



**HIGH DEFINITION INDUCTION LOG<sup>SM</sup>**  
**COMPENSATED Z-DENS LOG<sup>SM</sup>**  
**GAMMA RAY LOG**  
**CALIPER LOG**

FILE NO: 94534	COMPANY LARAMIE ENERGY
API NO: 05-077-10223-00	WELL PICEANCE 28-12M
	FIELD VEGA
	COUNTY MESA
	STATE COLORADO
Ver. 4.01	LOCATION: SHL: 2505' FSL & 1616' FWL N/ESW BHL: 2373' FSL & 2583' FWL
	SEC 28 TWP 9S RGE 93W
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	OTHER SERVICES BHP
G.L. ELEVATION 7580 FT K.B. 22 FT ABOVE P.D. K.B.	ELEVATIONS: KB 7602 FT DF GL 7580 FT

DATE	15-Mar-2015
RUN	TRIP 1
SERVICE ORDER	US094534J
DEPTH DRILLER	8040 FT
DEPTH LOGGER	8036 FT
BOTTOM LOGGED INTERVAL	8033 FT
TOP LOGGED INTERVAL	0 FT
CASING DRILLER	8.625 IN @ 1561 FT
CASING LOGGER	1561 FT
BIT SIZE	7.875 IN
TYPE OF FLUID IN HOLE	LSND
DENSITY	9.8 LB/G 69 CP
PH	9.3 8.0 C3
SOURCE OF SAMPLE	FLOWLINE
RM AT MEAS. TEMP.	1.80 OHMM @ 69 DEGF
RMF AT MEAS. TEMP.	1.48 OHMM @ 70 DEGF
RMC AT MEAS. TEMP.	2.09 OHMM @ 70 DEGF
SOURCE OF RMF	RMC MEASURED
RM AT BHT	0.66 OHMM @ 201 DEGF
TIME SINCE CIRCULATION	6 HOURS
MAX. RECORDED TEMP.	201 DEGF
EQUIP. NO.	HL-6685
RECORDED BY	VERCIMA
WITNESSED BY	MATT SETTLES

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE 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
7.875 IN	1561 FT	8040 FT

**CASING RECORD**

SIZE	WEIGHT	GRADE	FROM	TO
8.625 IN	24 LB/F		0 FT	1561 FT

**REMARKS**

RUN 1 TRIP 1: HDIL-ZDL=-CN-GR RAN IN COMBINATION

CVOL COMPUTED USING 4.5" CASING (BVOL, CVOL UNITS IN CUBIC FEET)

CALIPER VERIFIED IN CASING

RHO M = 2.68 G/CC RHO F = 1.0 G/CC  
MATRIX = SANDSTONE

TOOL STRING RAN WITH 1.5" HDIL STANDOFFS AND CN DECENTRALIZER

THANKS FOR USING BAKER HUGHES WIRELINE  
CREW: COATE / PRICE  
RIG: PATTERSON 306

## EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	SWVL	3950XA	10119949	FREE
1	1	TTMA	3980XA	10120299	FREE
1	1	FOC TEL	3518FB	10137522	FREE
1	1	GR	3518EB	10139870	DECENTRALIZED
1	1	CN	2436XA	10137930	DECENTRALIZED
1	1	ZDL	2223XA	10102922	PAD DEVICE / DECENT
1	1	KNCL	3930XA/3930XA	10087279/10139400	FREE
1	1	HDIL	1530XA	10118612	1.5" S.O.

## RESISTIVITY LOG 2"/100FT SCALE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1 Patches: 6

Plotted: Sun Mar 15 17:48:09 2015

## PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/94534/n970b104.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 19.682 ft BOTTOM DEPTH: 8054.503 ft

## SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER ()	medium (1)		TOP	BOTTOM
CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
SP-SPDH	FILTER ()	medium (1)		"	"

## BOREHOLE &amp; CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
BIT SIZE	BIT SIZE	7.875	in	TOP	BOTTOM
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (mbh*)	7.875	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	69.0	degF	"	"
	MUD SAMPLE RES	1.800	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	190.0	degF	"	"
	at BH REF DEPTH	8040.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"

## ACCELERATION PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

## HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

# CURVE DESCRIPTION REPORT

CURVE NAME    CREATION DATE    CURVE DESCRIPTION

F1:GR	Mar 15 15:08:14 2015	GAMMA RAY
F1:M0C6	Mar 15 15:08:14 2015	FOCUSED CONDUCTIVITY, 60-INCH DOI
F1:M0R2	Mar 15 15:08:14 2015	TRUE FOCUSED RESISTIVITY FOR HDIL, 20-INCH DOI
F1:M0R6	Mar 15 15:08:14 2015	TRUE FOCUSED RESISTIVITY FOR HDIL, 60-INCH DOI
F1:SP	Mar 15 15:08:14 2015	SPONTANEOUS POTENTIAL
F1:TEN	Mar 15 15:08:14 2015	DIFFERENTIAL TENSION

## CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
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GR	35.00	M0R2	2.75	SP	1.25		
M0C6	2.75	M0R6	2.75	TEN	0.00		

Presentation : cas6685:/dat1a/94534/RES\_2IN.fvpdf [2"/100" Scale]  
 Plot Interval : 0 - 8051 Feet

Data File 1 : F1 : cas6685:/dat1a/94534/MAIN.xtf  
 Created On : Mar 15 15:08:14 2015  
 Company : LARAMIE ENERGY  
 Well : PICEANCE 28-12M  
 Field : VEGA  
 File Interval : -16.75 - 8149 Feet  
 OCT : n970b1

GR BACKUP

GAMMA RAY [gr]

0 200

SP [sp]

-200 50

FEET

0

100

200

TOOL STICKING

DEEP [m0r6]

0 100

SHALLOW [m0r2]

0 100 500

AMPLIFIED SHALLOW [m0r2]

0 20

OVERRANGE DEEP [m0r6]

100 1000

OVERRANGE SHALLOW [m0r2]

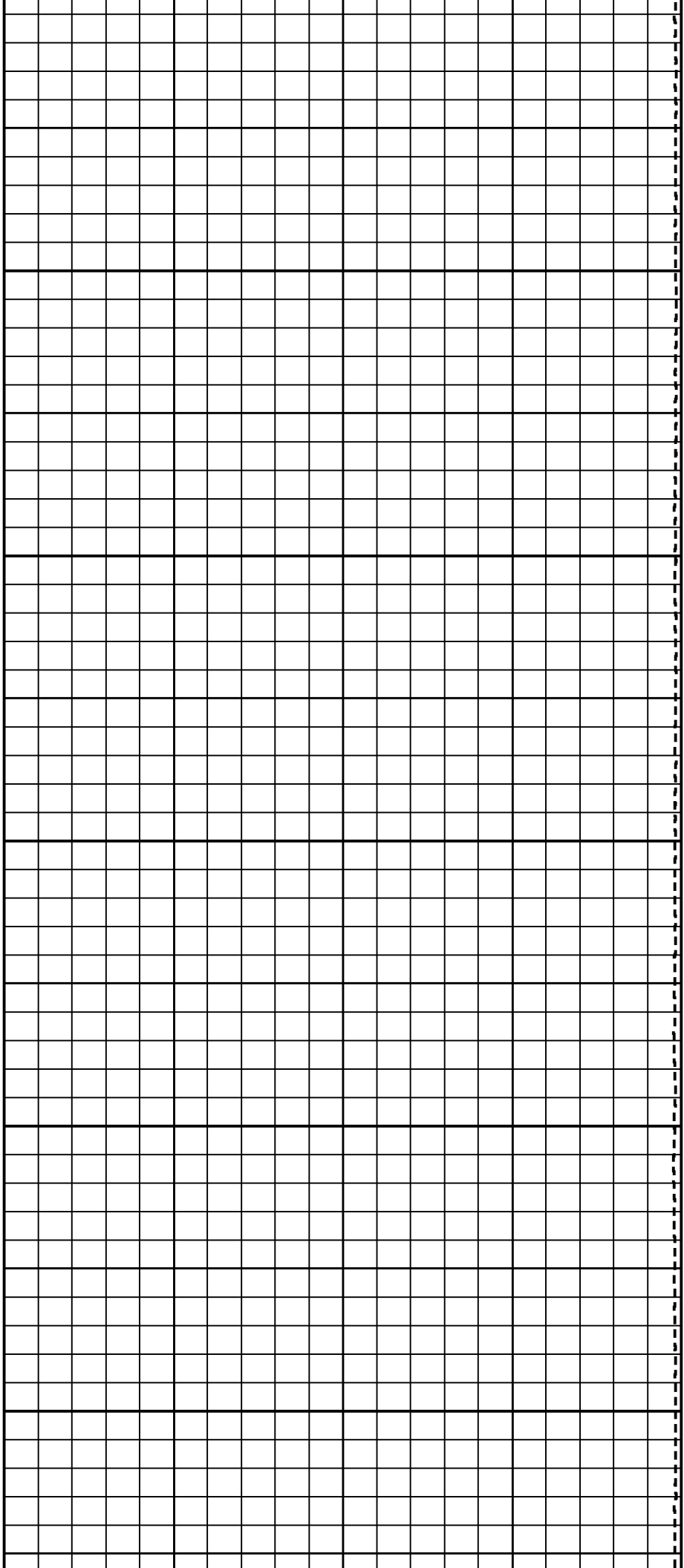
100 1000

DIFF. TENSION [ten]

4750 -250

60 in. DOI [m0c6]

0



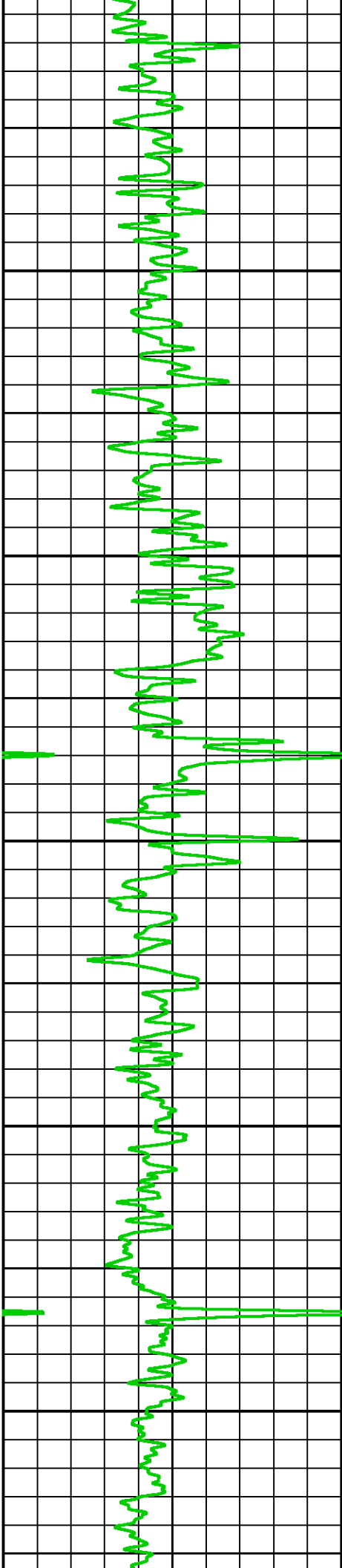
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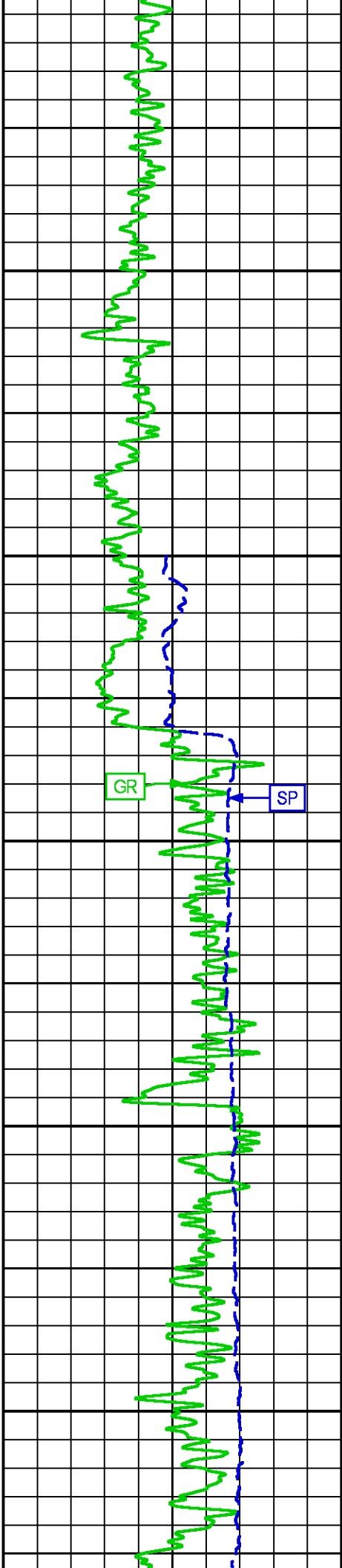
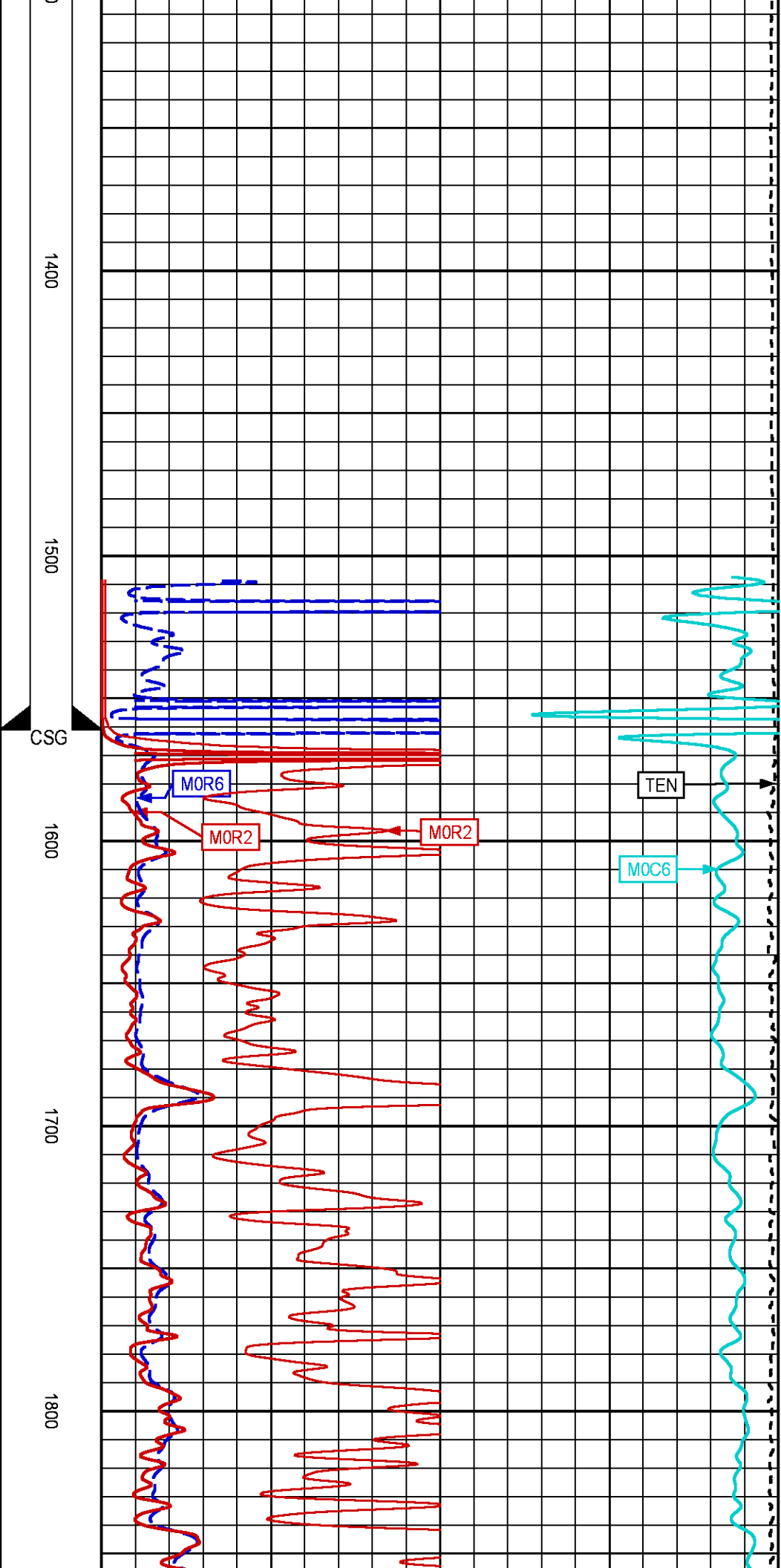
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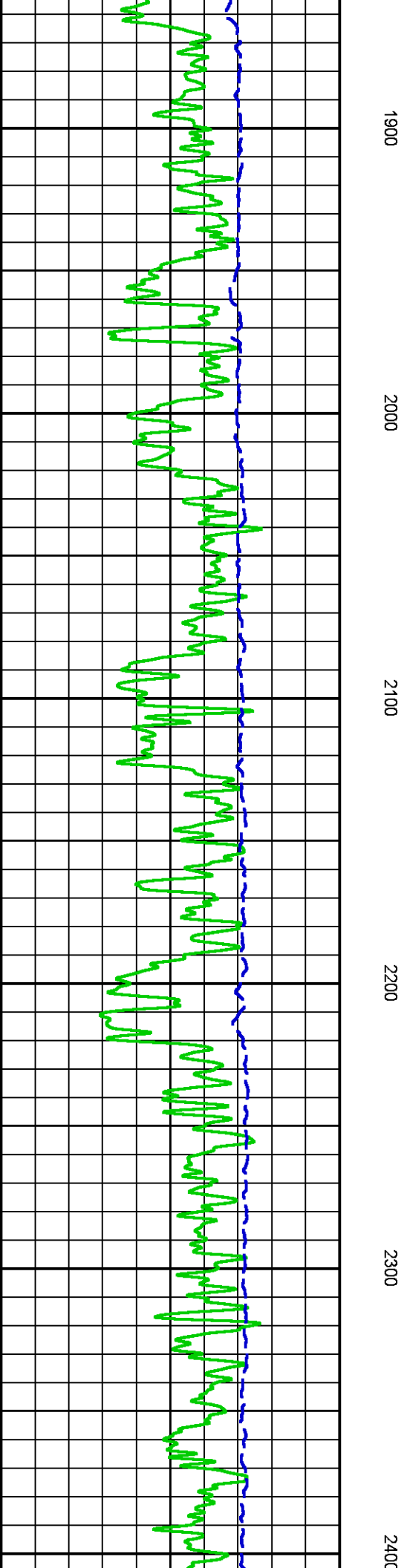
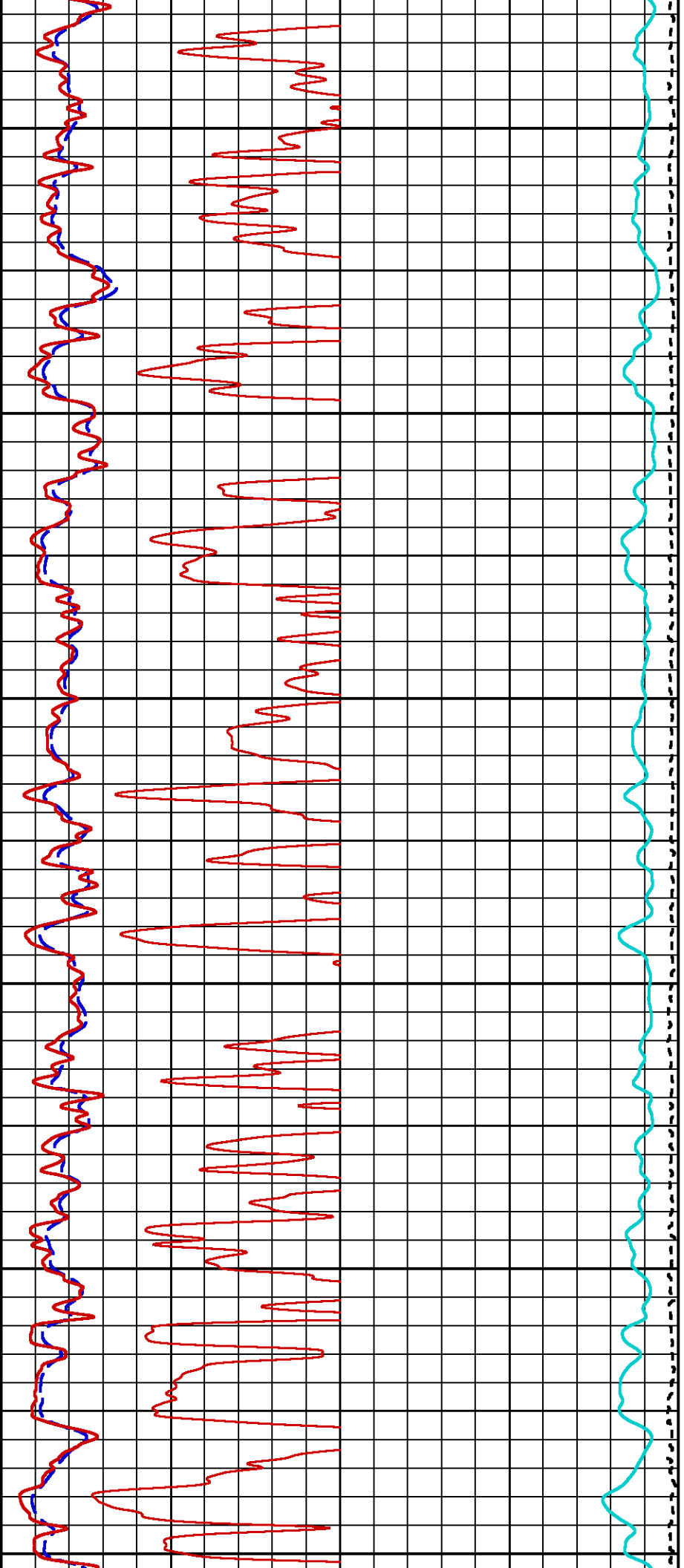
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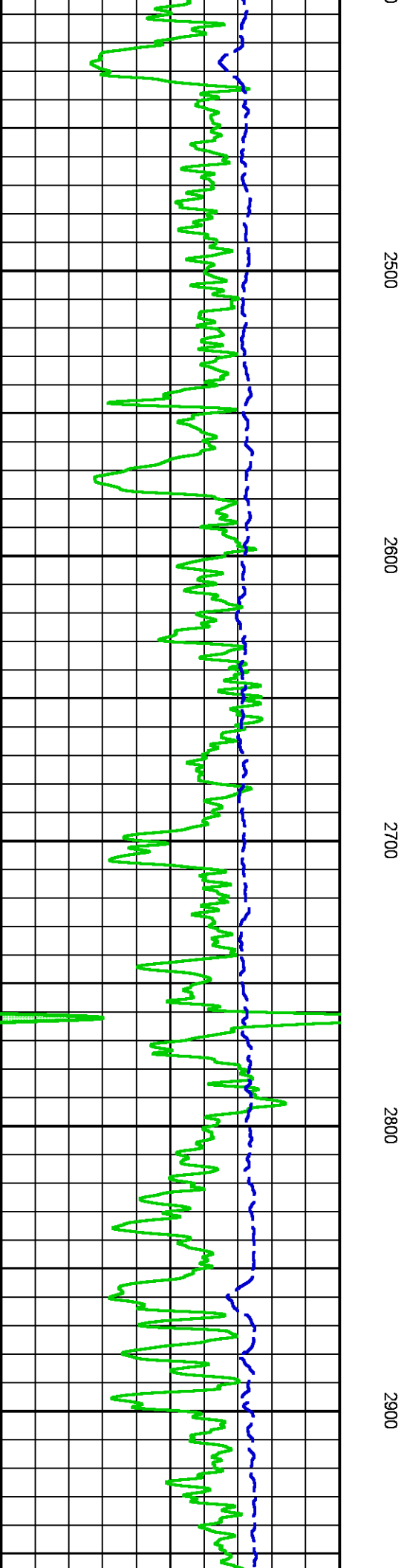
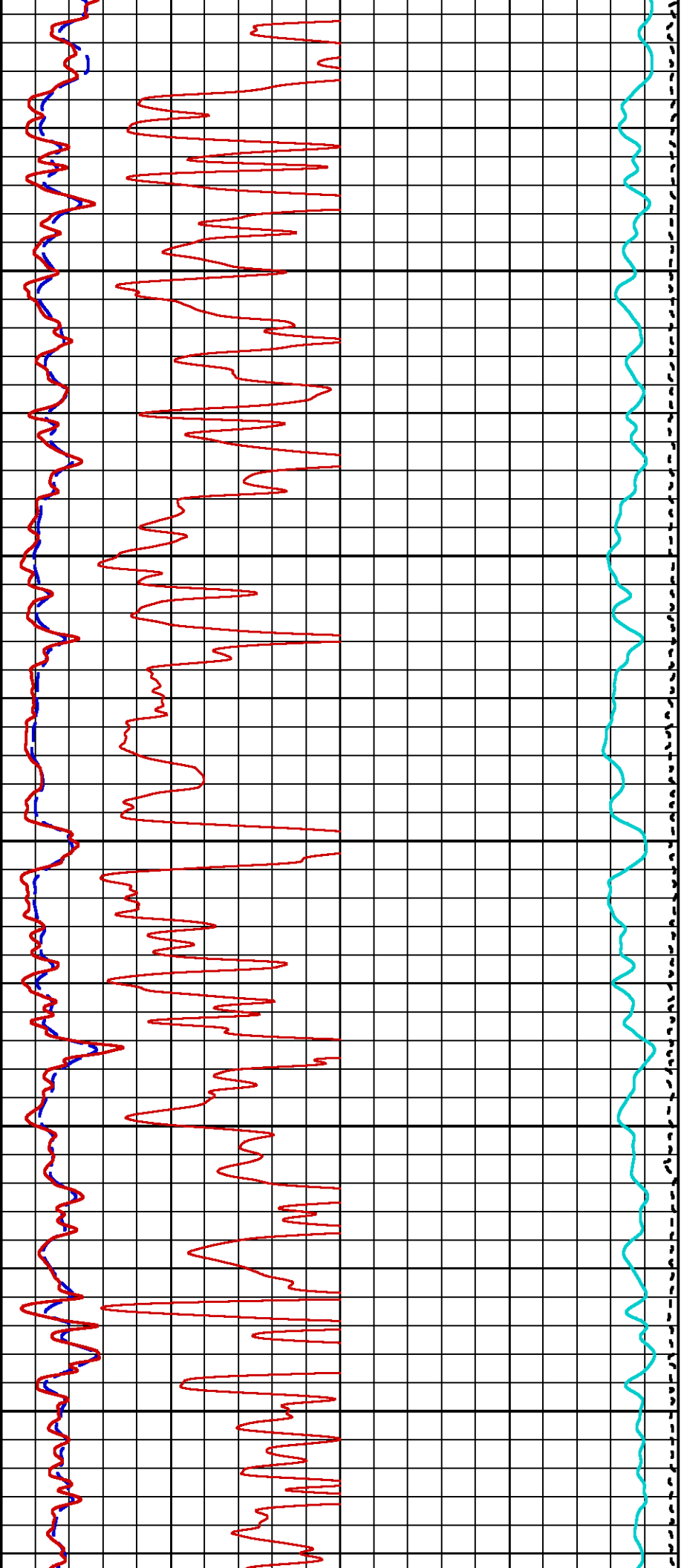
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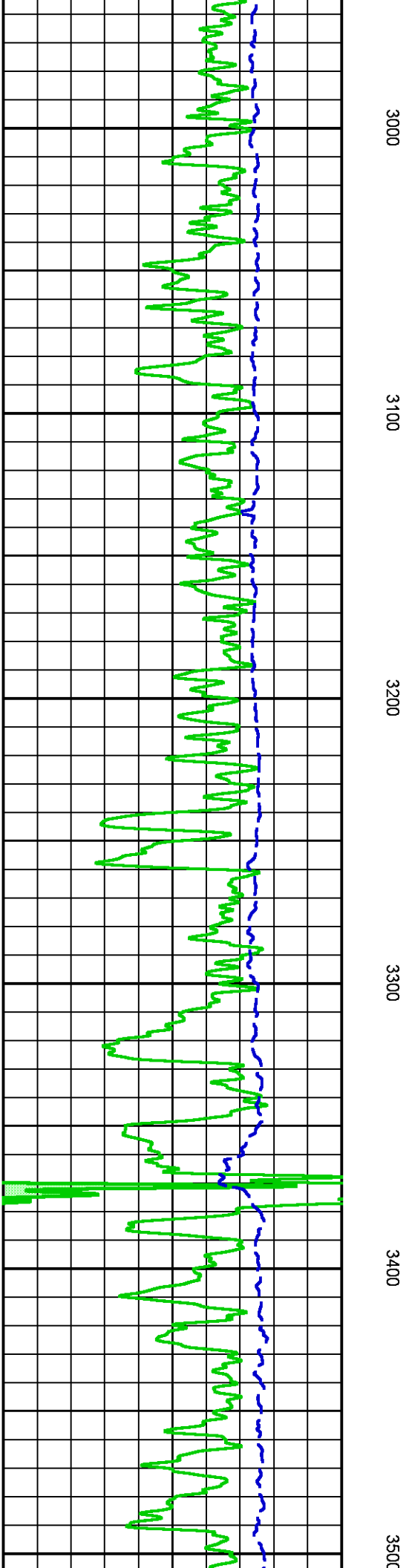
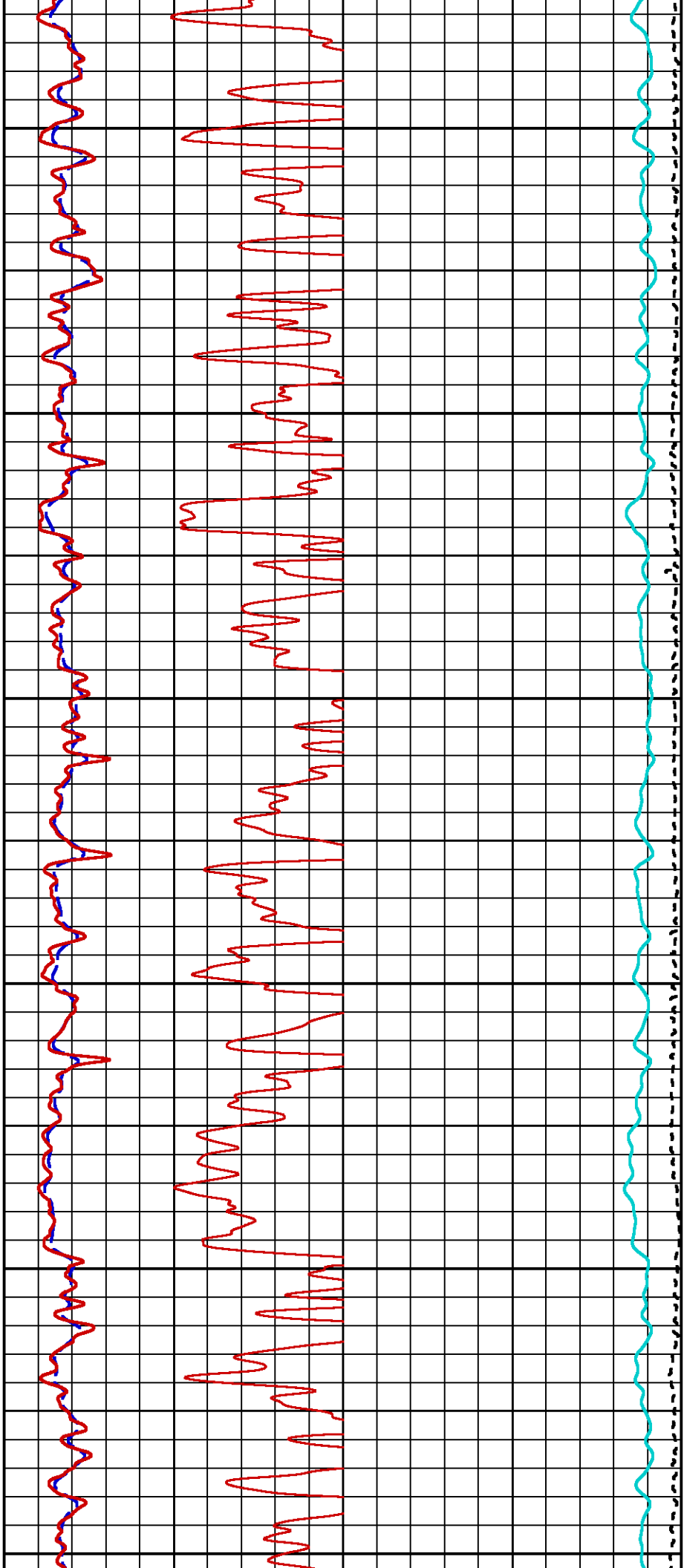


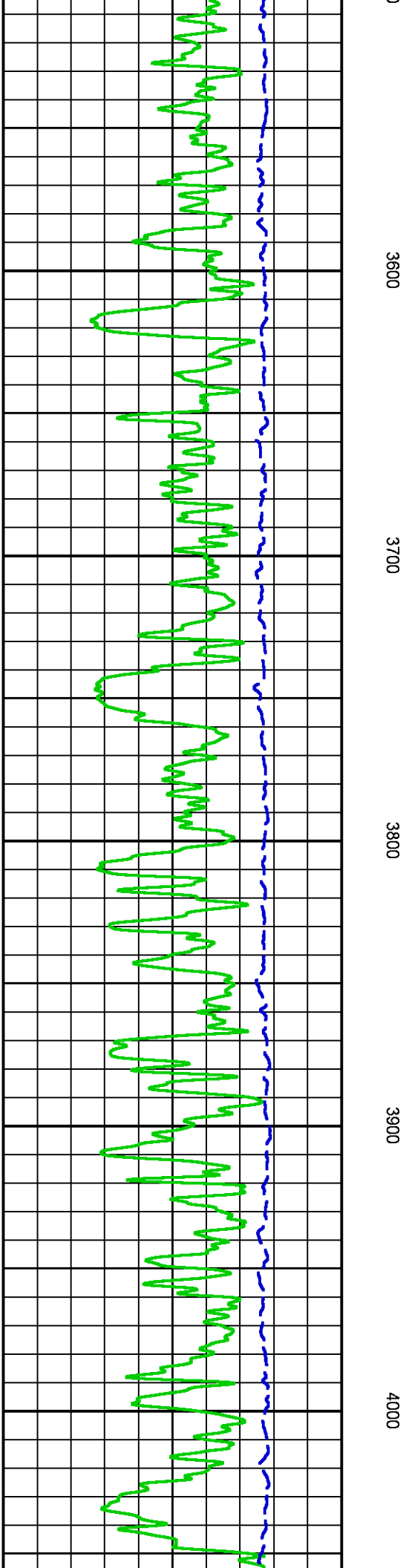
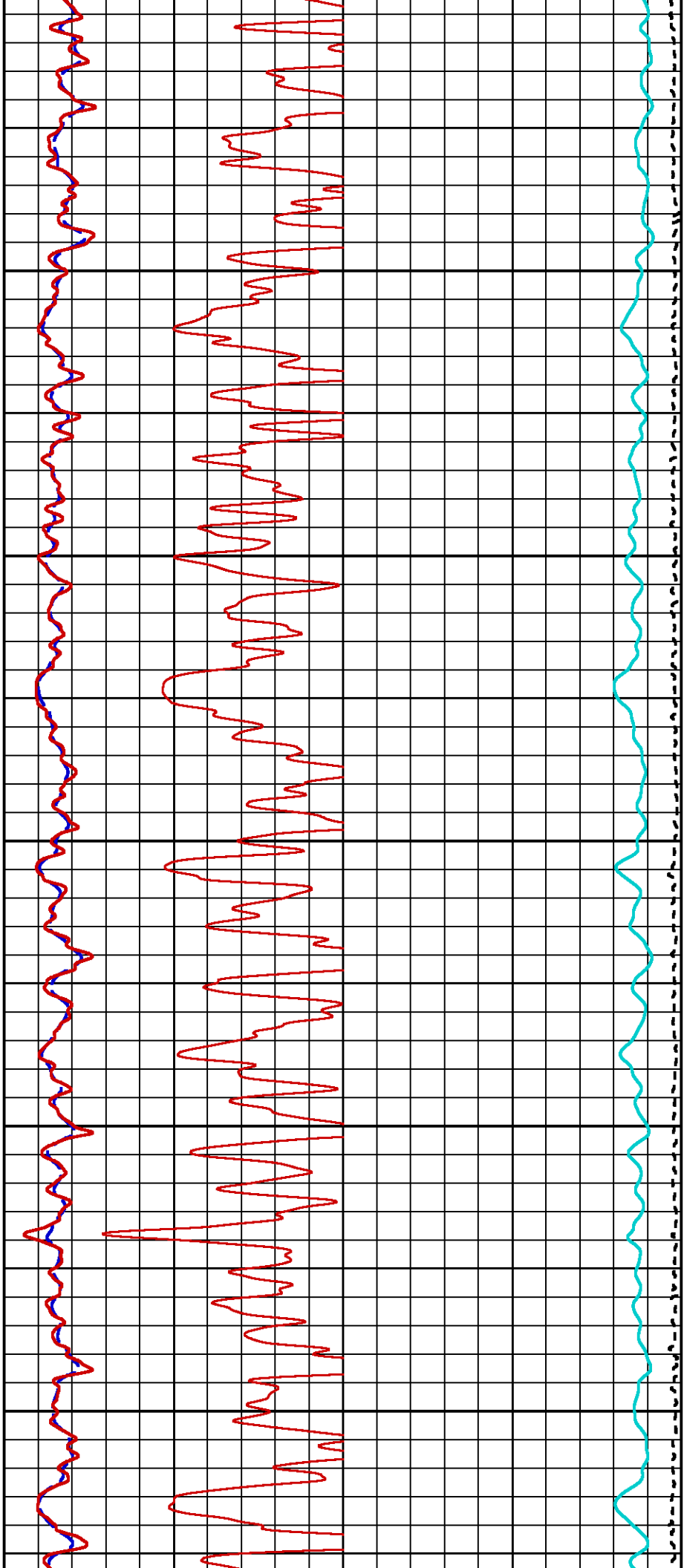


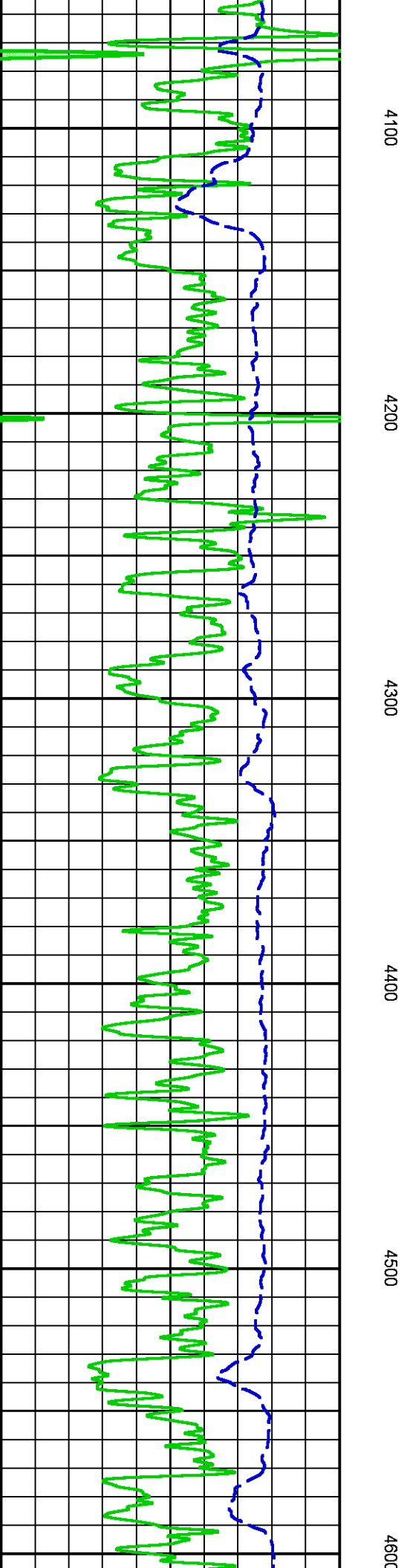
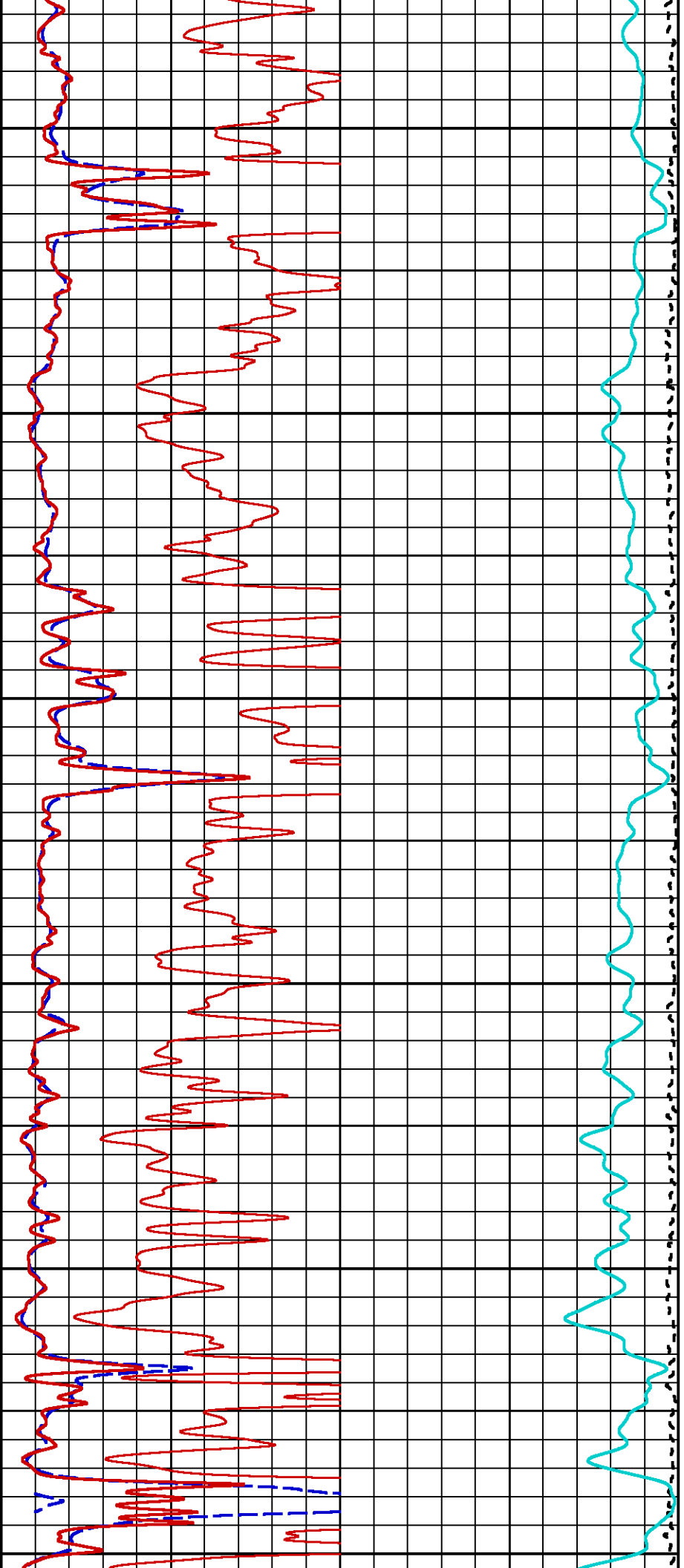


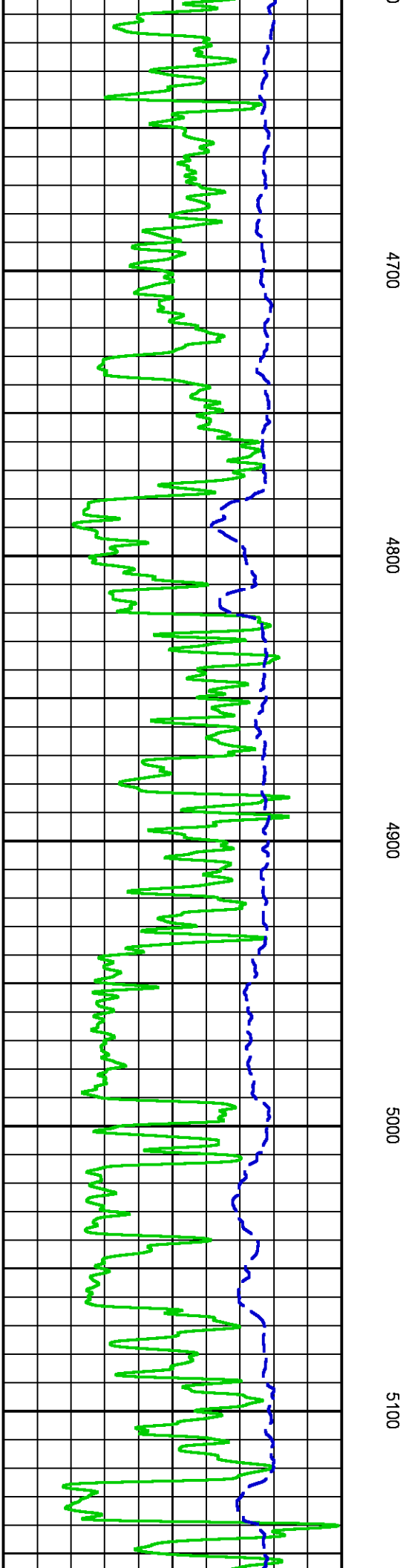
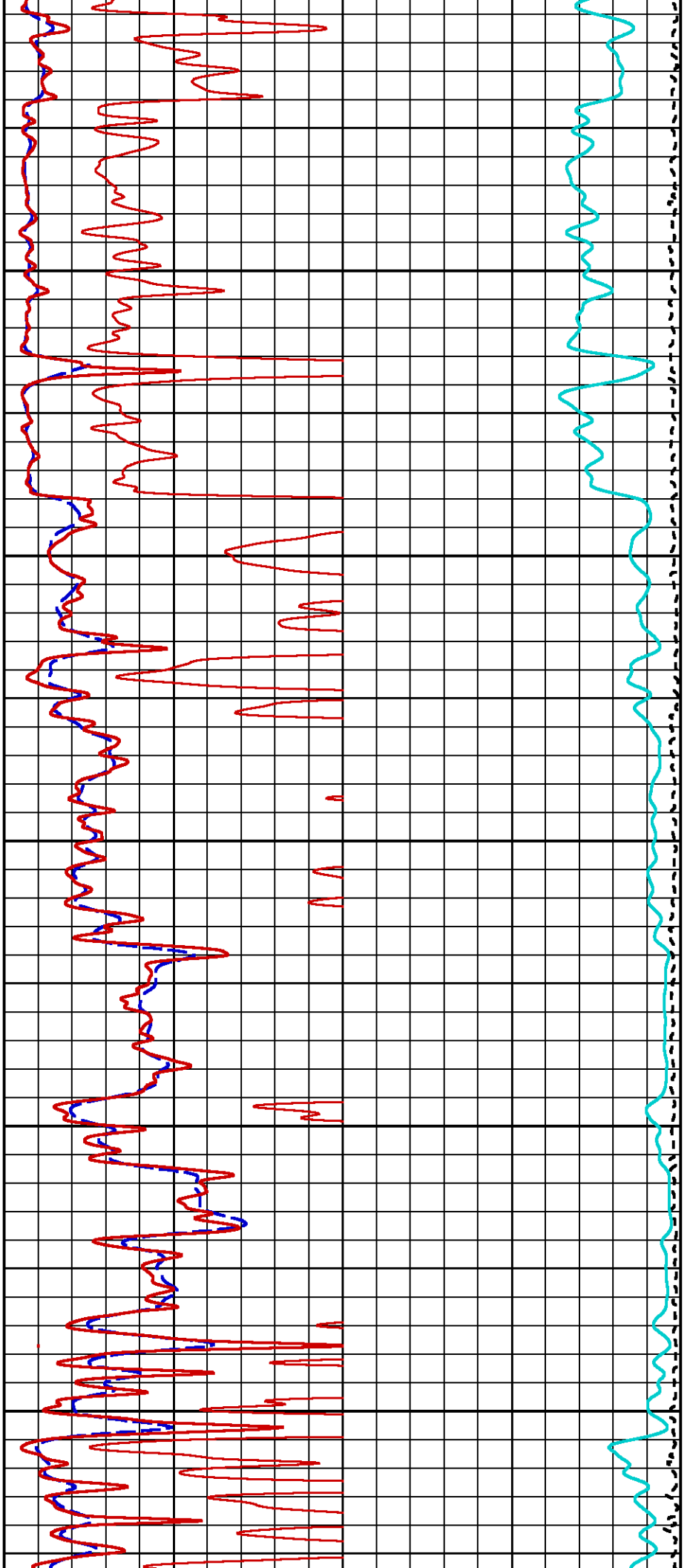


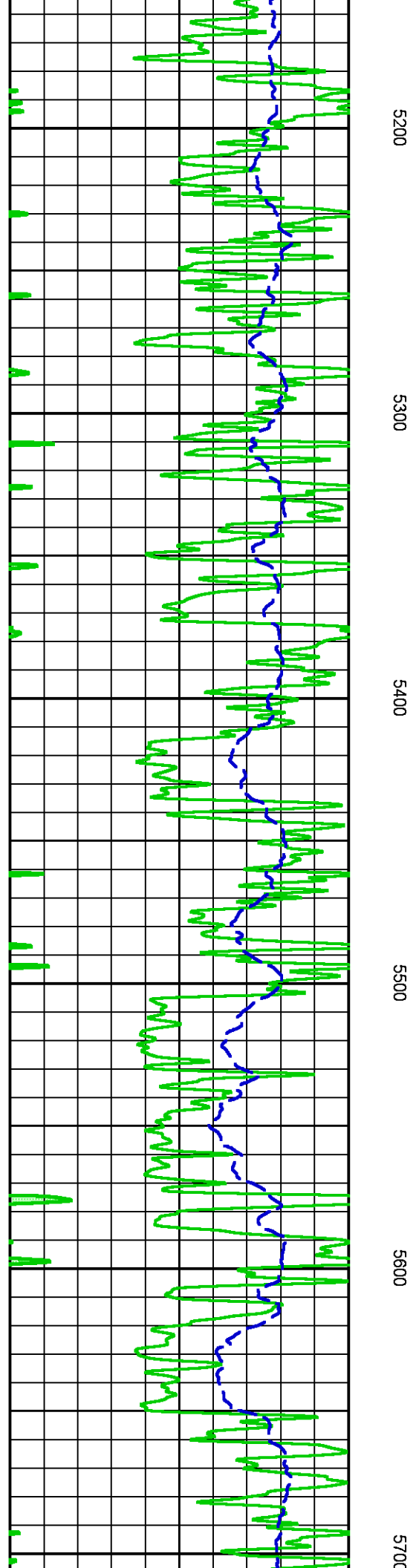
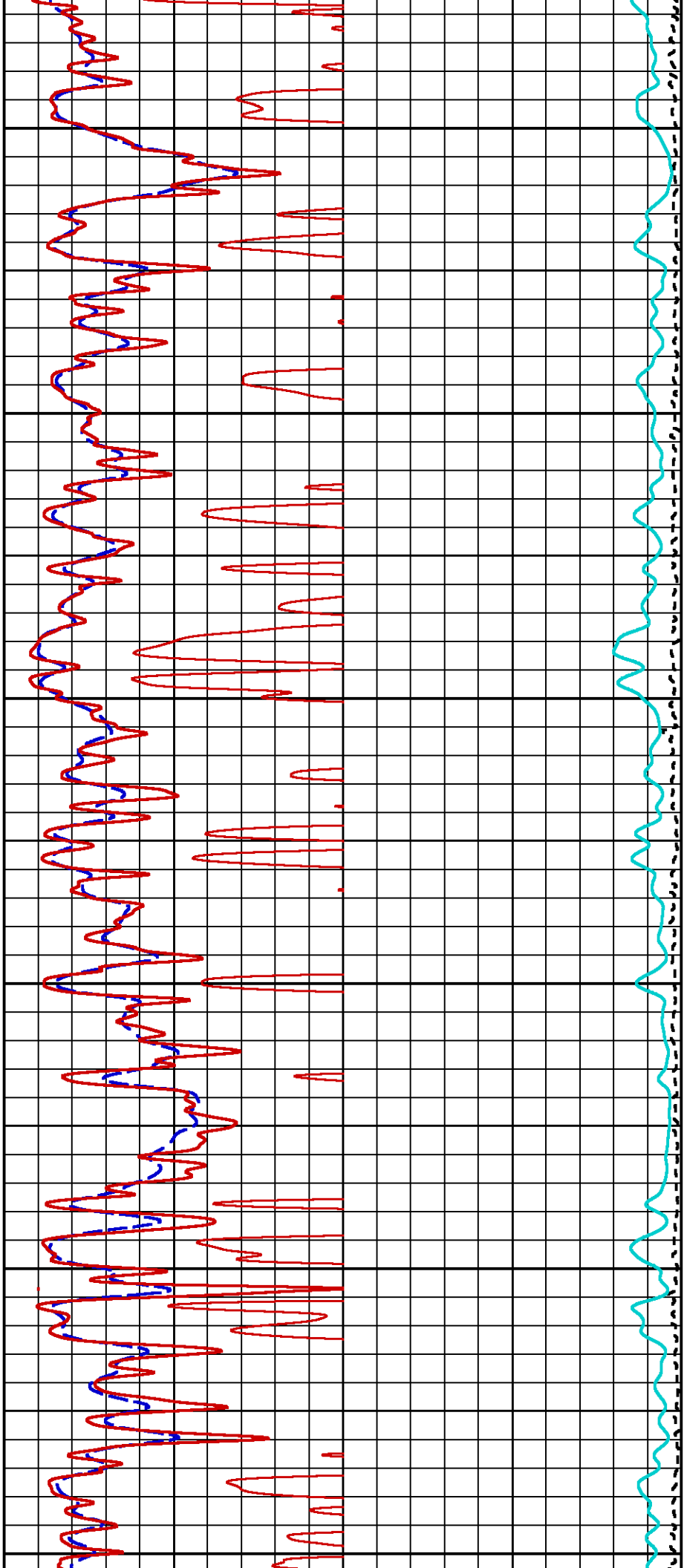


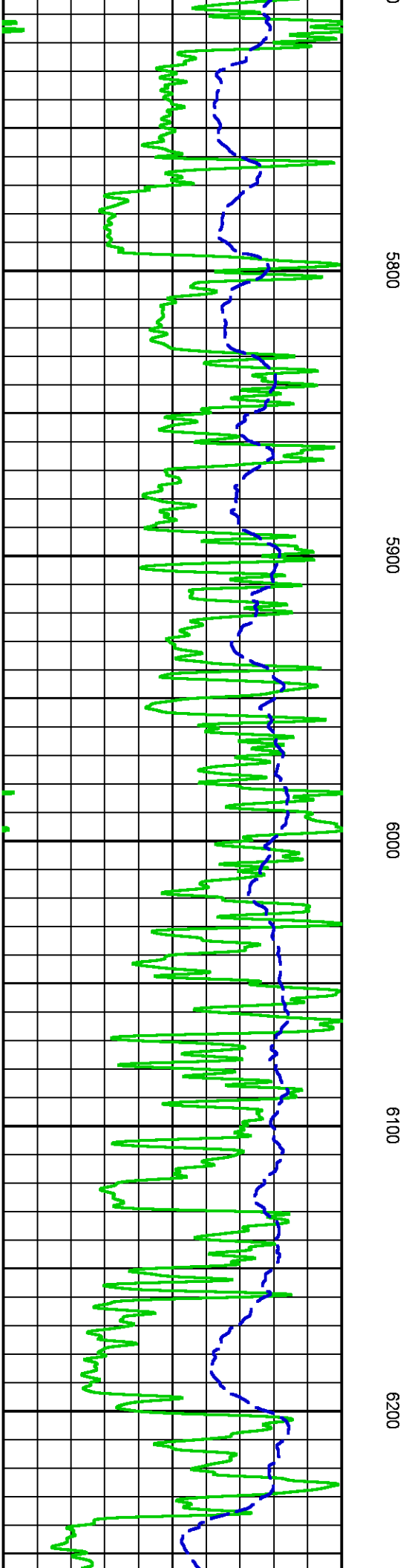
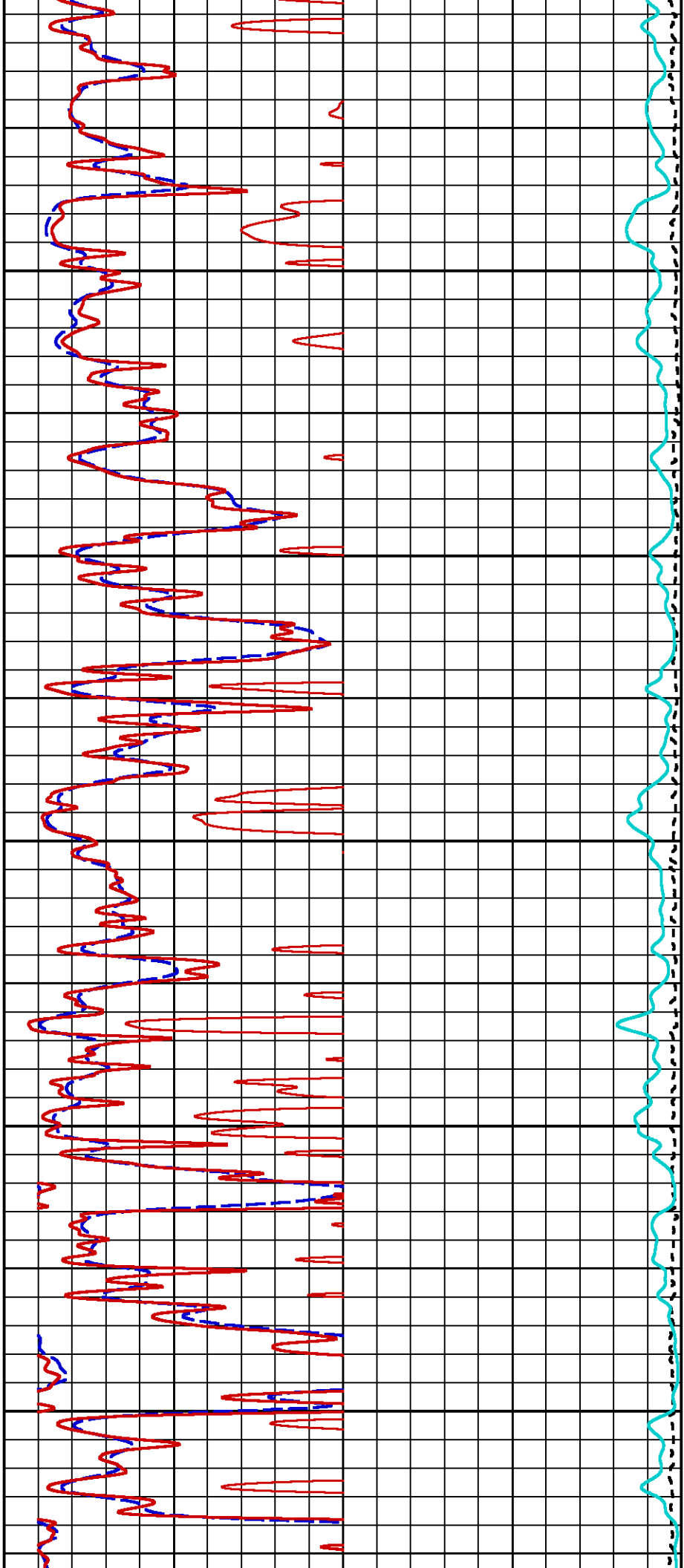


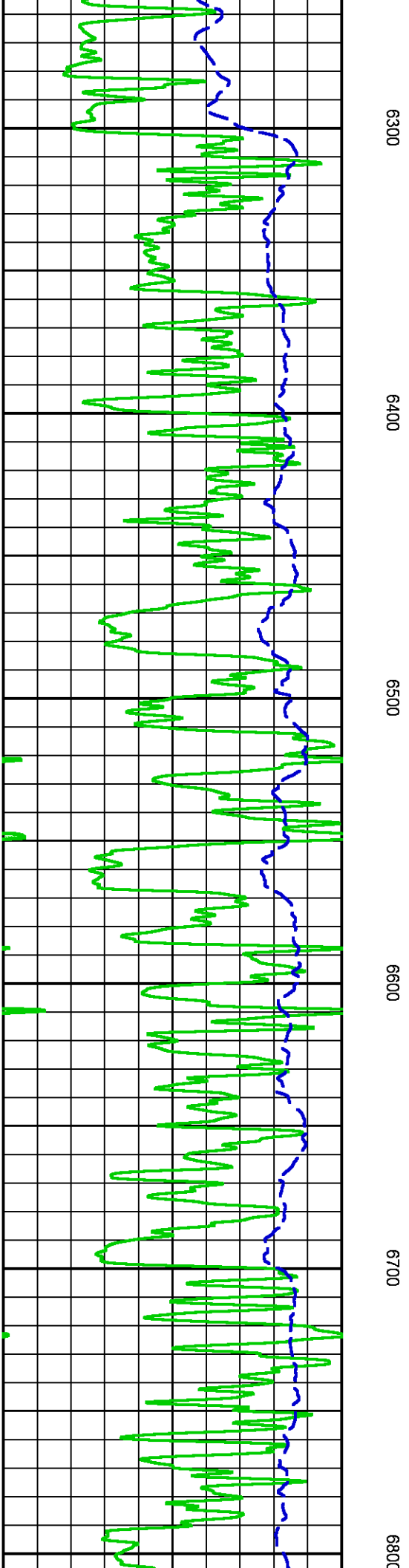
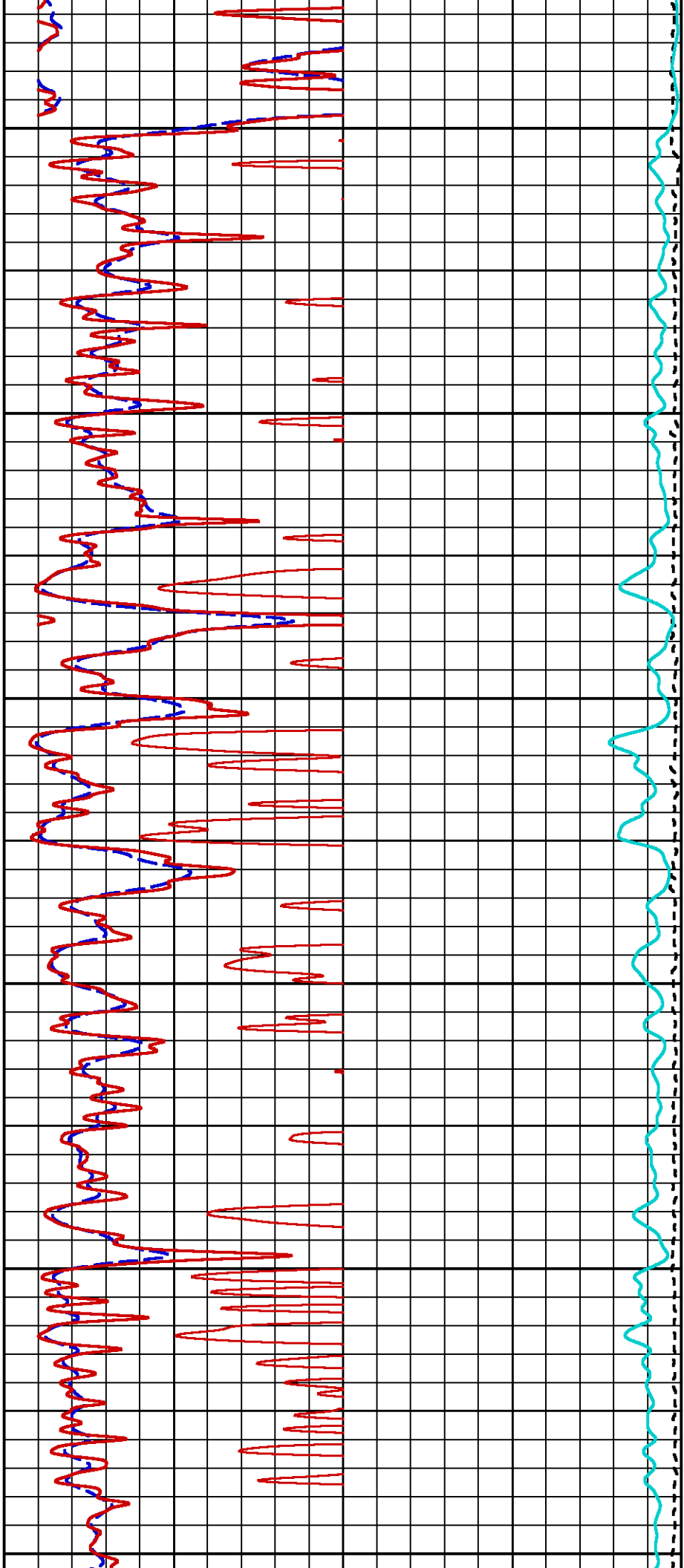


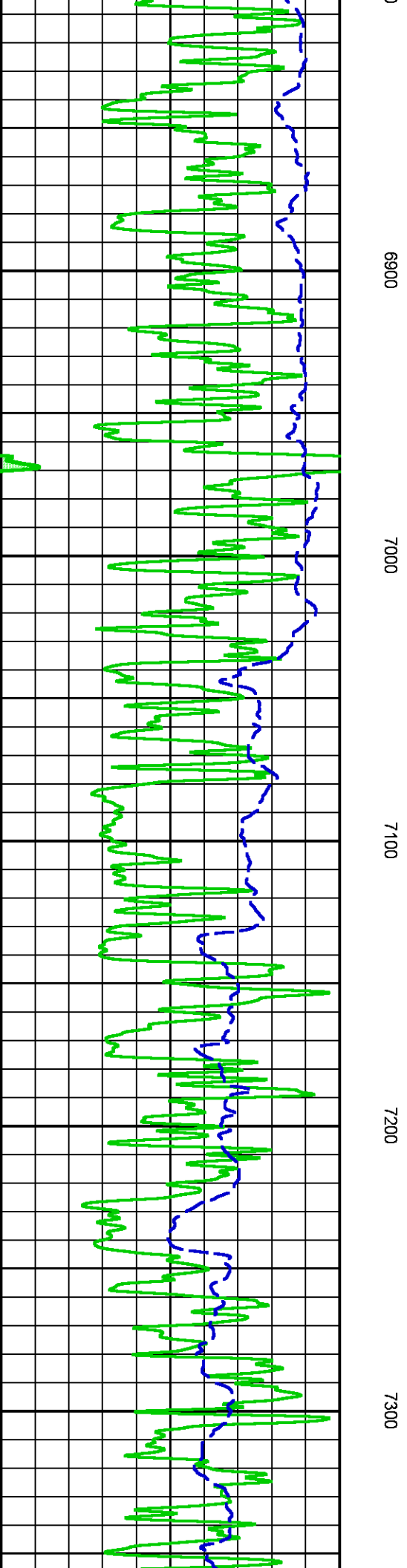
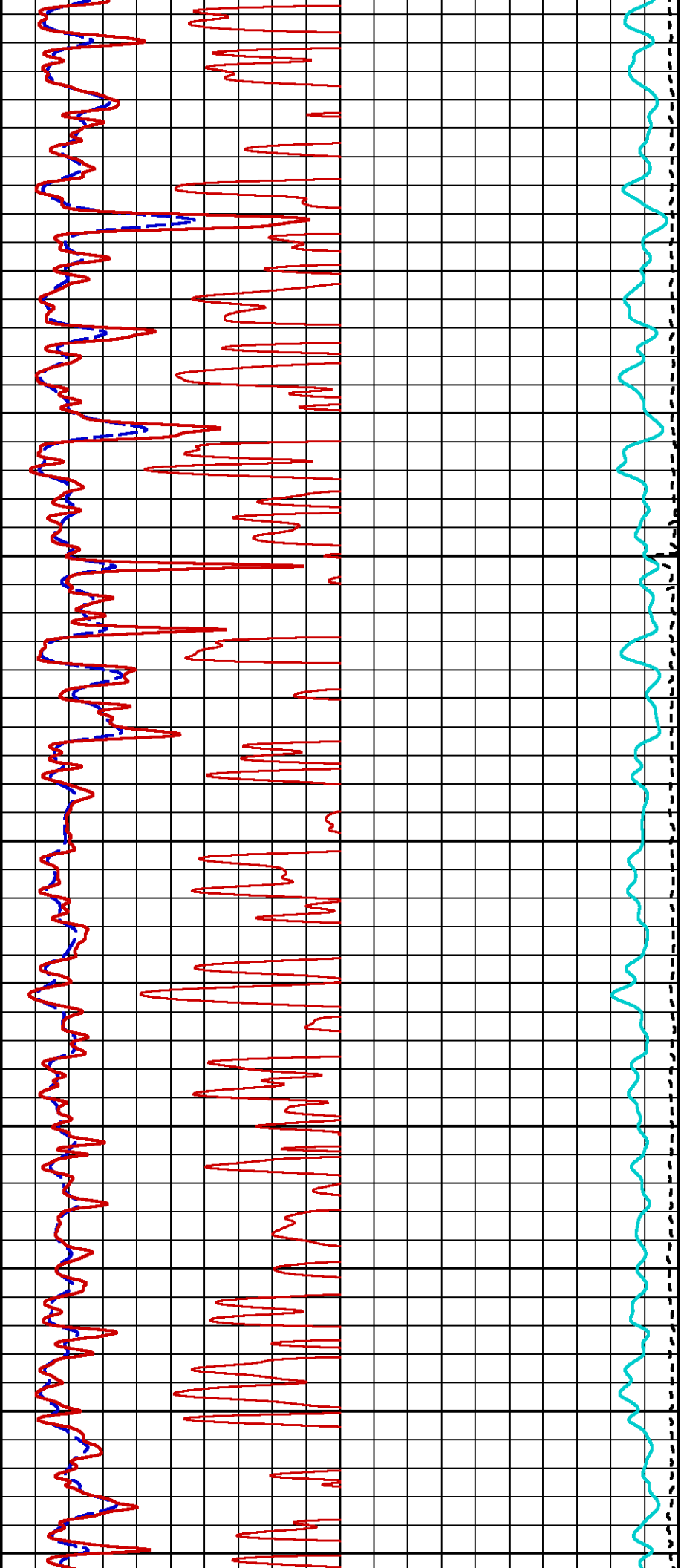




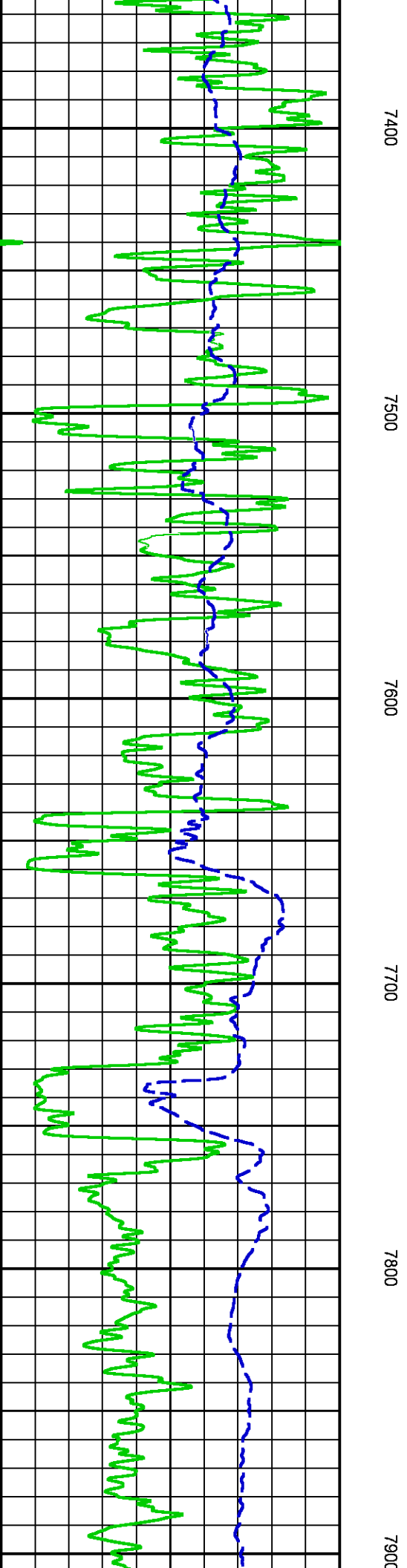
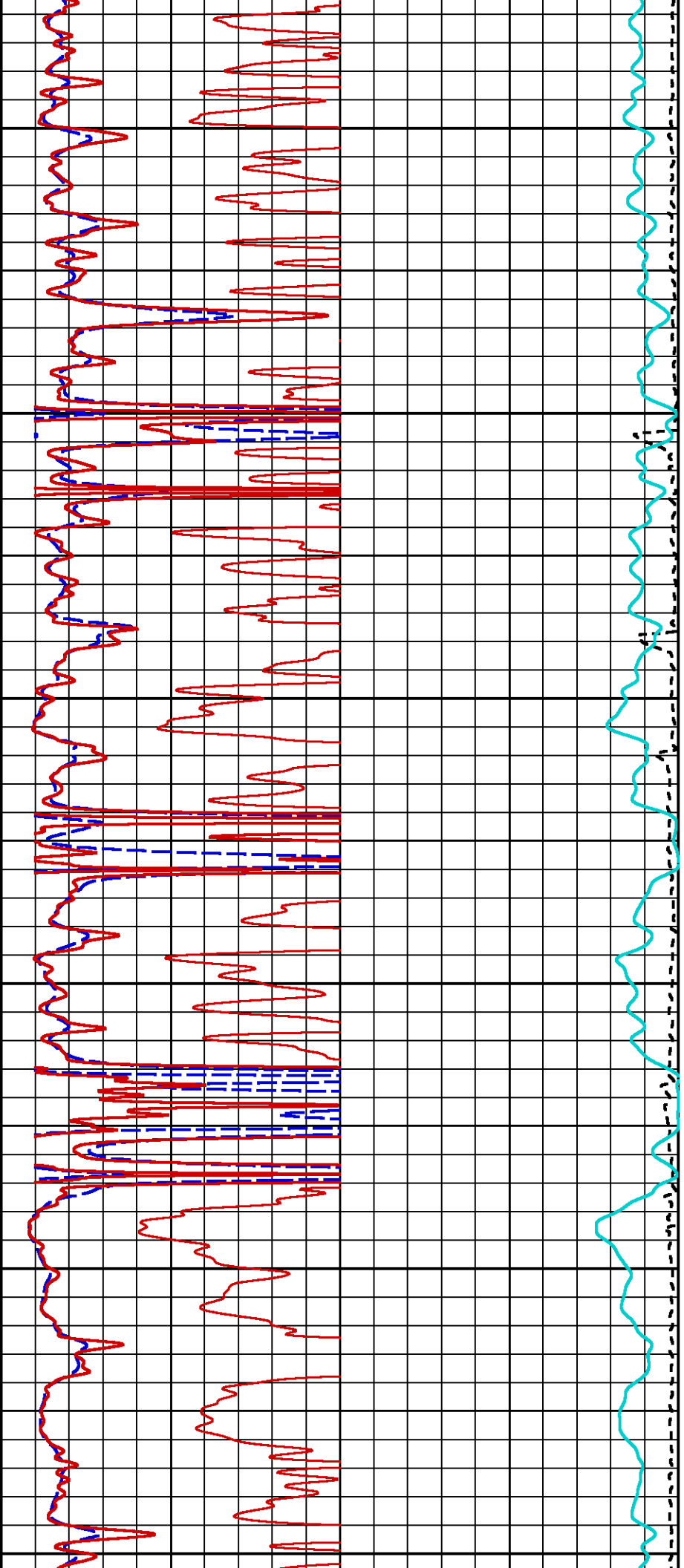


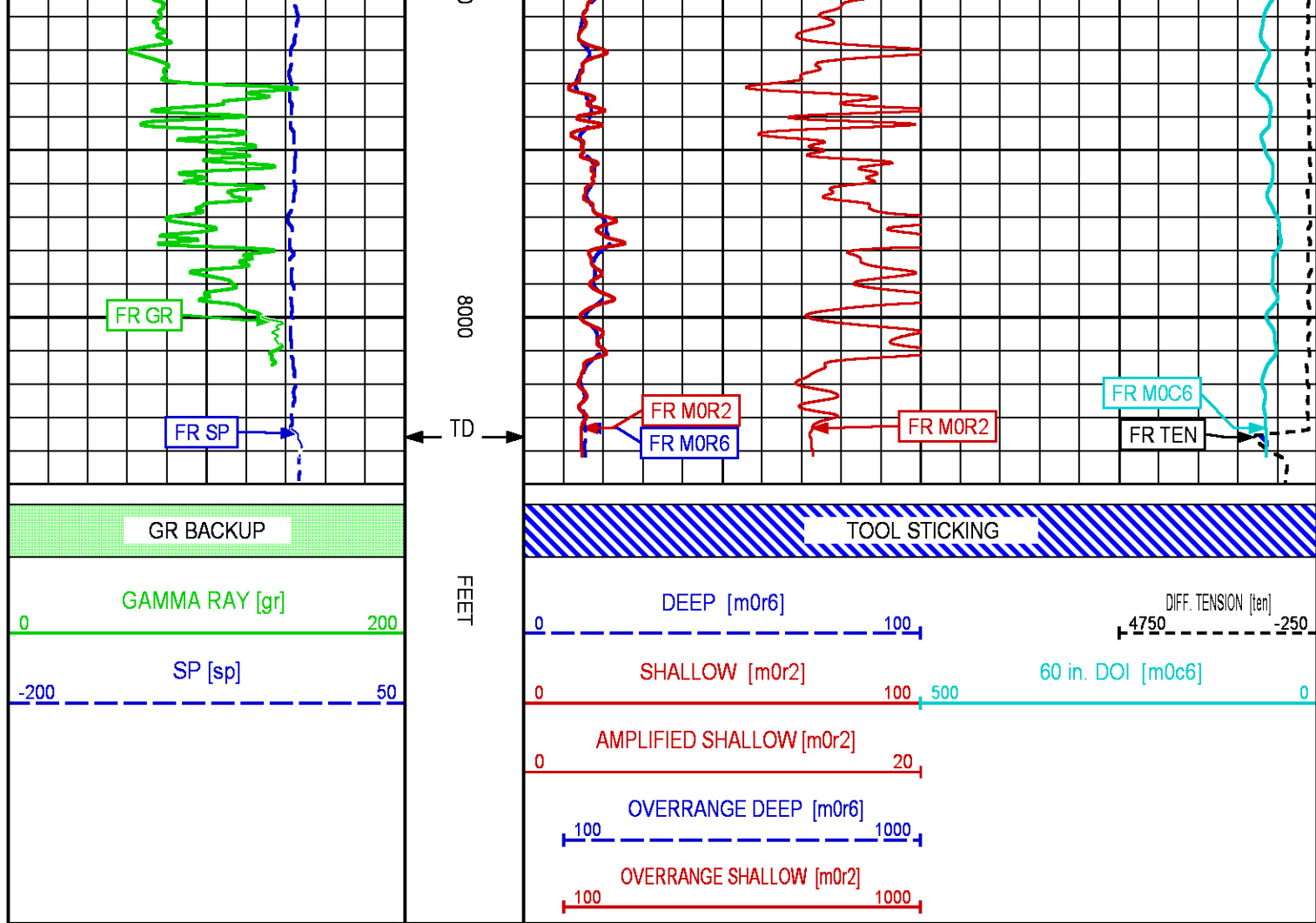












## MAIN LOG 5"/100FT SCALE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013

Updates: 1 Patches: 6

Plotted: Sun Mar 15 17:42:32 2015

### PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/94534/n970b104.prm  
 LOGGING MODE: DEPTH DIRECTION: UP  
 TOP DEPTH: 19.682 ft BOTTOM DEPTH: 8054.503 ft

#### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER ()	medium (1)		TOP	BOTTOM
CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
CN MED RES	FILTER ()	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP SPDH	FILTER ()	medium (1)		"	"

BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	7.875	in	"	"
	FIXED DIAMETER (mbh*)	7.875	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	69.0	degF	"	"
	MUD SAMPLE RES	1.800	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	190.0	degF	"	"
	at BH REF DEPTH	8040.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"

ACCELERATION PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	SANDSTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	0	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

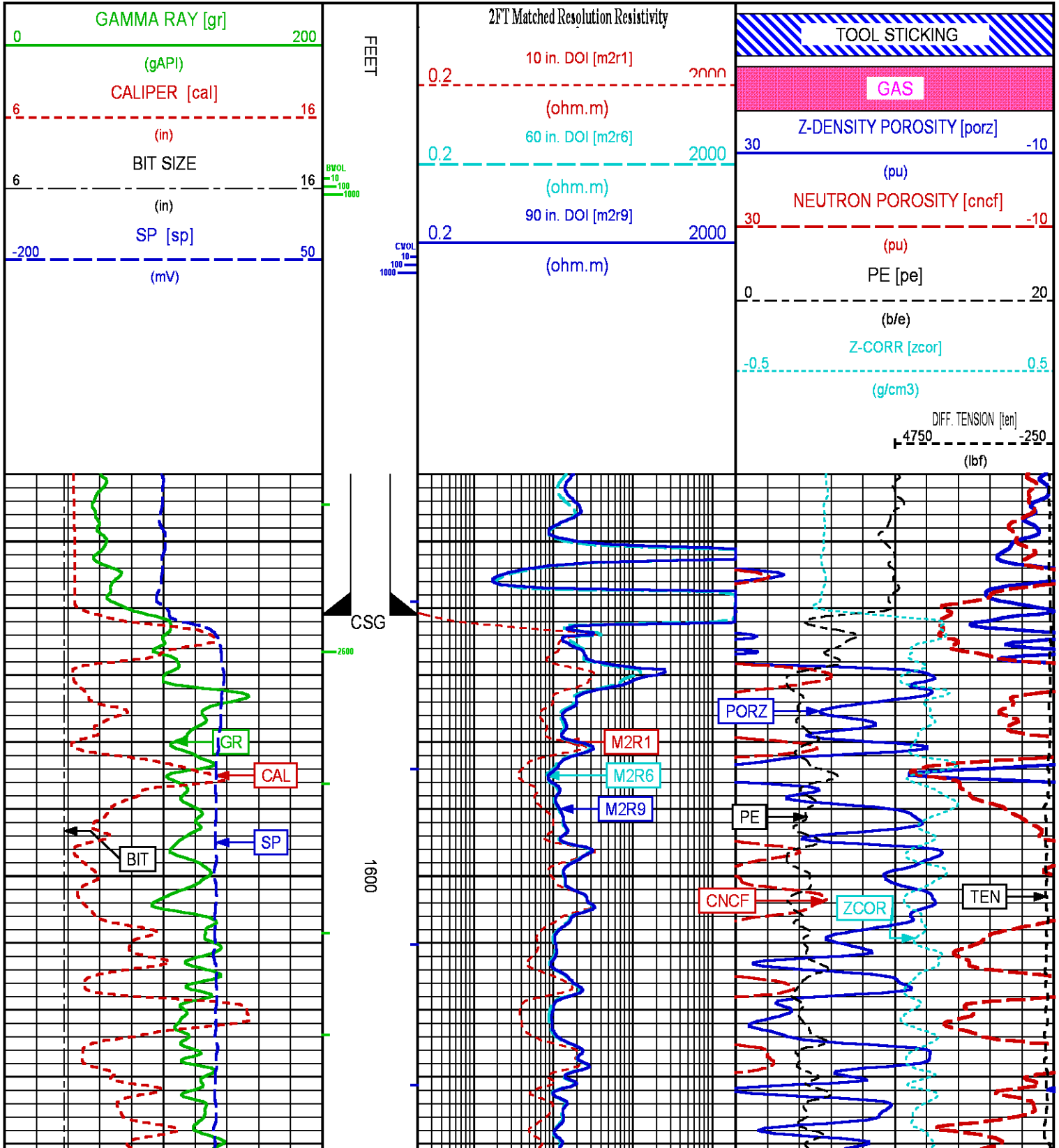
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 15 15:08:14 2015	BIT SIZE
F1:BVOL	Mar 15 15:08:14 2015	BOREHOLE VOLUME
F1:CAL	Mar 15 15:08:14 2015	CALIPER
F1:CNCF	Mar 15 15:08:14 2015	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Mar 15 15:08:14 2015	CEMENT VOLUME
F1:GR	Mar 15 15:08:14 2015	GAMMA RAY
F1:M2R1	Mar 15 15:08:14 2015	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Mar 15 15:08:14 2015	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Mar 15 15:08:14 2015	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Mar 15 15:08:14 2015	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Mar 15 15:08:14 2015	POROSITY FOR SELECTABLE MATRIX
F1:SP	Mar 15 15:08:14 2015	SPONTANEOUS POTENTIAL
F1:TEN	Mar 15 15:08:14 2015	DIFFERENTIAL TENSION
F1:ZCOR	Mar 15 15:08:14 2015	DENSITY CORRECTION

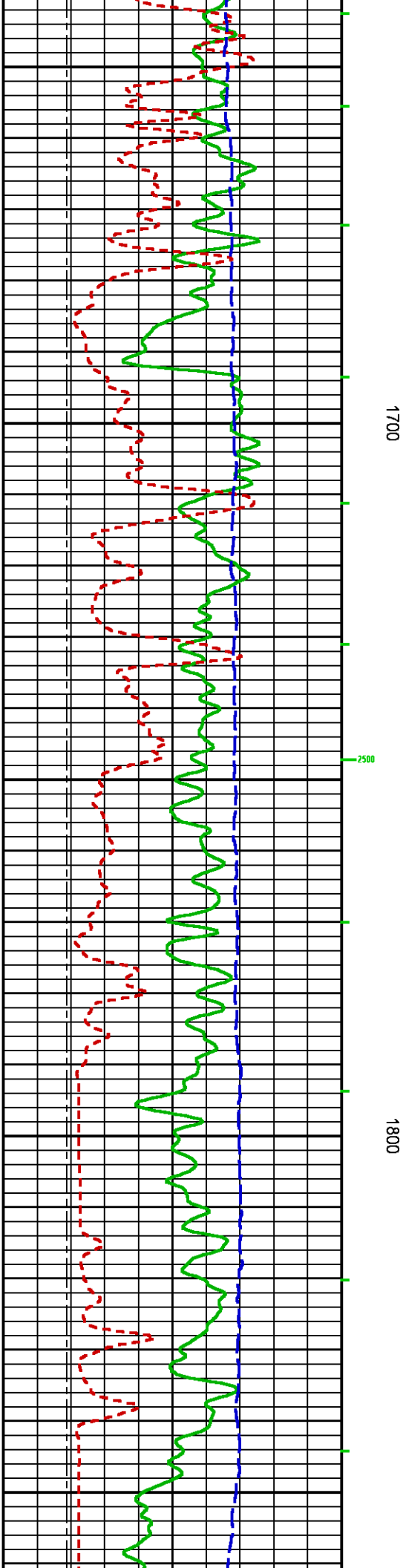
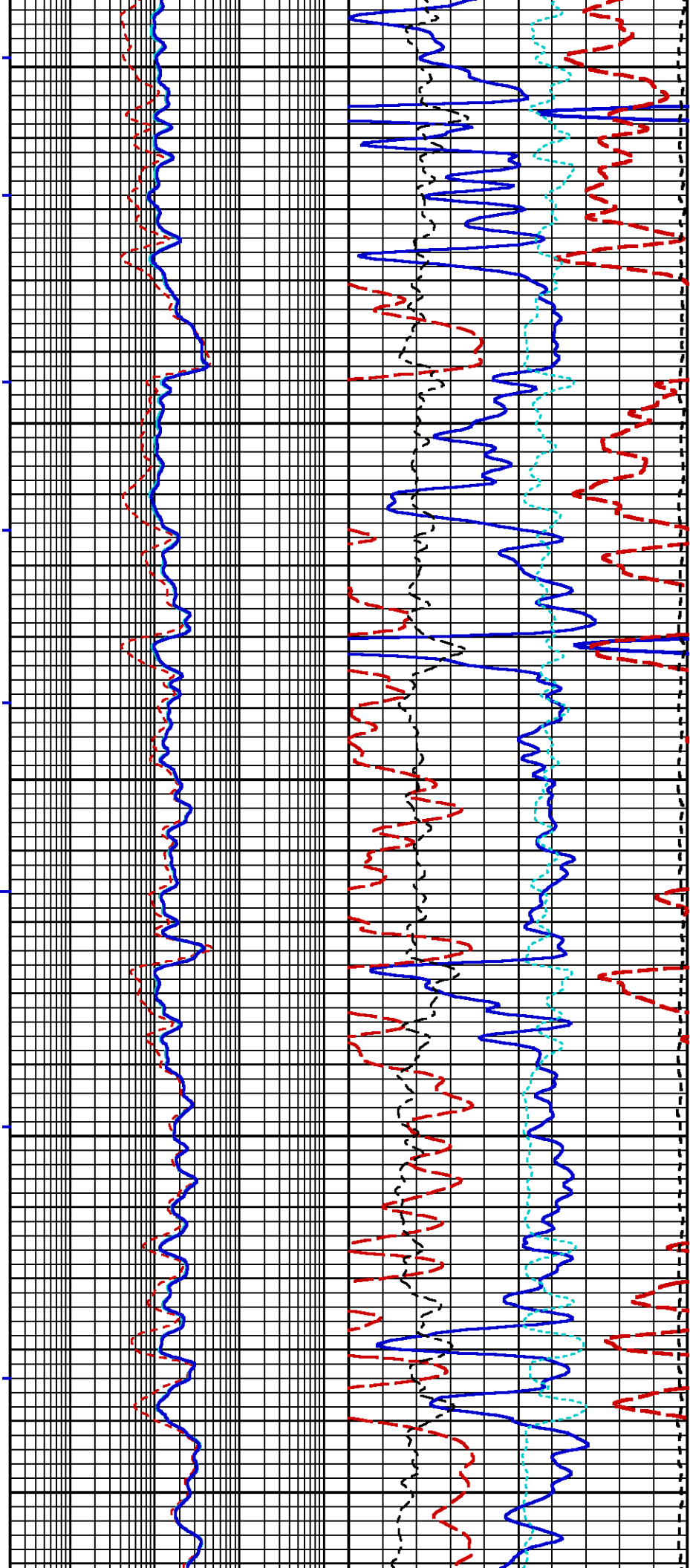
CURVE MEASURE POINT OFFSET					
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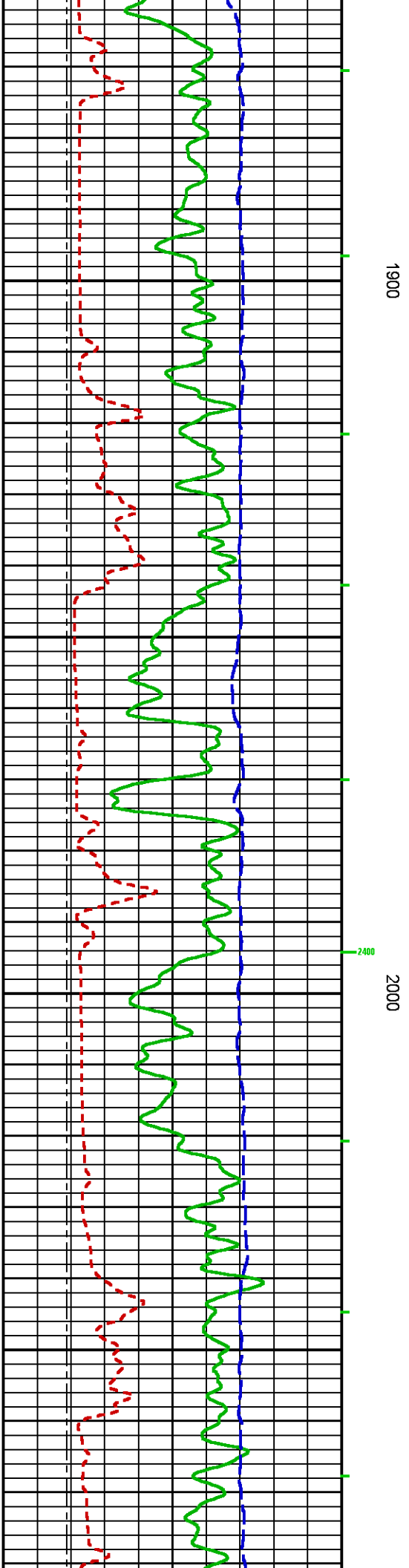
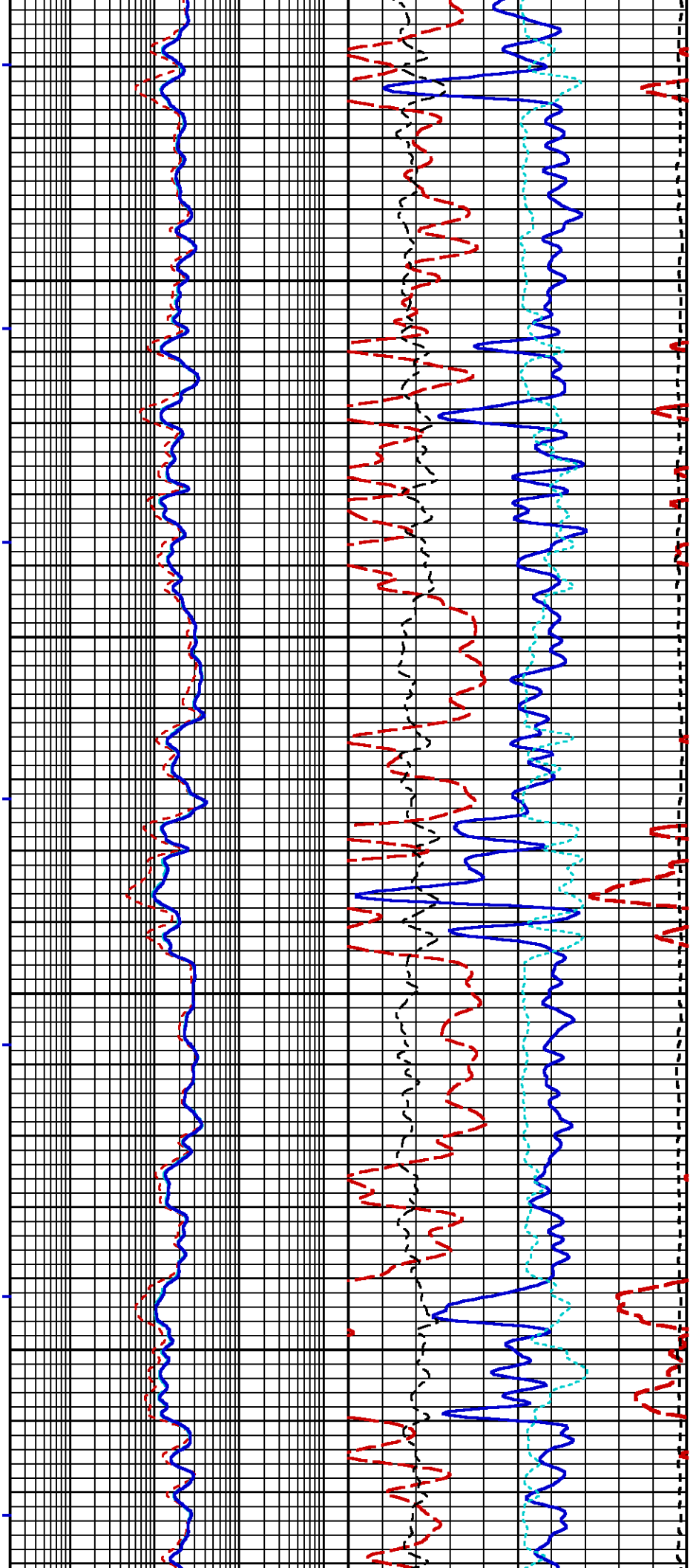
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	35.00	M2R9	2.75	SP	1.25
CAL	18.12	M2R1	2.75	PE	18.00	TEN	0.00
CNCF	27.38	M2R6	2.75	PORZ	18.00	ZCOR	18.00

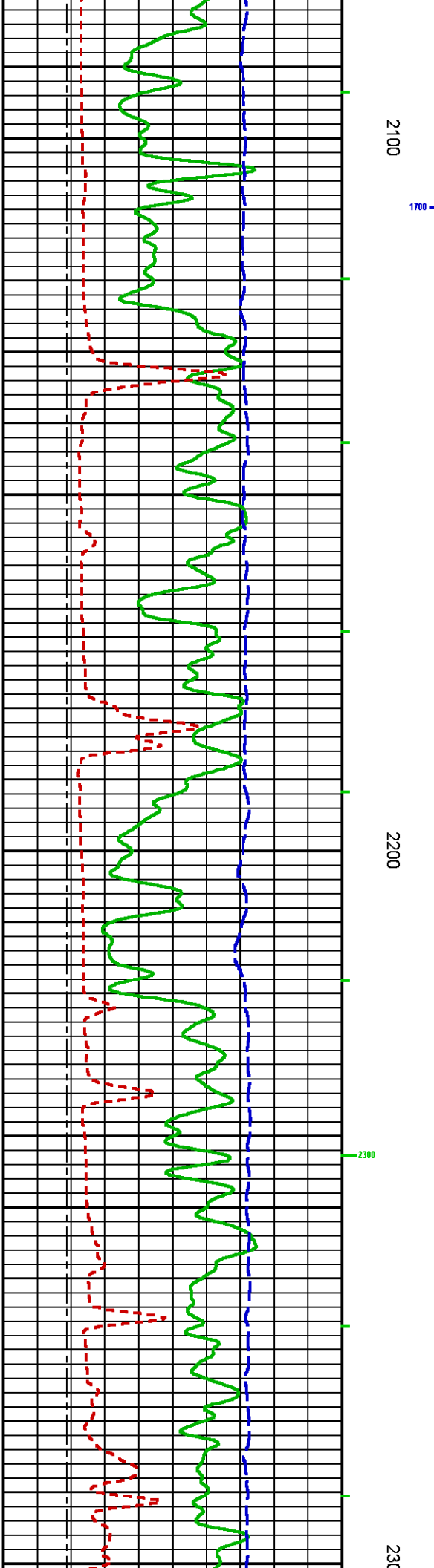
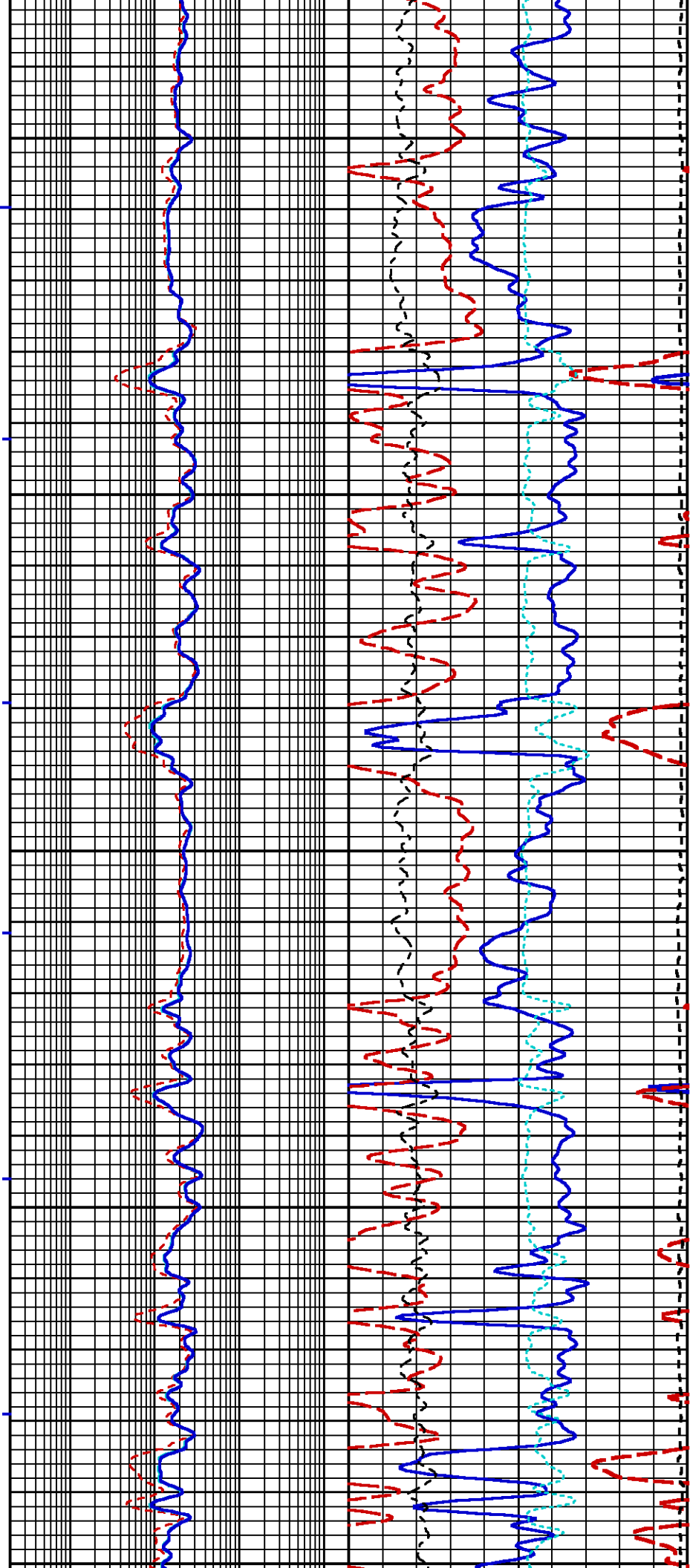
Presentation : cas6685:/dat1a/94534/MS\_MAIN.fvpdf [5"/100' Scale]  
Plot Interval : 1540 - 8055.75 Feet

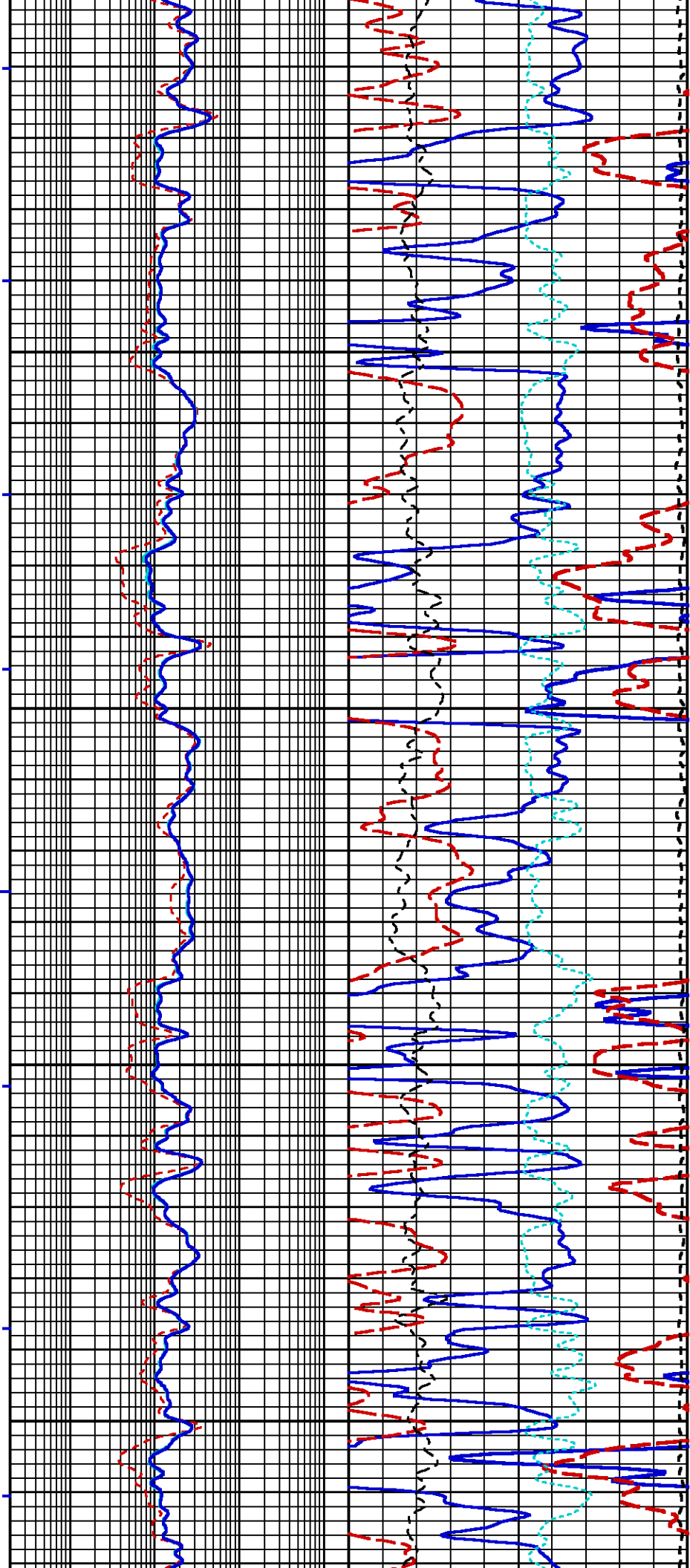
Data File 1 : F1 : cas6685:/dat1a/94534/MAIN.xtf  
Created On : Mar 15 15:08:14 2015  
Company : LARAMIE ENERGY  
Well : PICEANCE 28-12M  
Field : VEGA  
File Interval : -16.75 - 8149 Feet  
OCT : n970b1



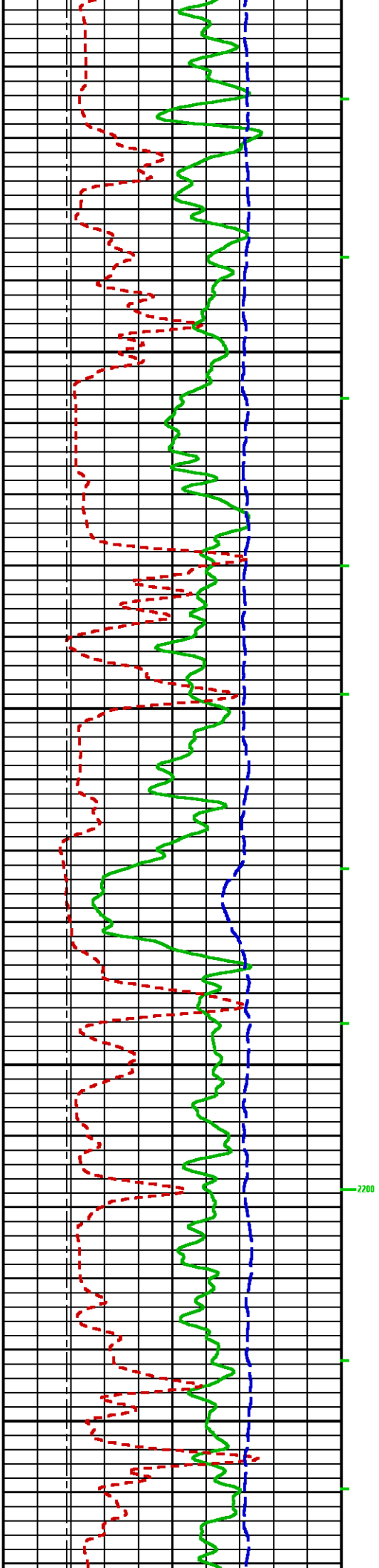




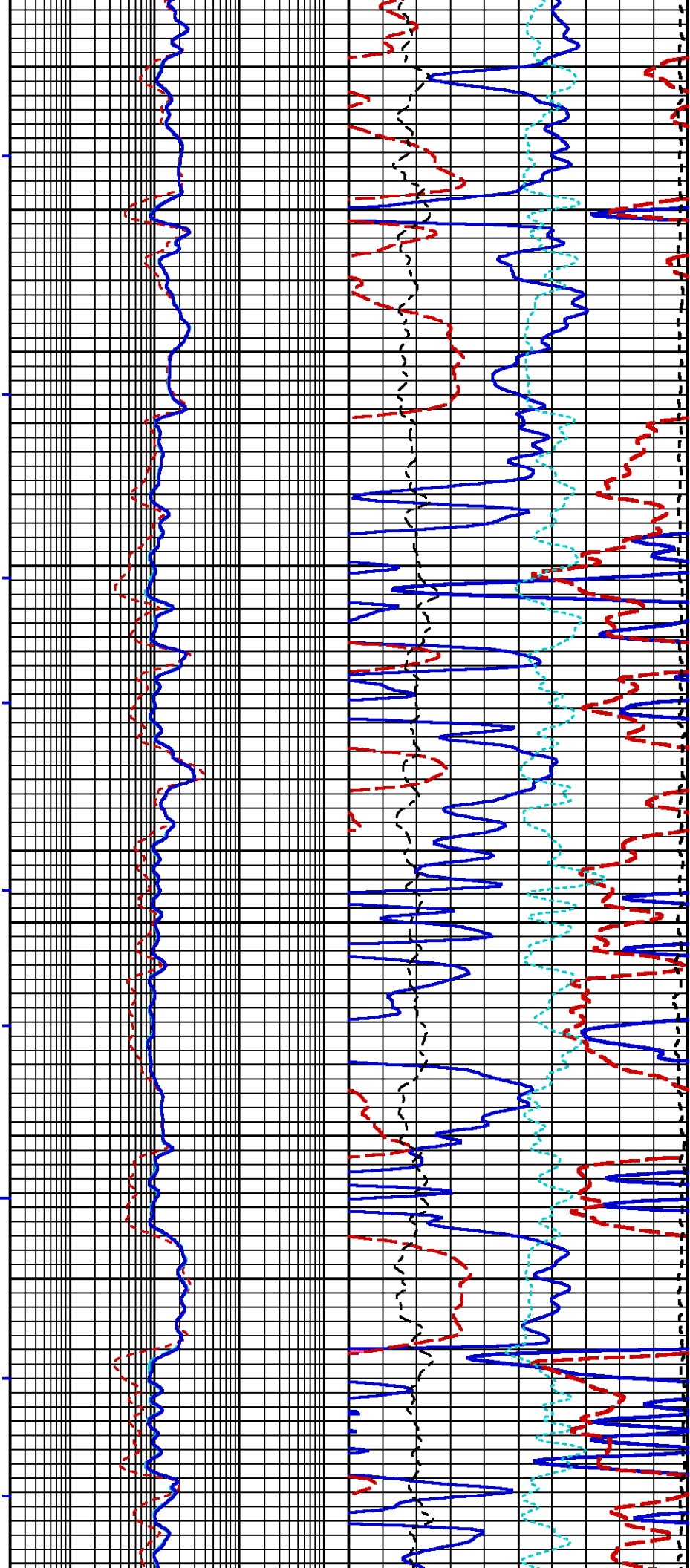




2800  
2400  
2200  
2000





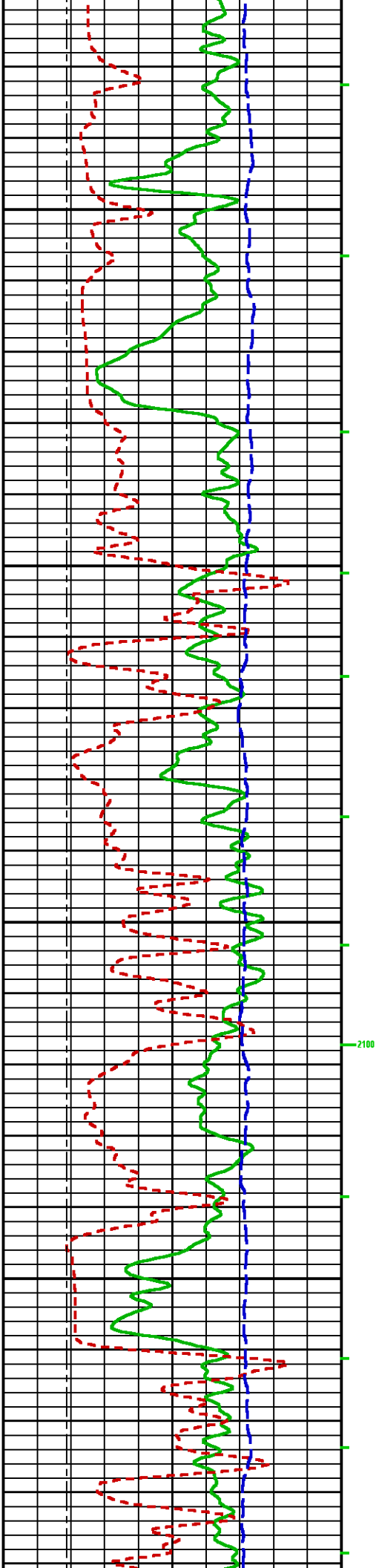


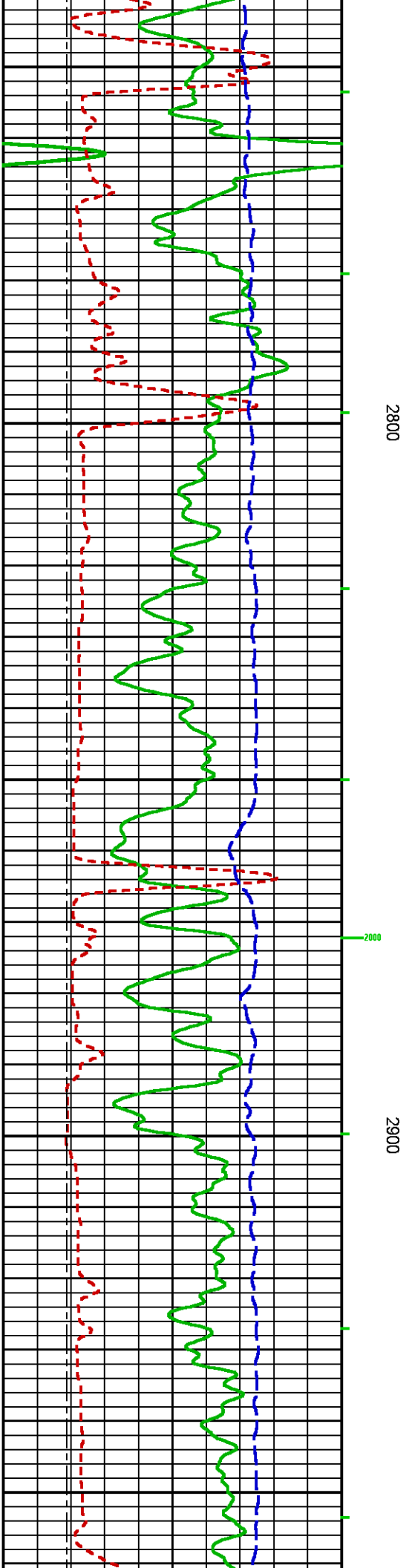
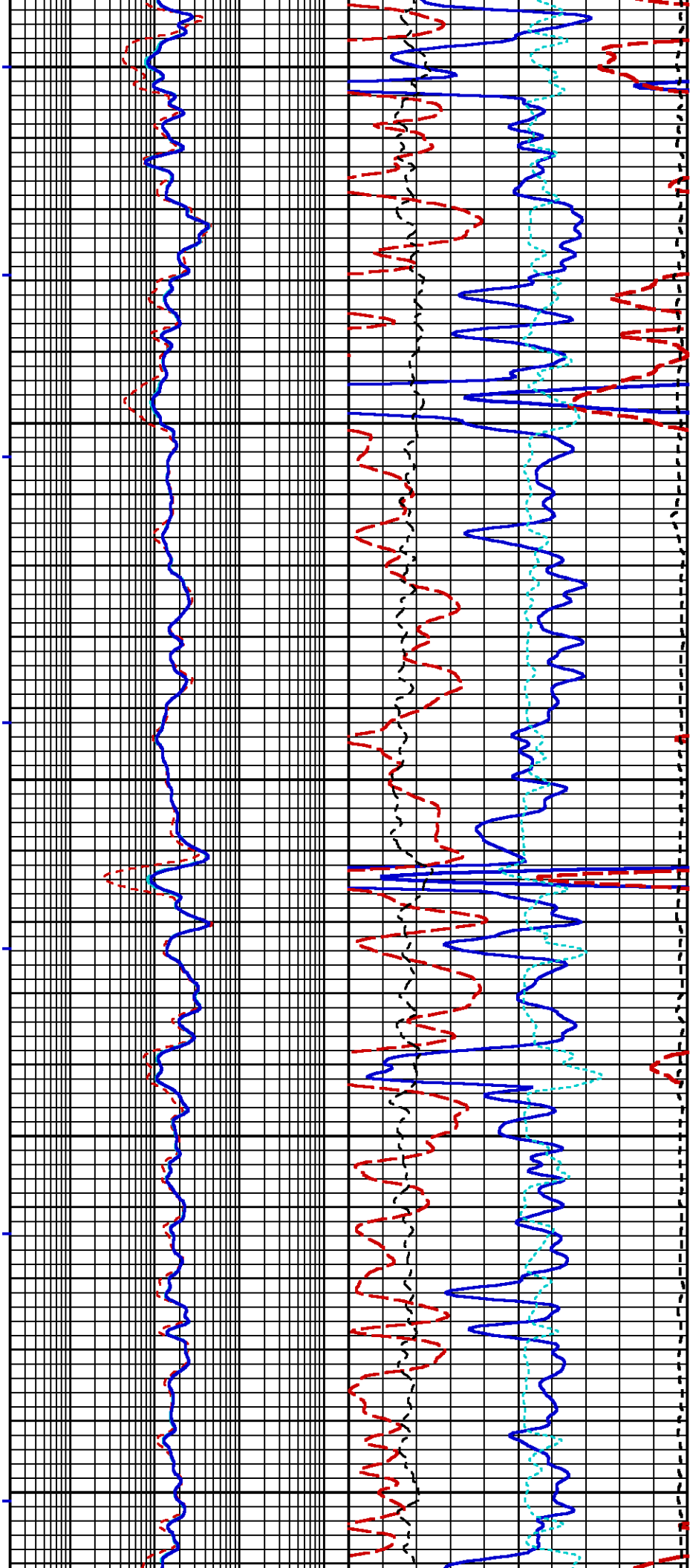
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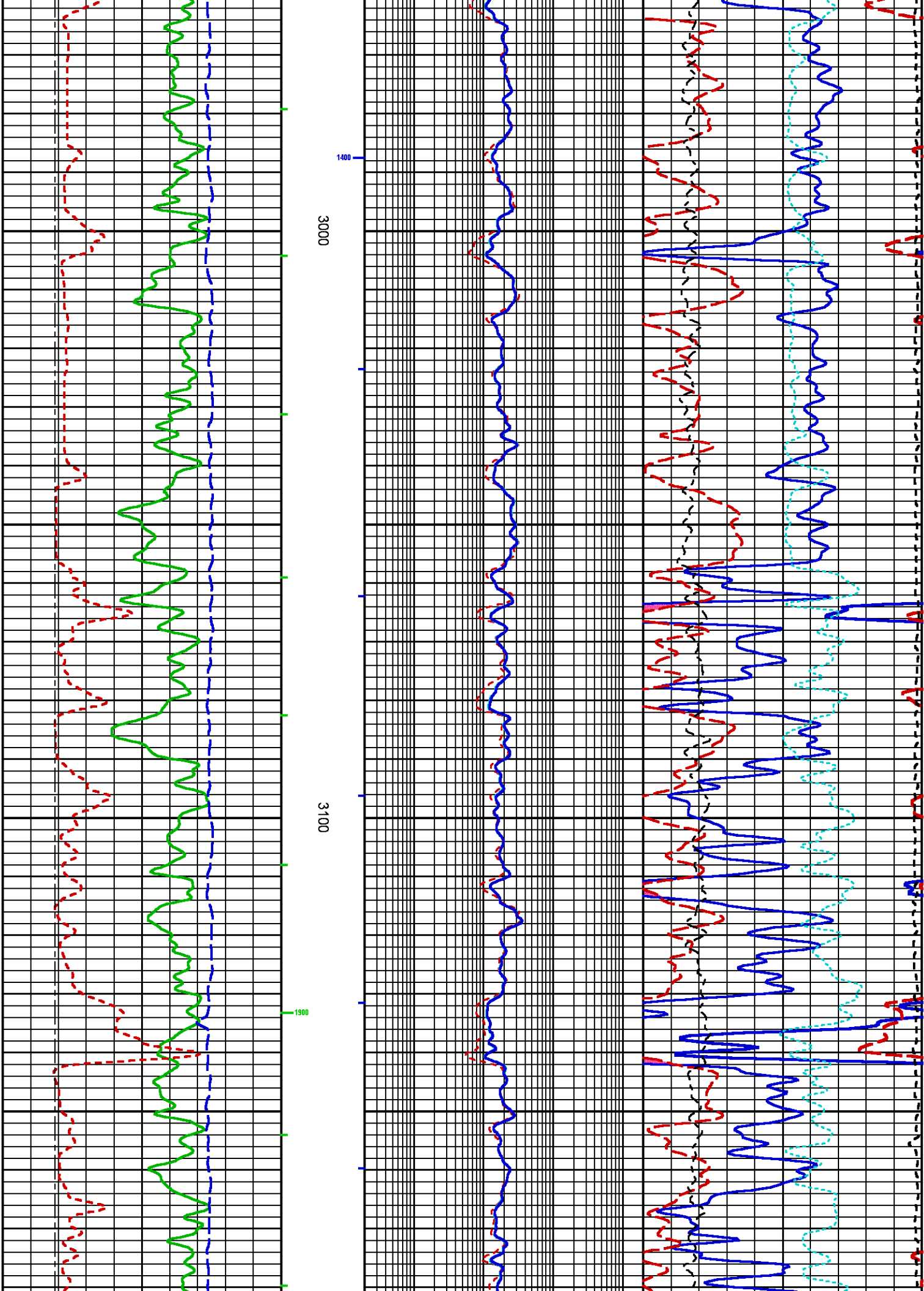
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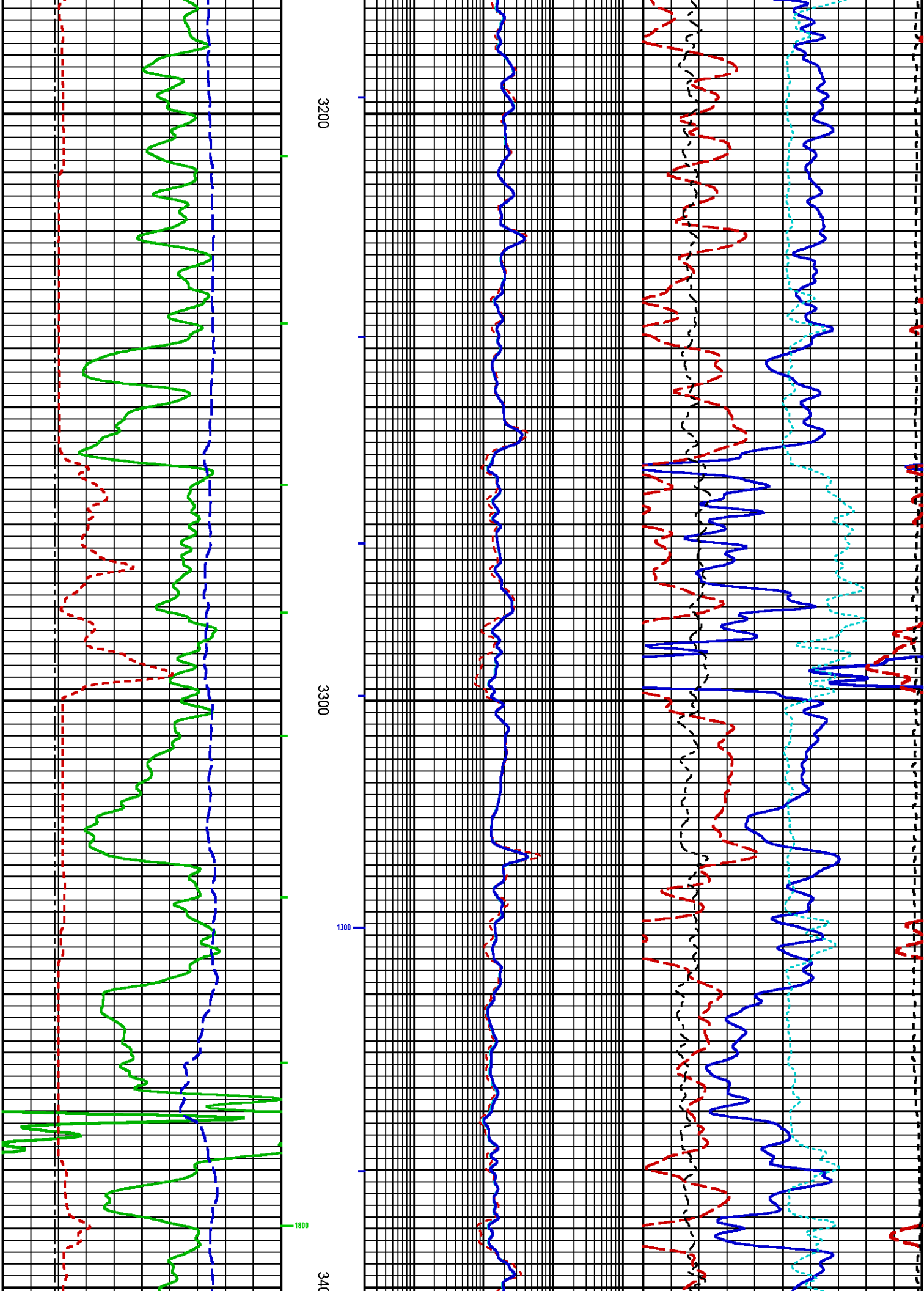
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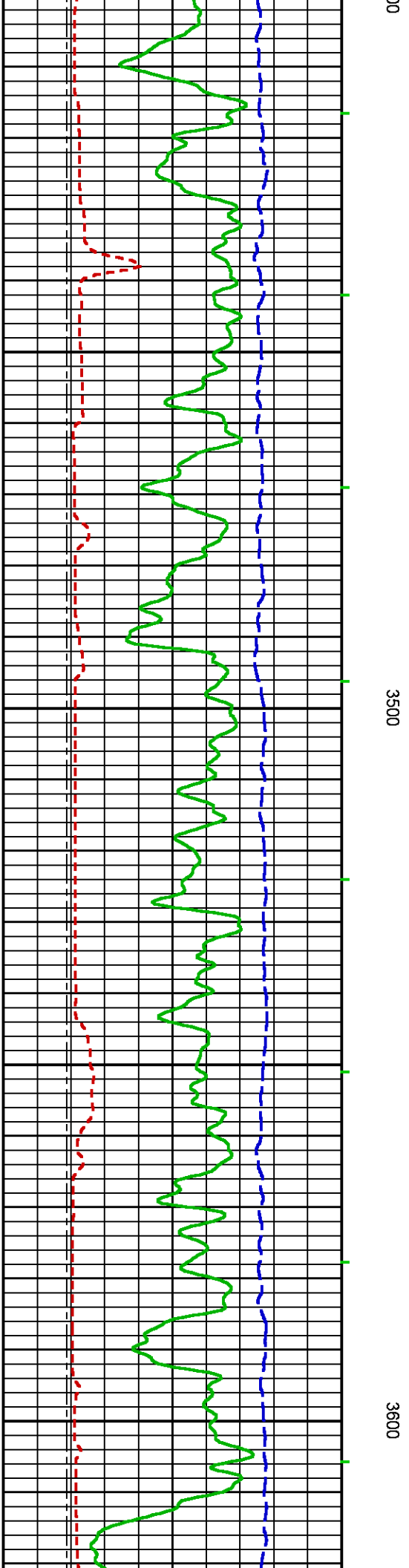
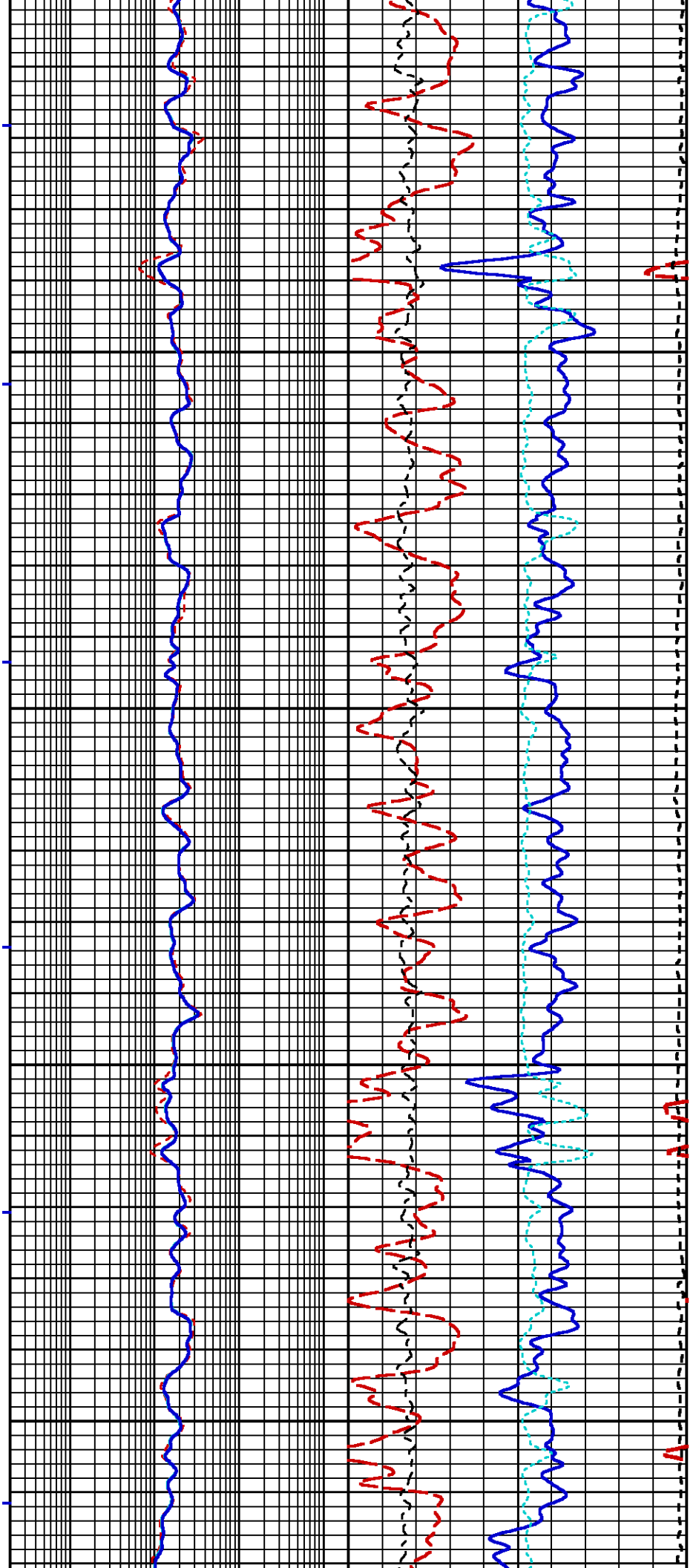
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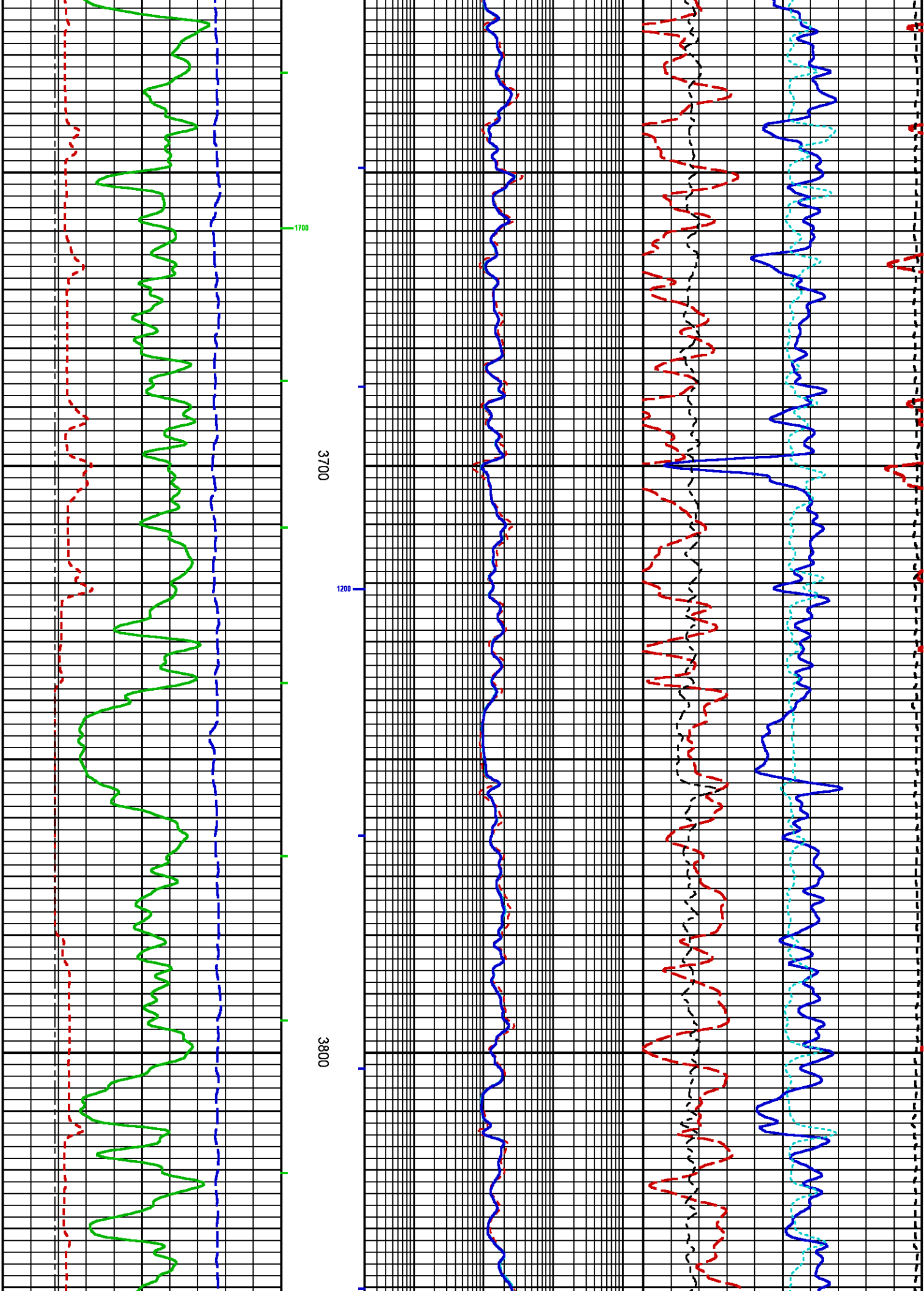


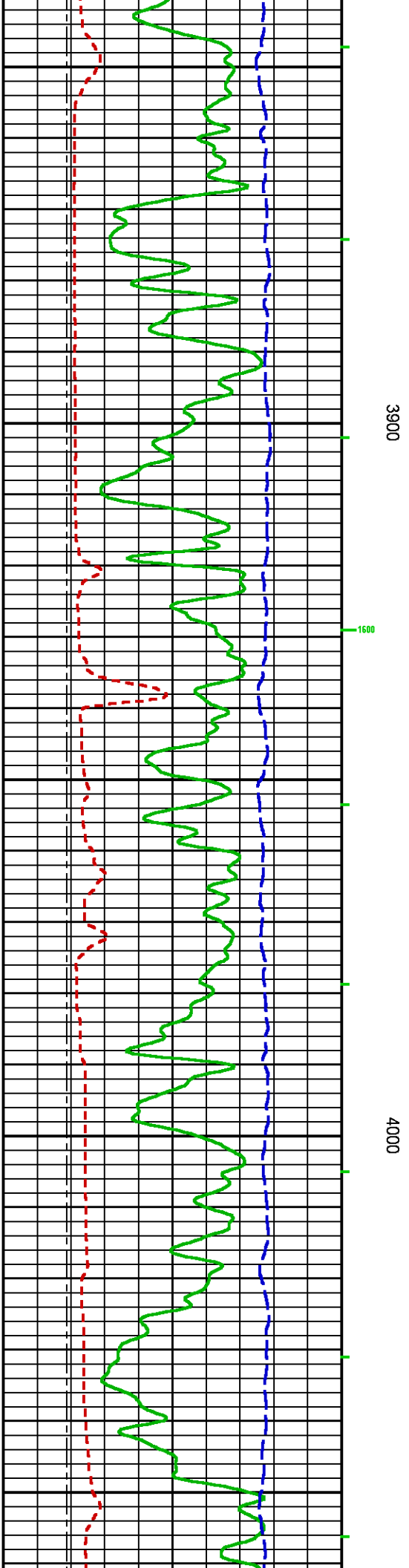
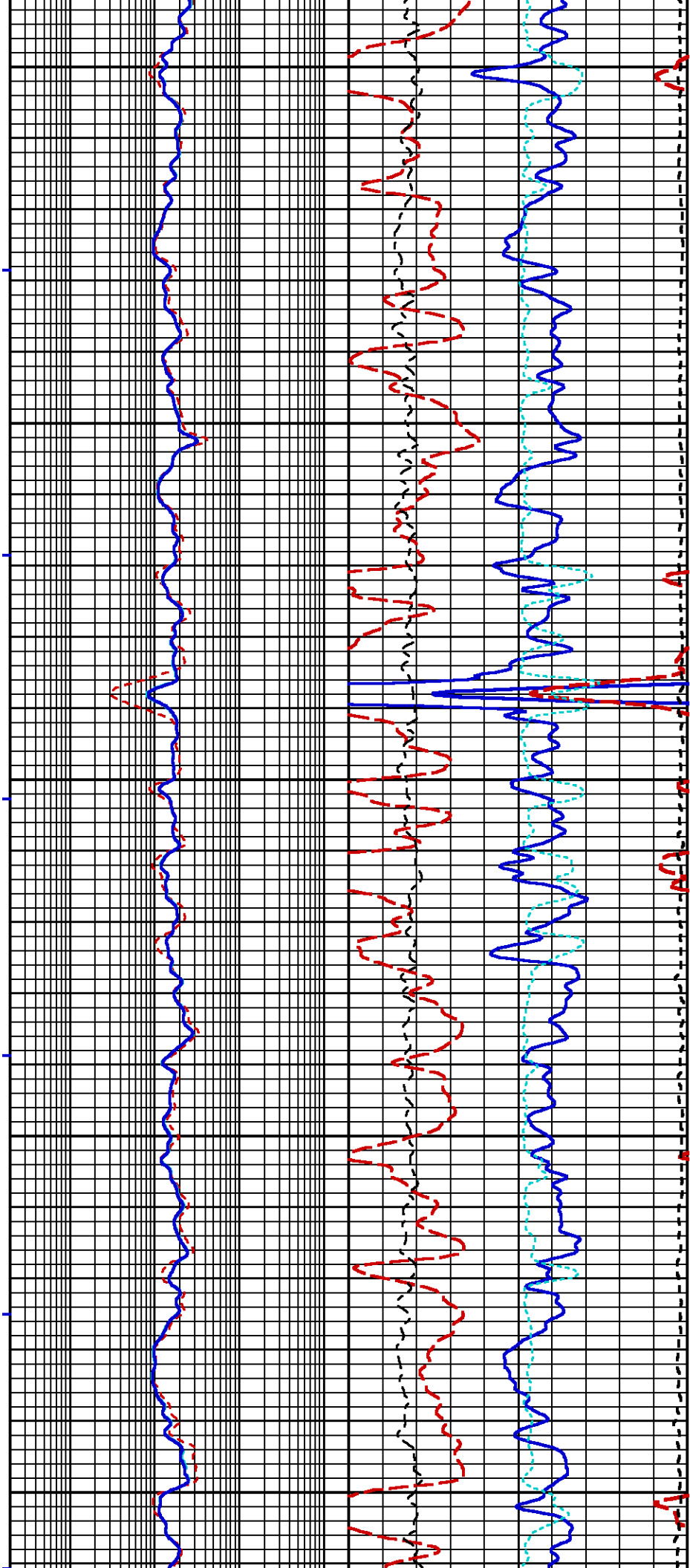




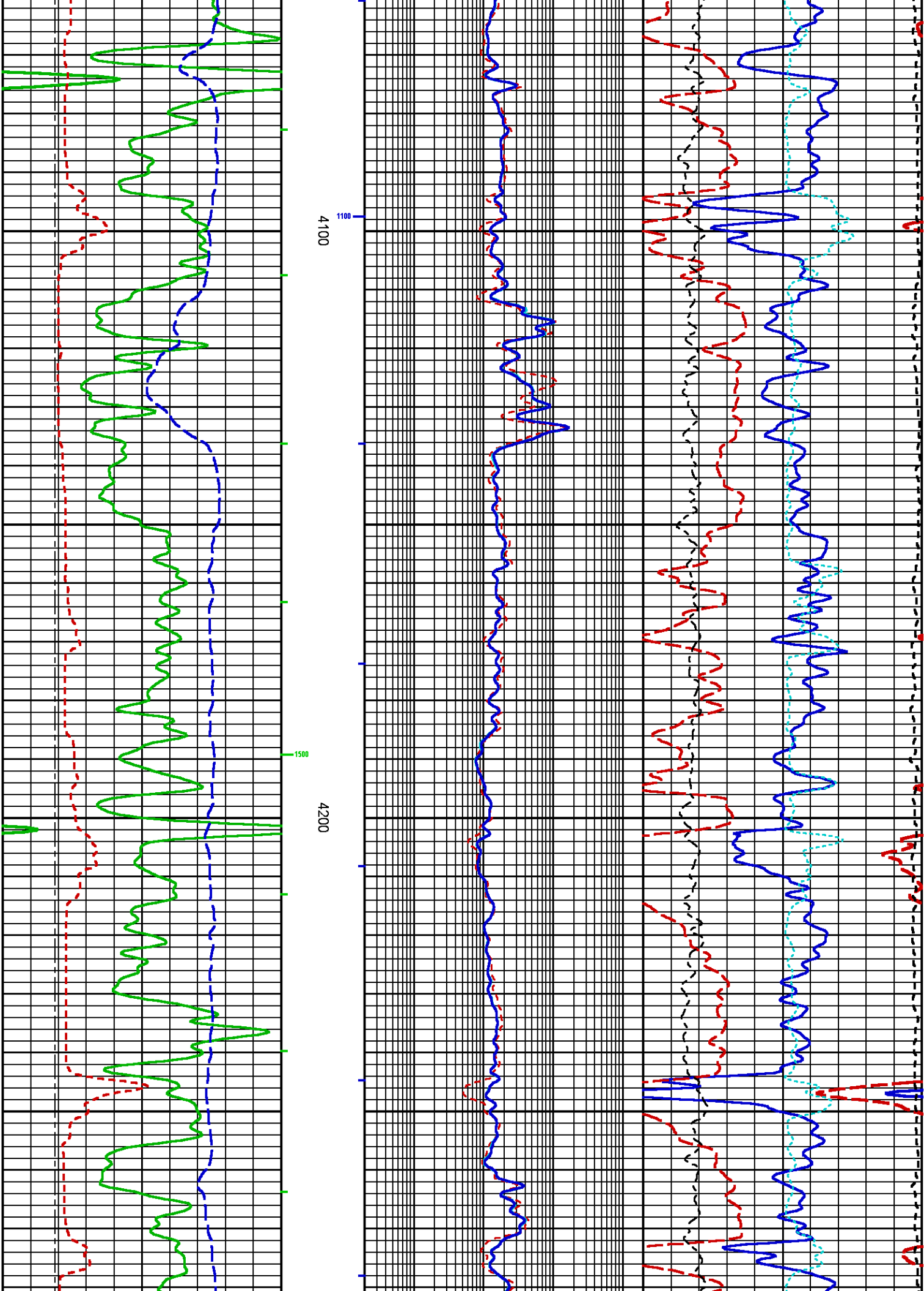




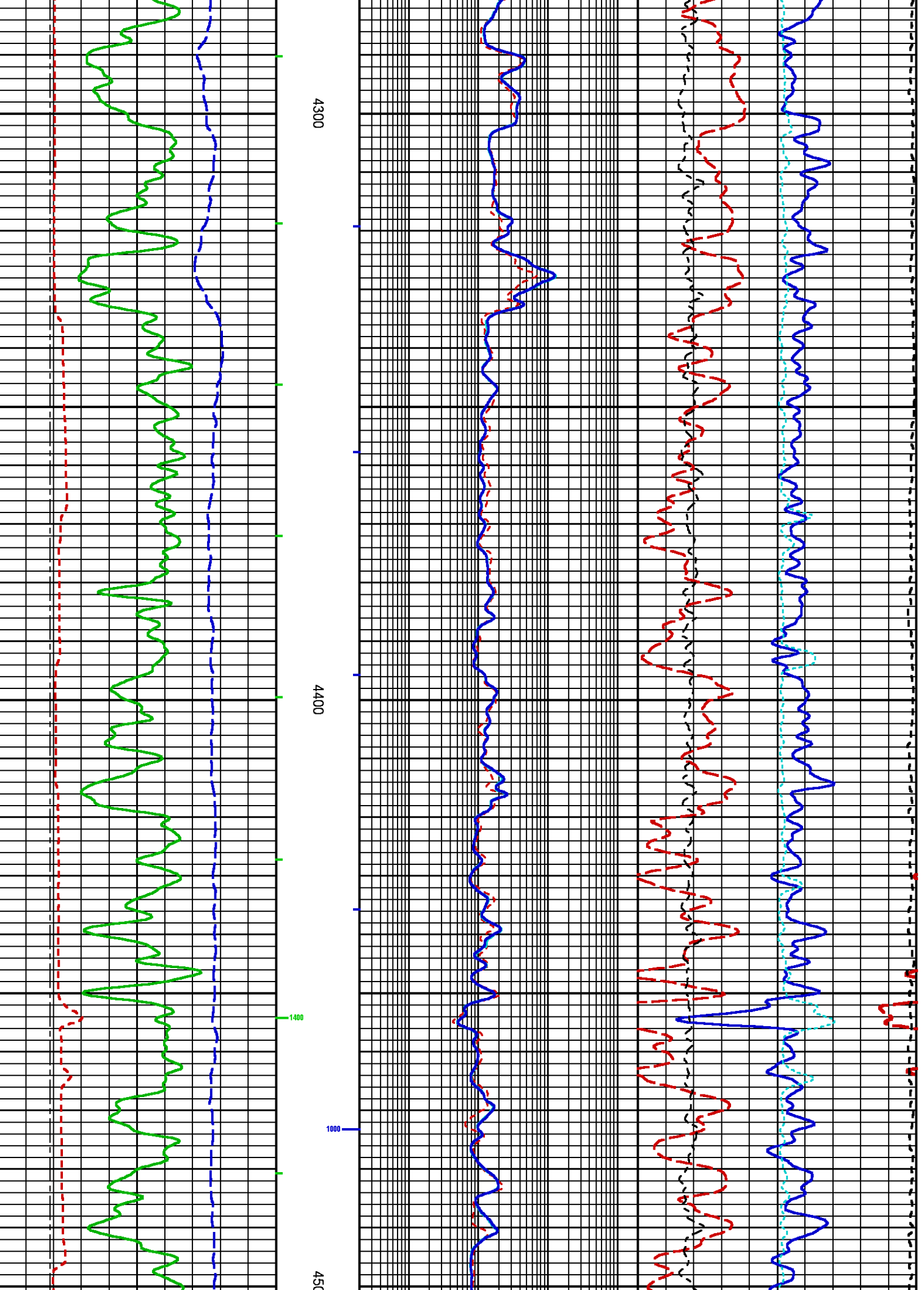


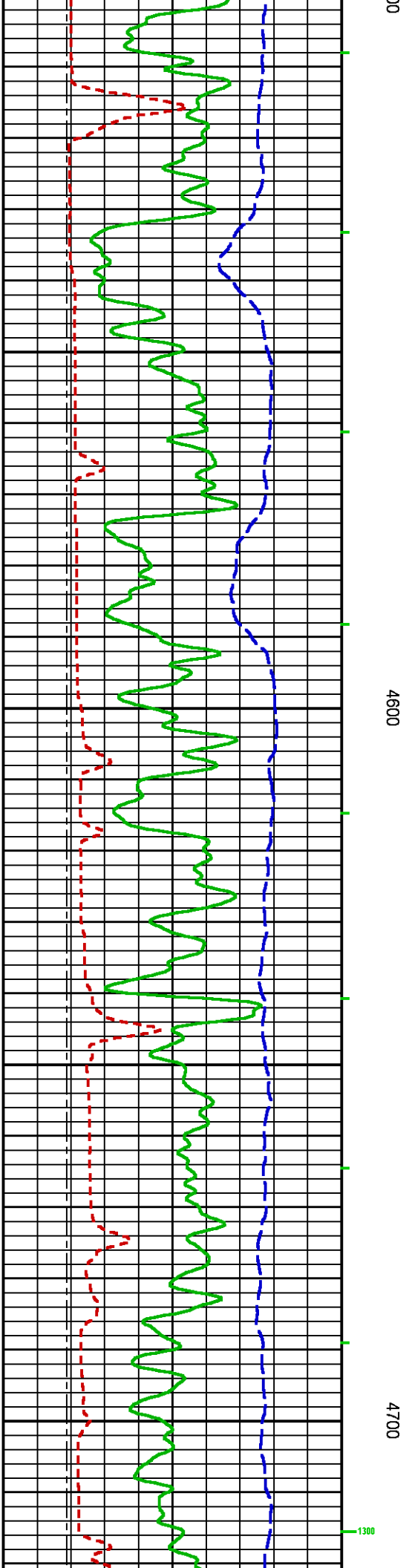
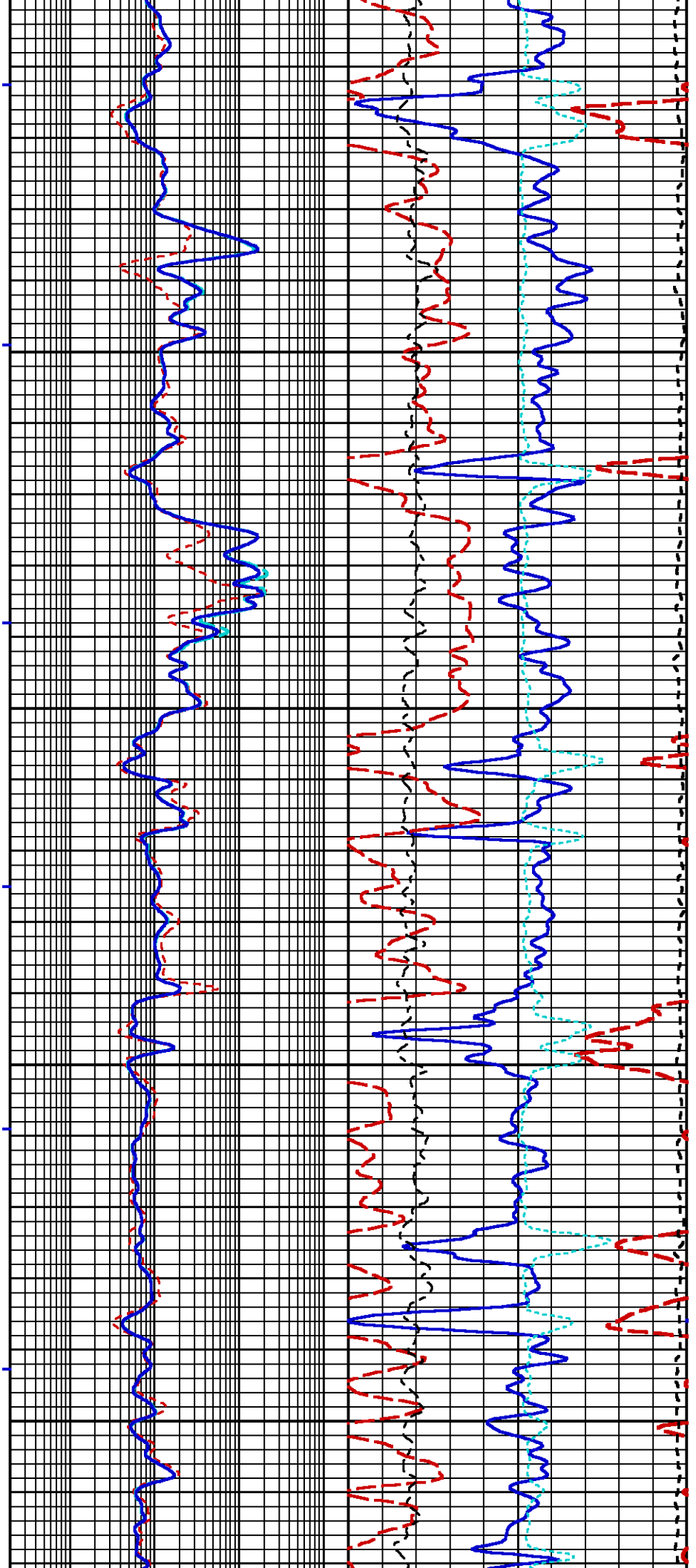


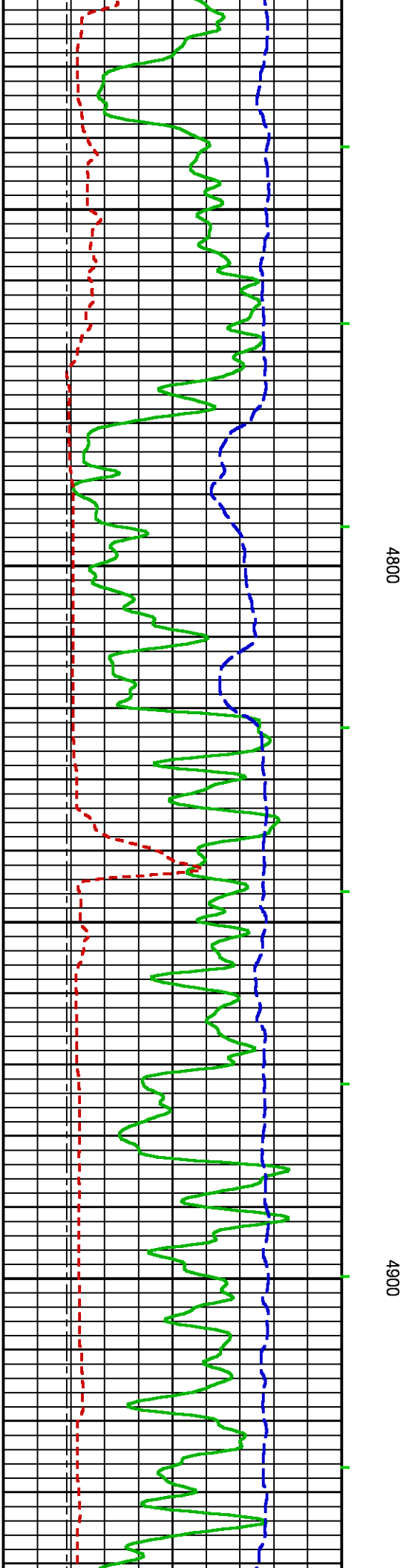
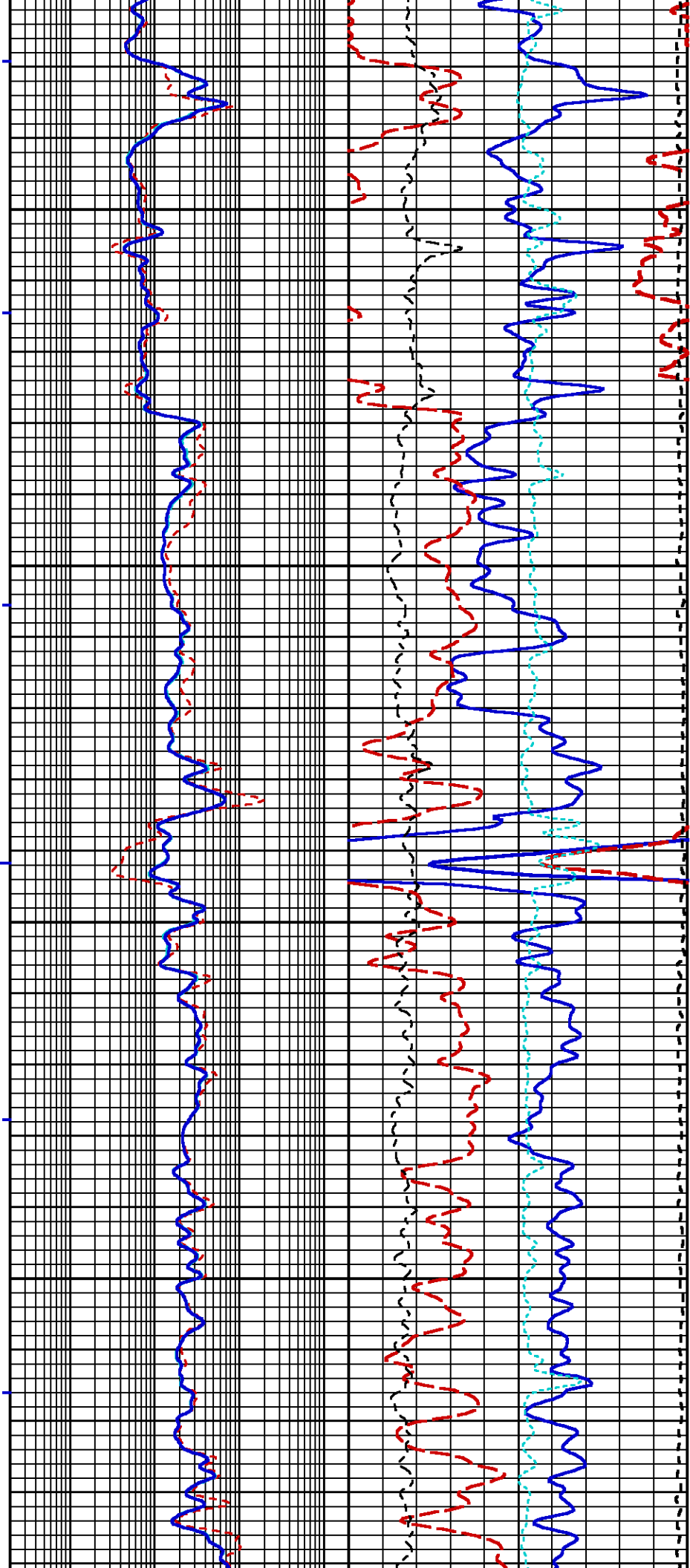


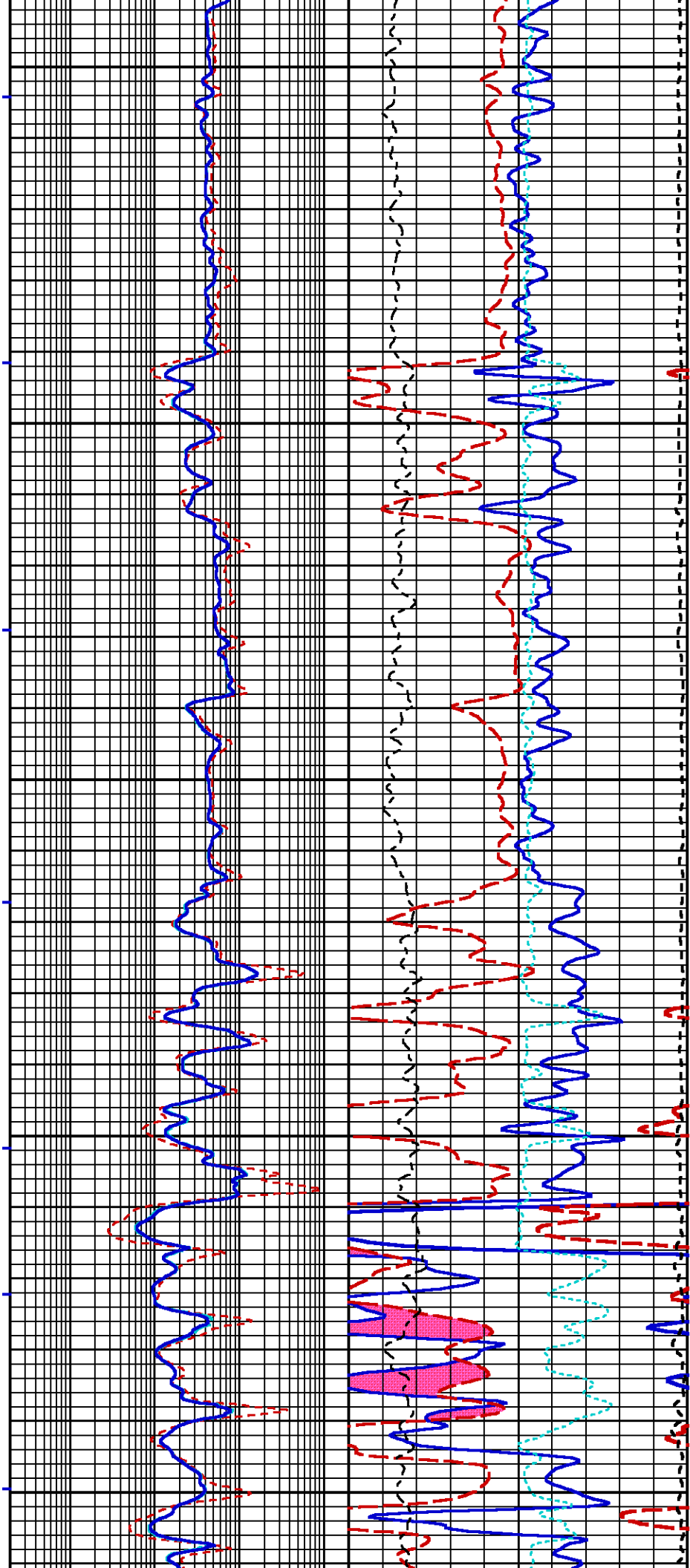








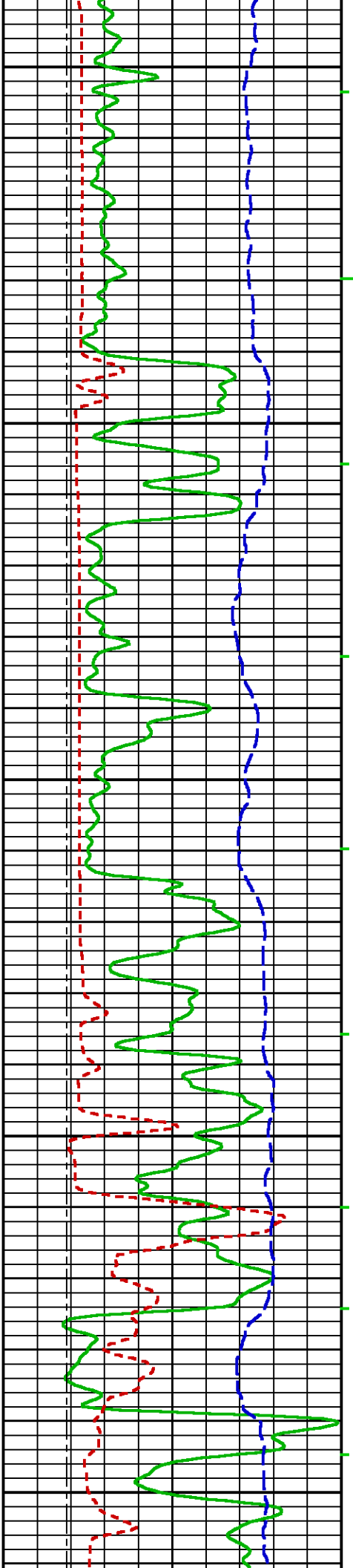




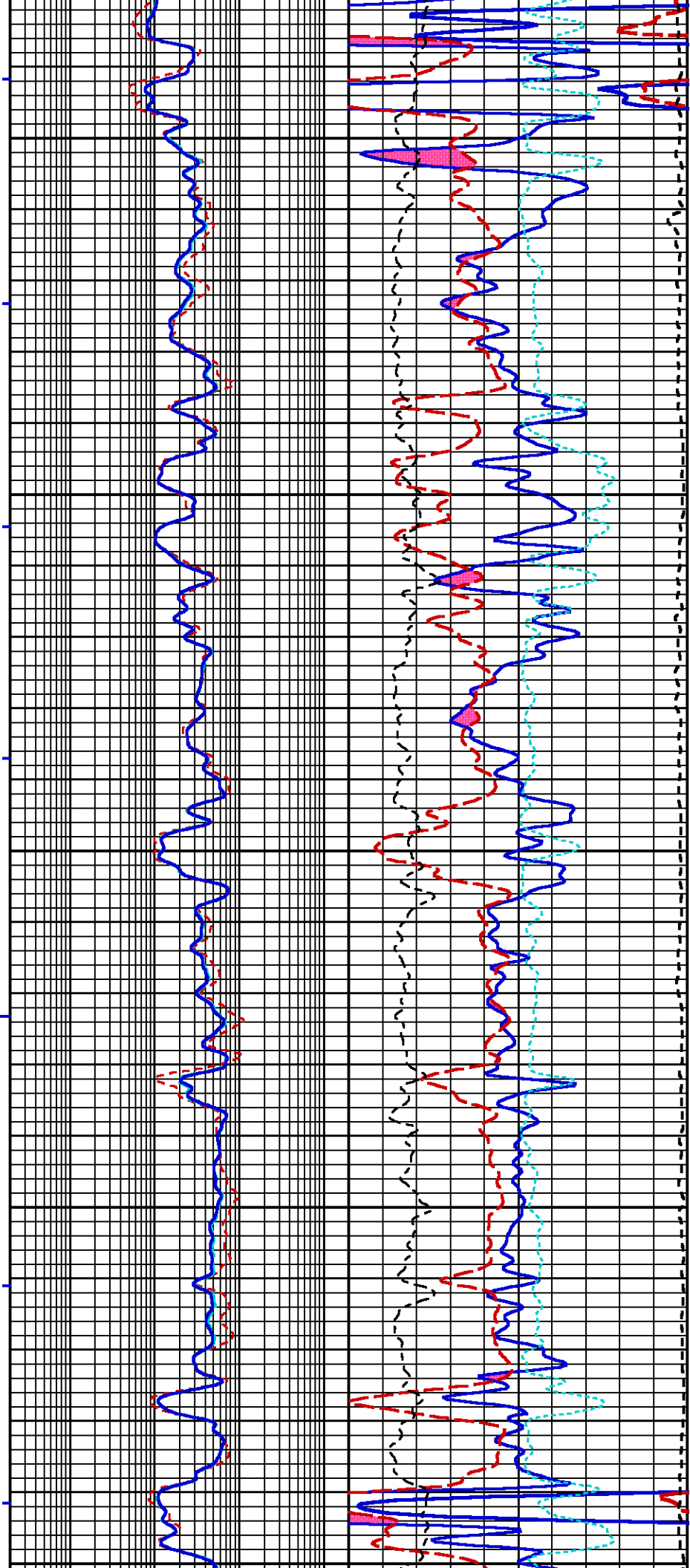
5000

5100

1200







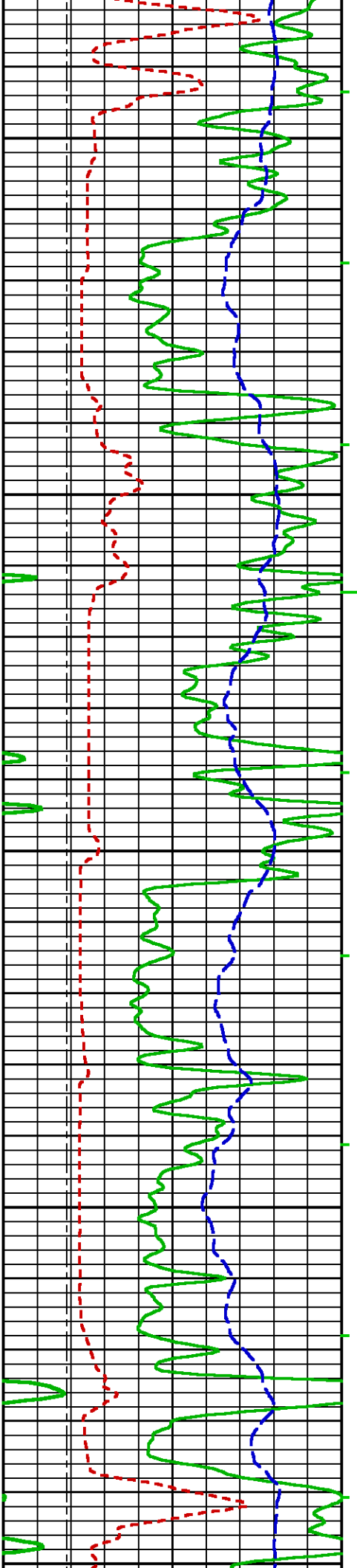
5400

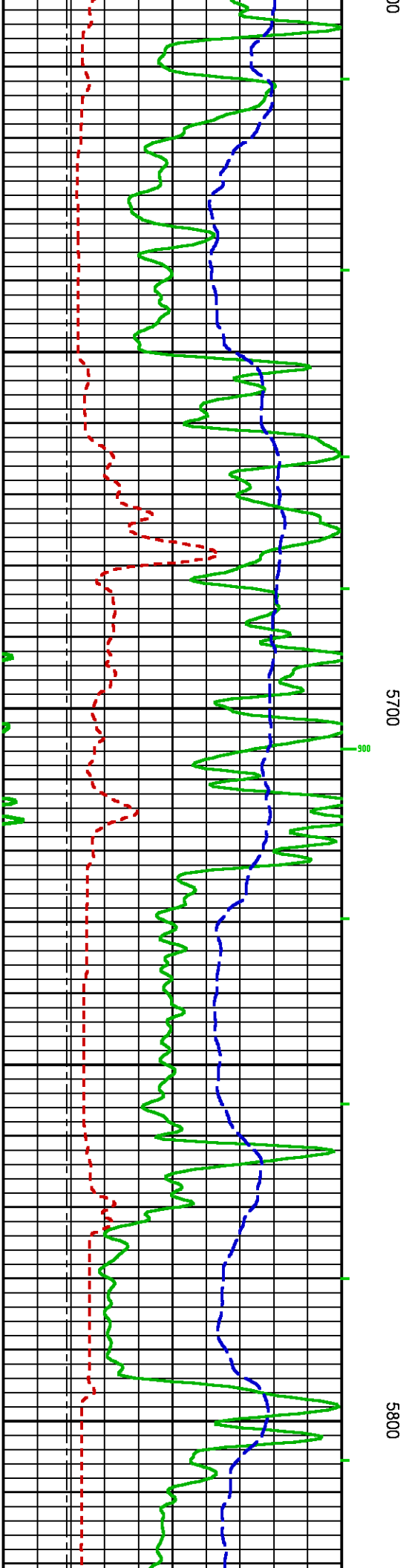
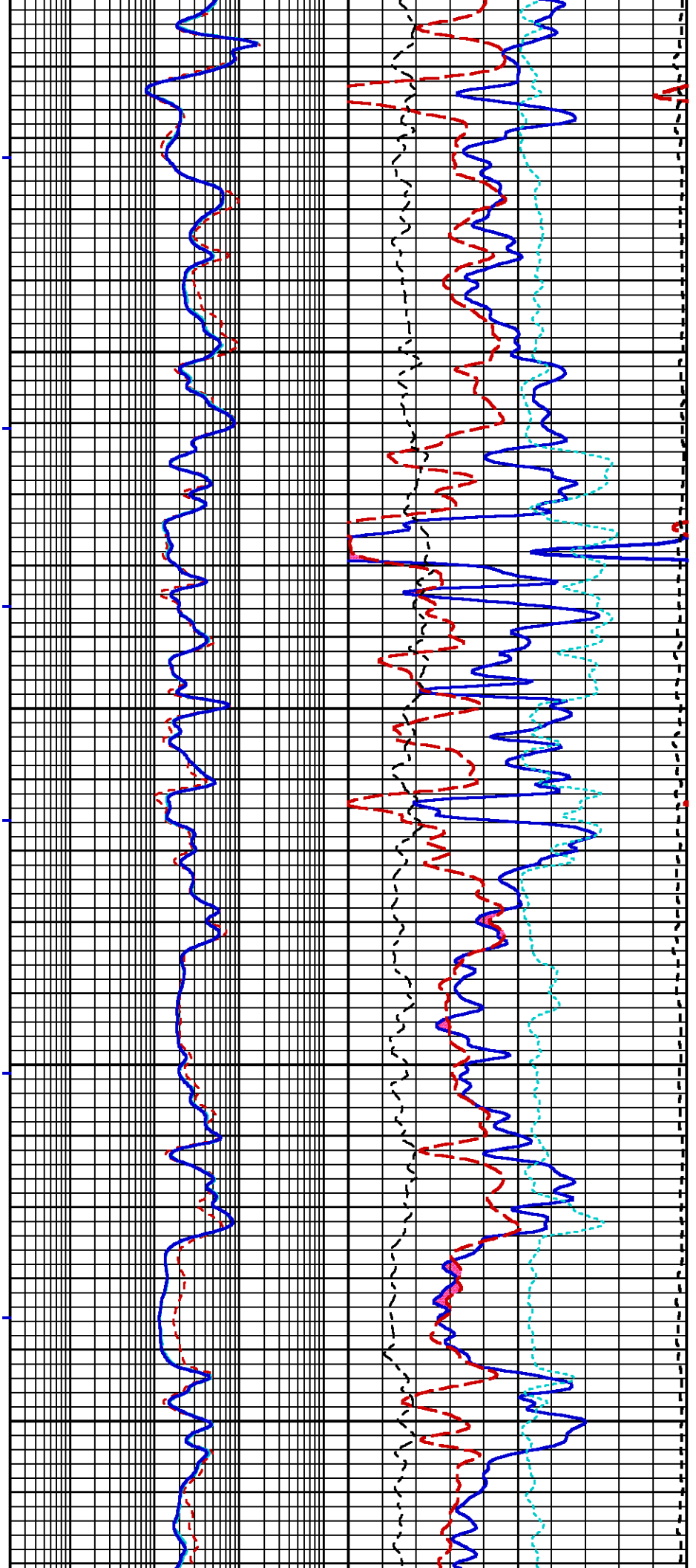
5500

700

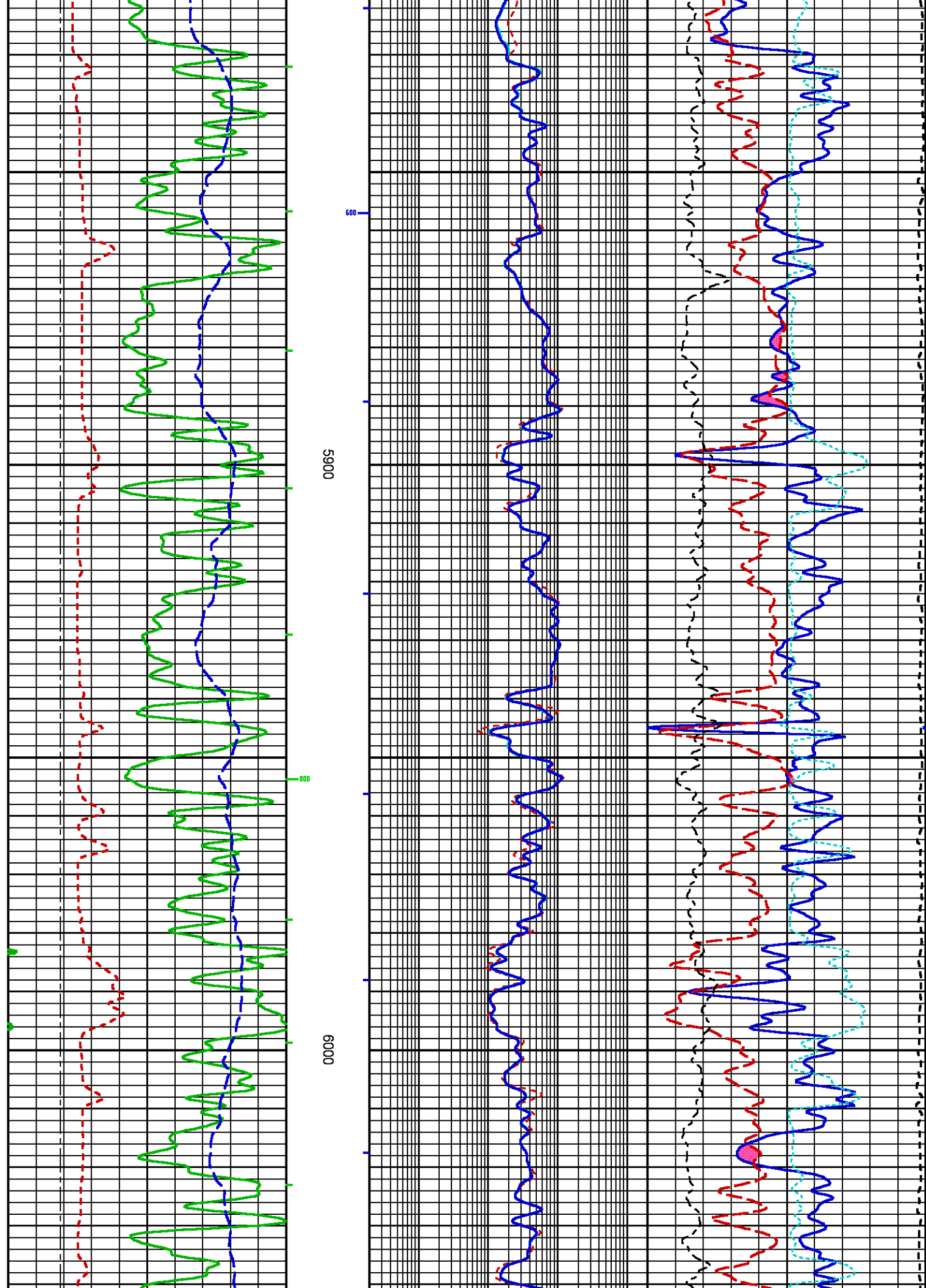
5600

1000

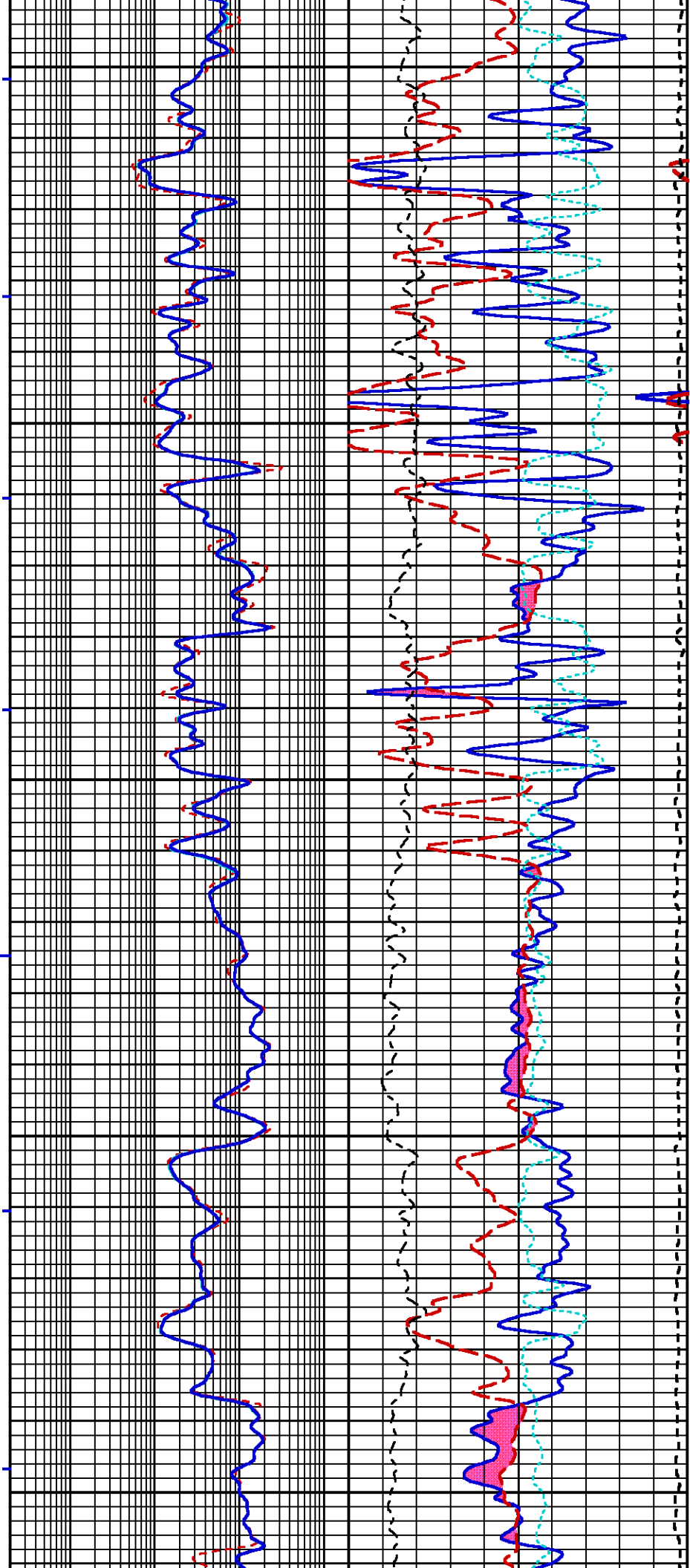










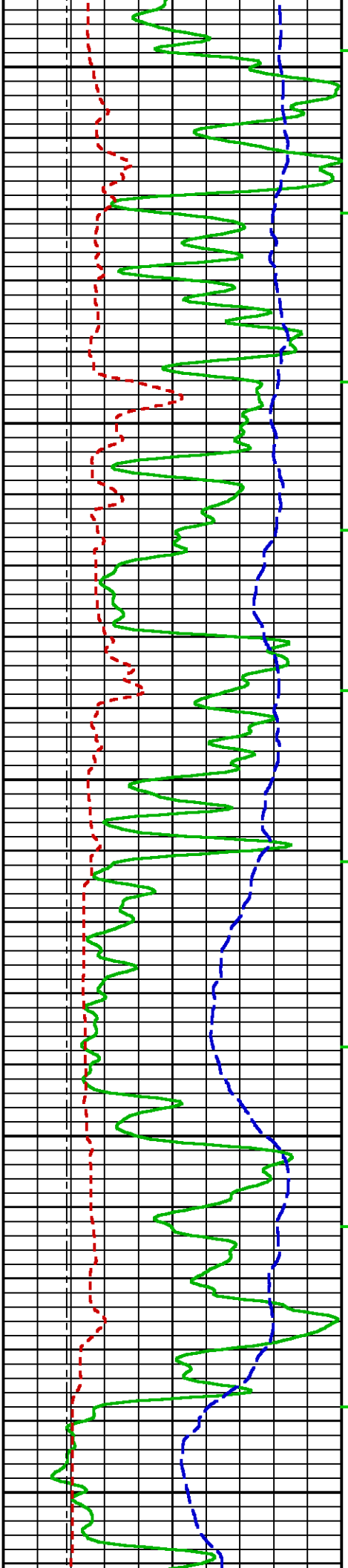


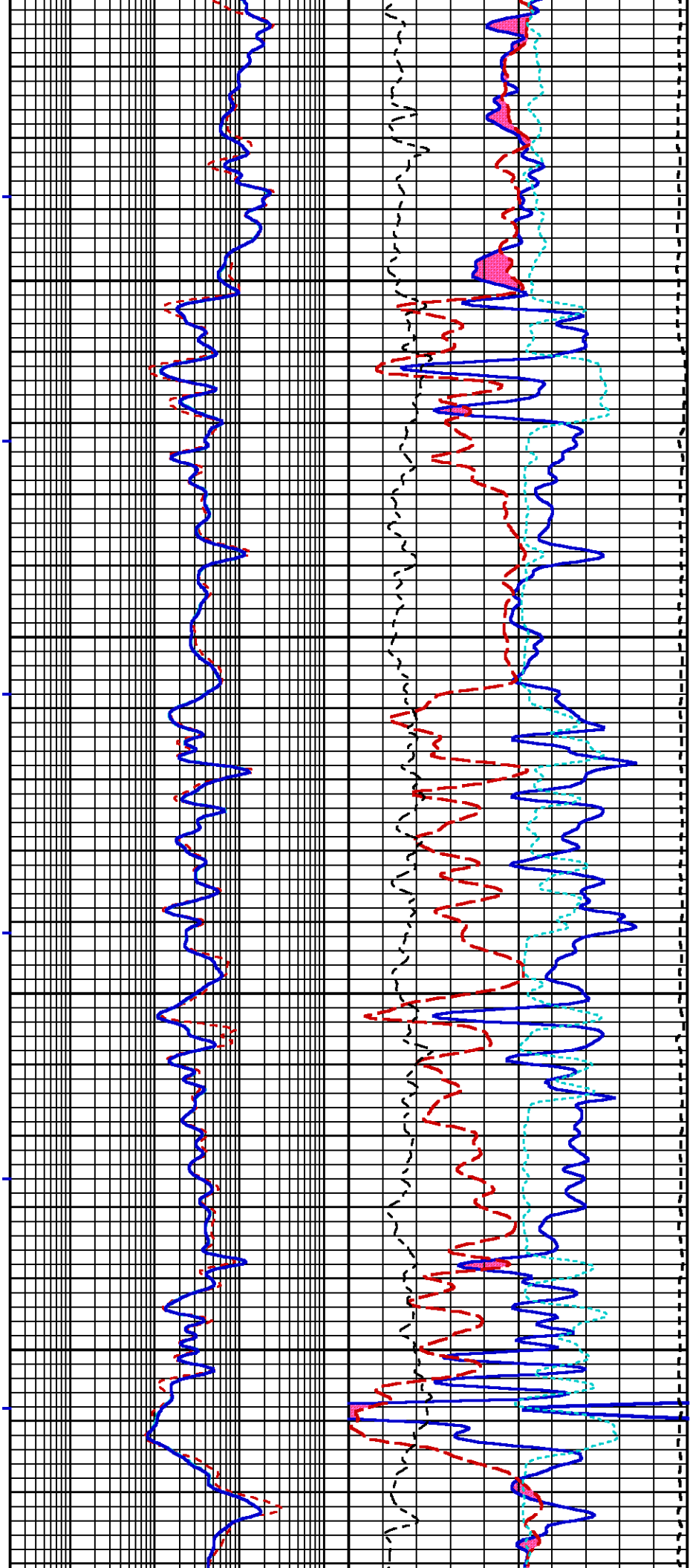
6100

500

6200

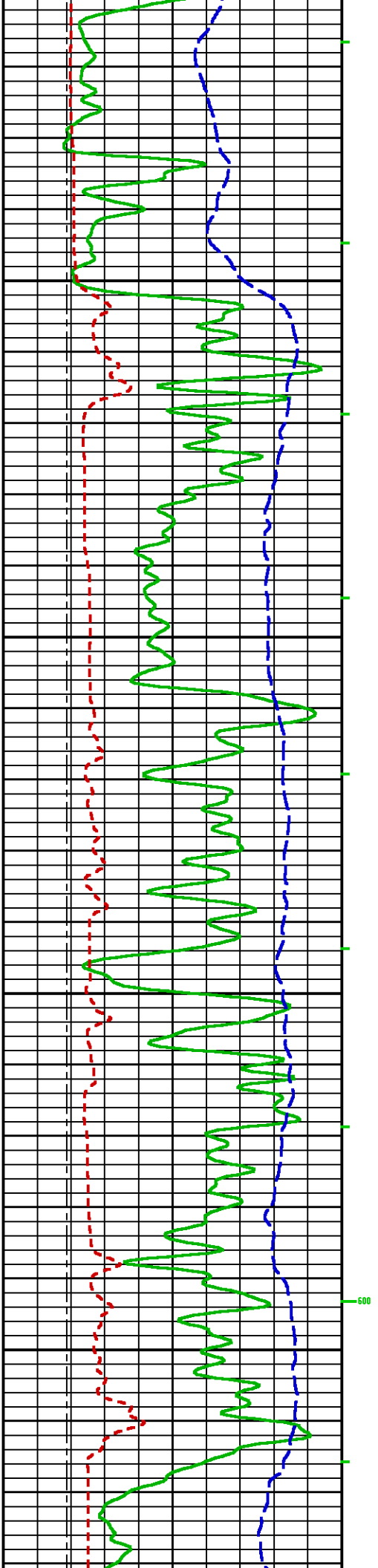
700

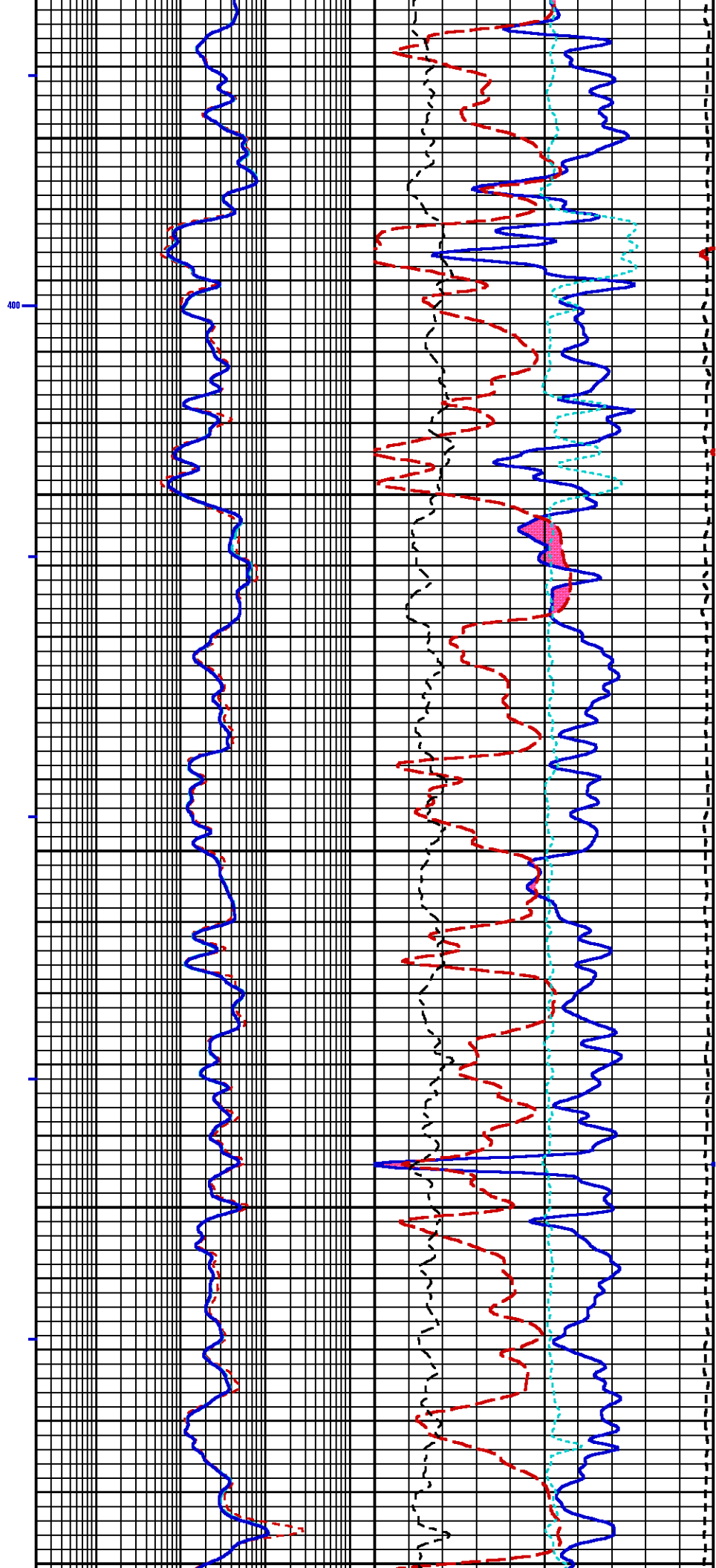
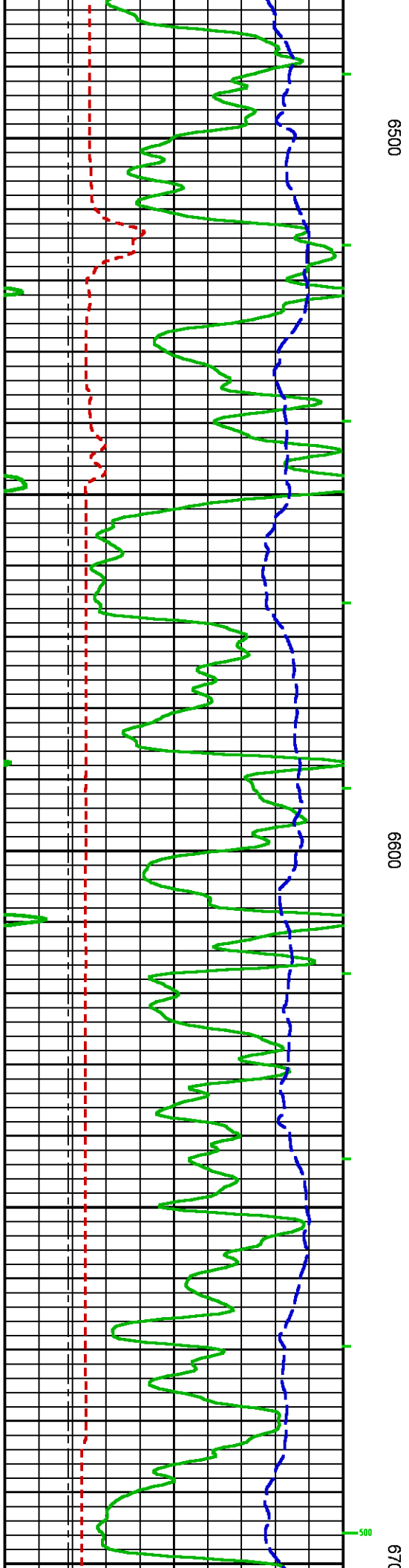


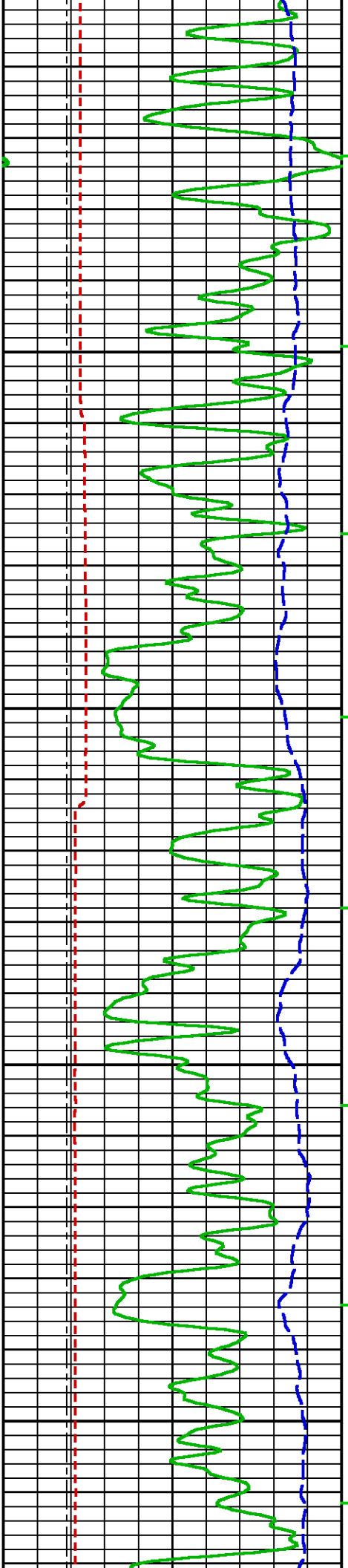


6300

6400





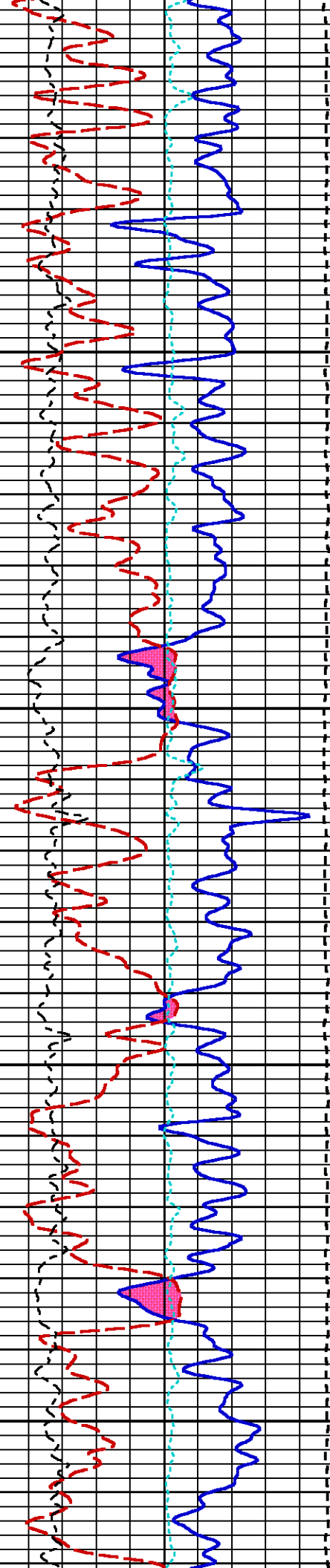
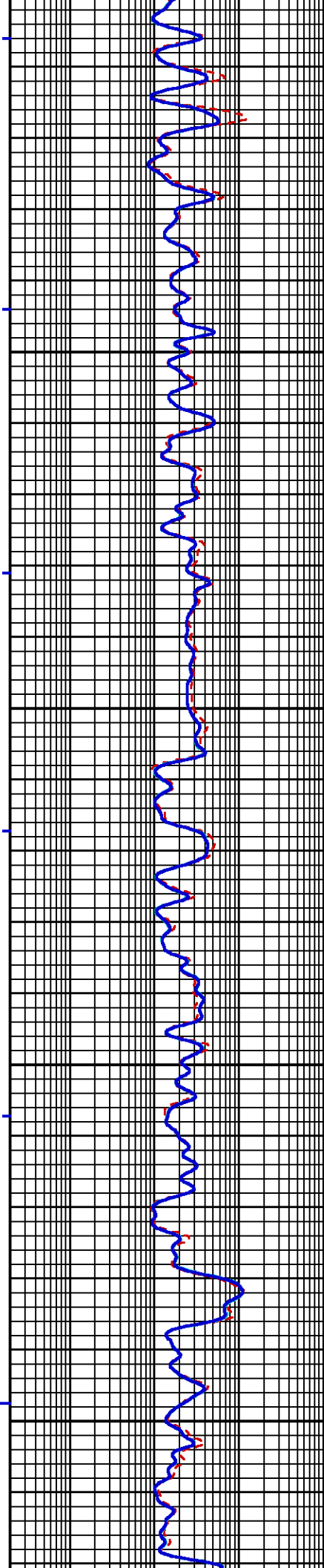


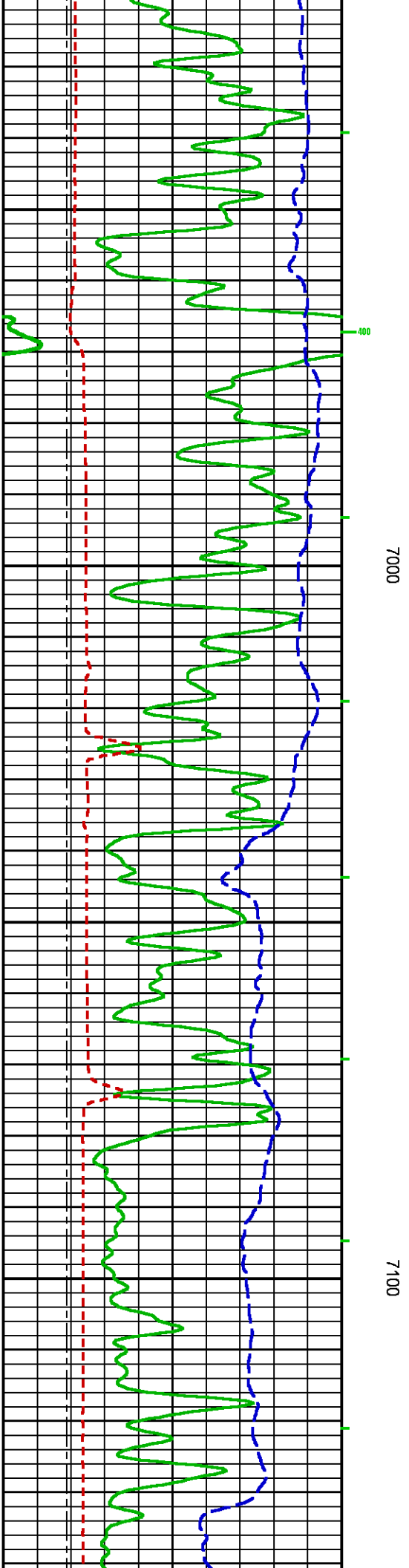
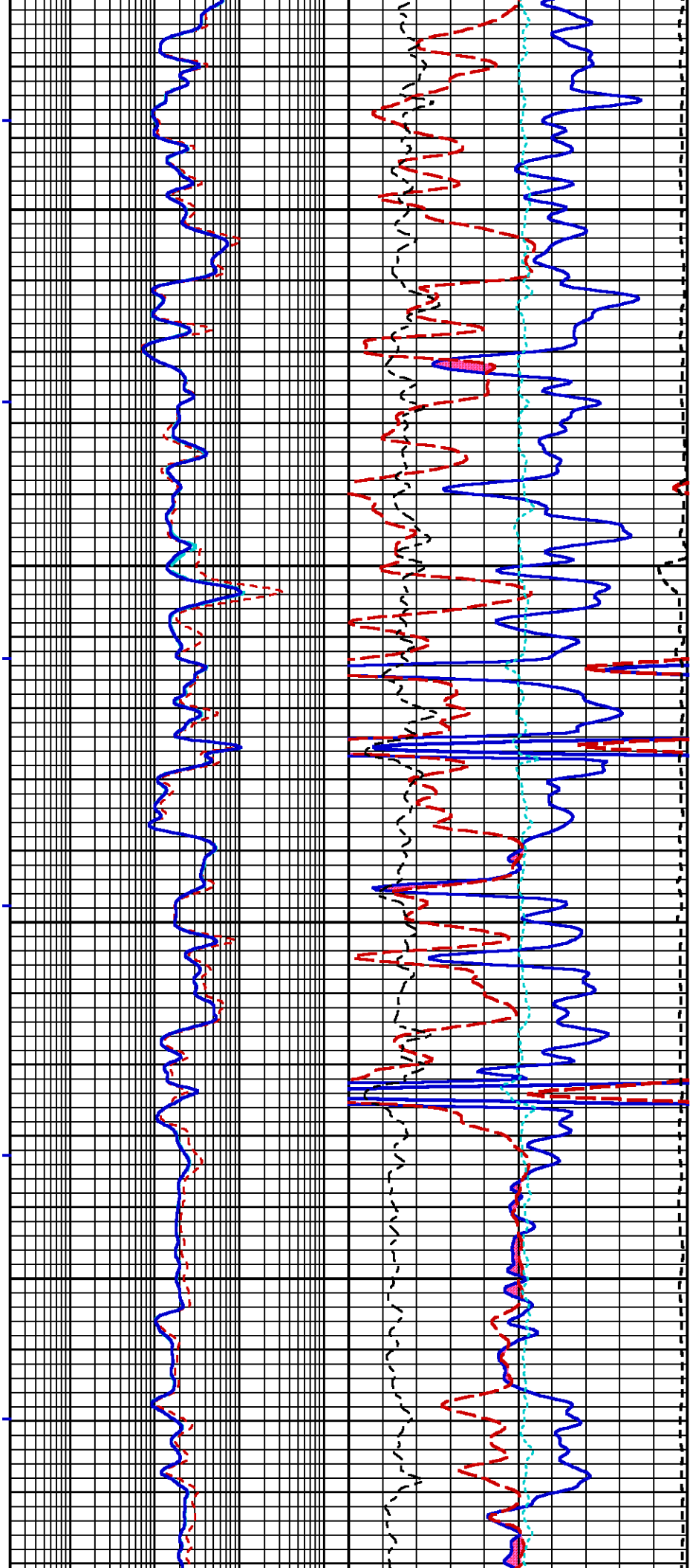
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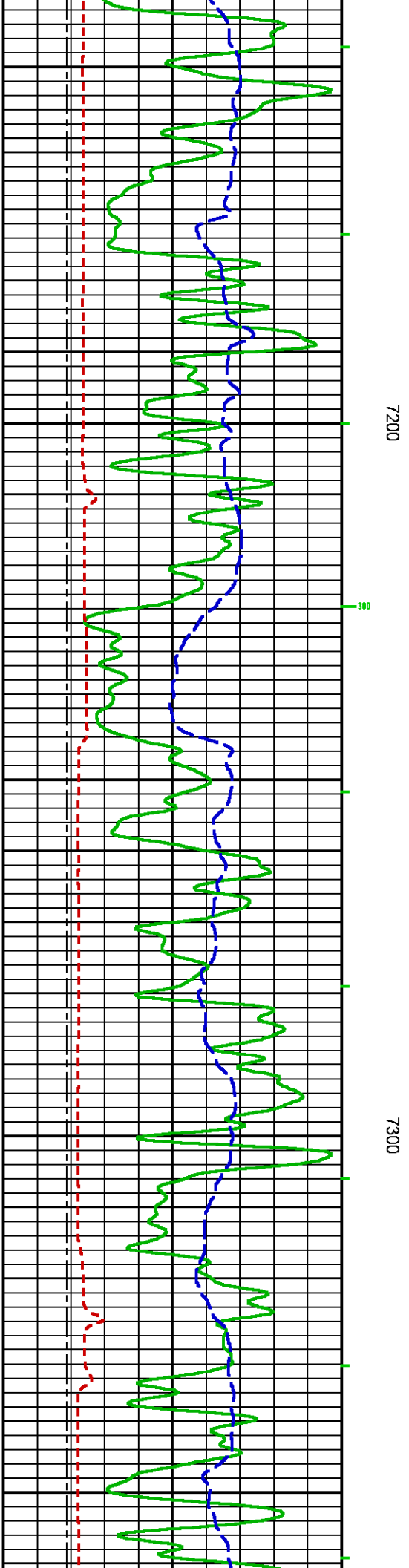
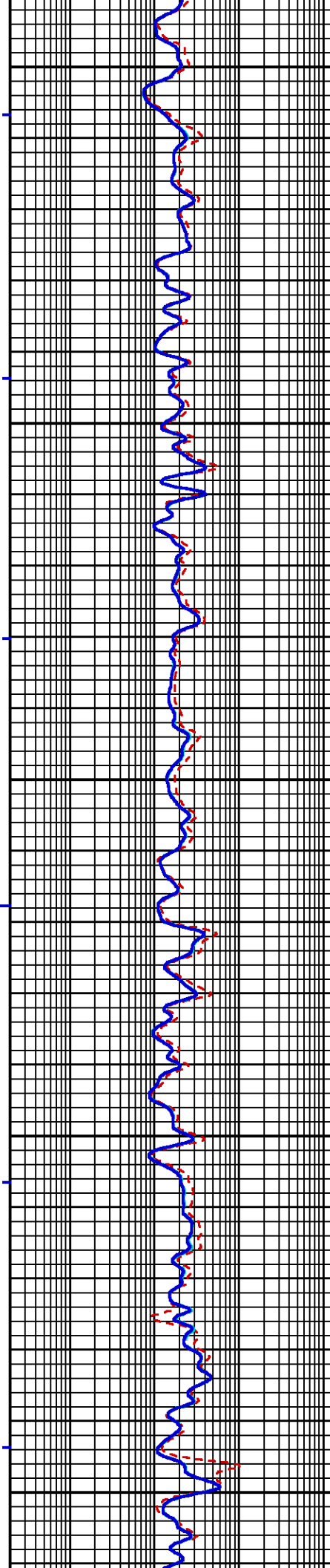
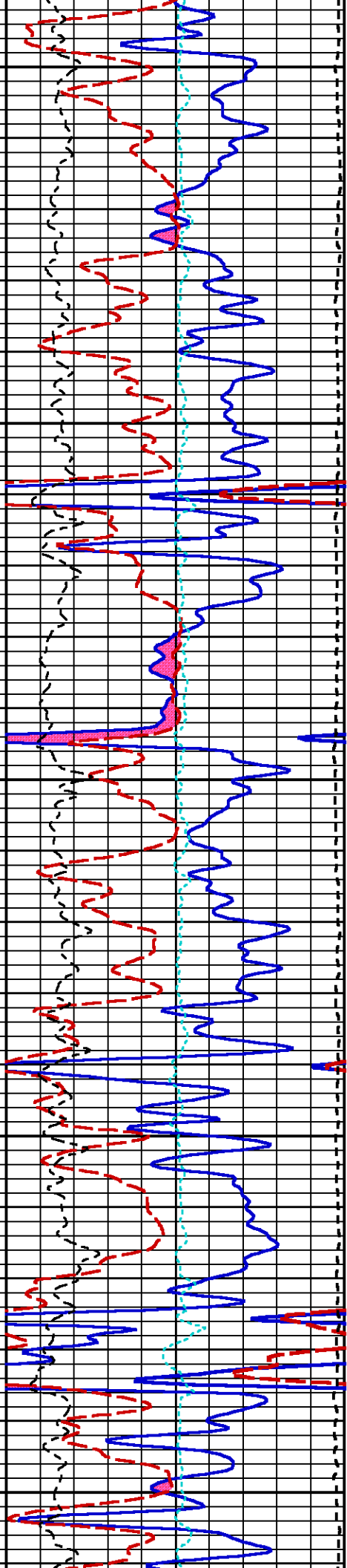
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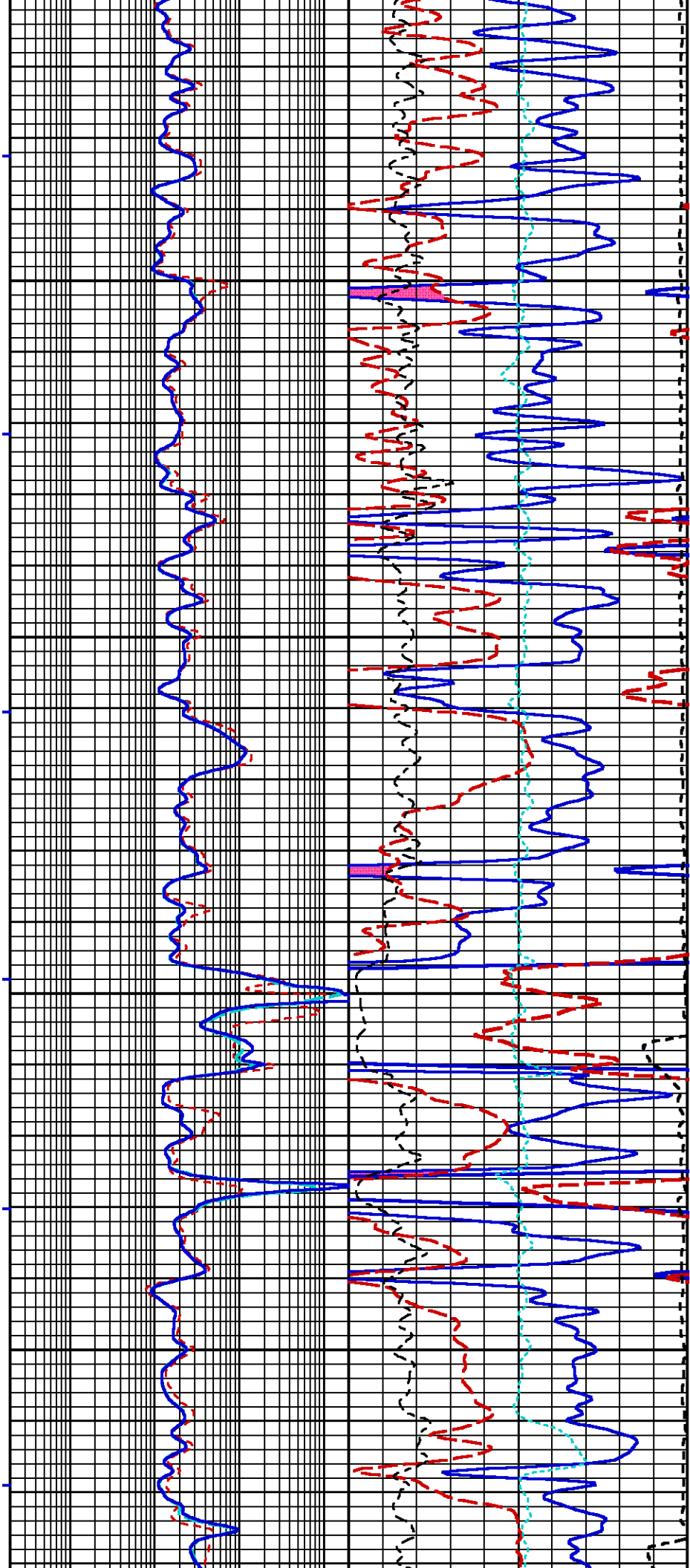
00

300





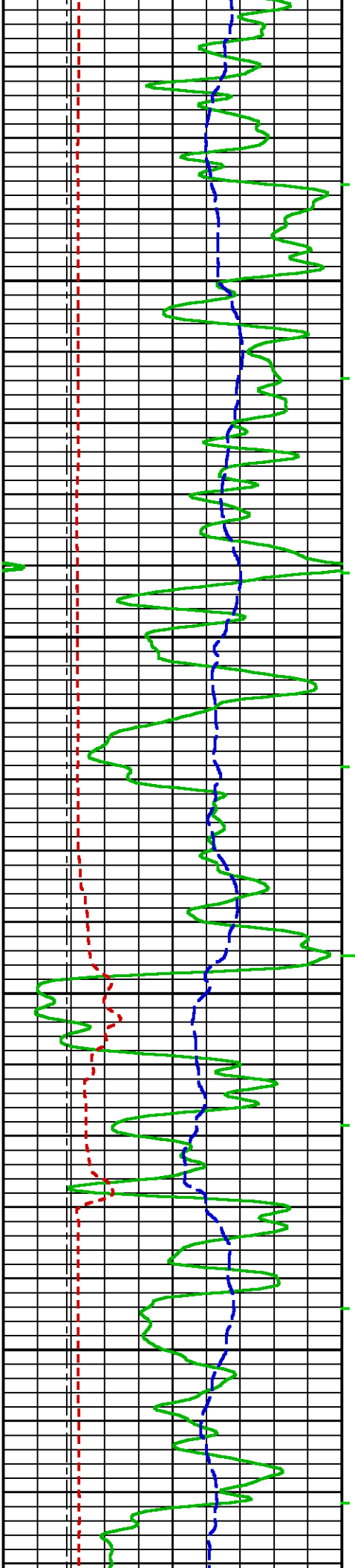




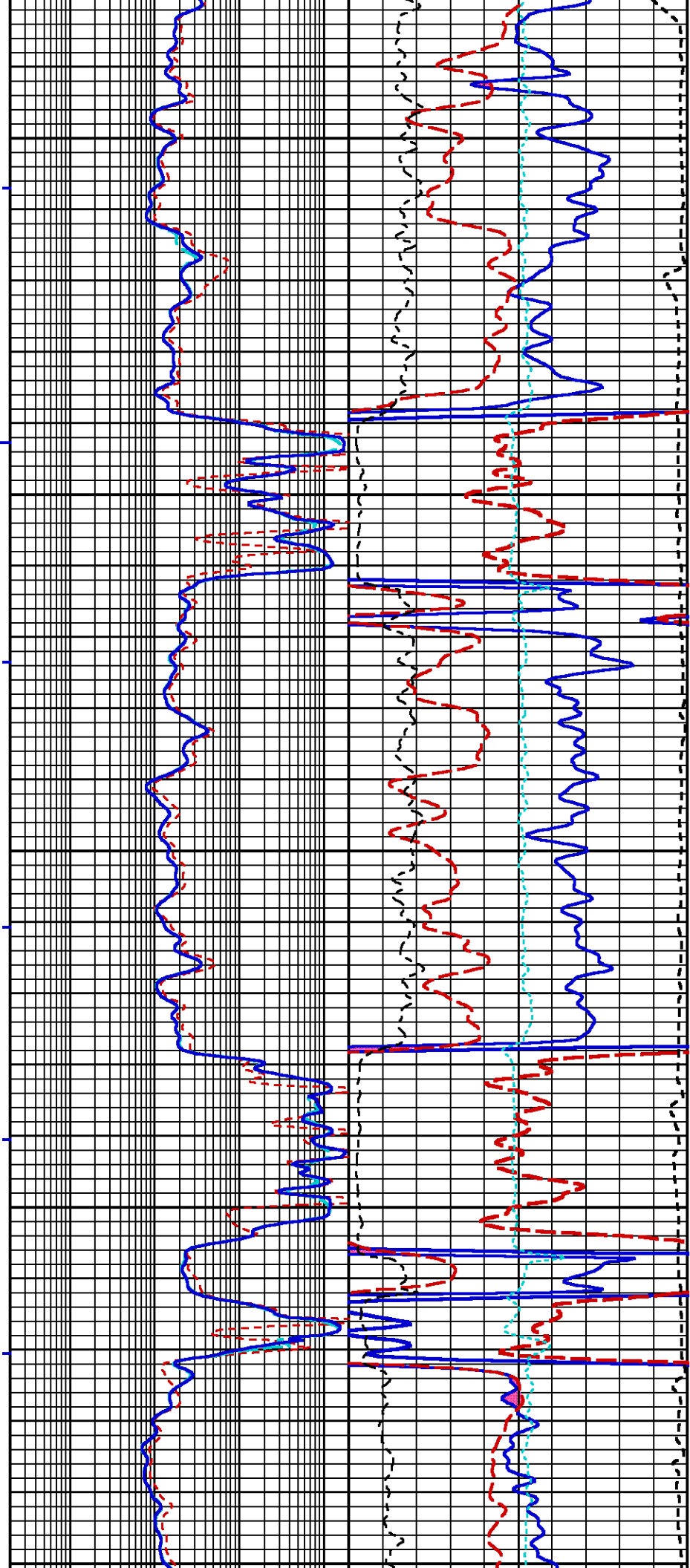
7400

7500

200







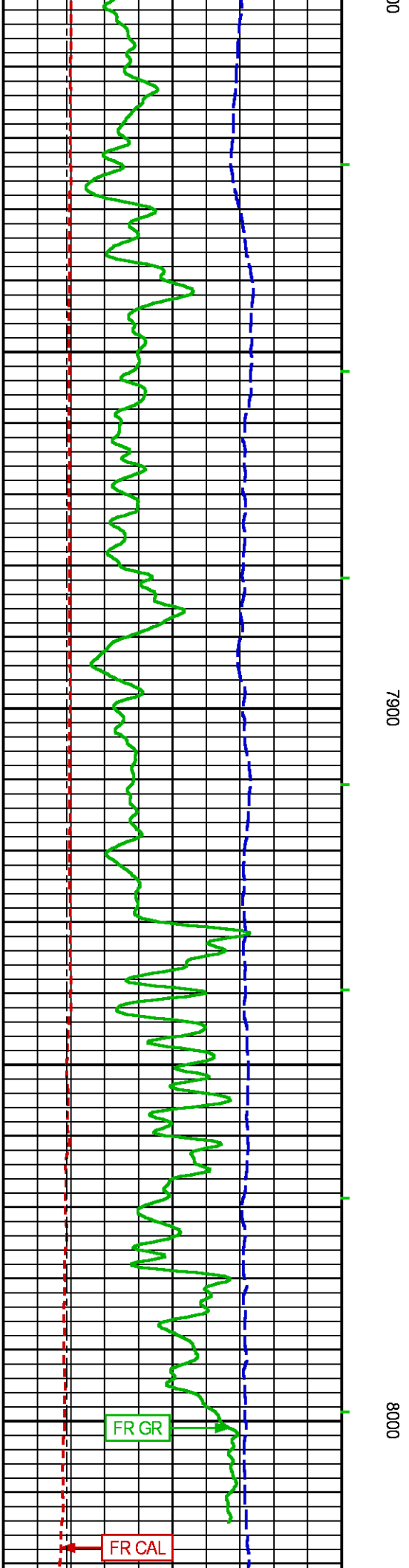
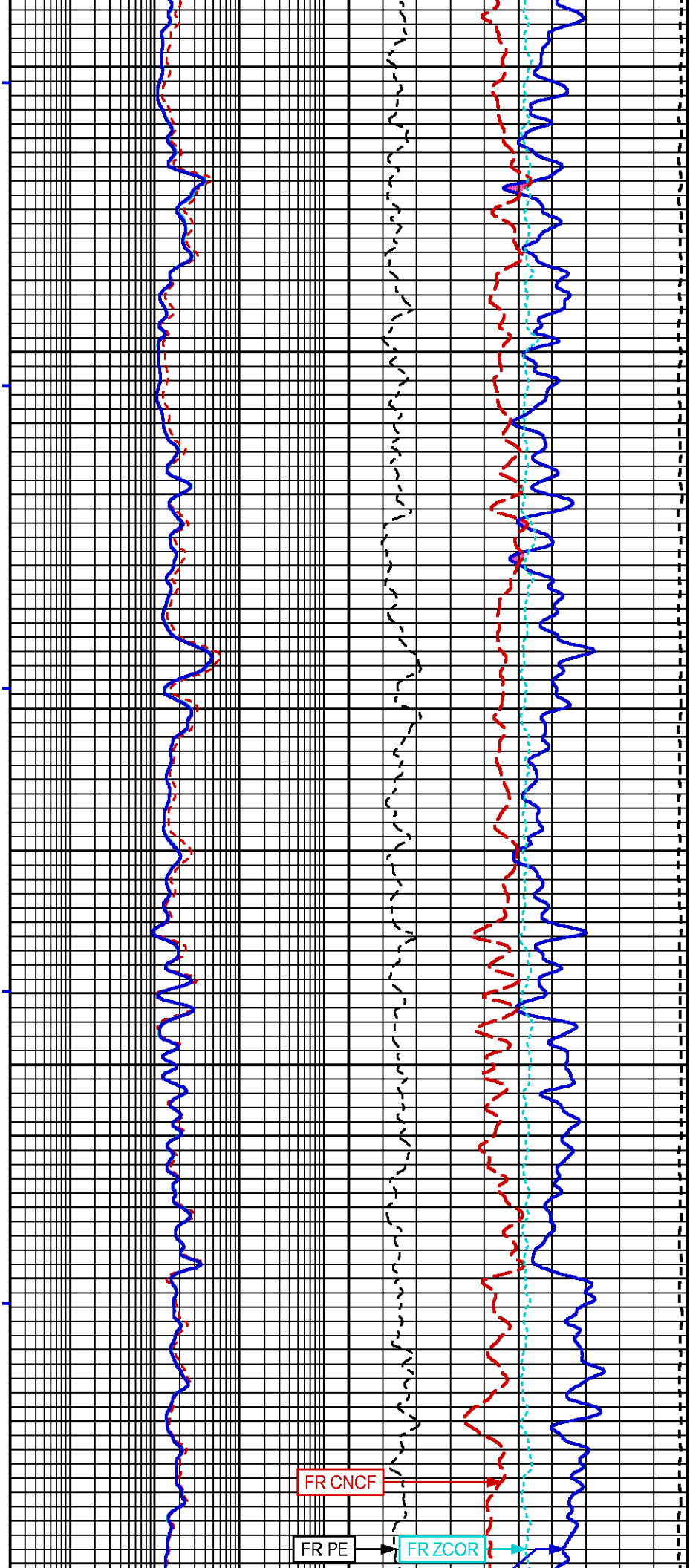
7600

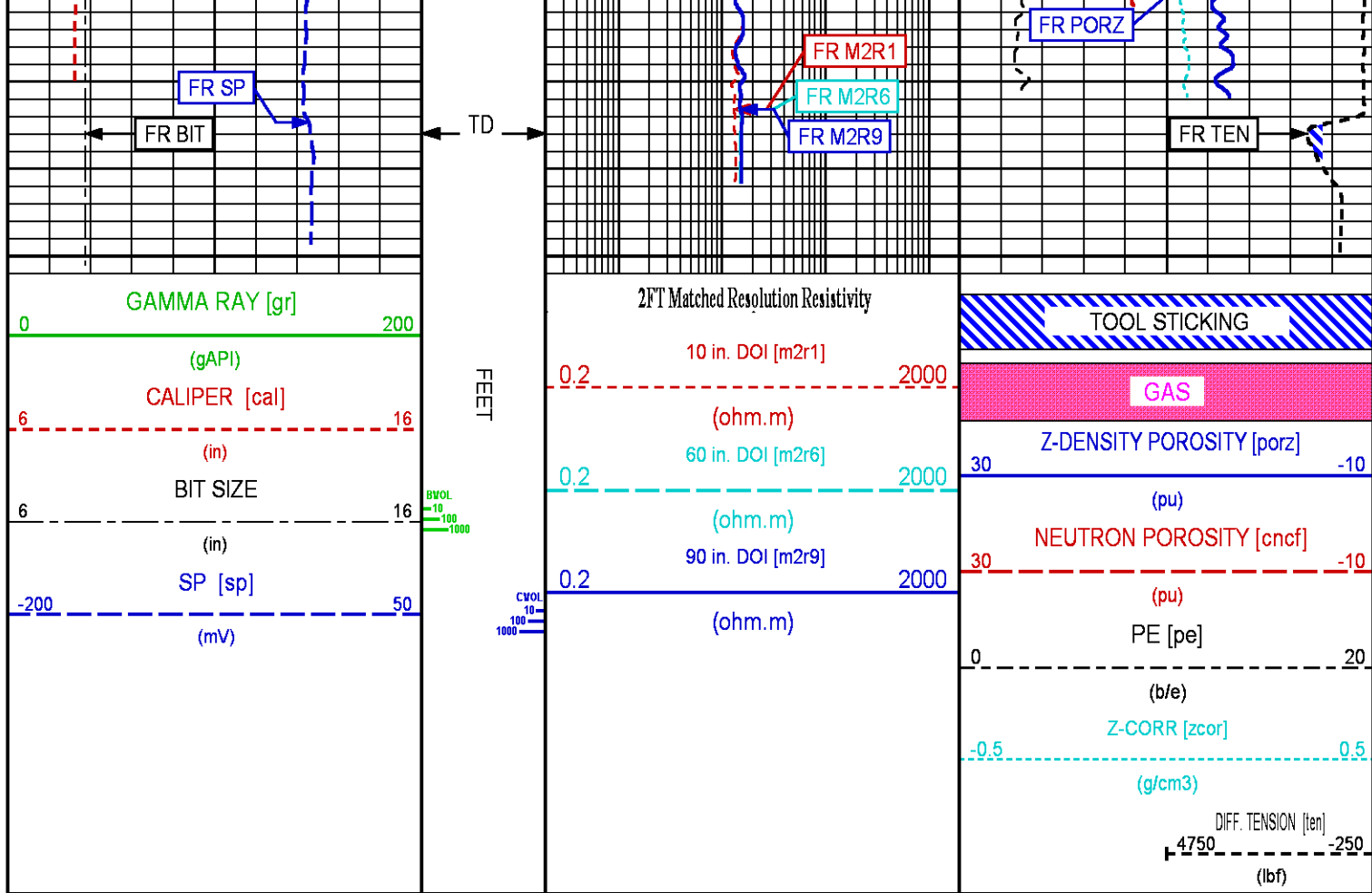
7700

7800

100







## REPEAT LOG 5"/100FT SCALE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013  
Updates: 1 Patches: 6

Plotted: Sun Mar 15 15:33:08 2015

### PARAMETER AND FILTER SUMMARY REPORT

File: /dat1a/94534/n970b103.prm  
LOGGING MODE: DEPTH DIRECTION: UP  
TOP DEPTH: 7685.000 ft BOTTOM DEPTH: 8061.459 ft

#### SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR MED RES	FILTER ()	medium (1)		TOP	BOTTOM
CALIPER	FILTER ()	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
CN MED RES	FILTER ()	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
SP-SPDH	FILTER ()	medium (1)		"	"

#### BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	4.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
BOREHOLE CORR DIAMETER	FIXED DIAMETER (cnbh*)	7.875	in	"	"
	FIXED DIAMETER (mbh*)	7.875	in	"	"
BH MUD RESISTIVITY SOURCE	RMUD SOURCE (HDIL)	TOOL MEASURED		"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	69.0	degF	"	"
	MUD SAMPLE RES	1.800	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	190.0	degF	"	"
	at BH REF DEPTH	8040.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"

ACCELERATION PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACCEL CORR SWITCH	ACCEL DEPTH CORR	CORRECTION ON		TOP	BOTTOM

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CN MATRIX	2436 MATRIX	SANDSTONE		TOP	BOTTOM
CN BOREHOLE CORRECTION	SALINITY	0	ppm	"	"
	BOREHOLE CORRECTION	ON		"	"
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		"	"
	STANDOFF AMOUNT	0.00	in	"	"
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		"	"
	BIT SIZE BEHIND CSNG	7.875	in	"	"

ZDL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DENSITY POROSITY	Air Filled Borehole	NO		TOP	BOTTOM
	RHOmatrix	2.680	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORRECTION	ON		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	ECCENTERED		"	"
	Rmud MULTIPLIER	1.000		"	"

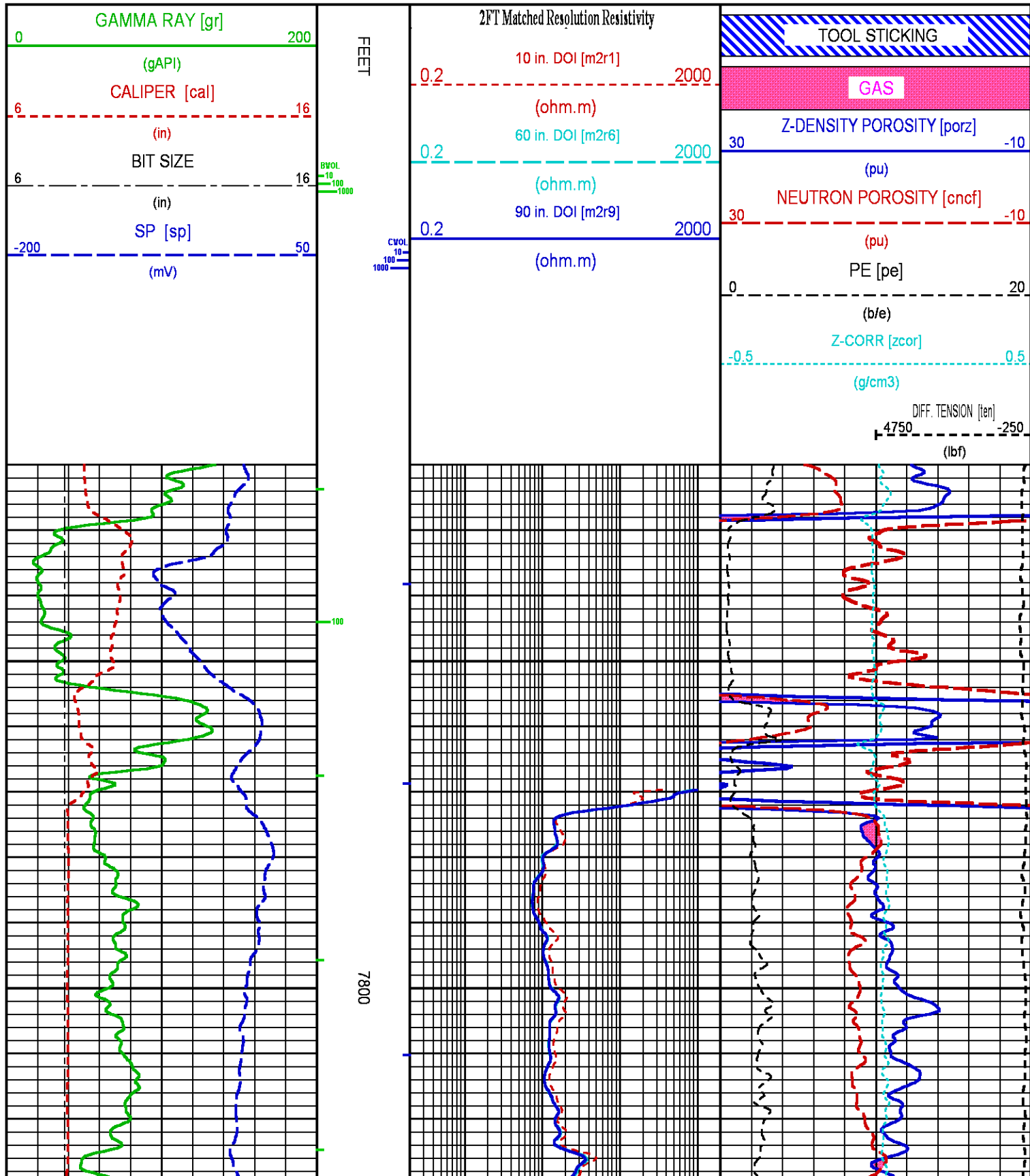
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Mar 15 14:48:00 2015	BIT SIZE
F1:BVOL	Mar 15 14:48:00 2015	BOREHOLE VOLUME
F1:CAL	Mar 15 14:48:00 2015	CALIPER
F1:CNCF	Mar 15 14:48:00 2015	FIELD NORMALIZED COMPENSATED NEUTRON POROSITY
F1:CVOL	Mar 15 14:48:00 2015	CEMENT VOLUME
F1:GR	Mar 15 14:48:00 2015	GAMMA RAY
F1:M2R1	Mar 15 14:48:00 2015	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R6	Mar 15 14:48:00 2015	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Mar 15 14:48:00 2015	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:PE	Mar 15 14:48:00 2015	PHOTO ELECTRIC CROSS-SECTION
F1:PORZ	Mar 15 14:48:00 2015	POROSITY FOR SELECTABLE MATRIX
F1:SP	Mar 15 14:48:00 2015	SPONTANEOUS POTENTIAL
F1:TEN	Mar 15 14:48:00 2015	DIFFERENTIAL TENSION
F1:ZCOR	Mar 15 14:48:00 2015	DENSITY CORRECTION

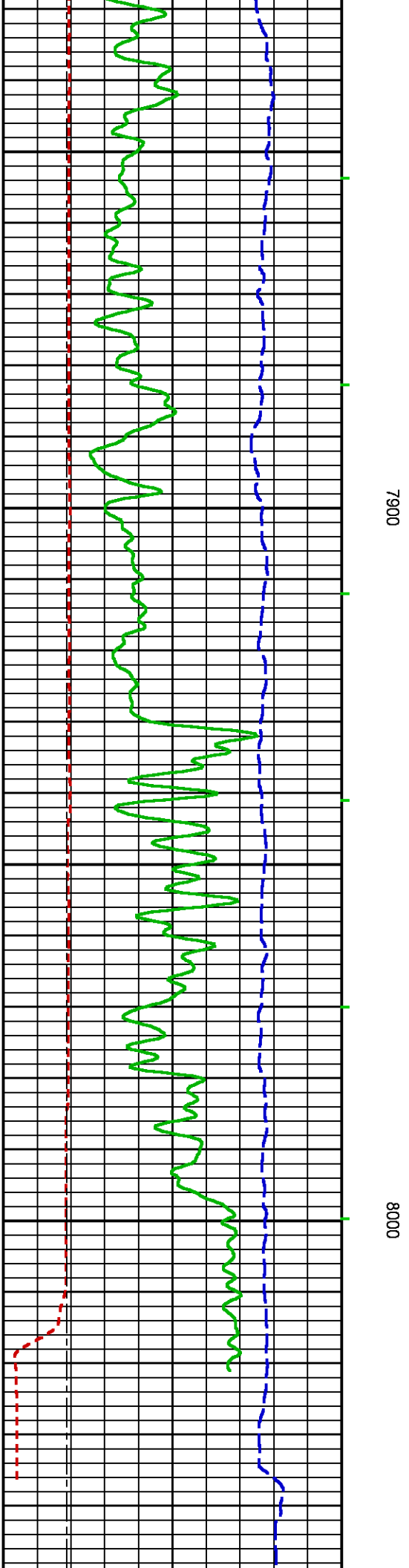
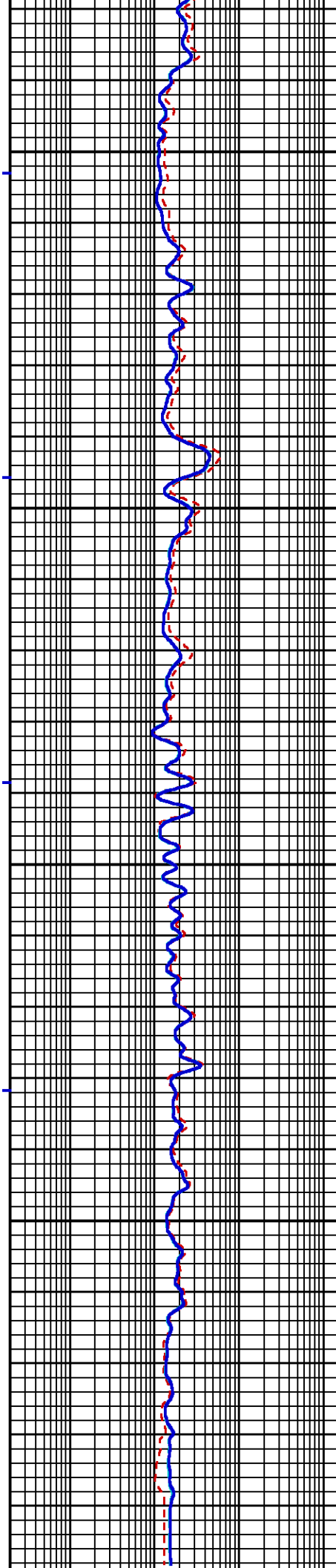
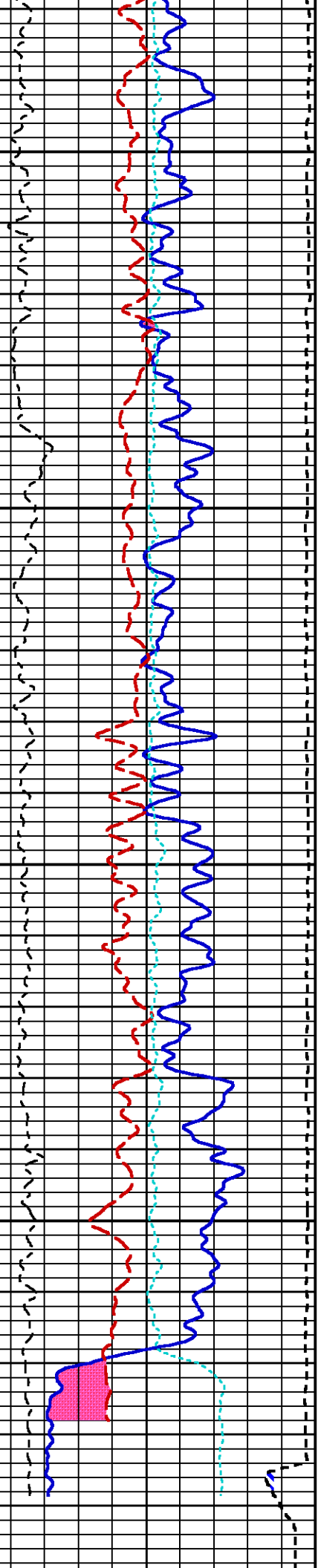
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	GR	35.00	M2R9	2.75	SP	1.25

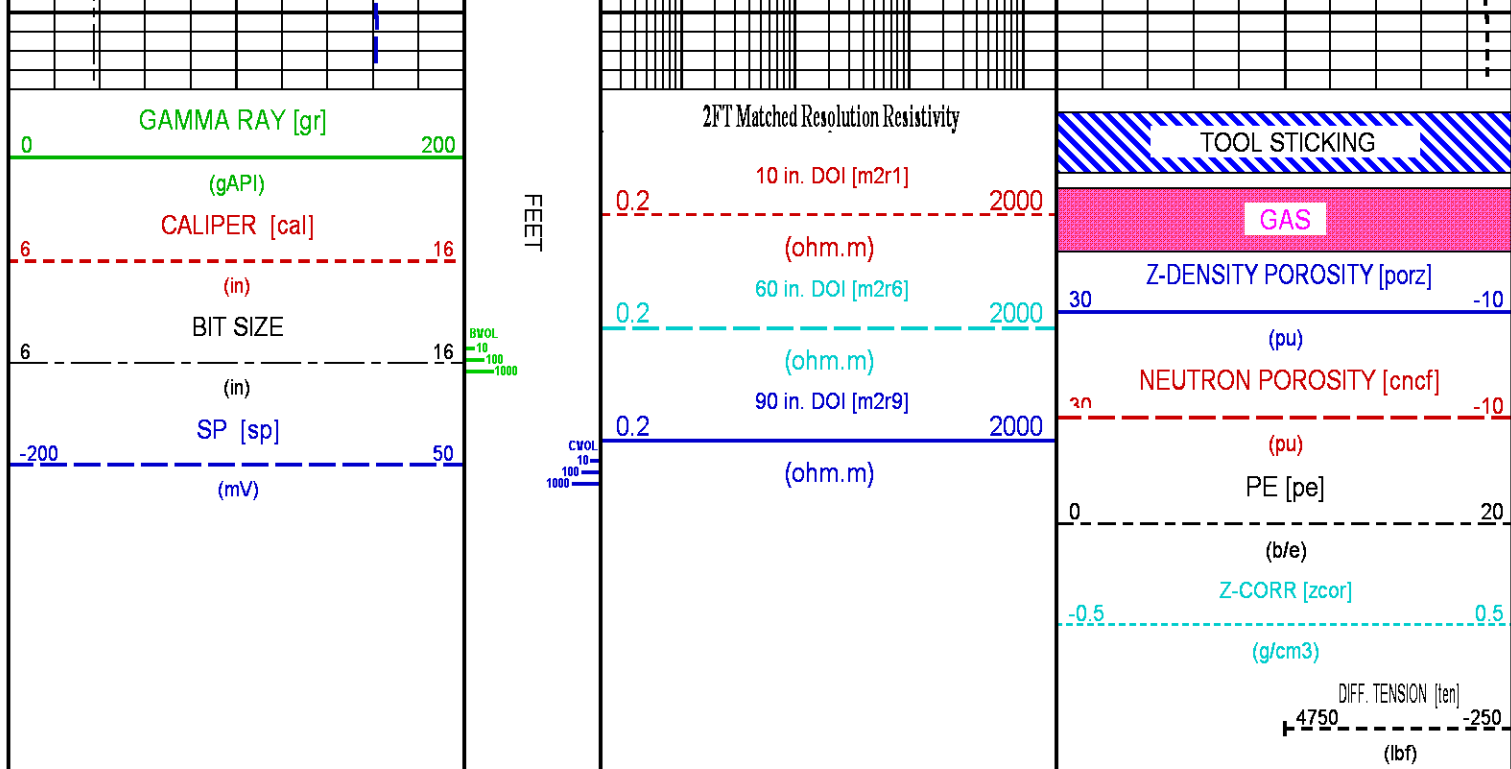
CAL	18.12	M2R1	2.75	PE	18.00	TEN	0.00
CNCF	27.38	M2R6	2.75	PORZ	18.00	ZCOR	18.00

Presentation : cas6685:/dat1a/94534/MS\_REPEAT.fvpdf [5"/100' Scale]  
Plot Interval : 7720 - 8062.5 Feet

Data File 1 : F1 : cas6685:/dat1a/94534/n970b103.aff  
Created On : Mar 15 14:48:00 2015  
Company : LARAMIE ENERGY  
Well : PICEANCE 28-12M  
Field : VEGA  
File Interval : 7648.25 - 8072.75 Feet  
OCT : n970b1







## CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/94534/ms.tp1

### GR PRIMARY CALIBRATION SUMMARY

Tool #: 3518EG 10139870

DATE/TIME PERFORMED: Mon Mar 9 19:33:48 2015

Unit #: 3885TC 6685

Jig Series: 4702NK DA-041

Background	Calibrator ON	Jig Value (gAPI)	Mult	Background (gAPI)	Calibrator ON (gAPI)
89.21	755.62	185	0.278 0.230 0.280	24.76	209.76

### GR PRIMARY VERIFICATION SUMMARY

NOT DONE

### GR BEFORE LOG VERIFICATION SUMMARY

TOOL #: 3518EG 10139870

DATE/TIME PERFORMED: Sun Mar 15 13:27:21 2015

DAYS SINCE CAL: 5

UNIT #: 3885TC 6685

Jig: INTRNL N/A

Counts	TEMP (degF)	HV (V)
976.67 929.00 1027.00	82.58 536.00	1361.74 1237.00 1512.00

### CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2436XA 10137930

DATE/TIME PERFORMED: Wed Dec 24 10:51:21 2014

UNIT #: 3885TC 6685

CALIBRATOR #: 2437XB 112674

SOURCE #: 4718XA N-0897



RATIO MG/AL

1.30	1.40	1.60	1.80
1.61		8.92	
1.58	1.70	8.55	9.55

## ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2223XA 10102922

DATE/TIME PERFORMED: Sun Mar 15 13:36:14 2015

DAYS SINCE CAL: 24

UNIT #: 3885TC 6685

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	3342.1	224.4	1436.9
	3332.1 3352.1	220.0 230.0	1250.0 1550.0
SS	22355.0	224.1	1334.9
	22344.8 22364.8	220.0 230.0	1250.0 1550.0
	LV (V)	PAD CURRENT (mA)	
	5.0	68.8	
	4.8 5.2	50.0 120.0	

## HDIL PRIMARY CALIBRATION SUMMARY

TOOL #: 1530XA 10118612

DATE/TIME PERFORMED: Thu Nov 13 11:27:23 2014

UNIT #: 3885TC 6685

GRCOND ID &amp; DATE: 86 101801

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.0013 -0.2000 0.2000	0.0002 -0.1000 0.1000	0.0004 -0.1000 0.1000	0.0001 -0.1000 0.1000	-0.0004 -0.1000 0.1000	0.0004 -0.1000 0.1000	-0.0001 -0.1000 0.1000	0.0002 -0.1000 0.1000
Coil 0 Q	0.0014 -0.5000 0.5000	0.0004 -0.2000 0.2000	0.0005 -0.1000 0.1000	-0.0002 -0.1000 0.1000	-0.0003 -0.1000 0.1000	-0.0002 -0.1000 0.1000	0.0004 -0.1000 0.1000	0.0001 -0.1000 0.1000
Coil 1 R	0.0056 -0.2000 0.2000	0.0011 -0.1000 0.1000	-0.0005 -0.1000 0.1000	0.0003 -0.1000 0.1000	-0.0007 -0.1000 0.1000	0.0001 -0.1000 0.1000	-0.0015 -0.1000 0.1000	0.0030 -0.1000 0.1000
Coil 1 Q	0.0023 -0.5000 0.5000	-0.0026 -0.2000 0.2000	0.0007 -0.1000 0.1000	-0.0001 -0.1000 0.1000	-0.0011 -0.1000 0.1000	0.0002 -0.1000 0.1000	-0.0002 -0.1000 0.1000	0.0012 -0.1000 0.1000
Coil 2 R	0.0063 -0.2000 0.2000	-0.0033 -0.1000 0.1000	0.0024 -0.1000 0.1000	-0.0022 -0.1000 0.1000	0.0012 -0.1000 0.1000	0.0005 -0.1000 0.1000	-0.0001 -0.1000 0.1000	-0.0031 -0.1000 0.1000
Coil 2 Q	0.0001 -0.5000 0.5000	0.0033 -0.2000 0.2000	0.0011 -0.1000 0.1000	0.0008 -0.1000 0.1000	-0.0003 -0.1000 0.1000	0.0023 -0.1000 0.1000	-0.0000 -0.1000 0.1000	-0.0013 -0.1000 0.1000
Coil 3 R	0.0198 -0.3000 0.3000	0.0001 -0.1000 0.1000	0.0002 -0.1000 0.1000	0.0003 -0.1000 0.1000	0.0016 -0.1000 0.1000	0.0004 -0.1000 0.1000	0.0018 -0.1000 0.1000	0.0012 -0.1000 0.1000
Coil 3 Q	0.0043 -0.5000 0.5000	-0.0042 -0.2000 0.2000	-0.0046 -0.1000 0.1000	-0.0012 -0.1000 0.1000	-0.0021 -0.1000 0.1000	-0.0025 -0.1000 0.1000	0.0015 -0.1000 0.1000	0.0008 -0.1000 0.1000
Coil 4 R	0.0695 -0.5000 0.5000	-0.0020 -0.2000 0.2000	-0.0046 -0.2000 0.2000	0.0073 -0.2000 0.2000	0.0013 -0.2000 0.2000	0.0001 -0.2000 0.2000	-0.0007 -0.2000 0.2000	-0.0006 -0.2000 0.2000
Coil 4 Q	0.0079 -1.0000 1.0000	-0.0151 -0.4000 0.4000	0.0055 -0.2000 0.2000	0.0001 -0.2000 0.2000	-0.0050 -0.2000 0.2000	0.0005 -0.2000 0.2000	-0.0027 -0.2000 0.2000	-0.0020 -0.2000 0.2000
Coil 5 R	0.1371 -1.2000 1.2000	-0.0130 -0.4000 0.4000	-0.0208 -0.4000 0.4000	0.0039 -0.4000 0.4000	0.0009 -0.4000 0.4000	0.0073 -0.4000 0.4000	0.0111 -0.4000 0.4000	0.0065 -0.4000 0.4000
Coil 5 Q	0.0671 -1.5000 1.5000	-0.0297 -0.8000 0.8000	0.0011 -0.4000 0.4000	-0.0003 -0.4000 0.4000	-0.0049 -0.4000 0.4000	0.0028 -0.4000 0.4000	0.0009 -0.4000 0.4000	-0.0174 -0.4000 0.4000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	161.66 136.00 186.00	160.27 134.00 184.00	157.39 131.00 181.00	153.10 126.00 176.00	147.45 122.00 170.00	140.43 118.00 161.00	132.23 112.00 150.00	122.85 105.00 139.00
Coil 0 P	7.658 6.000 9.000	25.280 21.000 30.000	42.458 35.000 50.000	59.597 49.000 71.000	76.731 63.000 91.000	93.874 77.000 109.000	111.025 92.000 130.000	128.123 106.000 151.000
Coil 1 M	281.20 238.00 328.00	278.93 235.00 325.00	274.21 230.00 320.00	267.16 225.00 312.00	257.82 218.00 302.00	246.25 208.00 288.00	232.56 196.00 266.00	216.79 184.00 244.00
Coil 1 P	7.531 6.000 9.000	25.002 21.000 30.000	42.015 35.000 51.000	58.991 49.000 71.000	75.982 63.000 92.000	93.004 78.000 112.000	110.067 93.000 130.000	127.121 107.000 151.000
Coil 2 M	569.81 479.00 659.00	565.09 474.00 654.00	555.37 463.00 643.00	540.73 450.00 622.00	521.32 432.00 602.00	497.29 412.00 572.00	468.62 390.00 540.00	436.05 359.00 499.00
Coil 2 P	7.741 6.000 9.000	25.479 21.000 31.000	42.798 35.000 51.000	60.077 49.000 71.000	77.385 63.000 92.000	94.734 76.000 115.000	112.084 92.000 135.000	129.437 105.000 155.000
Coil 3 M	921.28 772.00 1060.00	913.04 764.00 1050.00	896.11 752.00 1030.00	871.04 728.00 1010.00	837.87 700.00 970.00	797.33 665.00 925.00	750.17 628.00 868.00	695.49 589.00 799.00
Coil 3 P	7.852 6.000 10.000	25.802 21.000 30.000	43.317 35.000 51.000	60.785 49.000 72.000	78.237 63.000 93.000	95.667 76.000 114.000	113.138 90.000 135.000	130.542 104.000 156.000
Coil 4 M	1445.5 1210.0 1700.0	1432.4 1205.0 1690.0	1405.4 1180.0 1650.0	1365.4 1140.0 1590.0	1312.6 1120.0 1530.0	1248.1 1070.0 1450.0	1172.7 1000.0 1350.0	1087.7 942.0 1240.0
Coil 4 P	7.814	25.736	43.218	60.650	78.083	95.498	112.906	130.239



Coil 5 M	6.00010.000		21.00031.000		35.00052.000		49.00073.000		63.00093.000		77.000114.000		91.000135.000		105.000156.000	
	2943.5		2922.6		2876.8		2808.0		2715.4		2600.3		2462.3		2304.2	
	2450.03450.0		2420.03400.0		2410.03320.0		2350.03200.0		2280.03080.0		2150.02950.0		2020.02750.0		1870.02570.0	
Coil 5 P	7.539		25.019		42.085		59.130		76.228		93.396		110.623		127.927	
	6.00010.000		20.00031.000		35.00052.000		49.00073.000		63.00094.000		79.000113.000		93.000134.000		106.000156.000	
AM Factor	10 KHz		30 KHz		50 KHz		70 KHz		90 KHz		110 KHz		130 KHz		150 KHz	
Coil 0 R	-1062		-606		-486		-424		-382		-350		-325		-305	
	-3200940		-1400-20		-930-150		-760-160		-660-130		-600-120		-550-110		-520-92	
Coil 0 Q	499		-134		-199		-228		-249		-265		-279		-290	
	-1500011000		-58003800		-37002100		-27001400		-22001000		-1800790		-1600620		-1500490	
Coil 1 R	-164		-159		-144		-133		-123		-115		-108		-103	
	-750460		-36083		-2809		-230-10		-200-26		-180-35		-160-46		-150-49	
Coil 1 Q	428		91		29		0		-17		-27		-34		-39	
	-33003300		-1100960		-630530		-470360		-380260		-320190		-290150		-260120	
Coil 2 R	4.5		-32.5		-36.0		-35.2		-32.9		-30.7		-28.5		-27.1	
	-85.076.0		-64.0-0.4		-57.0-12.0		-51.0-16.0		-46.0-17.0		-42.0-16.0		-39.0-15.0		-37.0-13.0	
Coil 2 Q	387.6		132.2		76.6		51.7		38.5		30.9		26.2		23.8	
	-1500.01900.0		-500.0610.0		-290.0350.0		-220.0260.0		-160.0190.0		-140.0160.0		-110.0130.0		-99.0120.0	
Coil 3 R	1.4		-8.0		-9.5		-9.3		-8.8		-8.2		-7.8		-7.6	
	-23.021.0		-22.01.6		-21.0-1.3		-20.0-1.8		-19.0-2.0		-19.0-1.3		-19.0-0.8		-19.0-0.0	
Coil 3 Q	103.8		39.3		26.2		21.9		20.2		20.2		21.2		22.4	
	-540.0530.0		-180.0180.0		-100.0110.0		-71.081.0		-51.066.0		-37.058.0		-28.053.0		-21.051.0	
Coil 4 R	-3.11		-4.31		-4.49		-4.25		-4.10		-3.87		-3.69		-4.09	
	-18.0013.00		-12.002.70		-11.001.50		-9.800.52		-9.900.96		-10.001.50		-11.002.30		-11.002.60	
Coil 4 Q	7.40		5.87		7.57		9.89		12.34		15.07		18.10		21.21	
	-250.00280.00		-79.0098.00		-43.0064.00		-27.0051.00		-18.0046.00		-11.0042.00		-5.5042.00		-1.0042.00	
Coil 5 R	-2.87		-2.73		-2.92		-2.53		-2.48		-2.23		-2.49		-2.94	
	-56.0051.00		-8.403.60		-6.901.10		-6.901.20		-9.302.90		-14.006.30		-19.009.60		-24.0013.00	
Coil 5 Q	-5.67		2.18		5.82		9.24		12.53		15.75		19.00		22.22	
	-88.0069.00		-26.0027.00		-14.0022.00		-7.0022.00		-2.5024.00		1.1026.00		4.1029.00		7.1032.00	
MM Factor	10 KHz		30 KHz		50 KHz		70 KHz		90 KHz		110 KHz		130 KHz		150 KHz	
Coil 0 M	0.965		0.973		0.977		0.979		0.980		0.979		0.979		0.978	
	0.8501.100		0.8601.100		0.8701.100		0.8801.100		0.8801.100		0.8801.100		0.8801.100		0.8801.100	
Coil 0 P	-0.321		-0.453		-0.343		-0.230		-0.149		-0.101		-0.052		-0.014	
	-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500	
Coil 1 M	0.959		0.968		0.972		0.973		0.973		0.973		0.973		0.972	
	0.8501.100		0.8601.100		0.8701.100		0.8801.100		0.8801.100		0.8801.100		0.8801.100		0.8801.100	
Coil 1 P	-0.318		-0.468		-0.346		-0.240		-0.145		-0.095		-0.062		-0.038	
	-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500	
Coil 2 M	0.989		0.989		0.989		0.988		0.988		0.987		0.985		0.984	
	0.8901.100		0.8901.100		0.8901.100		0.8901.100		0.8901.100		0.8901.100		0.8901.100		0.8901.100	
Coil 2 P	0.007		0.052		0.121		0.151		0.188		0.209		0.210		0.192	
	-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500	
Coil 3 M	0.997		0.997		0.997		0.996		0.995		0.994		0.993		0.991	
	0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100	
Coil 3 P	0.024		0.092		0.158		0.222		0.266		0.270		0.346		0.375	
	-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500	
Coil 4 M	1.001		1.001		1.001		1.000		1.000		0.999		0.998		0.998	
	0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100	
Coil 4 P	0.002		0.057		0.116		0.171		0.232		0.263		0.300		0.331	
	-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500	
Coil 5 M	1.001		1.000		1.000		0.999		0.998		0.996		0.996		0.994	
	0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100		0.9001.100	
Coil 5 P	0.001		0.060		0.136		0.170		0.227		0.333		0.313		0.365	
	-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500		-1.5001.500	
PARMS	IDs		TCID 0		TCID 1		Cal Temp (degF)		T Factor							
			2.563		0.840		38.8		1.00							

Coil 1 Q	0.008 -0.500 0.500	-0.001 -0.200 0.200	-0.000 -0.100 0.100	0.000 -0.100 0.100	0.000 -0.100 0.100	-0.000 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100
Coil 2 R	0.001 -0.200 0.200	-0.002 -0.100 0.100	0.003 -0.100 0.100	0.002 -0.100 0.100	0.001 -0.100 0.100	0.000 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100
Coil 2 Q	-0.009 -0.500 0.500	0.002 -0.200 0.200	-0.002 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100
Coil 3 R	0.022 -0.300 0.300	-0.009 -0.100 0.100	0.007 -0.100 0.100	0.002 -0.100 0.100	0.003 -0.100 0.100	0.003 -0.100 0.100	-0.002 -0.100 0.100	0.004 -0.100 0.100
Coil 3 Q	0.003 -0.500 0.500	-0.003 -0.200 0.200	0.003 -0.100 0.100	-0.003 -0.100 0.100	-0.001 -0.100 0.100	0.001 -0.100 0.100	-0.000 -0.100 0.100	-0.002 -0.100 0.100
Coil 4 R	0.065 -0.500 0.500	-0.009 -0.200 0.200	-0.008 -0.200 0.200	0.001 -0.200 0.200	0.006 -0.200 0.200	0.003 -0.200 0.200	-0.005 -0.200 0.200	0.001 -0.200 0.200
Coil 4 Q	0.003 -1.000 1.000	-0.012 -0.400 0.400	0.006 -0.200 0.200	-0.008 -0.200 0.200	-0.007 -0.200 0.200	0.001 -0.200 0.200	-0.005 -0.200 0.200	0.000 -0.200 0.200
Coil 5 R	0.153 -1.200 1.200	0.000 -0.400 0.400	-0.000 -0.400 0.400	0.001 -0.400 0.400	0.002 -0.400 0.400	-0.001 -0.400 0.400	0.002 -0.400 0.400	0.007 -0.400 0.400
Coil 5 Q	0.027 -1.500 1.500	-0.030 -0.800 0.800	0.011 -0.400 0.400	0.008 -0.400 0.400	-0.021 -0.400 0.400	0.002 -0.400 0.400	-0.000 -0.400 0.400	-0.004 -0.400 0.400

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	161.13 136.00 186.00	159.70 134.00 184.00	156.82 131.00 181.00	152.53 126.00 176.00	146.85 122.00 170.00	139.90 118.00 161.00	131.68 112.00 150.00	122.33 105.00 139.00
Coil 0 P	7.399 -1.000 12.000	25.283 19.000 30.000	42.565 35.000 50.000	59.768 49.000 71.000	76.984 63.000 91.000	94.188 77.000 110.000	111.388 92.000 130.000	128.547 105.000 151.000
Coil 1 M	281.24 237.00 327.00	278.89 235.00 325.00	274.13 230.00 320.00	267.05 225.00 312.00	257.67 218.00 302.00	246.09 208.00 288.00	232.37 196.00 266.00	216.60 184.00 244.00
Coil 1 P	7.313 -1.000 12.000	25.019 19.000 30.000	42.126 35.000 51.000	59.168 49.000 71.000	76.231 63.000 92.000	93.309 77.000 112.000	110.416 92.000 132.000	127.557 105.000 153.000
Coil 2 M	566.97 479.00 659.00	562.15 474.00 654.00	552.36 463.00 643.00	537.83 450.00 622.00	518.47 432.00 602.00	494.53 412.00 572.00	466.31 390.00 540.00	433.45 359.00 499.00
Coil 2 P	7.441 -1.000 12.000	25.459 19.000 31.000	42.873 35.000 51.000	60.226 49.000 71.000	77.590 63.000 92.000	94.989 77.000 114.000	112.407 92.000 135.000	129.858 105.000 156.000
Coil 3 M	921.20 772.00 1060.00	912.84 764.00 1050.00	895.89 752.00 1030.00	870.87 728.00 1010.00	837.73 700.00 970.00	796.93 665.00 925.00	749.37 628.00 868.00	694.67 589.00 799.00
Coil 3 P	7.557 -2.000 13.000	25.782 19.000 31.000	43.394 35.000 52.000	60.926 49.000 72.000	78.454 63.000 93.000	95.947 77.000 114.000	113.448 92.000 135.000	130.913 105.000 156.000
Coil 4 M	1450.0 1210.0 1700.0	1436.6 1205.0 1690.0	1409.4 1180.0 1650.0	1369.2 1140.0 1590.0	1315.9 1120.0 1530.0	1250.8 1070.0 1450.0	1175.1 1000.0 1350.0	1089.2 942.0 1240.0
Coil 4 P	7.525 -2.000 13.000	25.712 19.000 31.000	43.289 35.000 52.000	60.780 49.000 73.000	78.264 63.000 93.000	95.726 78.000 114.000	113.166 92.000 135.000	130.549 105.000 156.000
Coil 5 M	2934.4 2450.0 3450.0	2912.4 2420.0 3400.0	2866.5 2410.0 3320.0	2797.2 2350.0 3200.0	2705.4 2280.0 3080.0	2588.9 2150.0 2850.0	2451.5 2020.0 2750.0	2293.4 1870.0 2570.0
Coil 5 P	7.309 -2.000 13.000	25.028 19.000 31.000	42.180 35.000 52.000	59.297 49.000 73.000	76.455 63.000 94.000	93.667 79.000 114.000	110.937 93.000 135.000	128.259 106.000 156.000

## INSTRUMENT CONFIGURATION

Source File: /dat1a/shop/n970b1~tdg

### CABLEHEAD

Diameter : 3.38"  
Length : 5.50'  
Weight : 24 lbs  
Series : CABL338  
Mnemonic : CBLH  
Measure Point: 2.75': CABLEHEAD TOP

### FOCUS SWIVEL

Diameter : 3.13"  
Length : 2.58'  
Weight : 50 lbs  
Series : 2050VA

53.17'

CABLEHEAD TOP 50.42'



Series : 3950XA  
Mnemonic : SWVL

FOCUS TEN/TEMP/MUD RES/ACCEL

Diameter : 3.13"  
Length : 4.31'  
Weight : 61 lbs  
Series : 3980XA  
Mnemonic : TTMA

FOCUS TELEMETRY (POWER SECTION)

Diameter : 3.13"  
Length : 3.71'  
Weight : 48 lbs  
Series : 3518FB  
Mnemonic : TMGR

FOCUS EB/EG TELEMETRY GAMMA RAY

Diameter : 3.12"  
Length : 5.83'  
Weight : 63 lbs  
Series : 3518EG  
Mnemonic : GR  
Measure Point: 4.24': GR MP

GR MP — 35.47'

FOCUS COMPENSATED NEUTRON

Diameter : 3.13"  
Length : 4.81'  
Weight : 65 lbs  
Series : 2436XA  
Mnemonic : CN  
Measure Point: 1.92': LSN MP  
Measure Point: 1.46': SSN MP

LSN MP — 28.33'  
SSN MP — 27.88'

FOCUS Z-DENSILOG

Diameter : 3.75"  
Length : 9.58'  
Weight : 200 lbs  
Series : 2223XA  
Mnemonic : ZDL  
Measure Point: 4.33': CR1 MP  
Measure Point: 1.69': LSD / CR2 MP  
Measure Point: 1.29': SSD MP

CR1 MP — 21.17'

LSD / CR2 MP — 18.52'  
SSD MP — 18.13'

FOCUS KNUCKLE JOINT

Diameter : 3.13"  
Length : 1.50'

FOCUS KNUCKLE JOINT

Diameter : 3.13"  
Length : 1.50'

# FOCUS HIGH DEFINITION INDUCTION TOOL

Diameter : 3.13"  
 Length : 13.33'  
 Weight : 115 lbs  
 Series : 1530XA  
 Mnemonic : HDIL  
 Measure Point: 7.17': COIL 5 MP  
 Measure Point: 5.67': COIL 4 MP  
 Measure Point: 4.17': COIL 3 MP  
 Measure Point: 3.67': COIL 2 MP  
 Measure Point: 3.17': COIL 1 MP  
 Measure Point: 2.67': COIL 0 MP  
 Measure Point: 1.14': SP MP

COIL 5 MP 7.67'

COIL 4 MP 6.17'

COIL 3 MP 4.67'

COIL 2 MP 4.17'

COIL 1 MP 3.67'


COIL 0 MP 3.17'

SP MP 1.64'

0.00'

FOCUS PINEAPPLE / CABBAGE

TOTAL LENGTH: 53.17'  
 TOTAL WEIGHT: 688 lbs  
 MAX DIAMETER: 0'6.13"

	<b>COMPANY</b> <u>LARAMIE ENERGY</u>		<b>FILE NO:</b> <u>94534</u>
	<b>WELL</b> <u>PICEANCE 28-12M</u>		<b>API NO:</b> <u>05-077-10223-00</u>
	<b>FIELD</b> <u>VEGA</u>		
	<b>COUNTY</b> <u>MESA</u>		<b>STATE</b> <u>COLORADO</u>
<b>LOCATION:</b> SHL: 2505' FSL & 1616' FWL NE/SW BHL: 2373' FSL & 2583' FWL		<b>ELEVATIONS:</b> KB 7602 FT DF GL 7580 FT	
<b>SEC</b> <u>28</u> <b>TWP</b> <u>9S</u> <b>RGE</b> <u>93W</u>		<b>DATE</b> <u>15-Mar-2015</u>	