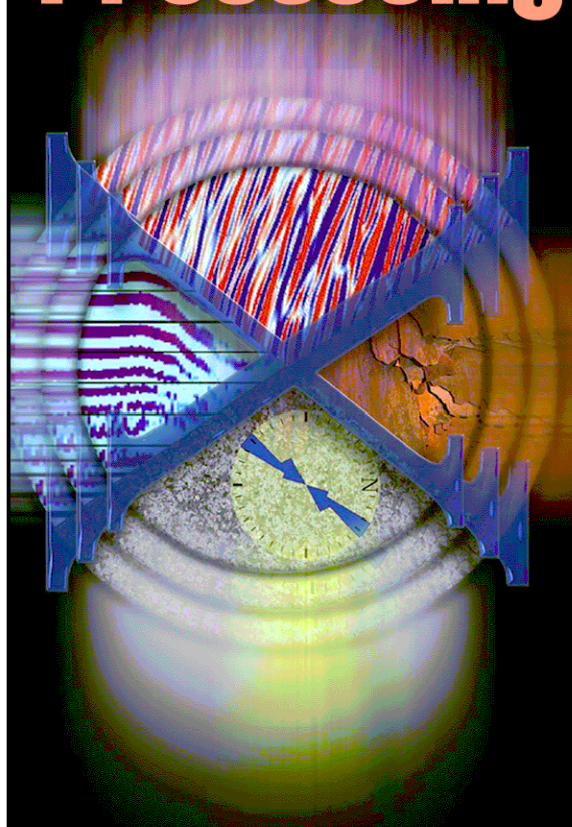


# Acoustic Waveform Processing



## SLOWNESS ANALYSIS

COMPANY NALCOR ENERGY

WELL NALCOR FT AL FINNEGAN #1

FIELD FINNEGAN

PROVINCE NEWFOUNDLAND AND LABRADOR

LOCATION:

LAT 49.92 N LONG 63.33 W

ELEVATIONS:

KB 125.00 M DF GL 118.75 M

DATE 27-NOV-2010 ECC 209243

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
216.0 MM	2285.0 M	3130.0 M

### CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
339.7 MM	81.1 KG/M	K-55	0.0 M	570.0 M
244.5 MM	64.7 KG/M	NA	570.0 M	2276.0 M
177.8 MM				

### REMARKS

TIME STOPPED CIRCULATION: 27-NOV-2010 09:30 AM

TD NOT LOGGED DUE TO DOWNHOLE CONDITIONS

SAMPLE MEASURED:

RM 0.955 @ 15.2 DEG

RMF 0.825 @ 15.2 DEG

RMC 1.146 @ 15.2 DEG

INTEGRATED TRANSIT TIME TICS EVERY: 1.0, 10.0, & 100.0  $\mu$ SEC.

RIG: STONEHAM 11

CREW: S.CREWE, J.HOUSE, L.BAZIAN, J.HENNESSEY, C.DROVER, J.WOODS, J.JEWEL

K.HASHIKI, R.BARSS

### EQUIPMENT DATA

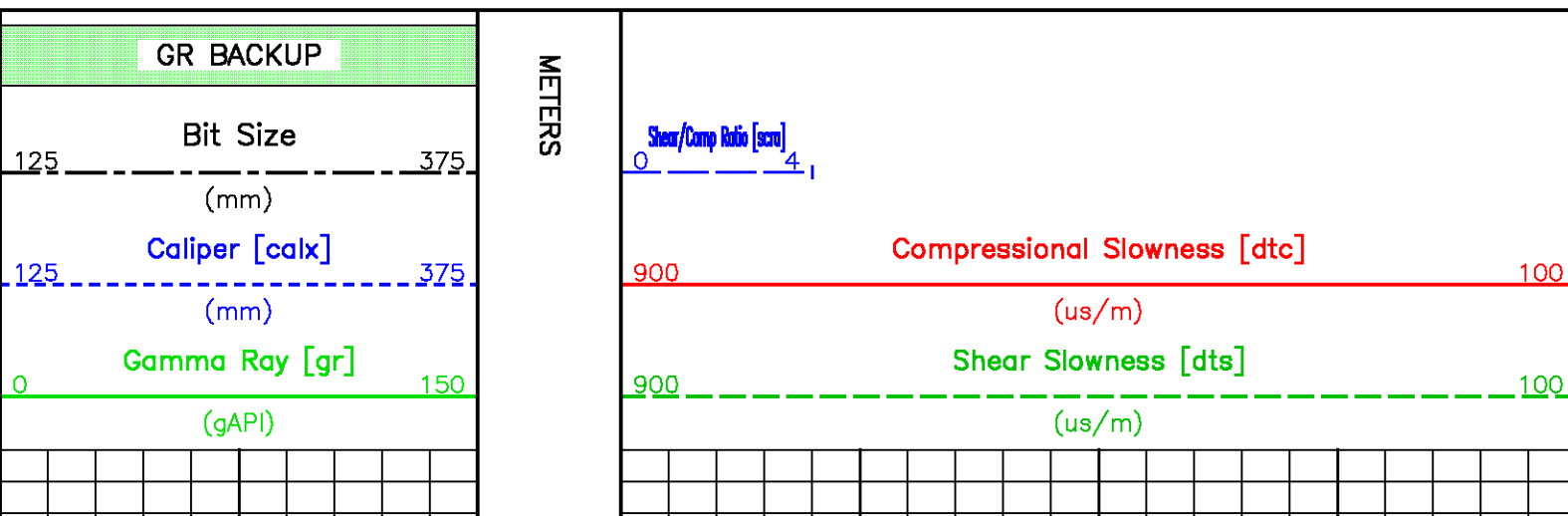
RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
2	1	SWIVEL	3944XB	73682	FREE
2	1	DHPA	4430XB	10152148	FREE
2	1	TTMA	3981XB	370721	FREE
2	1	COMM	3514XB	150740	FREE
2	1	WTS DGR/SLJ	1329XB	370830	FREE
2	1	ACOUSTIC EL	1677EA	10149056	CENTRALIZED
2	1	XMAC RX MDR	1678MB	10039363	CENTRALIZED
2	1	XMAC ISO	1678PB	10148319	FREE
2	1	XMAC TX ELC	1678BA	370862	CENTRALIZED
2	1	XMAC TX ELC	1678FA	10051497	CENTRALIZED
2	1	ORIT	4401XB	10119993	FREE
2	1	WTS DBL KNJ	3939XA	10238695	FREE
2	1	STAR II PS	1022PA	10569170	FREE
2	1	F/ GOM	1036EA	10103726	FREE
2	1	STAR MANDRE	4236MA	10103666	6-PAD DEVICE

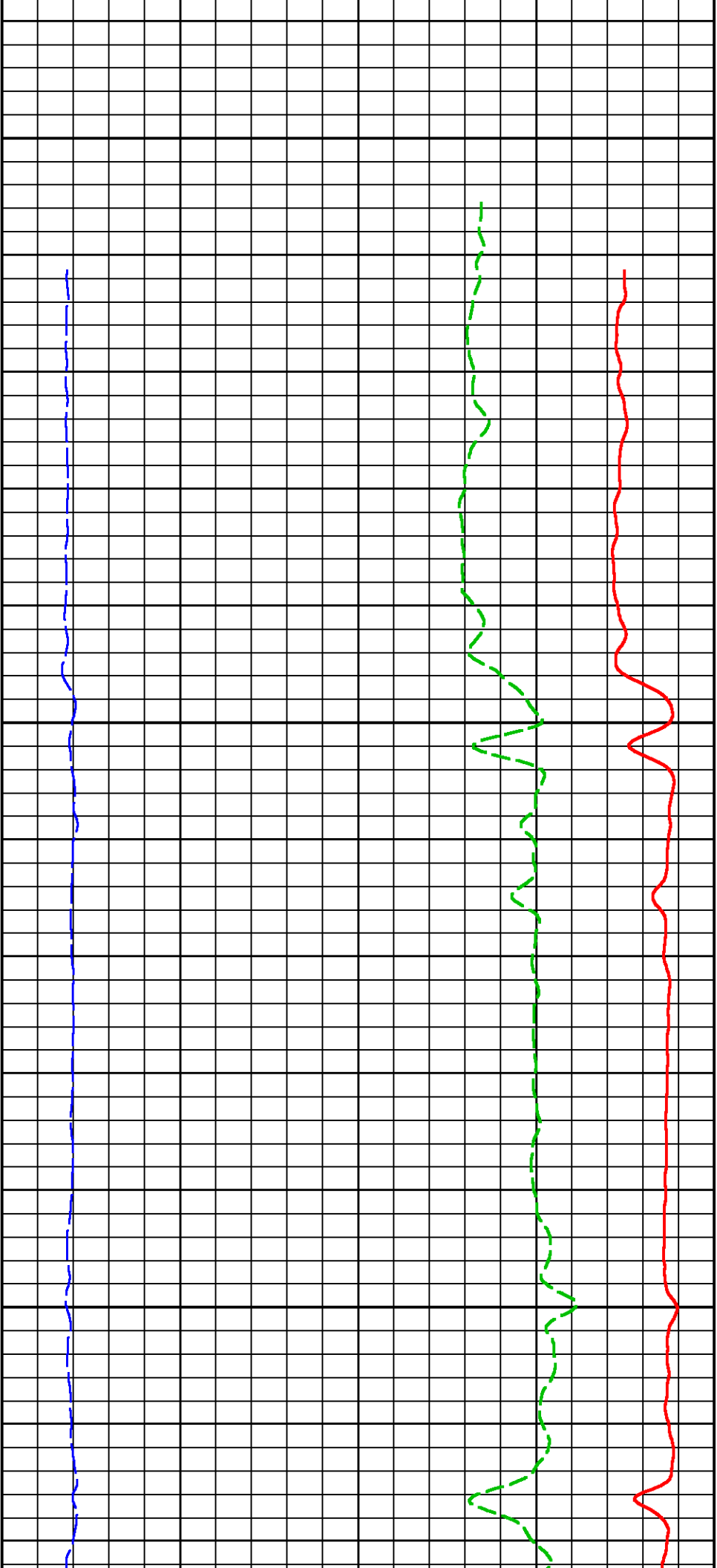
### Computed Slowness Curves 1:240

### CURVE DESCRIPTION REPORT

CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 27 14:41:47 2010	BIT SIZE
F1:CALX	CAL	Nov 27 20:22:40 2010	CALIPER FROM X AXIS OF X-Y CALIPER(S)
F1:DTC	DTC	Nov 29 09:30:42 2010	COMPRESSIONAL WAVE SLOWNESS
F1:DTS	DTS	Nov 29 09:30:54 2010	SHEAR WAVE SLOWNESS
F1:GR	GR	Nov 27 14:41:47 2010	GAMMA RAY

**Project** : /data/jianwei/209243\_nalcor\_xmac  
**User** : jianwei  
**Presentation** : calsunsv3:/data/jianwei/209243\_nalcor\_xmac/xmac.dt.pdf [1:240 Scale]  
**Plot Interval** : 2217.42 - 3020.11 Meters  
  
**Data File 1** : F1 : calsunsv3:/export/data/jianwei/209243\_nalcor\_xmac/slowness.xtf  
**Created On** : Nov 27 14:41:47 2010  
**Company** : NALCOR ENERGY  
**Well** : NALCOR ET AL FINNEGAN 1  
**Field** : FINNEGAN  
**File Interval** : 2217.42 - 3020.11 Meters  
**Oct** : m837c\_xm

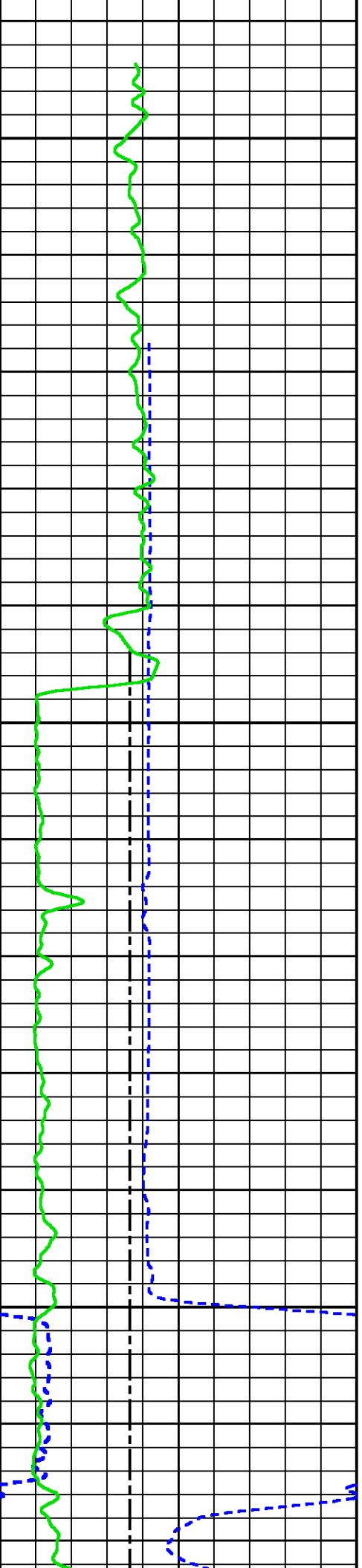


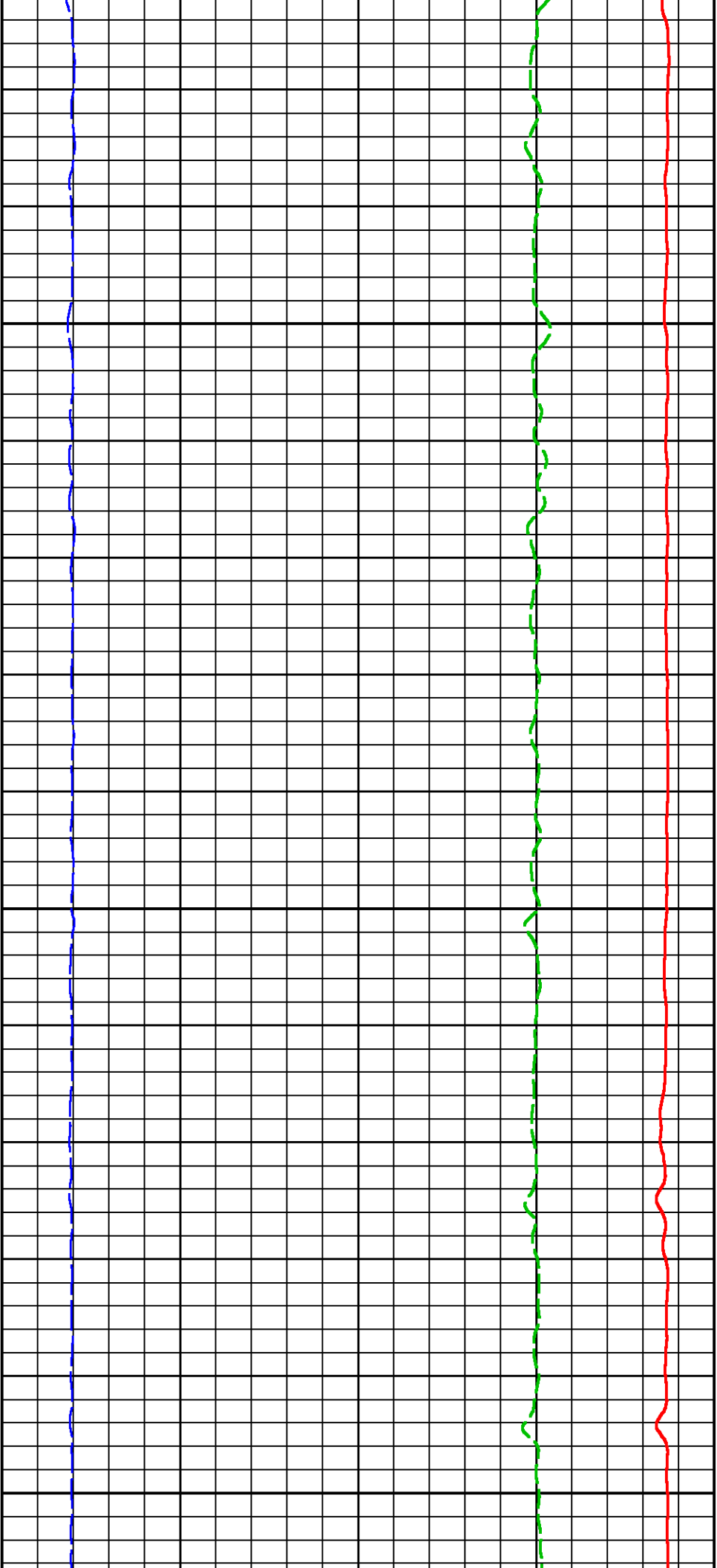


2225

2250

2275

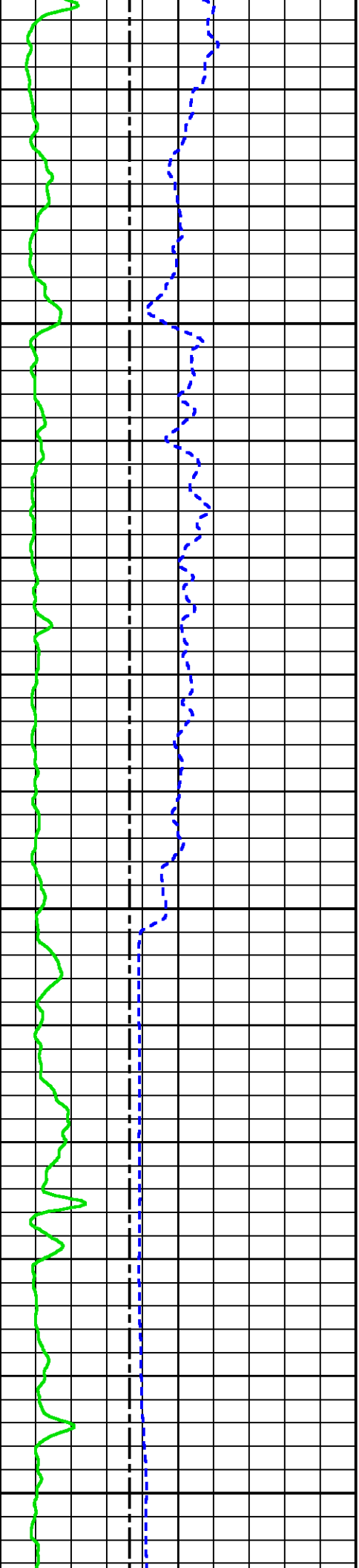


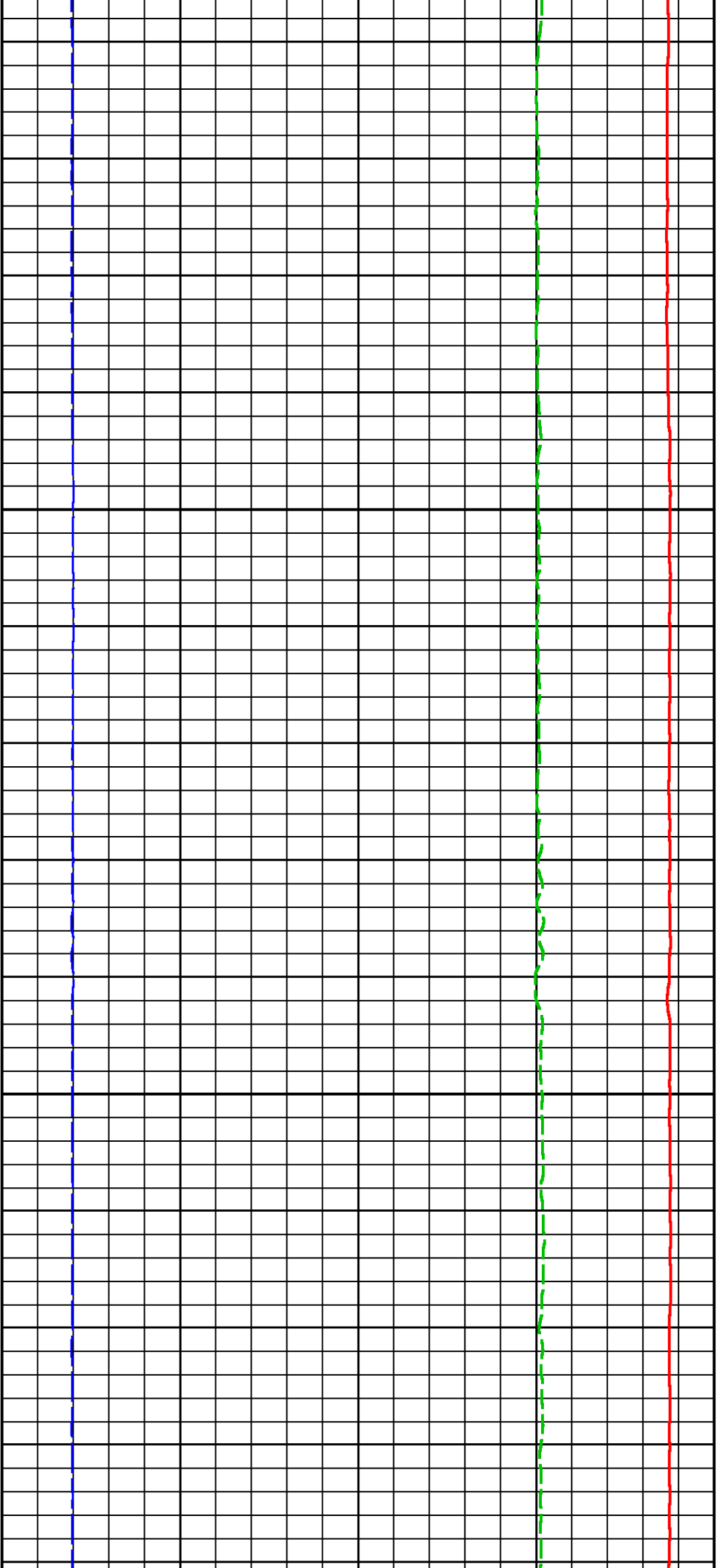


2300

2325

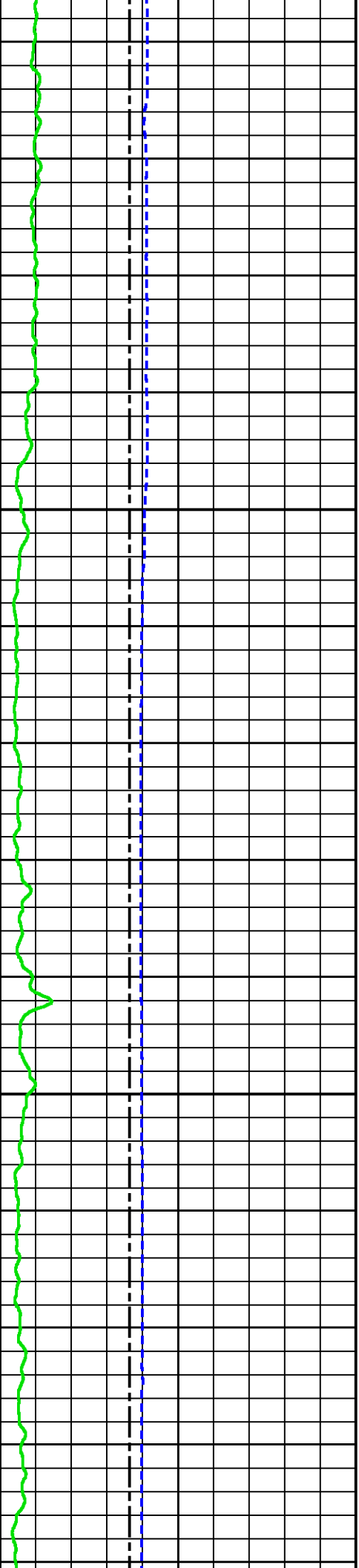
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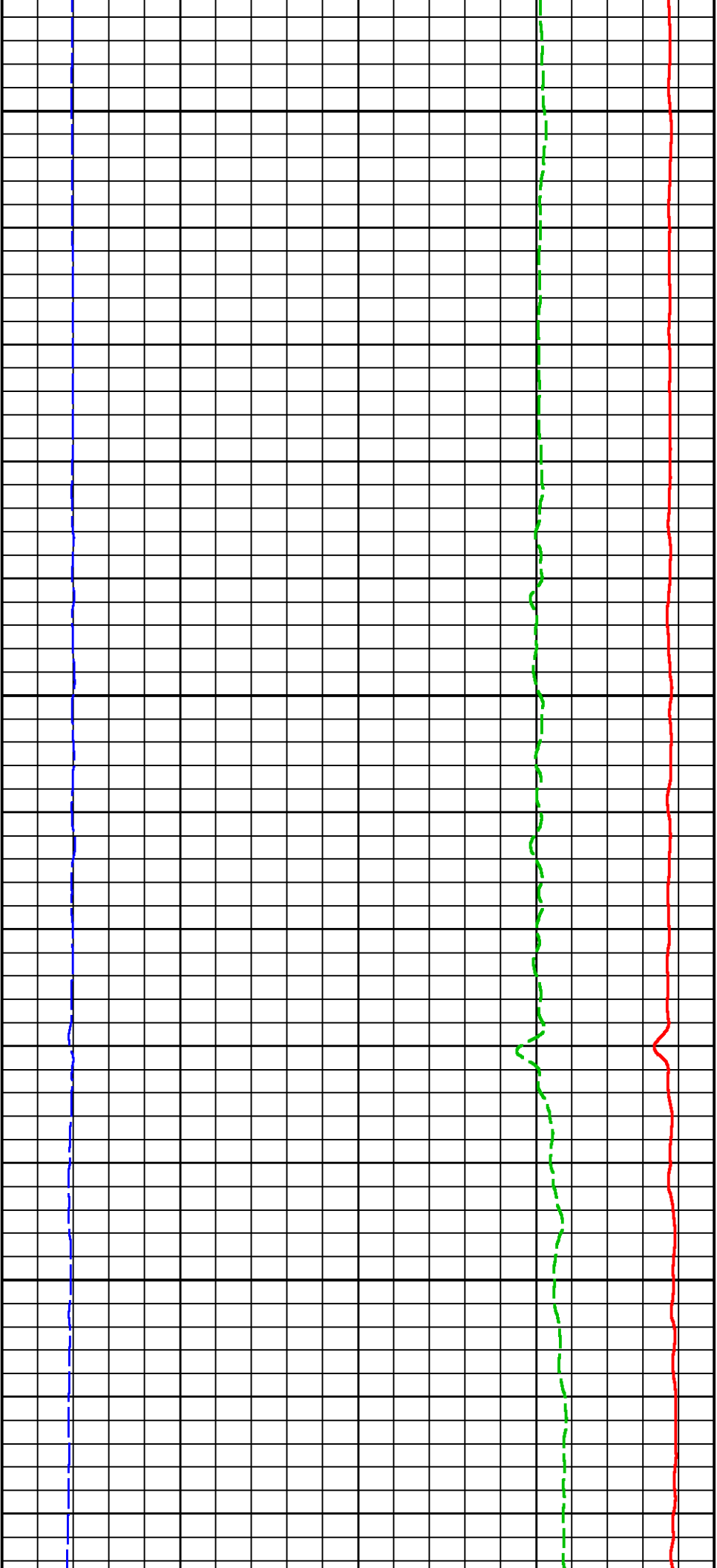




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2400

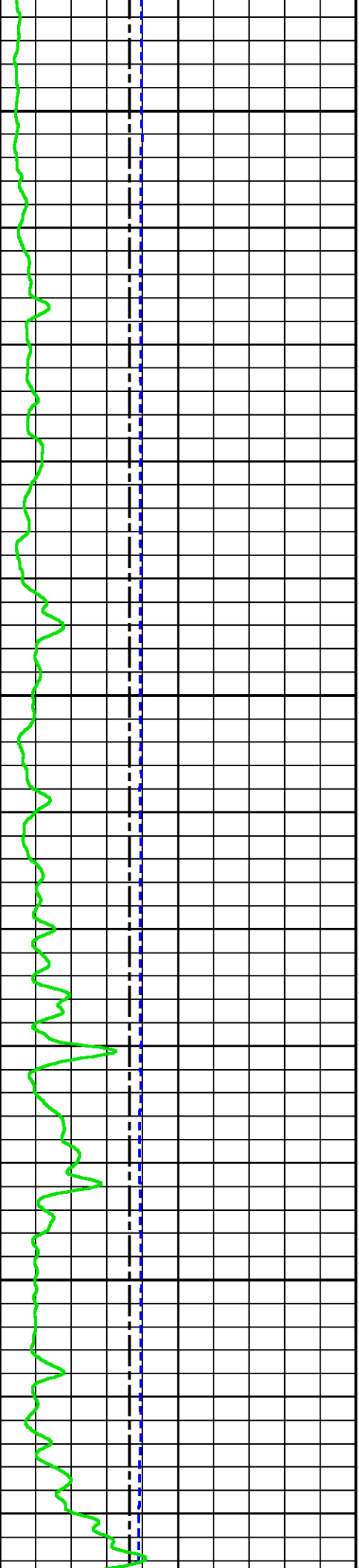


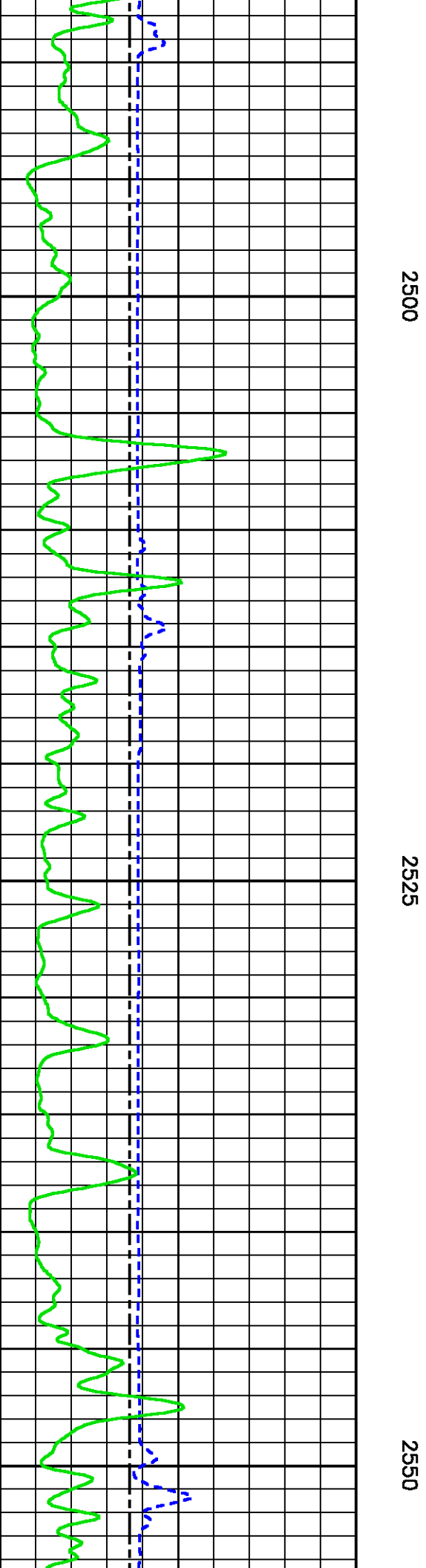
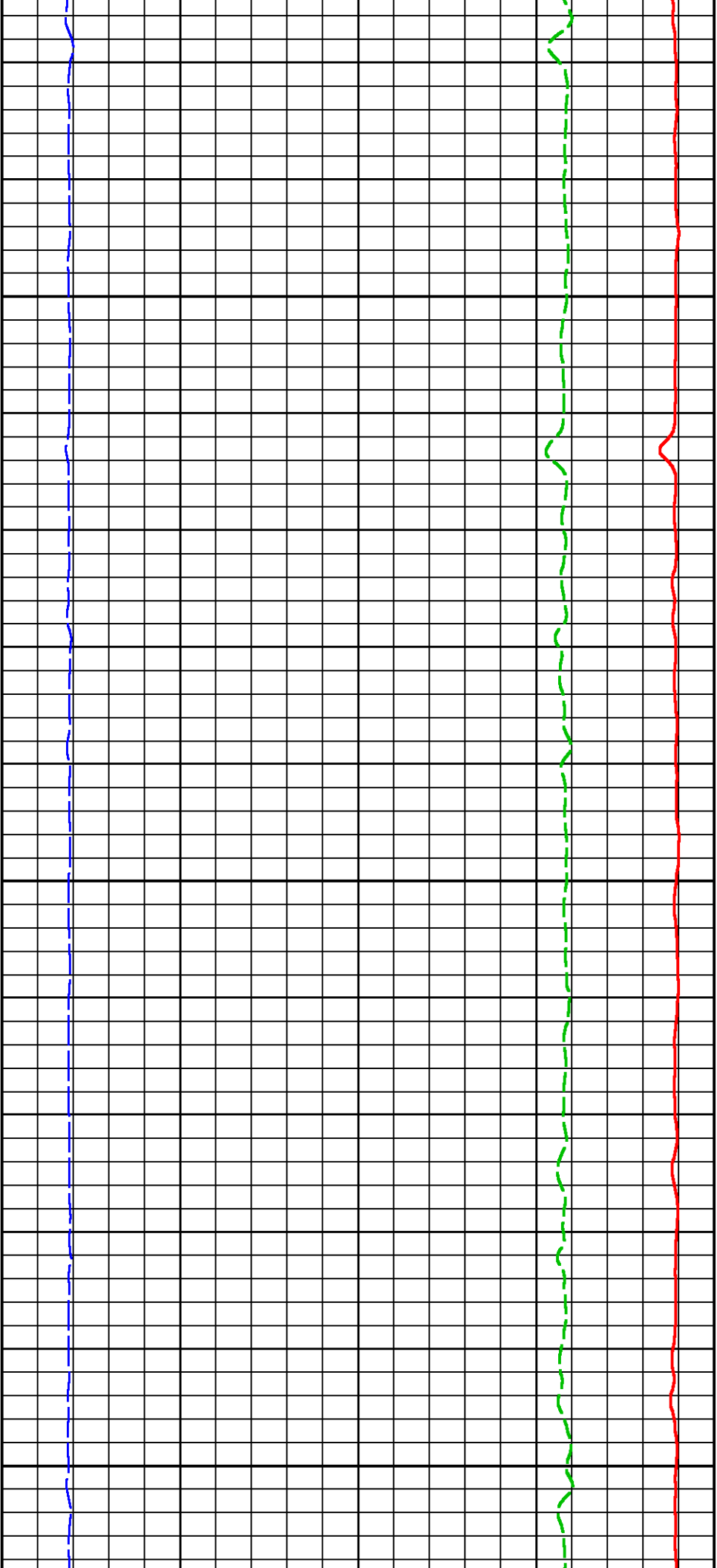


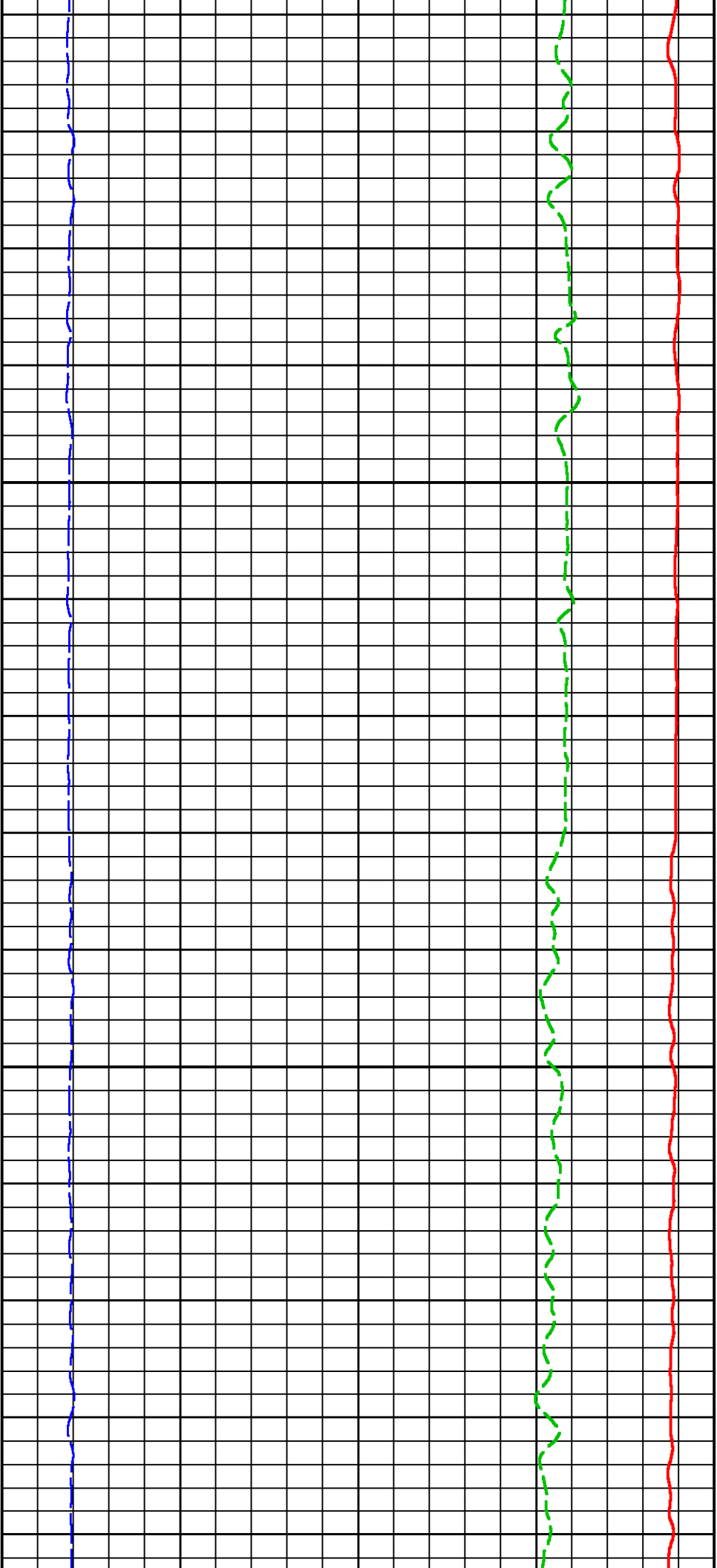
2425

2450

2475

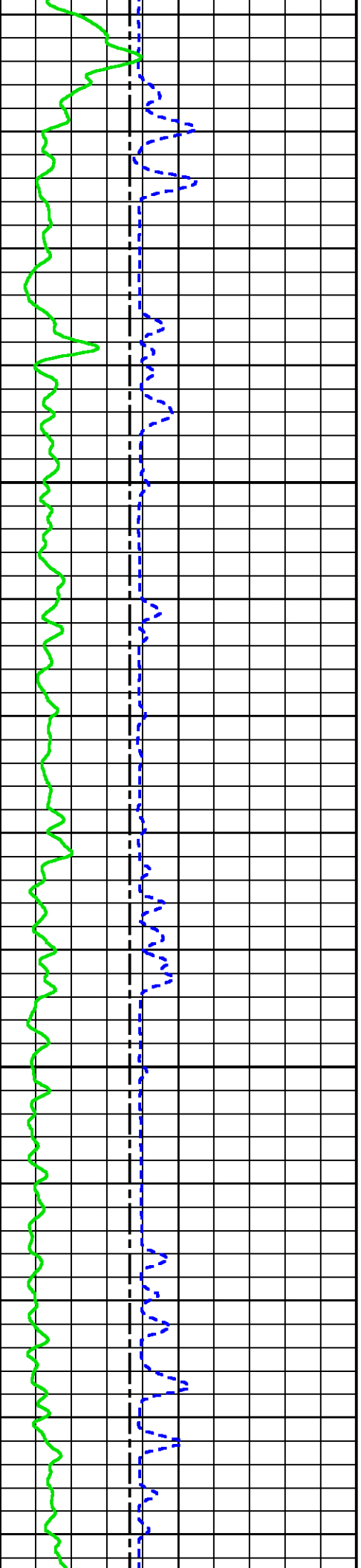




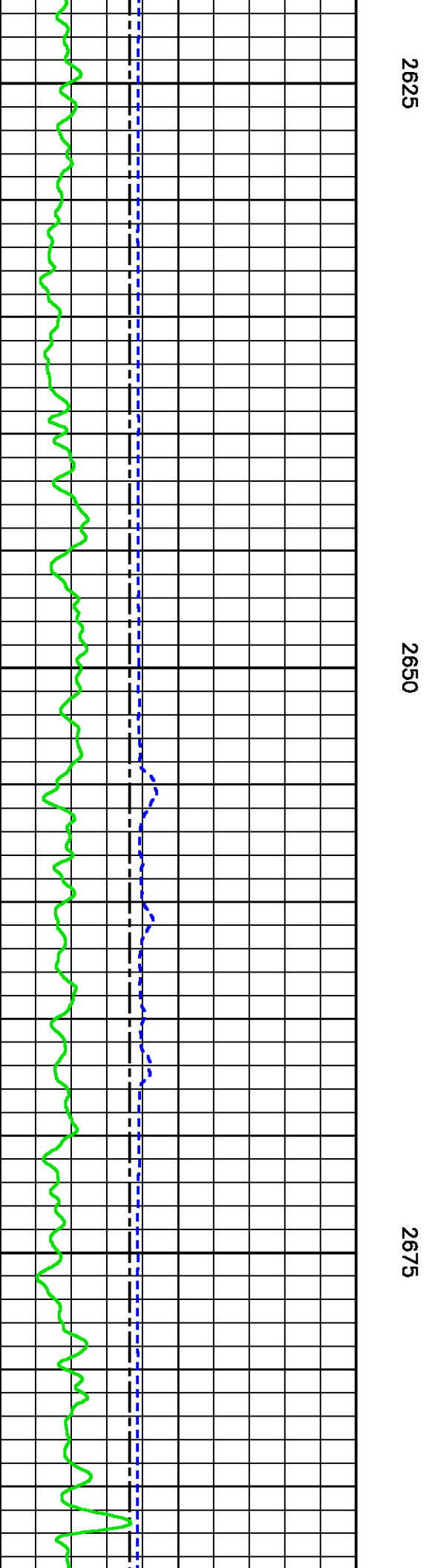
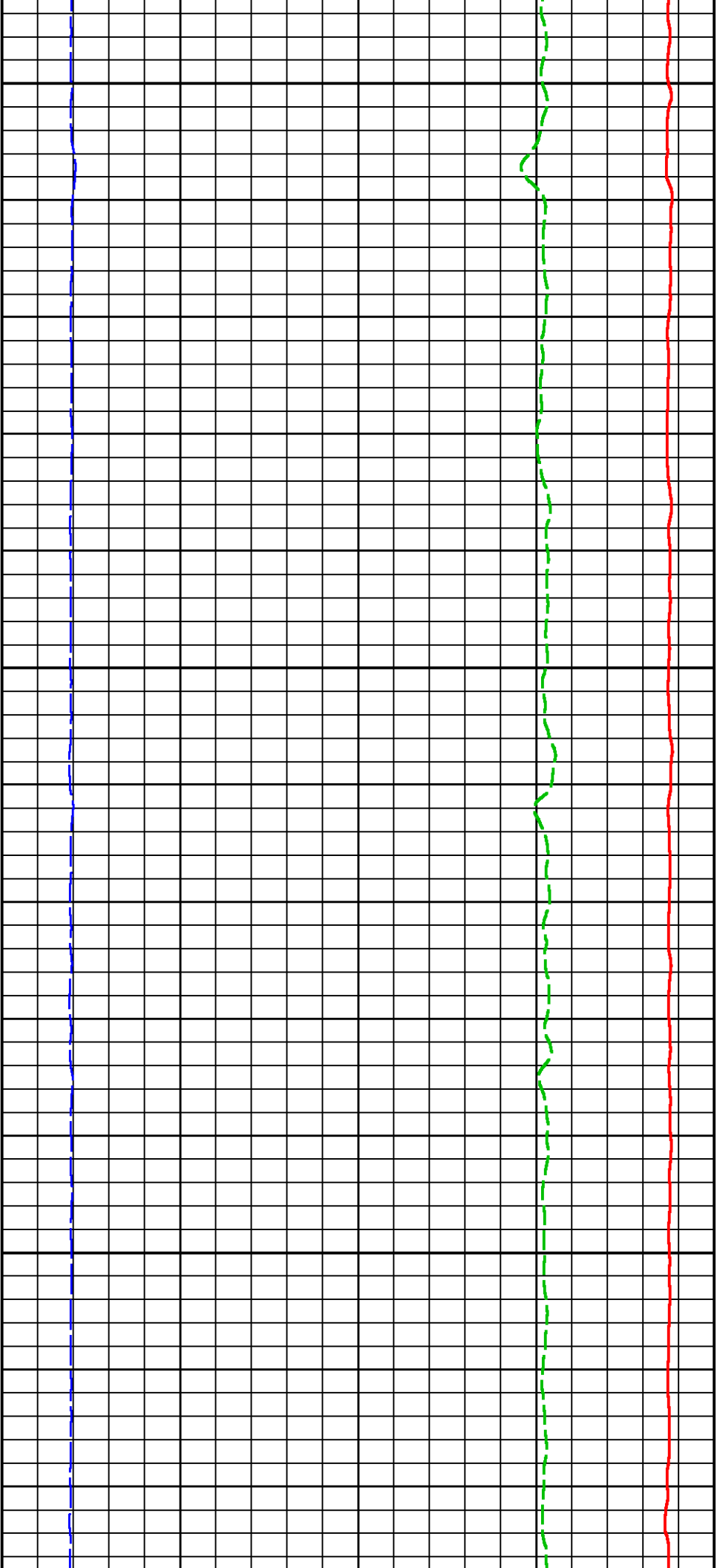


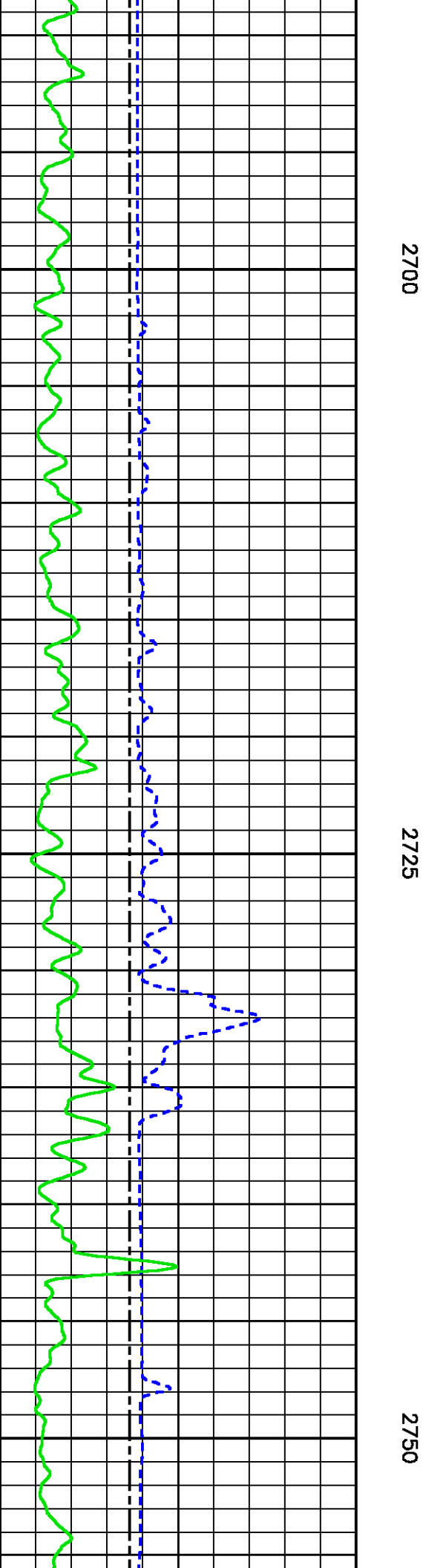
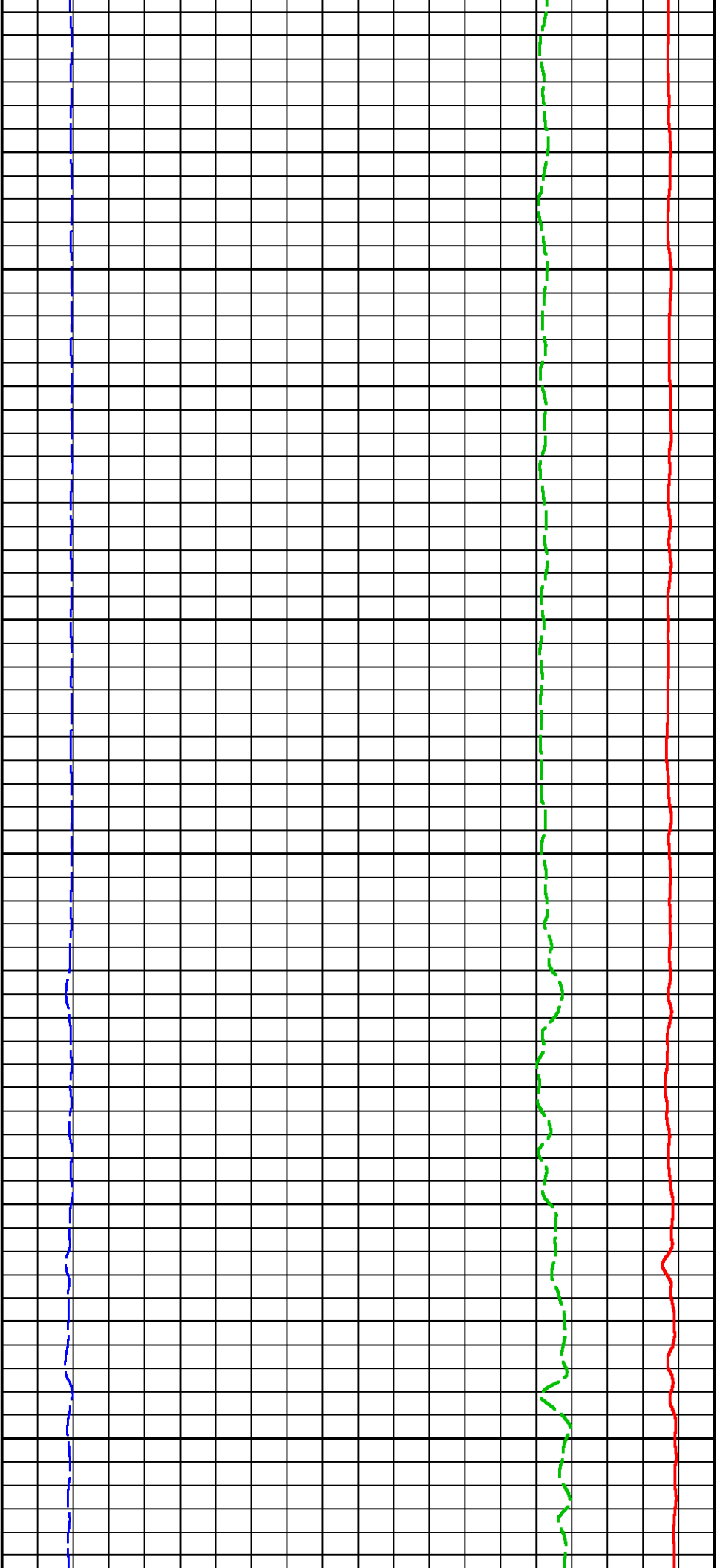
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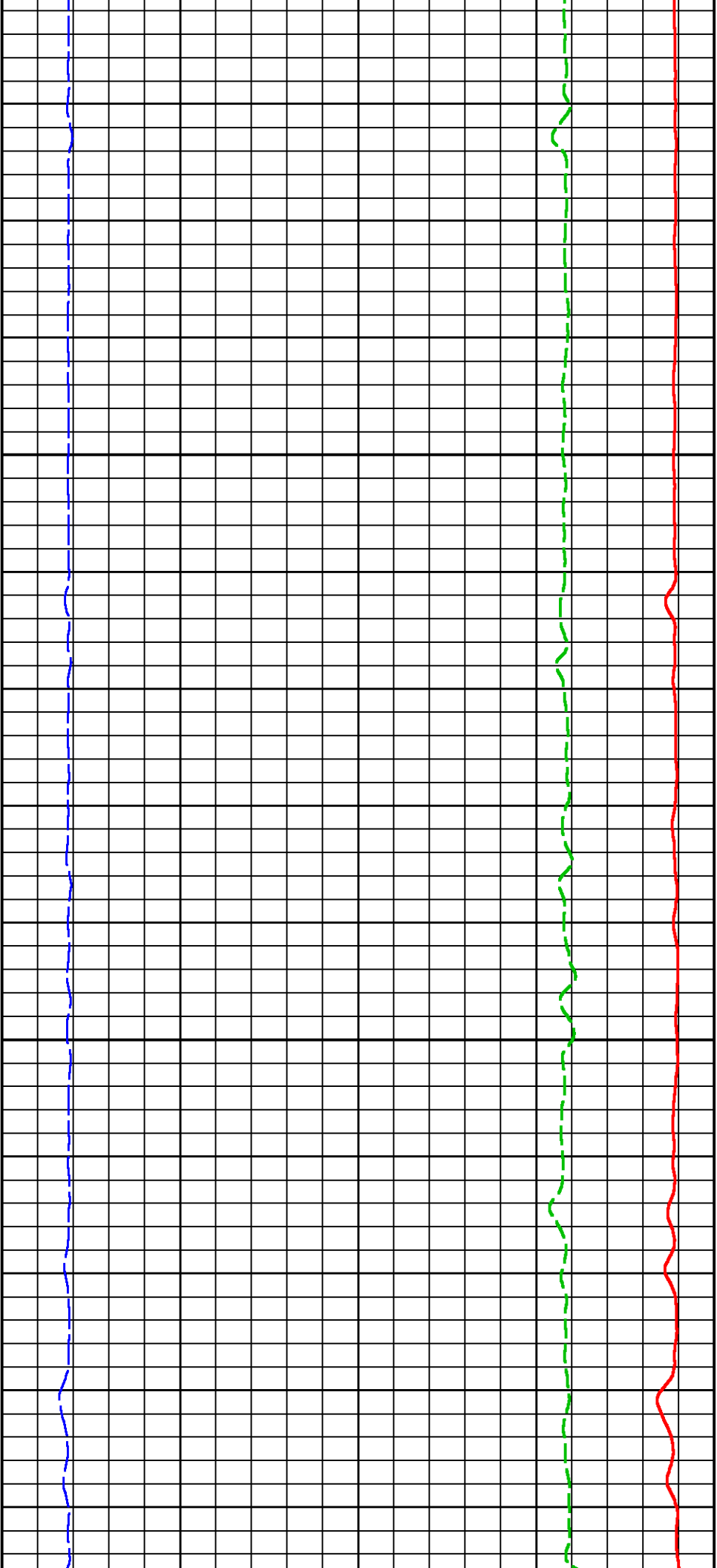
2600





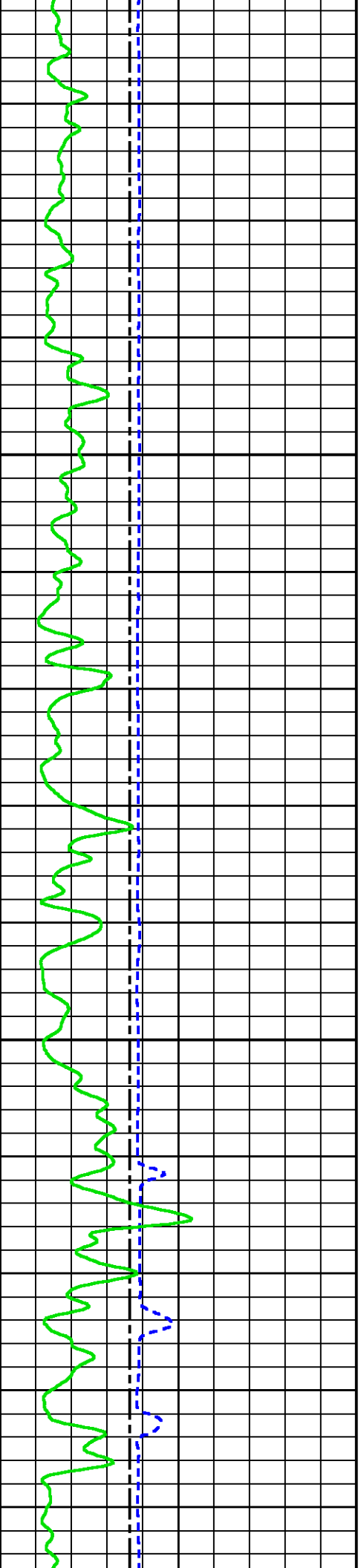


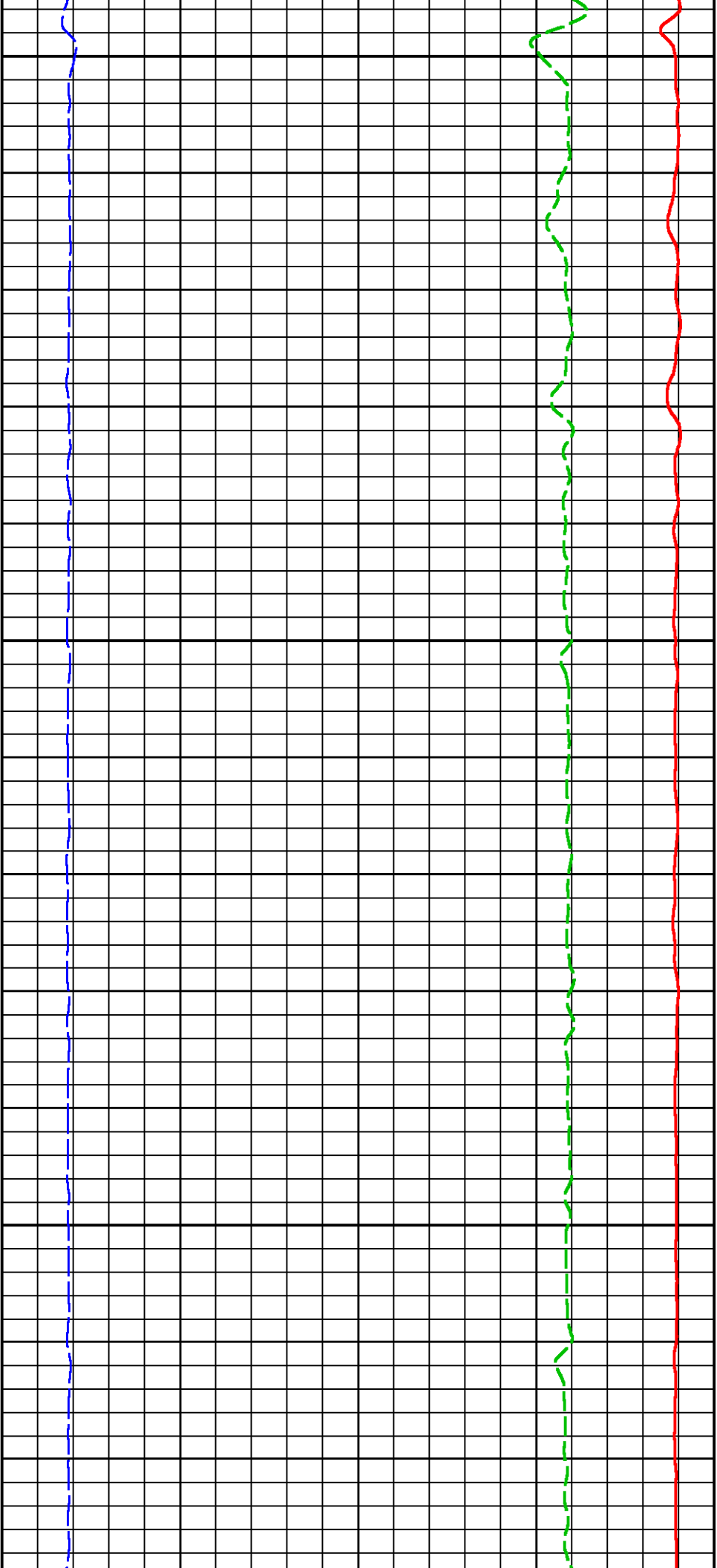




2775

2800

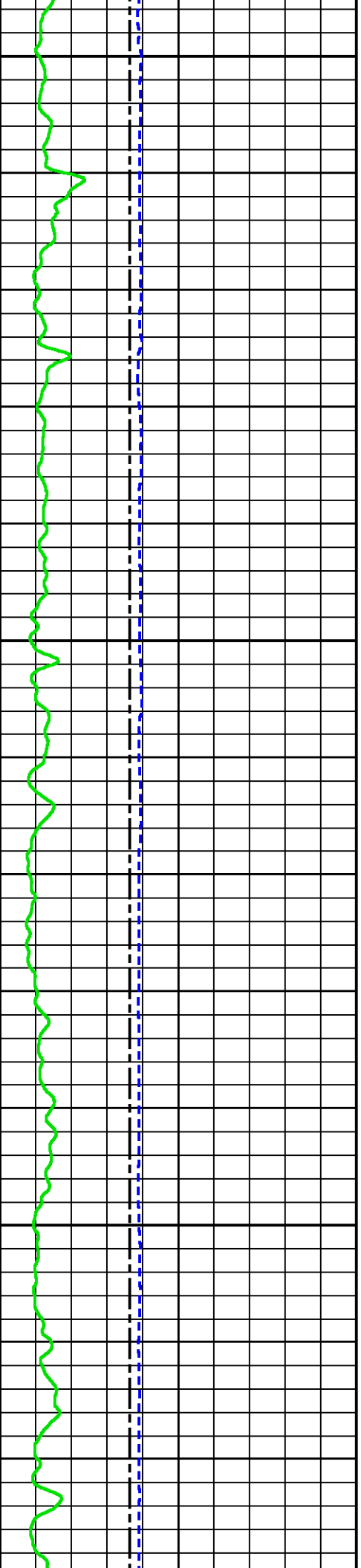


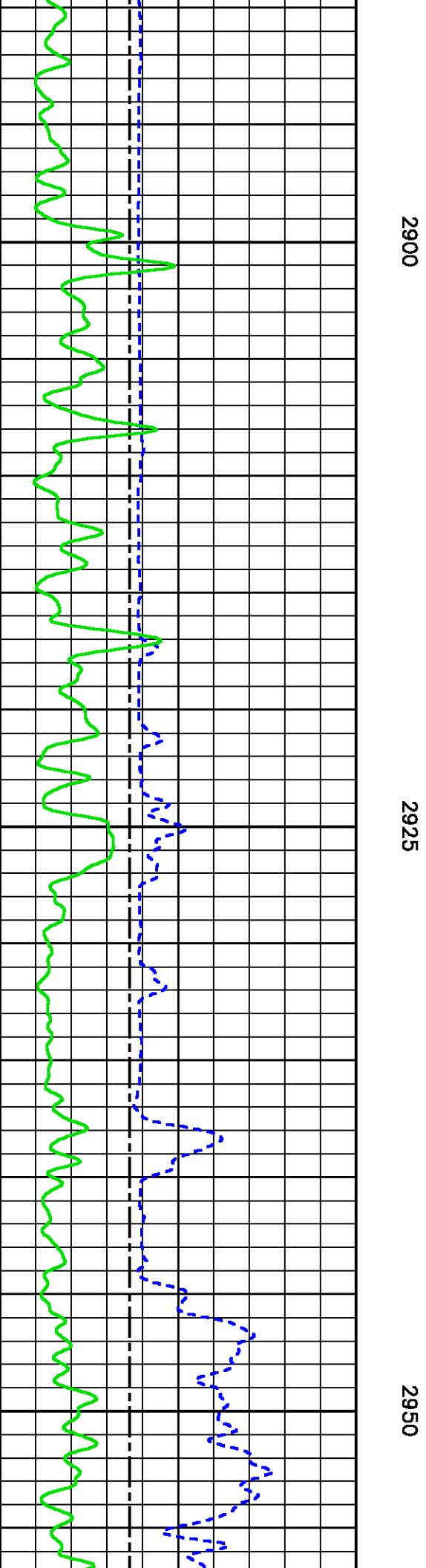
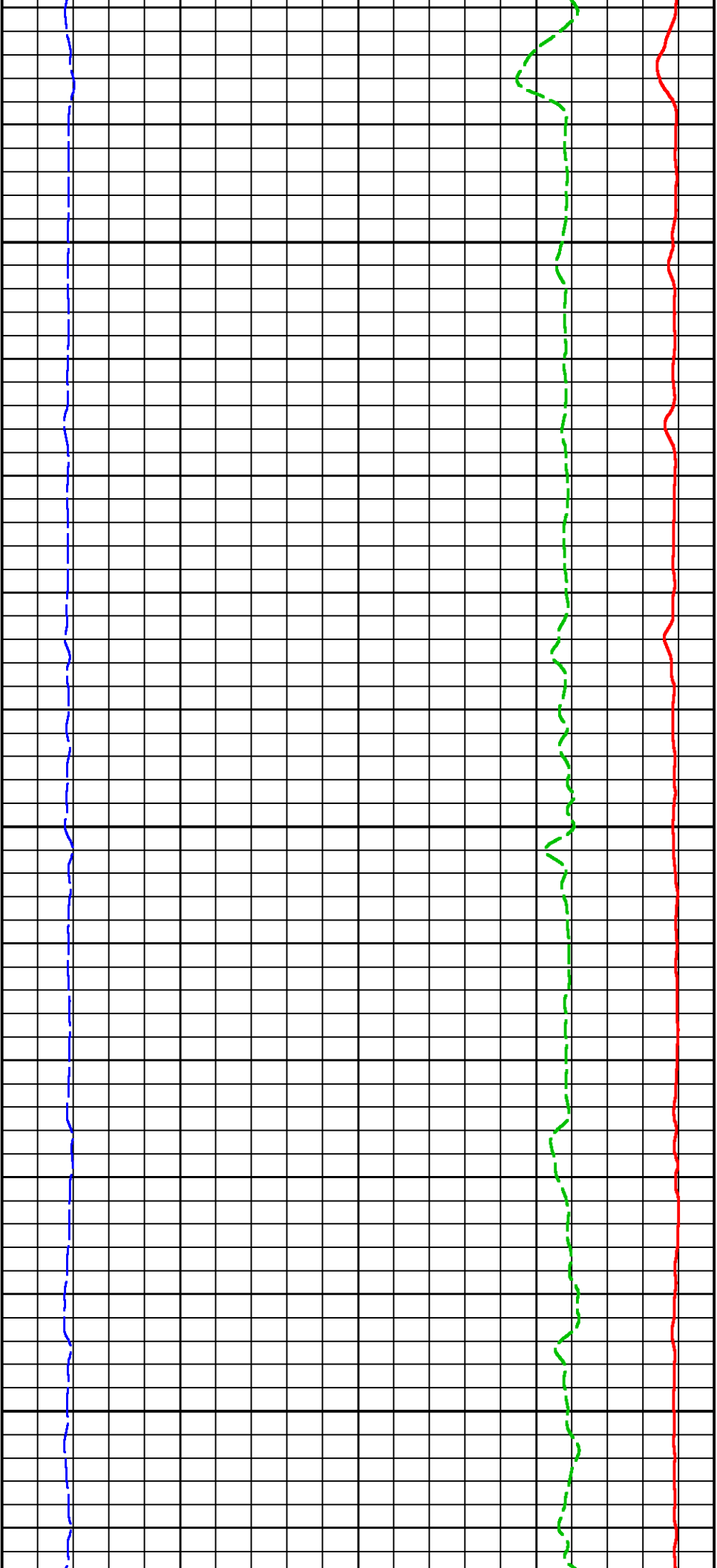


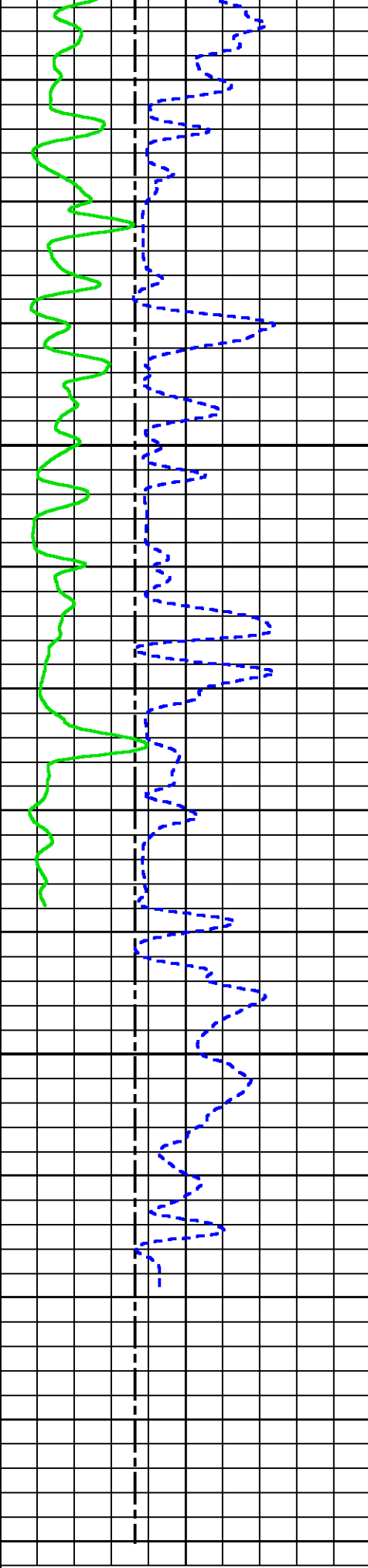
2825

2850

2875

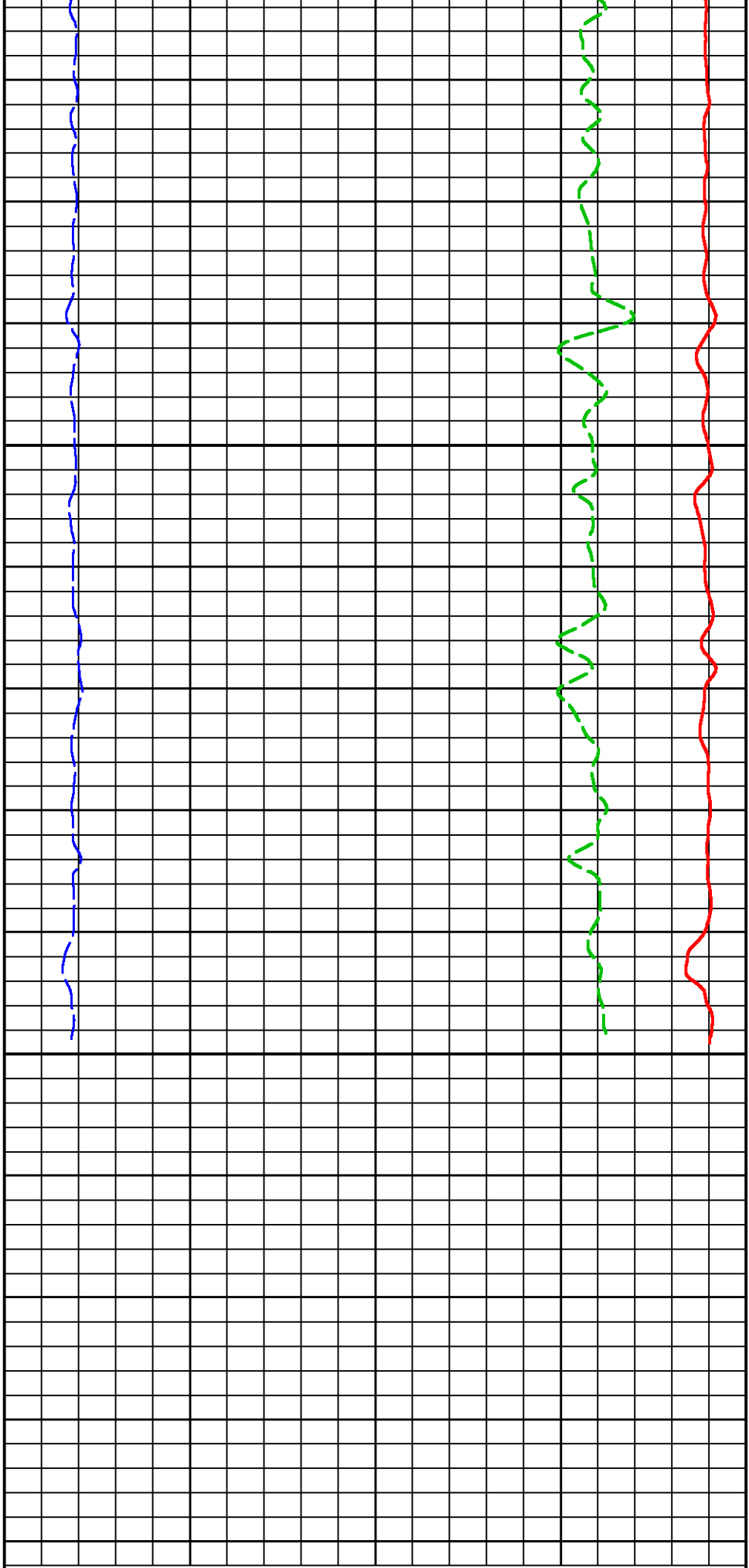


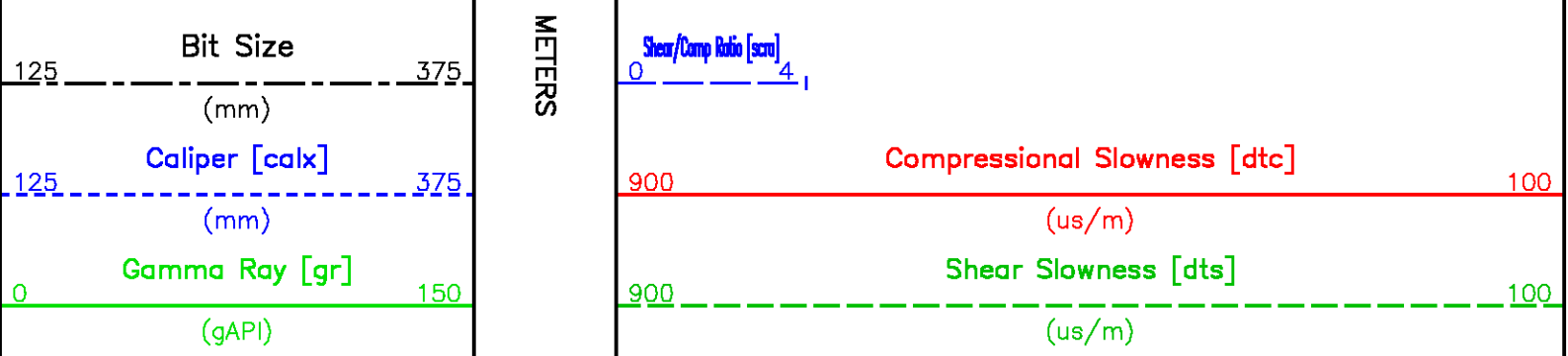




2975

3000





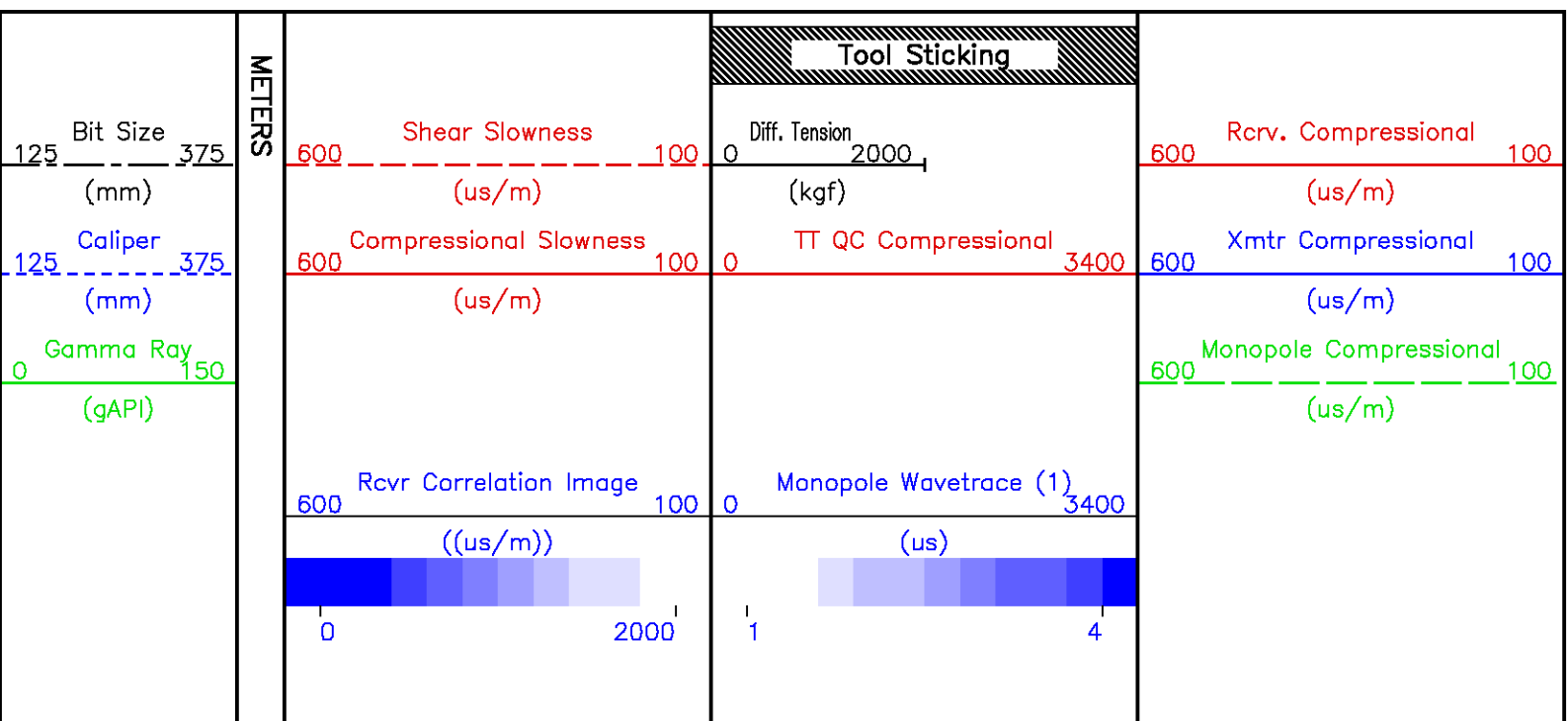
## Monopole Quality Control Plot

### CURVE DESCRIPTION REPORT

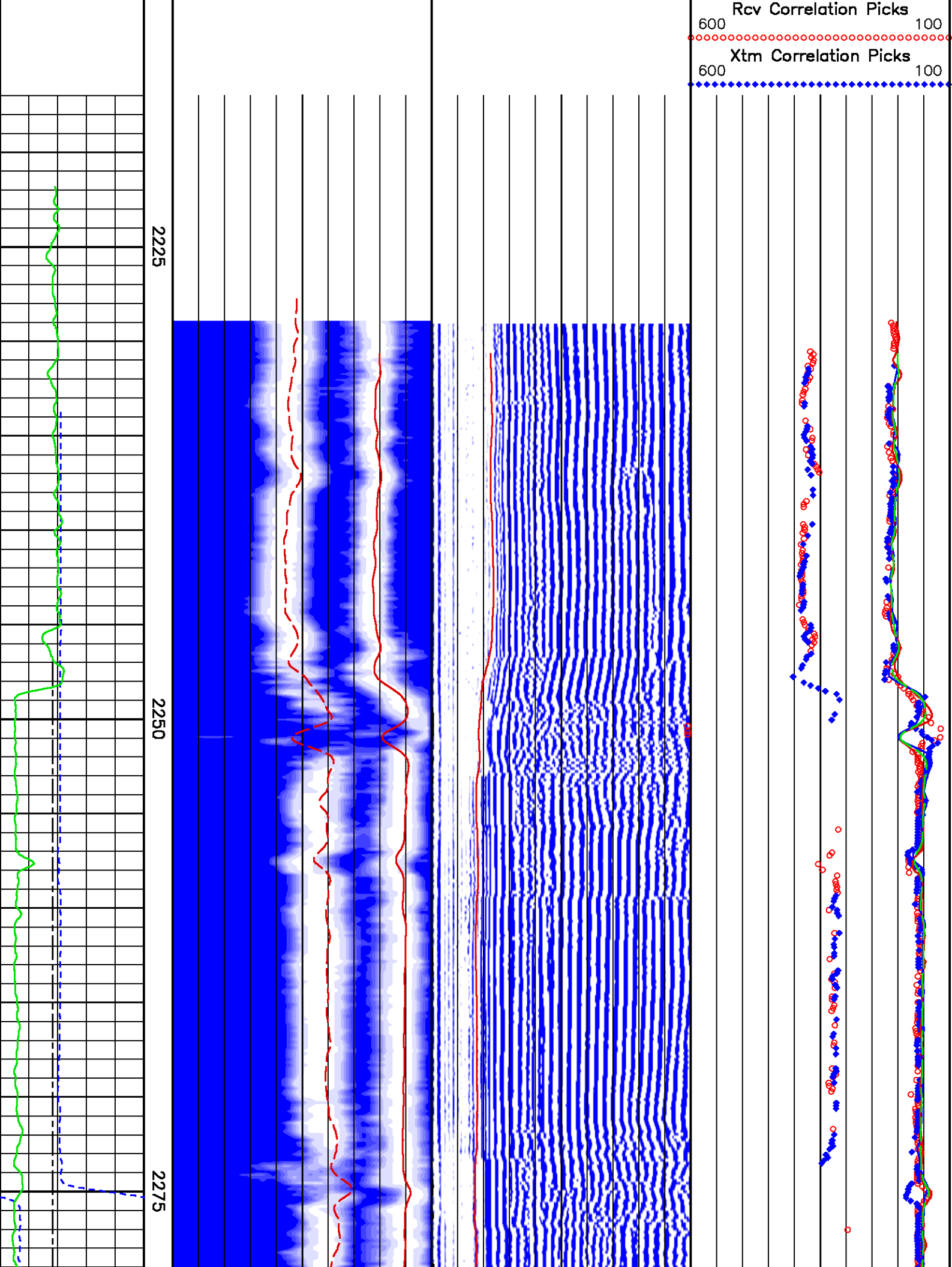
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 27 14:41:47 2010	BIT SIZE
F1:CALX	CALX	Nov 27 20:22:40 2010	CALIPER FROM X AXIS OF X-Y CALIPER(S)
F1:DTC	DTCN	Nov 29 09:30:42 2010	COMPRESSIONAL WAVE SLOWNESS
F1:DTS	DTSD	Nov 29 09:30:54 2010	SHEAR WAVE SLOWNESS
F1:GR	GR	Nov 27 14:41:47 2010	GAMMA RAY
F1:TEN	TEN	Nov 27 14:41:47 2010	DIFFERENTIAL TENSION

Project : /data/llanwel/209243\_nalcor\_xmac  
User : llanwel  
Presentation : calsunsv3:/data/llanwel/209243\_nalcor\_xmac/xmac.monopole.pdf [1:240 Scale]  
Plot Interval : 2217.42 - 3020.11 Meters

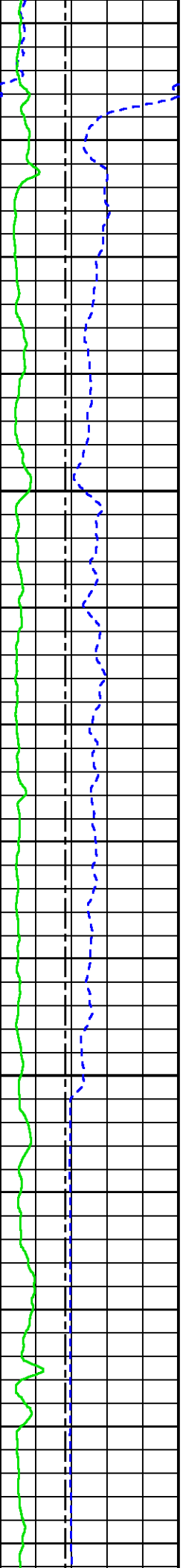
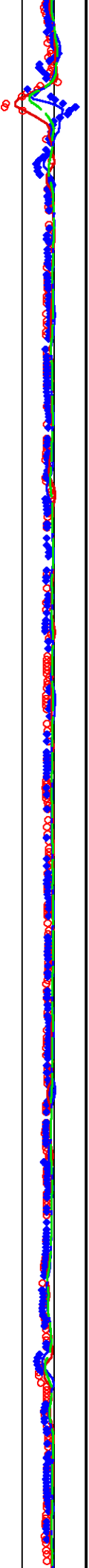
Data File 1 : F1 : calsunsv3:/export/data/llanwel/209243\_nalcor\_xmac/slowness.xtf  
Created On : Nov 27 14:41:47 2010  
Company : NALCOR ENERGY  
Well : NALCOR ET AL FINNEGAN 1  
Field : FINNEGAN  
File Interval : 2217.42 - 3020.11 Meters  
Oct : m837c\_xm

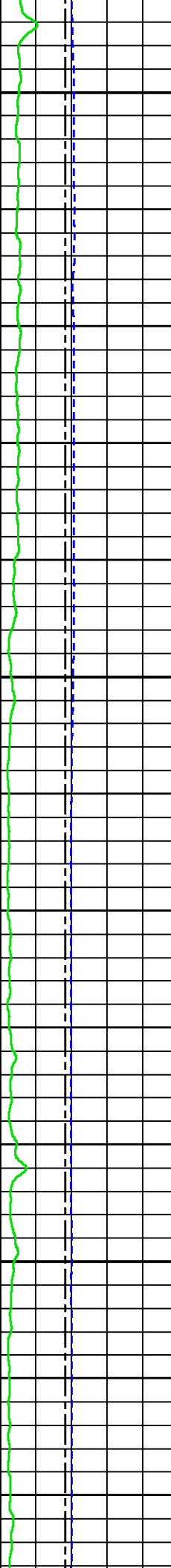
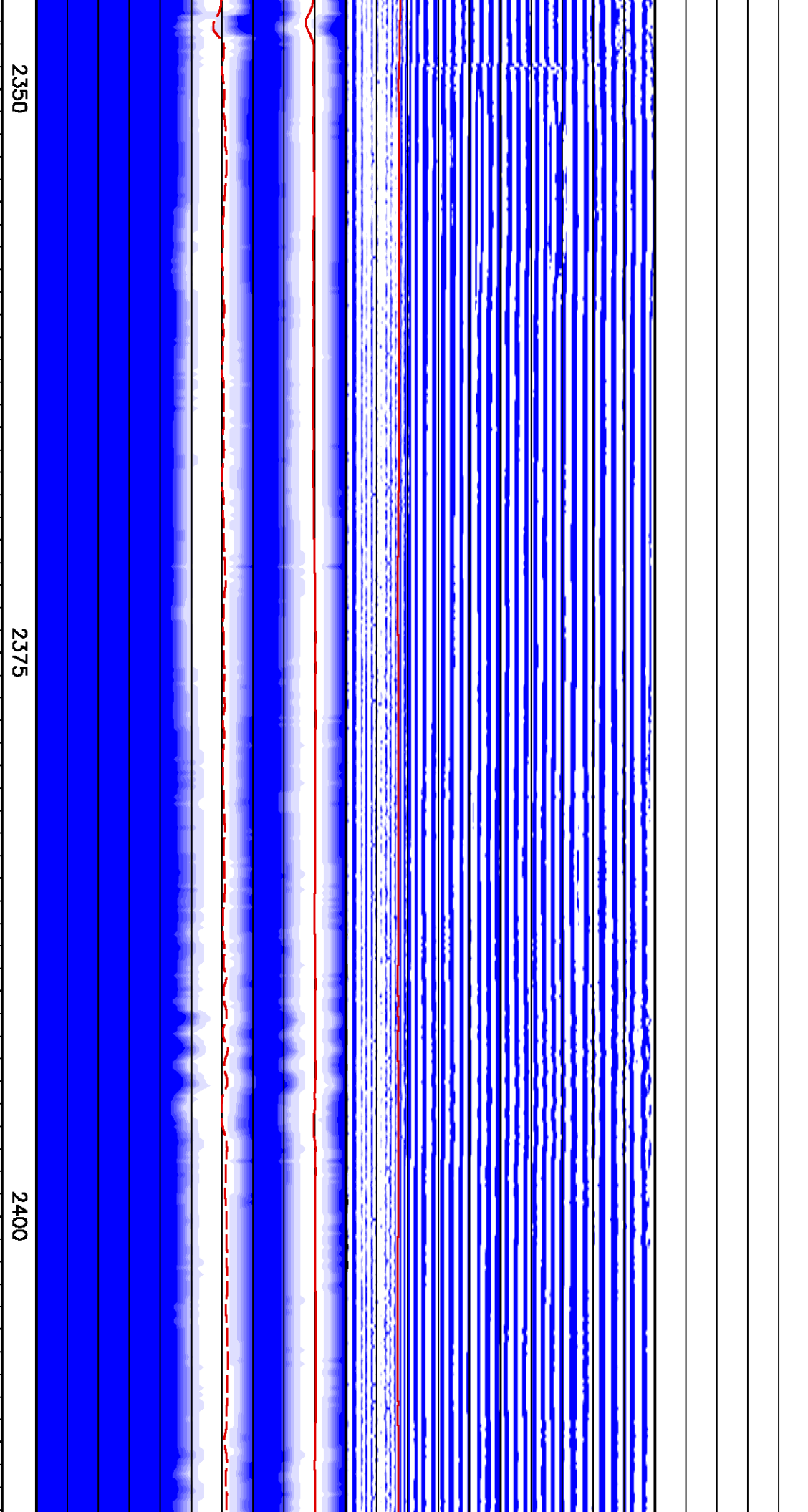
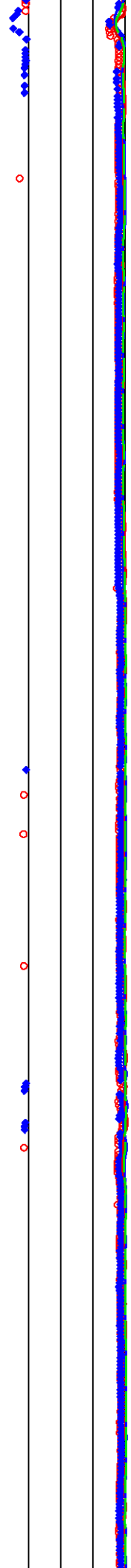


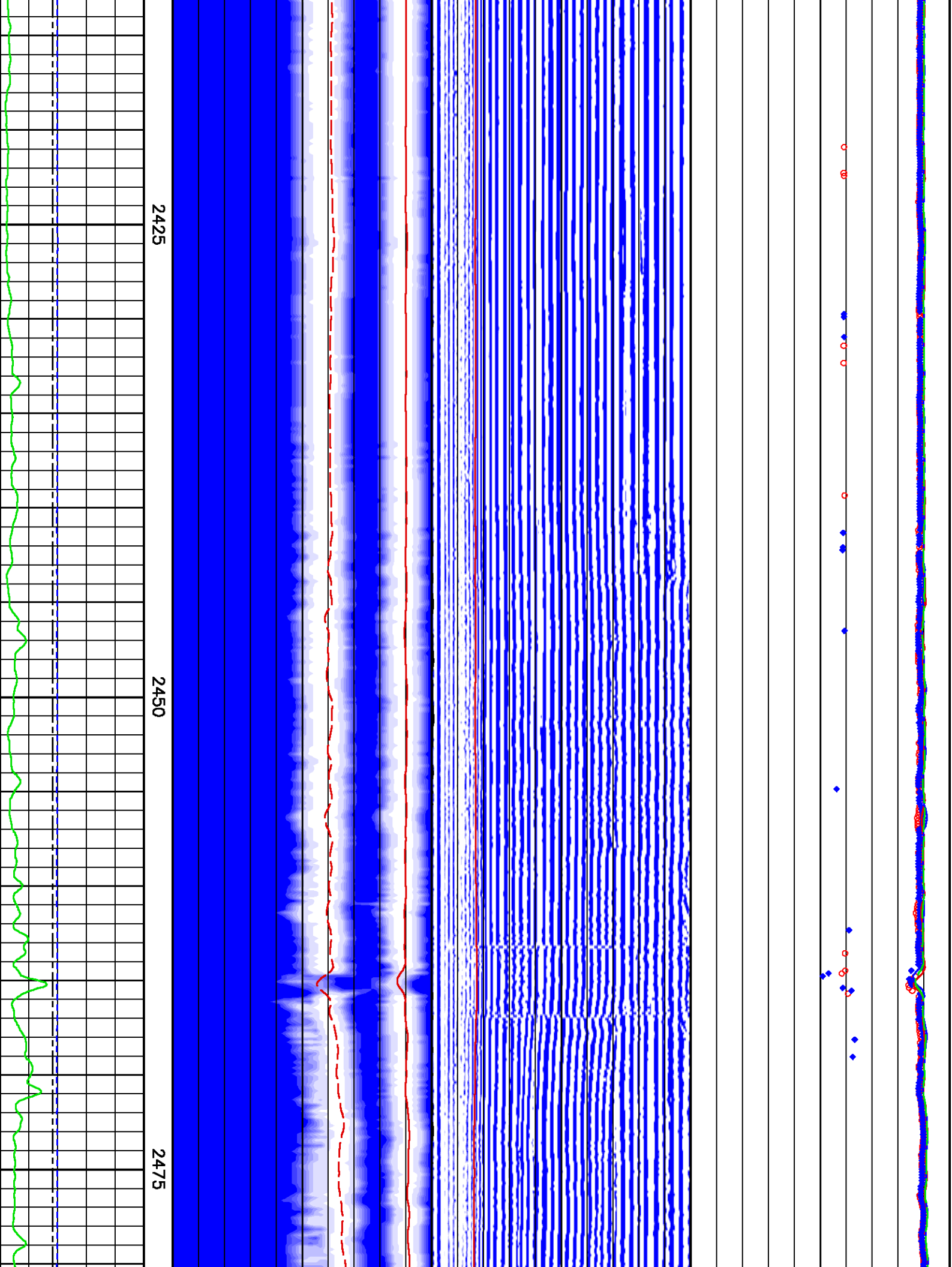
Rcv Correlation Picks  
600 100  
Xtm Correlation Picks  
600 100

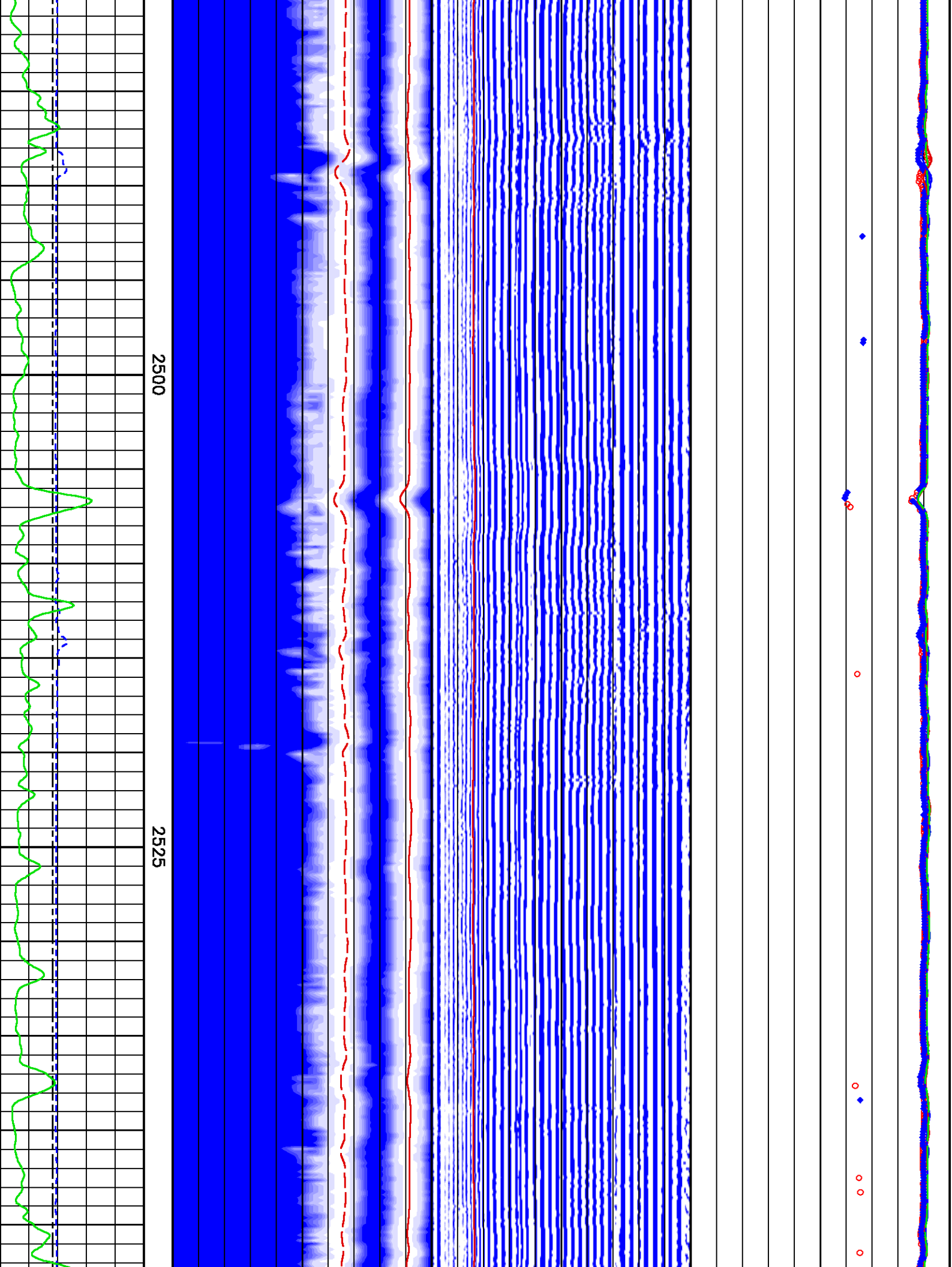


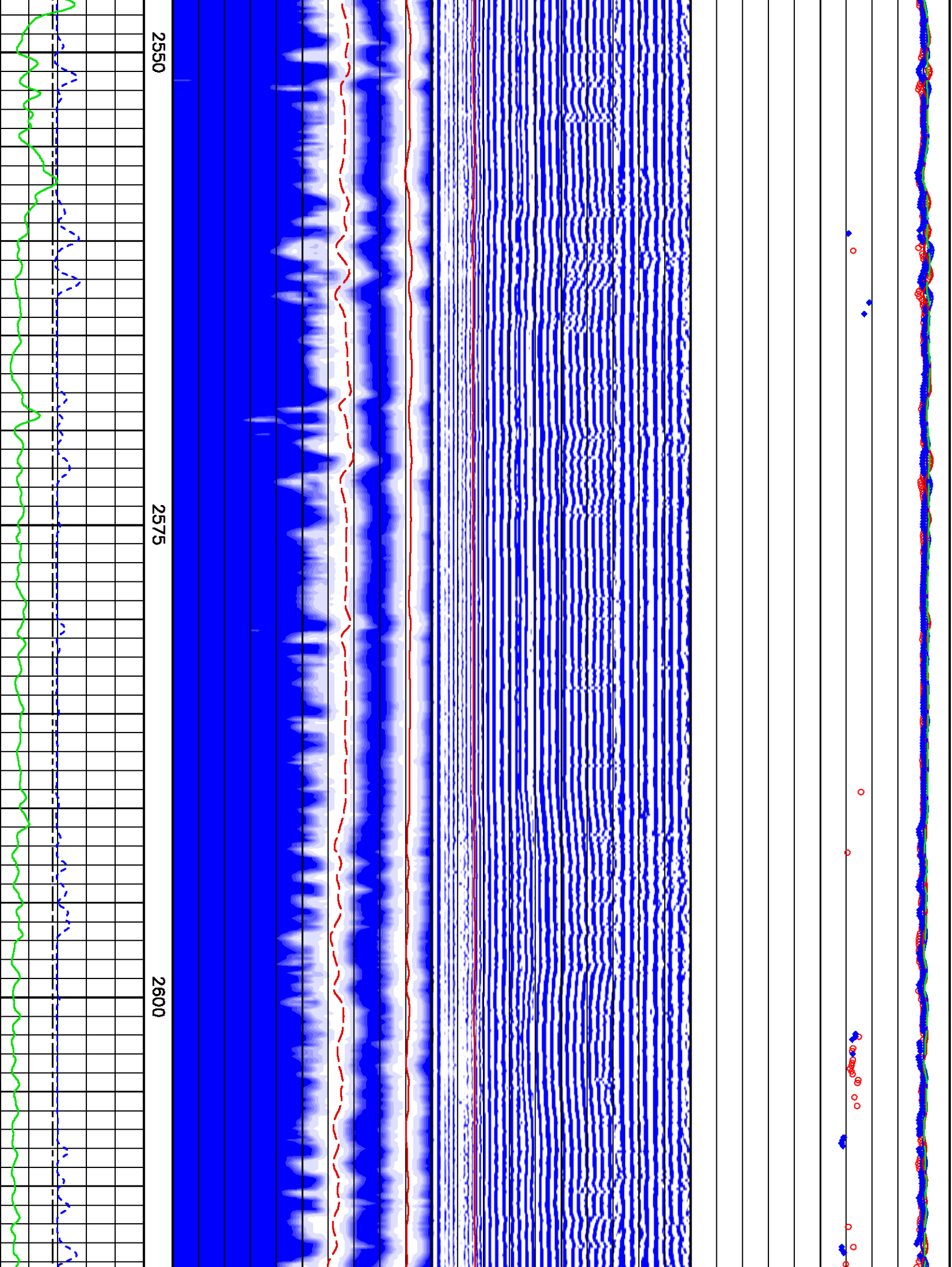


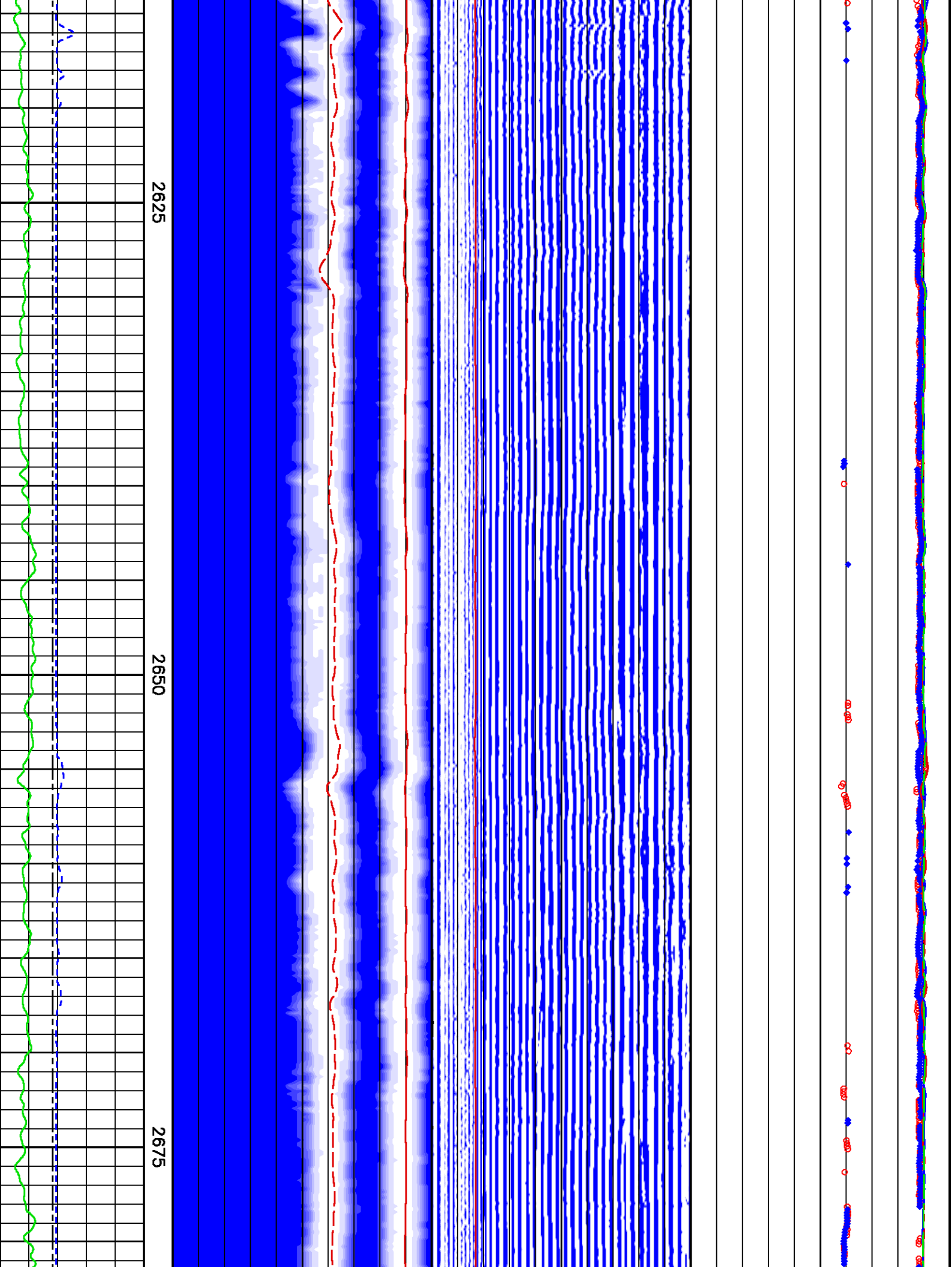




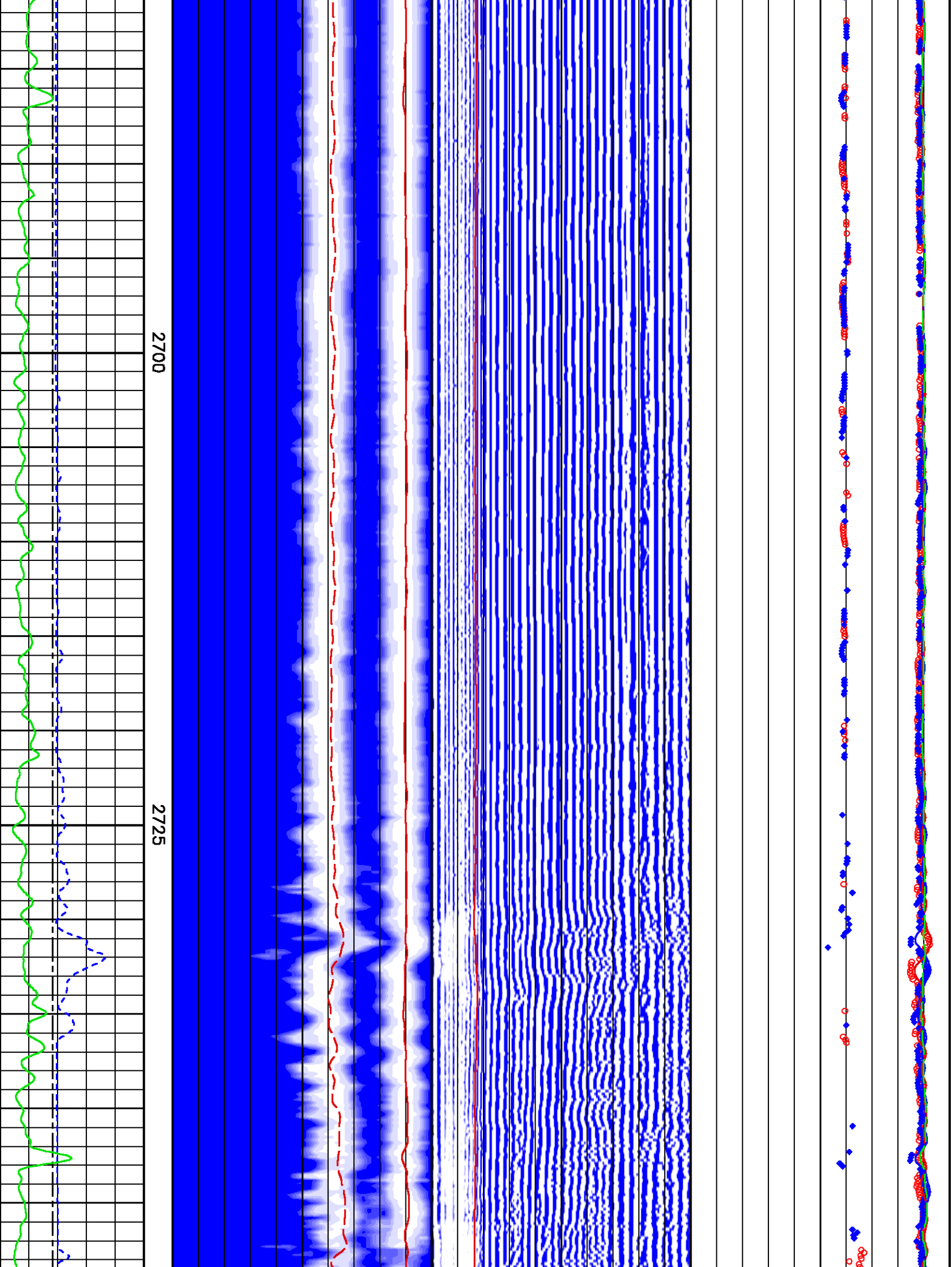


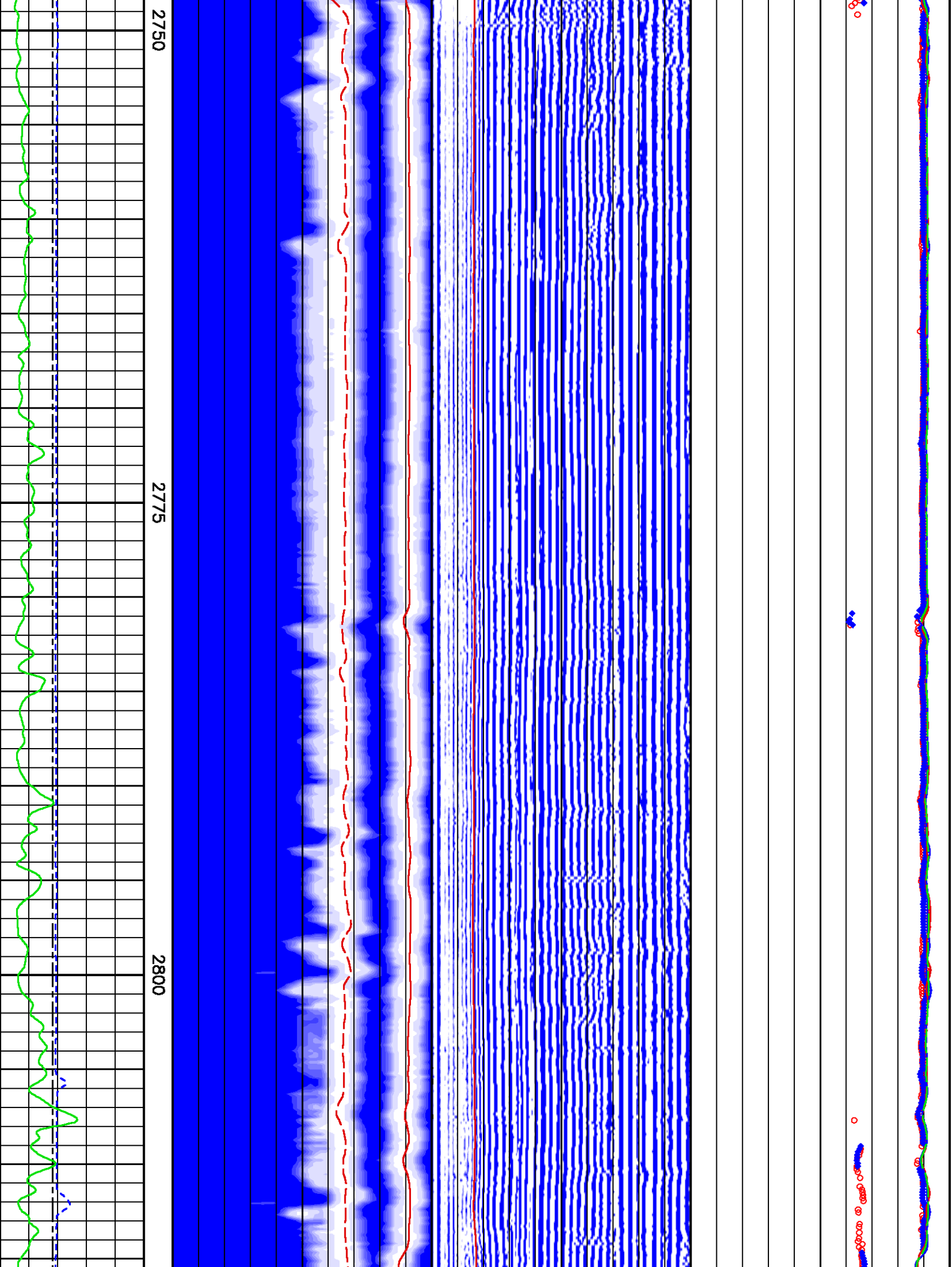




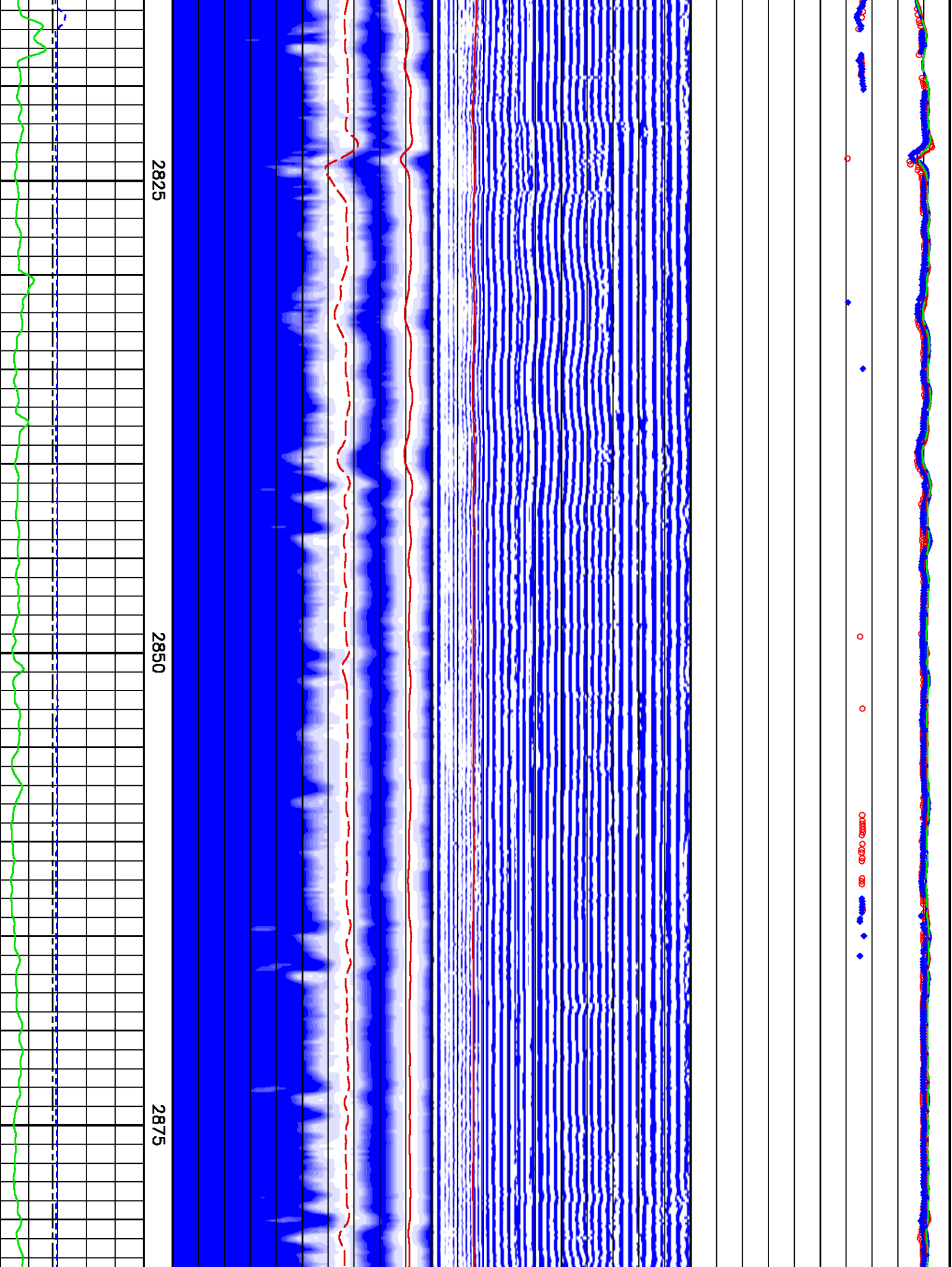


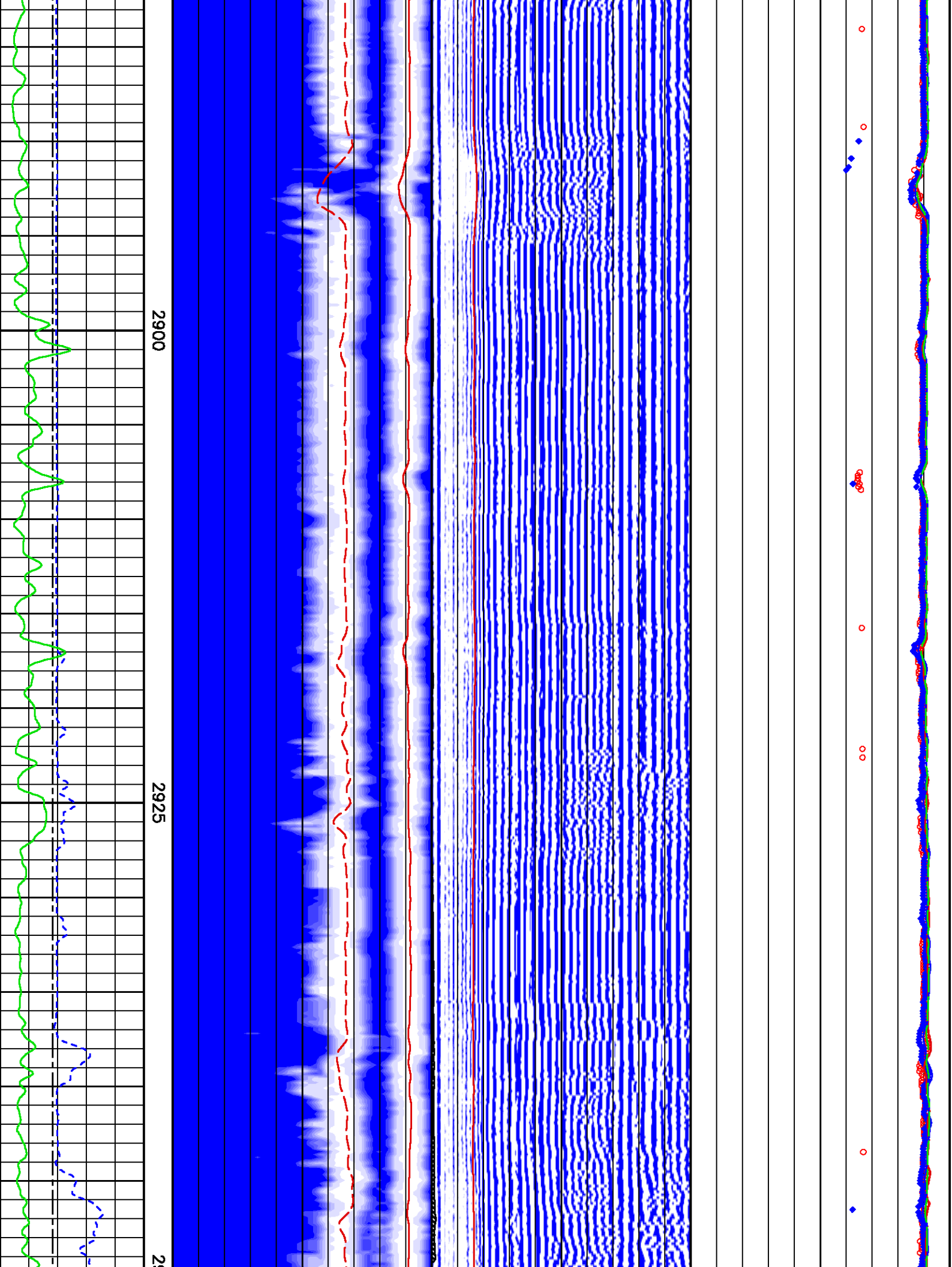


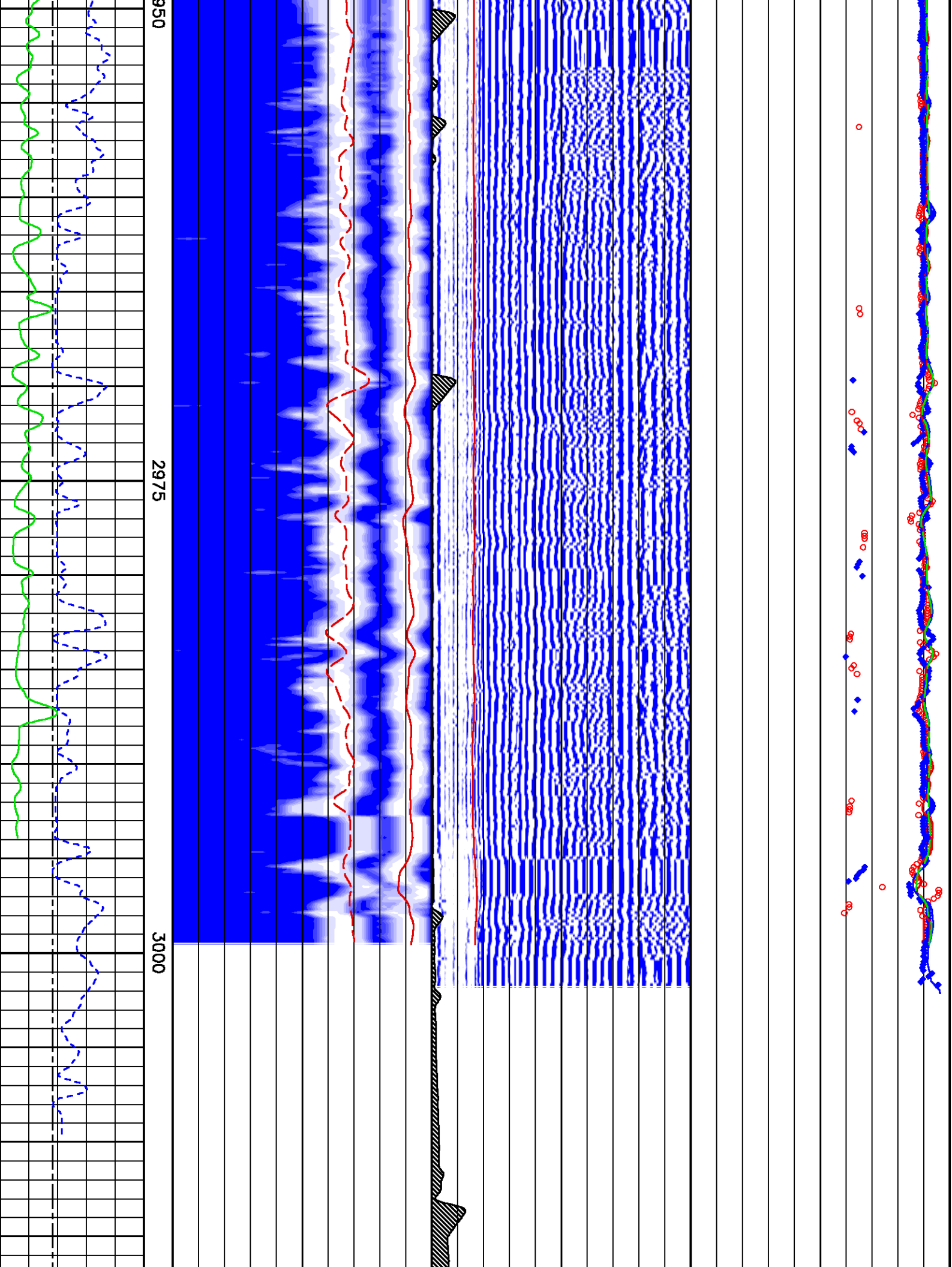


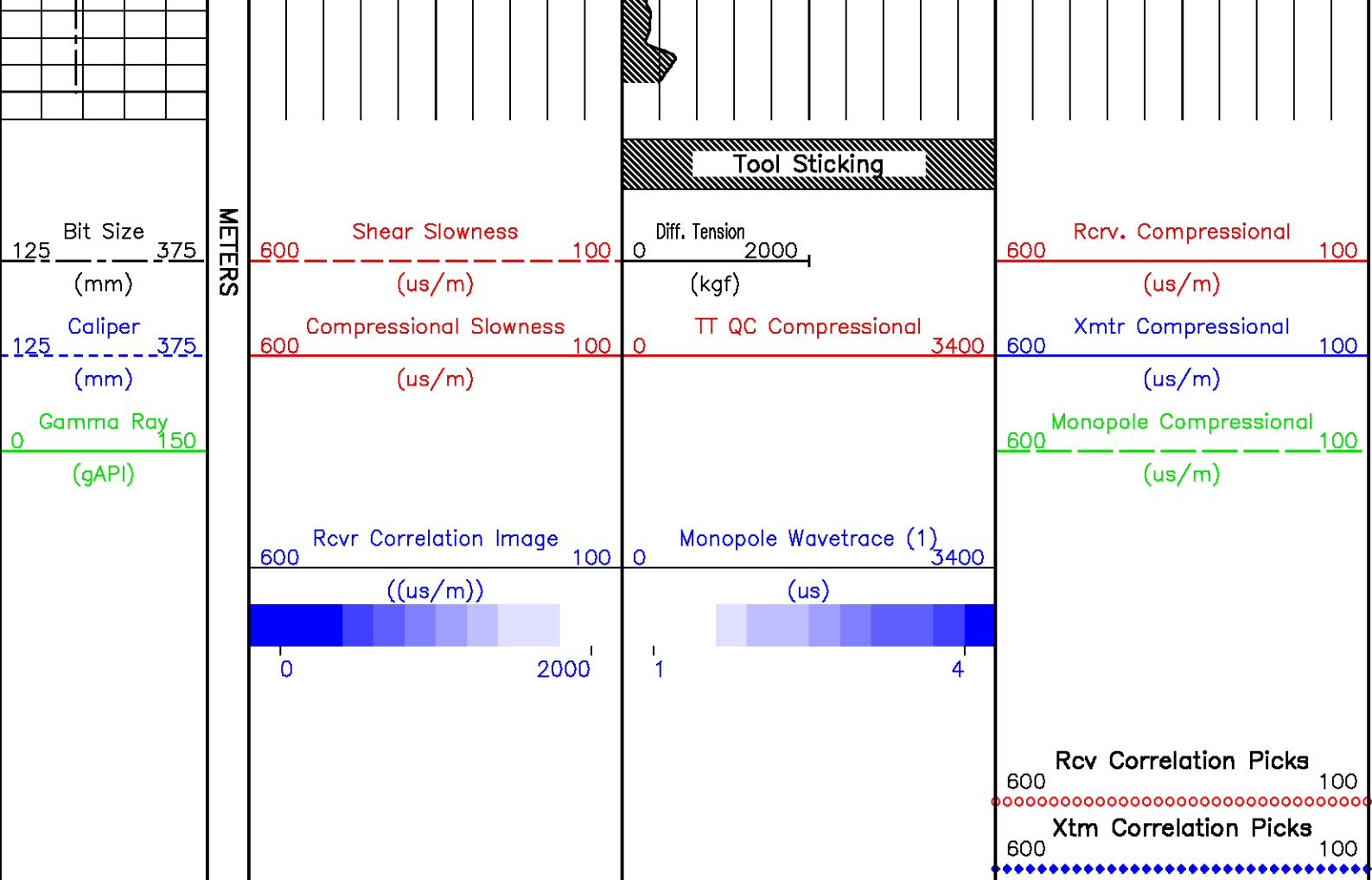












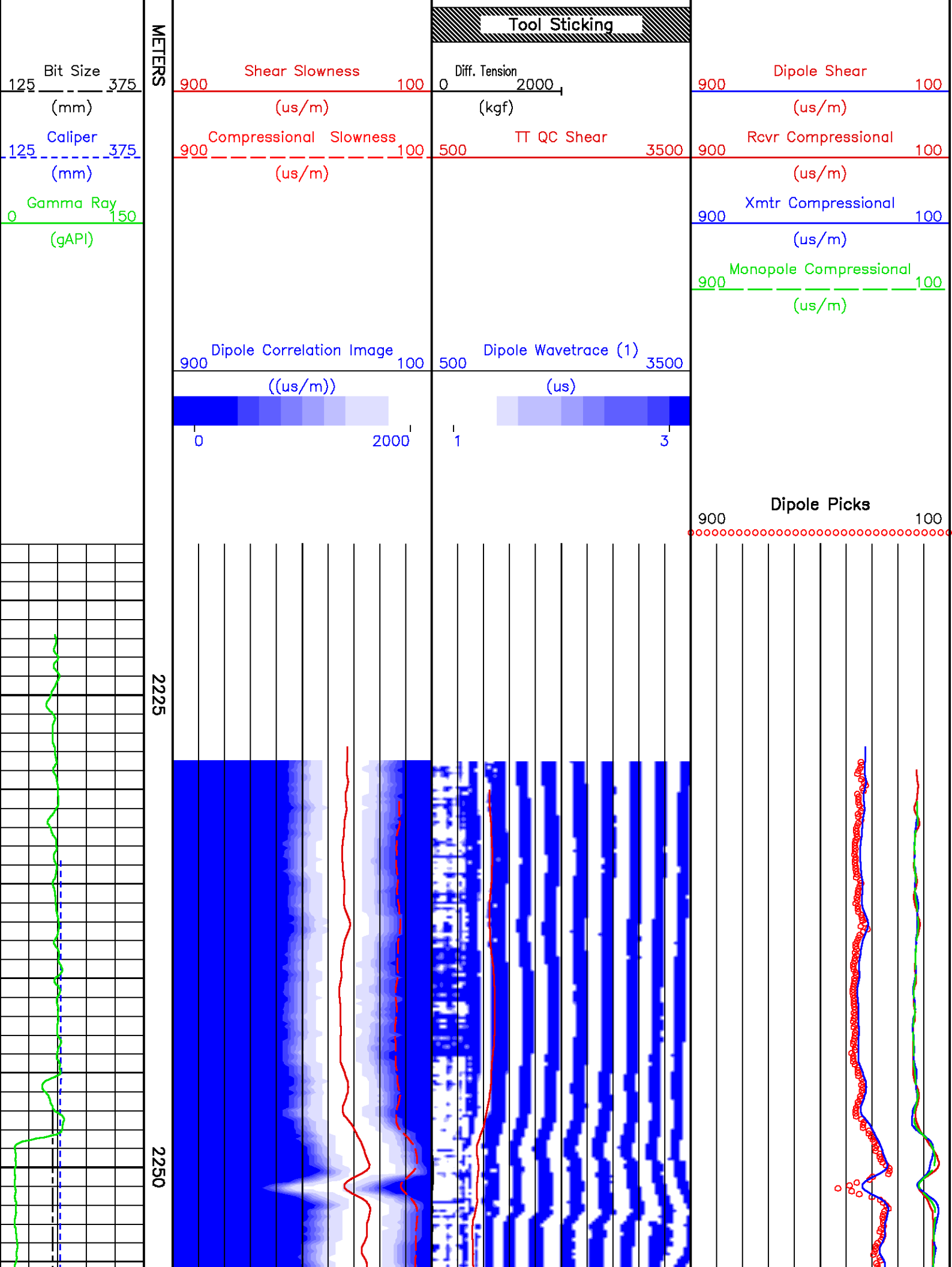
## Dipole Quality Control Plot

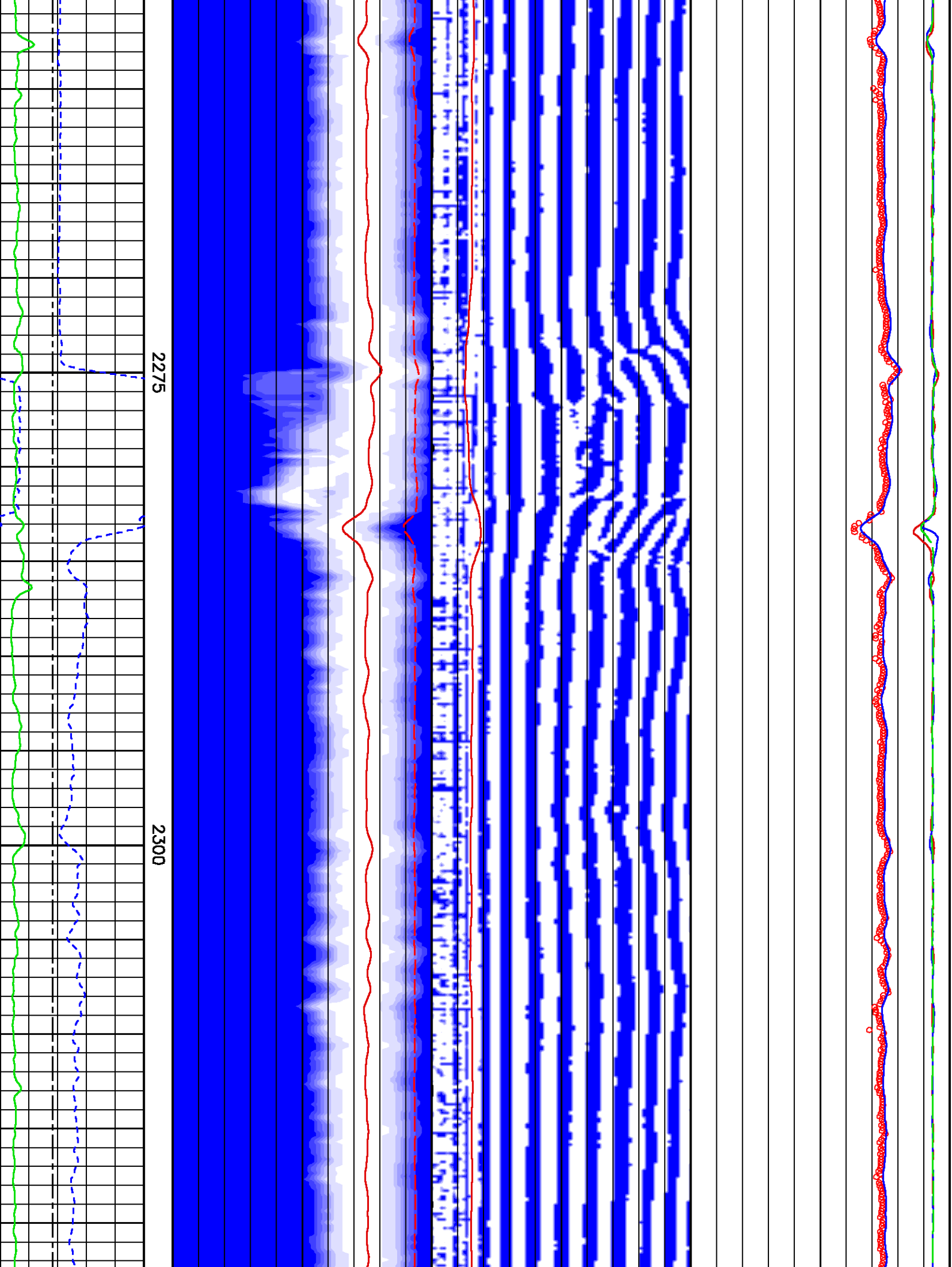
### CURVE DESCRIPTION REPORT

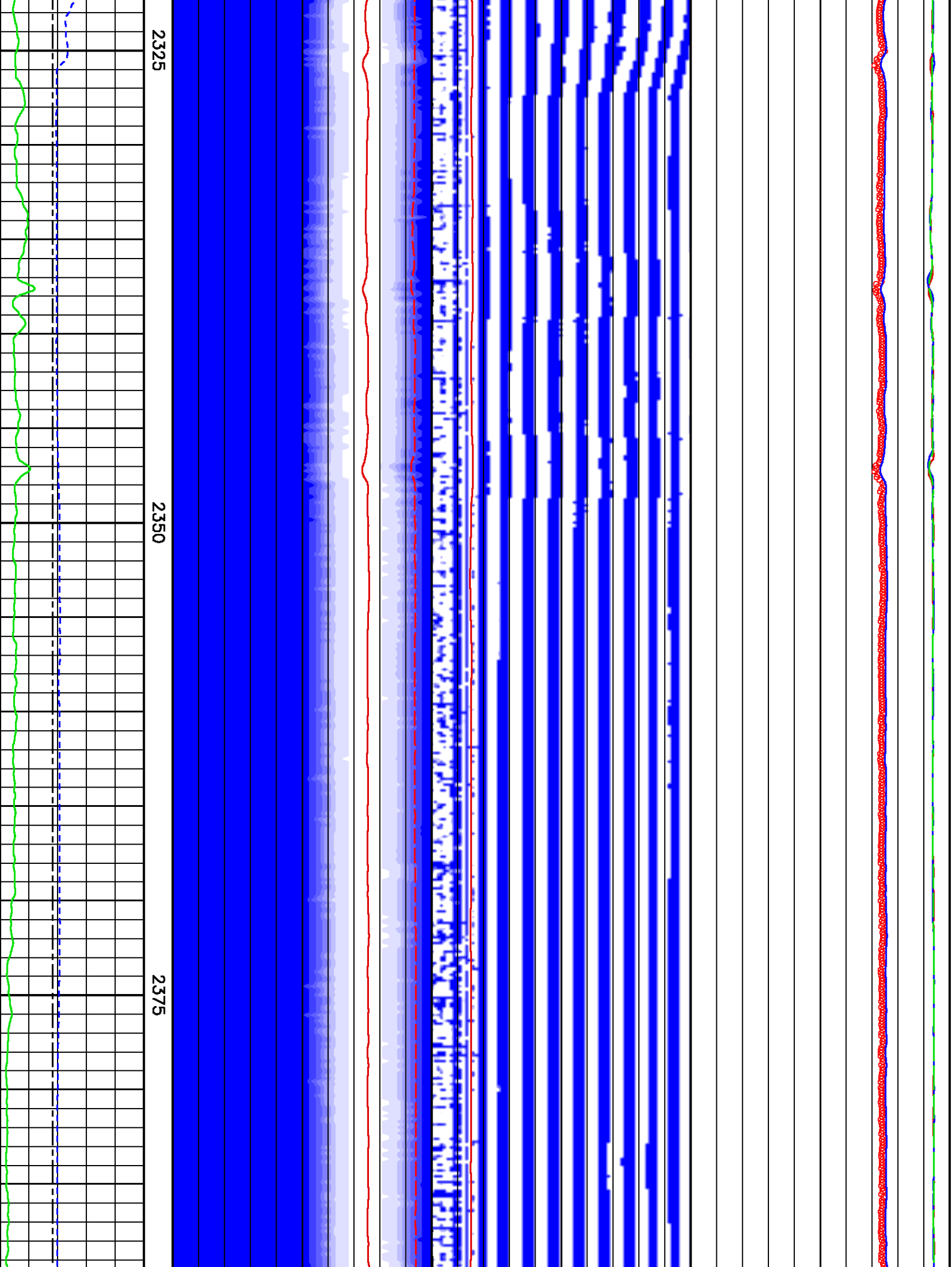
CURVE NAME	CURVE ALIAS	CREATION DATE	CURVE DESCRIPTION
F1:BIT	BIT	Nov 27 14:41:47 2010	BIT SIZE
F1:CALX	CALX	Nov 27 20:22:40 2010	CALIPER FROM X AXIS OF X-Y CALIPER(S)
F1:DTC	DTC	Nov 29 09:30:42 2010	COMPRESSIONAL WAVE SLOWNESS
F1:DTS	DTS	Nov 29 09:30:54 2010	SHEAR WAVE SLOWNESS
F1:GR	GR	Nov 27 14:41:47 2010	GAMMA RAY
F1:TEN	TEN	Nov 27 14:41:47 2010	DIFFERENTIAL TENSION
F1:TTS	TTS	Nov 29 09:31:32 2010	TRAVEL TIME ESTIMATE FAR MONOPOLE SHEAR
F1:TXXWV01	TXXWV10	Nov 27 14:41:47 2010	X-X AXIS DIPOLE MULTIPLEX WAVEFORM

Project : /data/[lanwel/209243\_nalcor\_xmac  
 User : [lanwel  
 Presentation : calsunsv3:/data/[lanwel/209243\_nalcor\_xmac/xmac.dipole.pdf [1:240 Scale]  
 Plot Interval : 2217.42 – 3020.11 Meters

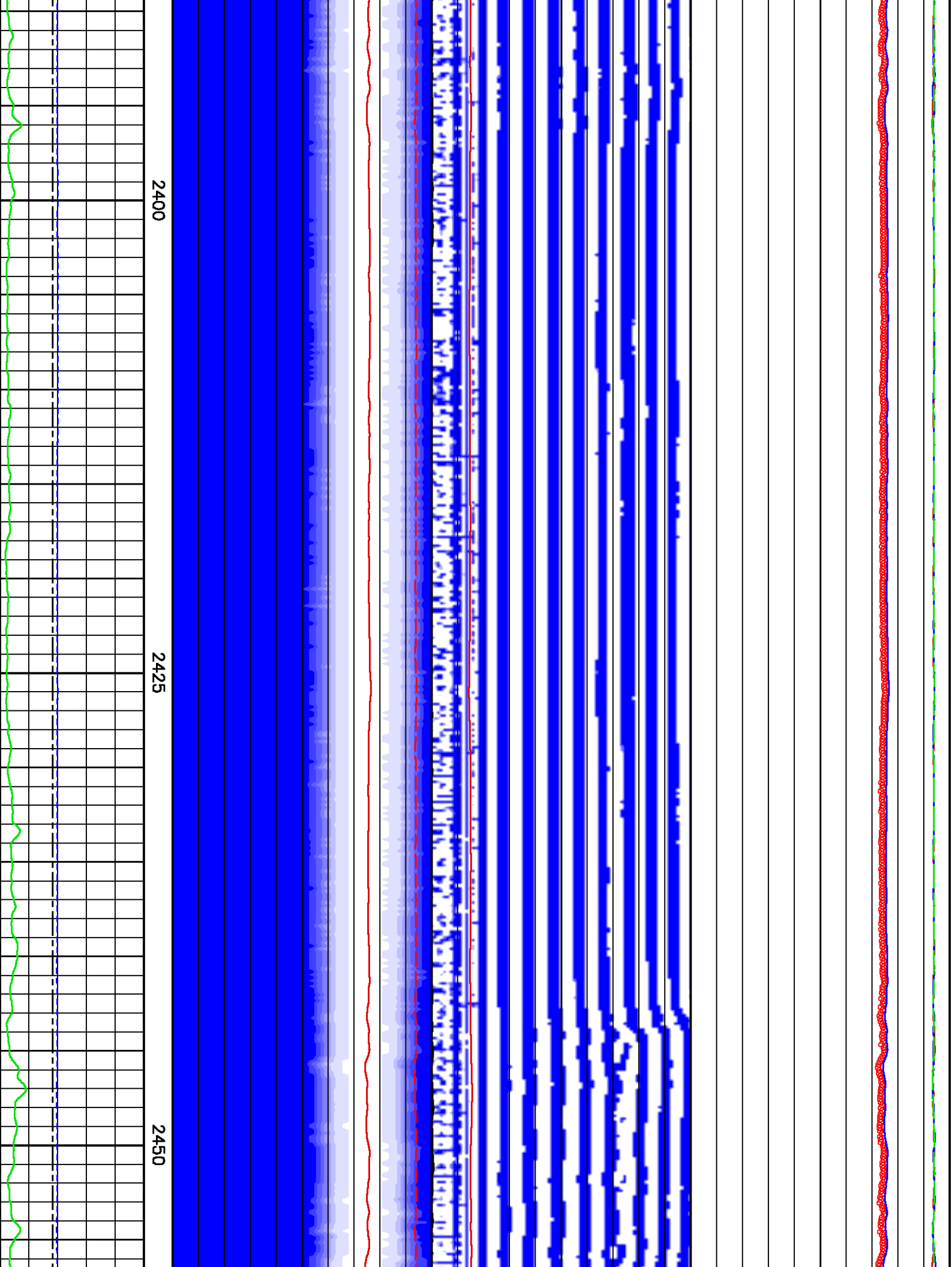
Data File 1 : F1 : calsunsv3:/export/data/[lanwel/209243\_nalcor\_xmac/slowness.xtf  
 Created On : Nov 27 14:41:47 2010  
 Company : NALCOR ENERGY  
 Well : NALCOR ET AL FINNEGAN 1  
 Field : FINNEGAN  
 File Interval : 2217.42 – 3020.11 Meters  
 Oct : m837c\_xm



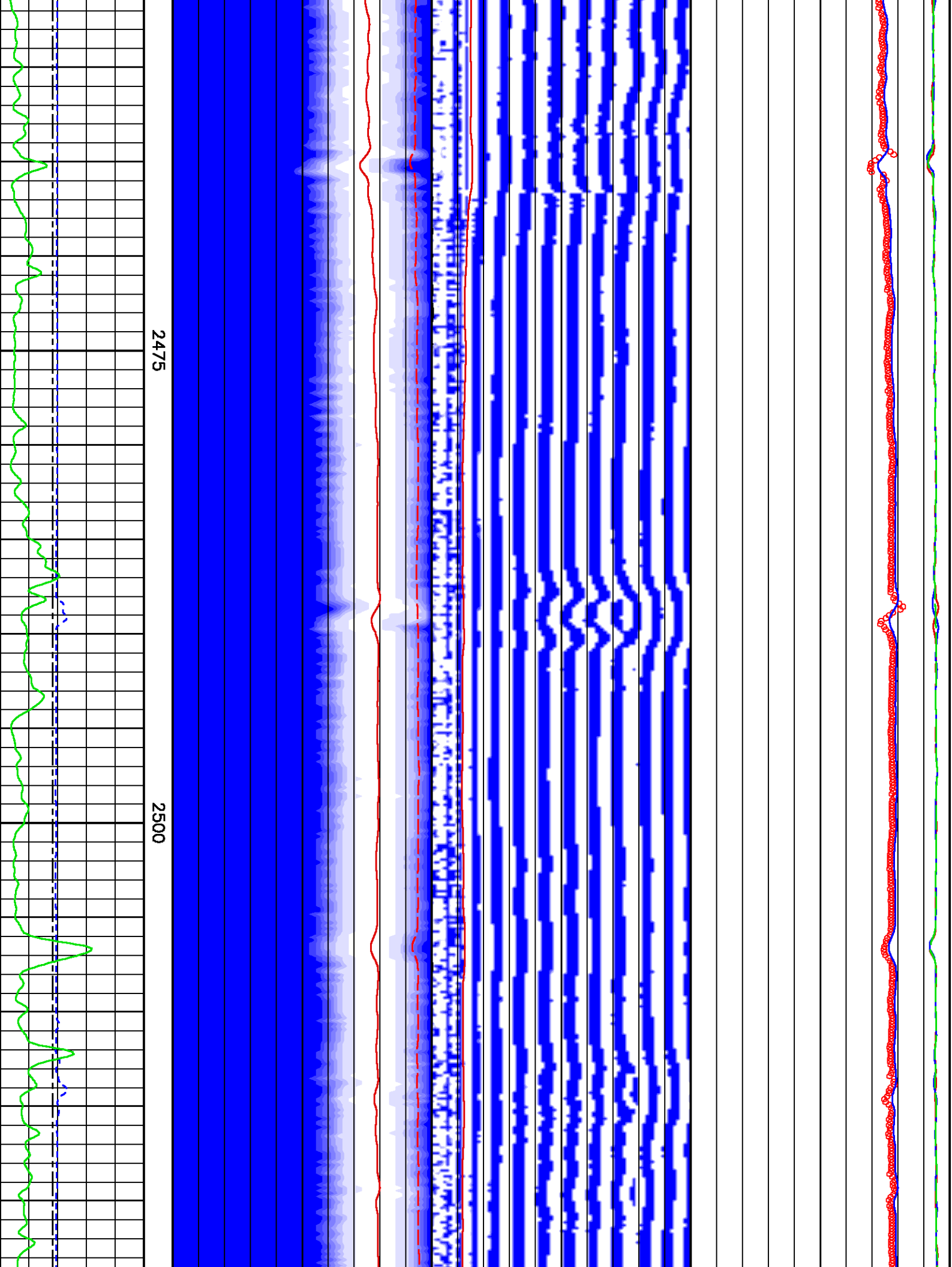


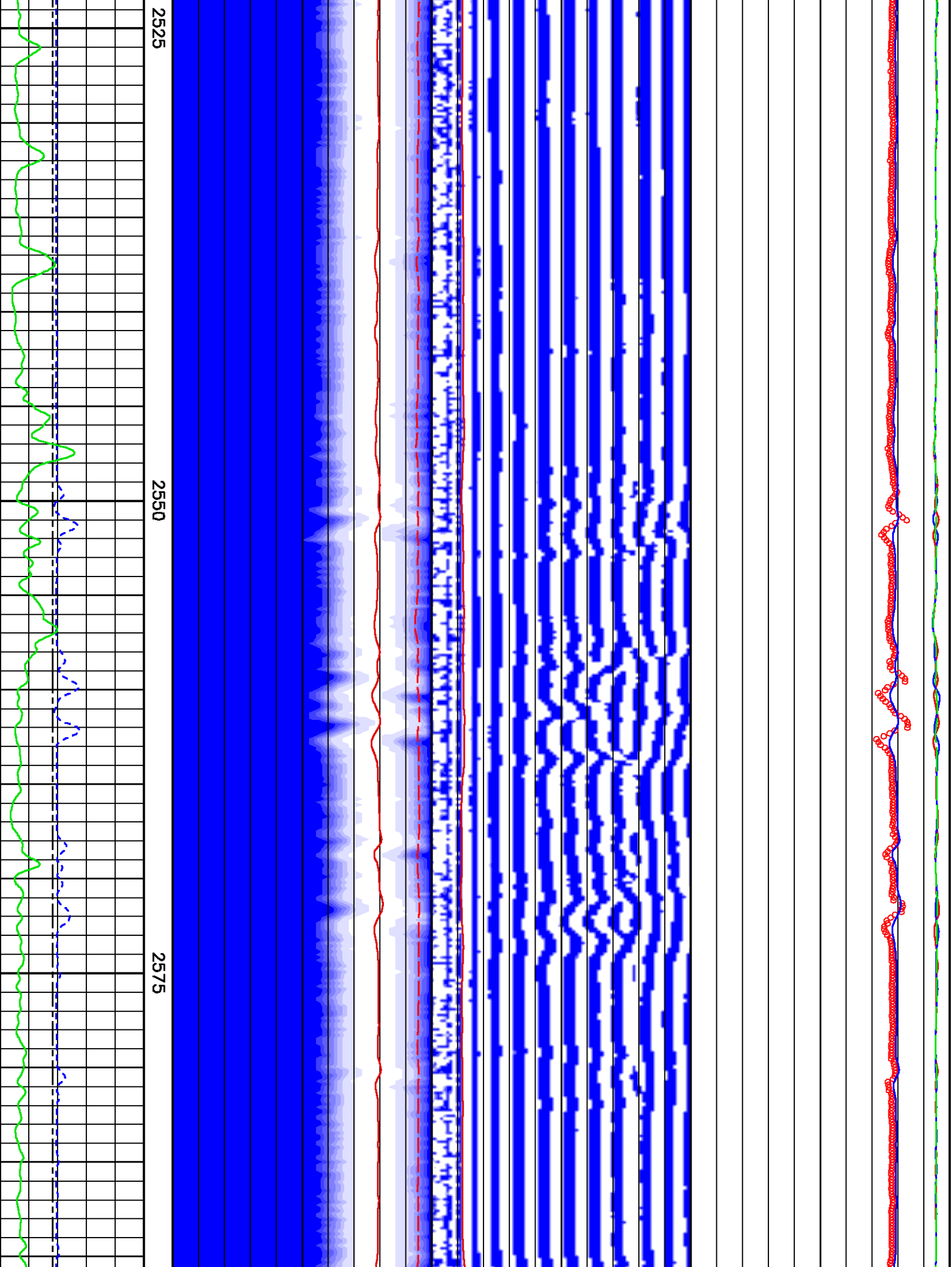


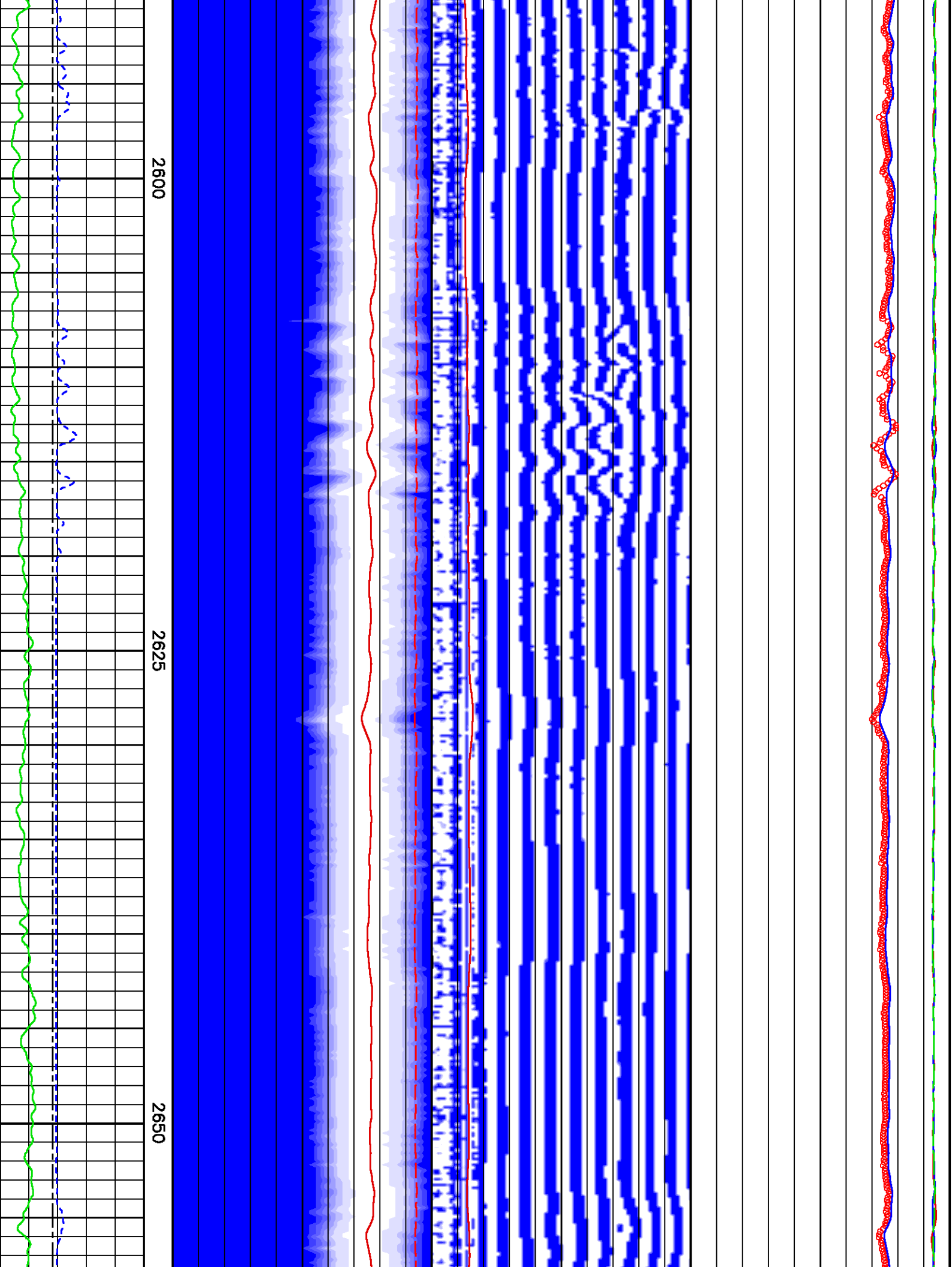


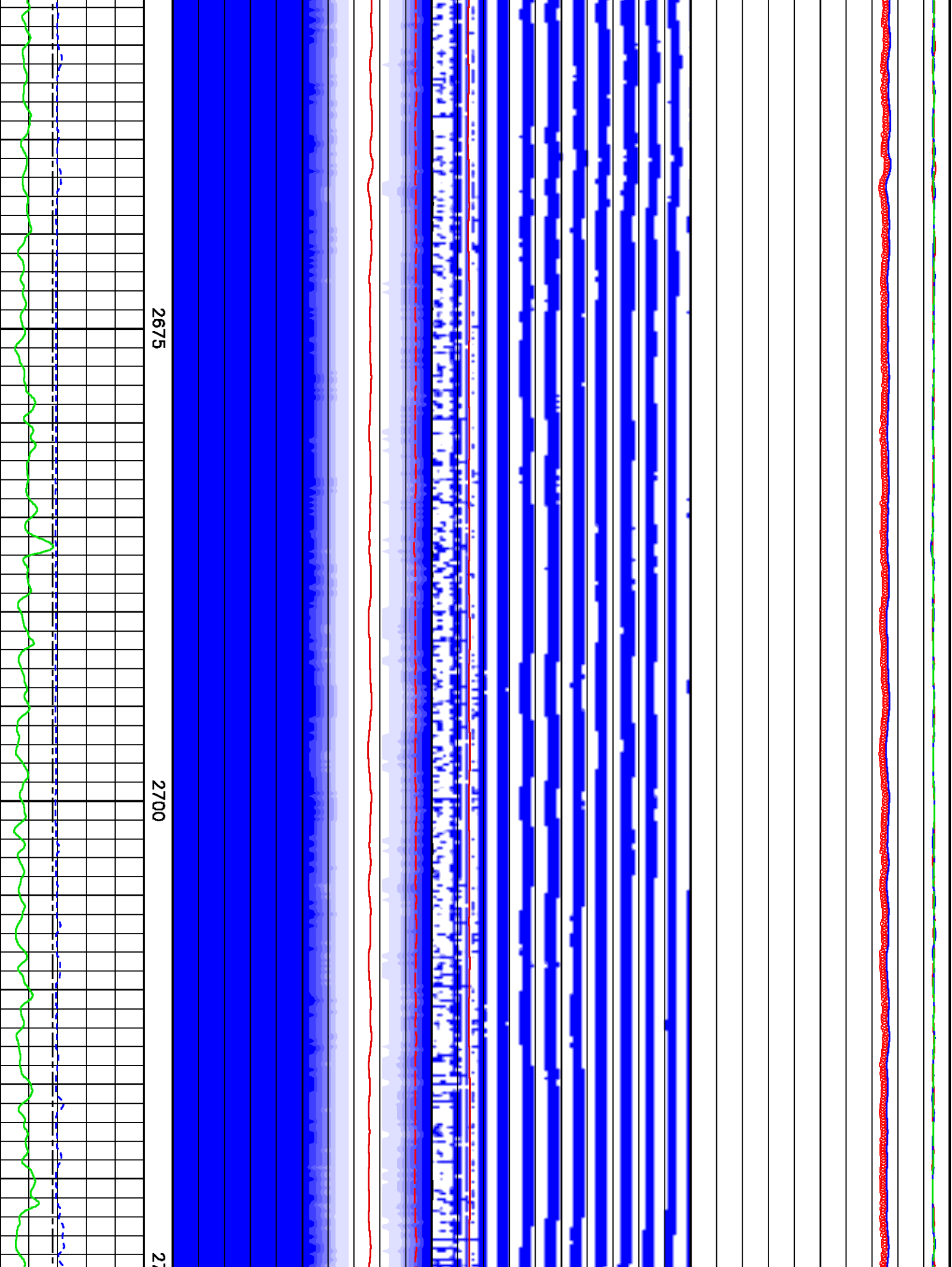


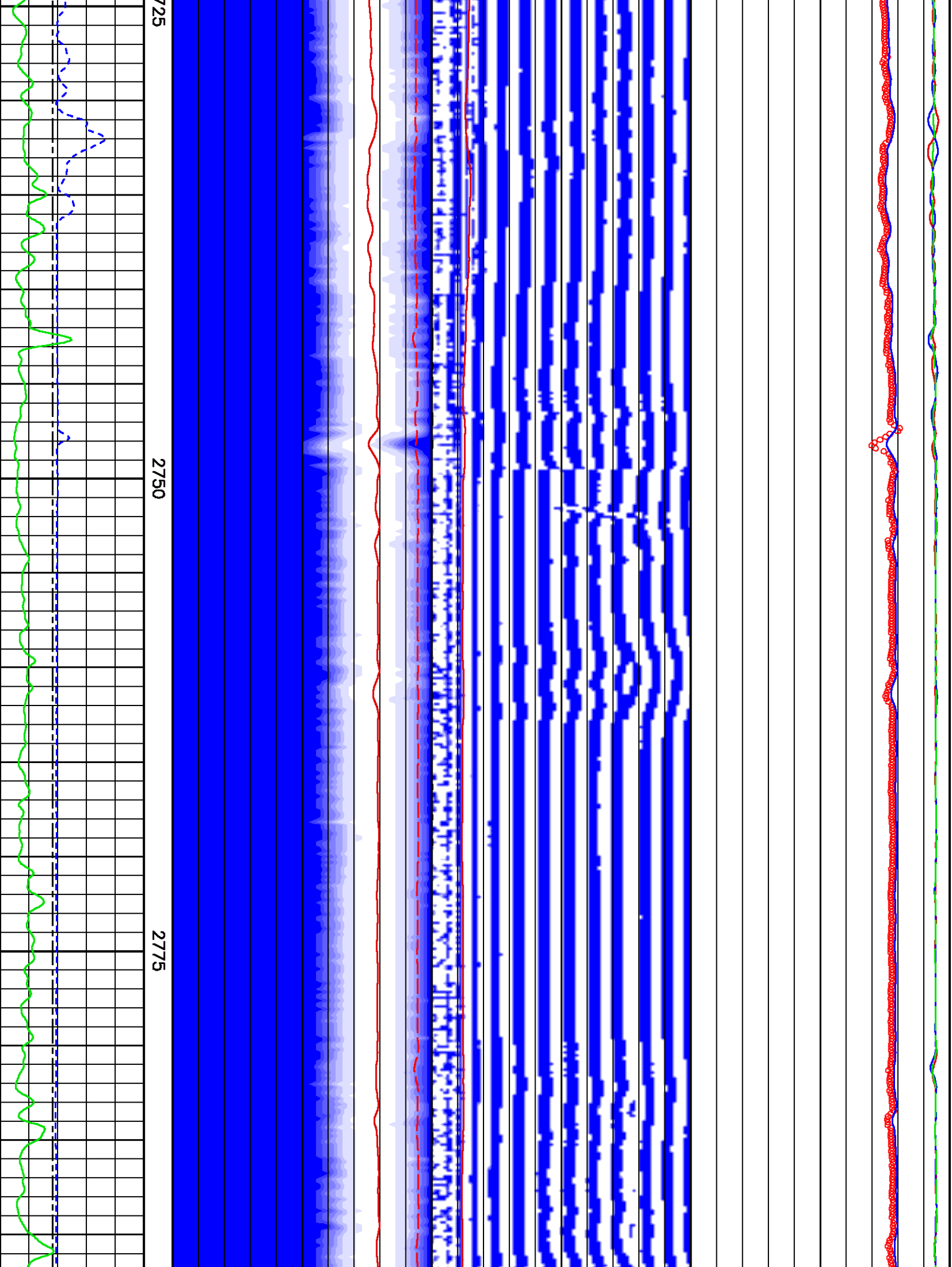


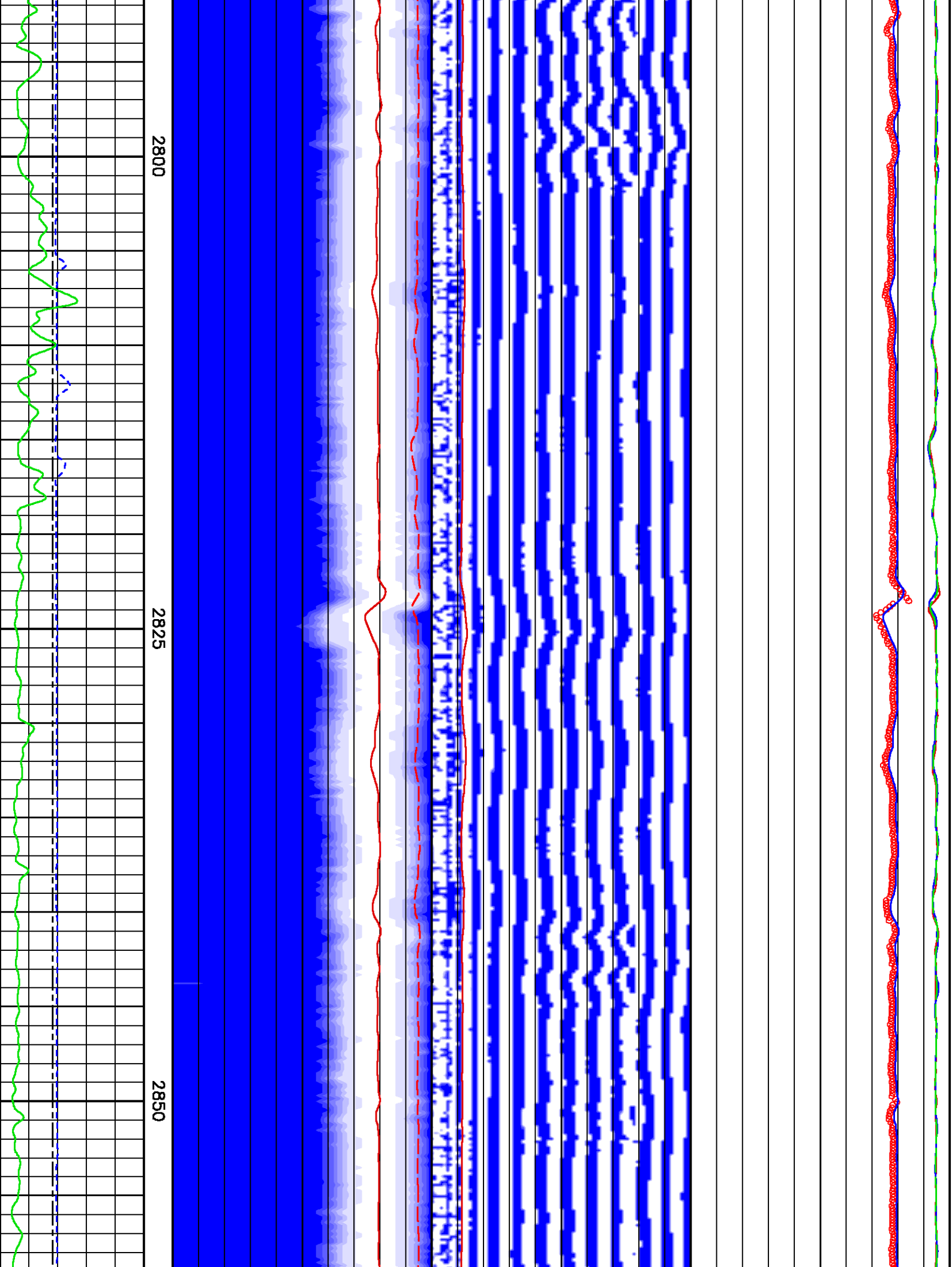


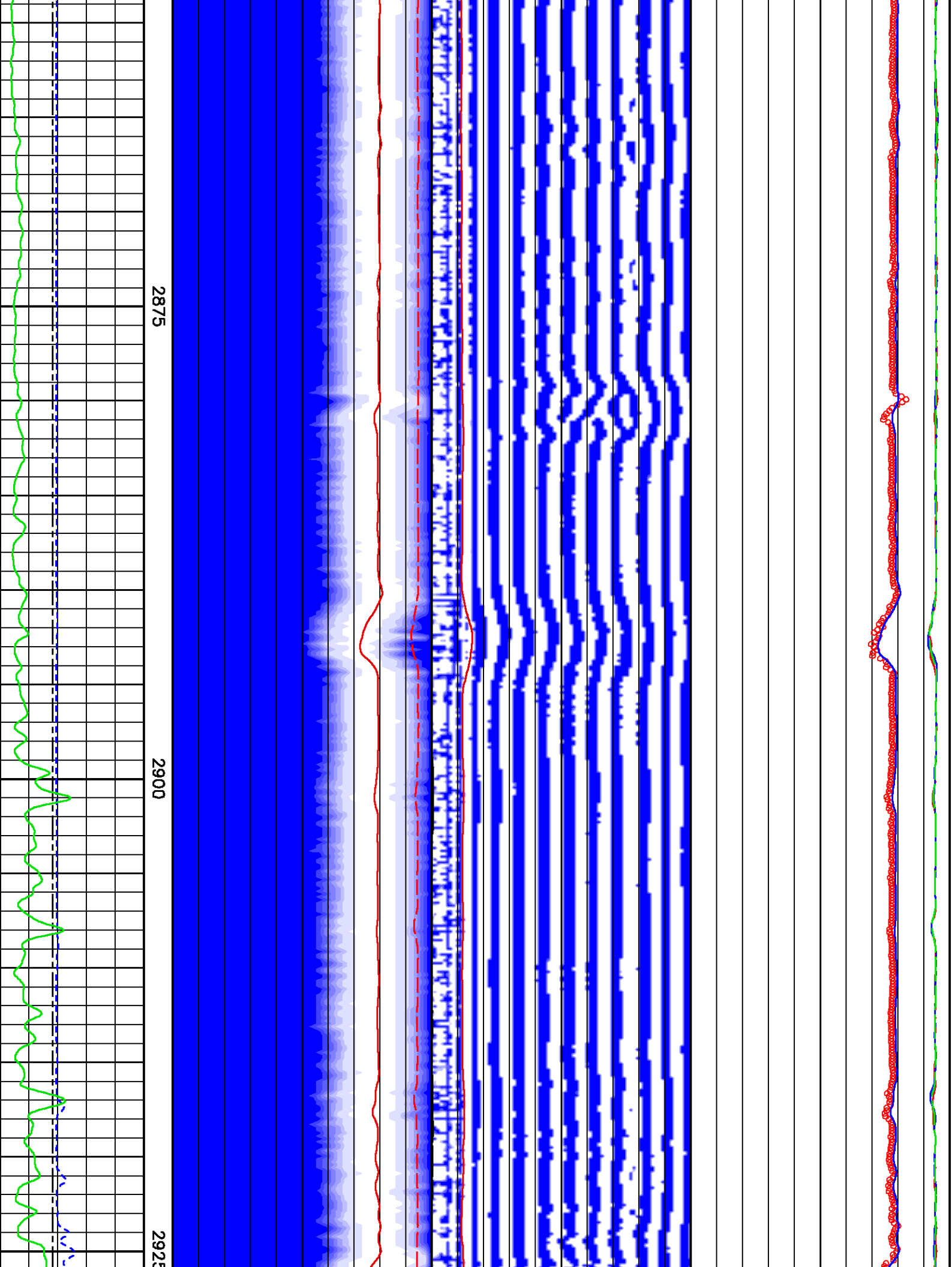


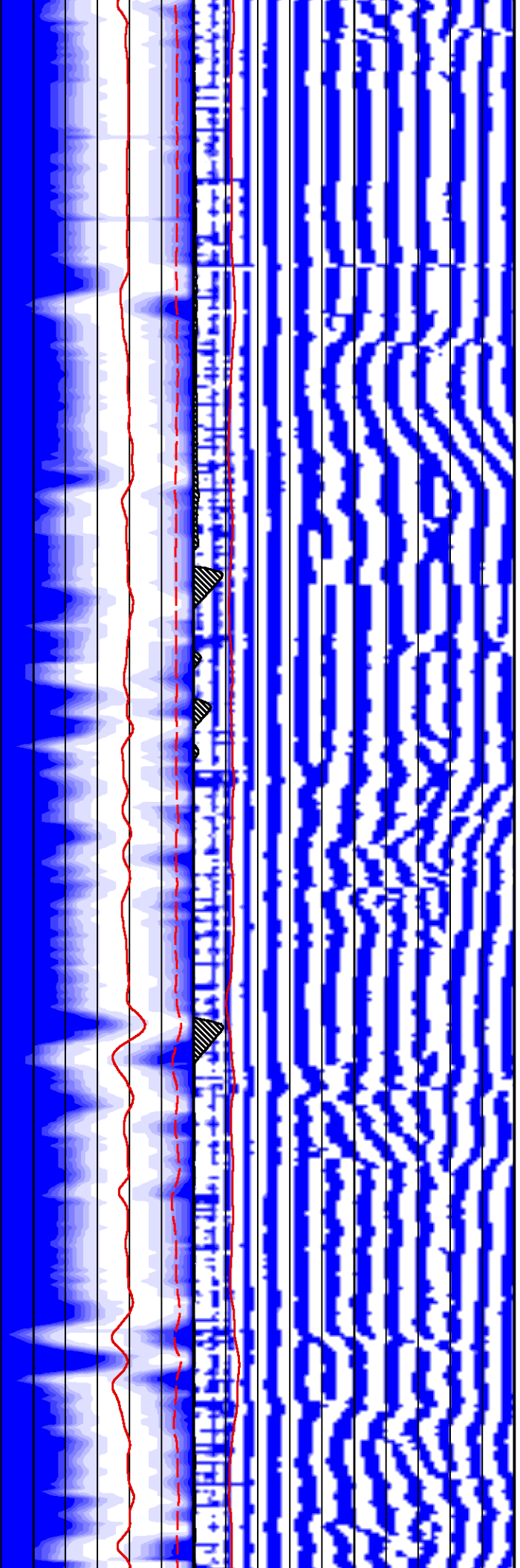
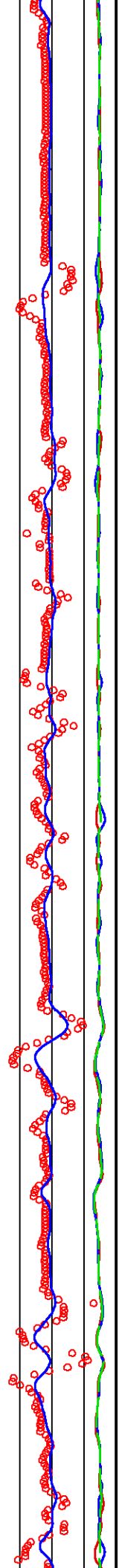




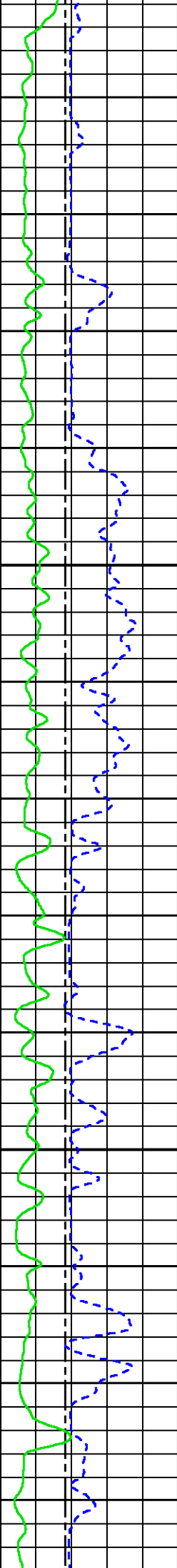




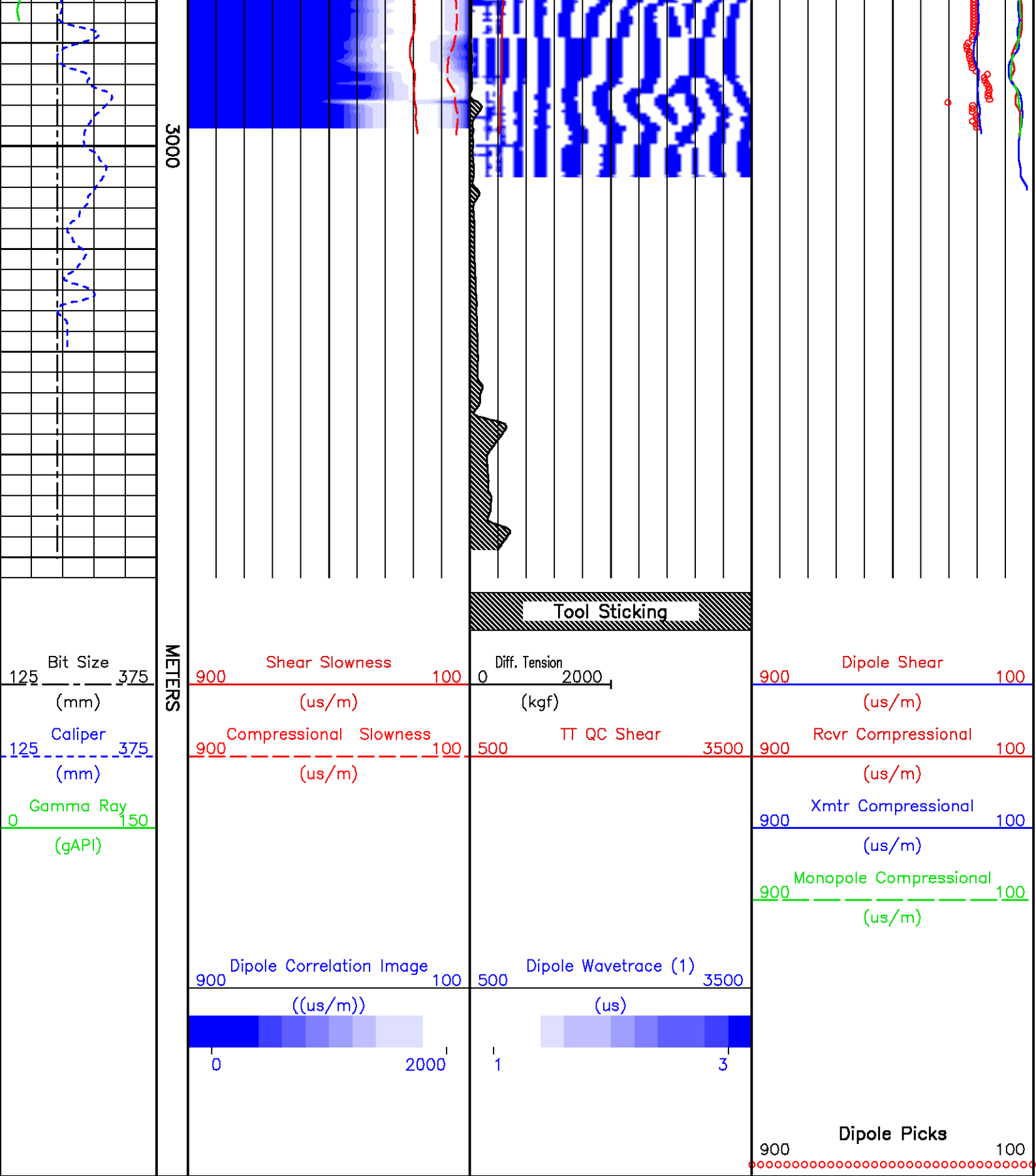





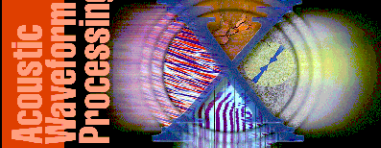
5 2950 2975







	COMPANY WELL FIELD PROVINCE	NALCOR ENERGY NALCOR ET AL FINNEGAN #1 FINNEGAN NEWFOUNDLAND AND LABRADOR	FILE NO:  API NO:  
	LOCATION:	ELEVATIONS:	



LAT 49.92 N LONG 63.33 W

KB 125.00 M	LICENSE:
DF	2010-128-04
GL 118.75 M	
DATE	27-NOV-2010