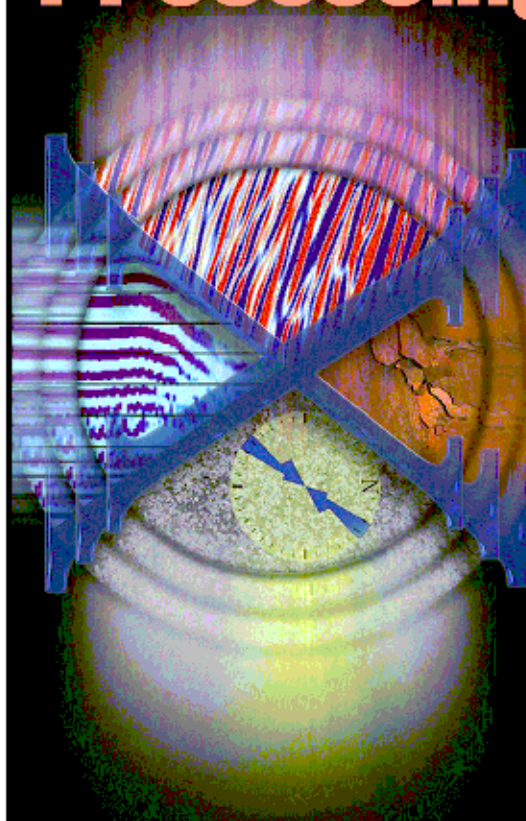


Acoustic Waveform Processing



SLOWNESS ANALYSIS

COMPANY NALCOR ENERGY INC.

WELL NALCOR ET AL FINNEGAN #1

FIELD FINNEGAN

PROVINCE NEWFOUNDLAND AND LABRADOR

LOCATION:

LAT 49.82 N LONG 63.33 W

ELEVATIONS:

KB 125.00 M DF GL 118.75 M

DATE 02-NOV-2010 ECC 208041

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

BOREHOLE RECORD

BIT SIZE	FROM	TO
444.5 MM	0.0 M	570.0 M
311.0 MM	570.0 M	2285.0 M

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
338.7 MM	81.1 KG/M	K-55	0.0 M	570.0 M
244.5 MM				

REMARKS

TIME STOPPED CIRCULATION: 02-NOV-2010 03:00 AM

SAMPLE MEASURED: RM 1.078 @ 8.3 DEG

RMF 0.918 @ 8.3 DEG

RMC 2.278 @ 8.3 DEG

CABLEHEAD THERMOMETER READINGS: 54 DEG

INTEGRATED TRANSIT TIME TICS EVERY: 1.0, 10.0, & 100.0 μ SEC.

RIG: STONEHAM 11

CREW:

S.CREWE, B.BARSS, M.BAHAR, J.HENNESSEY, K.HASIUK, J.WOODS, J.JEWEL, R.PERRY

LOG ANALYST WEI JIANG

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	SURVEL	3844XB	73682	FREE
1	1	DHPA	4430XB	10152148	FREE
1	1	TTWA	3881XB	152403	FREE
1	1	COMM	3514XB	150740	FREE
1	1	WTS DGR/SU	1328XB	370830	FREE
1	1	ACOUSTIC EL	1877EA	10148038	CENTRALIZED
1	1	XMAC RX MDR	1678MB	10038383	CENTRALIZED
1	1	XMAC ISO	1678PB	10148318	FREE
1	1	XMAC TX FLC	1678PA	370882	CENTRALIZED
1	1	XMAC TX FLC	1878FA	10051497	CENTRALIZED
1	1	WTS DBL KNJ	3838XA	188288	FREE
1	1	DRT	4401XB	10119883	FREE
1	1	STAR II PS	1022PA	10568170	FREE
1	1	F / BCM	1038EA	10103728	FREE
1	1	STAR MDR	4236MA	10433028	6-PAD DEVICE

Computed Slowness Curves 1:240

CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 2 16:48:02 2010	BIT SIZE
F1:CALX	CAL	Nov 3 01:15:13 2010	CALIPER FROM X AXIS OF X-Y CALIPER(S)
F1:DTC	DTC	Nov 10 10:08:31 2010	COMPRESSIONAL WAVE SLOWNESS
F1:DTS	DTS	Nov 10 10:08:45 2010	SHEAR WAVE SLOWNESS
F1:GR	GR	Nov 2 16:48:02 2010	GAMMA RAY

Project : /data/lanreal/208041_naloor_xmaa
 User : lanreal
 Presentation : c:\saunary3\data/lanreal/208041_naloor_xmaa/xmaa.dt.pdf [1:240 Scale]
 Plot Interval : 528.999 - 2291.33 Meters

 Data File 1 : F1 : c:\saunary3\export\data/lanreal/208041_naloor_xmaa/slowness.xtf
 Created On : Nov 2 13:02:15 2010
 Company : NALCOR ENERGY
 Well : NALCOR ET AL FINNEGAN 31
 Field : FINNEGAN
 File Interval : 528.999 - 2291.33 Meters
 Dat : m874B18

GR BACKUP

Bit Size

125 --- 375

(mm)

Caliper [calx]

125 --- 375

(mm)

Gamma Ray [gr]

0 --- 150

(gAPI)

METERS

Sharp/Deep Hole [m]

0 --- 4

Compressional Slowness [dts]

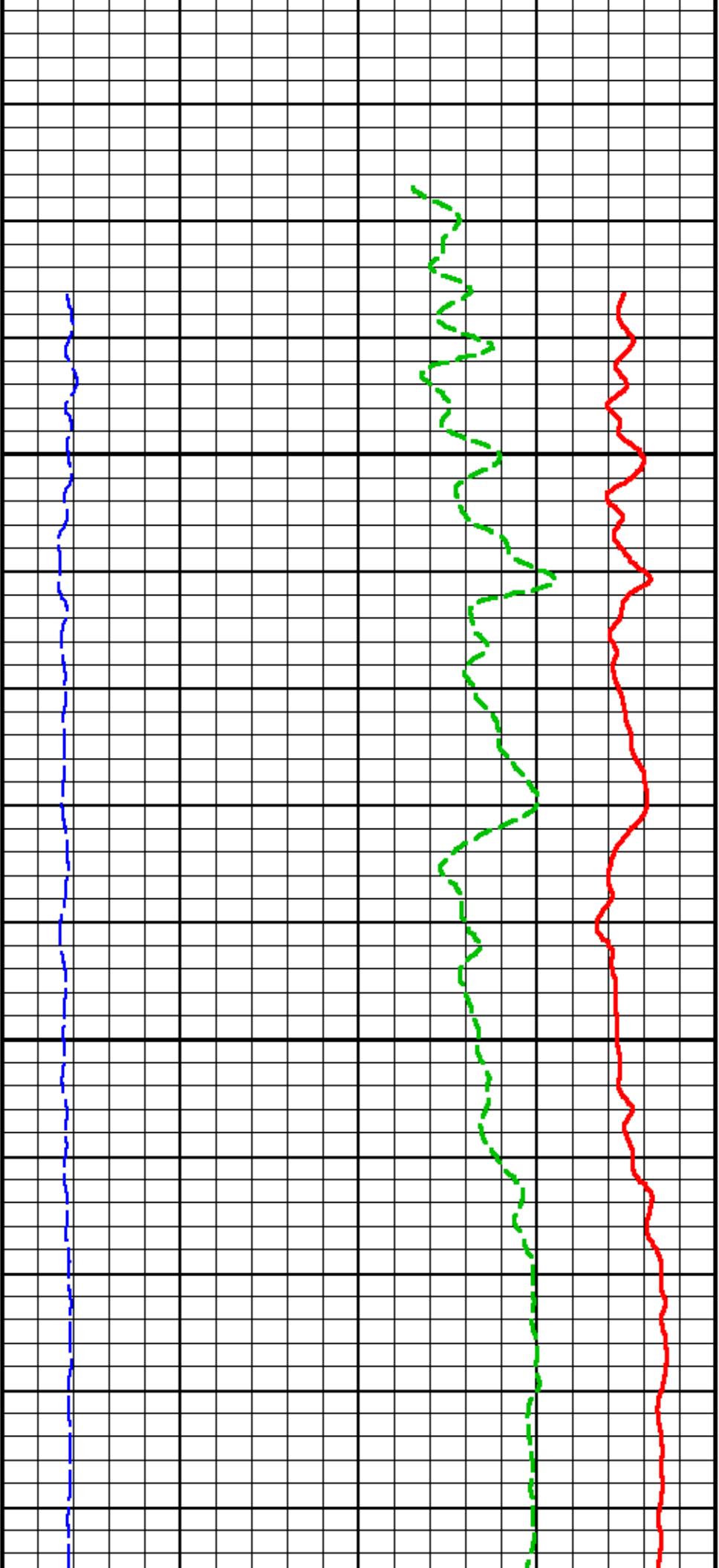
900 --- 100

(us/m)

Shear Slowness [dts]

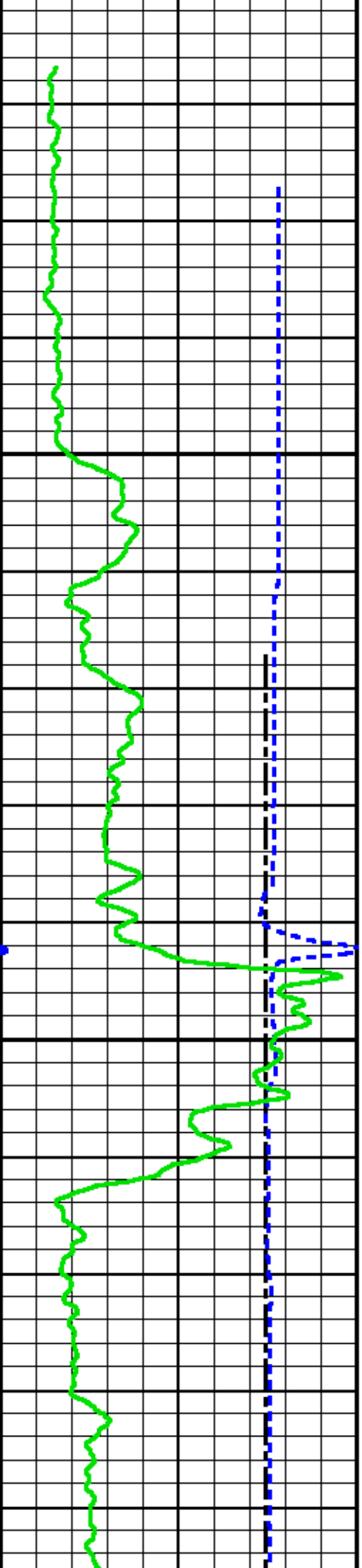
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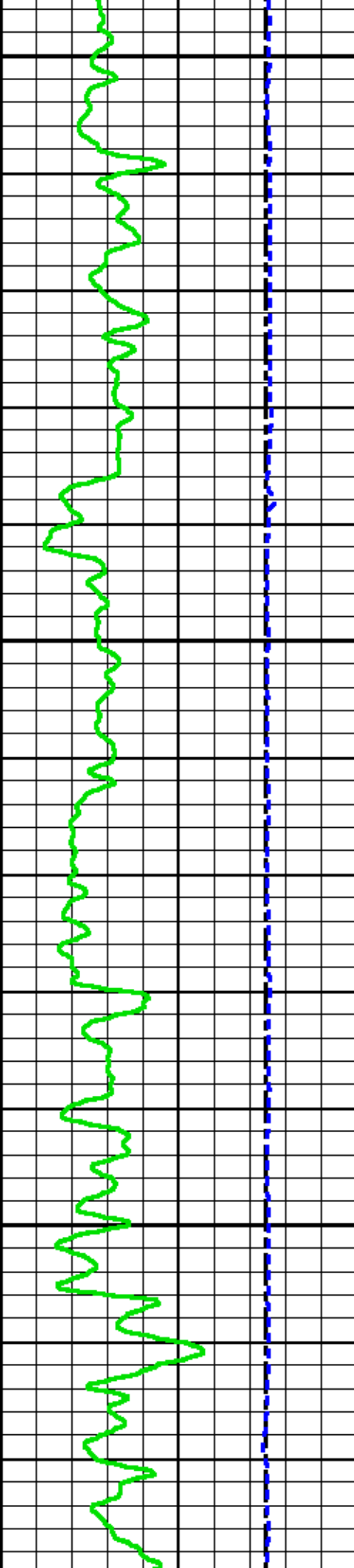
(us/m)



550

575

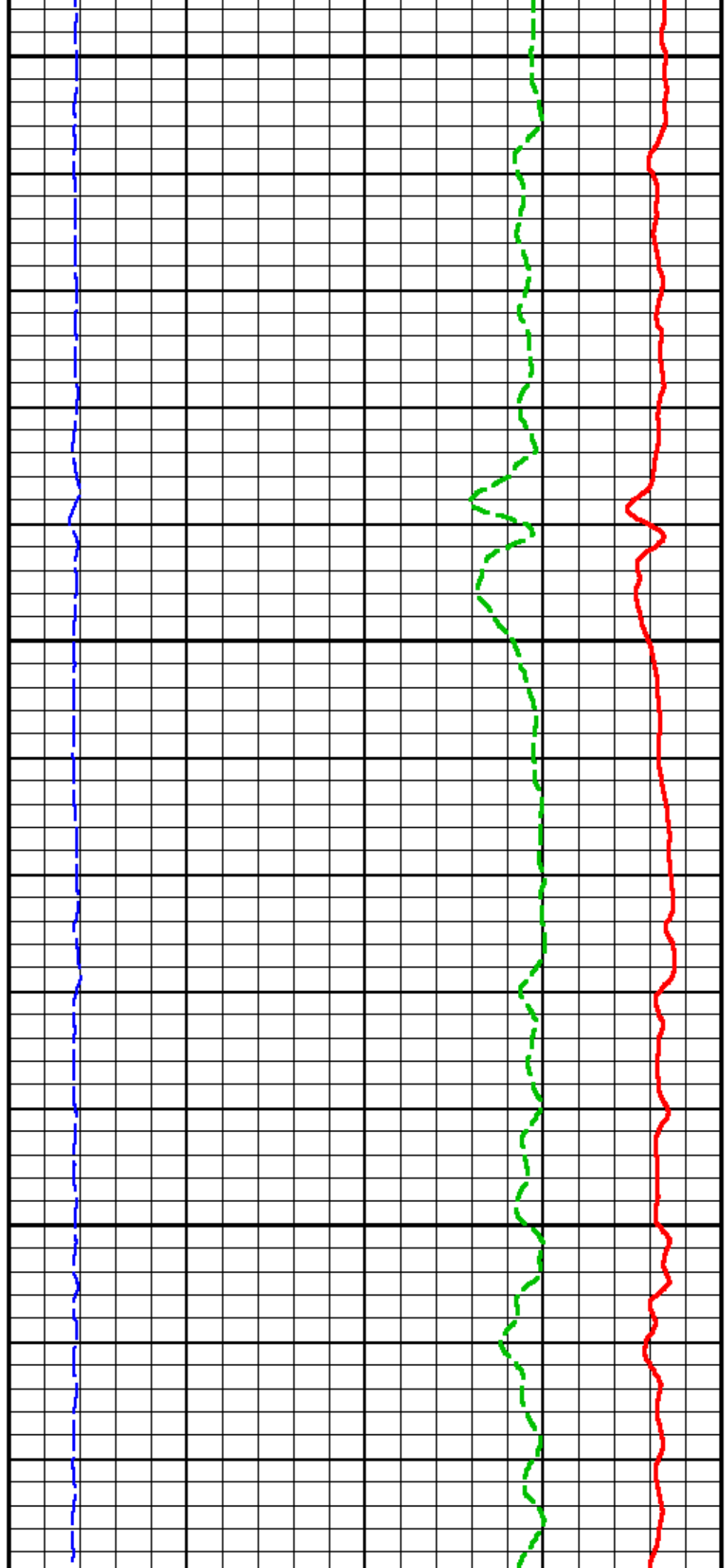


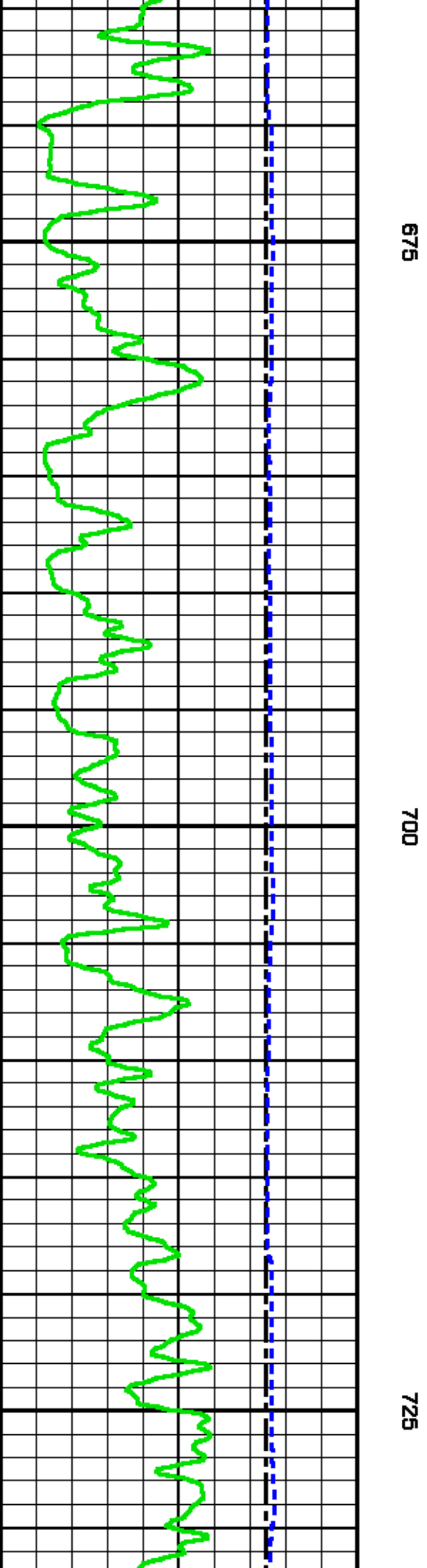
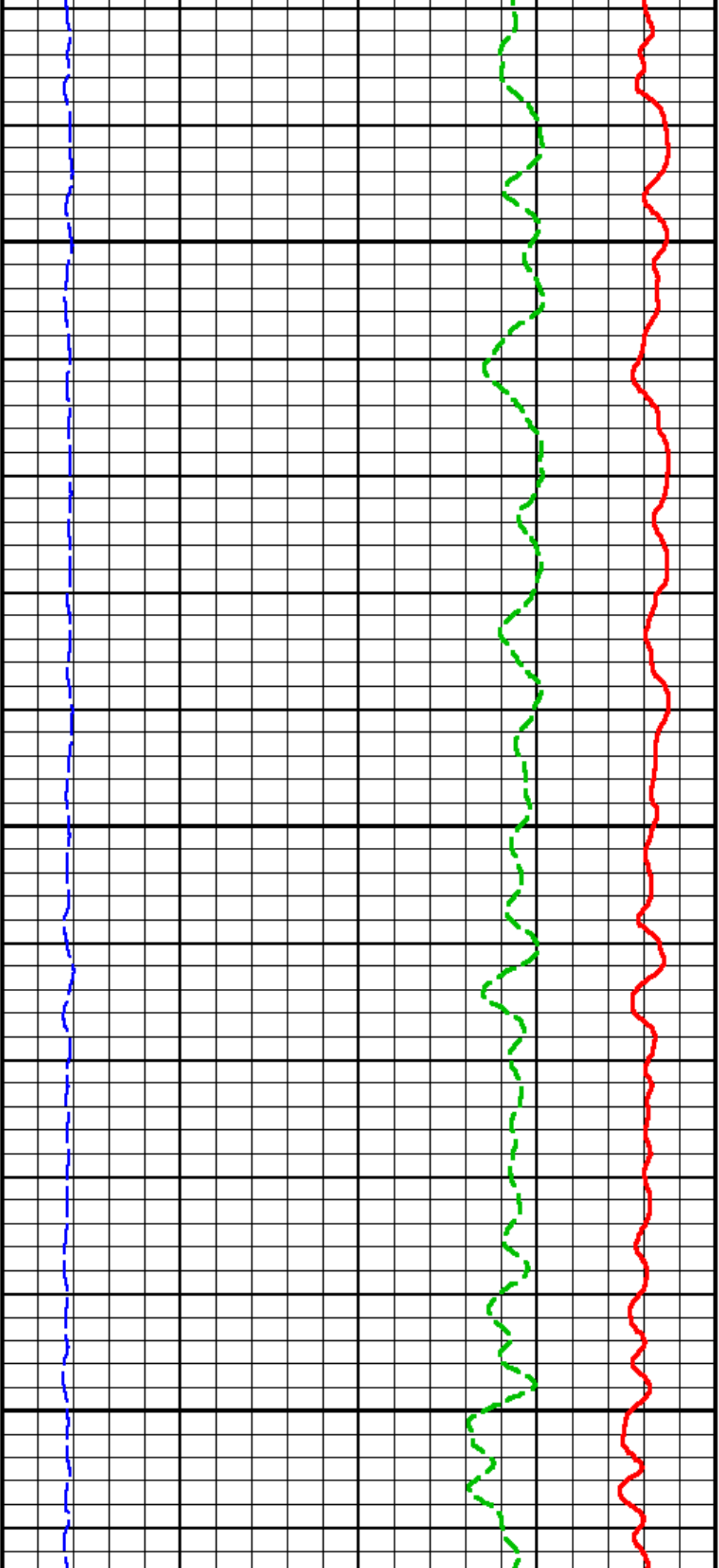


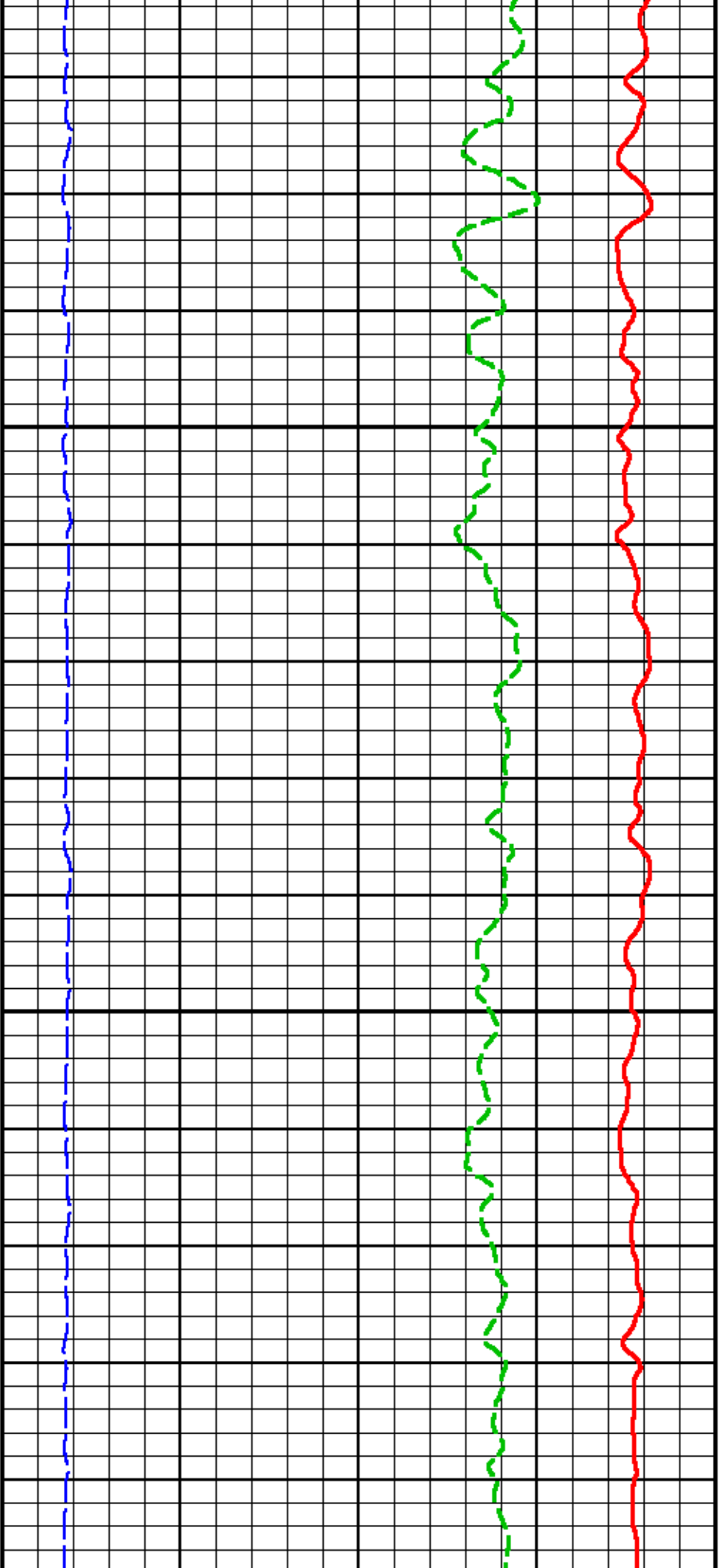
650

625

600

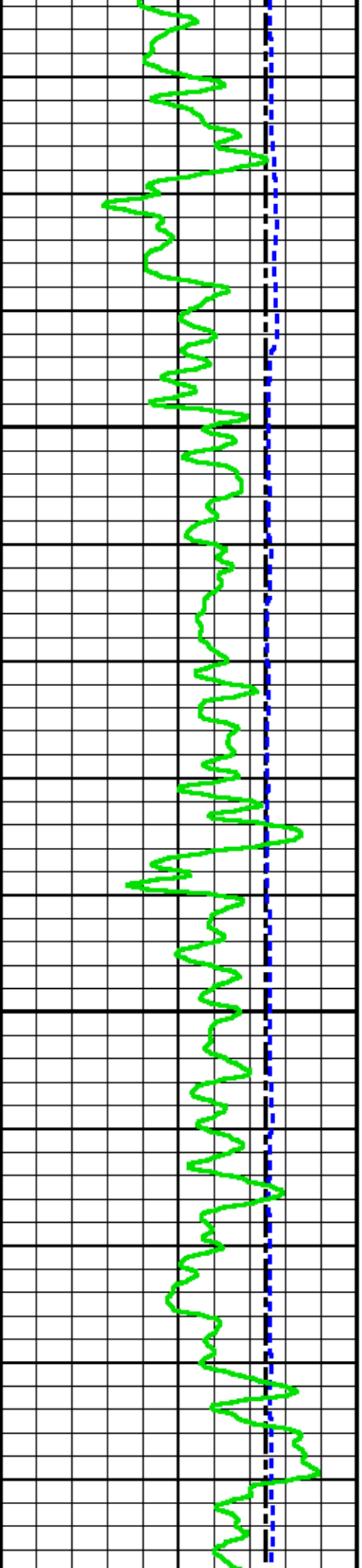


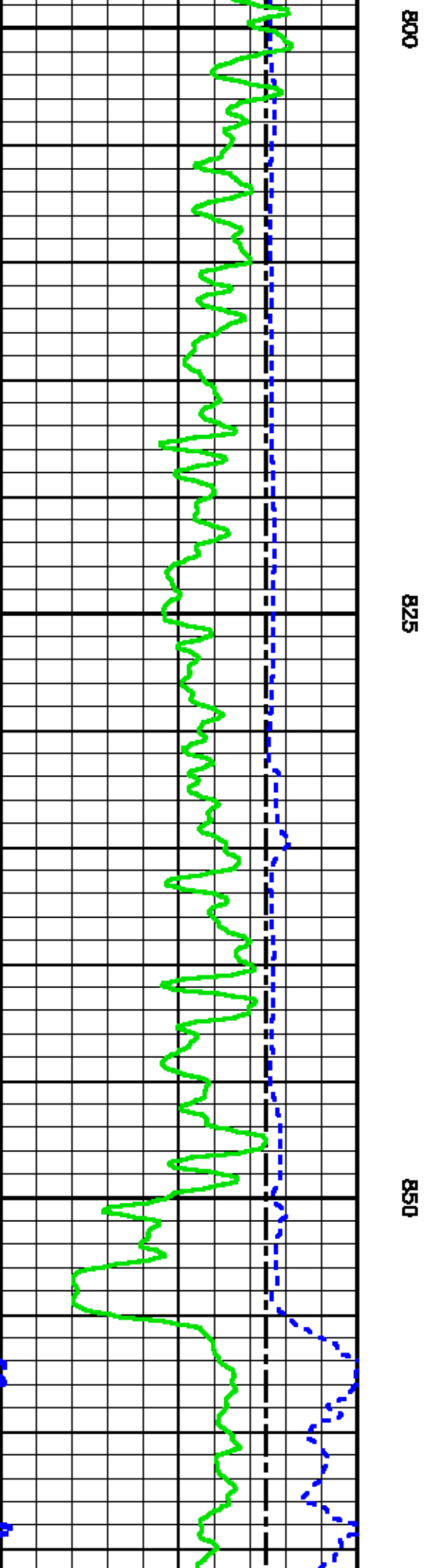
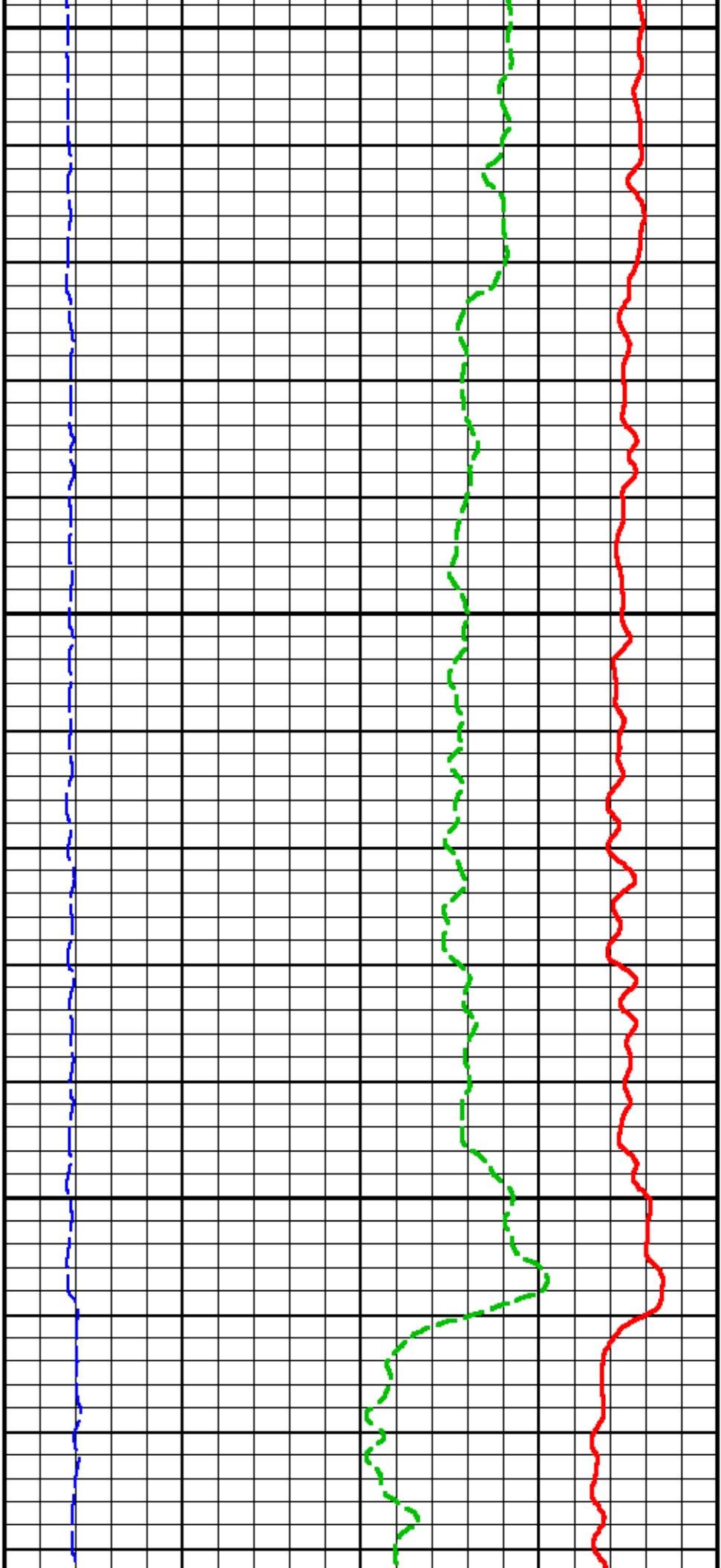


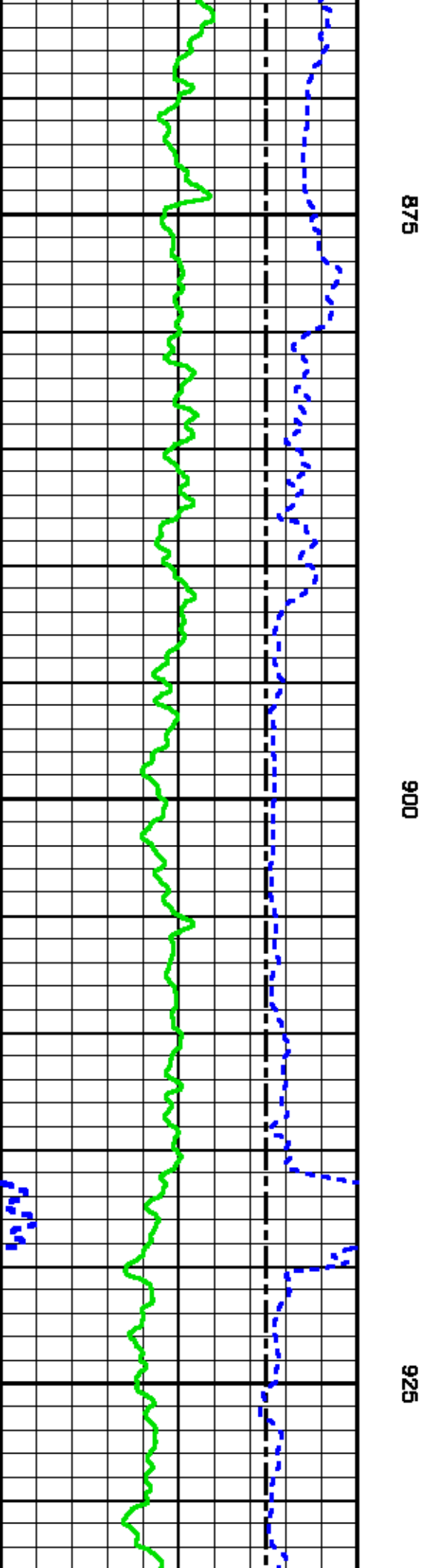
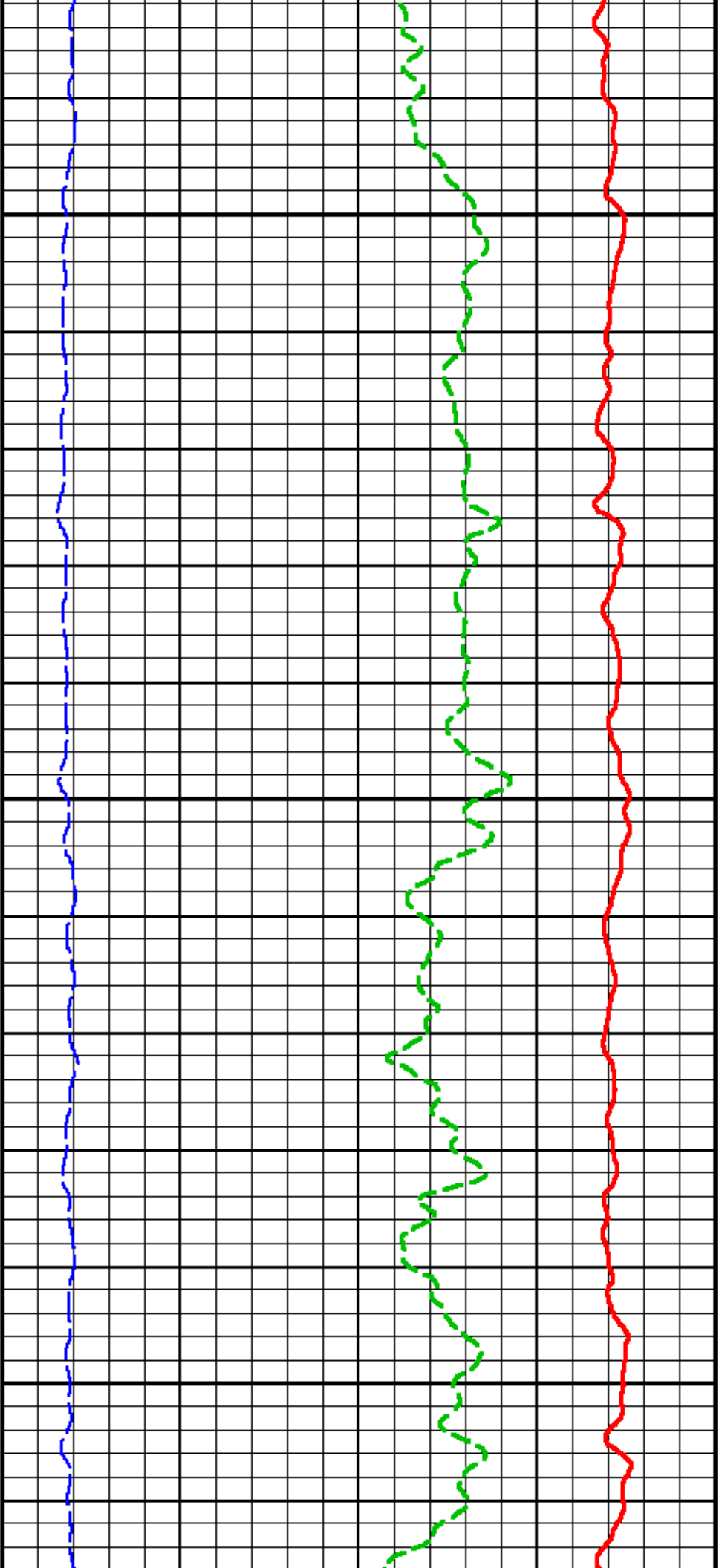


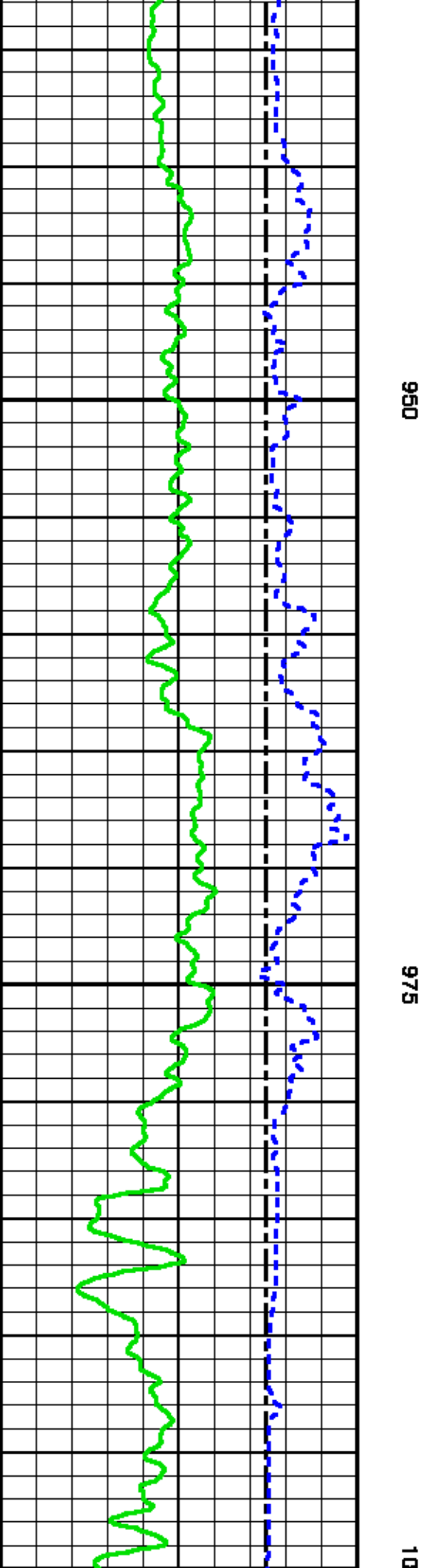
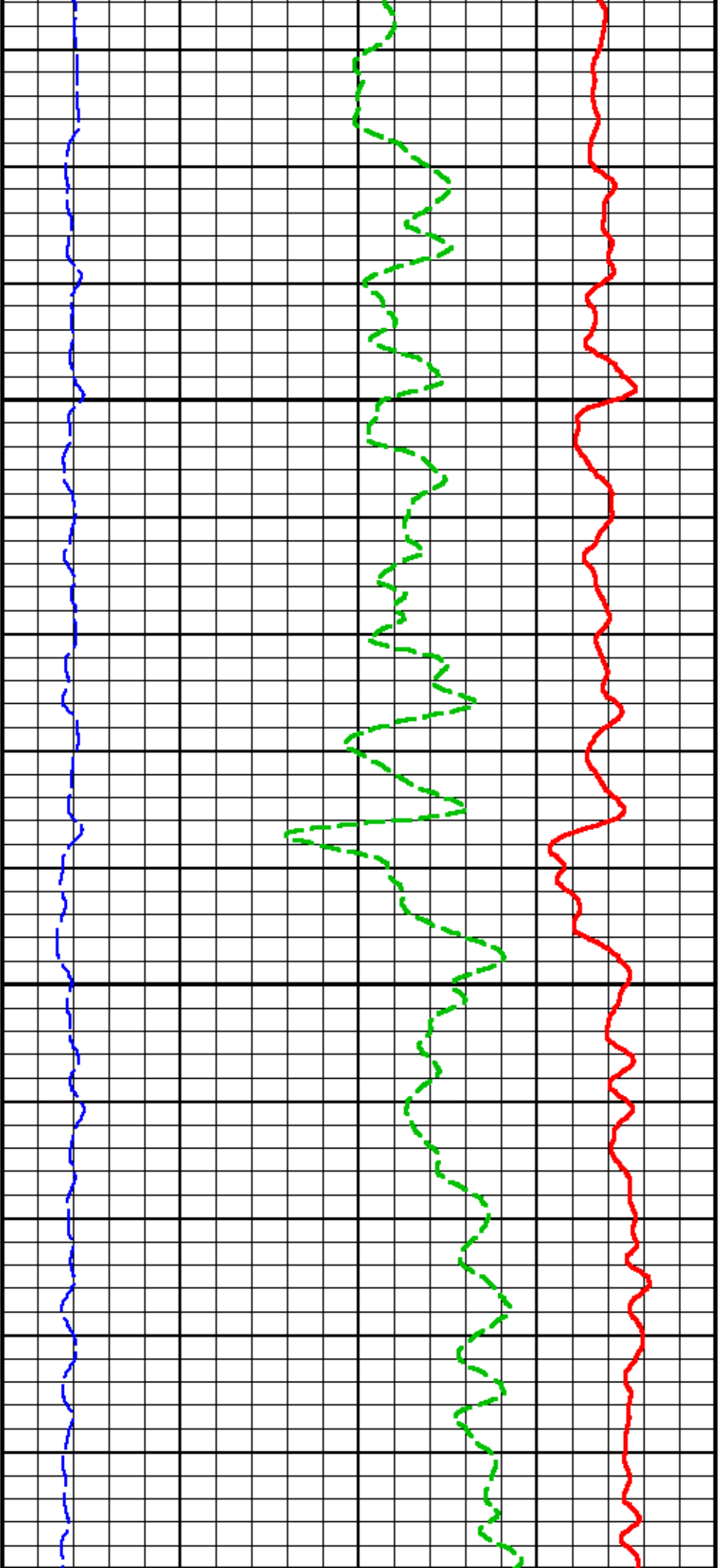
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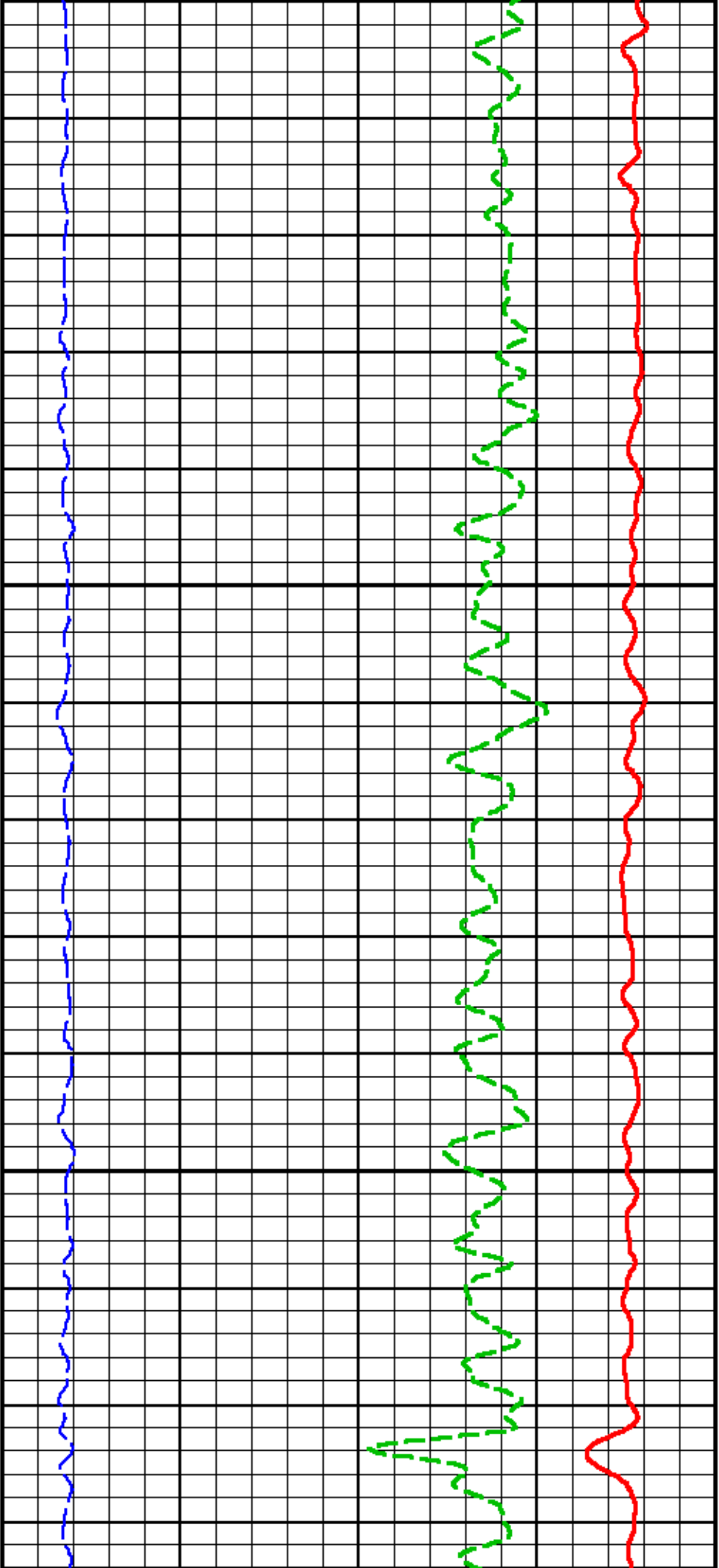
775







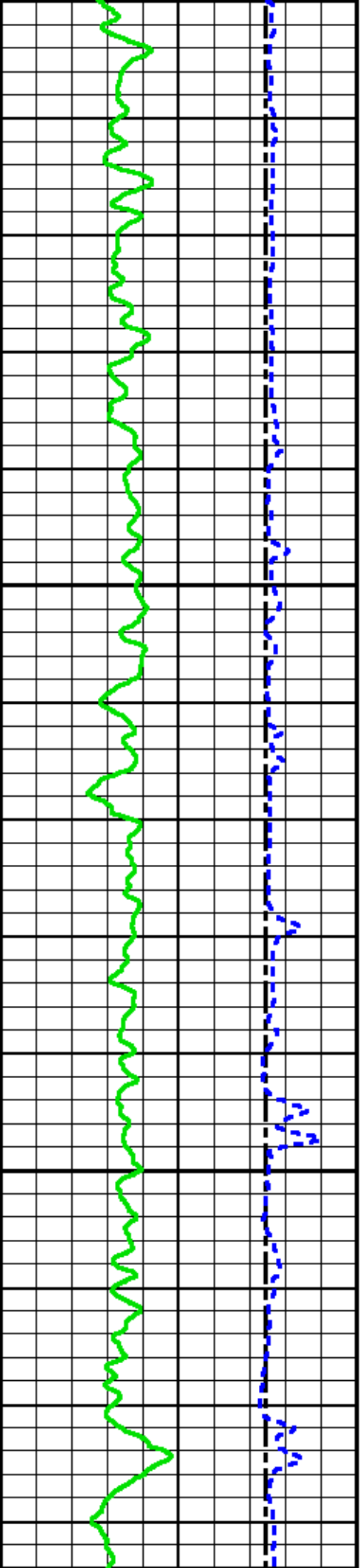


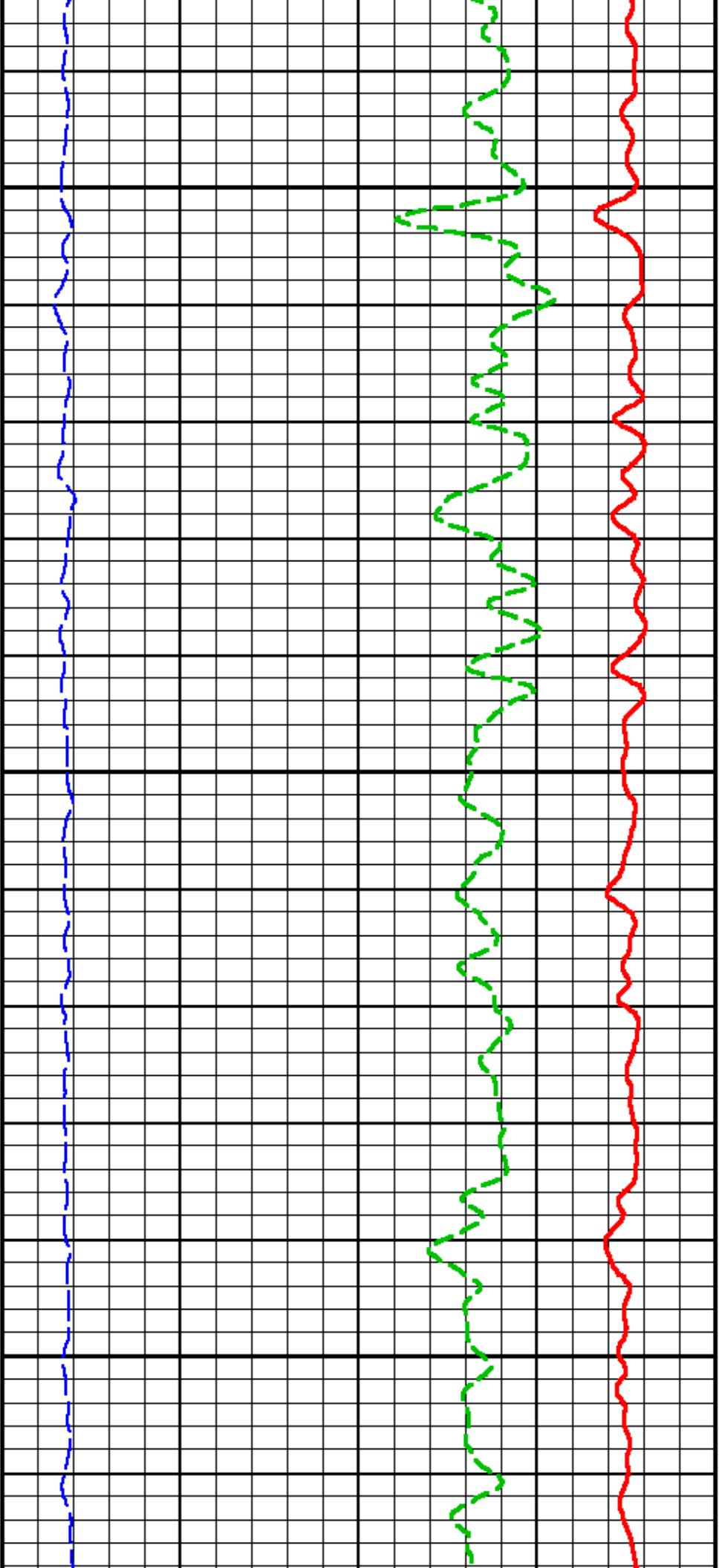


00

1025

1050

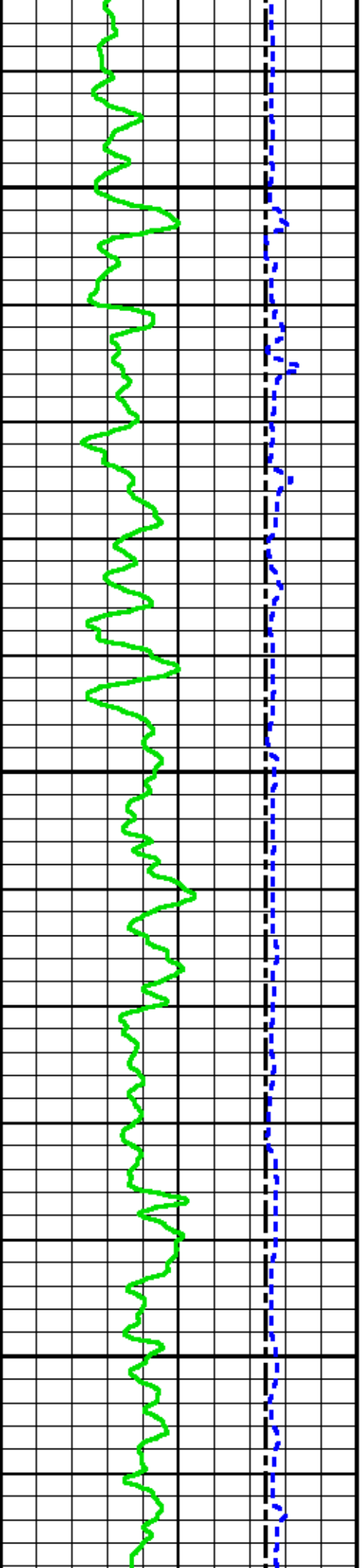


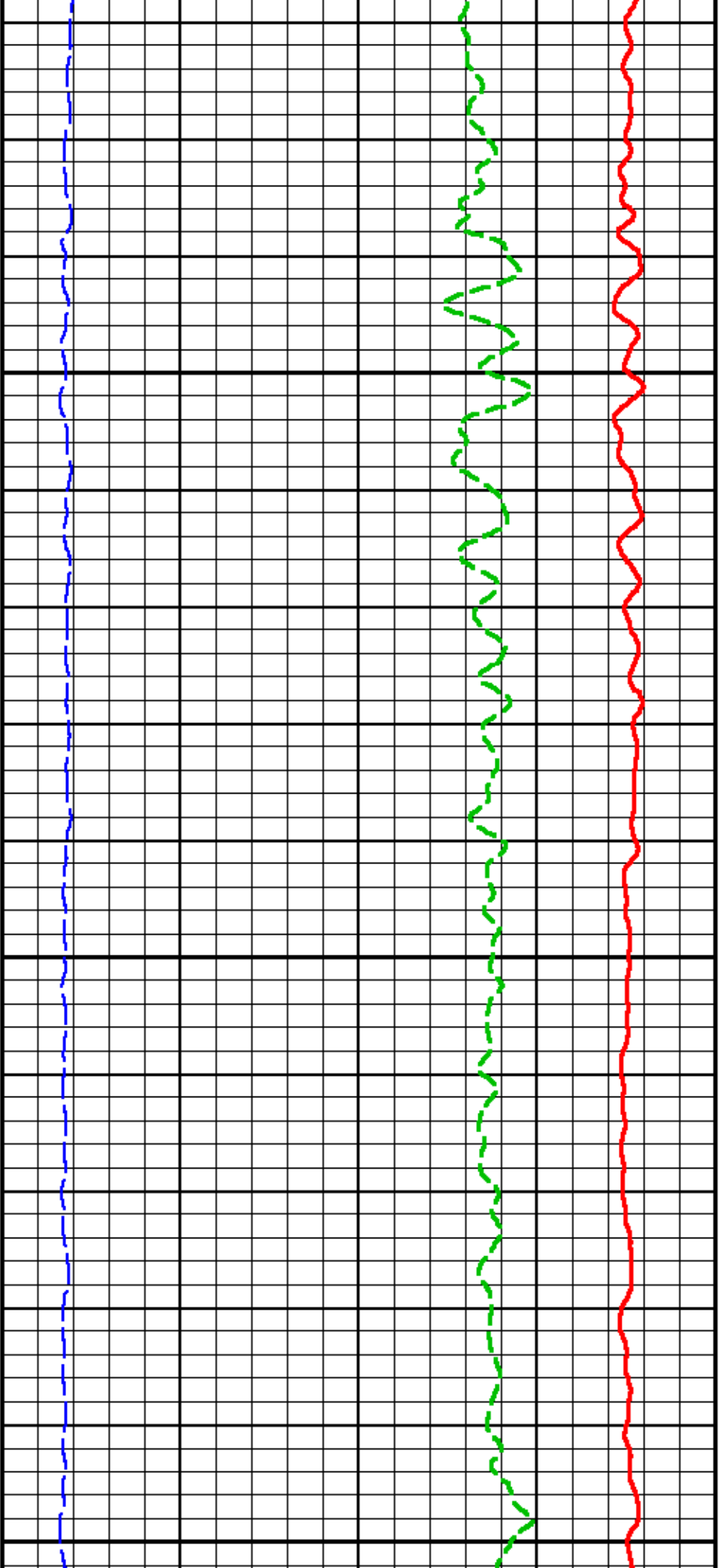


1075

1100

1125

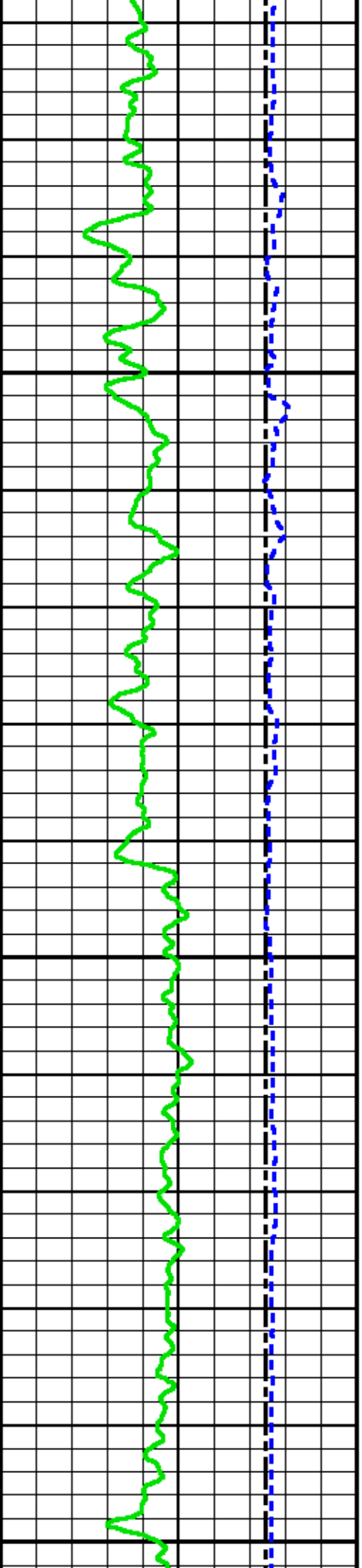


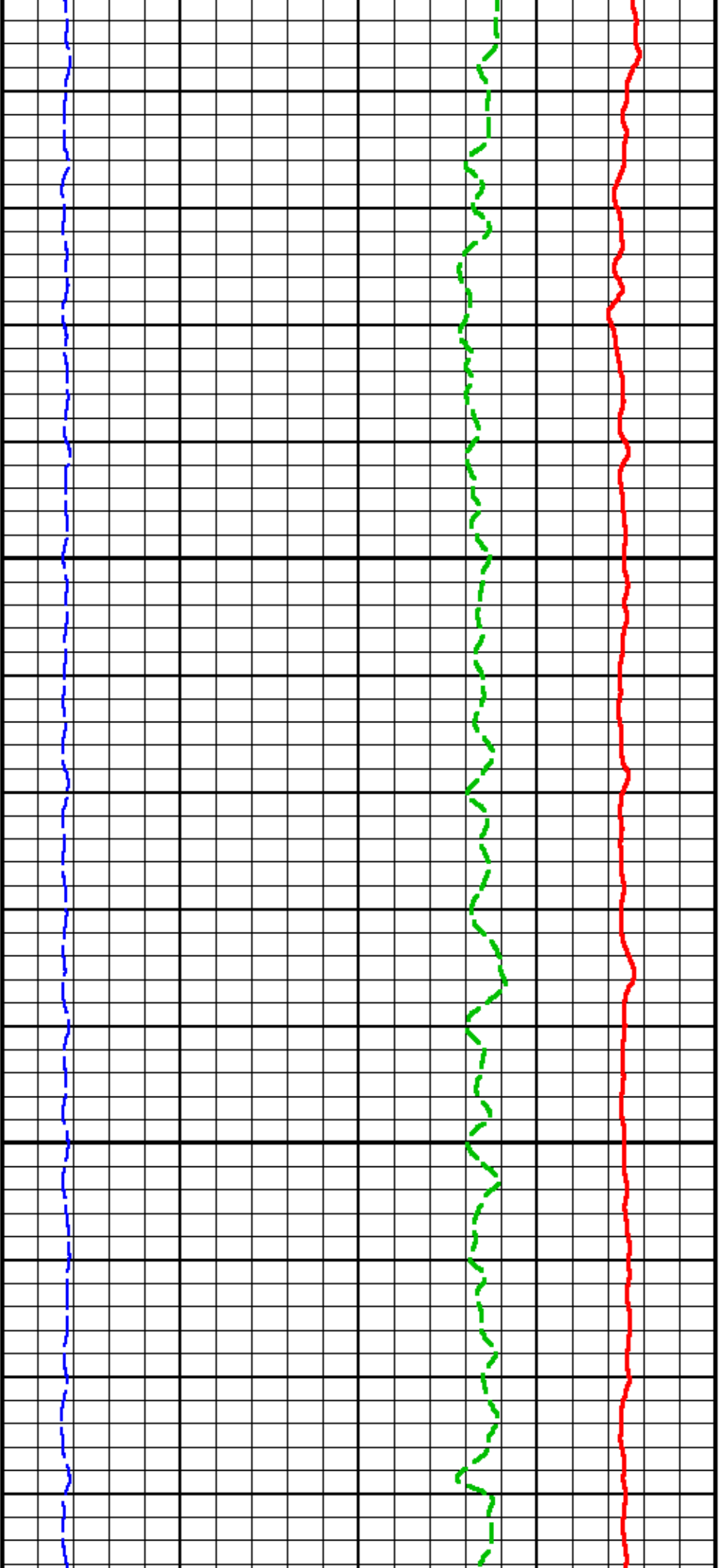


1150

1175

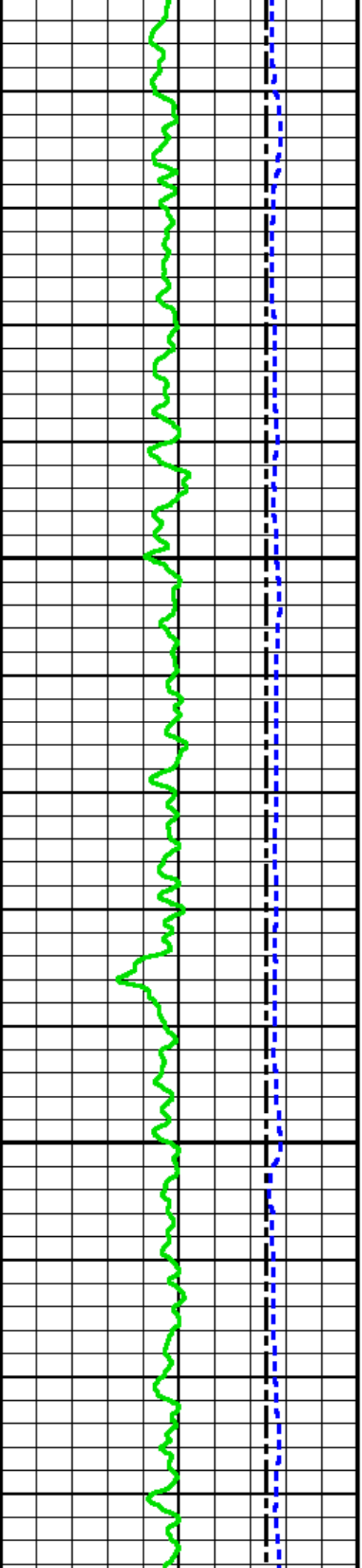
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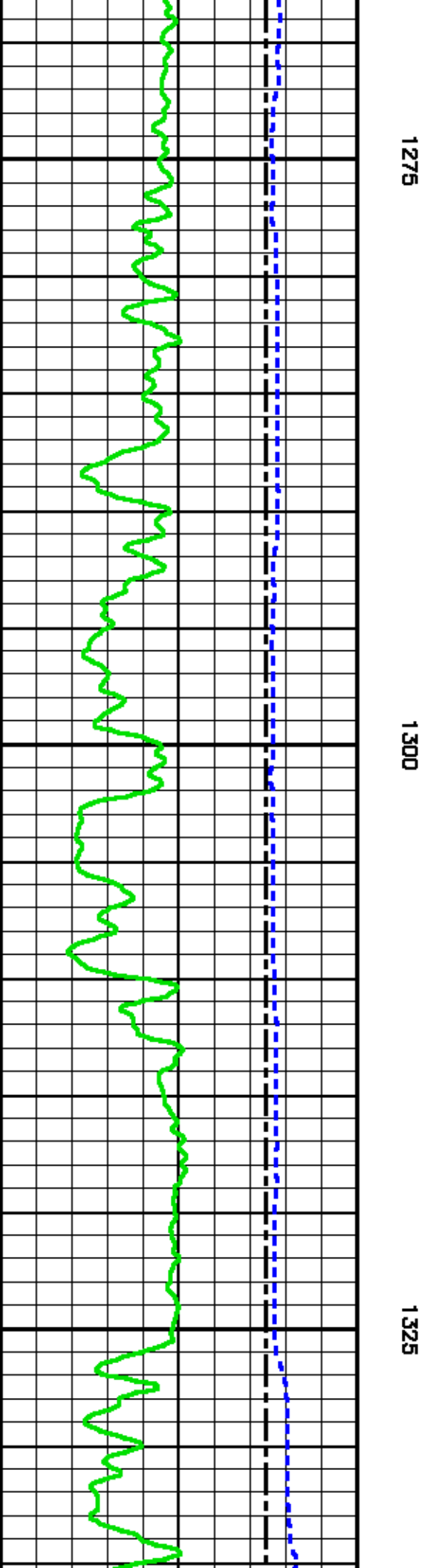
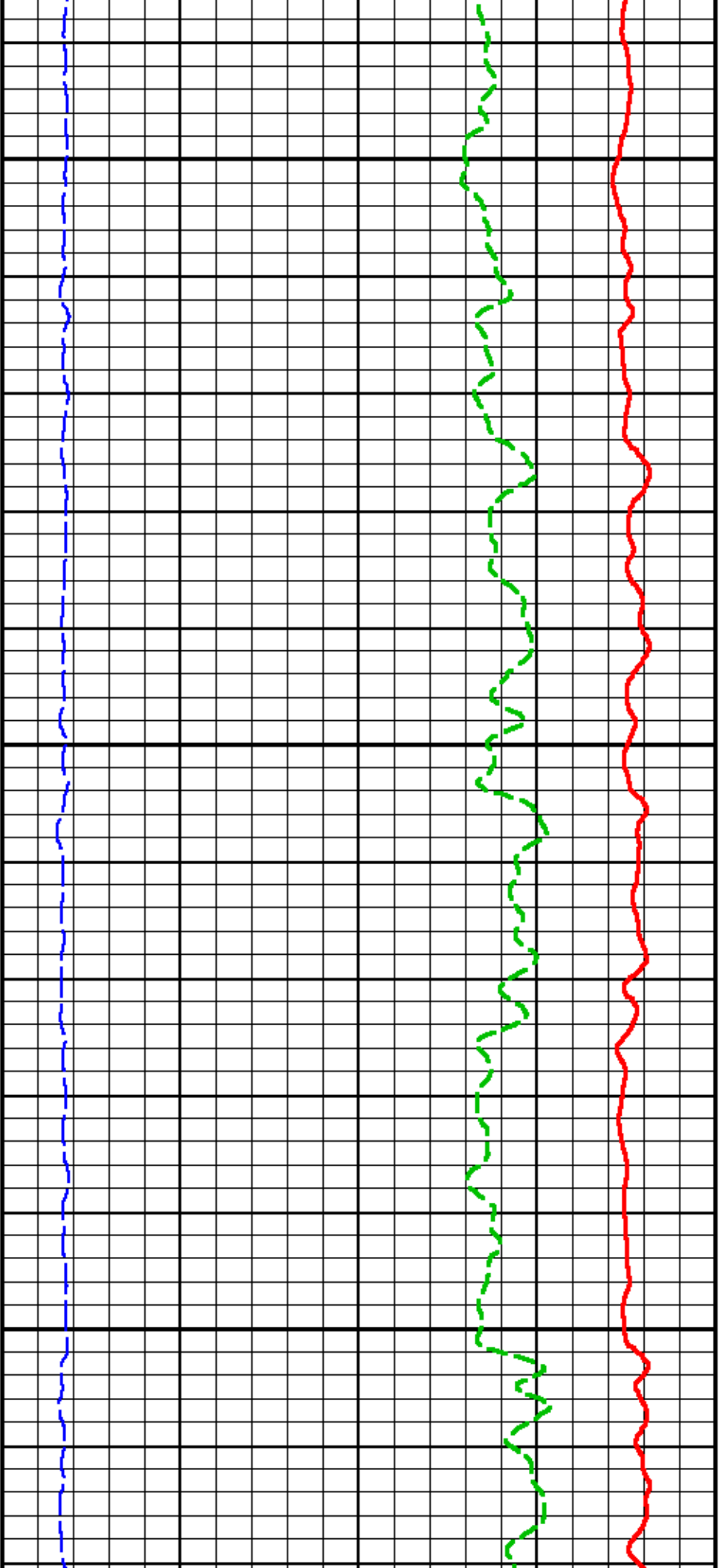


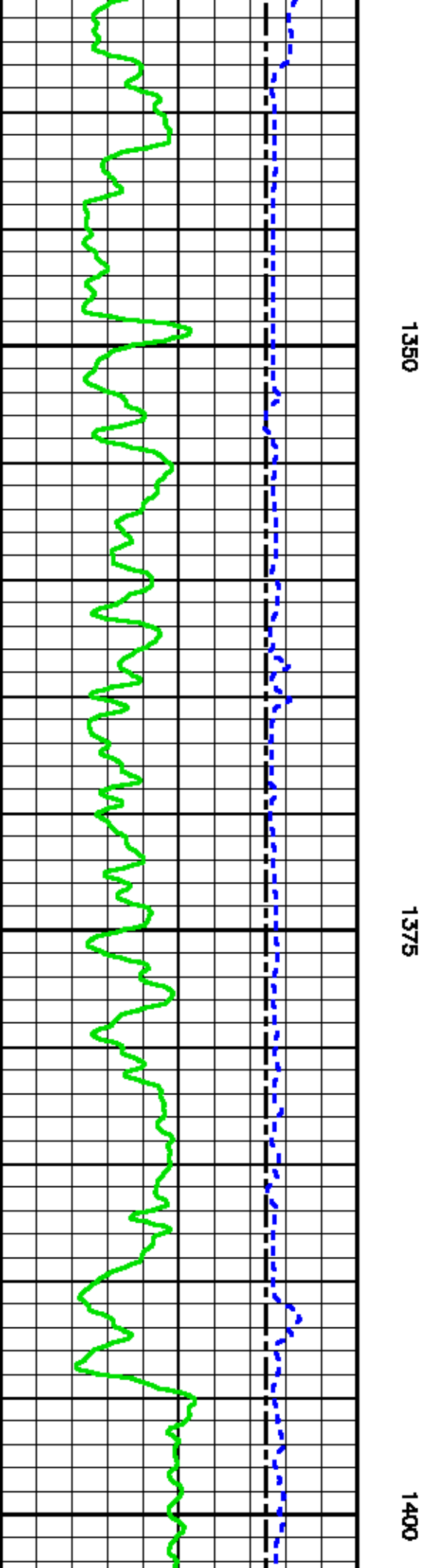
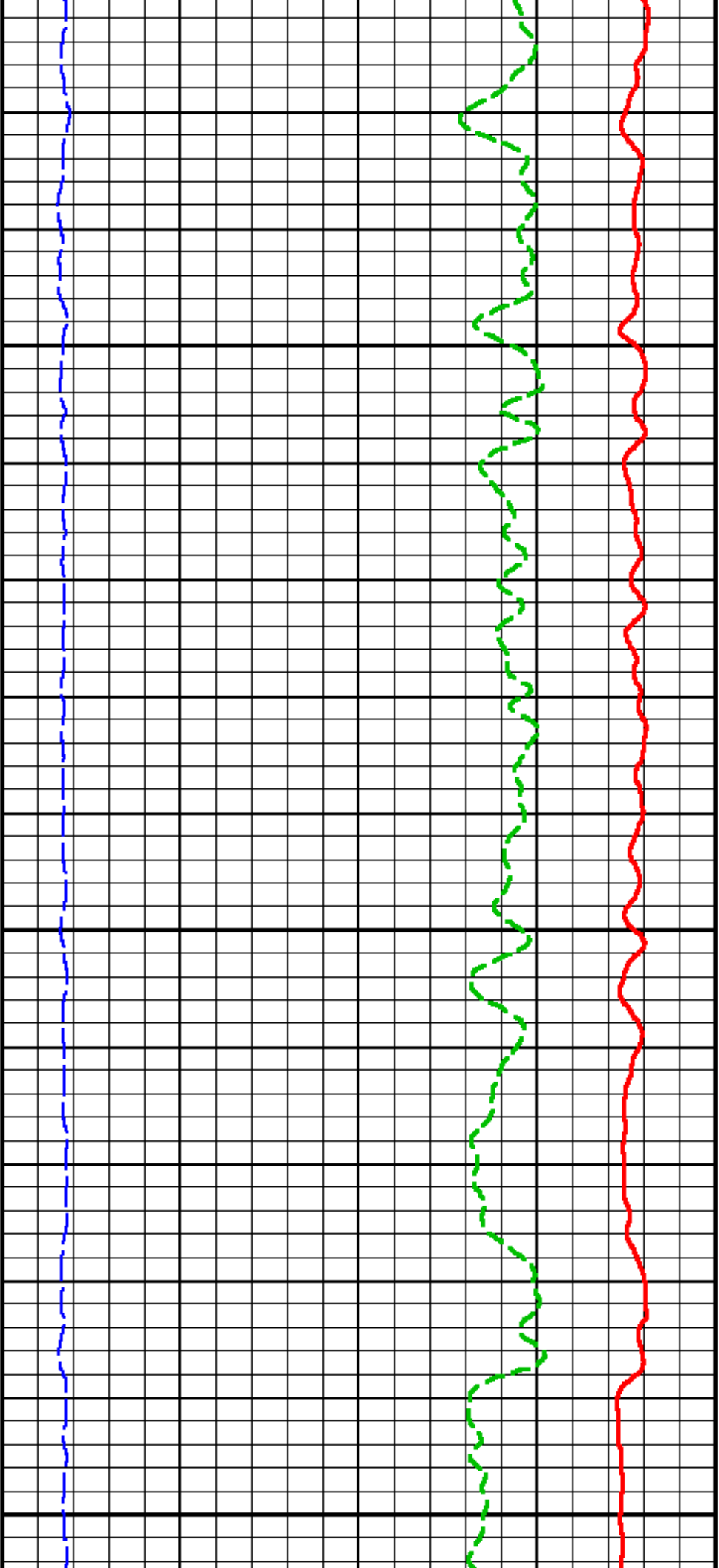


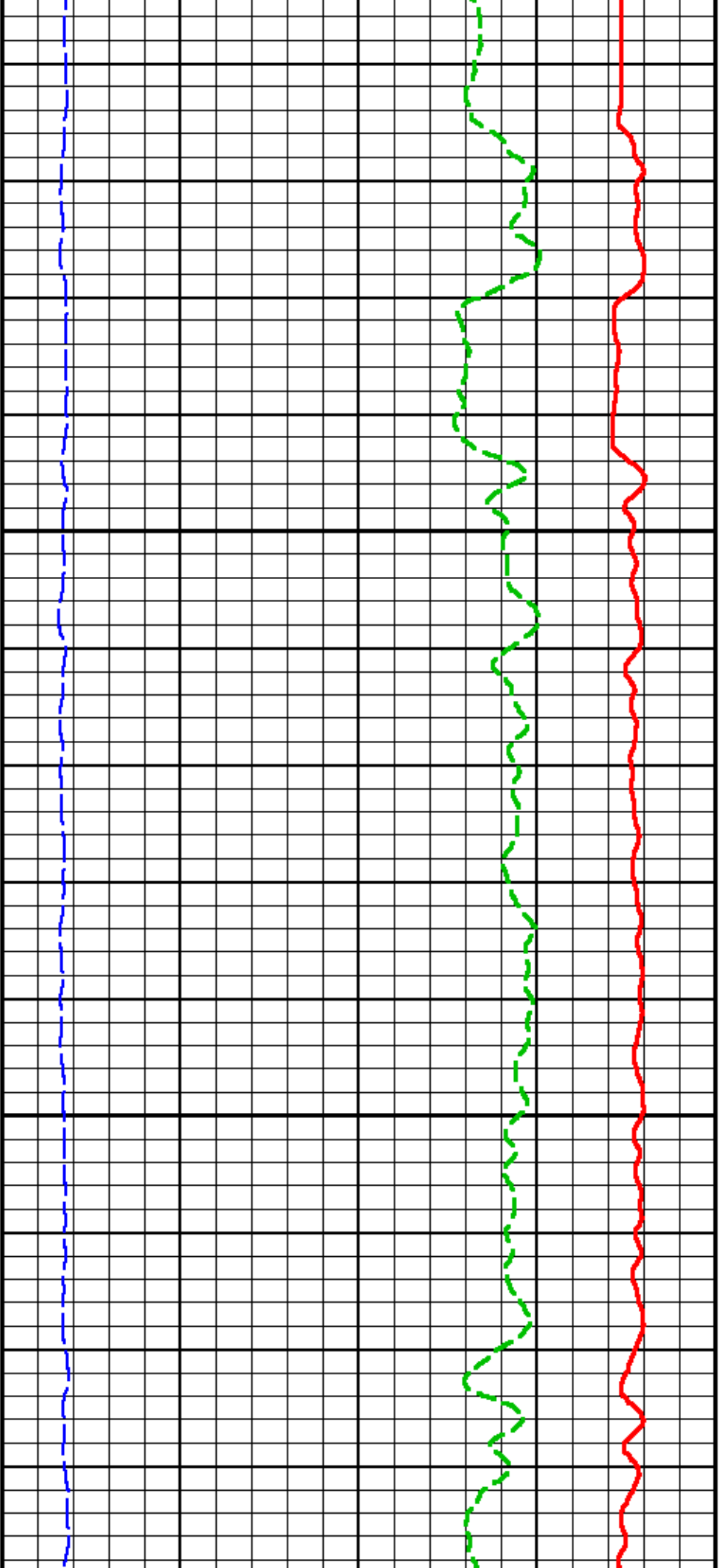
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1250



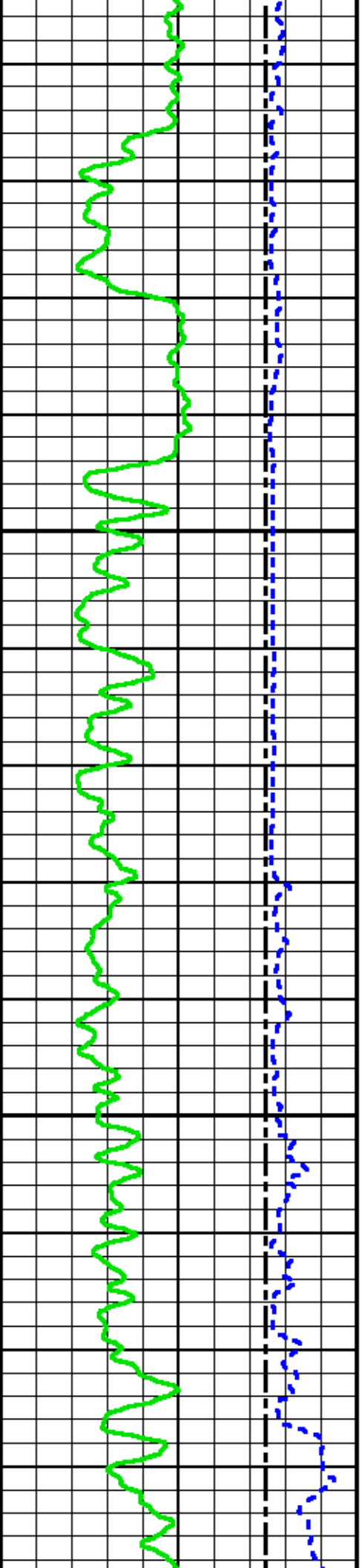


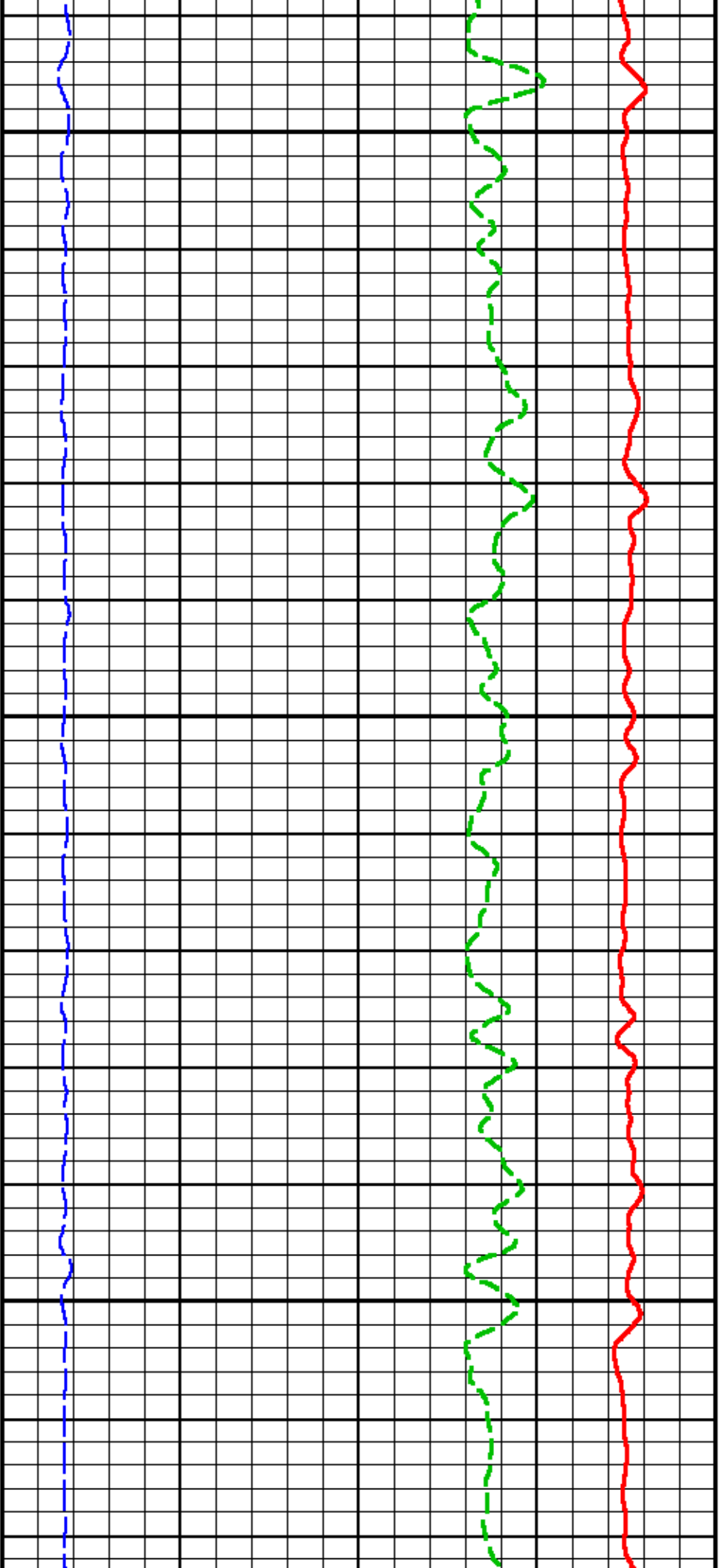




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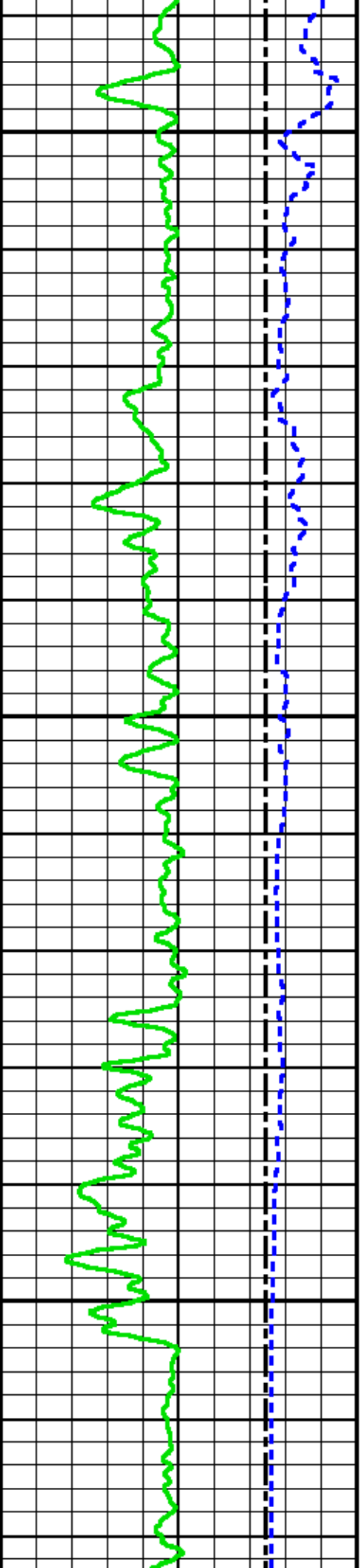


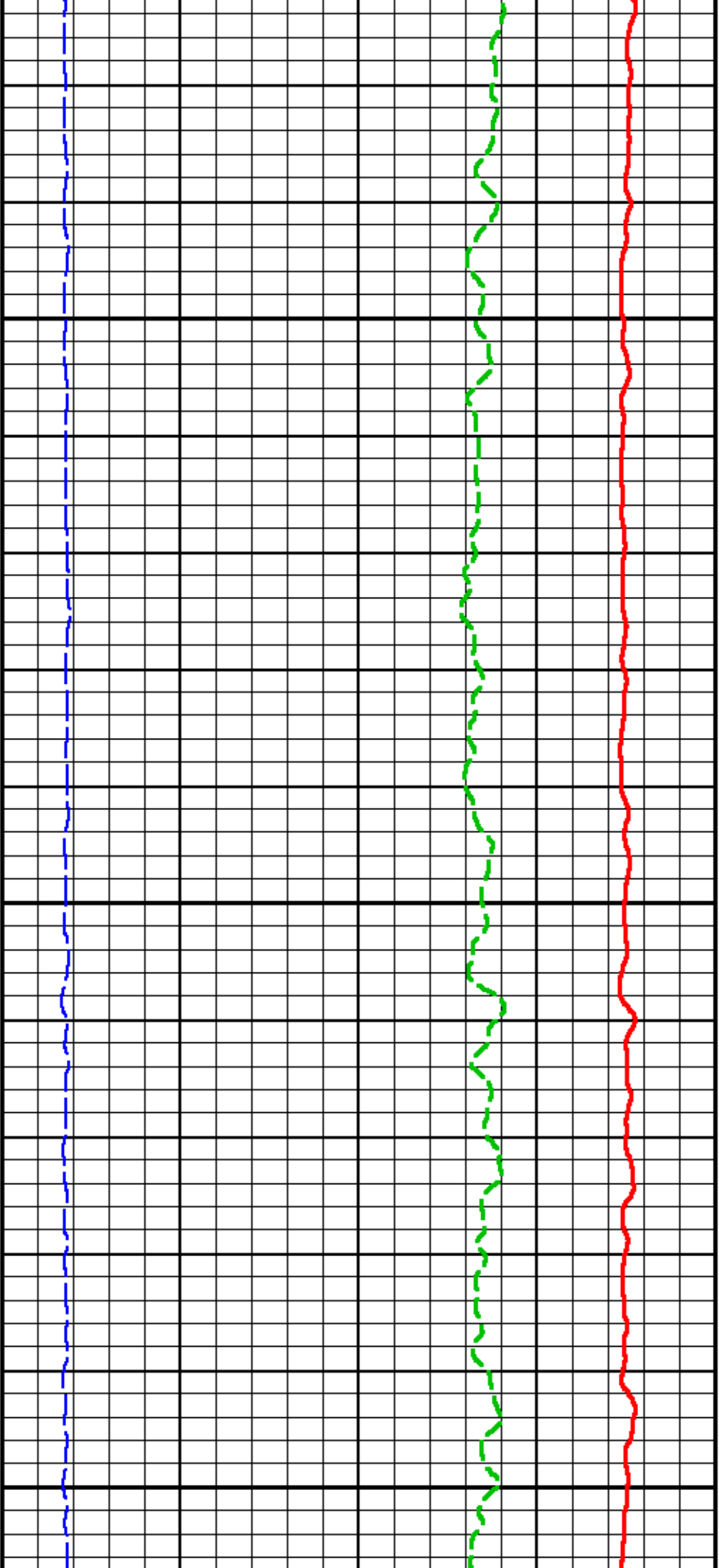


1475

1500

1525

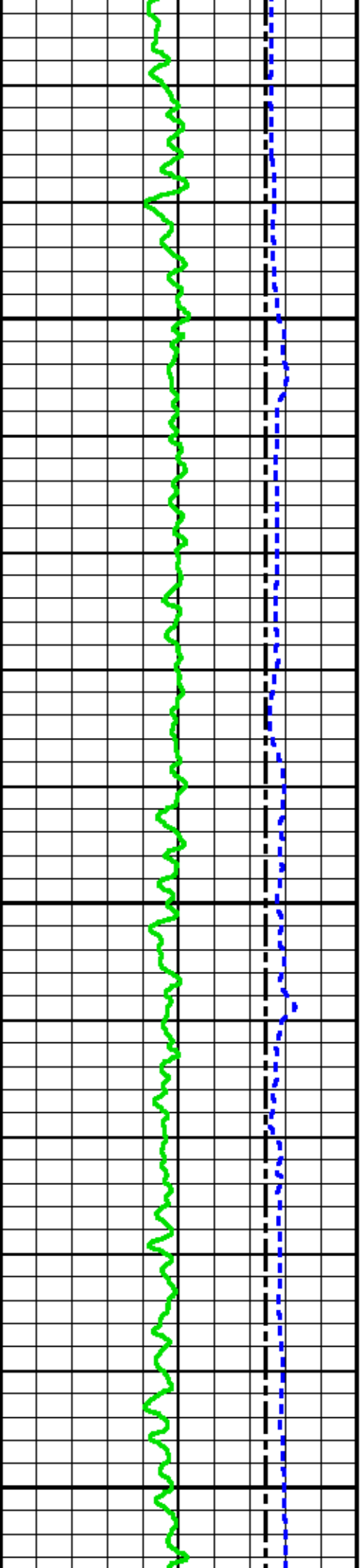


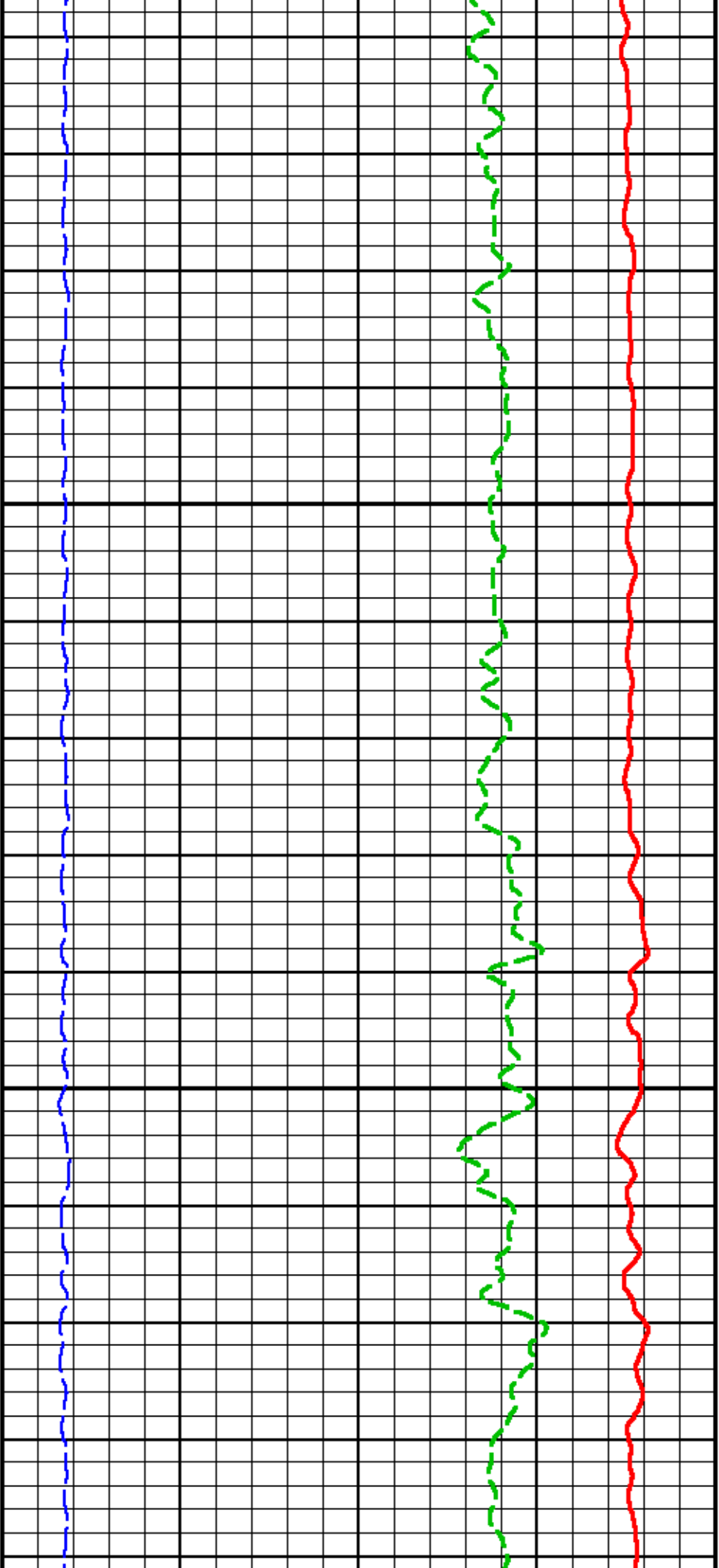


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1575

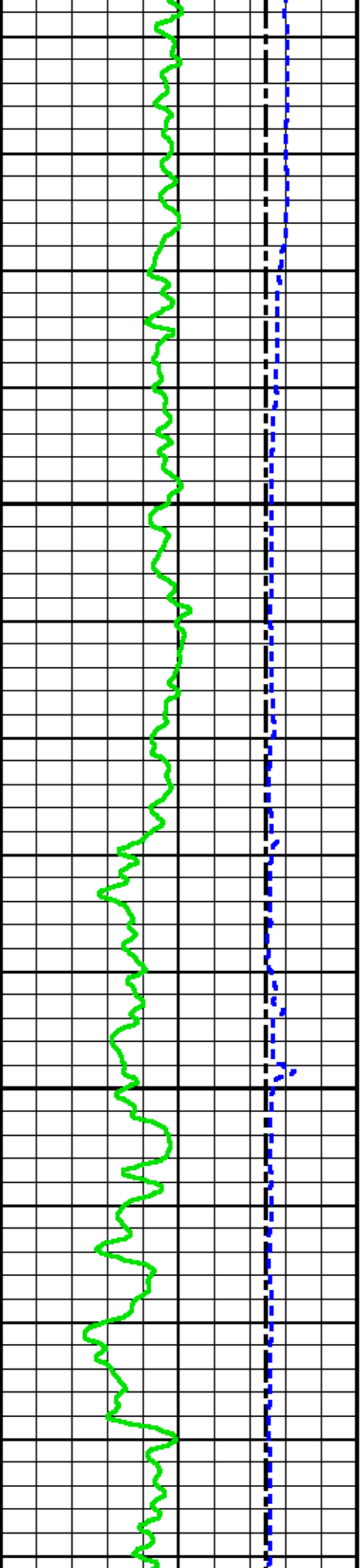
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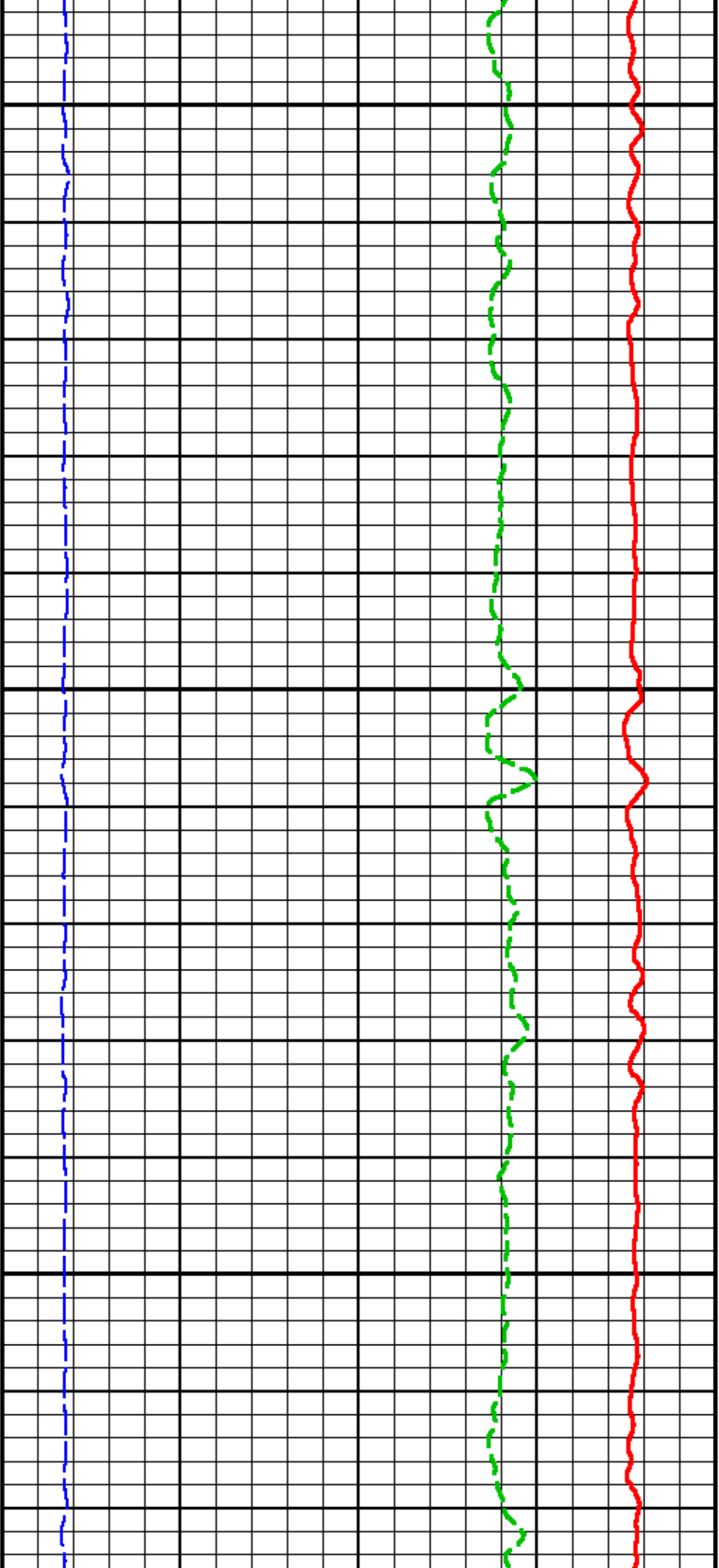




1625

1650

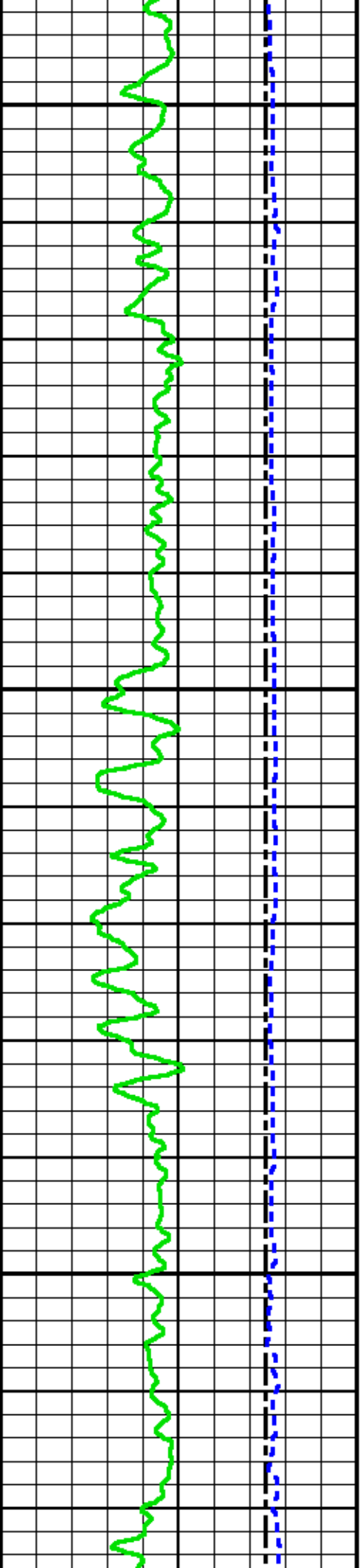


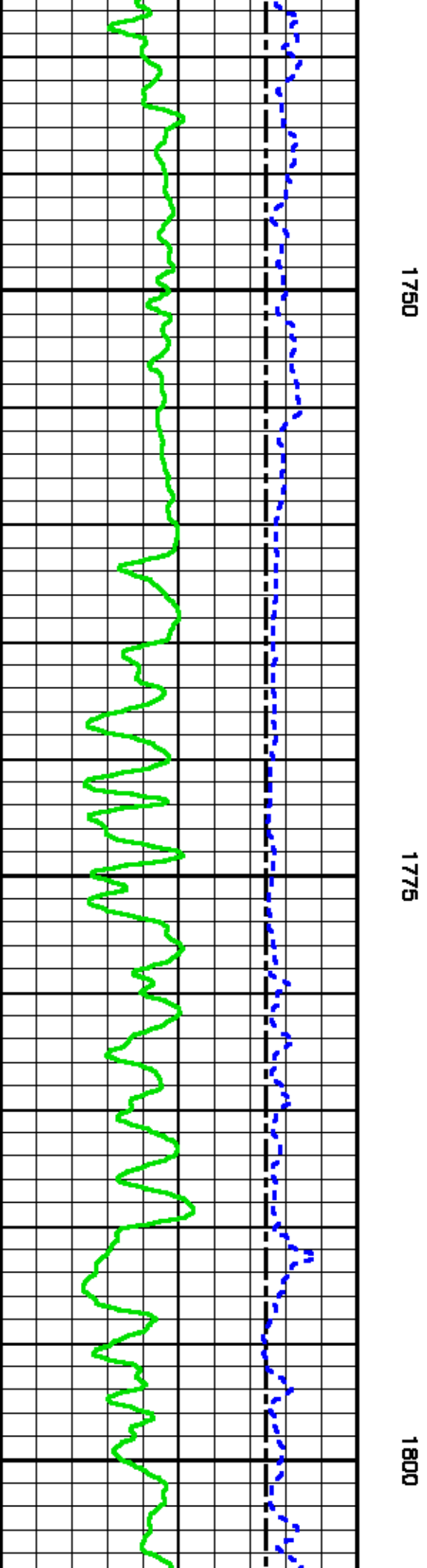
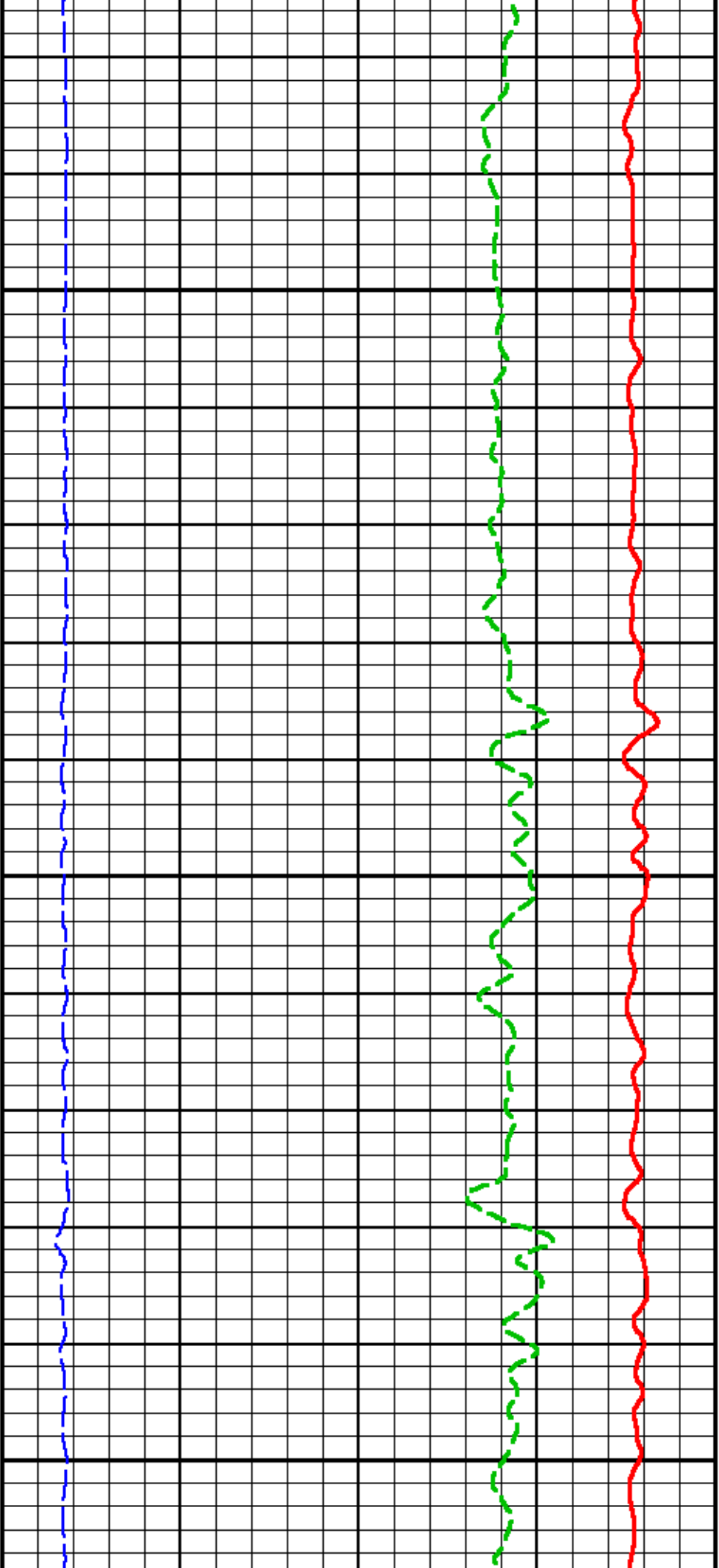


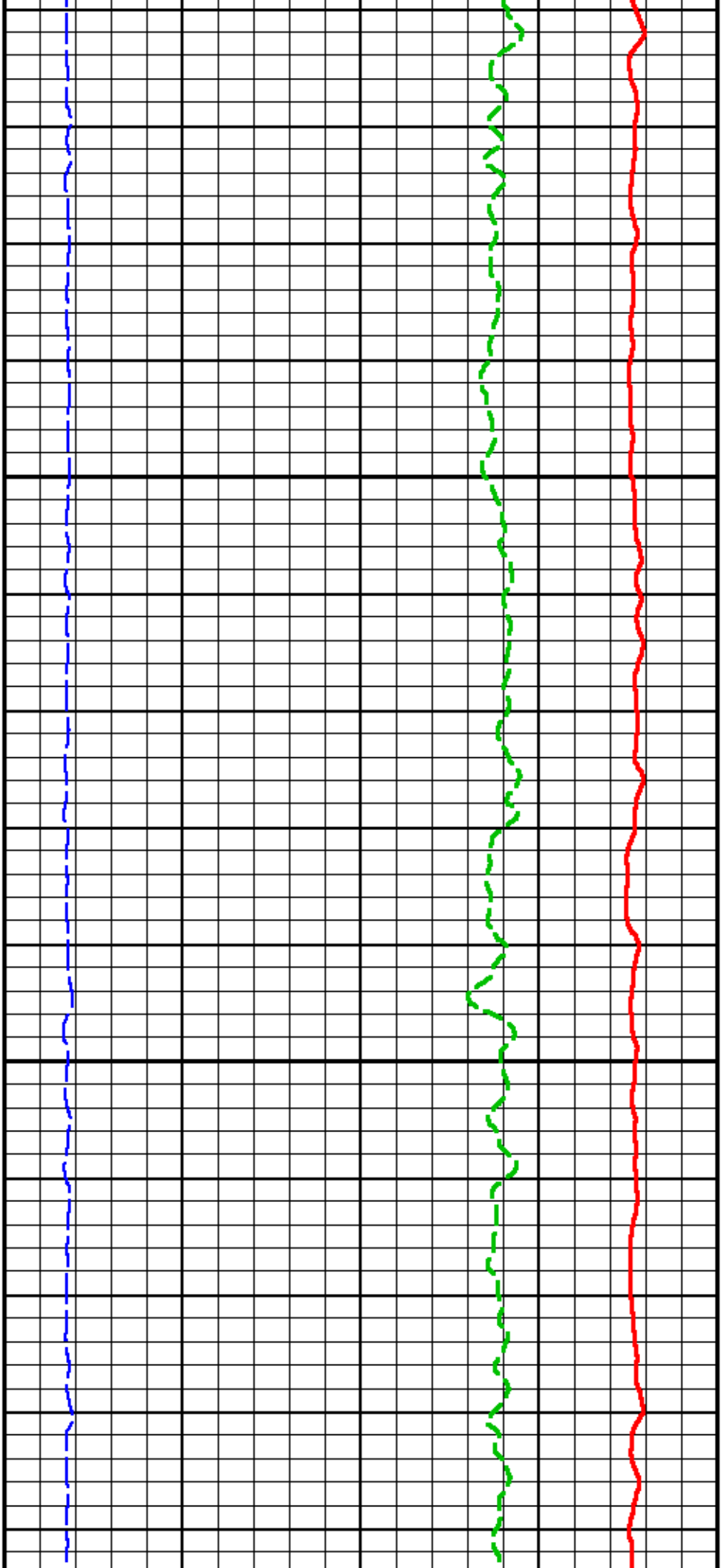
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1700

1725

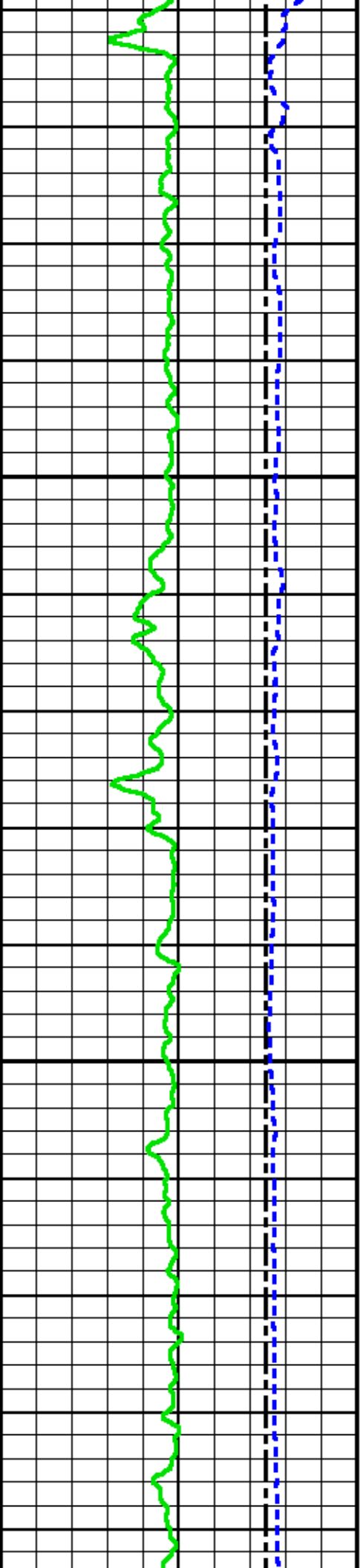


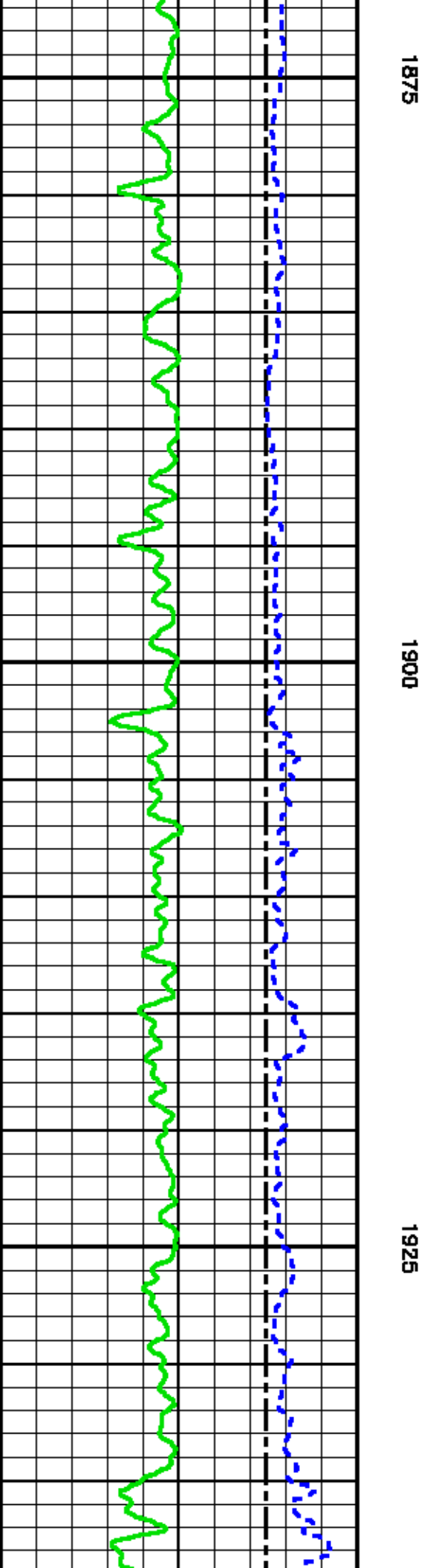
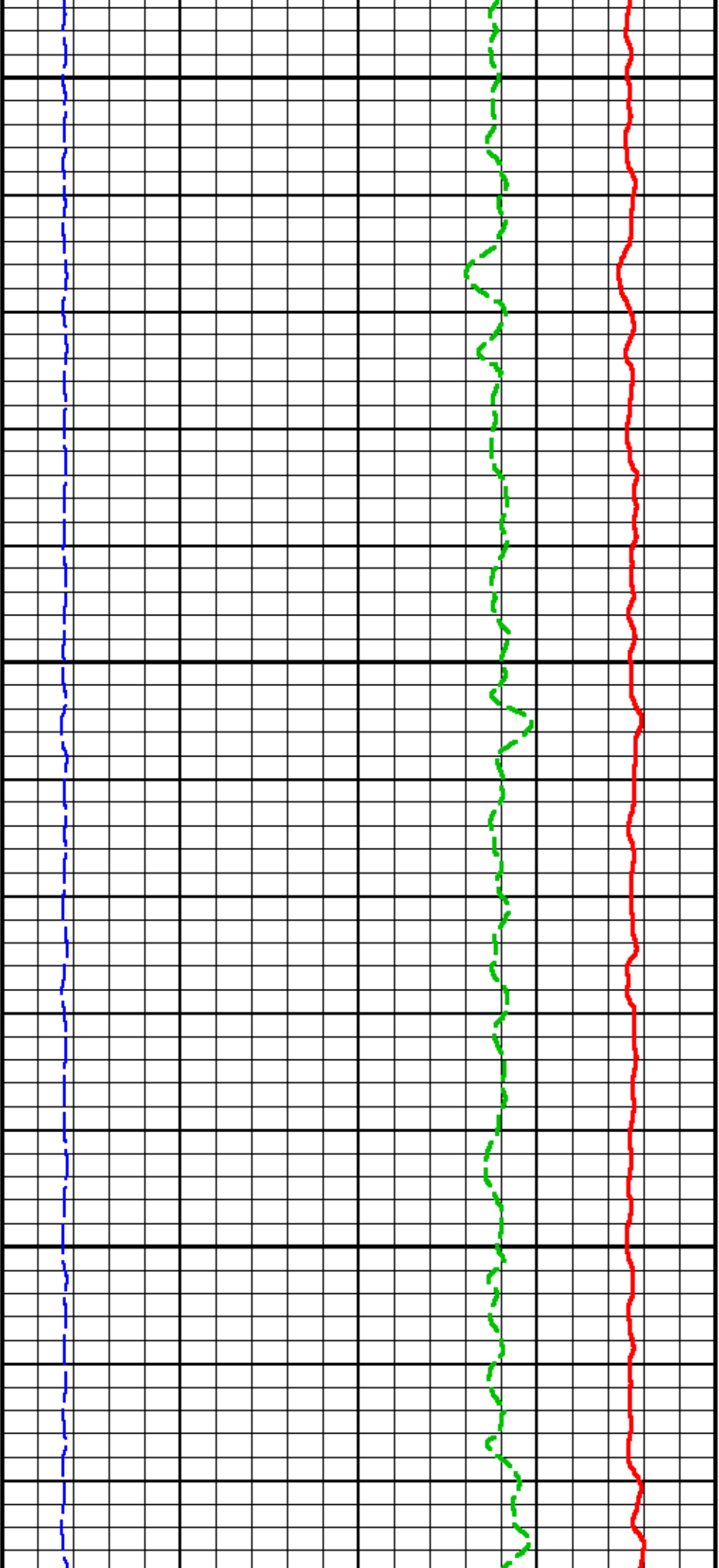


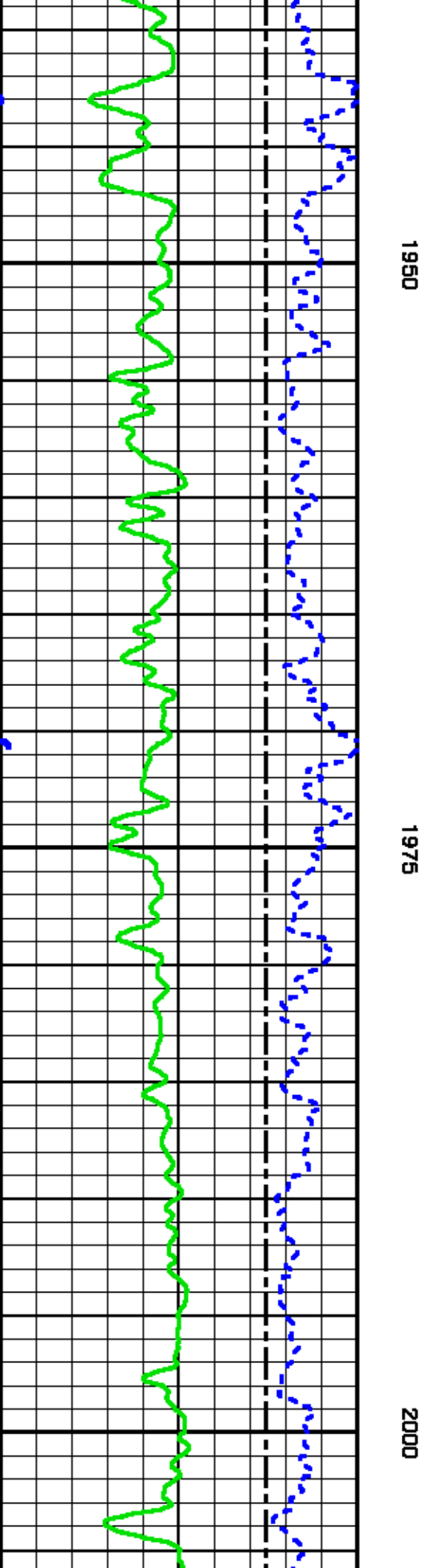
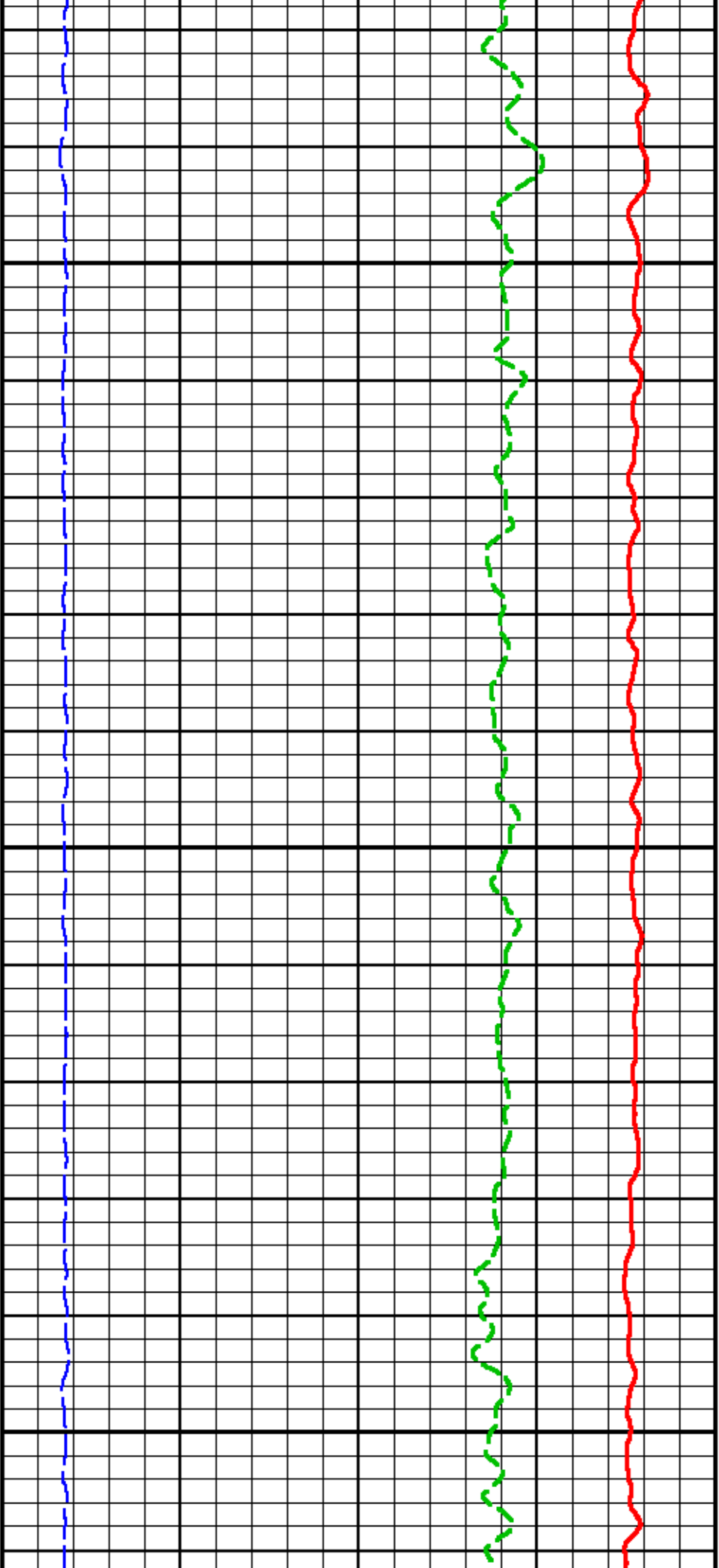


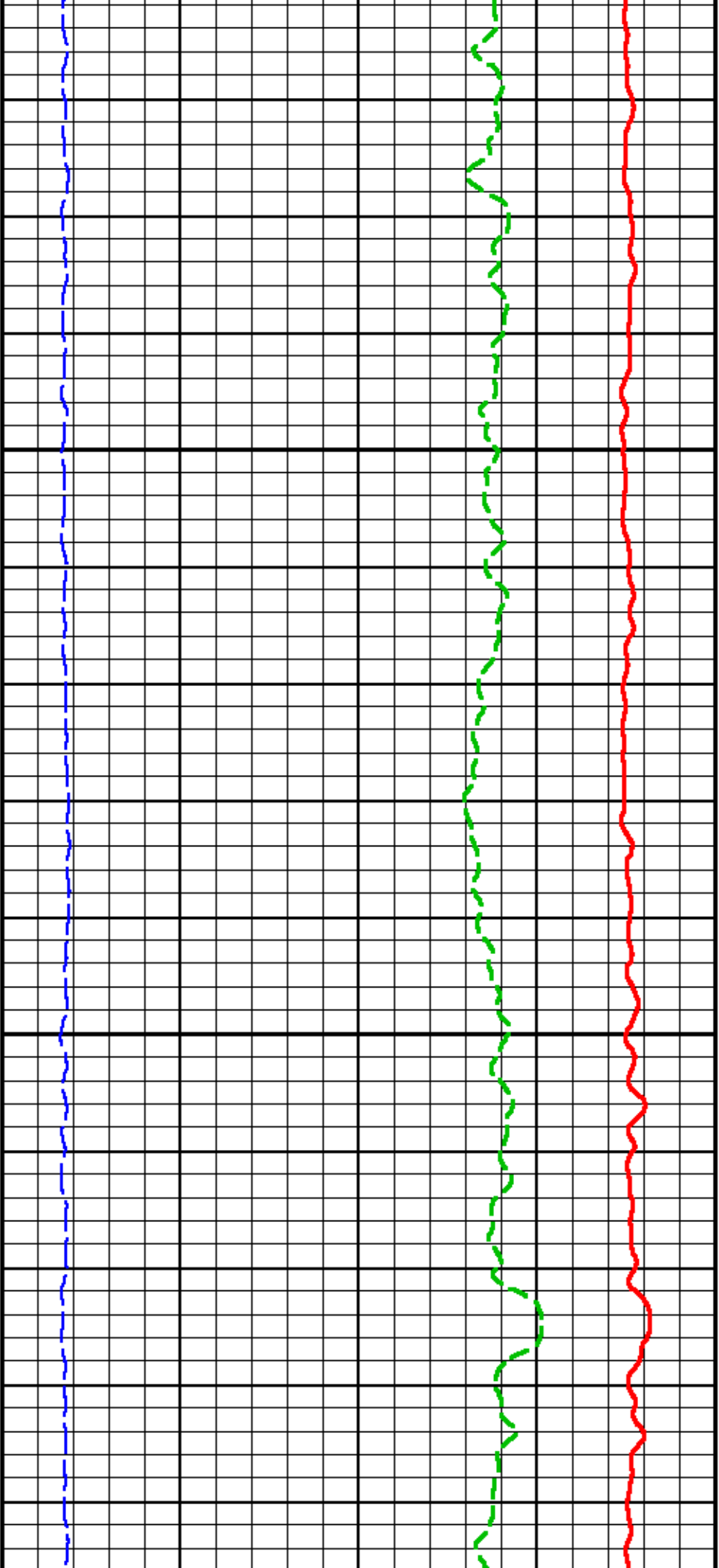
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1850



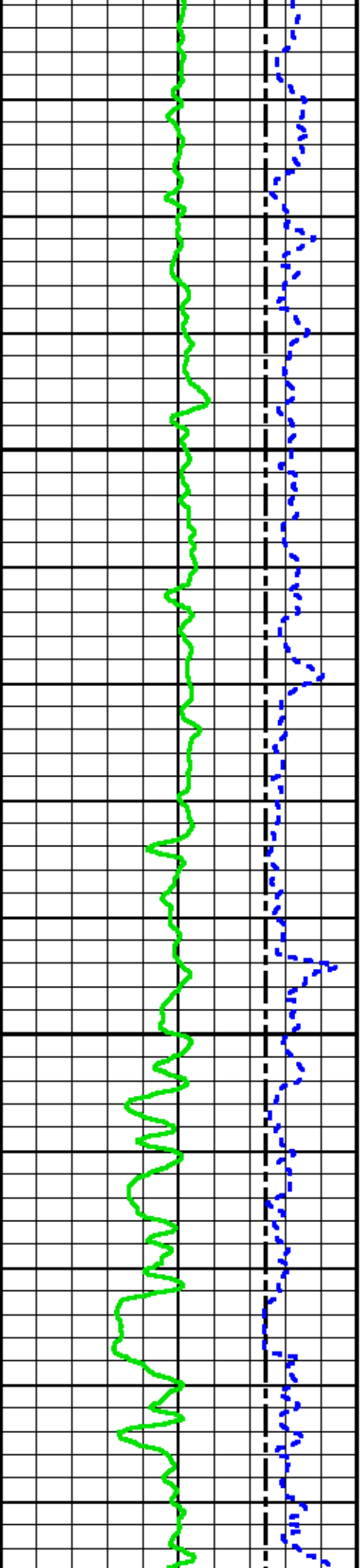


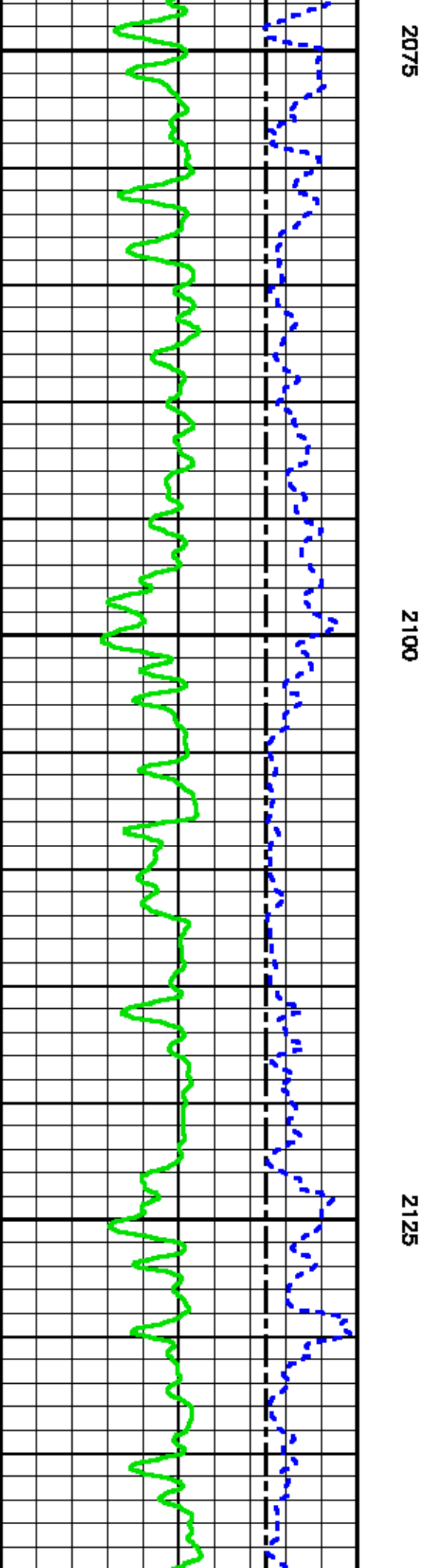
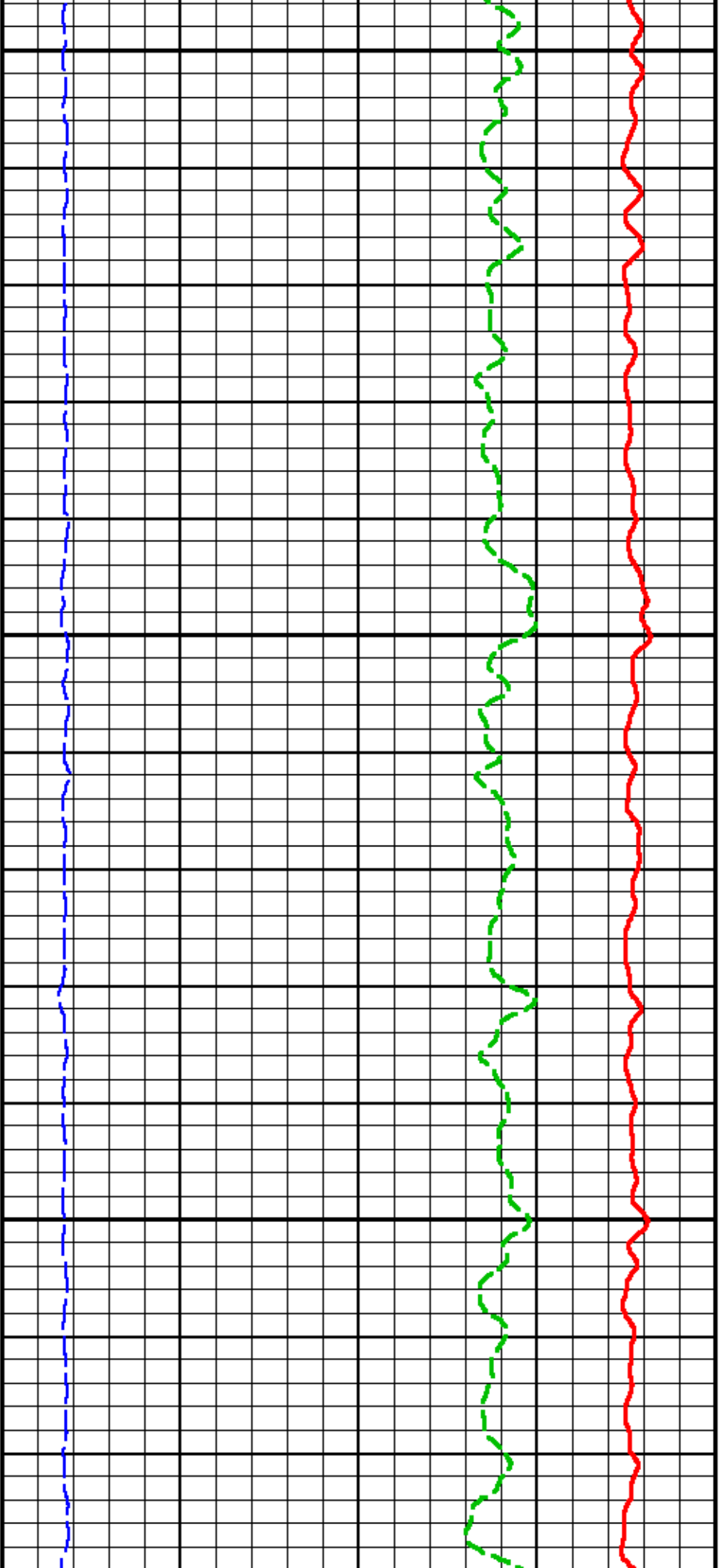


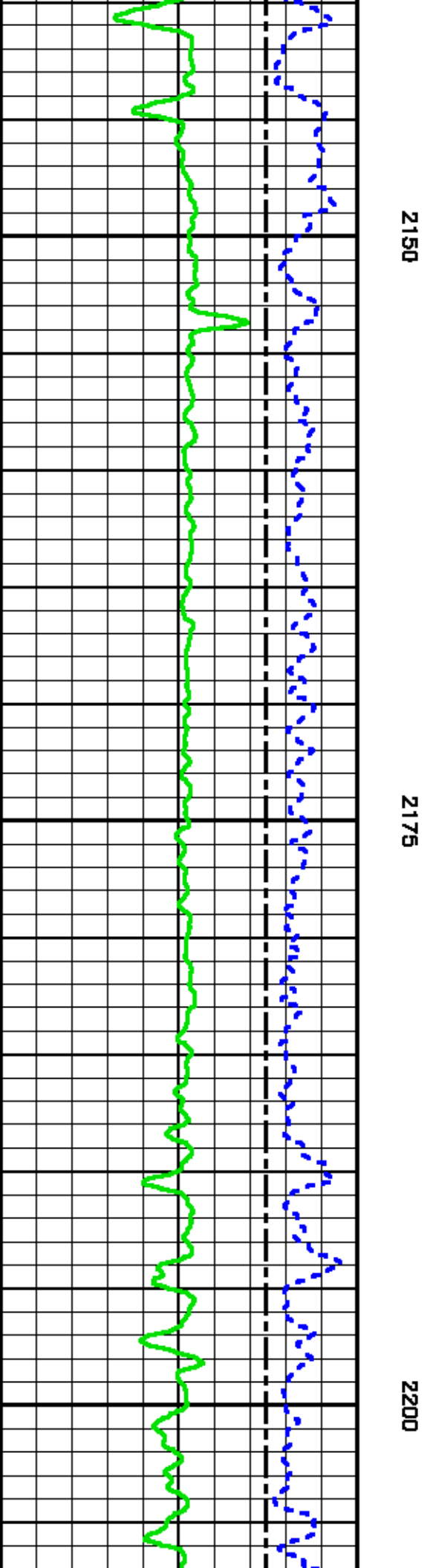
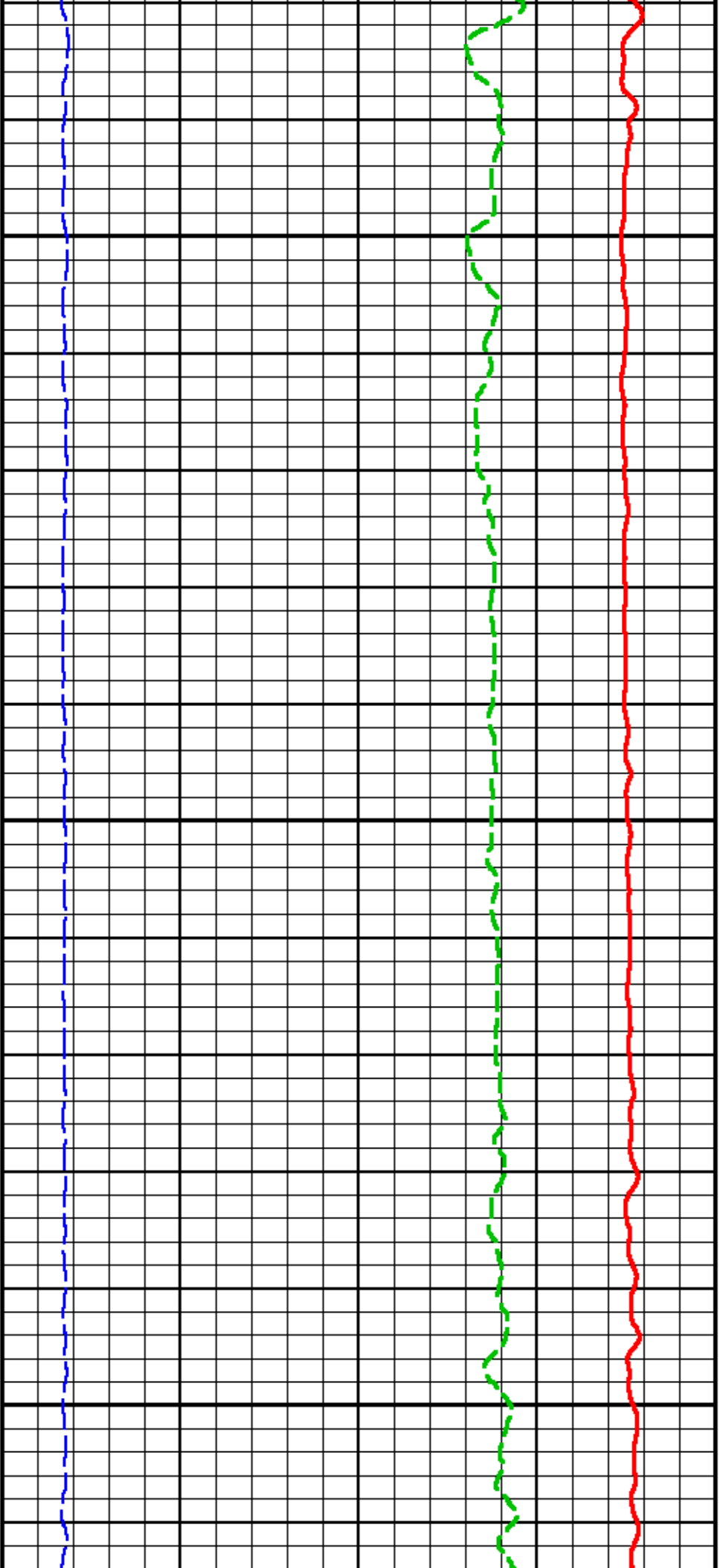


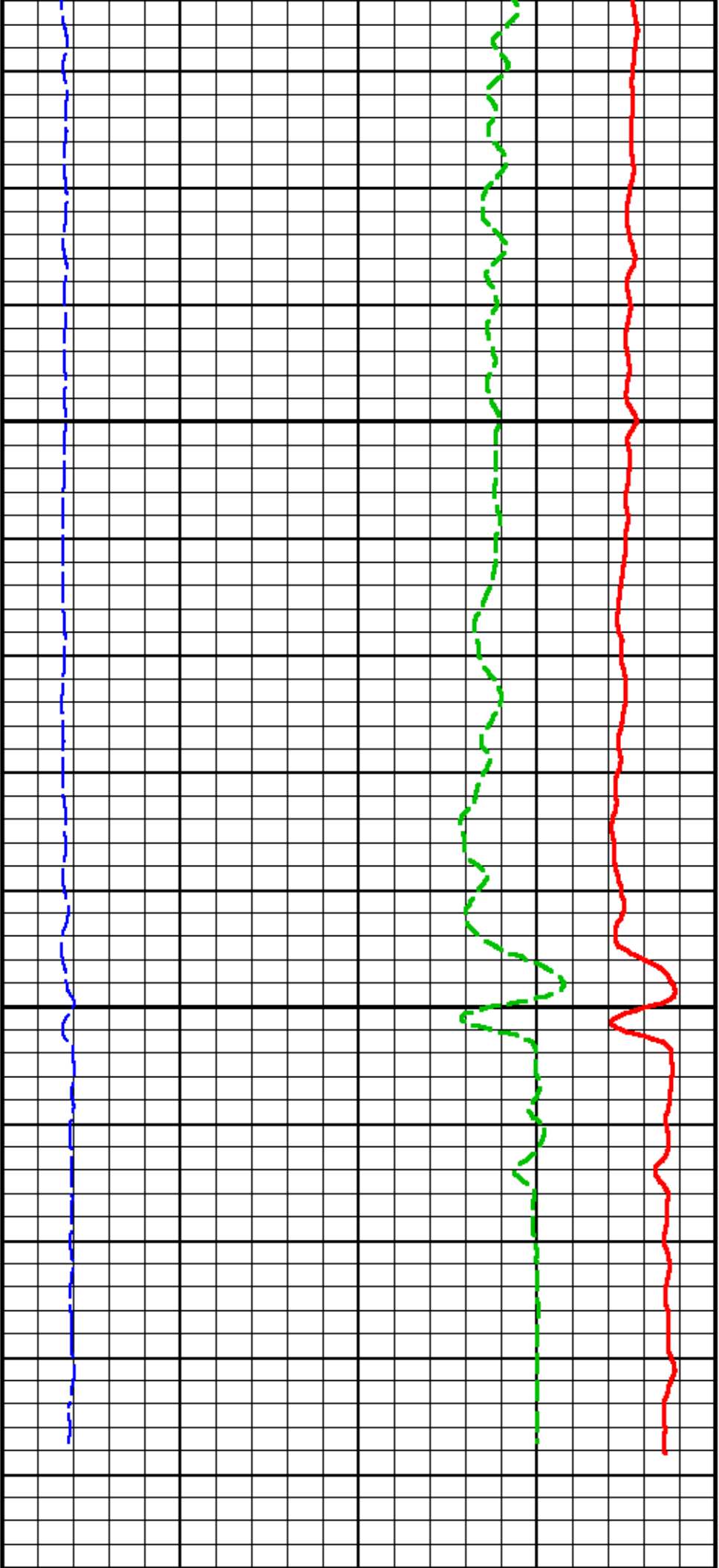
2025

2050



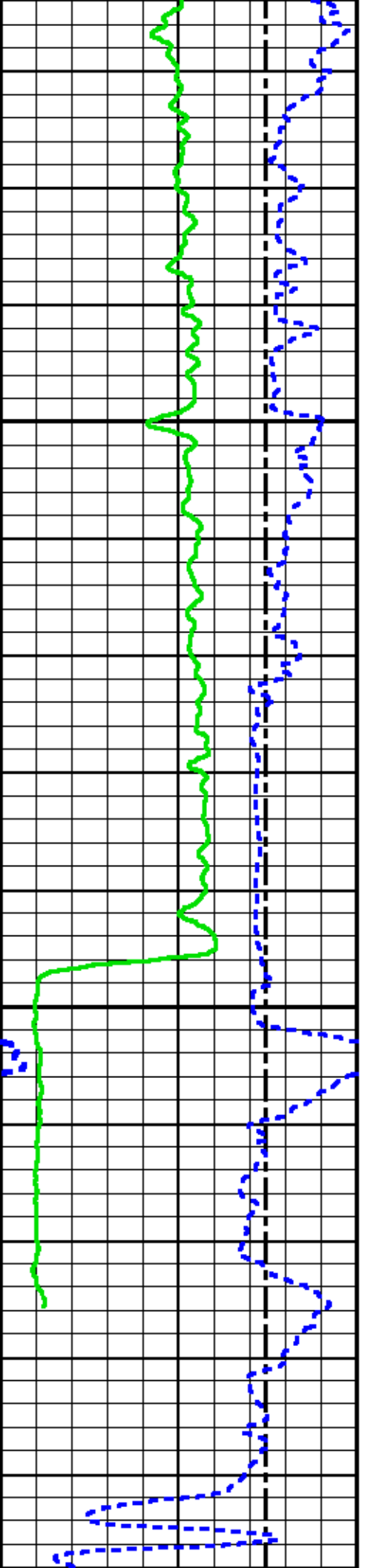


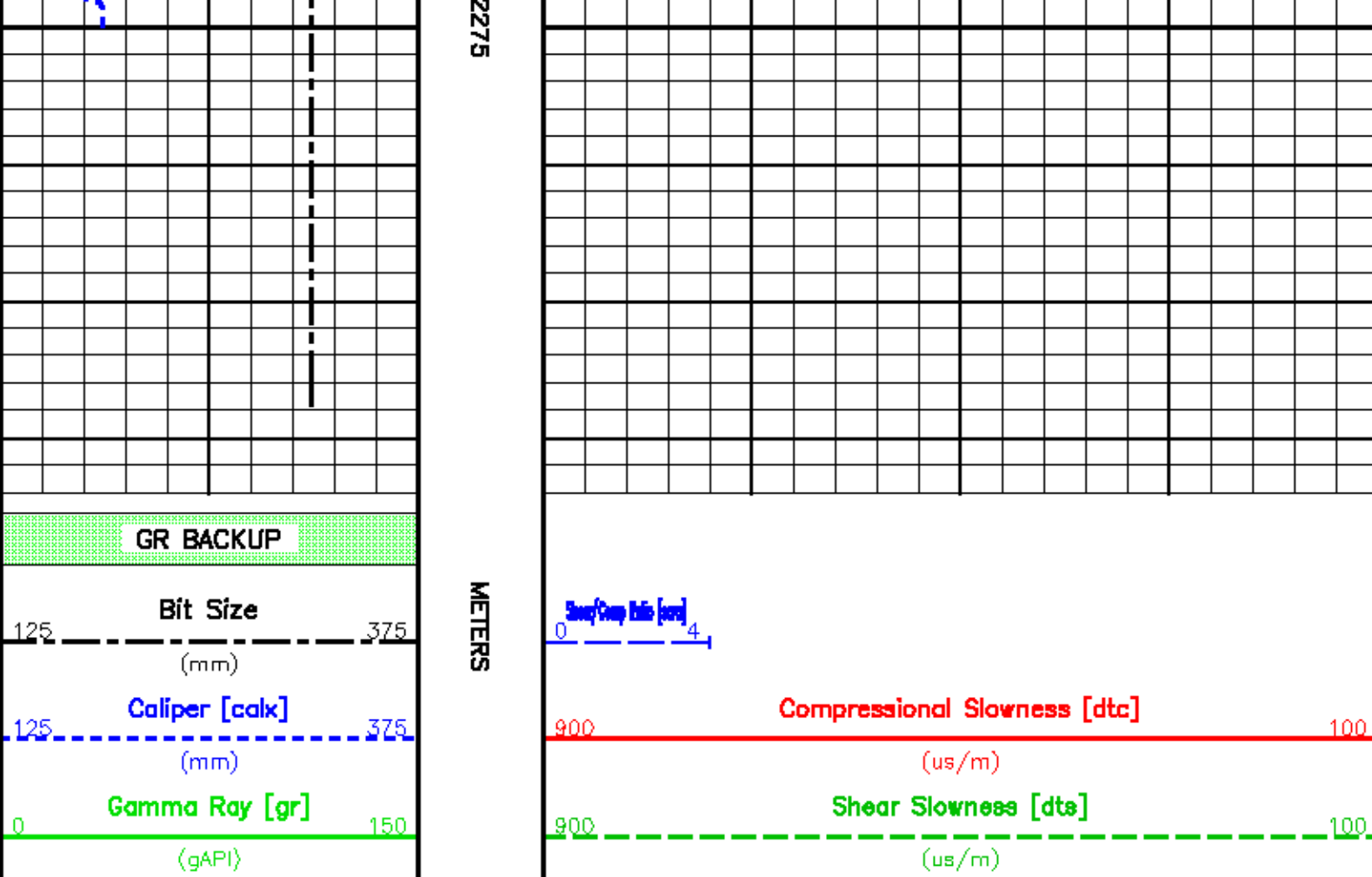




2225

2250





Monopole Quality Control Plot

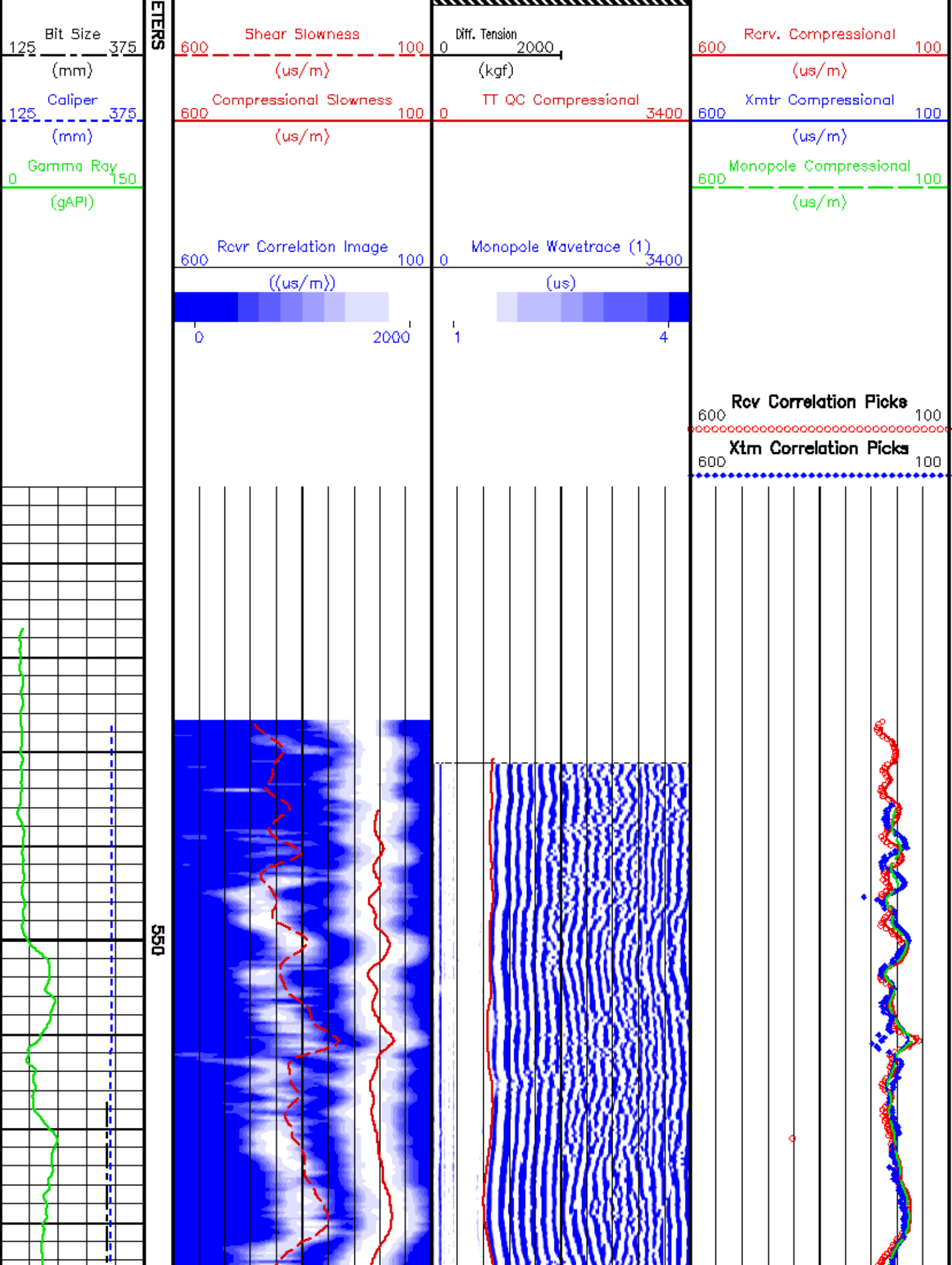
CURVE DESCRIPTION REPORT

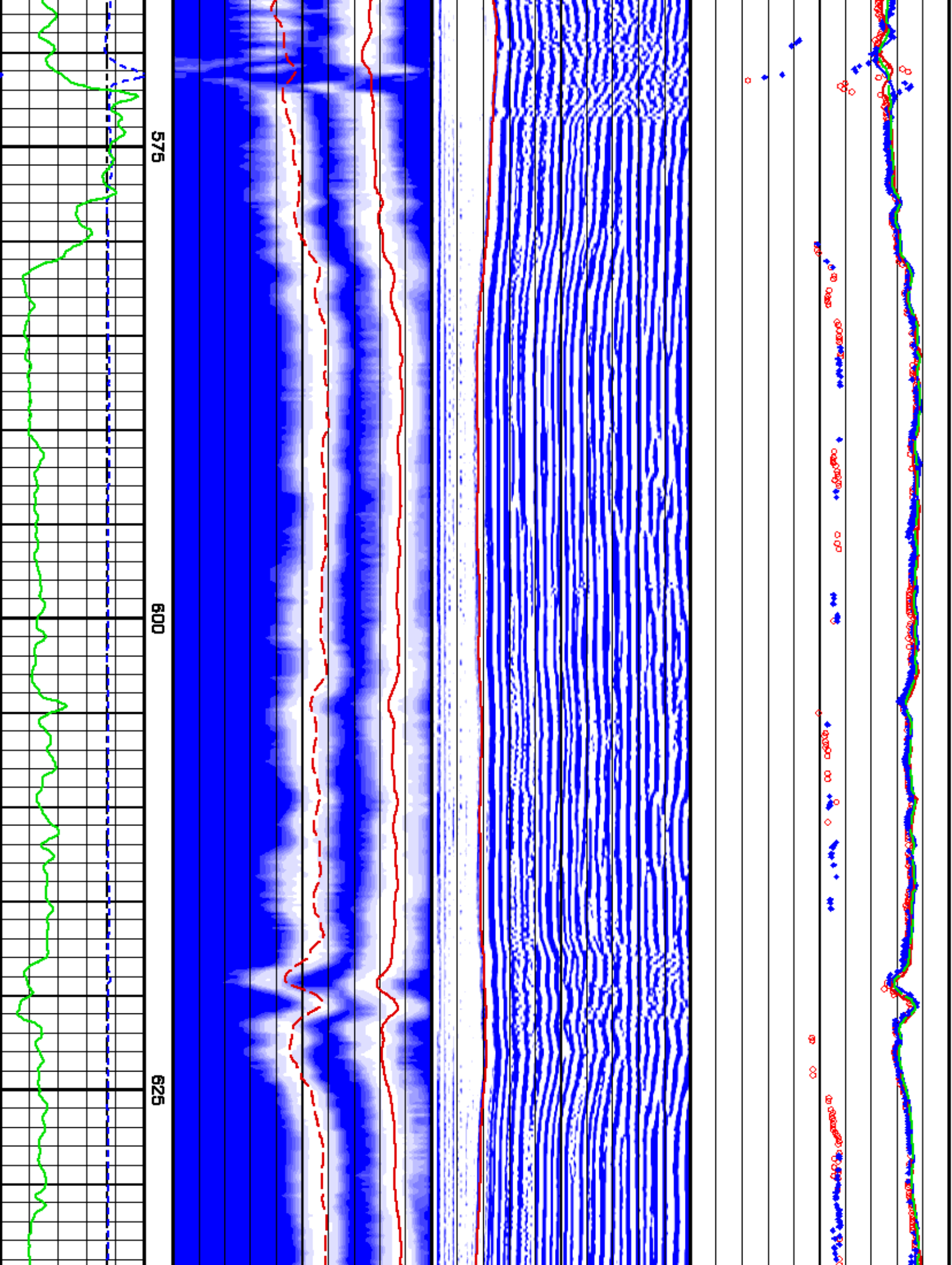
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 2 16:48:02 2010	BIT SIZE
F1:CALX	CALX	Nov 3 01:15:13 2010	CALIPER FROM X AXIS OF X-Y CALIPER(S)
F1:DTC	DTCN	Nov 10 10:08:31 2010	COMPRESSIONAL WAVE SLOWNESS
F1:DTS	DTSN	Nov 10 10:08:45 2010	SHEAR WAVE SLOWNESS
F1:GR	GR	Nov 2 16:48:02 2010	GAMMA RAY
F1:TEN	TEN	Nov 2 16:48:02 2010	DIFFERENTIAL TENSION

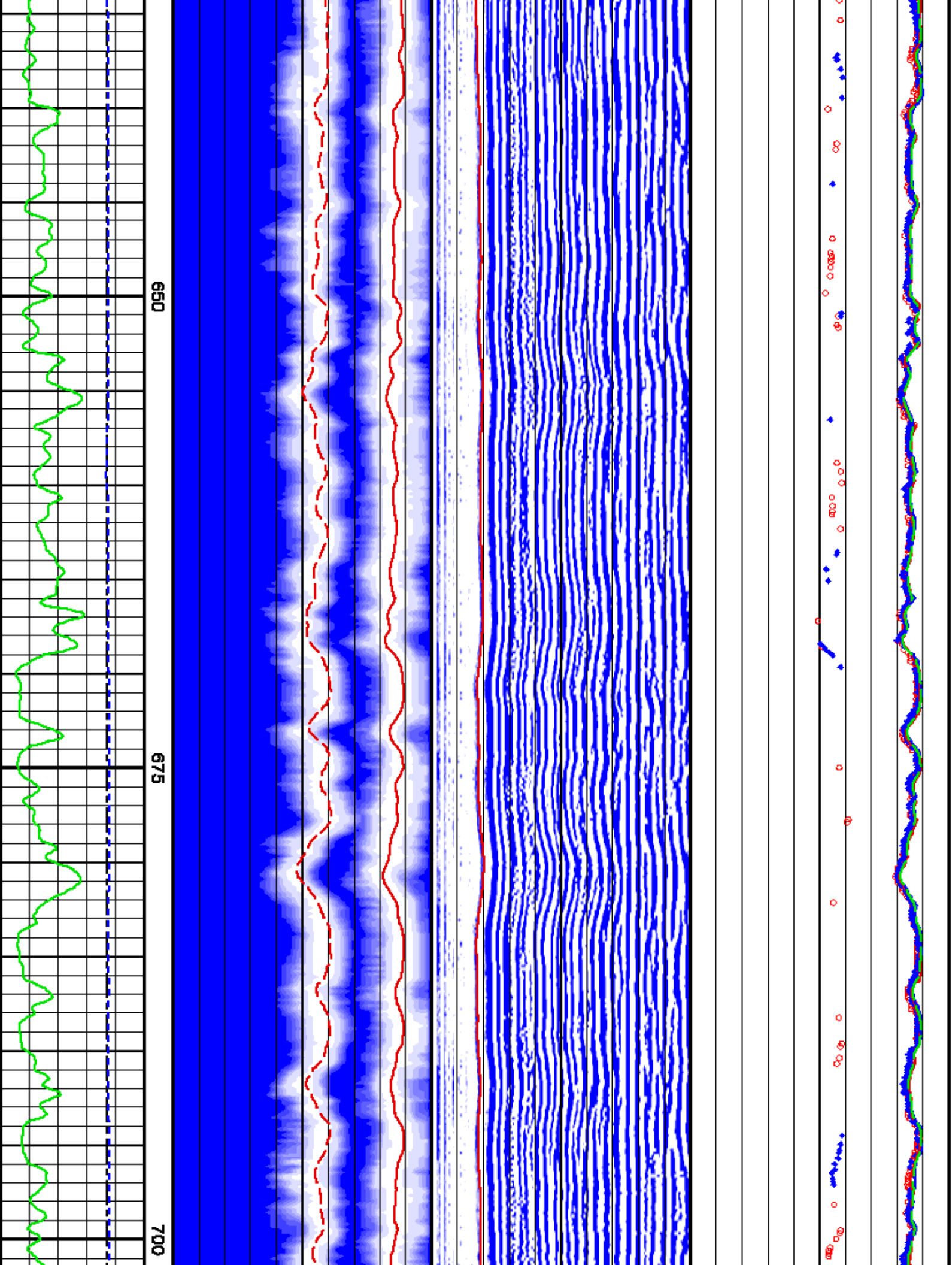
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 User : finnrel
 Presentation : calsunrv3c/data/finnrel/208041_nalcor_xmac/xmac.monopole.pdf [1:240 Scale]
 Plot Interval : 528.999 - 2291.33 Meters

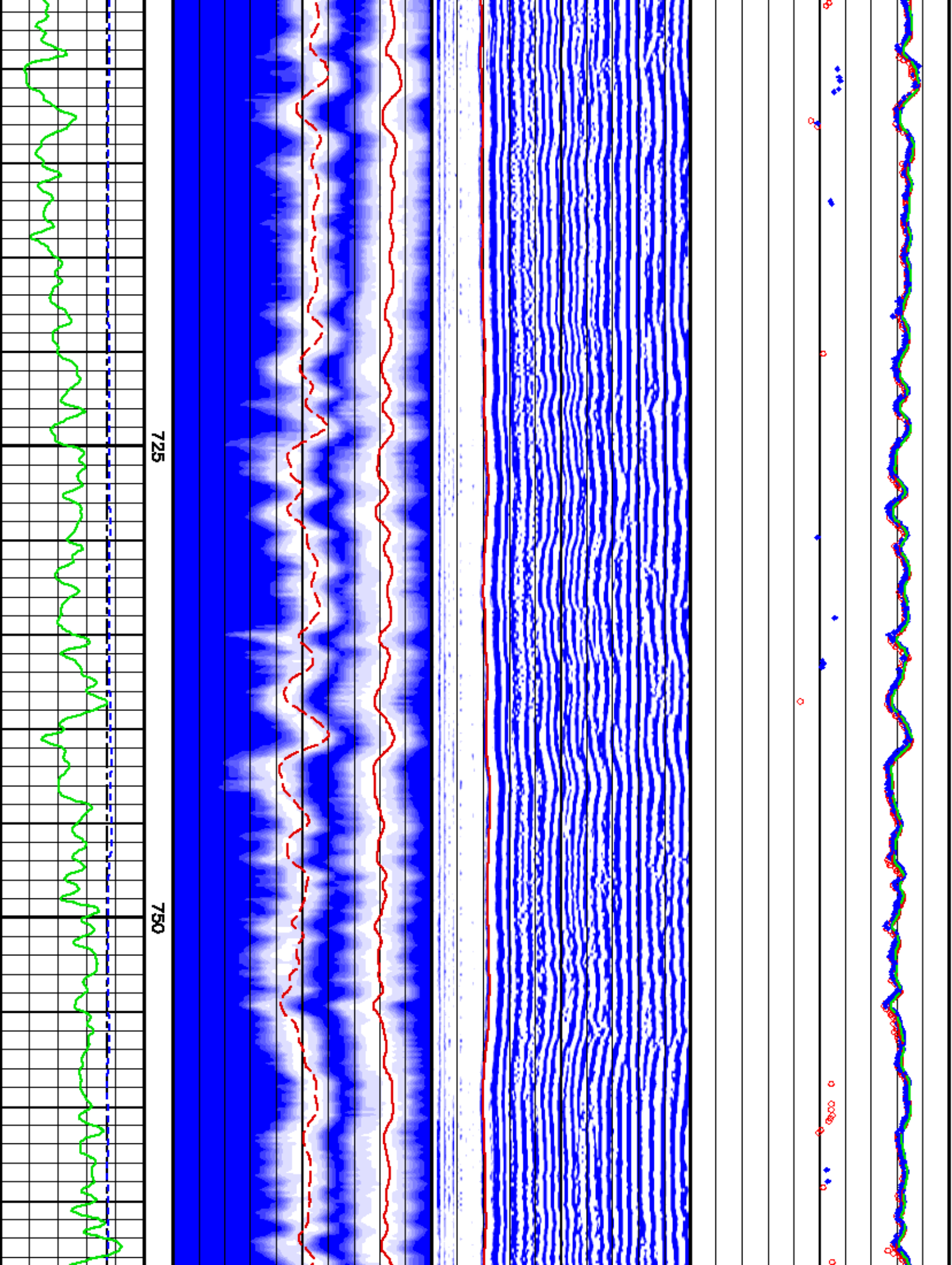
Data File 1 : F1 : calsunrv3c/export/data/finnrel/208041_nalcor_xmac/slowness.tif
 Created On : Nov 2 13:02:15 2010
 Company : NALCOR ENERGY
 Well : NALCOR ET AL FINNEGAN 31
 Field : FINNEGAN
 File Interval : 528.285 - 2289.05 Meters
 Oct : m874HB16

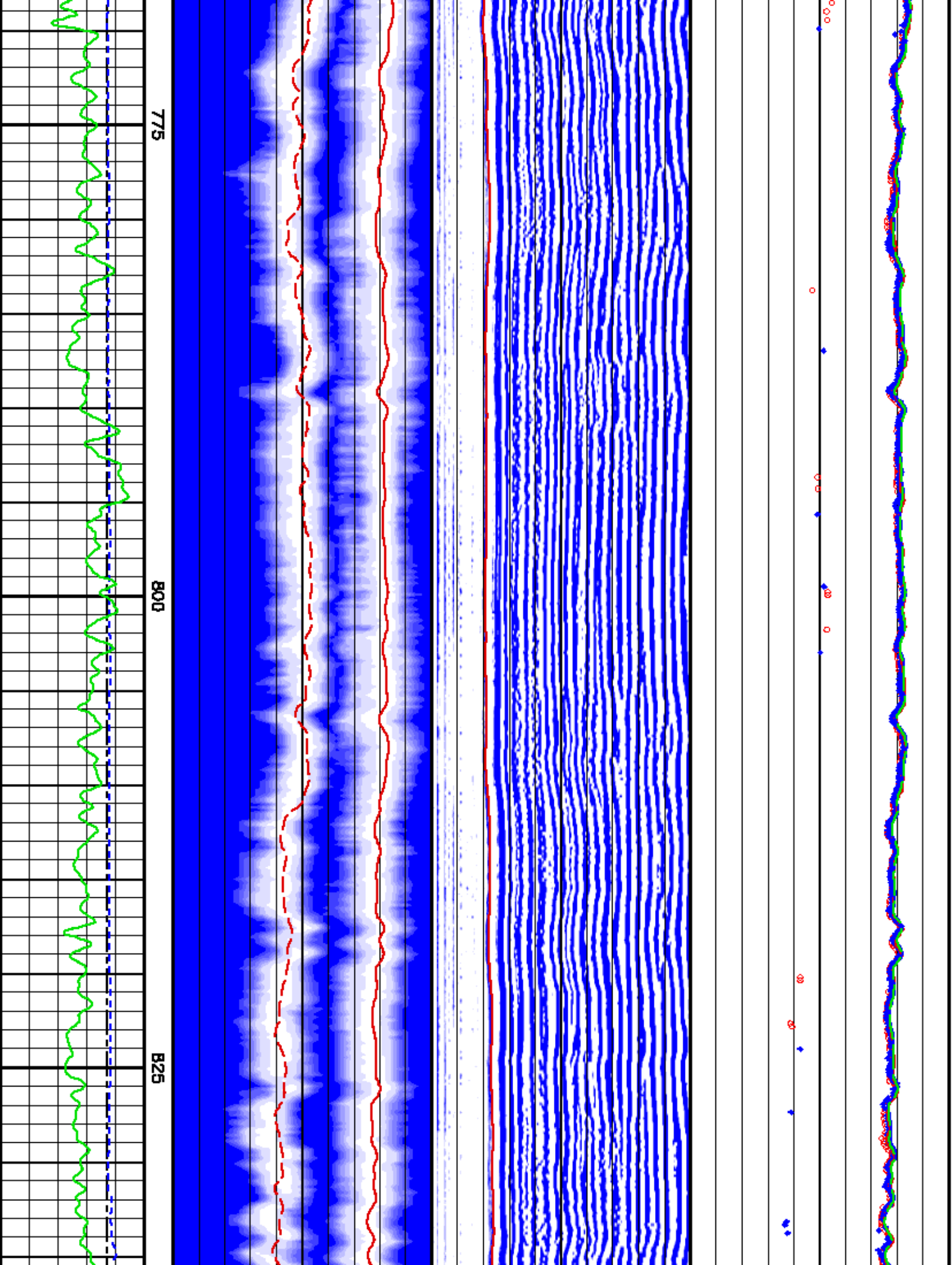
Tool Sticking

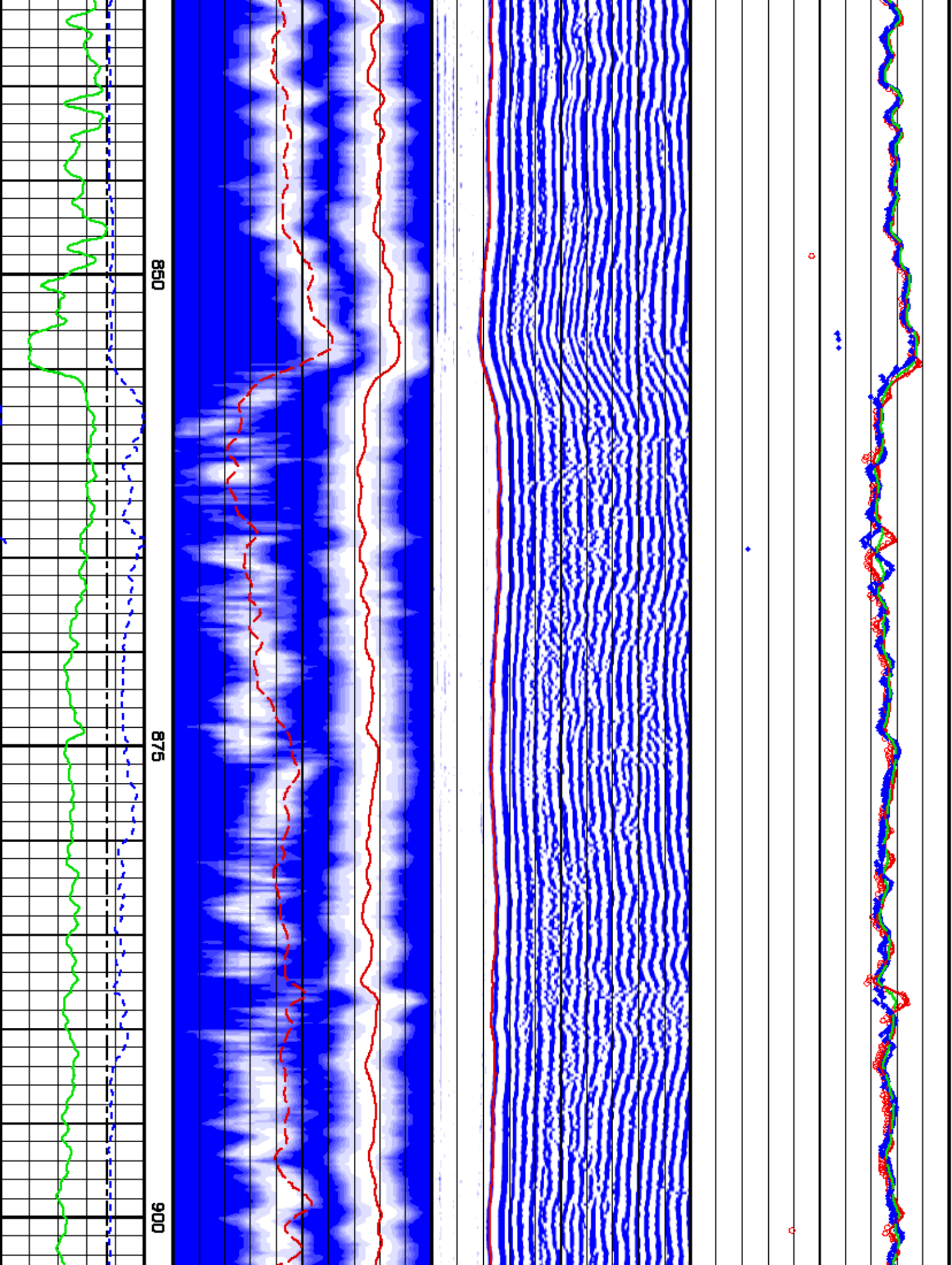


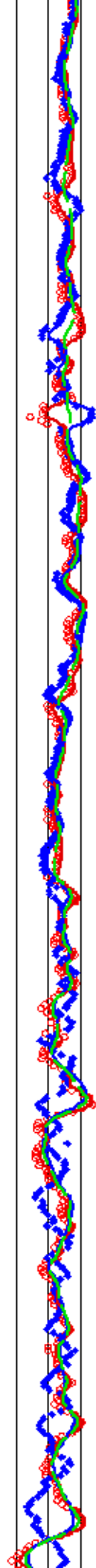








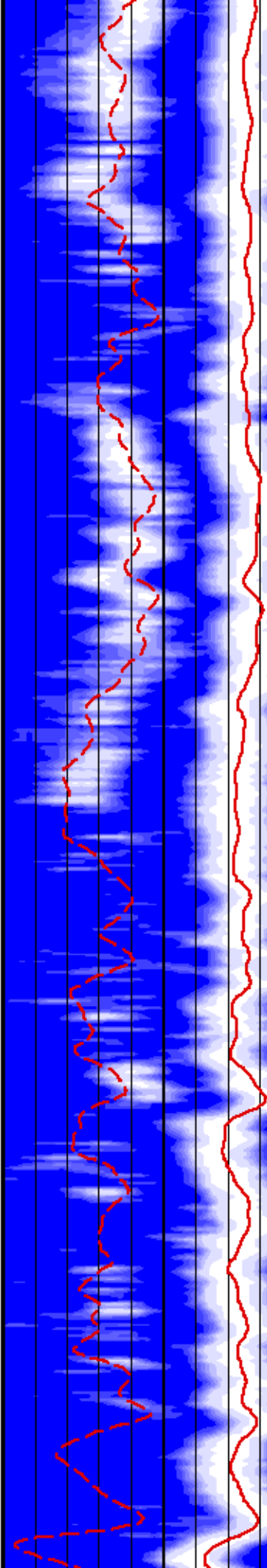
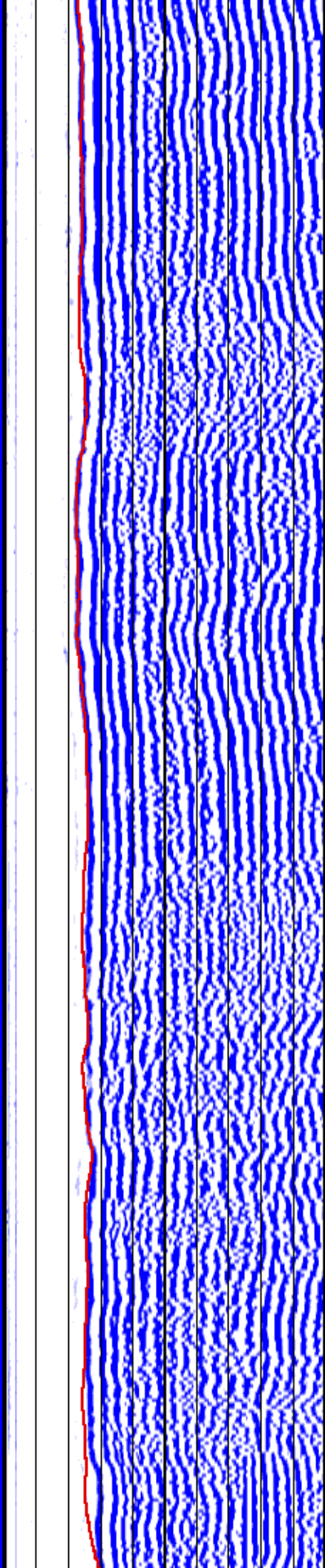




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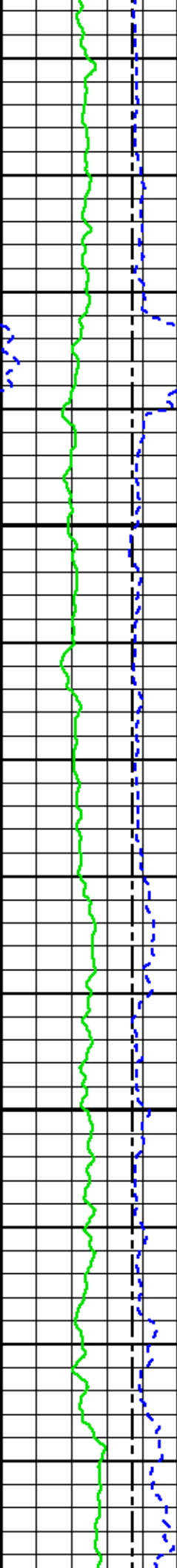
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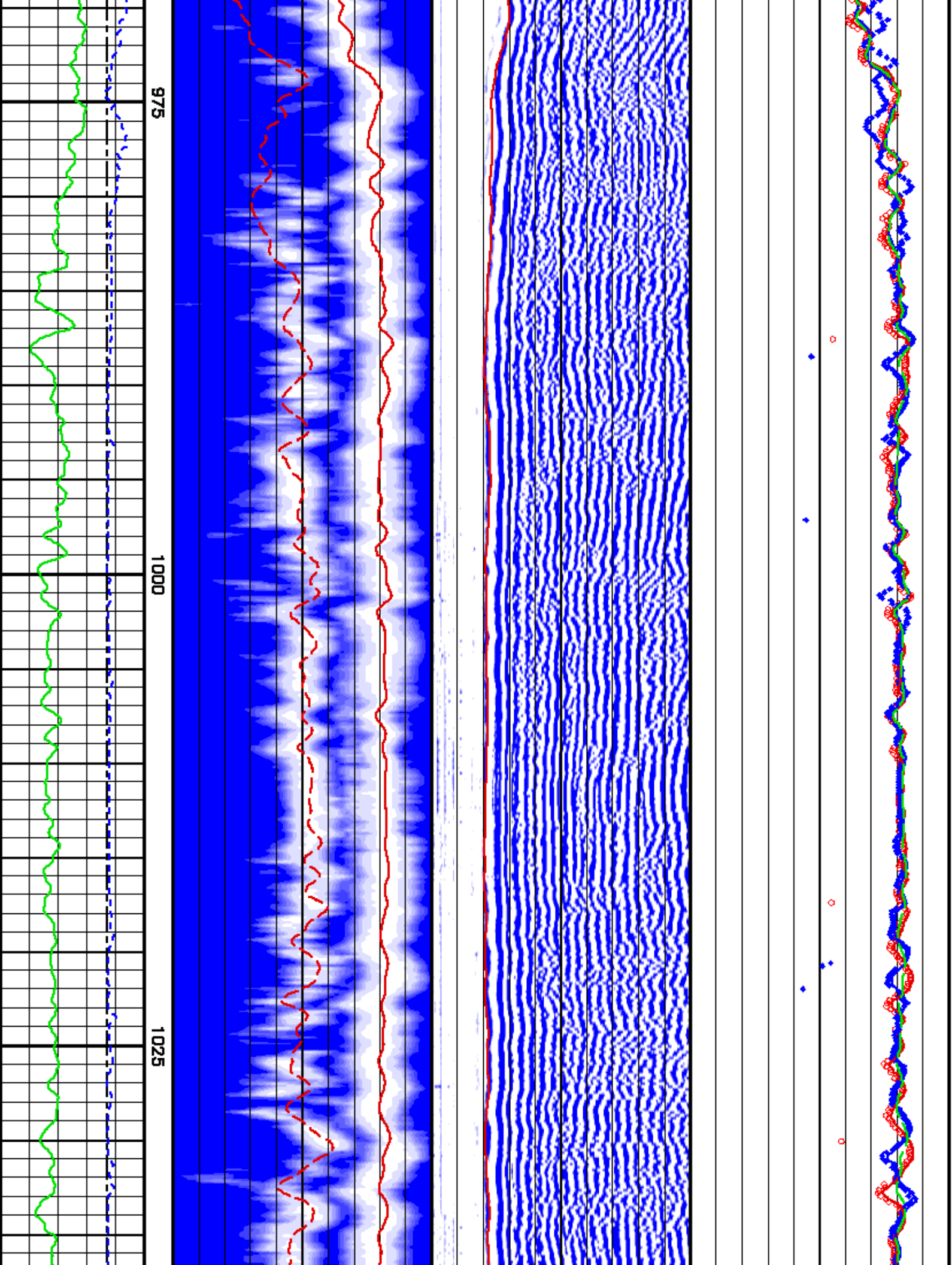
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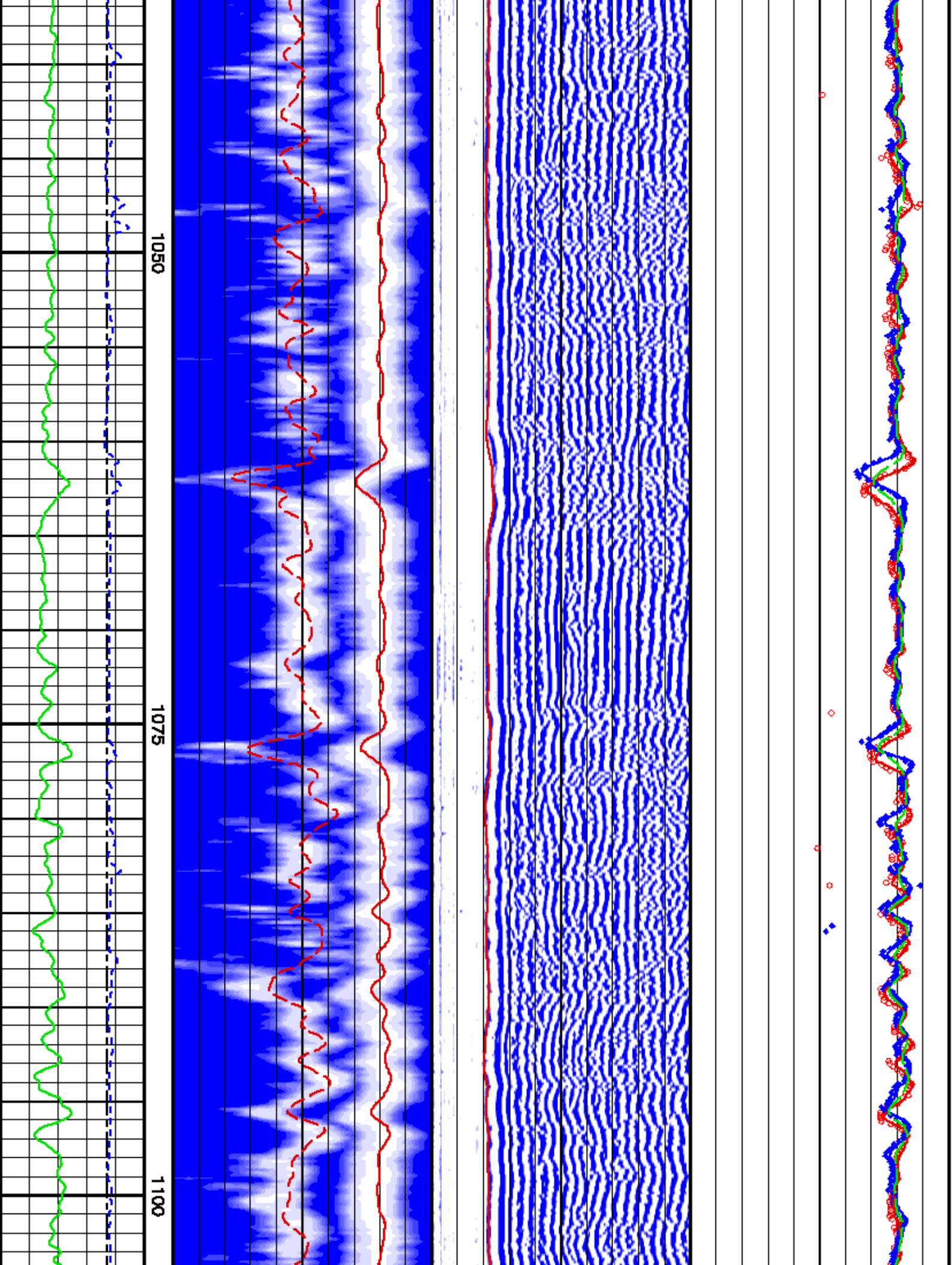


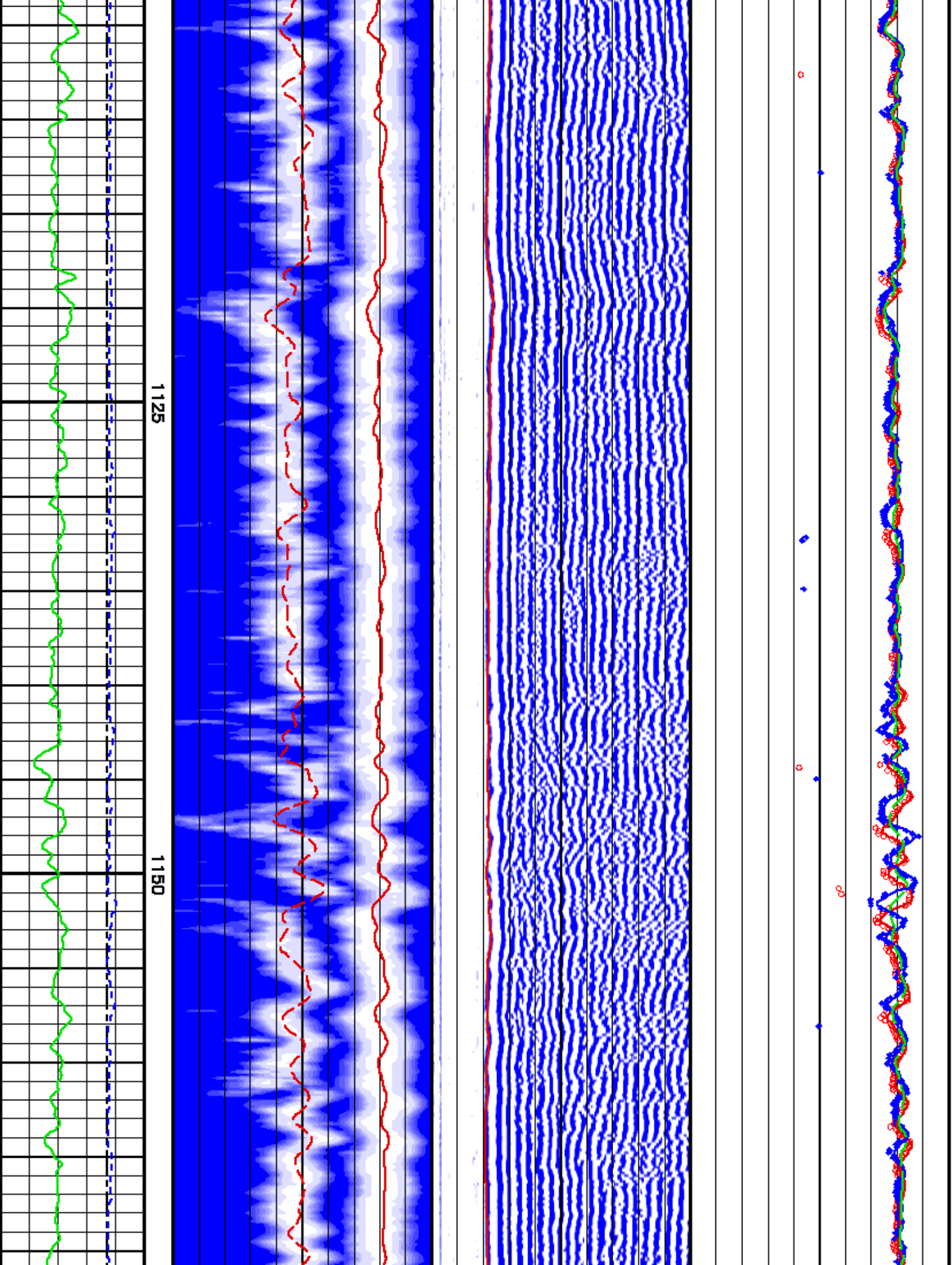
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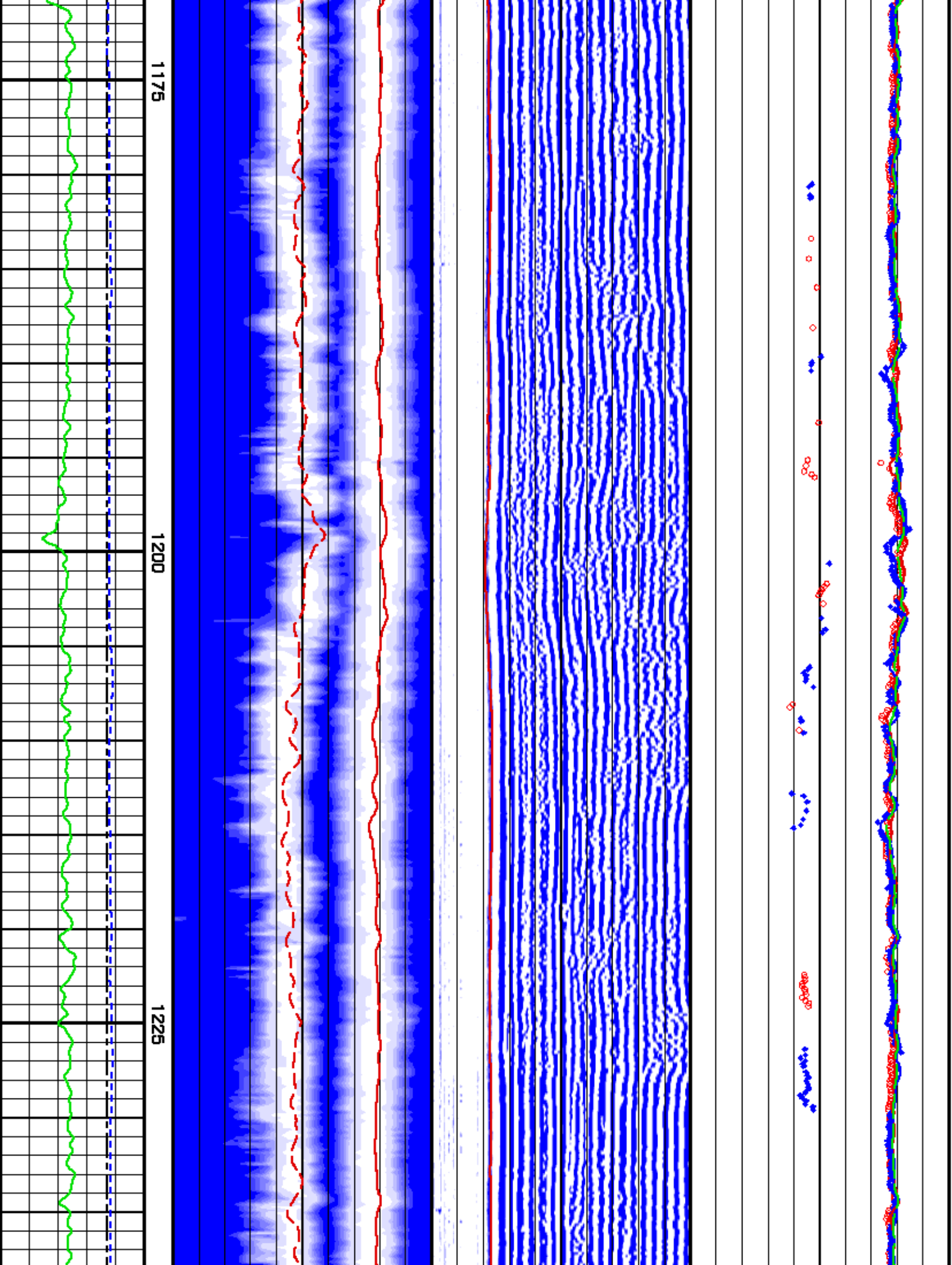
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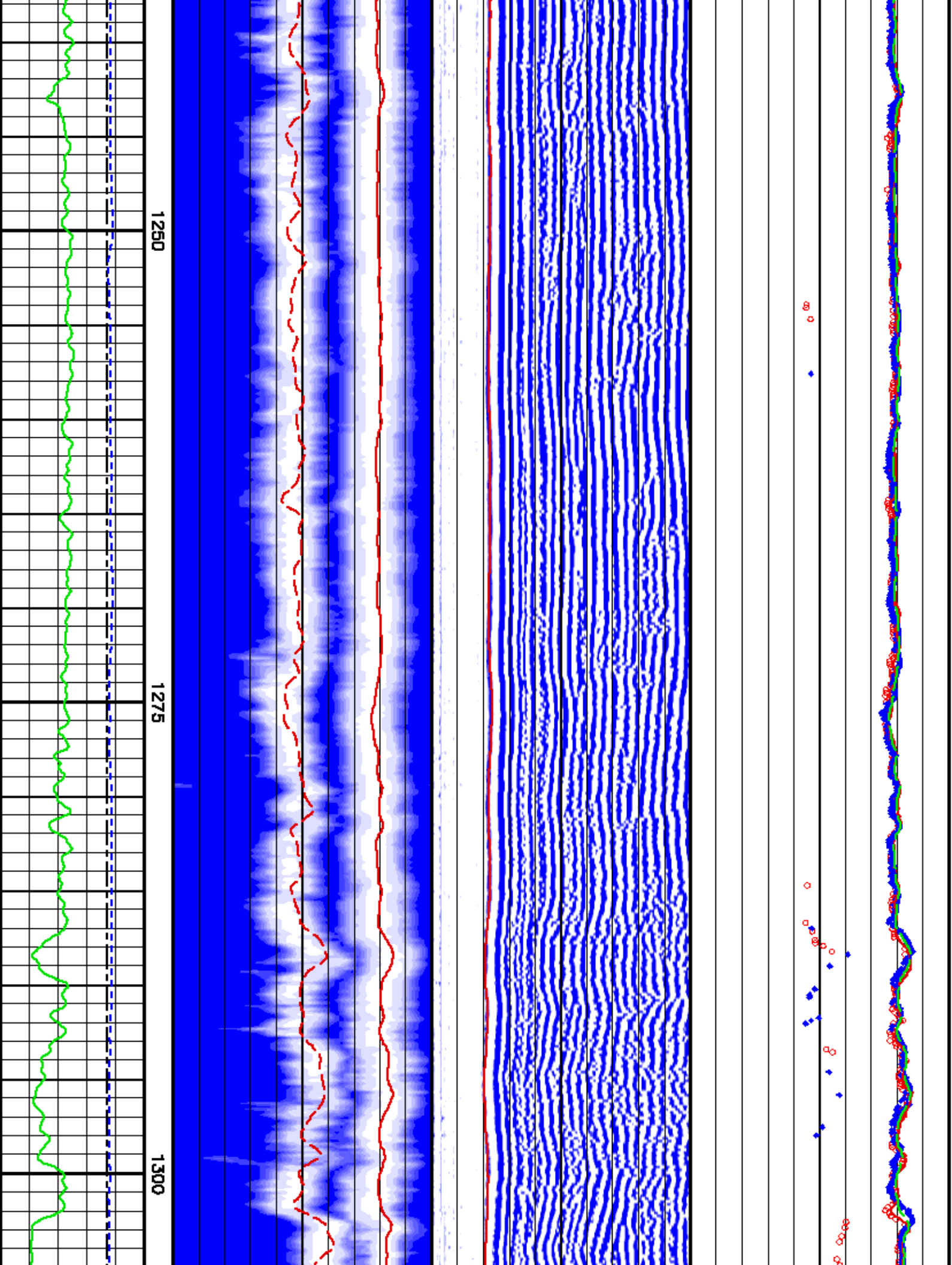


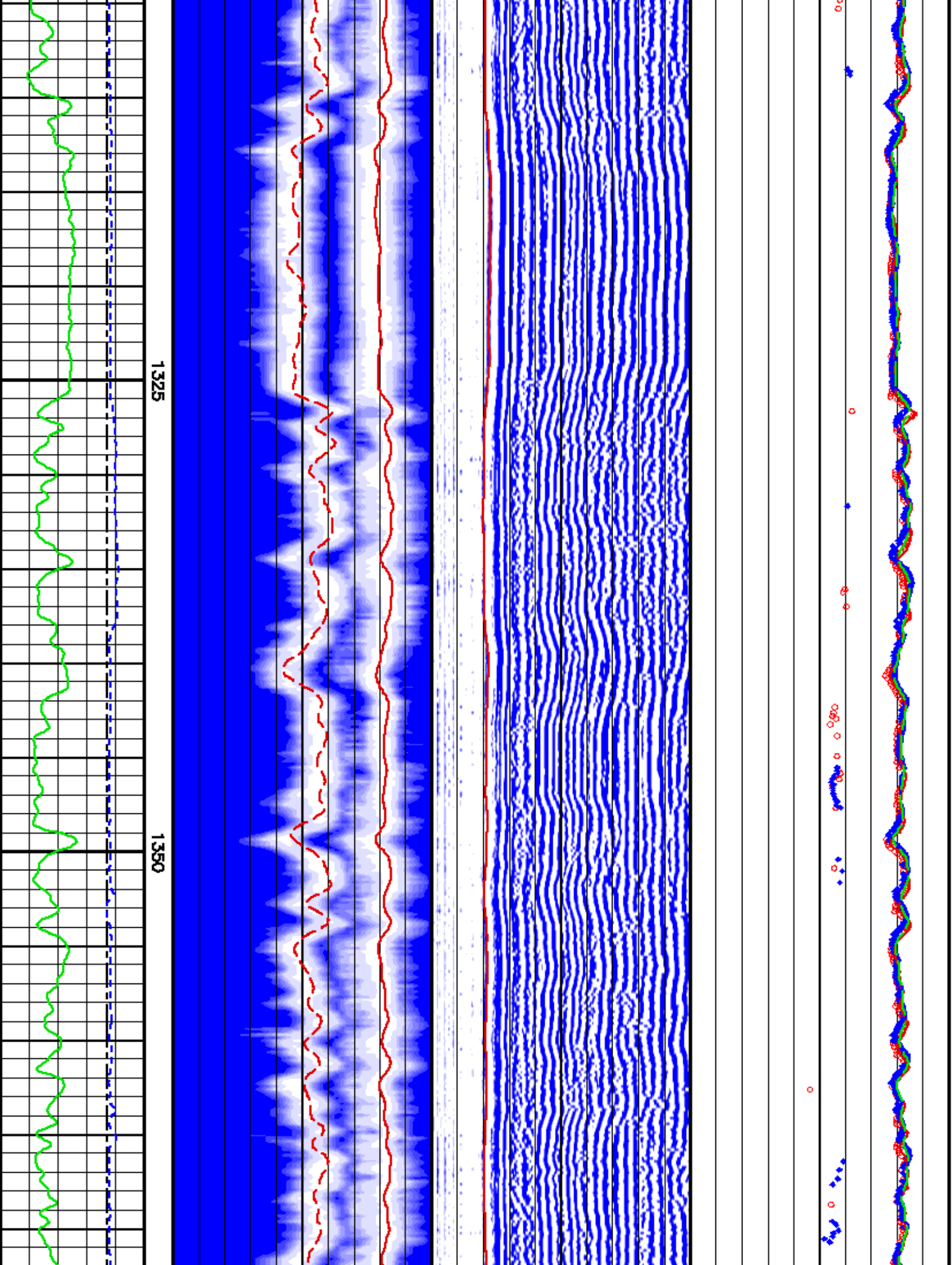


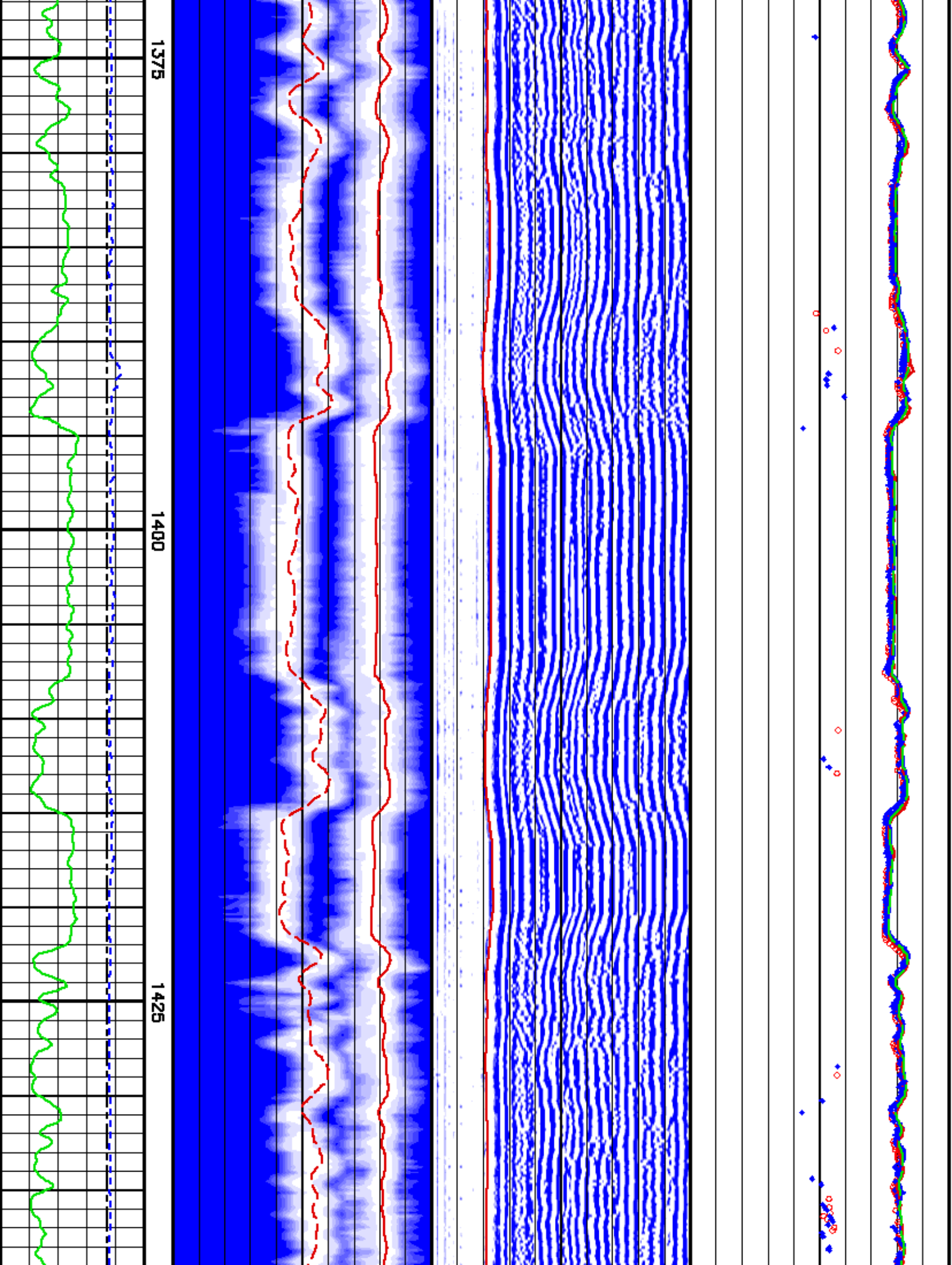


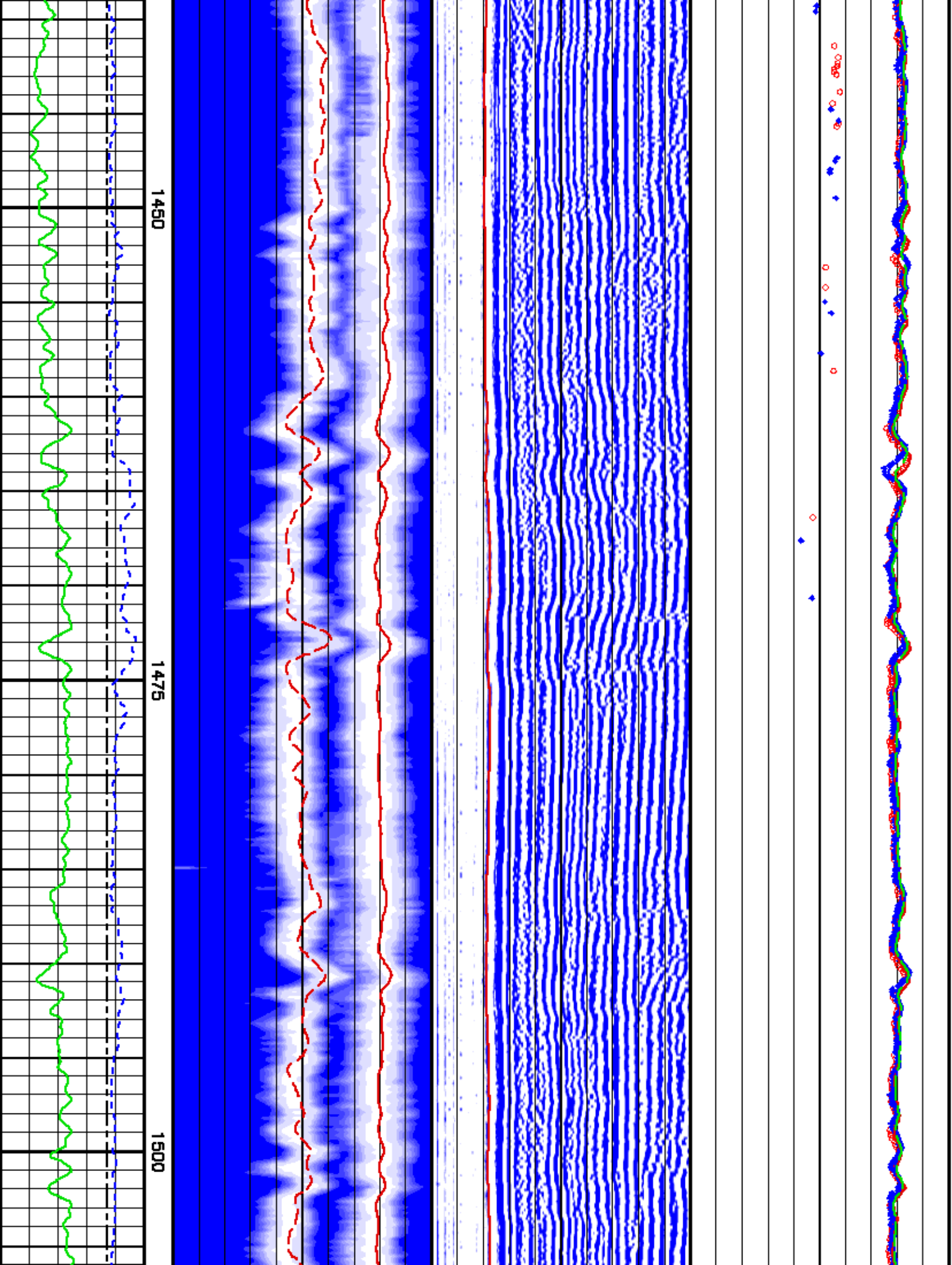


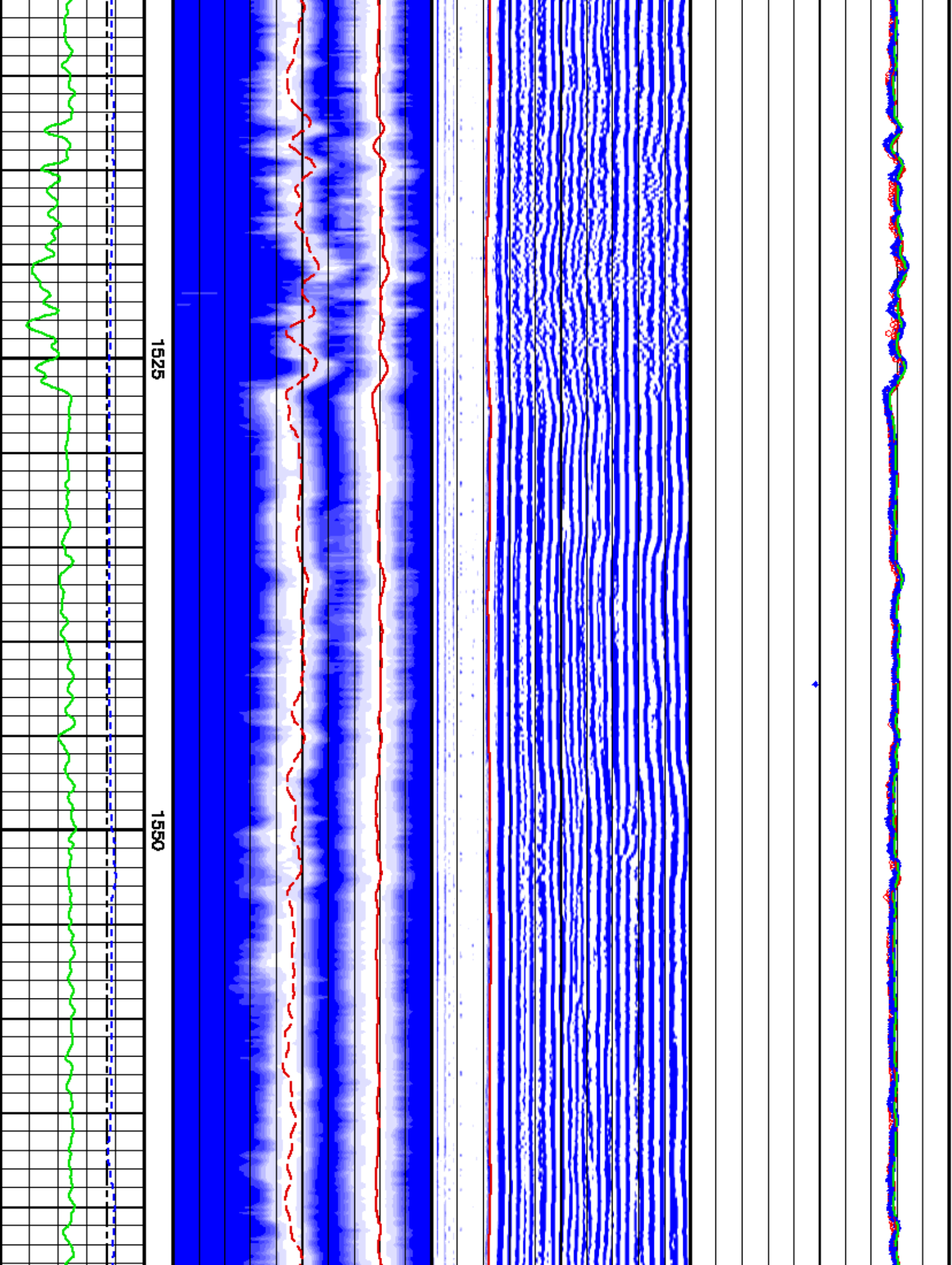


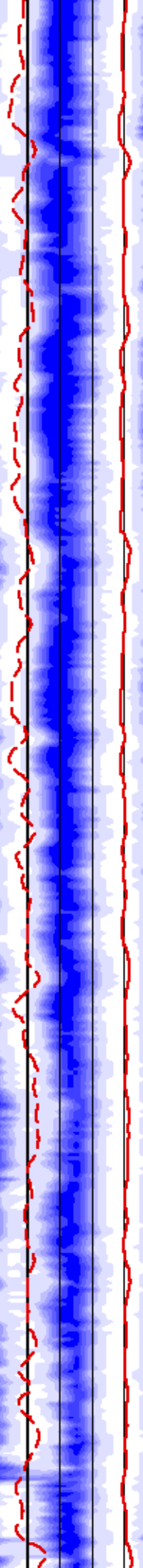
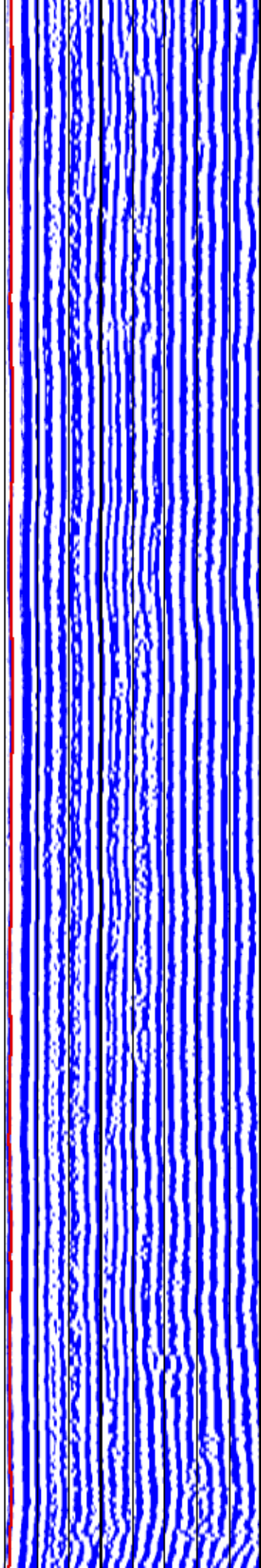
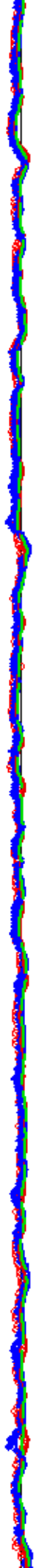








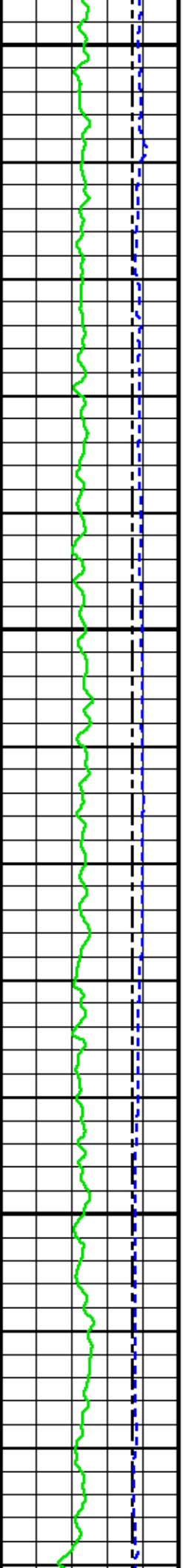


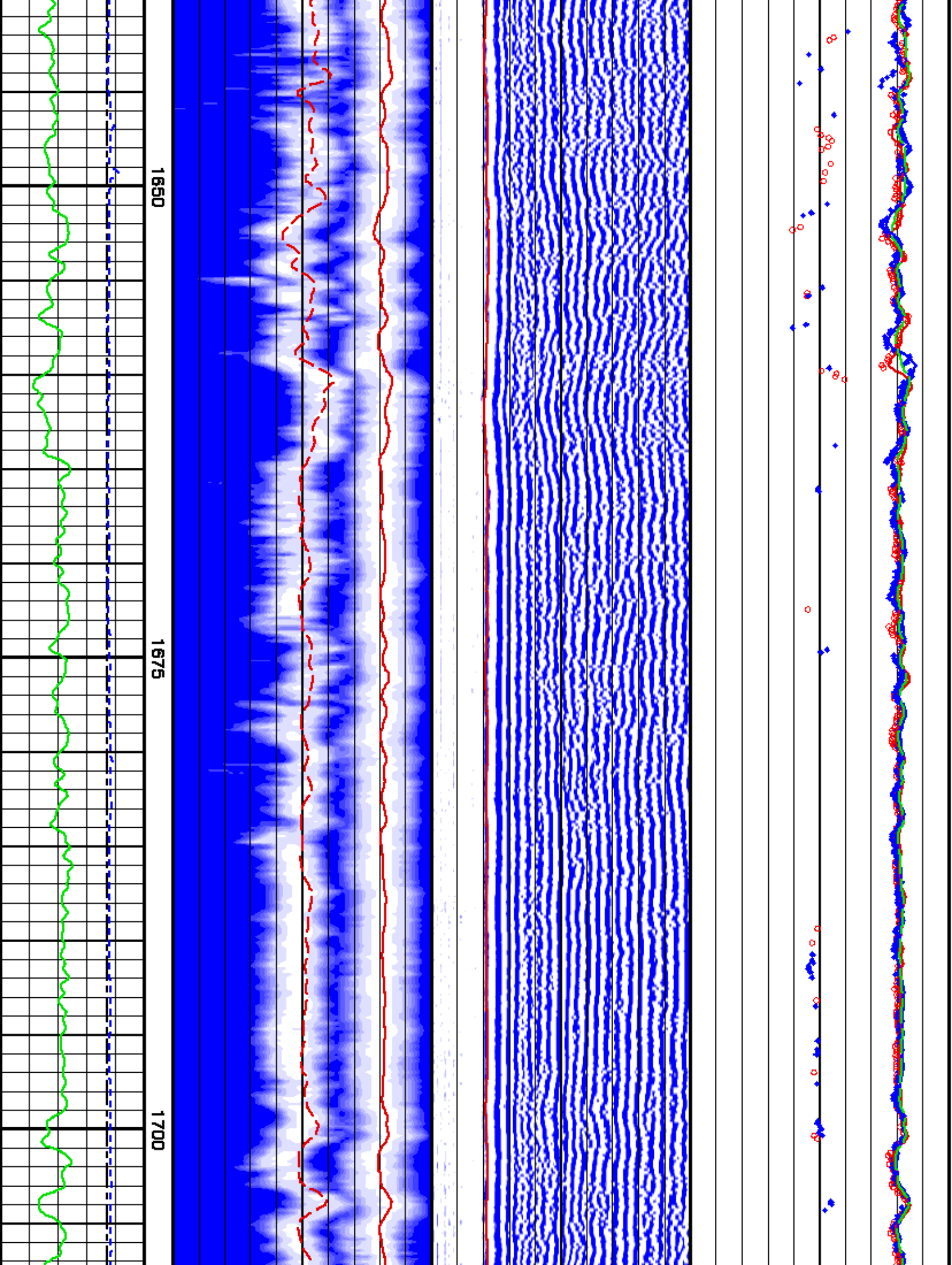


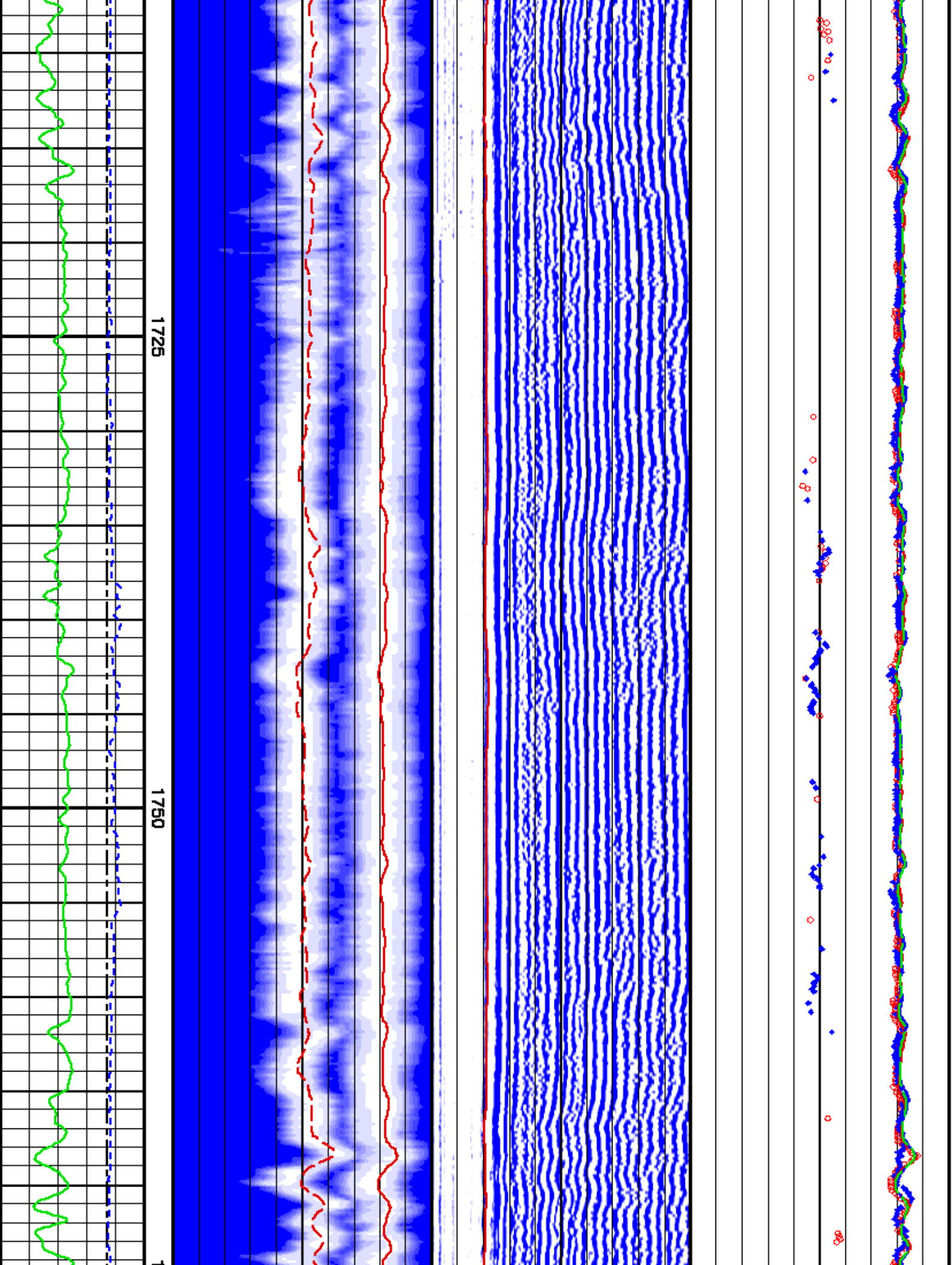
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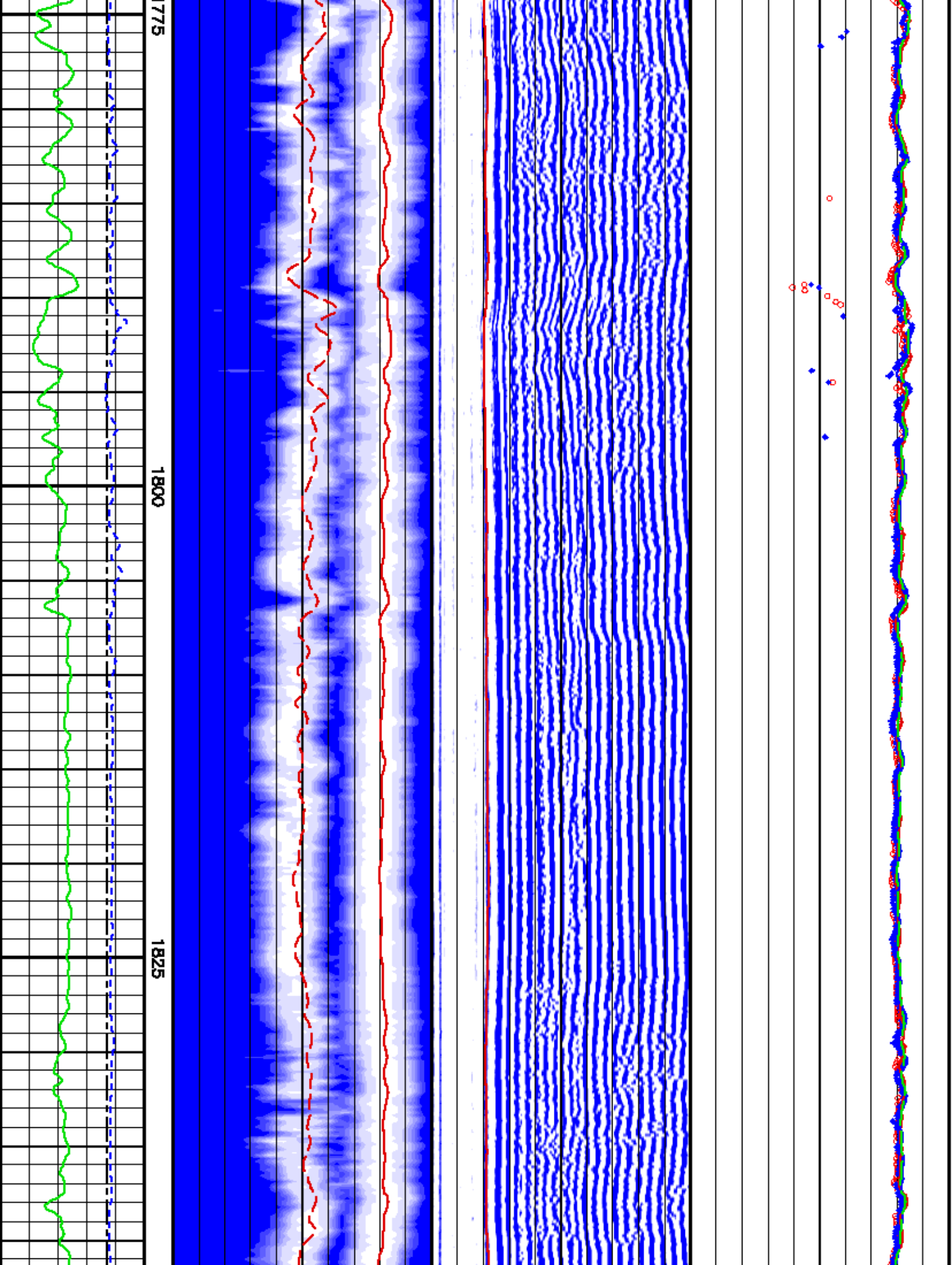
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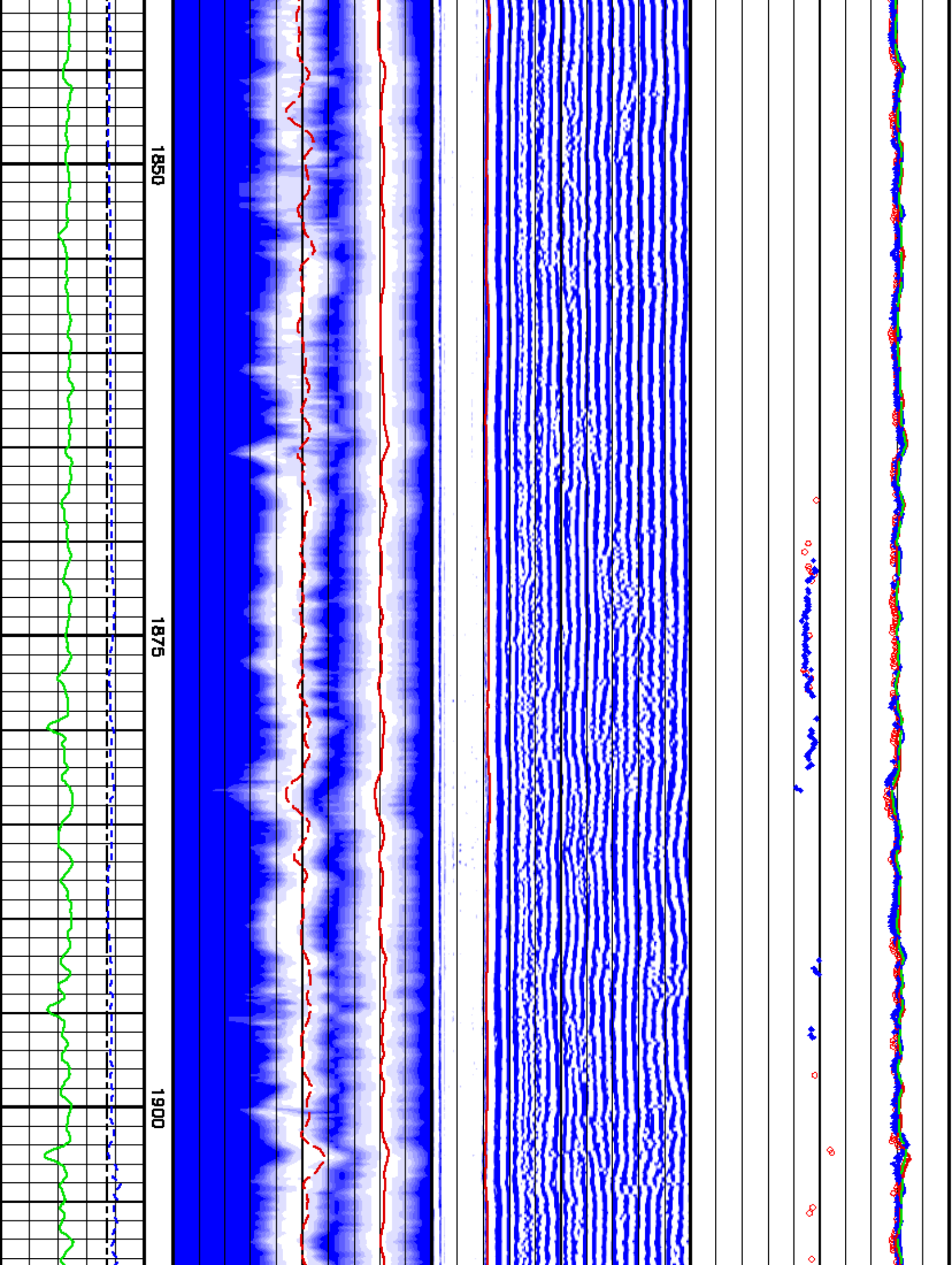
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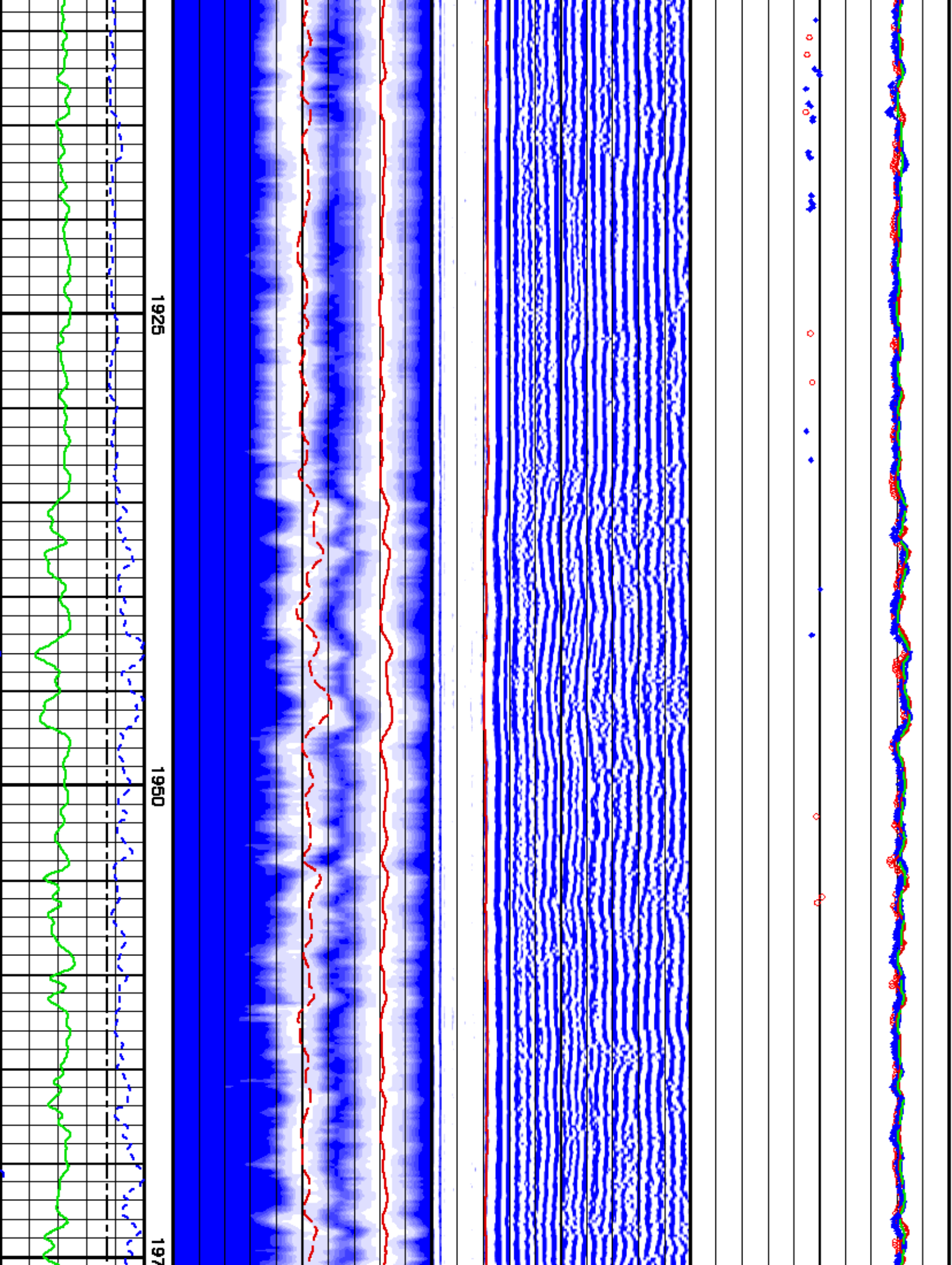


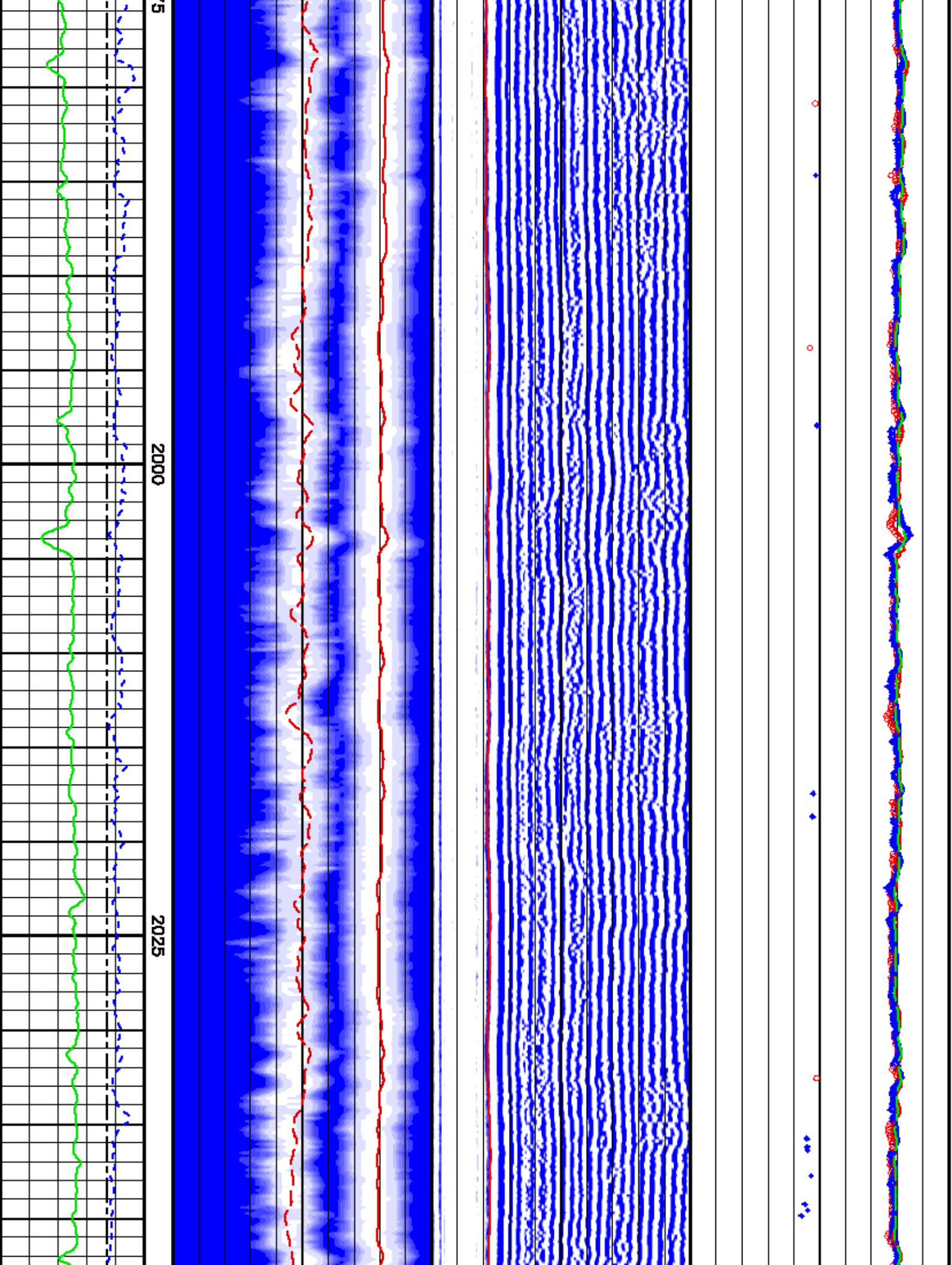


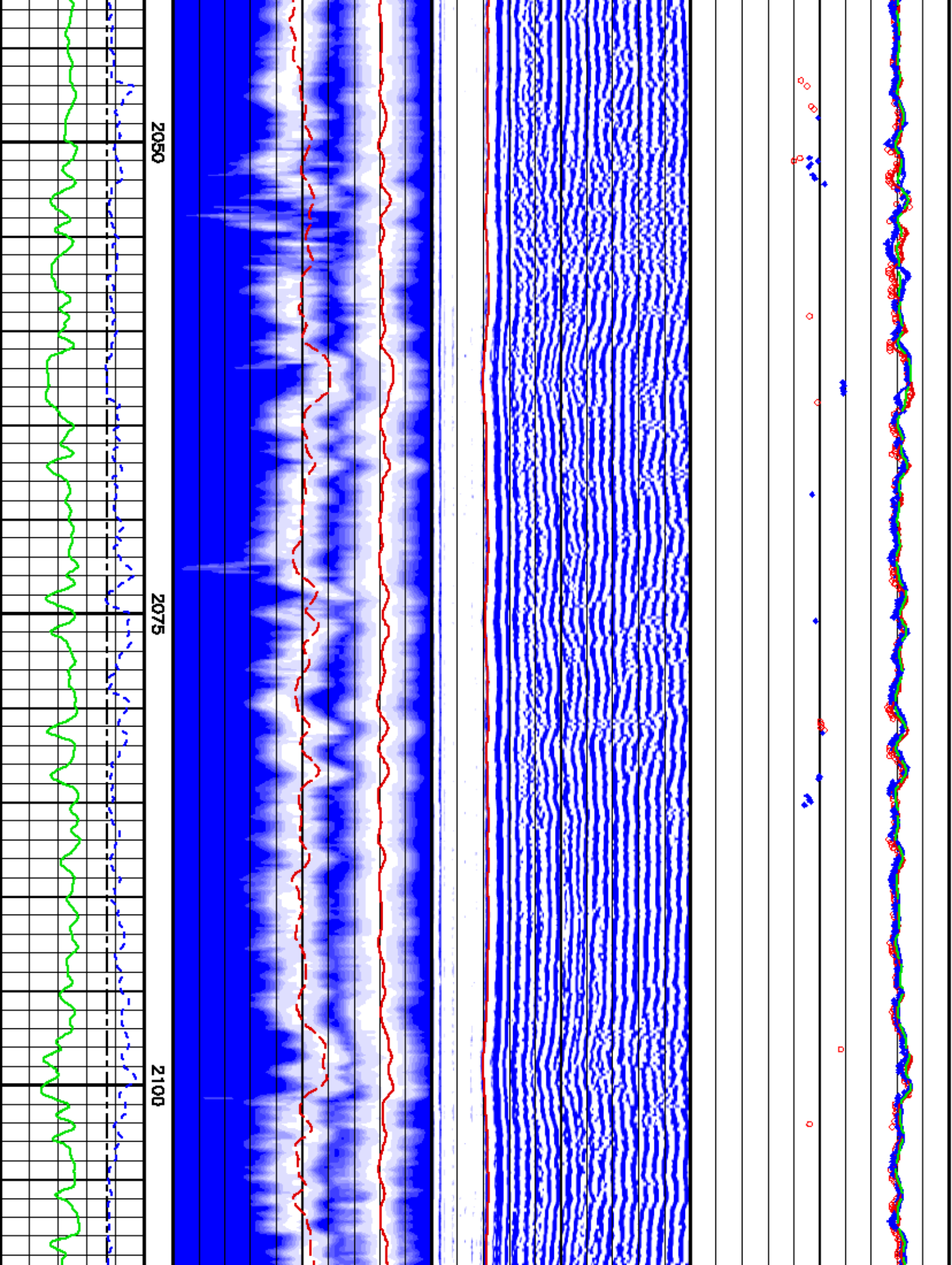


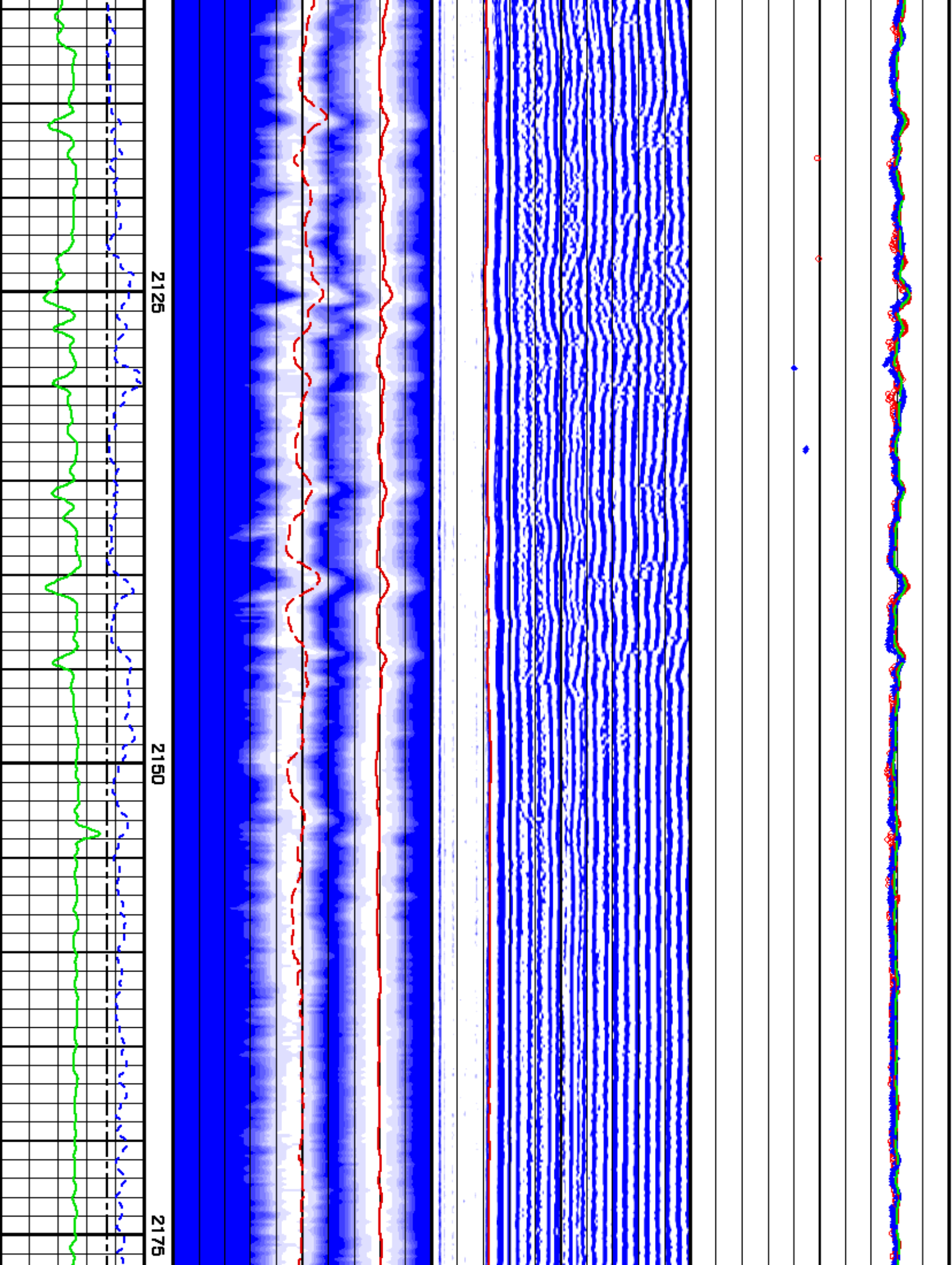








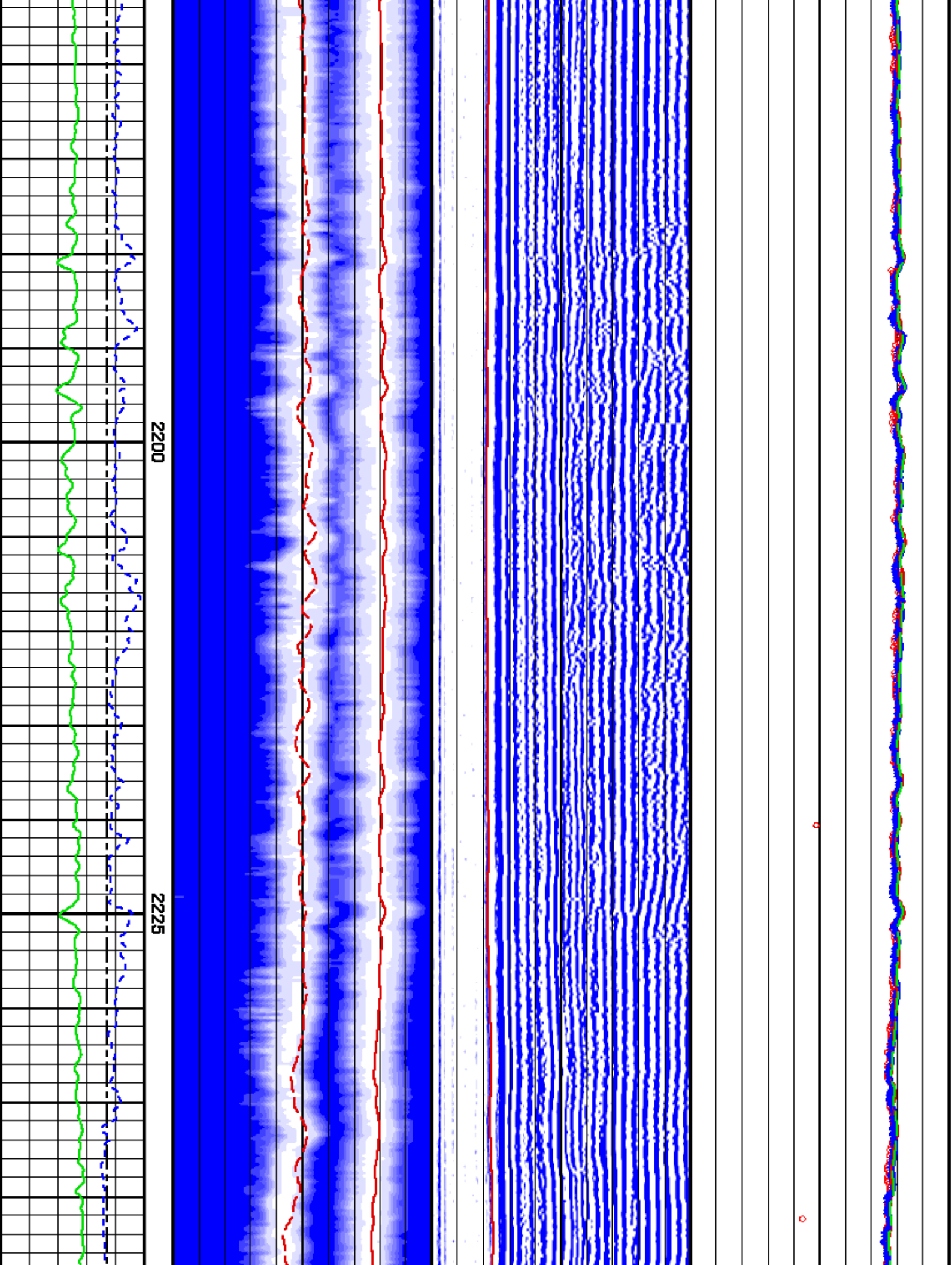


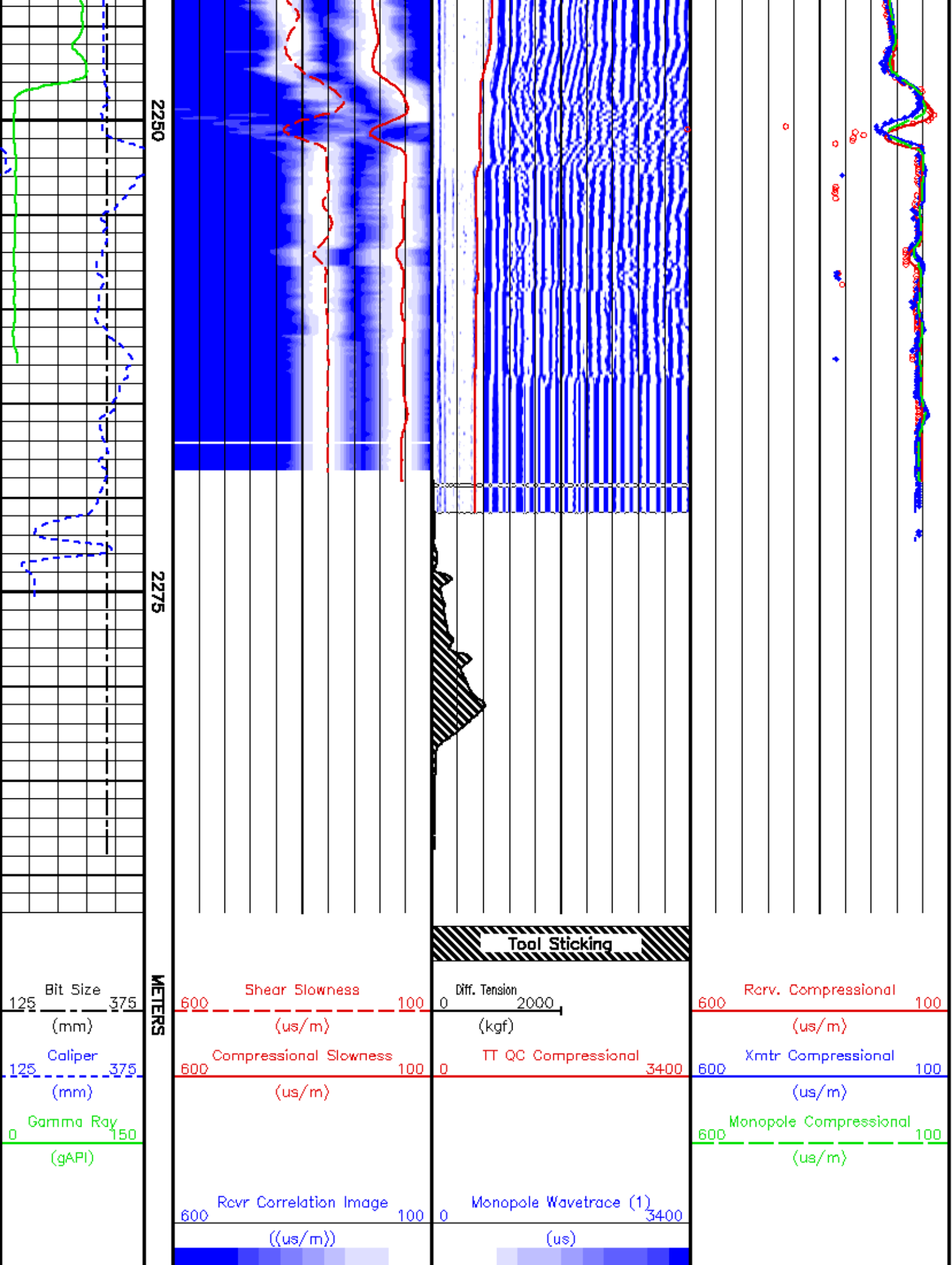


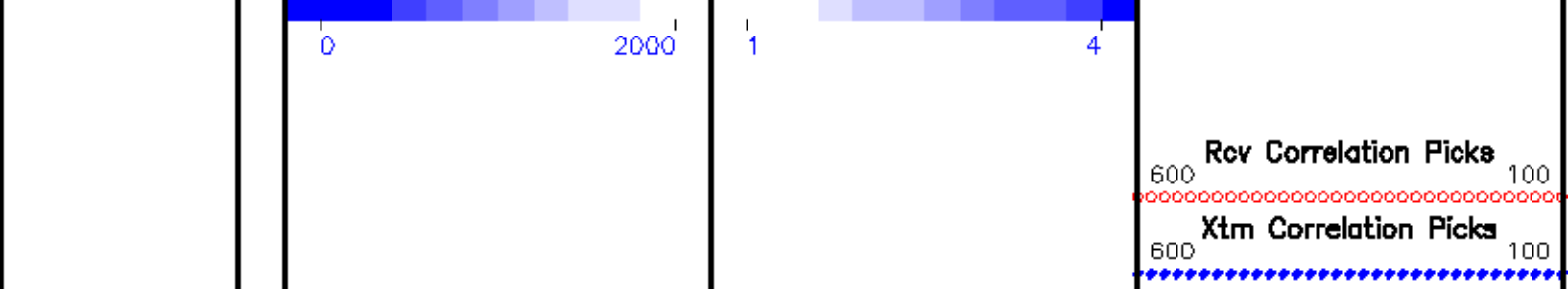
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2175







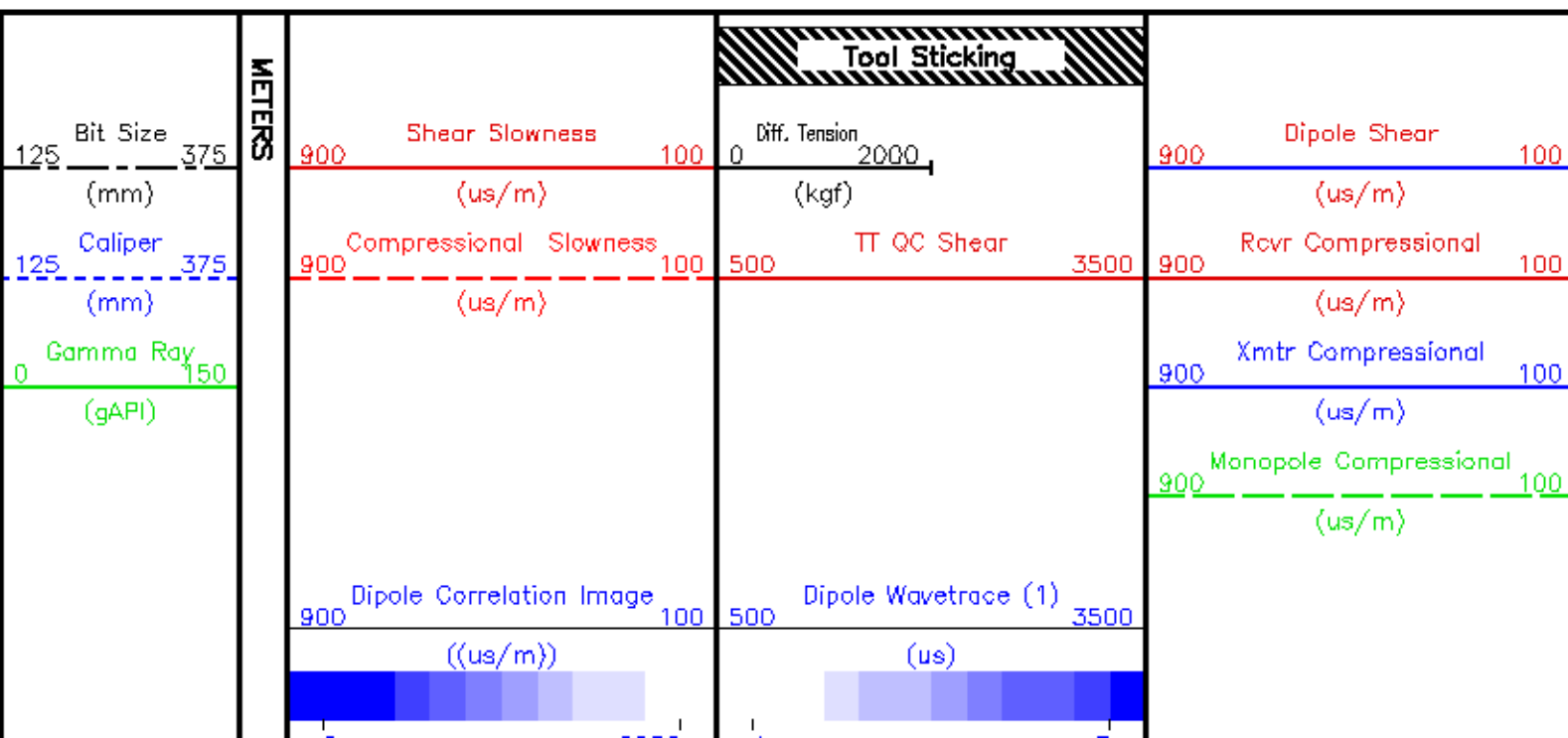
Dipole Quality Control Plot

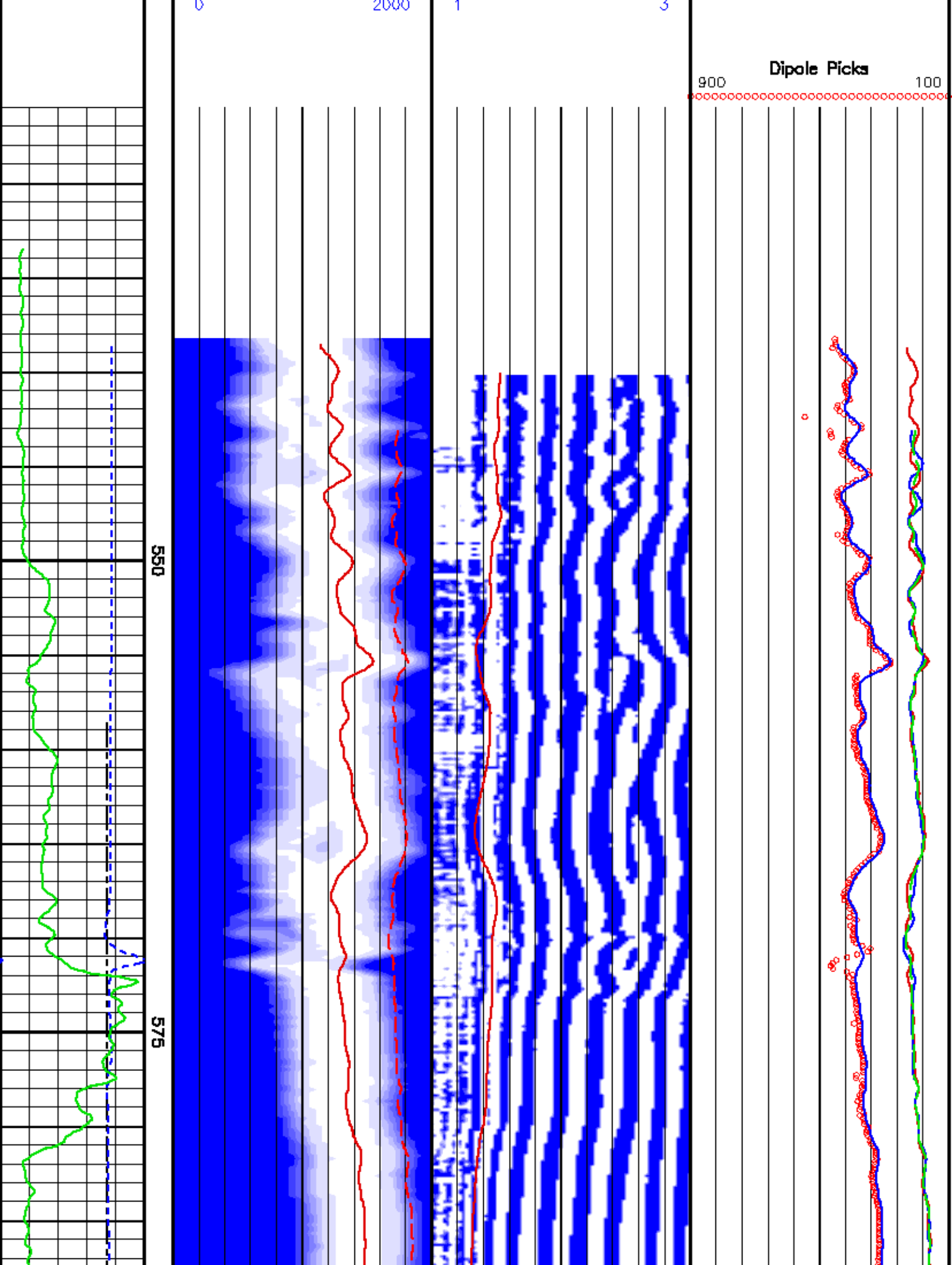
CURVE DESCRIPTION REPORT

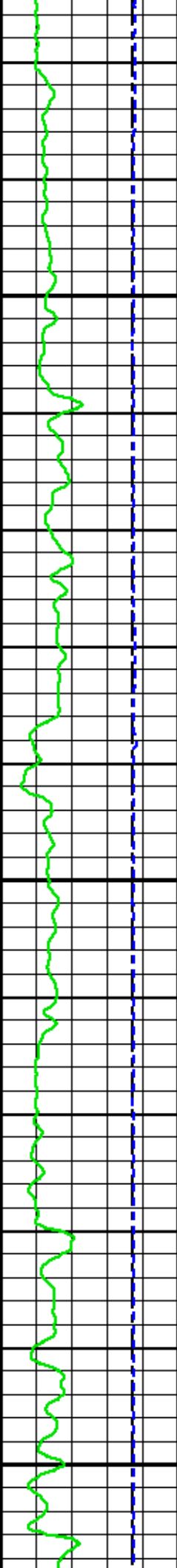
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 2 16:48:02 2010	BIT SIZE
F1:CALX	CALX	Nov 3 01:15:13 2010	CALIPER FROM X AXIS OF X-Y CALIPER(S)
F1:DTC	DTC	Nov 10 10:08:31 2010	COMPRESSIONAL WAVE SLOWNESS
F1:DTS	DTS	Nov 10 10:08:45 2010	SHEAR WAVE SLOWNESS
F1:GR	GR	Nov 2 16:48:02 2010	GAMMA RAY
F1:TEN	TEN	Nov 2 16:48:02 2010	DIFFERENTIAL TENSION
F1:TTS	TTS	Nov 10 10:09:13 2010	TRAVEL TIME ESTIMATE FOR MONOPOLE SHEAR
F1:TX00V01	TX00V10	Nov 2 16:48:02 2010	X-X AXIS DIPOLE MULTIPLEX WAVEFORM

Project : /data/[karnel/208041_nalcor_xmac
 User : [karnel]
 Presentation : calsumrv3:/data/[karnel/208041_nalcor_xmac/xmac.dipole.pdf [1:240 Scale]
 Plot Interval : 526.988 - 2291.33 Meters

Data File 1 : F1 : calsumrv3:/export/data/[karnel/208041_nalcor_xmac/slowness.xif
 Created On : Nov 2 13:02:15 2010
 Company : NALCOR ENERGY
 Well : NALCOR ET AL FINNEGAN 31
 Field : FINNEGAN
 File Interval : 529.285 - 2289.05 Meters
 Oct : m874H16



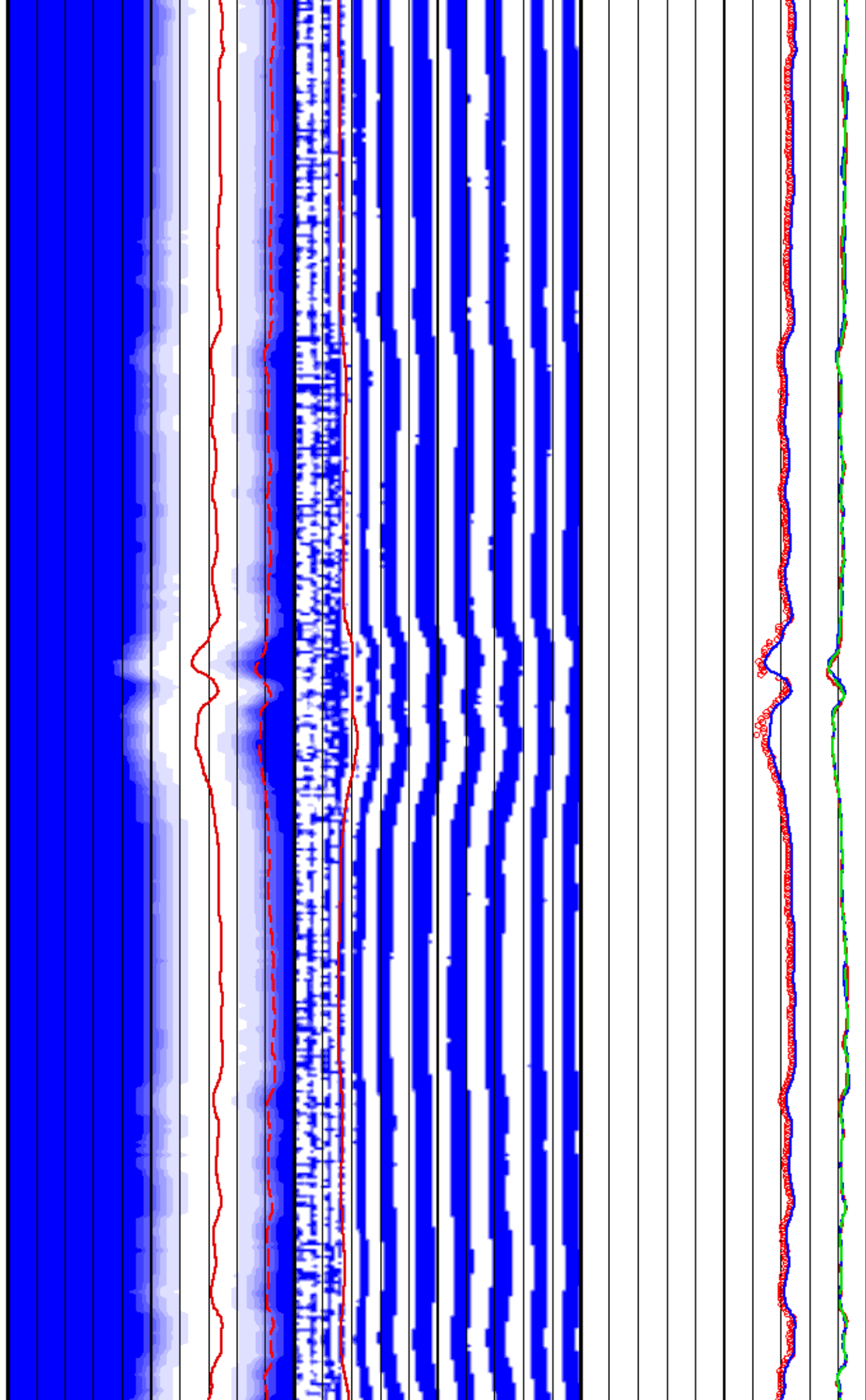


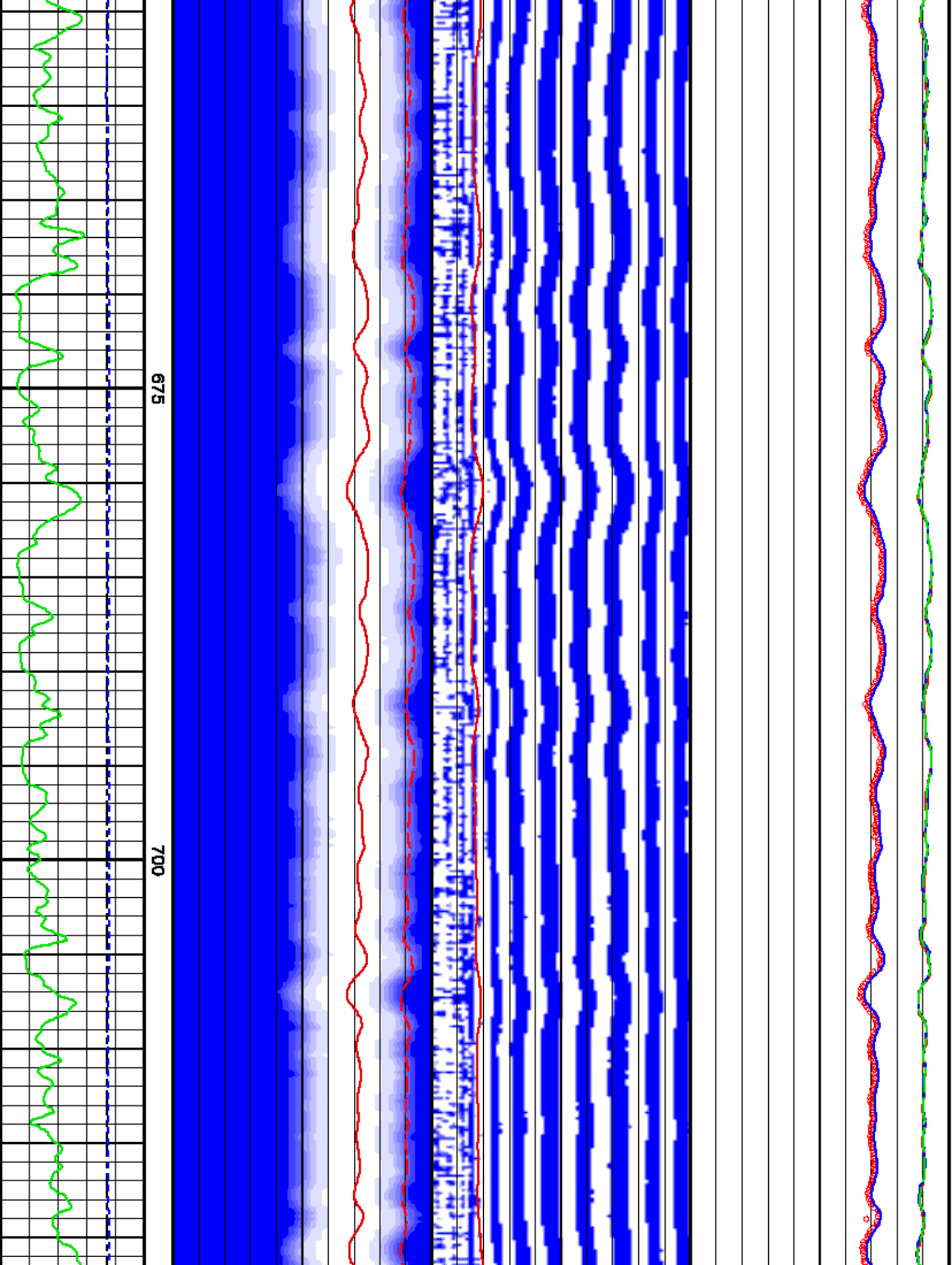


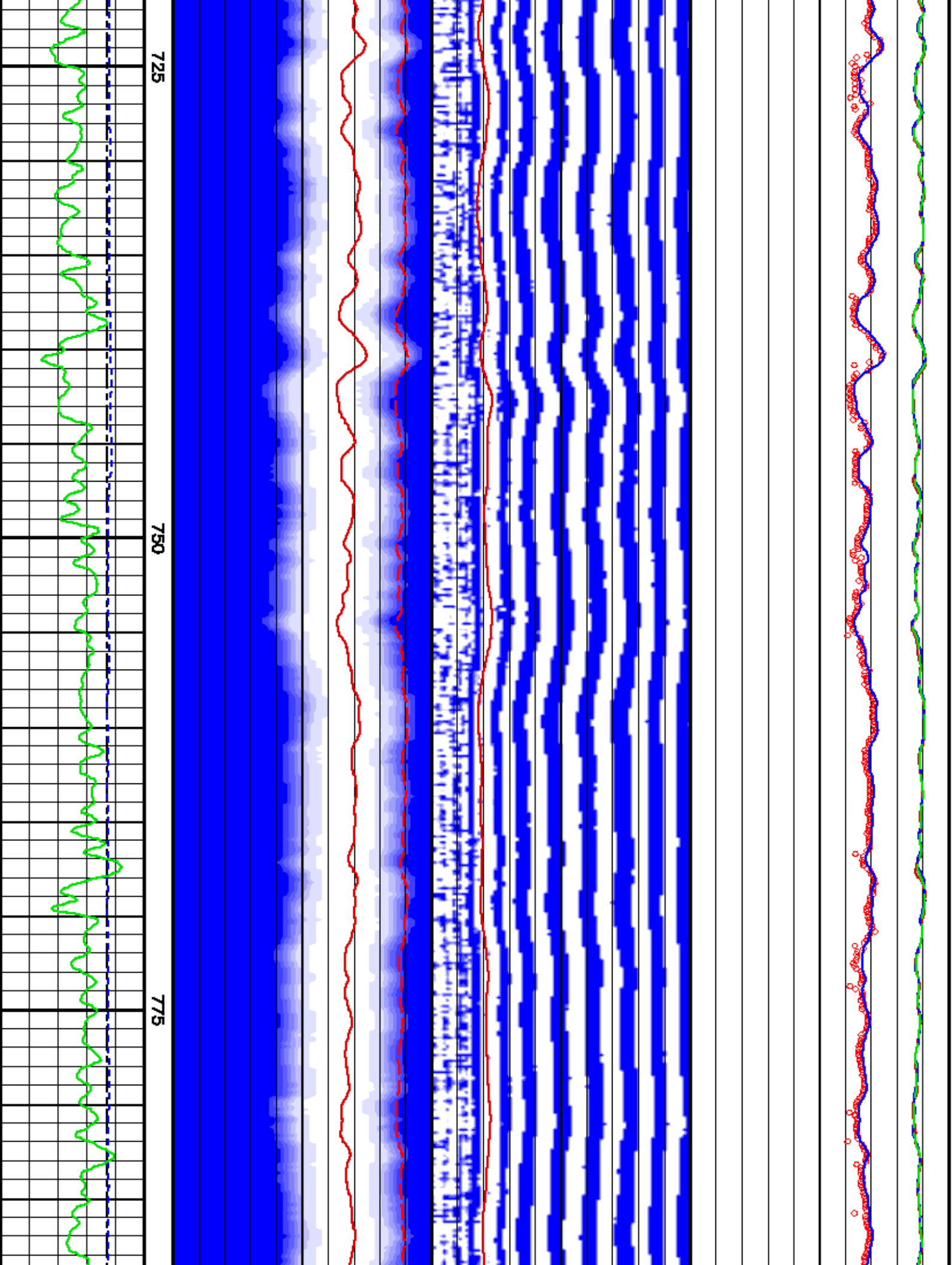
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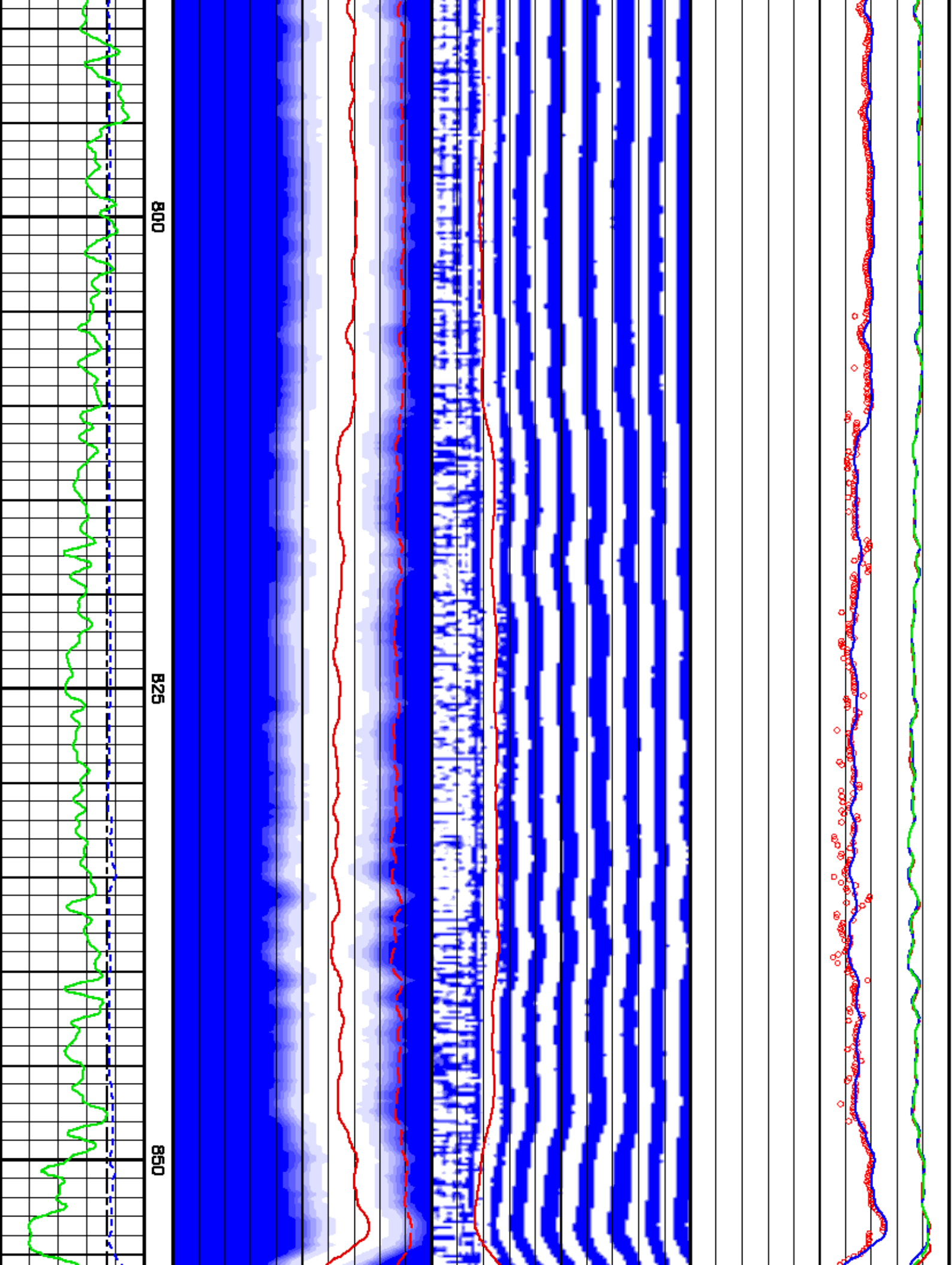
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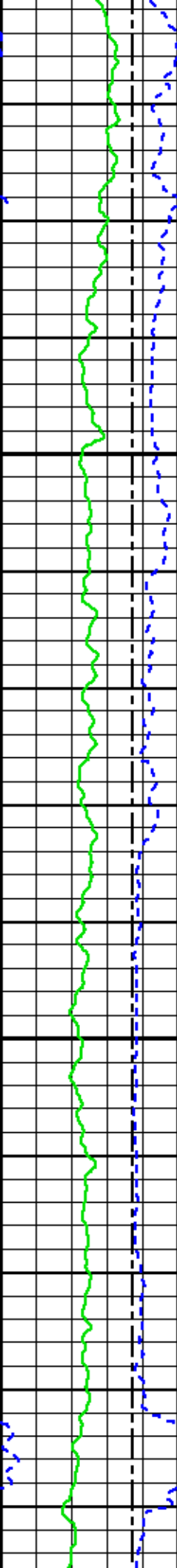
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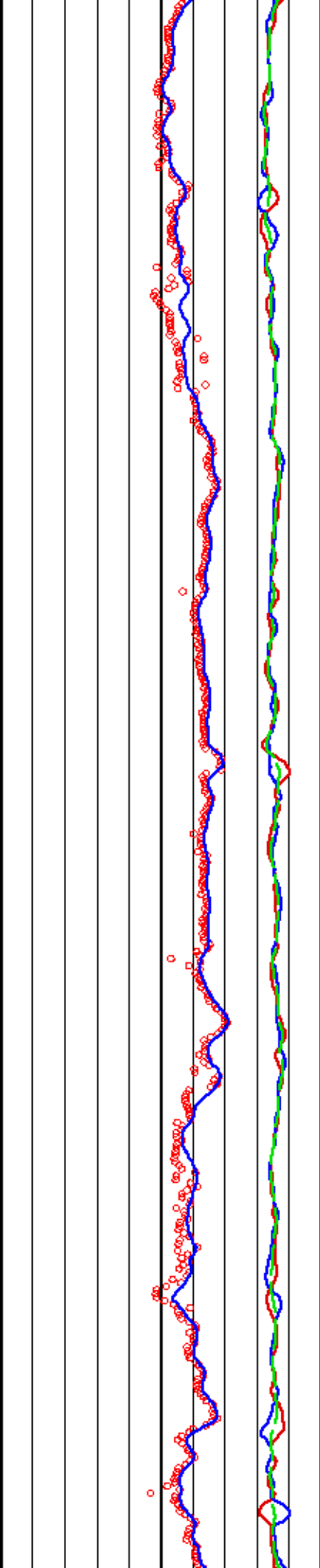
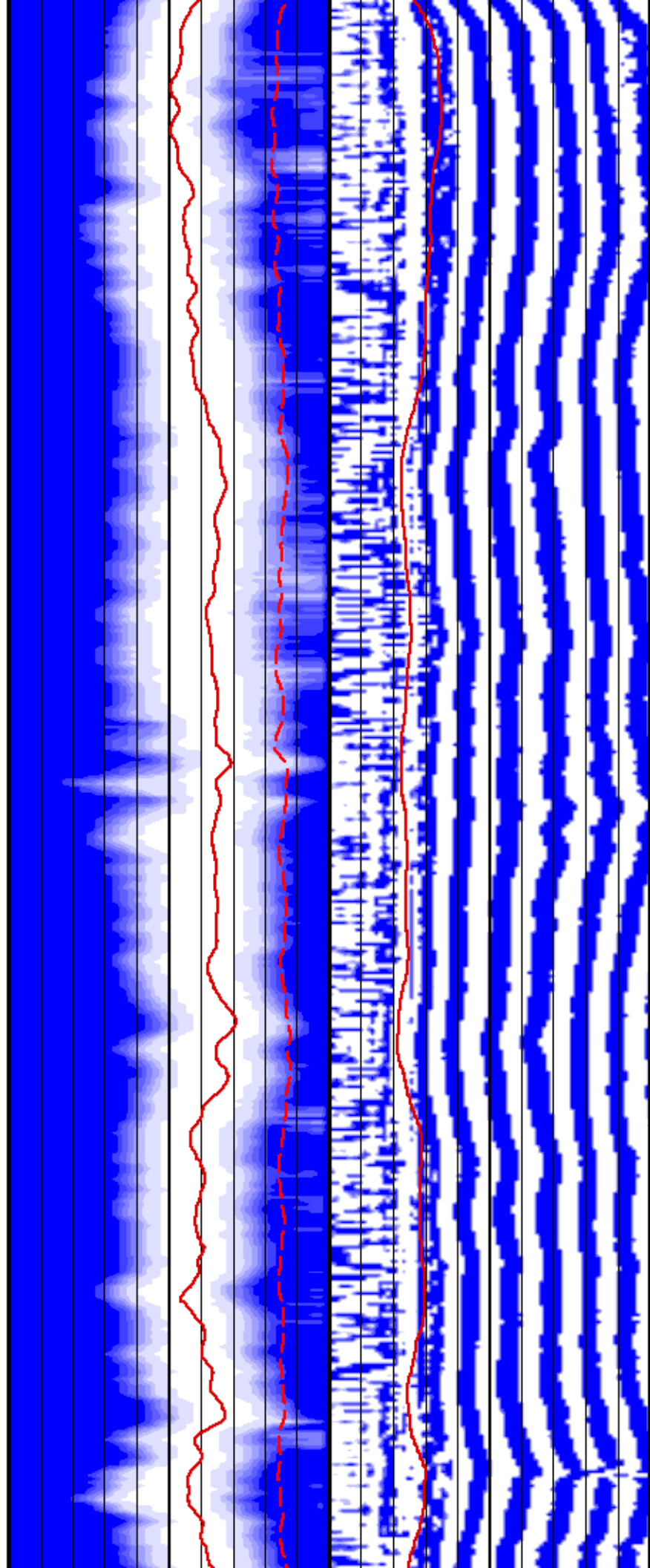


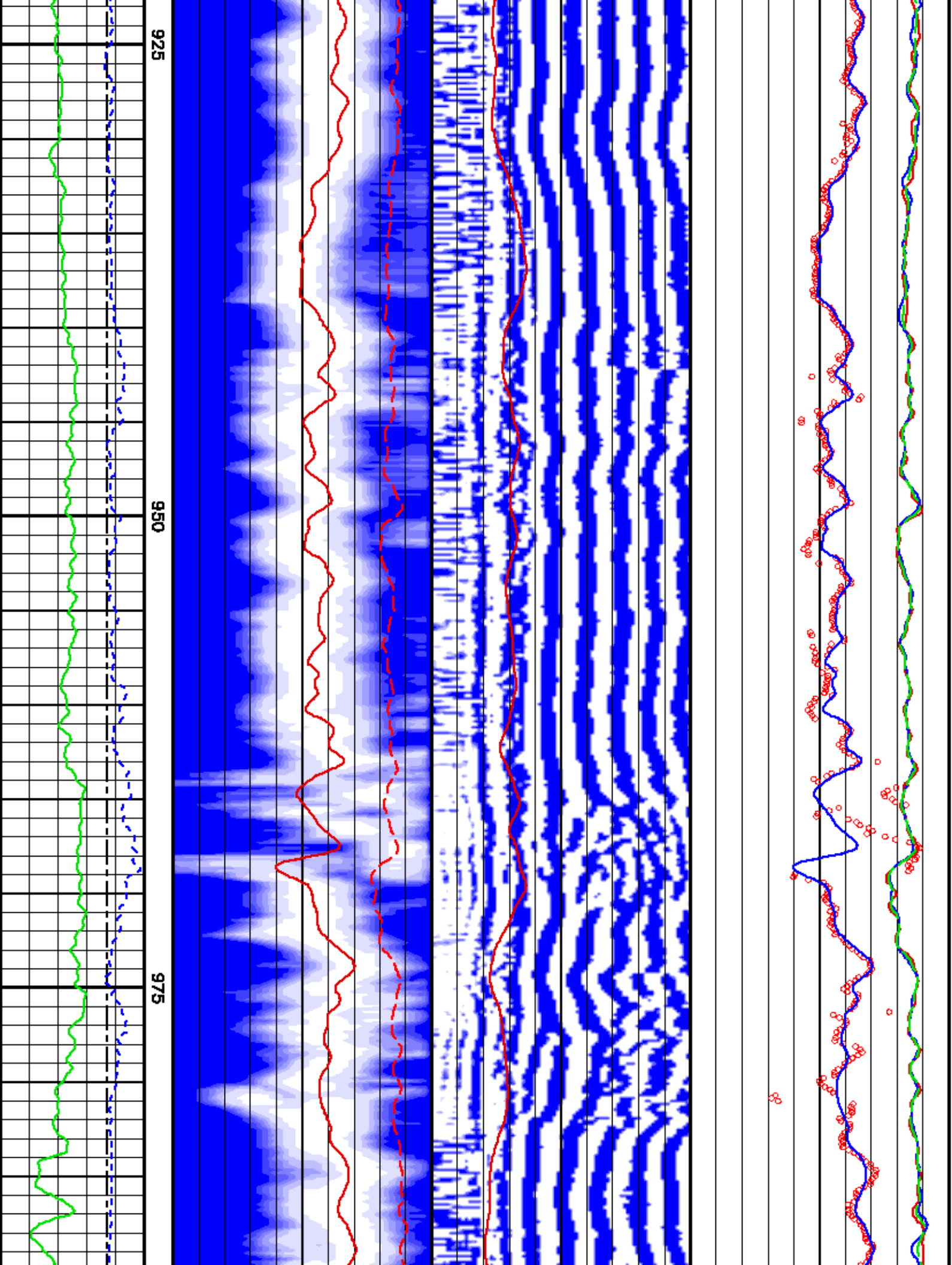


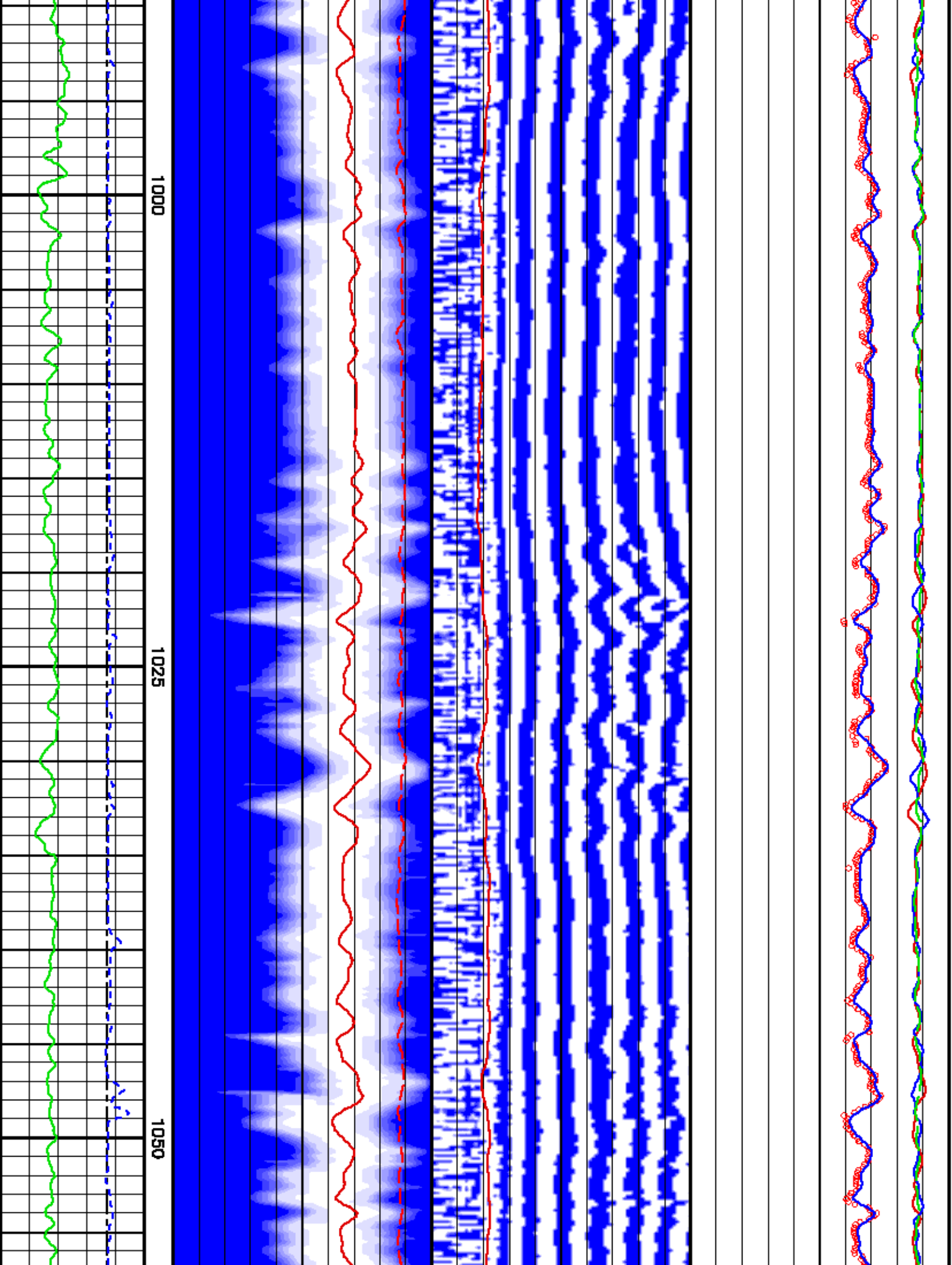


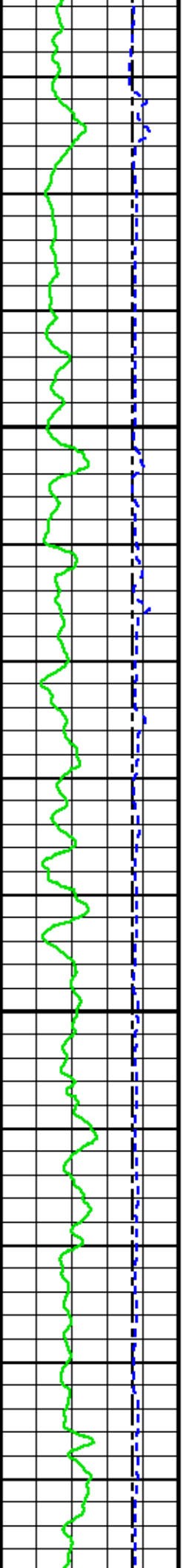
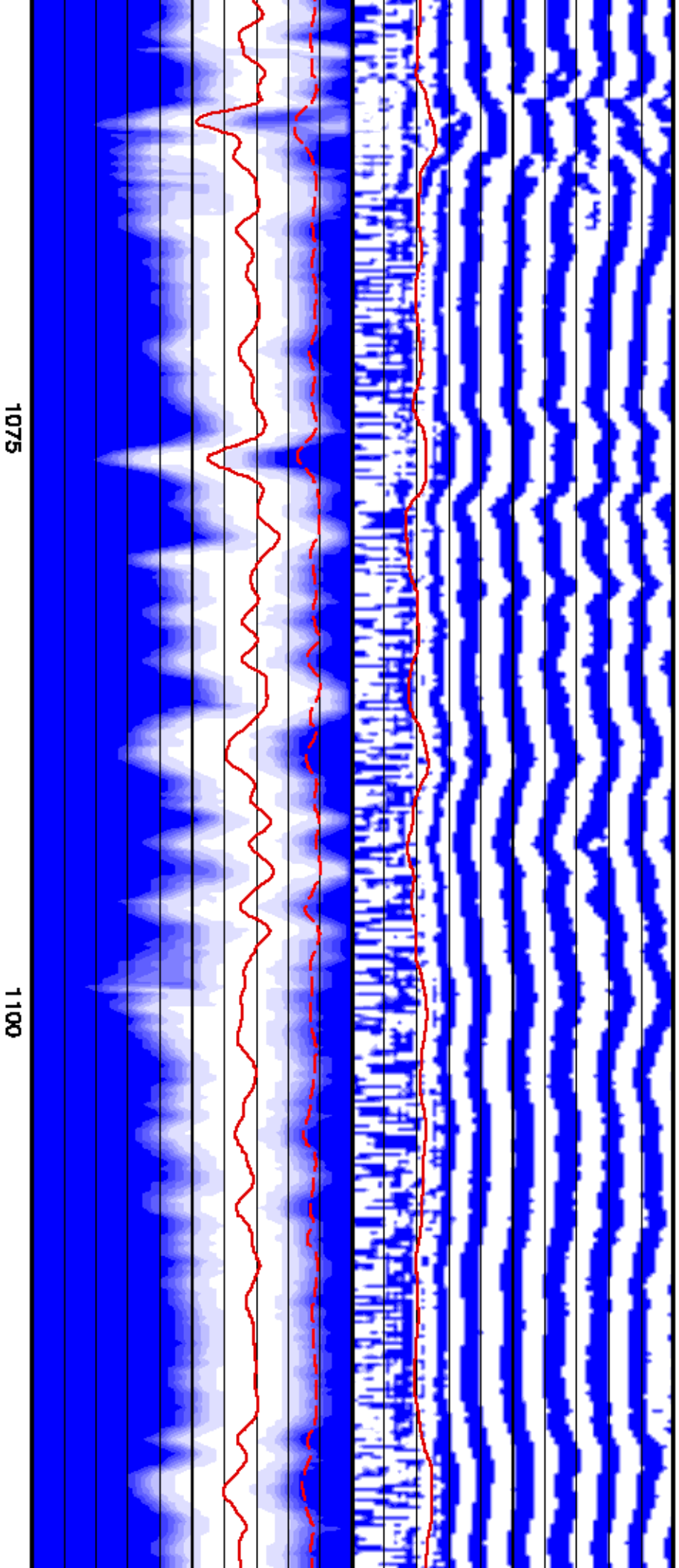
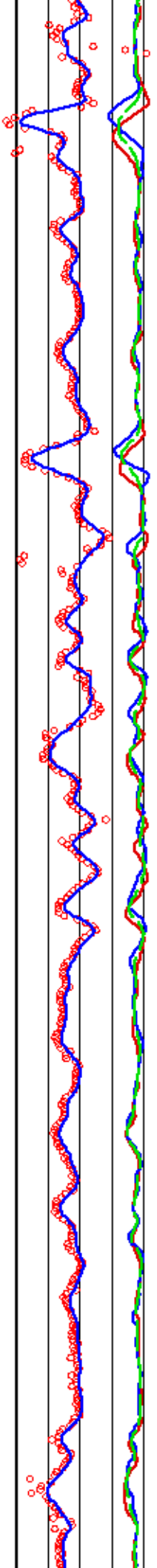
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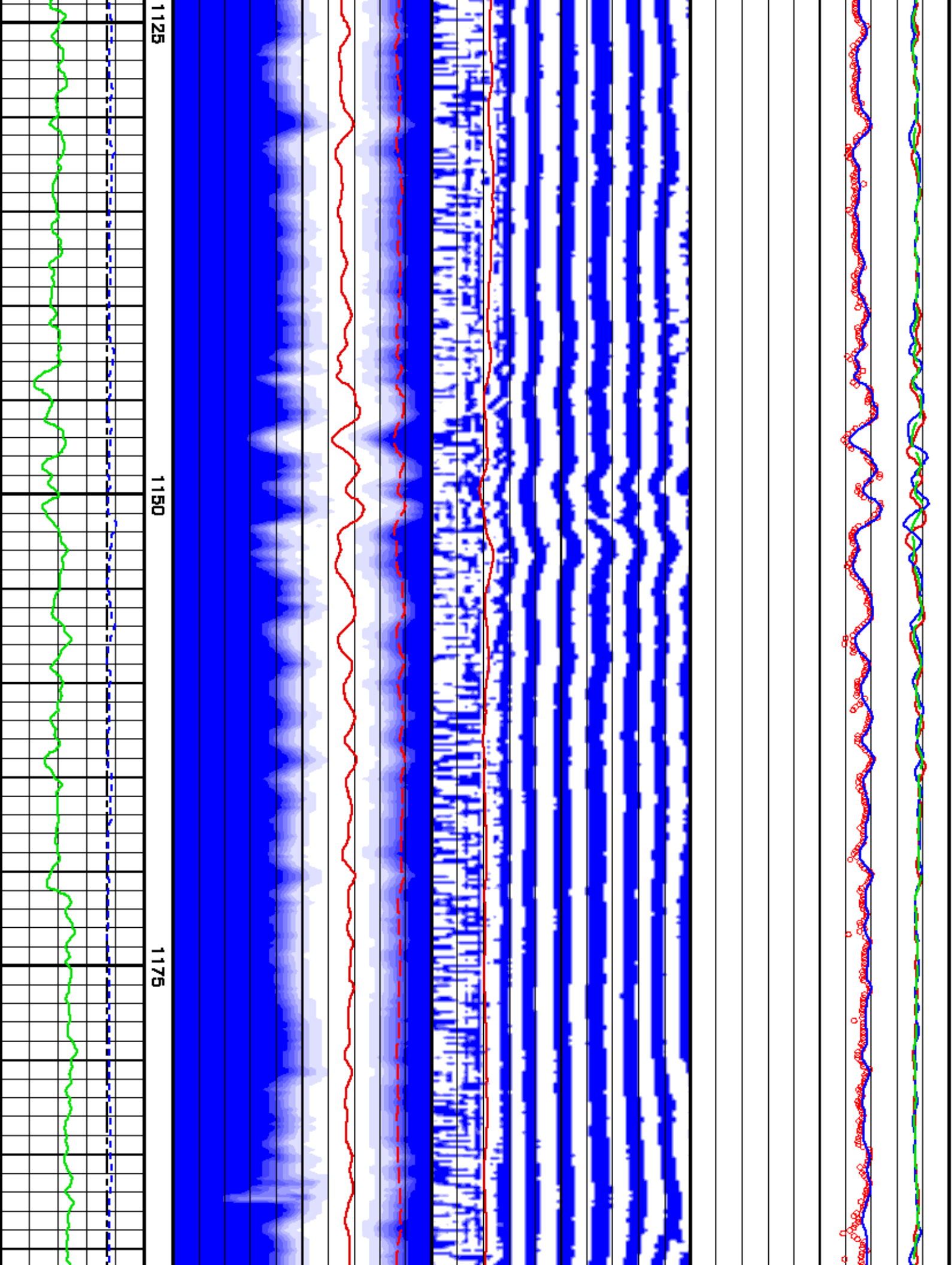
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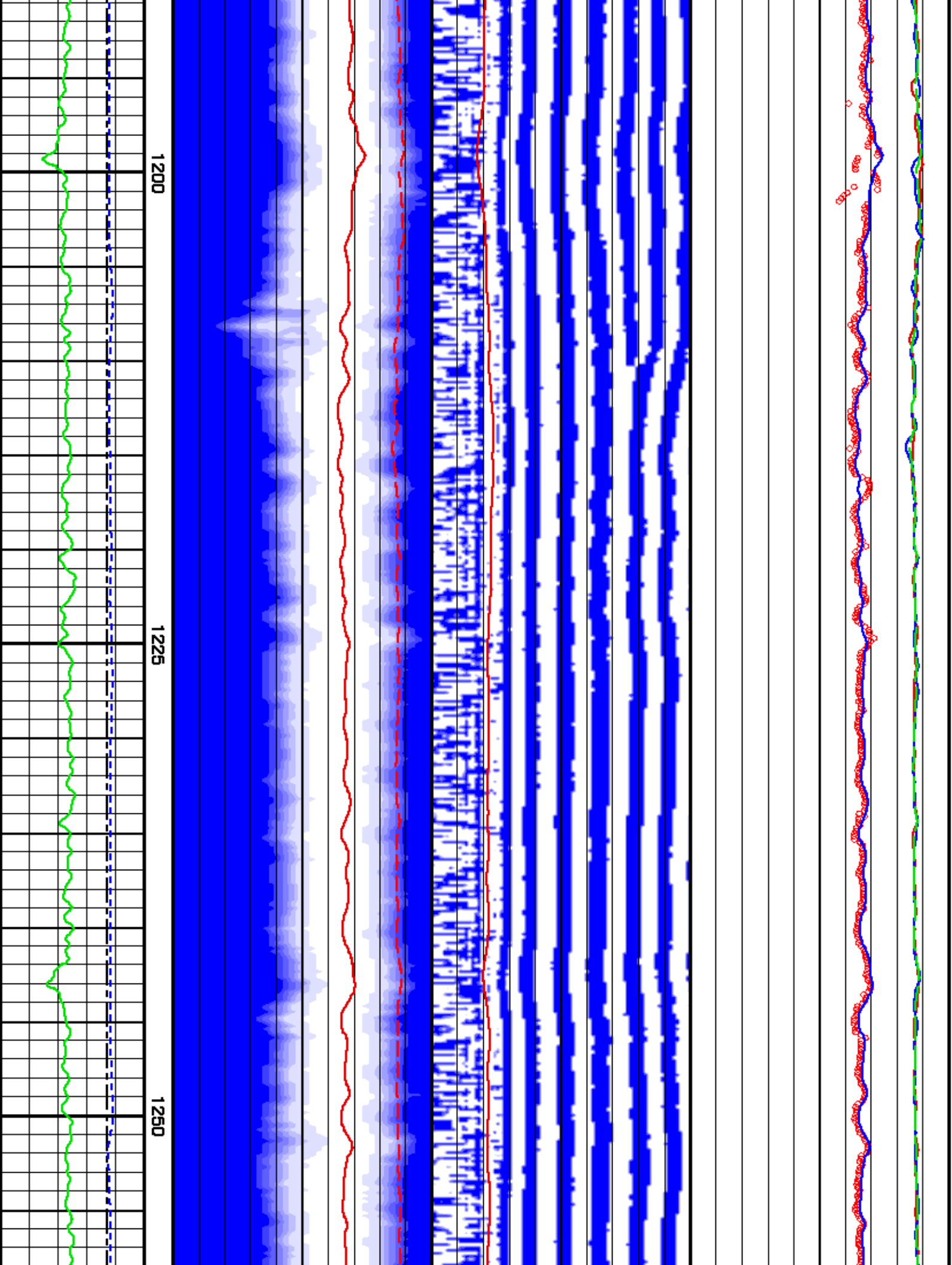


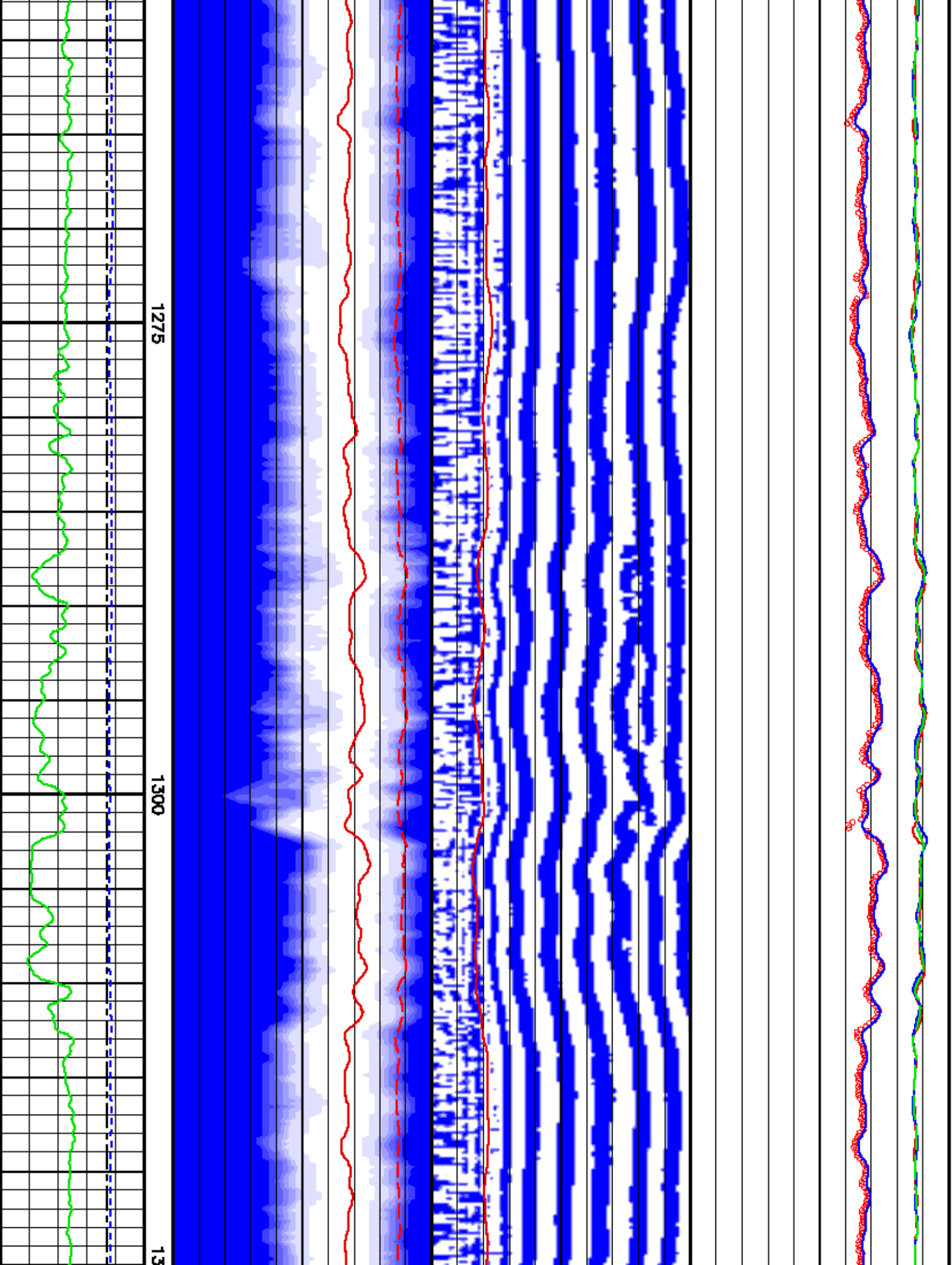


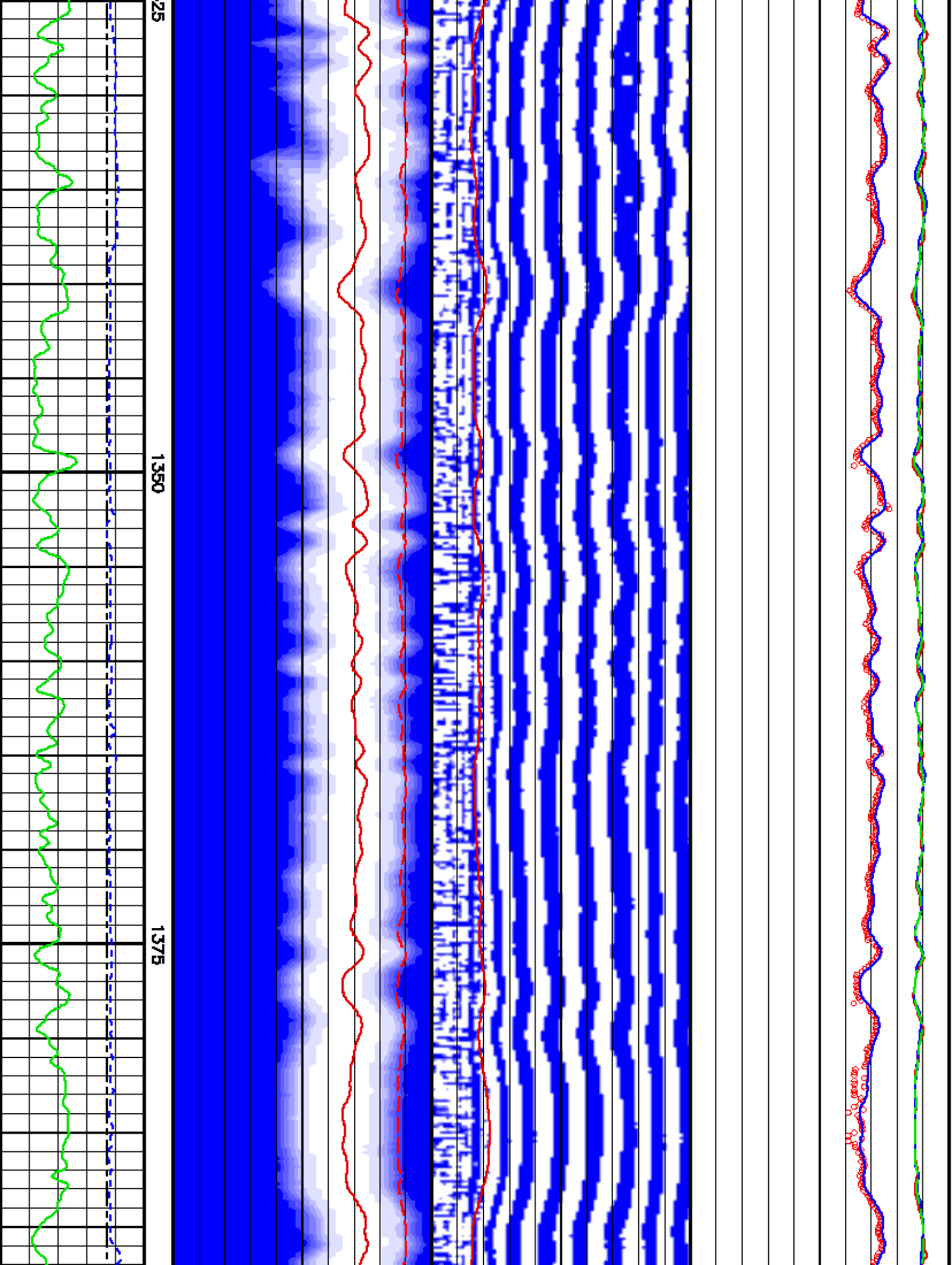


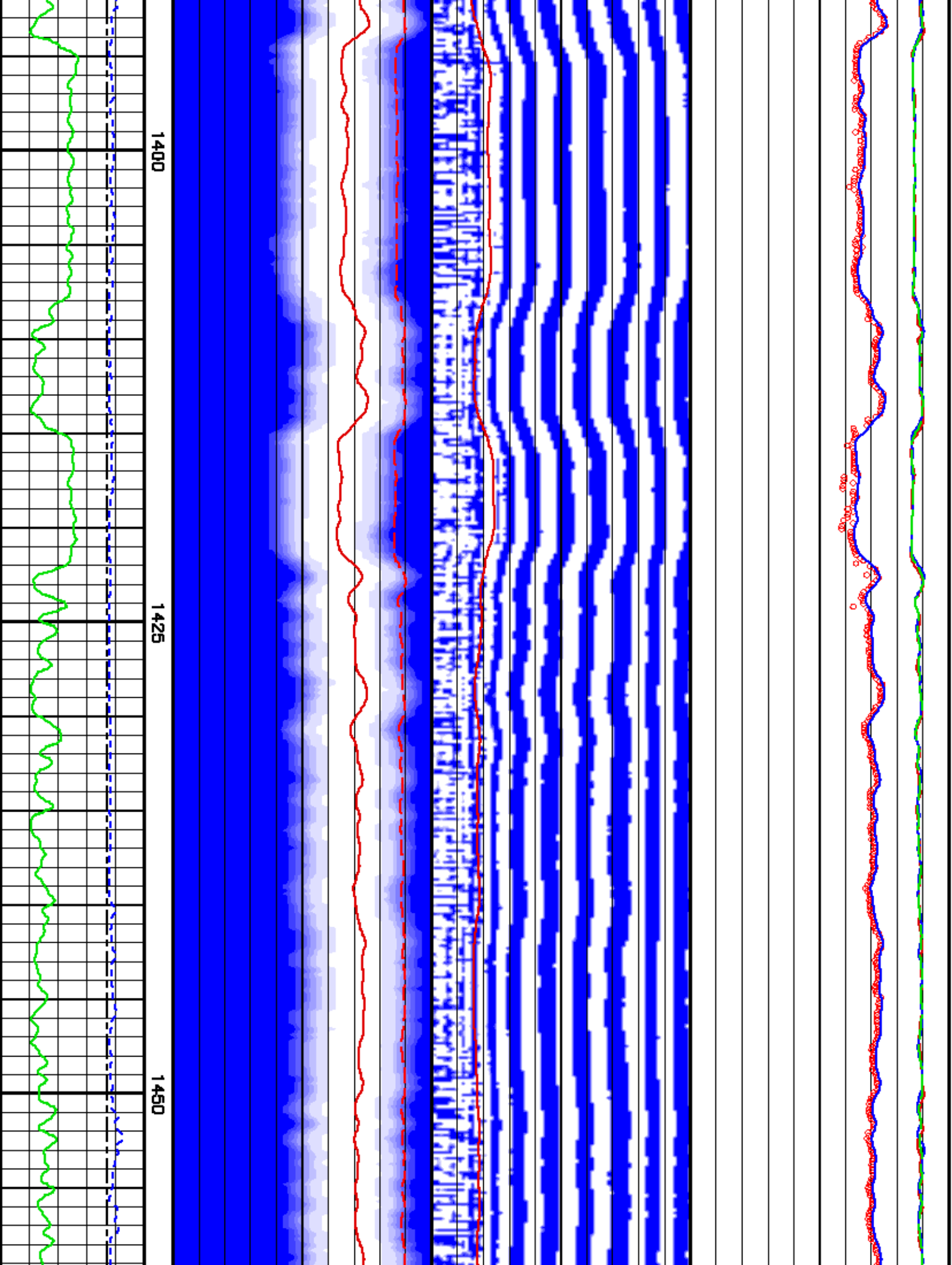


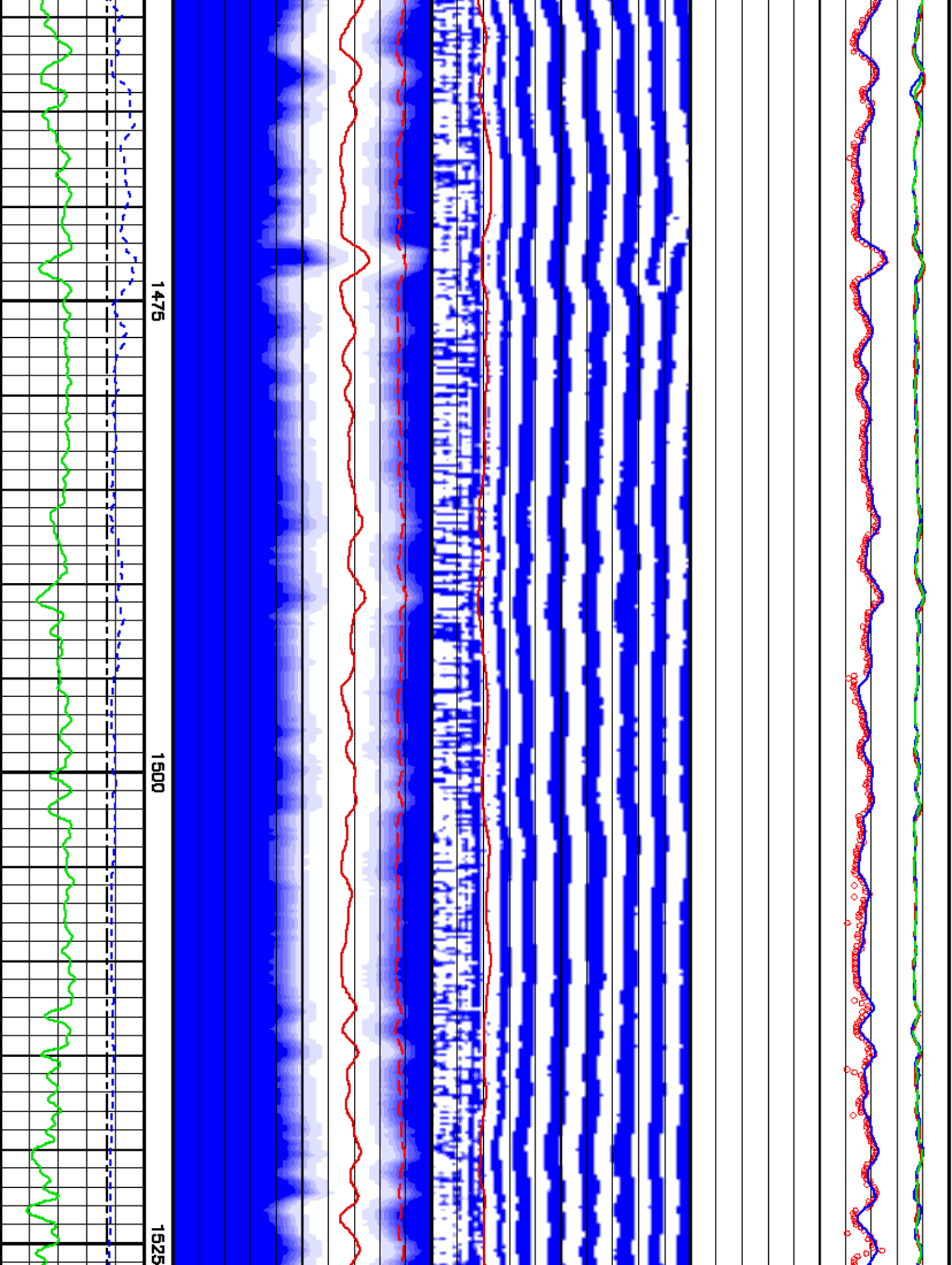


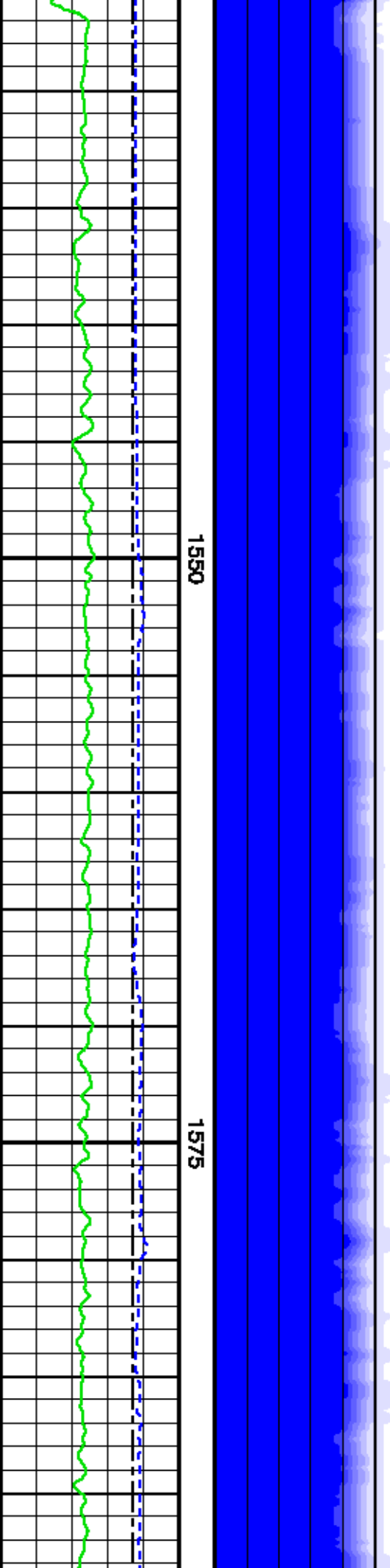
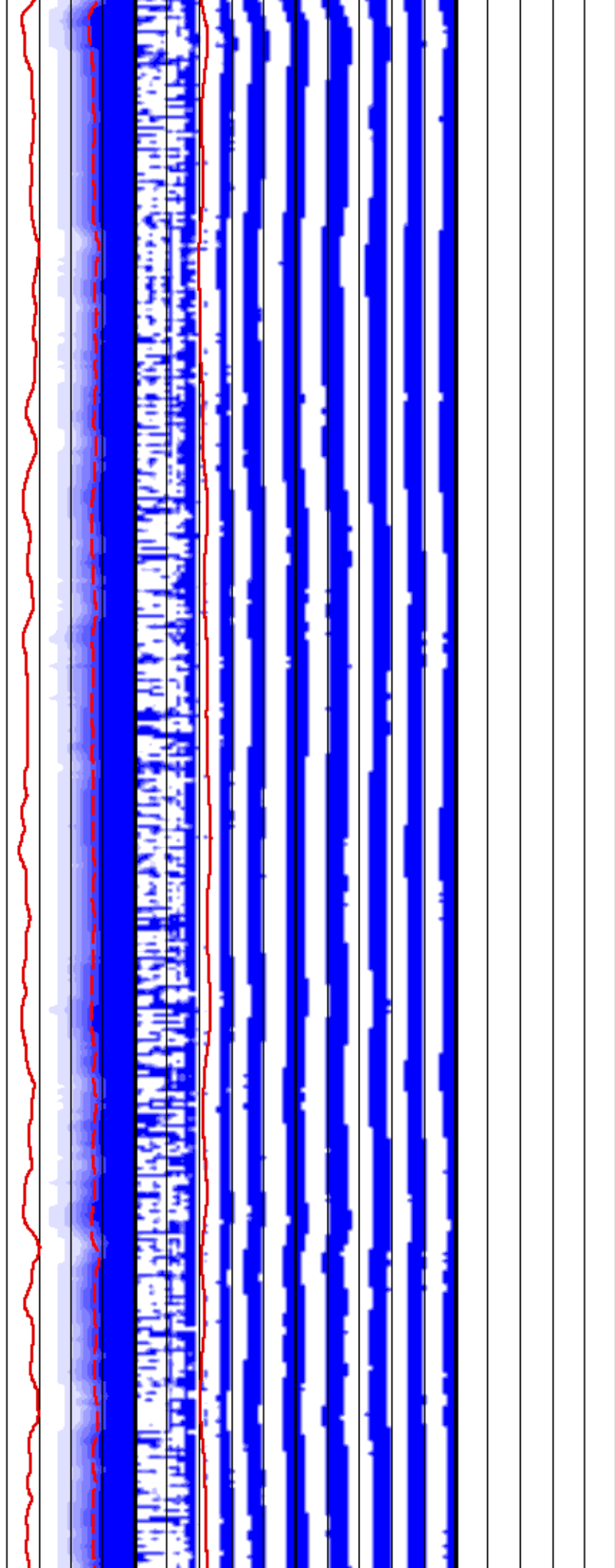
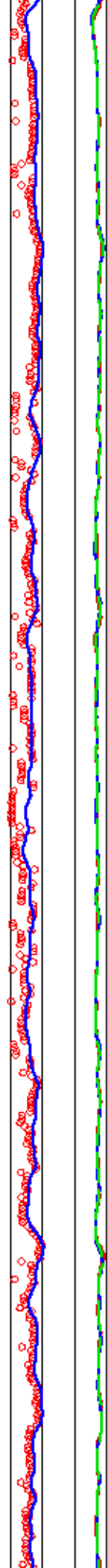






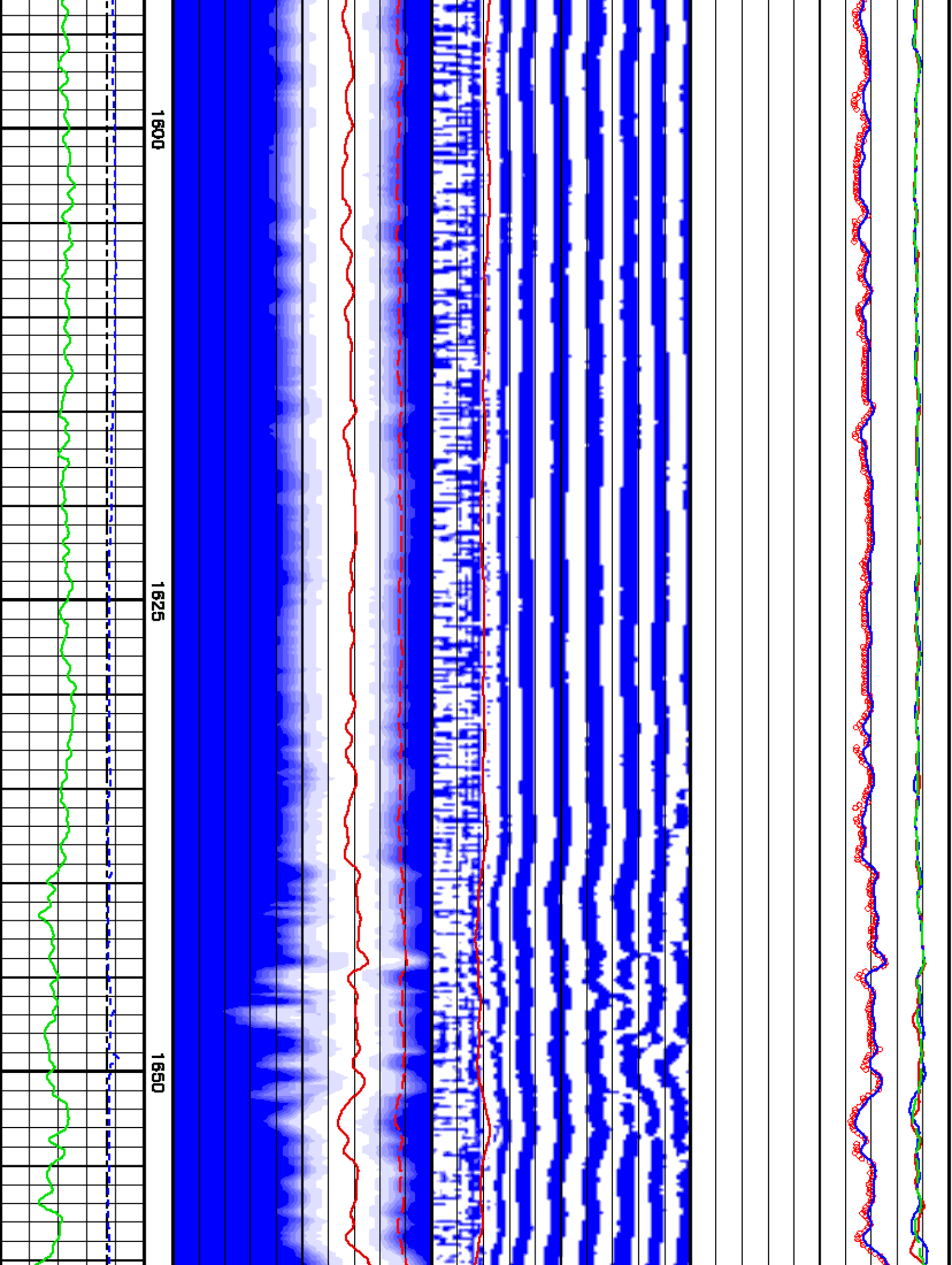


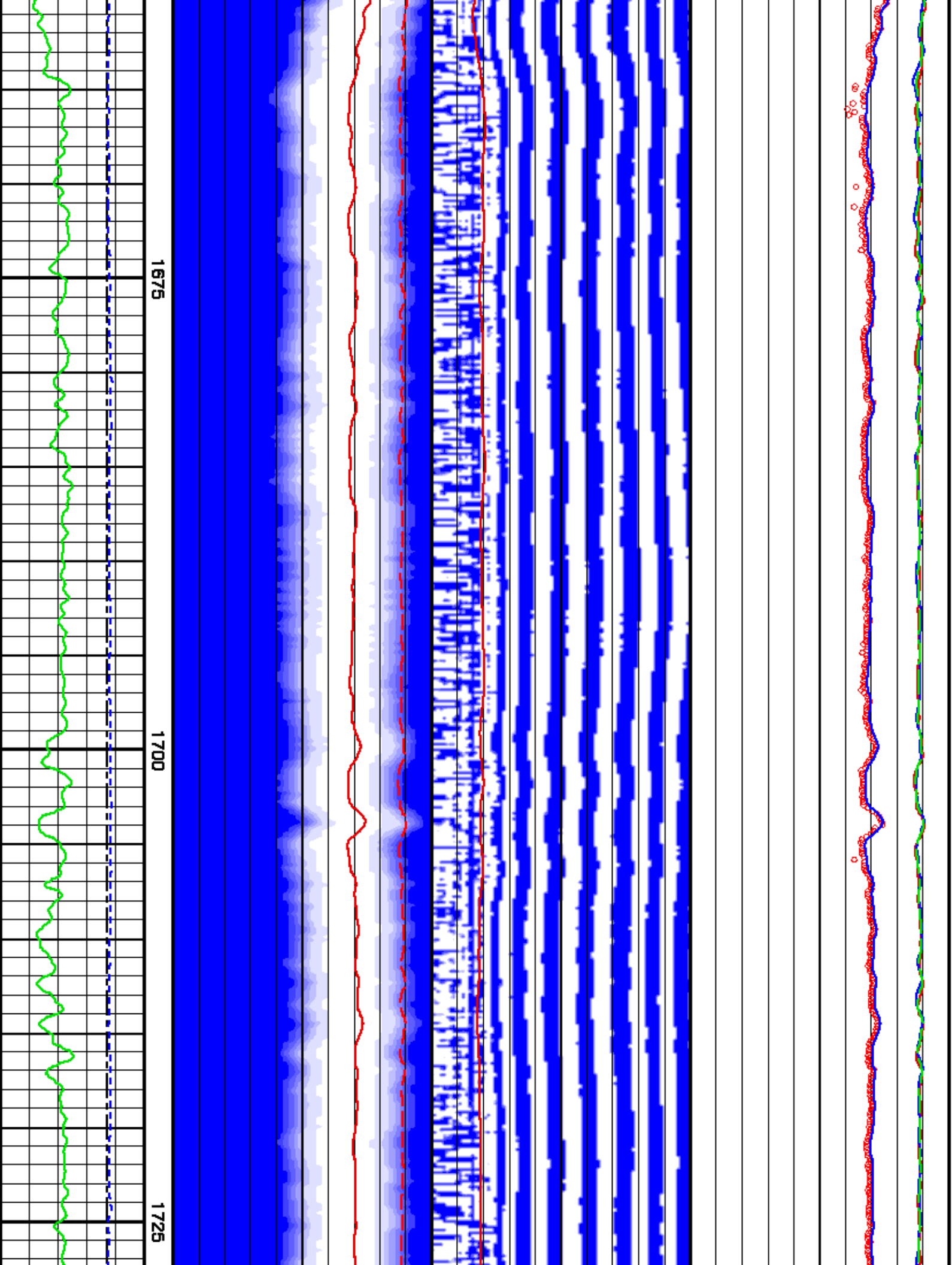


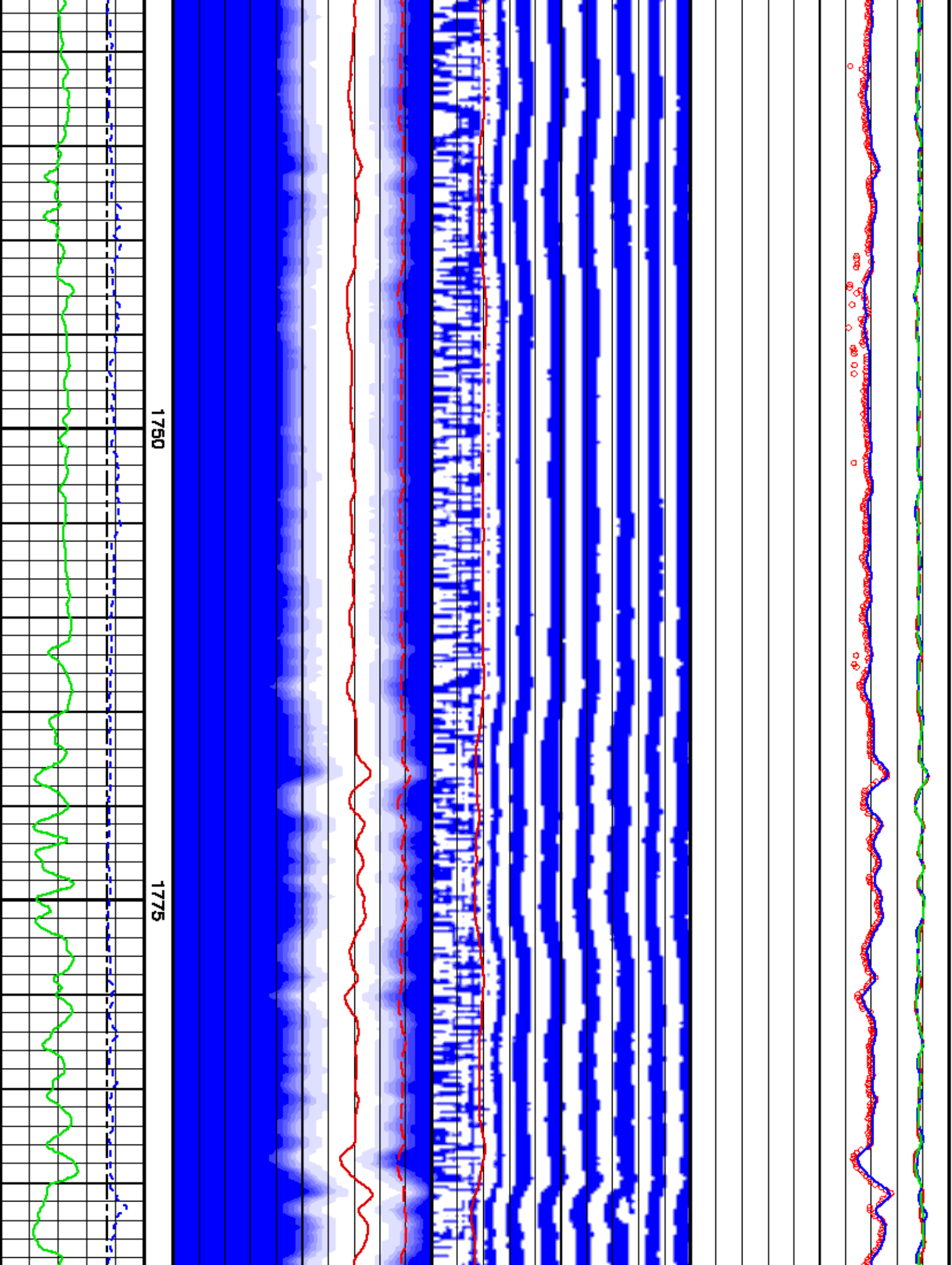


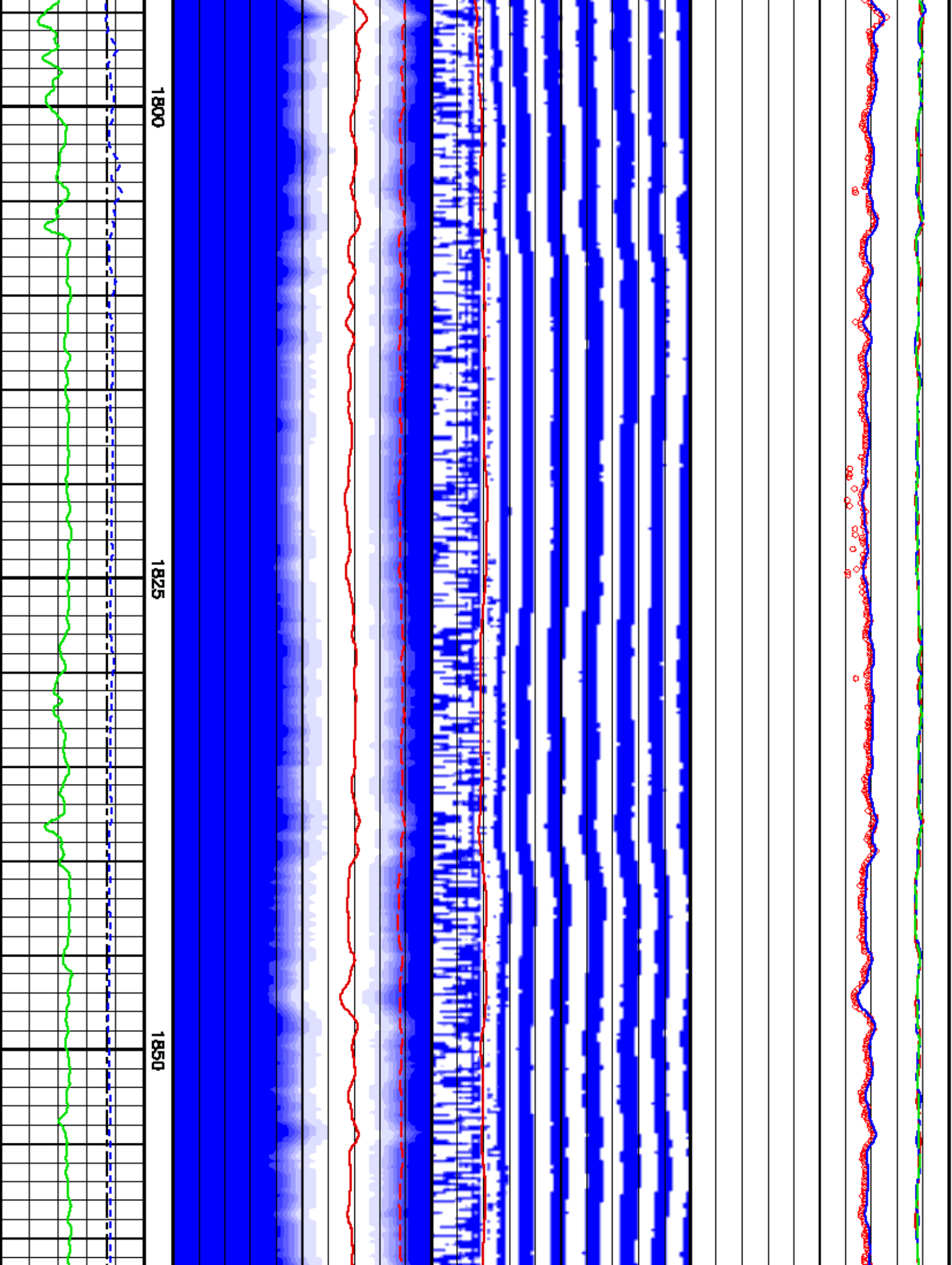
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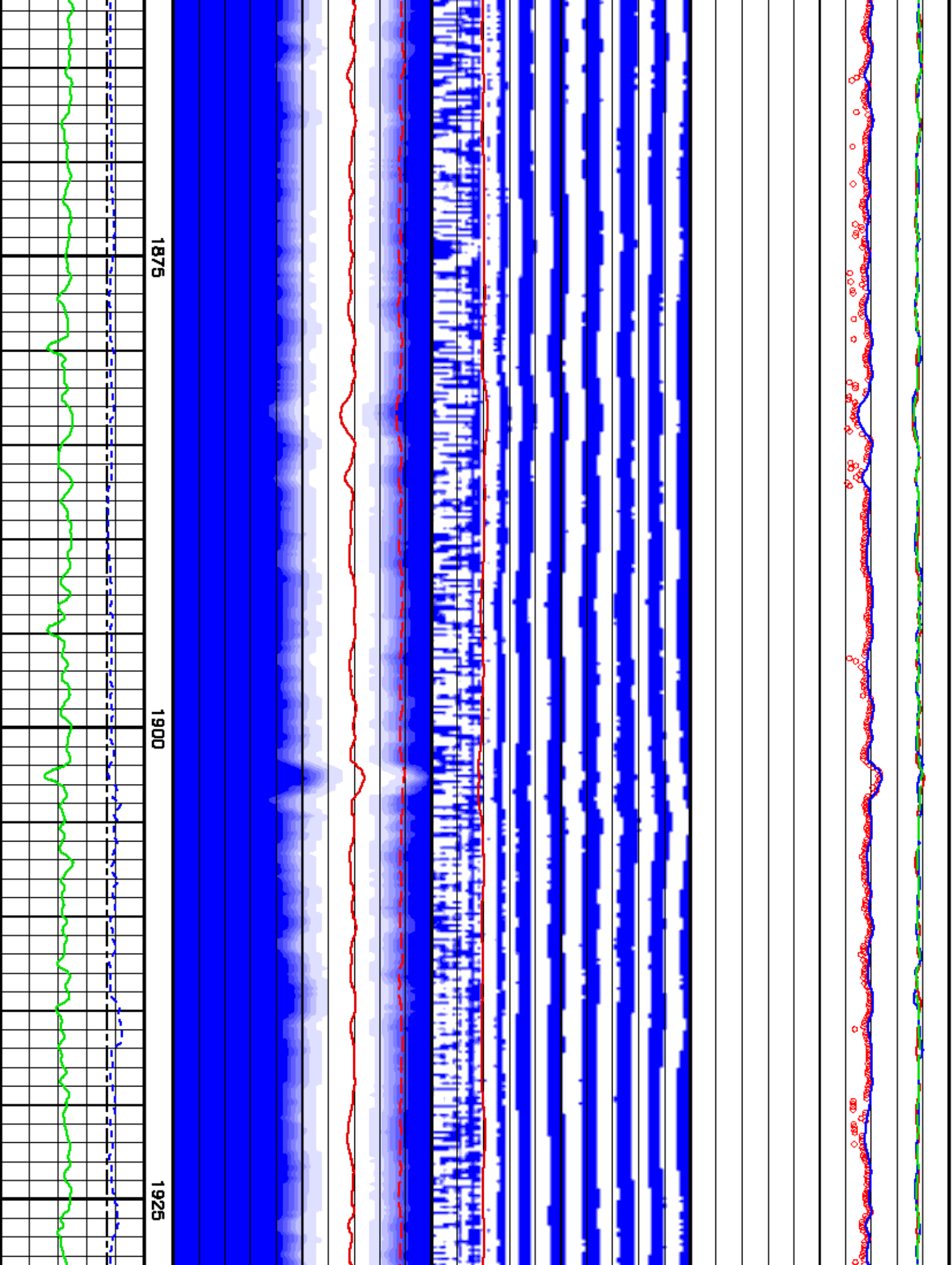
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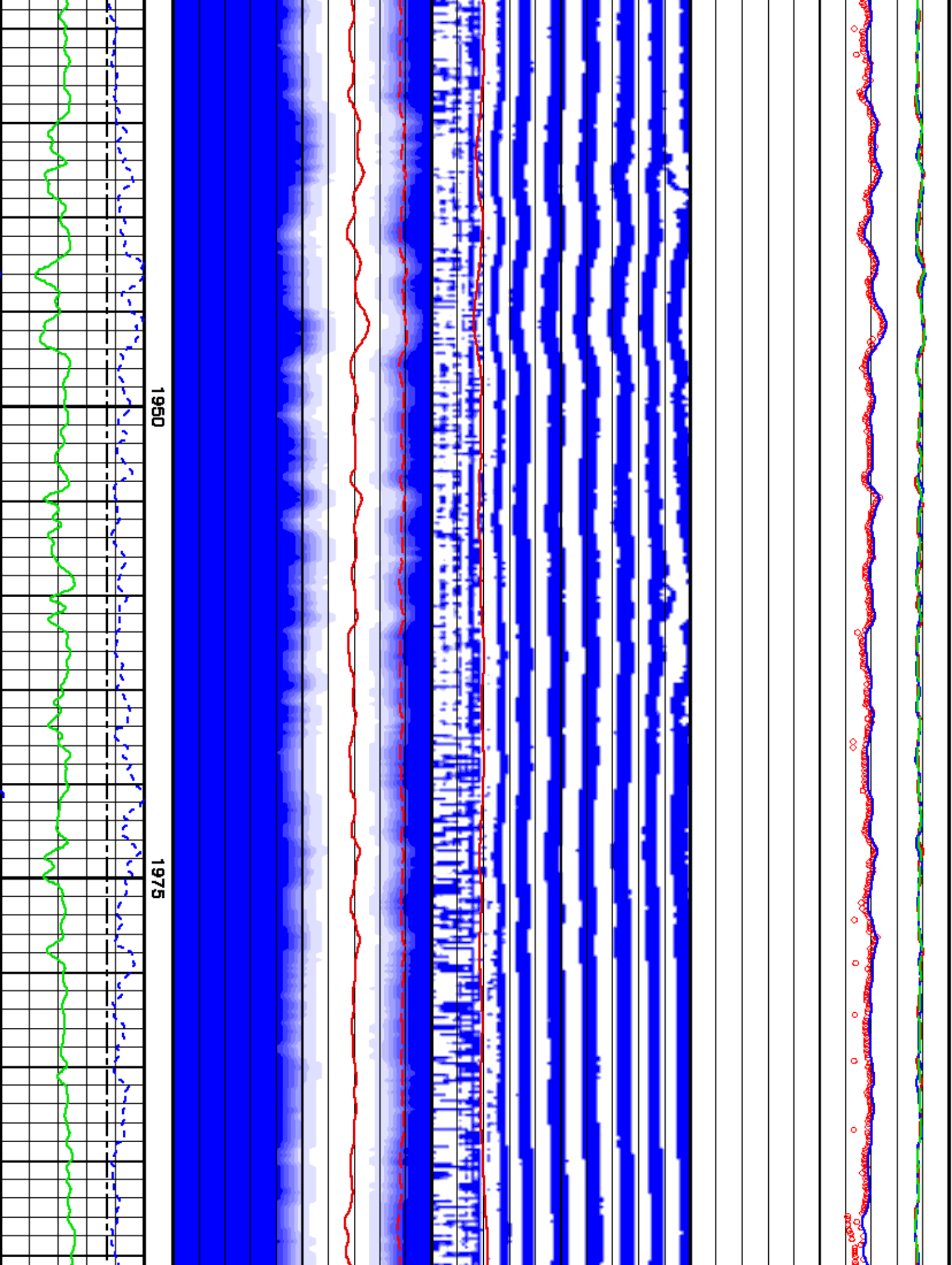


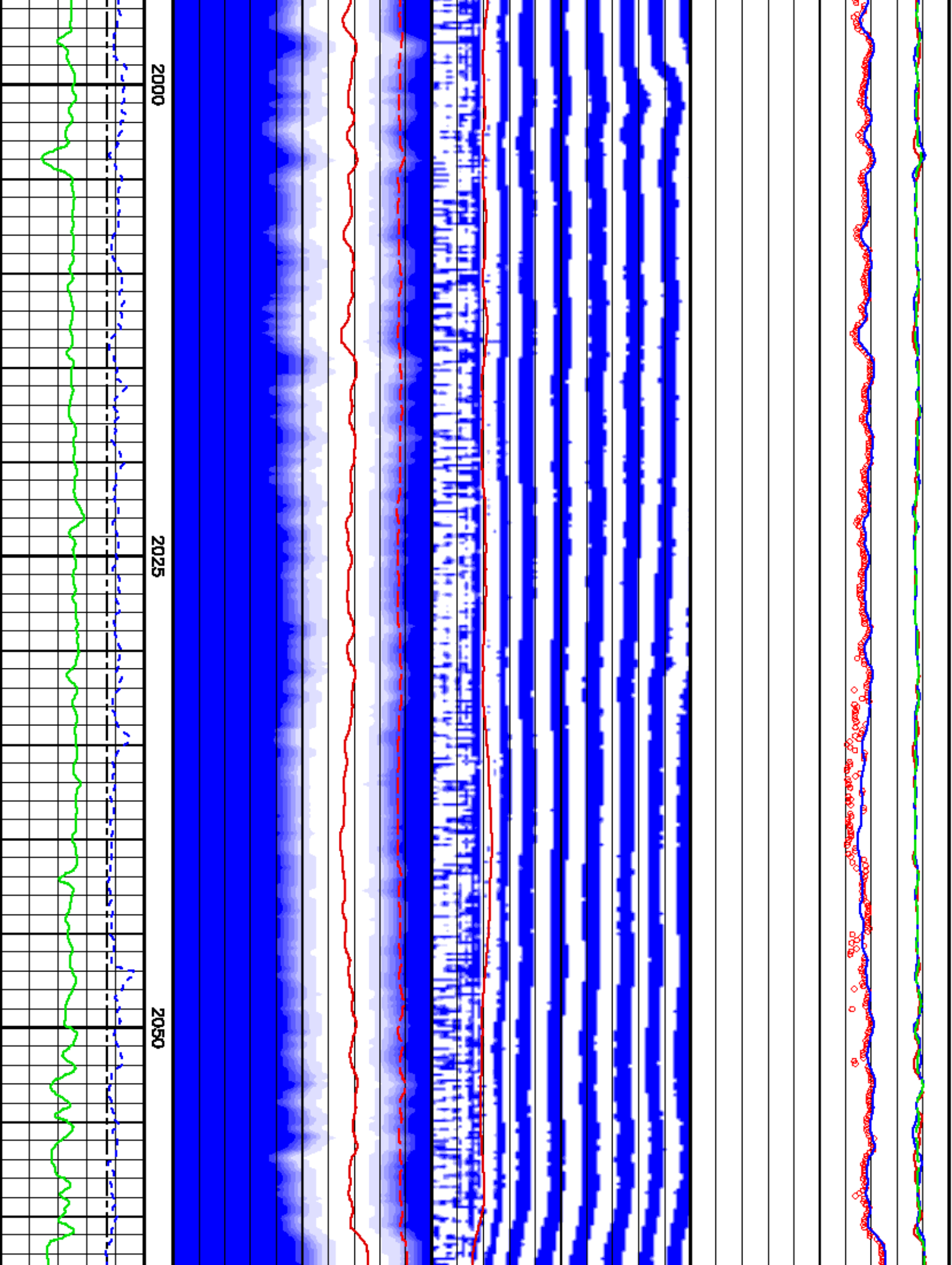


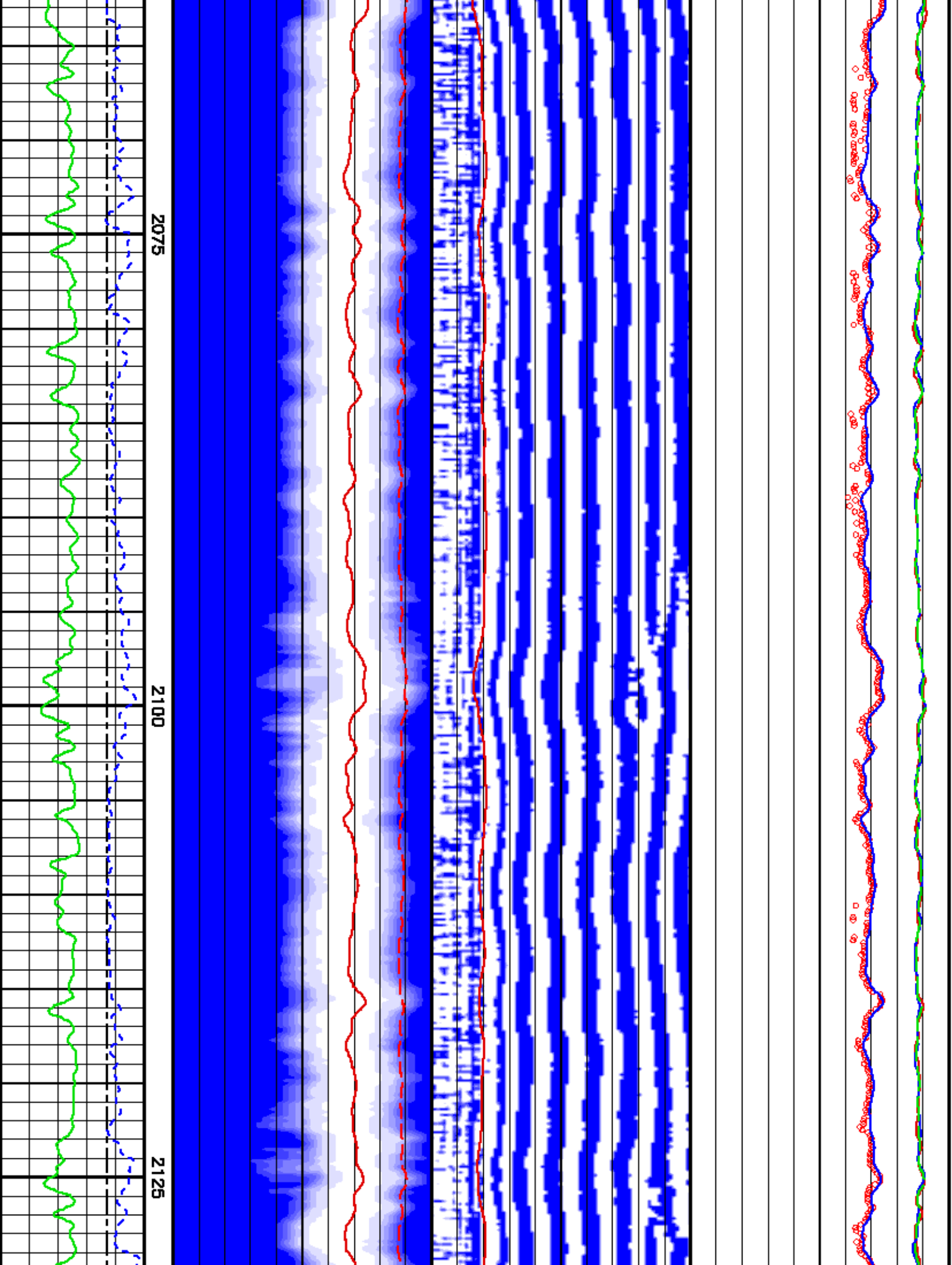


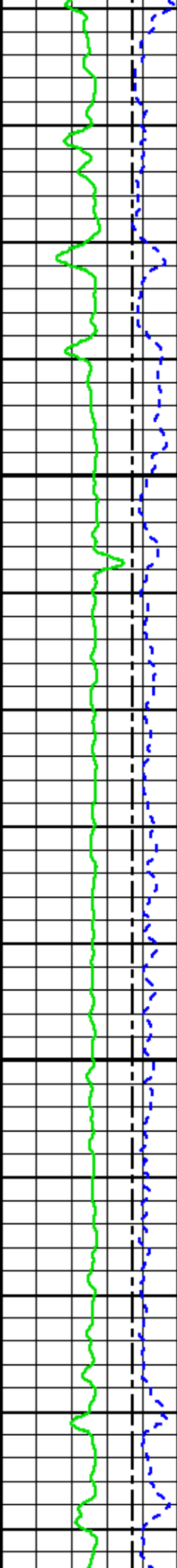






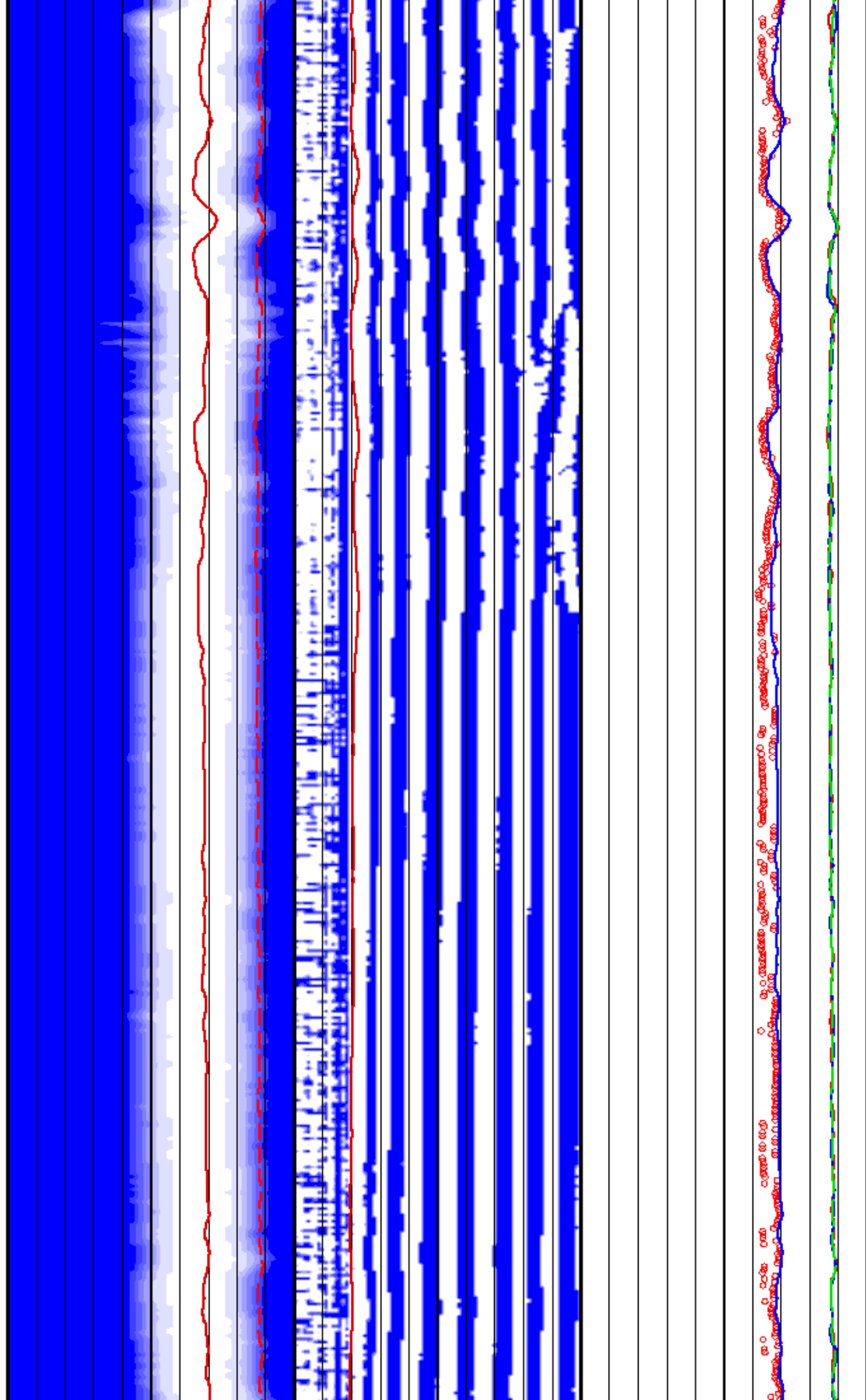


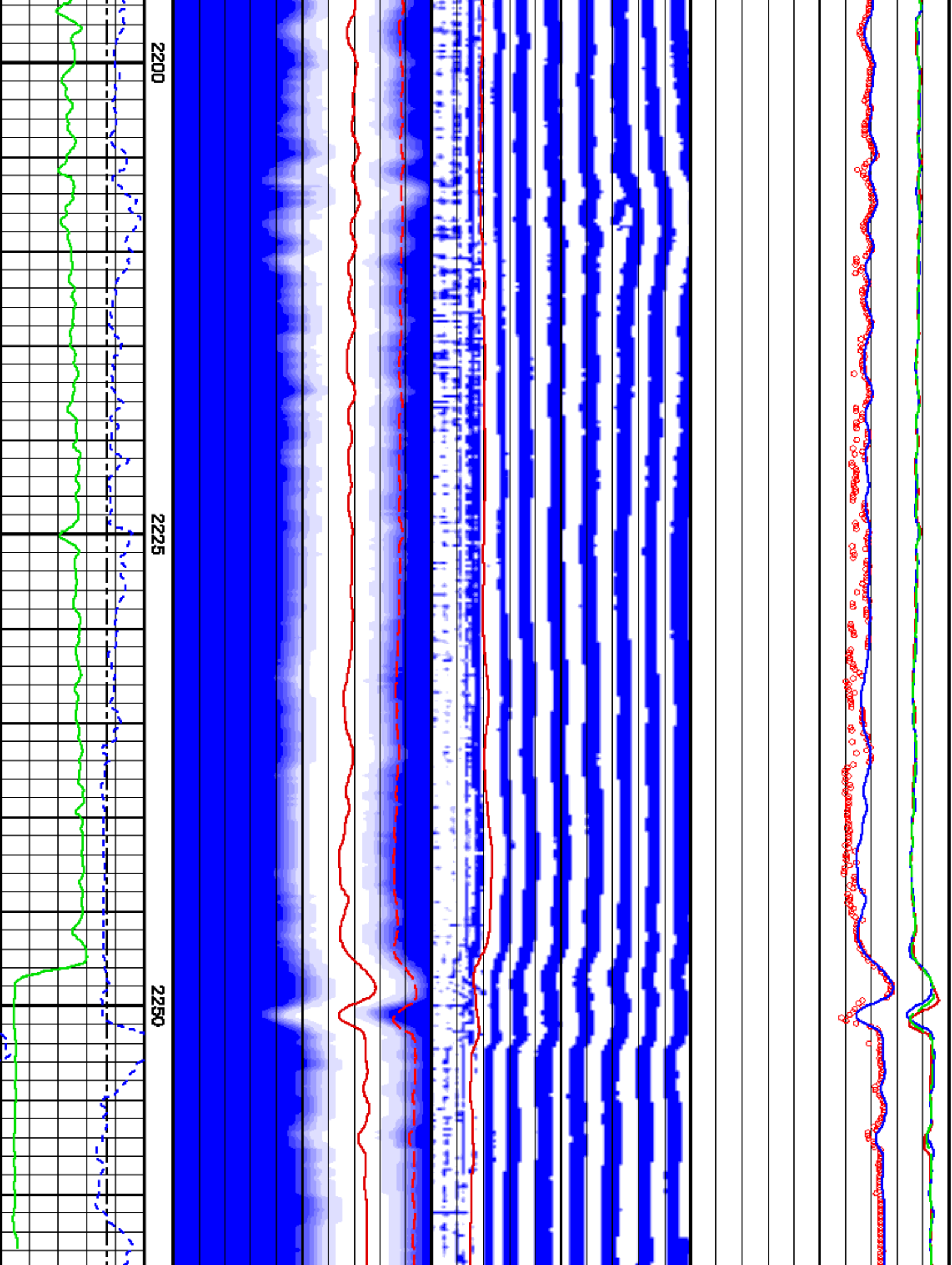


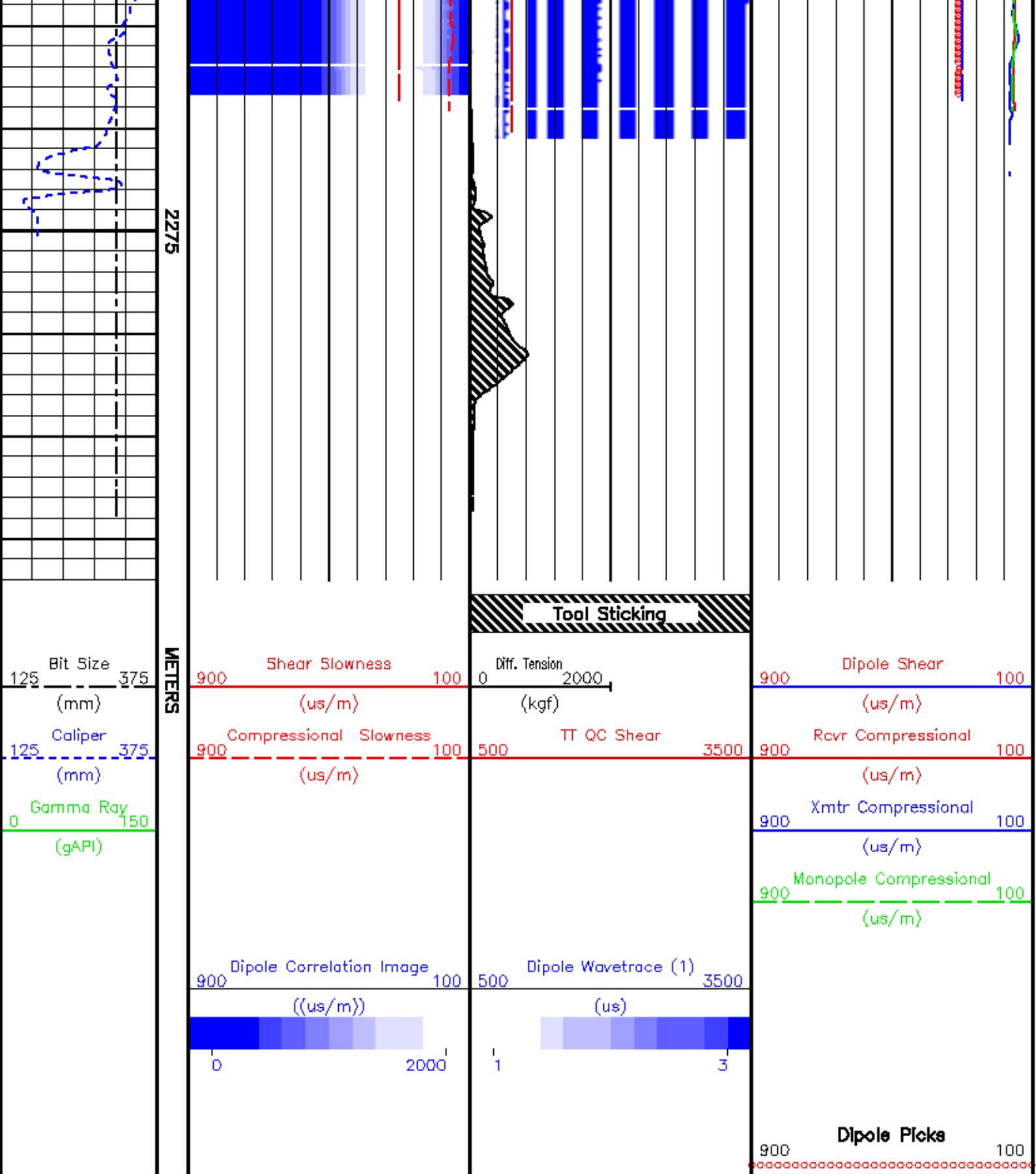


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Baker Atlas

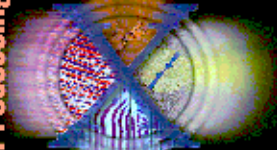
COMPANY
WELL
FIELD
PROVINCE

LOCATION:

NALCOR ENERGY INC.
NALCOR ET AL FINNEGAN #1
FINNEGAN
NEWFOUNDLAND AND LABRADOR

ELEVATIONS:

FILE NO:
API NO:



ELEVATIONS:

KB 125.00 M
DF
GL 118.75 MLICENSE:
2010-128-04

LAT 49.92 N

LONG 63.33 W

DATE 02-NOV-2010