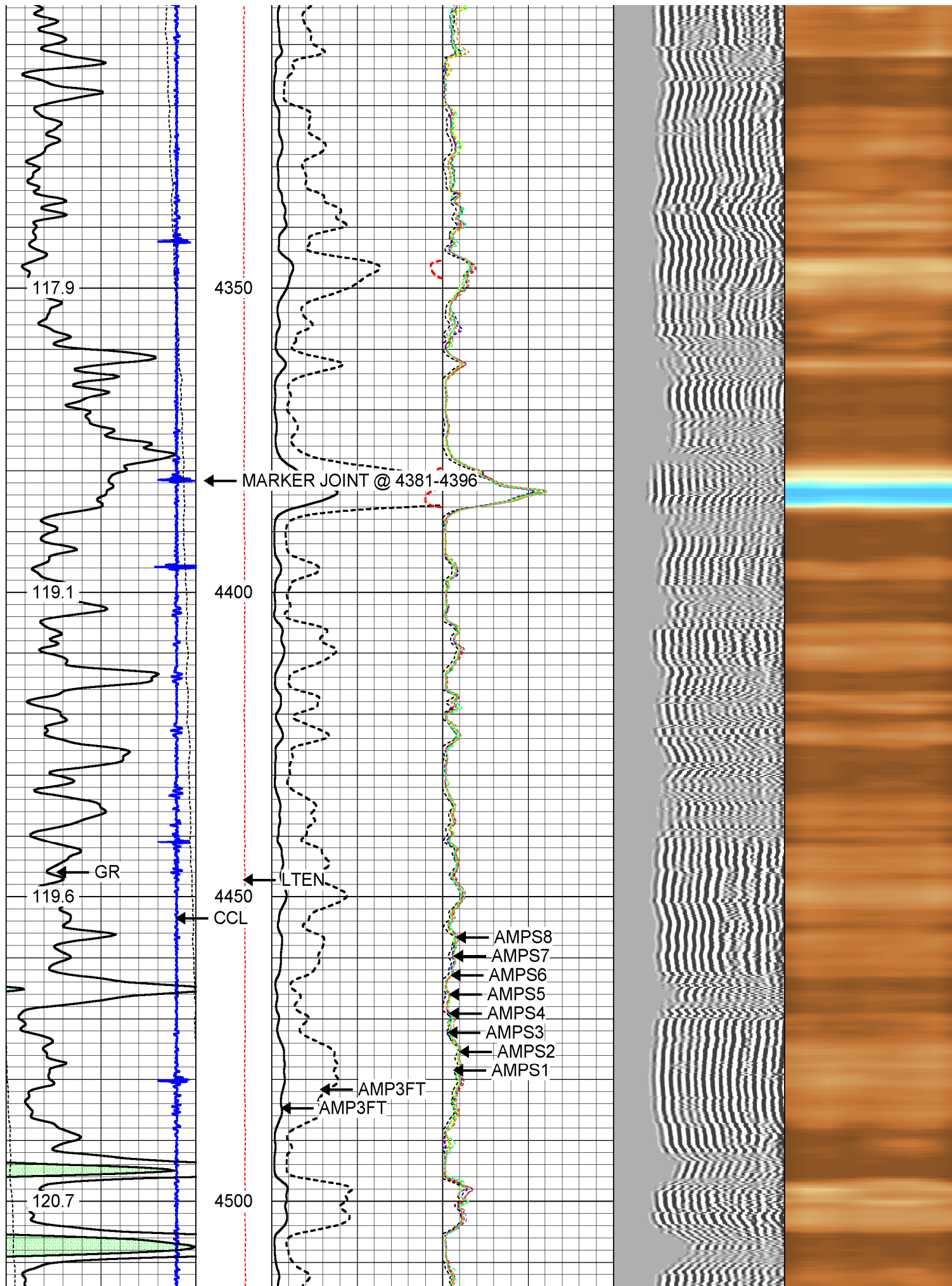


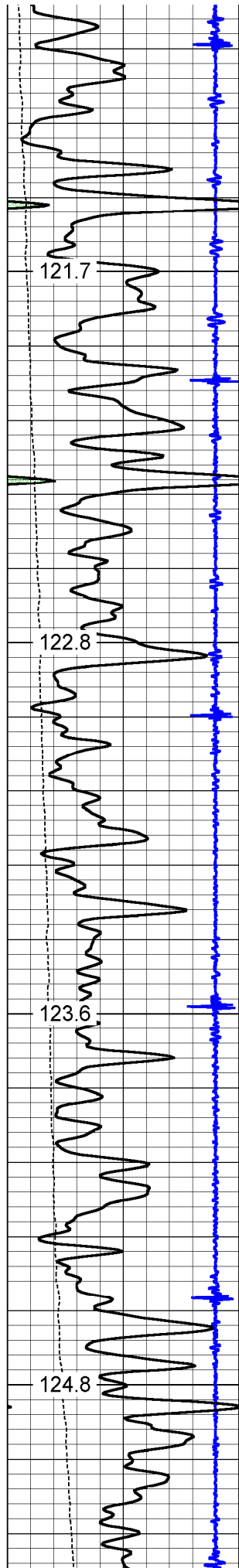










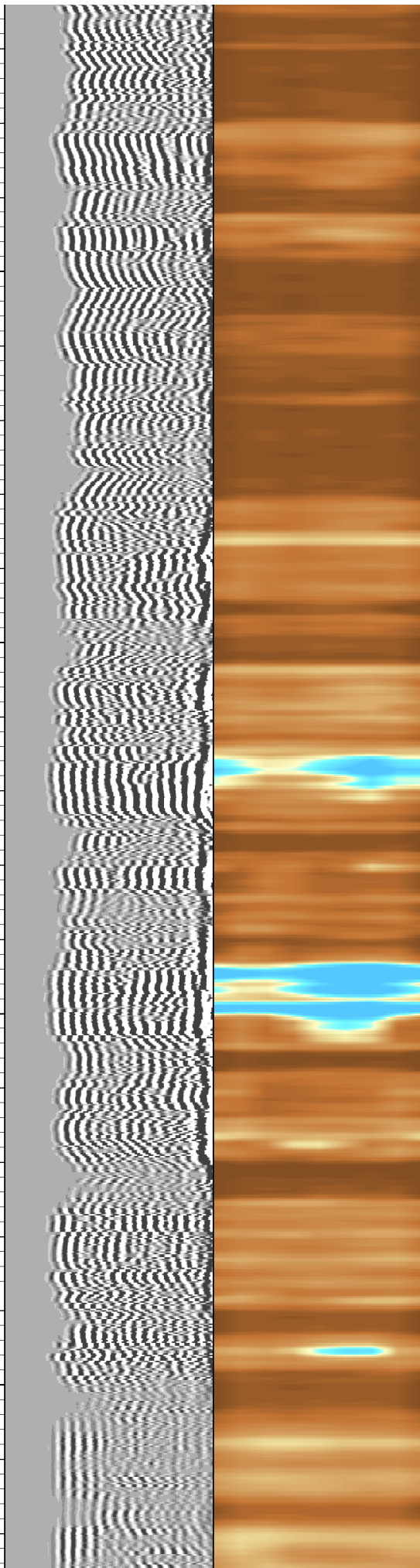
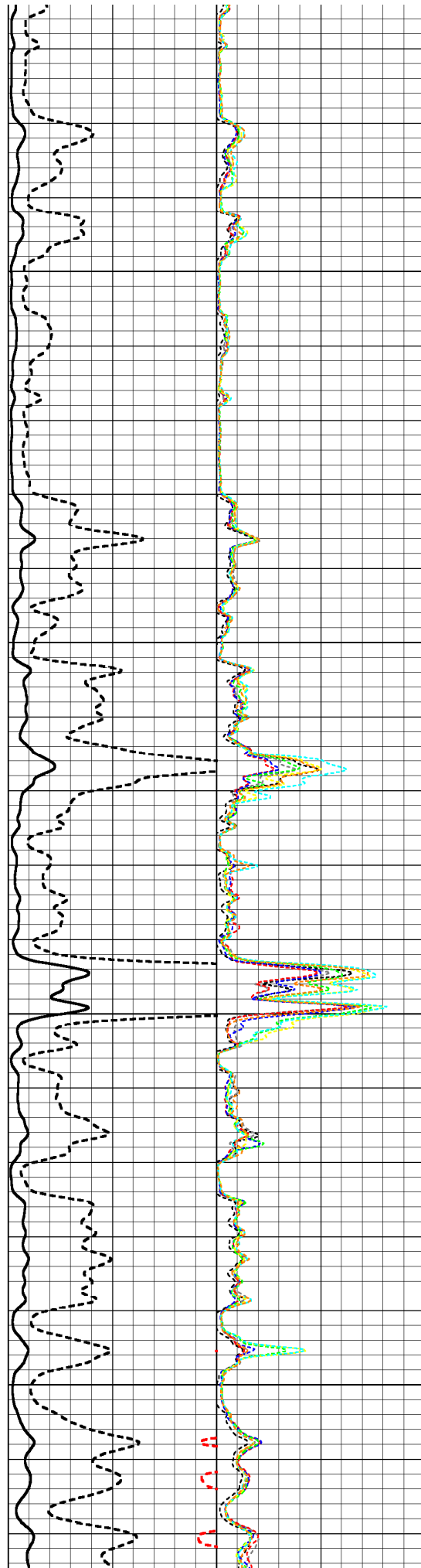


4550

4600

4650

4700



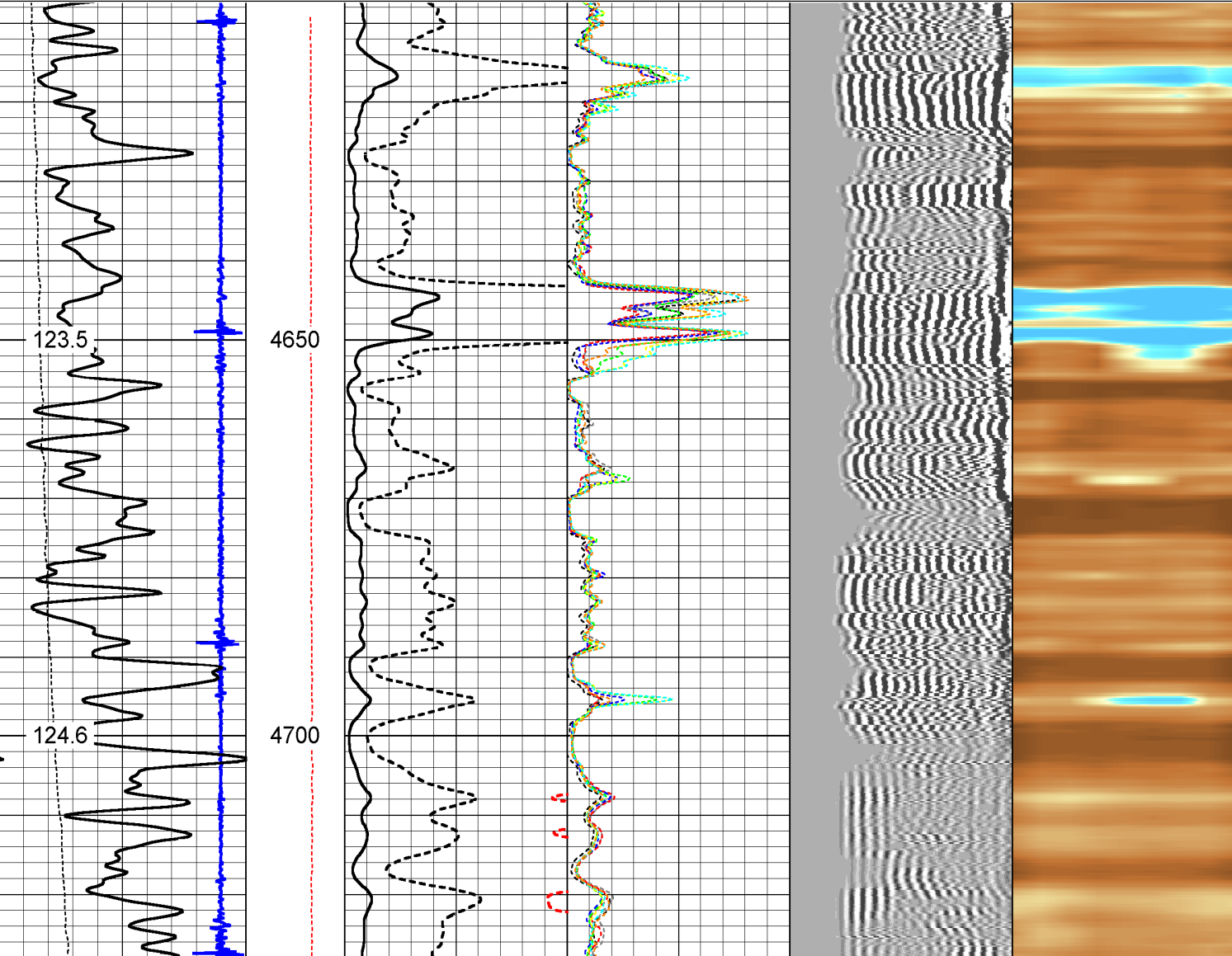
REPEAT PASS

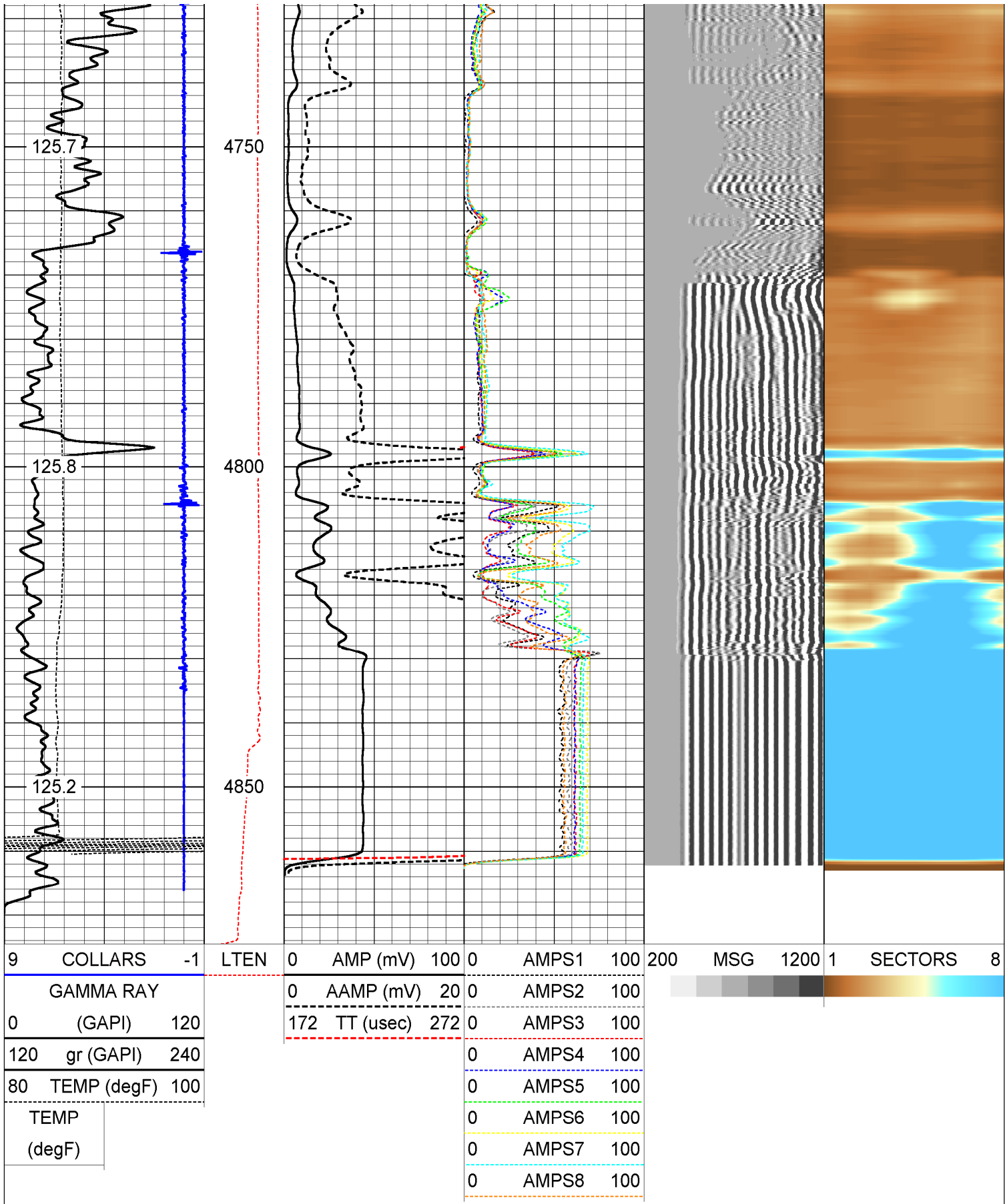
HALLIBURTON

SCALE 1:240

Database File: hartman_garden_city_1-19_rcbl.db
Dataset Pathname: pass13
Presentation Format: rcbl_tem
Dataset Creation: Mon Oct 29 10:21:27 2012 by Log Halliburton Casedho
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	172			TT (usec)	272	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				





REPEAT PASS

HALLIBURTON

SCALE 1:240

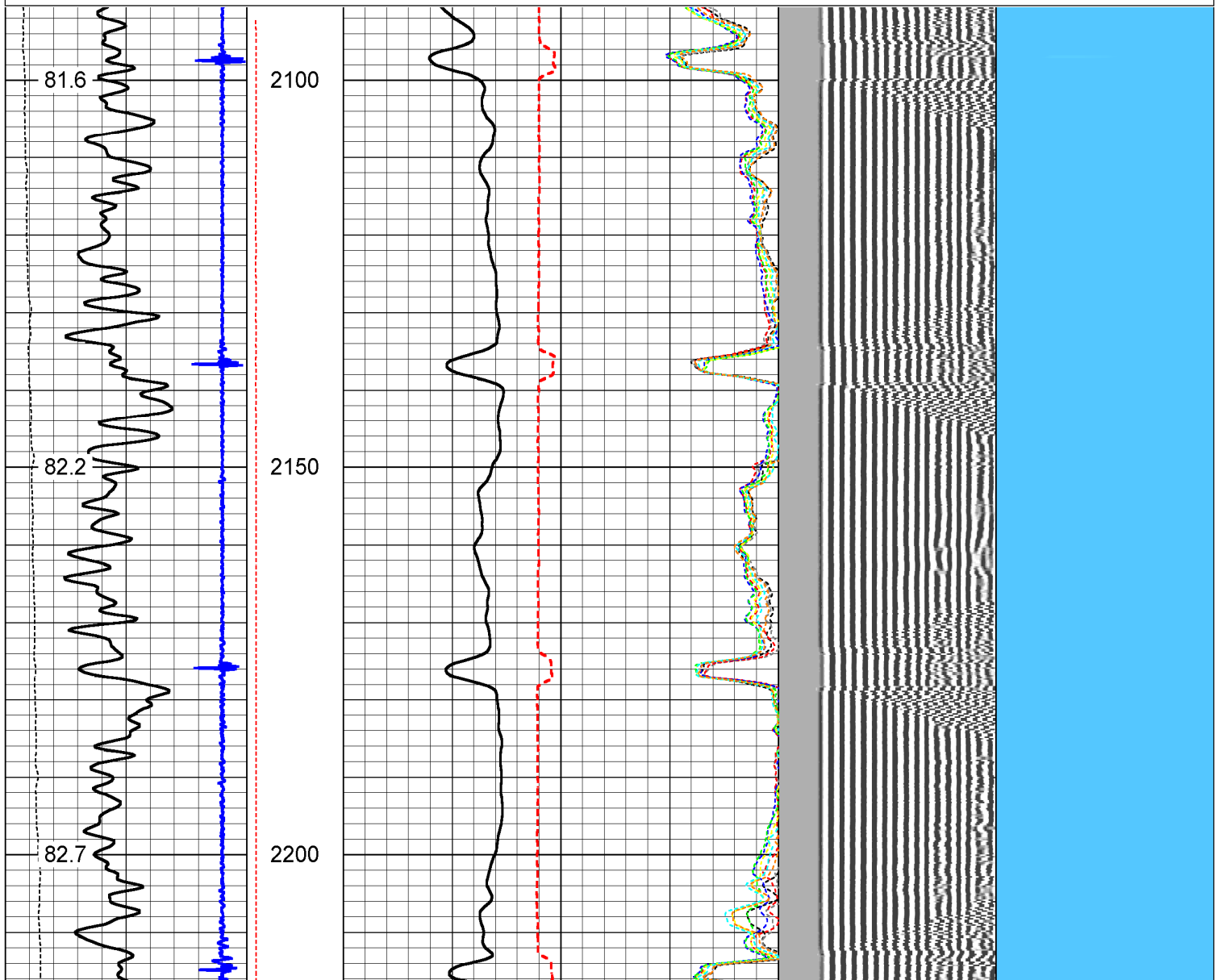
FREE PIPE PASS

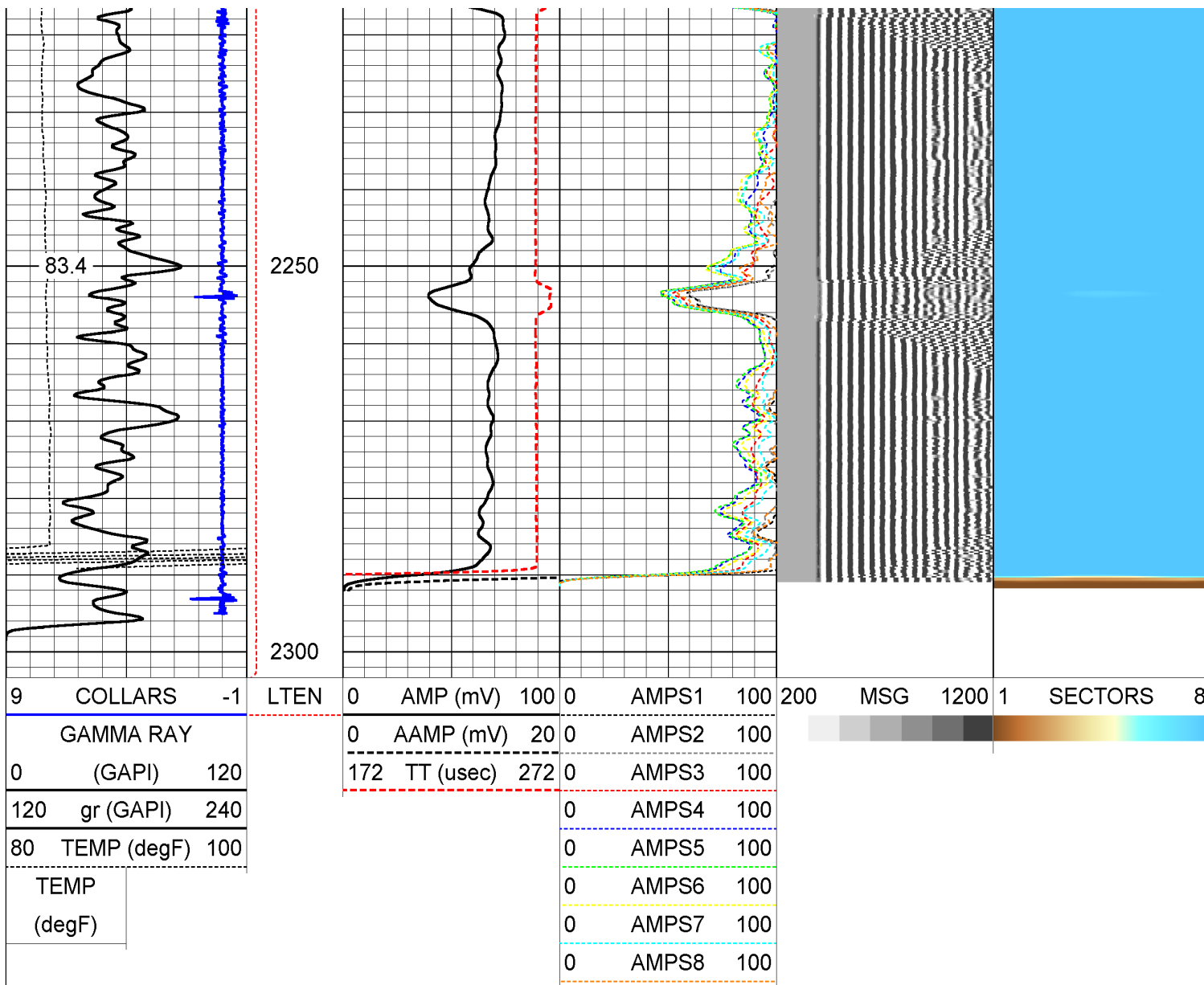
HALLIBURTON

SCALE 1:240

Database File: hartman_garden_city_1-19_rcbl.db
 Dataset Pathname: pass11
 Presentation Format: rcbl_tem
 Dataset Creation: Mon Oct 29 10:10:16 2012 by Log Halliburton Casedho
 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					172	TT (usec)	272	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 PASS

HALLIBURTON

SCALE 1:240

Calibration Report

Database File: hartman_garden_city_1-19_rcbl.db
 Dataset Pathname: pass14
 Dataset Creation: Mon Oct 29 10:30:48 2012 by Log Halliburton Casedho

Gamma Ray Calibration Report

Type / Serial: probe275dig / 080725

SHOP CALIBRATION

Fri Feb 24 10:26:00 2012

	Counts/Sec.	Gain	Offset	Jig	Units
Background	32.8				cps
Calibrator	333.2				cps
		1.2354			GAPI/cps

PRIMARY VERIFICATION

Thu Feb 07 09:42:28 2008

Background	28.4		cps
Calibrator	276.0		cps
Difference		247.5	GAPI

BEFORE SURVEY VERIFICATION Thu Feb 07 09:45:26 2008

Background	26.5		cps
Calibrator	256.0		cps
Difference		229.5	GAPI

AFTER SURVEY VERIFICATION

Background	0.0		cps
Calibrator	0.0		cps
Difference		0.0	GAPI

Segmented Cement Bond Log Calibration Report

Serial Number:	080640	
Tool Model:	Probe	
Calibration Casing Diameter:	5.500	in
Calibration Depth:	2191.855	ft

Master Calibration, performed Mon Oct 29 10:09:26 2012:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.471	0.500	71.921	151.752	0.481
CAL	0.001	0.590				
5'	0.001	0.432	0.500	71.921	165.990	0.289
SUM						
S1	0.016	0.479	0.000	100.000	215.738	-3.374
S2	0.002	0.463	0.000	100.000	216.599	-0.325
S3	0.001	0.458	0.000	100.000	218.587	-0.133
S4	0.002	0.464	0.000	100.000	216.262	-0.380
S5	0.000	0.473	0.000	100.000	211.516	-0.098
S6	0.001	0.487	0.000	100.000	205.793	-0.166
S7	0.001	0.493	0.000	100.000	203.351	-0.159
S8	0.001	0.484	0.000	100.000	206.681	-0.121

Internal Reference Calibration, performed Wed Dec 31 18:00:00 1969:

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.001	0.590	1.000	0.000

Air Zero Calibration, performed Wed Dec 31 18:00:00 1969:

	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: Tue Nov 15 13:47:32 2011

	Reference	Reading
Low Reference:	89.00 degF	101.15 degF
High Reference:	134.00 degF	144.83 degF

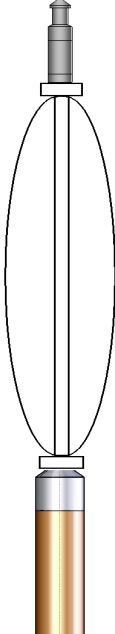
Gain: 1.03
 Offset: -16.20
 Delta Spacing: 1

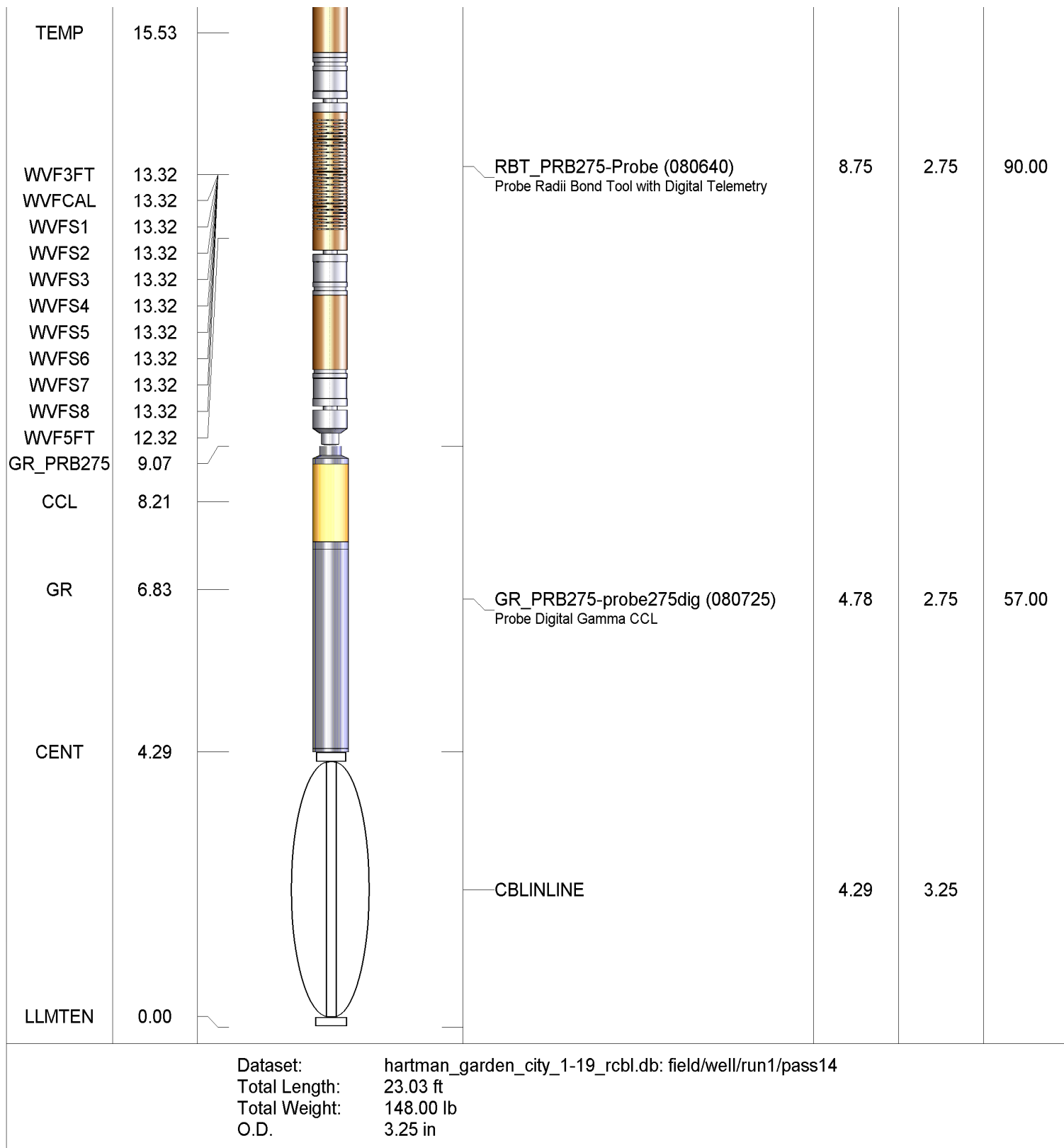
Log Variables

Database: C:\Warrior\Data\hartman_garden_city_1-19_rcbl.db
 Dataset: field/well/run1/pass14

Top - Bottom

PPT usec 262	CASEWGHT lb/ft 15.5	MAXAMPL mV 72	MINAMPL mV 1	MINATTN db/ft 0.8	CASEOD in 5.5	PERFS 0
TDEPTH ft 4843	BOTTEMP degF 126.2	BITSIZE in 7.875				

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
STNDCH	23.03		STND_CH 1.4375 IN CABLE HEAD	0.92	1.44	1.00
CENT	22.12		CBLINLINE	4.29	3.25	
RBT_PR275	17.82					



Company	HARTMAN OIL COMPANY, INC.				
Well	GARDEN CITY NO. 1-19				
Field	DAMME				
County	FINNEY		State	KANSAS	
HALLIBURTON		RADIAL CEMENT BOND LOG			

