



FILE NO: OH162460	COMPANY MERIT ENERGY CO	WELL WENU 103	OTHER SERVICES NONE
API NO: 15-081-22209-0000	FIELD EUBANK NORTH	COUNTY HASKELL	STATE KANSAS
Ver. 4.14 SCALES: 5"=100' 2"=100'	LOCATION: LAT/LONG: 37.643651 N / 101.045965 W X = 1262921.69 Y = 365797.39 SEC 04 TWP 28S RGE 34W		
PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KB	ELEVATION 12.0 FT 3081.0 FT ABOVE P.D.	ELEVATIONS: KB 3093.0 FT DF GL 3081.0 FT

DATE	12-FEB-2020
RUN	1
SERVICE ORDER	US162460J
DEPTH DRILLER	5595 FT
DEPTH LOGGER	5594 FT
BOTTOM LOGGED INTERVAL	5594 FT
TOP LOGGED INTERVAL	1780 FT
CASING DRILLER	8.625 IN @ 1787 FT
CASING LOGGER	1780 FT
BIT SIZE	7.875 IN
TYPE OF FLUID IN HOLE	WBM
DENSITY	9.2 LB/G
PH	10.5
SOURCE OF SAMPLE	ACTIVE TANK
RM AT MEAS. TEMP.	0.689 OHMM @ 54 DEGF
RMF AT MEAS. TEMP.	0.567 OHMM @ 54 DEGF
RMC AT MEAS. TEMP.	0.697 OHMM @ 54 DEGF
SOURCE OF RMF	RMC
RM AT BHT	0.289 OHMM @ 138 DEGF
TIME SINCE CIRCULATION	14.0 HOURS
MAX. RECORDED TEMP.	138 DEGF
EQUIP. NO.	Z004291
RECORDED BY	MANUEL BAUKA
WITNESSED BY	RODNEY GONZALEZ

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
12.25 IN	0 FT	1787 FT
7.875 IN	1787 FT	5595 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
8.625 IN	24 LB/F	J-55	0 FT	1787 FT

REMARKS

RUN 1 TRIP 1: FIRST RUN IN THE WELLBORE

MAIN LOG RECORDED FROM TD @ 5594.0 FT TO 3824.0 FT AT CUSTOMER REQUEST
REPEAT LOG RECORDED FROM 5594.0 FT TO 5090.0 FT AT CUSTOMER REQUEST

ALL DEPTHS ARE REFERENCED TO THE RIG DRILL FLOOR AT 12.0 FT ABOVE GL

WELL DATA:
CIRCULATION ON BOTTOM STOPPED AT 18:45 HRS 12-FEB-2020, 1.5 HRS DURATION

TIME AT START OF MAIN LOG IS 08:10 HRS ON 13-FEB-2020

GSLAM
#

GAMMA RAY/SPECTRALOG
TOOL WAS RUN DECENTRALISED AS PER TOOL DIAGRAM

DENSITY:
DENSITY (ZDNC) PRESENTED ON LIMESTONE SCALES
DENSITY DATA IS CORRECTED FOR BOREHOLE SIZE AND MUD WEIGHT

CN:
NEUTRON POROSITY (CNC CORRECTED FOR BOREHOLE SIZE AND MUD SALINITY
SALINITY CORRECTION USED WAS 1700.0 PPM NACL EQUIVALENT
CNC PRESENTED ON LIMESTONE SCALES

CALIPERS:
CALIPER PRESENTED (CALX) IS A SINGLE ARM CALIPER FROM DENSITY TOOL

HDIL:
TOOL WAS RUN CENTRALISED AS PER TOOL DIAGRAM
HDIL IS CORRECTED FOR BOREHOLE SIZE AND TEMPERATURE
2FT RESOLUTION MATHED CURVES WITH 10, 20, 30, 60, 90 AND 120 IN DOI PRESENTED

LOGGED AND PRESENTED AS PER CUSTOMER REQUEST

OTHER SERVICES;

NONE

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	POWER ADPT	4430XB	12131278	FREE
1	1	SWIVEL	3944XD	12448483	FREE
1	1	TTRM	3981XA	10074880	FREE
1	1	COMMON RMT	3514XB	10188364	FREE
1	1	SPECTRALOG	1329XB	10202999	DE-CENTRALISED
1	1	NEUTRON	2446XA	10400611	DE-CENTRALISED
1	1	DENSITY	2234XA	Z118201	PAD-DEVICE
1	1	XMAC ISO	1678PB	12173632	FREE
1	1	XMAC ELE	1677EA	10481154	CENTRALISED
1	1	XMAC MAND	1678MC	10231698	CENTRALISED
1	1	XMAC ISO	1678PB	Z166436	CENTRALISED
1	1	XMAC TX	1678BA	Z190070	CENTRALISED
1	1	XMAC ELEC	1678FA	10166664	CENTRALISED
1	1	MINILOG	1243XA	11593171	PAD-DEVICE
1	1	HDIL ELEC	1515EA	10069826	CENTRALISED
1	1	HDIL MADRL	1515MA	10452472	CENTRALISED
1	1	INLINE CENT	4341XA	10172384	CENTRALISED

MAIN LOG 5"/100' SCALE

FILE: /dat1a/MERIT/Wenu_103/p87cb03.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 3330.500 ft BOTTOM DEPTH: 5607.000 ft					
SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
DT24	FILTER ()	light (2)		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
ML	FILTER ()	light (2a)		"	"
BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	5.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	35.0	degF	"	"
	MUD SAMPLE RES	0.689	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calml*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	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		"	"
	RMUD SOURCE	TOOL MEASURED		"	"
GENERAL & MULTI-SERVICE					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
FORMATION FACTOR	A	1.000		TOP	BOTTOM
	M	2.000		"	"
CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BH SIZE ON		"	"
	SALINITY	1700	ppm	"	"
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)	
MUD DENSITY	MUD DENSITY	9.20	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOfmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"
ACOUSTIC POROSITY					

ACOUSTIC POROSITY					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACOUSTIC POROSITY	POROSITY TYPE	WYLLIE		TOP	BOTTOM
	DTmatrix	47.60	us/ft	"	"
	DTfluid	190.00	us/ft	"	"
	DTshale	100.00	us/ft	"	"
	MOD. WYLLIE PARM	2.25		"	"
	MOD. R-H-G PARM	2.00		"	"
DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24		"	"

ACOUSTIC AVAN CORRELATON					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MONOPOLE COMPRESSIONAL	FORMATION TYPE	GENERIC (MEDIUM)		TOP	BOTTOM
	CORRELATION METHOD	NTH ROOT		"	"
	RESET TAPERS			"	"
	TAPER - LEFT END	50	us/ft	"	"
	TAPER - RIGHT END	180	us/ft	"	"
	FLOOR (UNIV. OPTION)	0.050		"	"

ACOUSTIC PICK CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM
	REJECTION DTmax	180	us/ft	"	"
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	"	"
	SEARCH START OFFSET (sfan2*)	0	us	"	"
	SEARCH START OFFSET (sfan3*)	0	us	"	"
	SEARCH START OFFSET (sfan4*)	0	us	"	"
	SEARCH WINDOW LENGTH	1200	us	"	"
	THRESHOLD FACTOR	0.30		"	"
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	"	"
	E3 THRESHOLD	OFF		"	"

ACOUSTIC QUALITY CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM

ACOUSTIC WAVEFORM FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM
	LOW FREQ CUTOFF	4000	Hz	"	"
	HIGH FREQ CUTOFF	20000	Hz	"	"
WAVEFORM FILTER - FULLWAVE	SURFACE WAVE FILTER	ON		"	"
	LOW FREQ CUTOFF	2000	Hz	"	"
	HIGH FREQ CUTOFF	20000	Hz	"	"

ACOUSTIC TCC CONTROL PARAMETERS					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GENERAL TCC PARAMETERS	AGC	ON		TOP	BOTTOM
	SUBCYCLE LENGTH	50		"	"
	SUBSET			"	"
GENERAL MONOPOLE TCC PARAMETERS	STACK LEVEL	2		"	"
	DSP FILTER	ON		"	"
DELTA T TCC PARAMETERS	ACG WINDOW	832	us	"	"
	MOVEOUT	16	us/ft	"	"
	SAMPL F PERIOD	16		"	"
	RX DELAY	240	us	"	"
FULL WAVE MONOPOLE TCC PARAMETERS	ACG WINDOW	8064	us	"	"
	SAMPLE PERIOD	24		"	"
	RX DELAY	0	us	"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"

HDIL High RESISTIVITY Normalization	ABC to CALCULATE	MUD CONDUCTIVITY	"	"
	STANDOFF	1.50	in	"
	TOOL POSITION	CENTRALIZED	"	"
	Rmud MULTIPLIER	1.000	"	"
	VRM Norm	ON	"	"

ML PARMS				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
ML BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP BOTTOM

PARAMETER AND FILTER SUMMARY REPORT				
FILE:	/dat1a/MERIT/Wenu_103/p87cb04.prm			
LOGGING MODE:	DEPTH	DIRECTION:	UP	
TOP DEPTH:	1638.500 ft	BOTTOM DEPTH:	4312.750 ft	

SYMMETRIC FILTER				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
TTRM	FILTER ()	medium (1)		TOP BOTTOM
	FILTER (.h)	medium (1)		" "
	FILTER (.i)	medium (1)		" "
TENSION	FILTER ()	medium (1)		" "
GR	FILTER ()	medium (1)		" "
CN	FILTER ()	medium (1)		" "
CALIPER	FILTER ()	medium (1)		" "
ZDL MED RES	FILTER (hrd1*)	medium		" "
	FILTER (hrd1s*)	medium		" "
	FILTER (hrd2*)	medium		" "
	FILTER (hrd2s*)	medium		" "
	FILTER (soft*)	medium		" "
DT24	FILTER ()	light (2)		" "
SP-SPDH	FILTER ()	medium (1)		" "
ML	FILTER ()	light (2a)		" "

BOREHOLE & CEMENT				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	5.500	in	TOP BOTTOM
	CASING THICKNESS	0.000	in	" "
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		" "
BIT SIZE	BIT SIZE	7.875	in	" "
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	35.0	degF	" "
	MUD SAMPLE RES	0.689	ohm.m	" "
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	" "
	at BH REF DEPTH	0.0	ft	" "
	with TEMP GRADIENT	1.200	0.01 degF/ft	" "
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calml*)	USE CALIPER		" "
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		" "
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		" "
	CALIPER/FIXED DIA. (zdbh*)	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		" "
	RMUD SOURCE	TOOL MEASURED		" "

GENERAL & MULTI-SERVICE				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
FORMATION FACTOR	A	1.000		TOP BOTTOM
	M	2.000		" "

CN PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BH SIZE ON		" "
	SALINITY	1700	ppm	" "
CN TOOL STANDOFF	ENABLE STANDOFF CORR	OFF		" "
	STANDOFF AMOUNT	0.00	in	" "
CN CASING & CEMENT CORRECTION	CORRECTION	OFF		" "

ON CASING & CEMENT CORRECTION		CORRECTION	OFF	in	"	"
		BIT SIZE BEHIND CSNG	7.875			
ZDL PROCESSING						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
MUD DENSITY	MUD DENSITY	9.20	lbm/gal	TOP	BOTTOM	
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	"	"	
	RHOfluid	1.000	g/cm3	"	"	
ZDL	DENX TRACKING	ON		"	"	
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"	
ACOUSTIC POROSITY						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
ACOUSTIC POROSITY	POROSITY TYPE	WYLLIE		TOP	BOTTOM	
	DTmatrix	47.60	us/ft	"	"	
	DTfluid	190.00	us/ft	"	"	
	DTshale	100.00	us/ft	"	"	
	MOD. WYLLIE PARM	2.25		"	"	
	MOD. R-H-G PARM	2.00		"	"	
	DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24	"	"	
ACOUSTIC AVAN CORRELATON						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
MONOPOLE COMPRESSIONAL	FORMATION TYPE	GENERIC (MEDIUM)		TOP	BOTTOM	
	CORRELATION METHOD	NTH ROOT		"	"	
	RESET TAPERS			"	"	
	TAPER - LEFT END	50	us/ft	"	"	
	TAPER - RIGHT END	180	us/ft	"	"	
	FLOOR (UNIV. OPTION)	0.050		"	"	
ACOUSTIC PICK CONTROL						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM	
	REJECTION DTmax	180	us/ft	"	"	
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	"	"	
	SEARCH START OFFSET (sfan2*)	0	us	"	"	
	SEARCH START OFFSET (sfan3*)	0	us	"	"	
	SEARCH START OFFSET (sfan4*)	0	us	"	"	
	SEARCH WINDOW LENGTH	1200	us	"	"	
	THRESHOLD FACTOR	0.30		"	"	
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	"	"	
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	"	"	
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	"	"	
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	"	"	
	E3 THRESHOLD	OFF		"	"	
ACOUSTIC QUALITY CONTROL						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM	
ACOUSTIC WAVEFORM FILTER						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM	
	LOW FREQ CUTOFF	4000	Hz	"	"	
	HIGH FREQ CUTOFF	20000	Hz	"	"	
WAVEFORM FILTER - FULLWAVE	SURFACE WAVE FILTER	ON		"	"	
	LOW FREQ CUTOFF	2000	Hz	"	"	
	HIGH FREQ CUTOFF	20000	Hz	"	"	
ACOUSTIC TCC CONTROL PARAMETERS						
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)		
GENERAL TCC PARAMETERS	AGC	ON		TOP	BOTTOM	
	SUBCYCLE LENGTH	50		"	"	
	SUBSET			"	"	
GENERAL MONOPOLE TCC PARAMETERS	STACK LEVEL	2		"	"	
	DSP FILTER	ON		"	"	
DELTA T TCC PARAMETERS	ACG WINDOW	832	us	"	"	

FULL WAVE MONOPOLE TCC PARAMETERS	MOVEOUT	16	us/ft	"	"
	SAMPLE PERIOD	16		"	"
	RX DELAY	240	us	"	"
	ACG WINDOW	8064	us	"	"
	SAMPLE PERIOD	24		"	"
	RX DELAY	0	us	"	"

HDIL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	CENTRALIZED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL High RESISTIVITY Normalization	VRM Norm	ON		"	"

ML PARMS

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ML BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP	BOTTOM

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Feb 13 11:53:33 2020	BIT SIZE
F1:BVOL	Feb 13 11:53:33 2020	BOREHOLE VOLUME
F1:CALX	Feb 13 11:53:33 2020	CALIPER FROM X-AXIS OF XY CALIPER(S)
F1:CNC	Feb 13 11:53:33 2020	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Feb 13 11:53:33 2020	CEMENT VOLUME
F1:DT24QI	Feb 13 09:48:14 2020	SLOWNESS OVER 24-INCH INTERVAL
F1:GR	Feb 13 11:53:33 2020	GAMMA RAY
F1:M2R1	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Feb 13 11:53:33 2020	PHOTO ELECTRIC CROSS-SECTION
F1:PORACQI	Feb 13 09:48:14 2020	ACOUSTIC POROSITY FROM 8 WAVE MONOPOLE
F1:PORZC	Feb 13 11:53:33 2020	CORRECTED POROSITY
F1:RLML	Feb 13 11:53:33 2020	1-INCH LATERAL RESISTIVITY
F1:RNML	Feb 13 11:53:33 2020	2-INCH NORMAL RESISTIVITY
F1:RWAZC	Feb 13 11:53:33 2020	APPARENT FORMATION WATER RESISTIVITY (CORRECTED)
F1:SPDH	Feb 13 11:53:33 2020	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Feb 13 11:53:33 2020	DIFFERENTIAL TENSION
F1:ZCOR	Feb 13 11:53:33 2020	DENSITY CORRECTION
F1:ZDNC	Feb 13 11:53:33 2020	BOREHOLE SIZE/MUD WEIGHT CORRECTED DENSITY

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R2	-12.00	PORACQI	-63.00	TEN	0.00
CALX	-86.75	M2R3	-12.00	PORZC	-86.00	ZCOR	-86.00
CNC	-96.88	M2R6	-12.00	RLML	-32.75	ZDNC	-86.00
DT24QI	-55.00	M2R9	-12.00	RNML	-32.75		
GR	-103.75	M2RX	-12.00	RWAZC	-12.00		
M2R1	-12.00	PE	-86.00	SPDH	-18.00		

Presentation : SysA:/dat1a/MERIT/Wenu_103/MERIT_v1_TCOMBOM-ML_500_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 1720 - 5608 Feet

Data File 1 : F1 : SysA:/dat1a/MERIT/Wenu_103/15081222090000_Wenu-103_TCombo_Main.tif
Created On : Feb 13 09:48:14 2020
Company : MERIT ENERGY CO
Well : WENU 103
Field : EUBANK NORTH
File Interval : 1524 - 5608 Feet
OCT : p87cb

BIT < CAL		PNMI > PLMI	DENSITY - NEUTRON
-----------	--	-------------	-------------------

BIT < CAL

RNML > RNML

DENSITY NEUTRON

GR BACKUP

GAMMA RAY [gr]

0 150

(gAPI)

CALIPER [calx]

6 16

(in)

BIT SIZE

6 16

(in)

SP [spdh]

-160 40

(mV)

RWA

0 0.5

(ohm.m)

DIFF. TENSION
(lb f)

BVOL
10
100
1000

CVOL
10
100
1000

CSG

1800

10 in. DOI [m2r1]

0.2 2000

(ohm.m)

20 in. DOI [m2r2]

0.2 2000

(ohm.m)

30 in. DOI [m2r3]

0.2 2000

(ohm.m)

60 in. DOI [m2r6]

0.2 2000

(ohm.m)

90 in. DOI [m2r9]

0.2 2000

(ohm.m)

120 in. DOI [m2rx]

0.2 2000

(ohm.m)

MICRO INVERSE

0.2 2000

(m.ohm)

MICRO NORMAL

0.2 2000

(m.ohm)

BULK DENSITY [zdnc]

2 3

(g/cm3)

NEUTRON POROSITY [cnc]

30 -10

(pu)

PE [pe]

0 10 -0.25 0.25

(b/e)

Z-CORR [zcor]

(g/cm3)

COMPRESSIONAL SLOWNESS [dl24qi]

140 40

(us/ft)

Z-DENSITY POROSITY

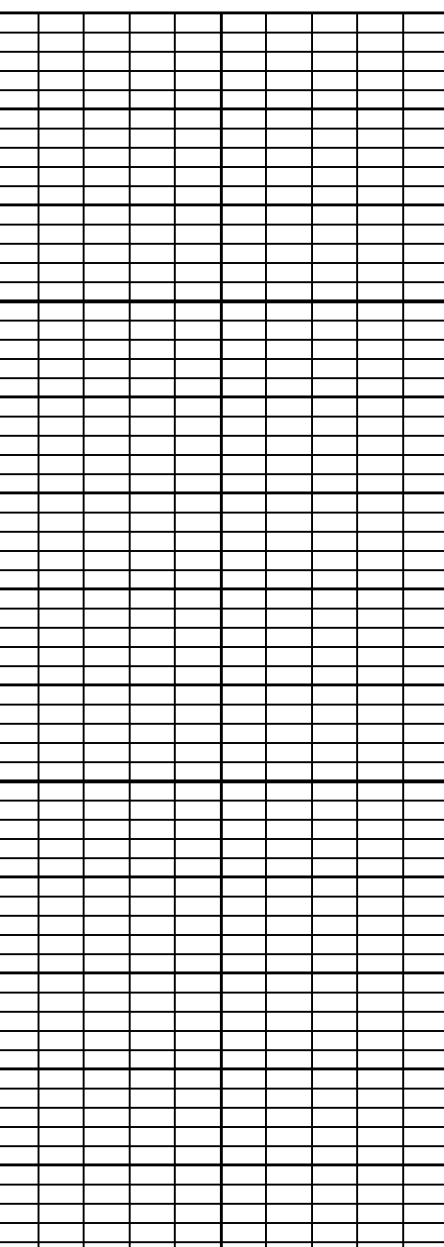
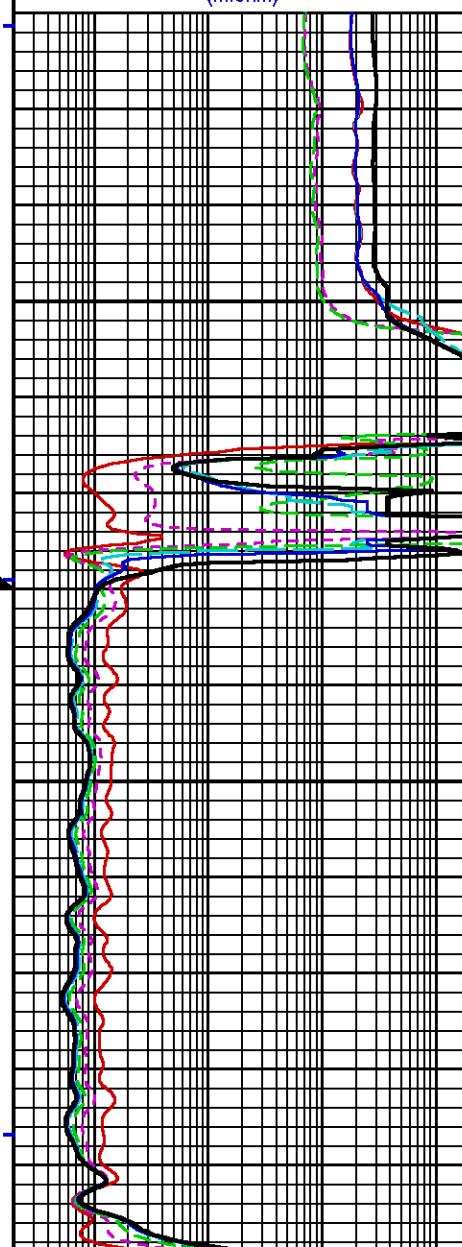
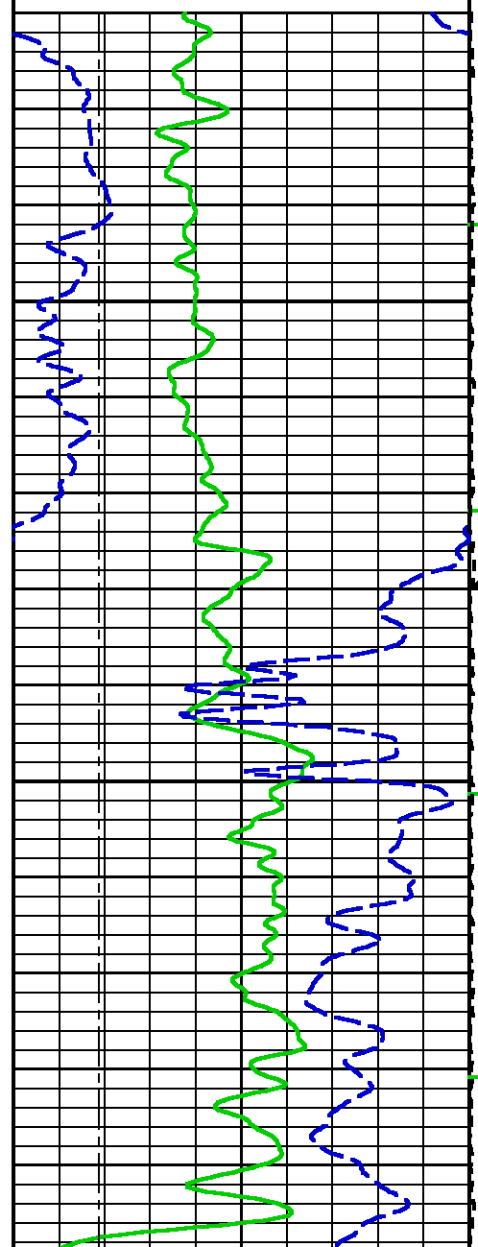
30 -10

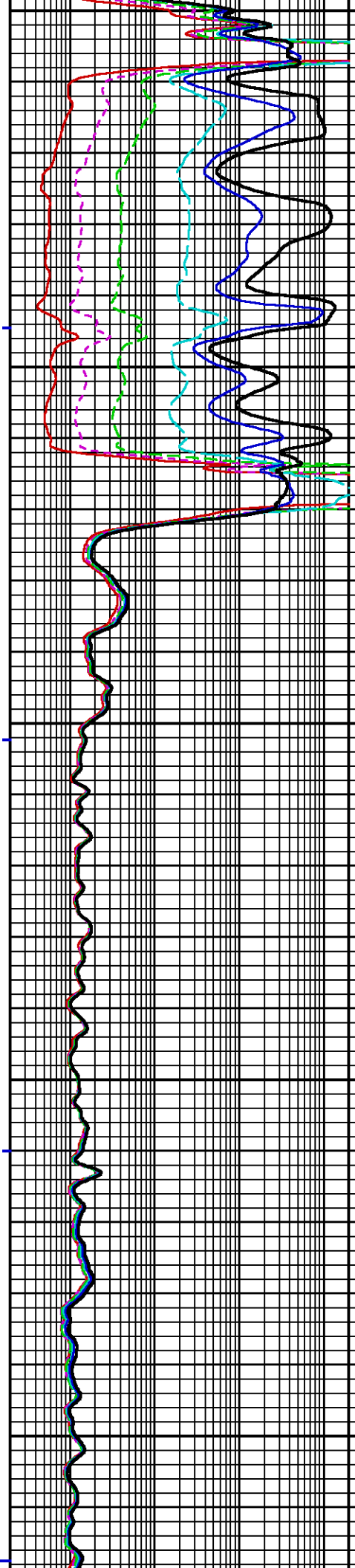
(pu)

ACOUSTIC POROSITY [poracqi]

30 -10

(pu)



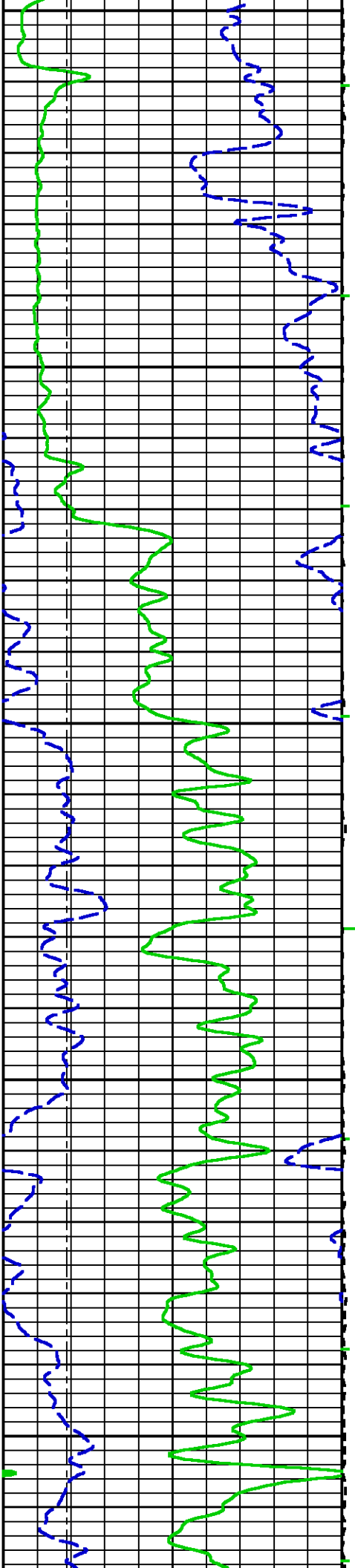


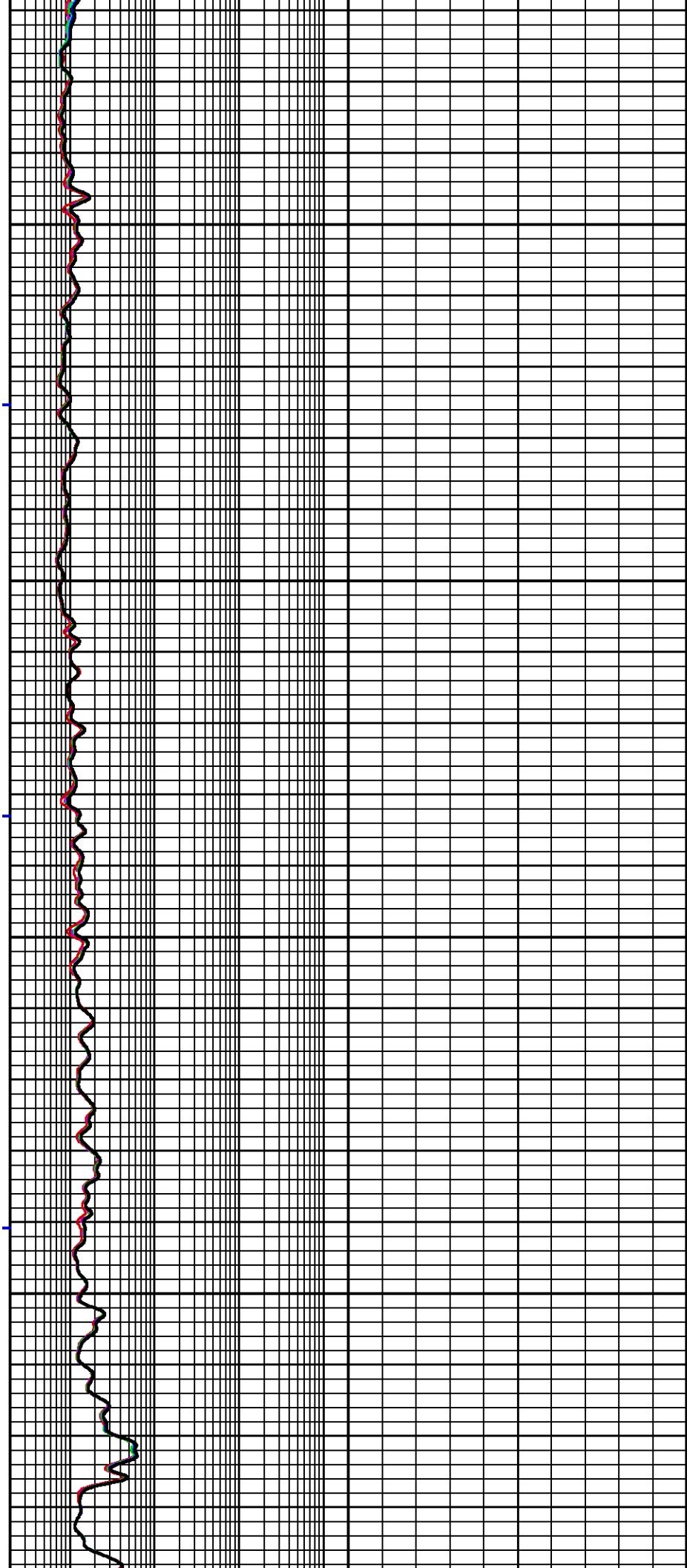
1900

2000

400

800

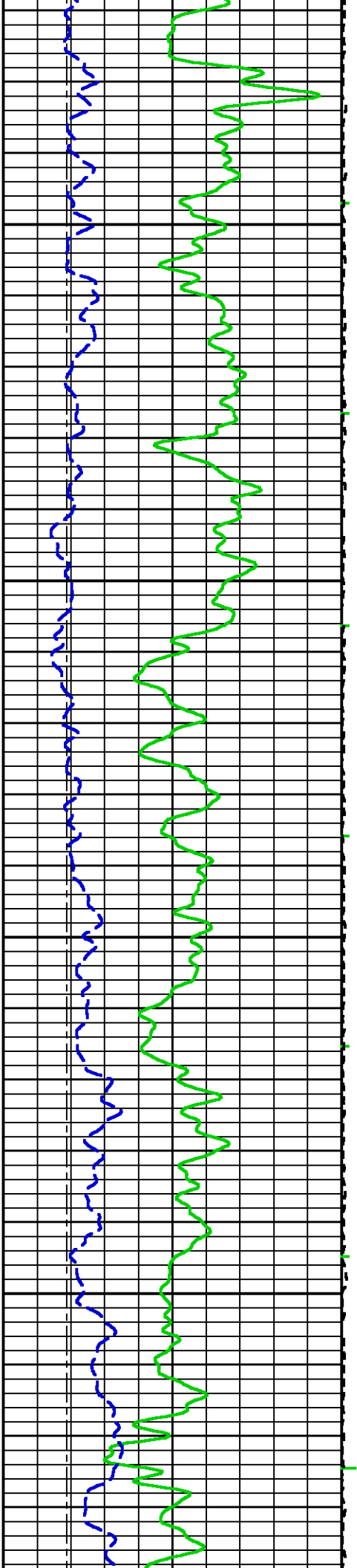


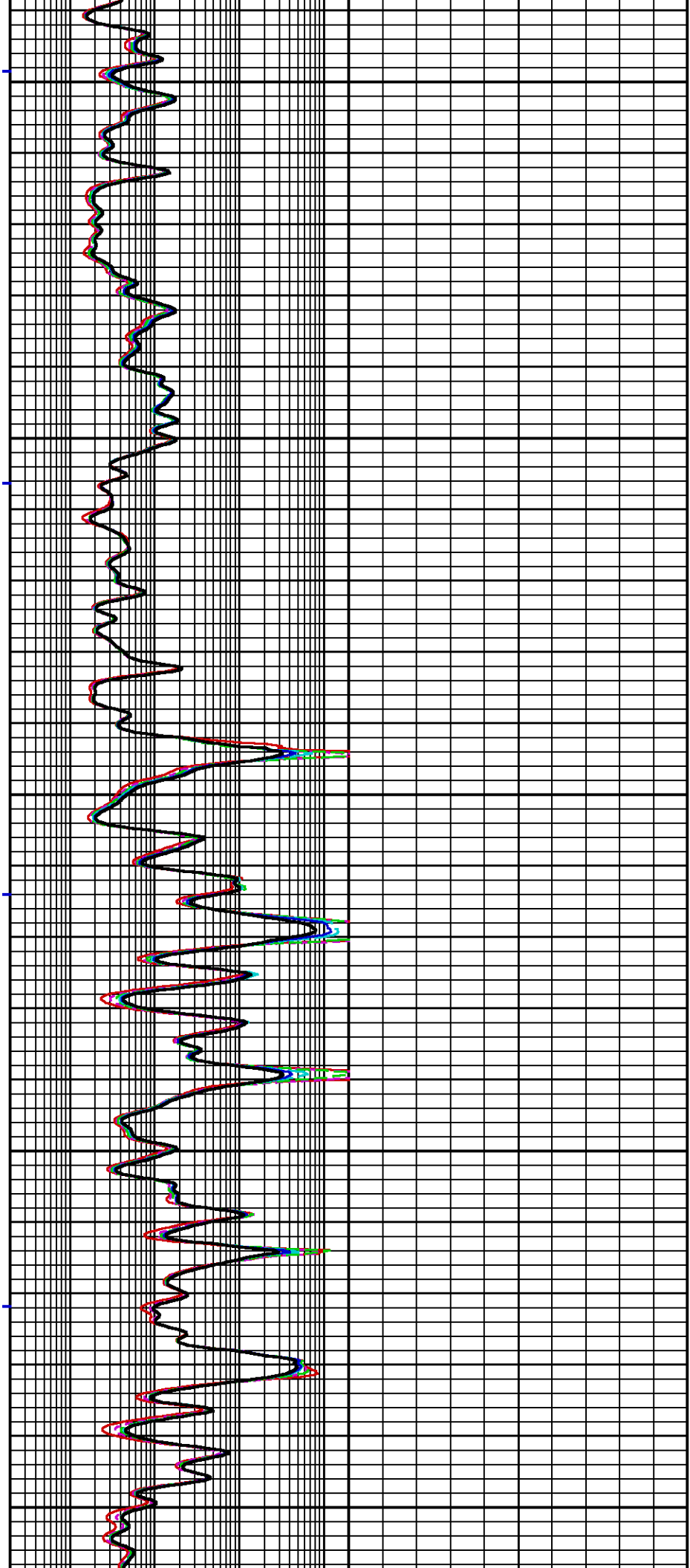


2100

2200

700

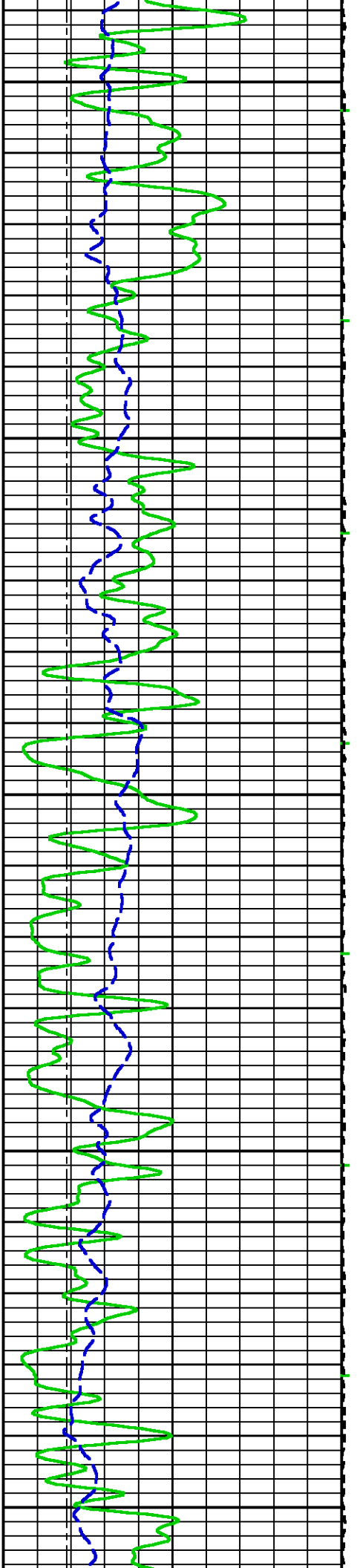


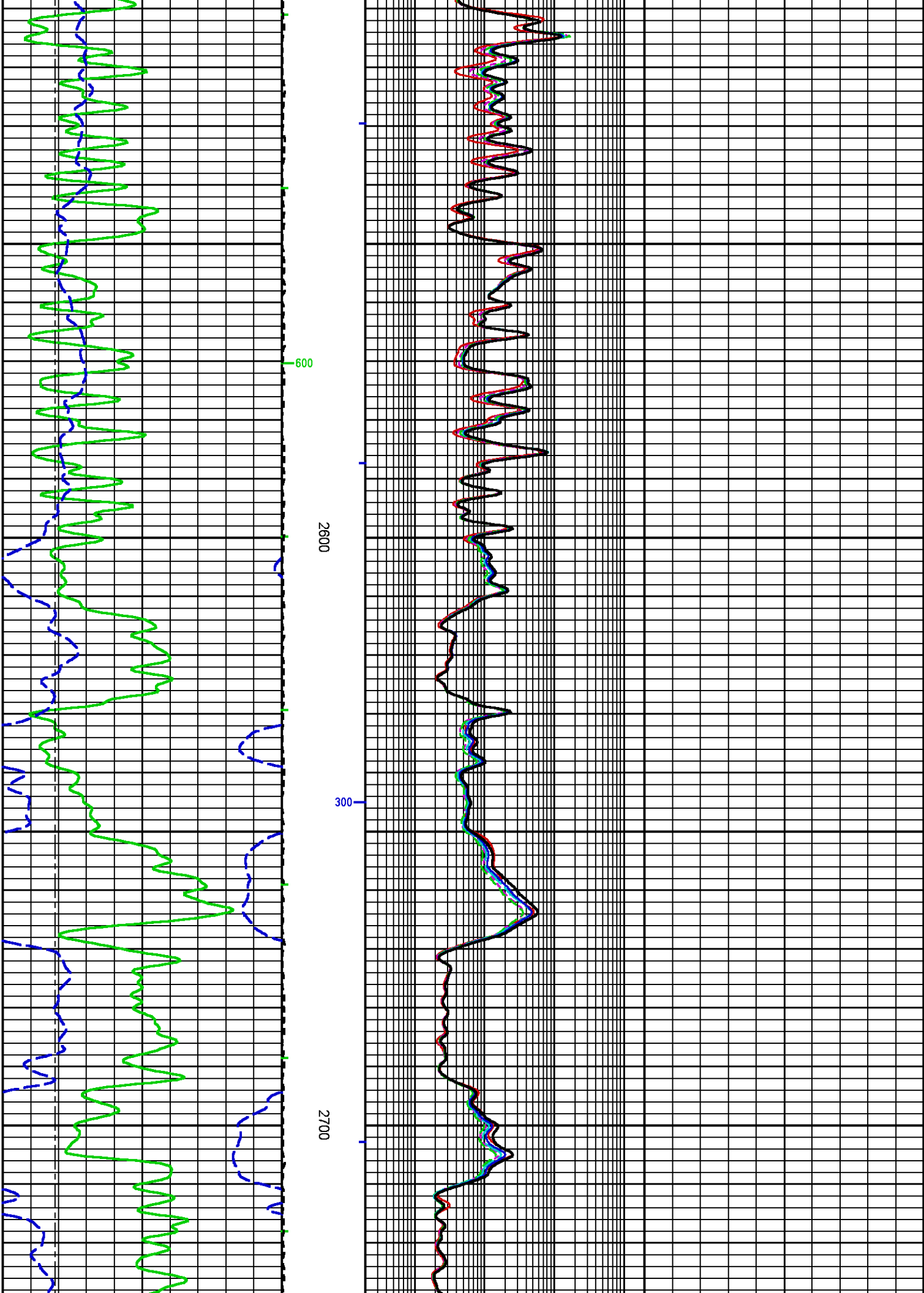


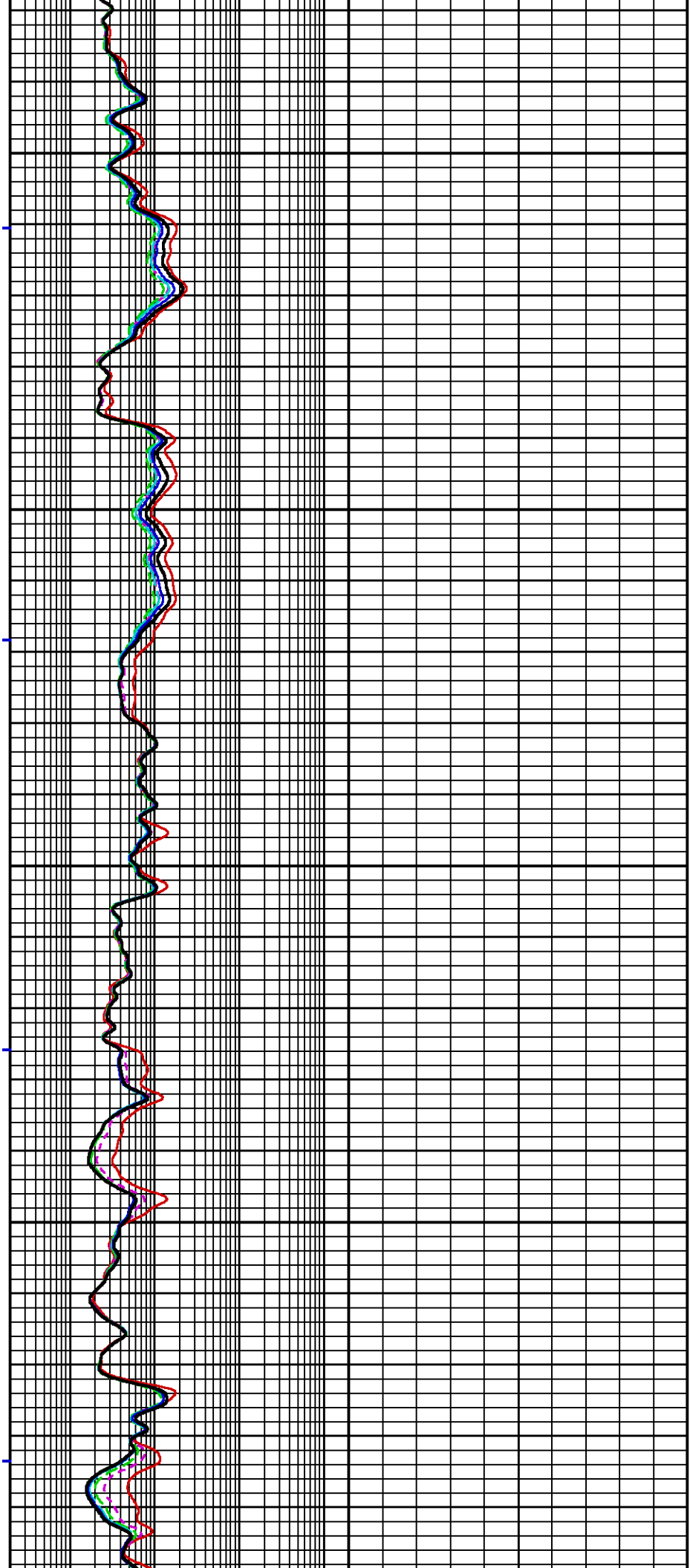
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2400

2500



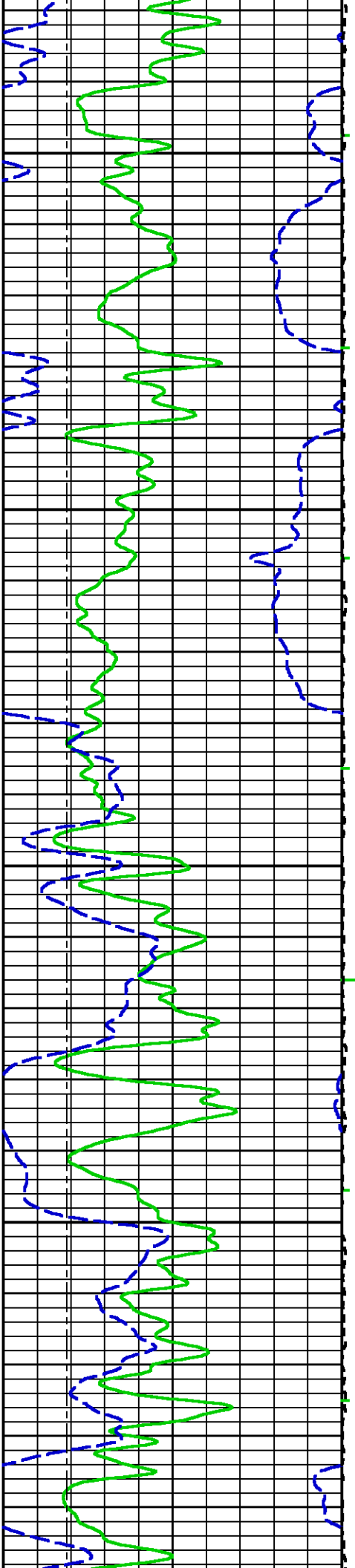


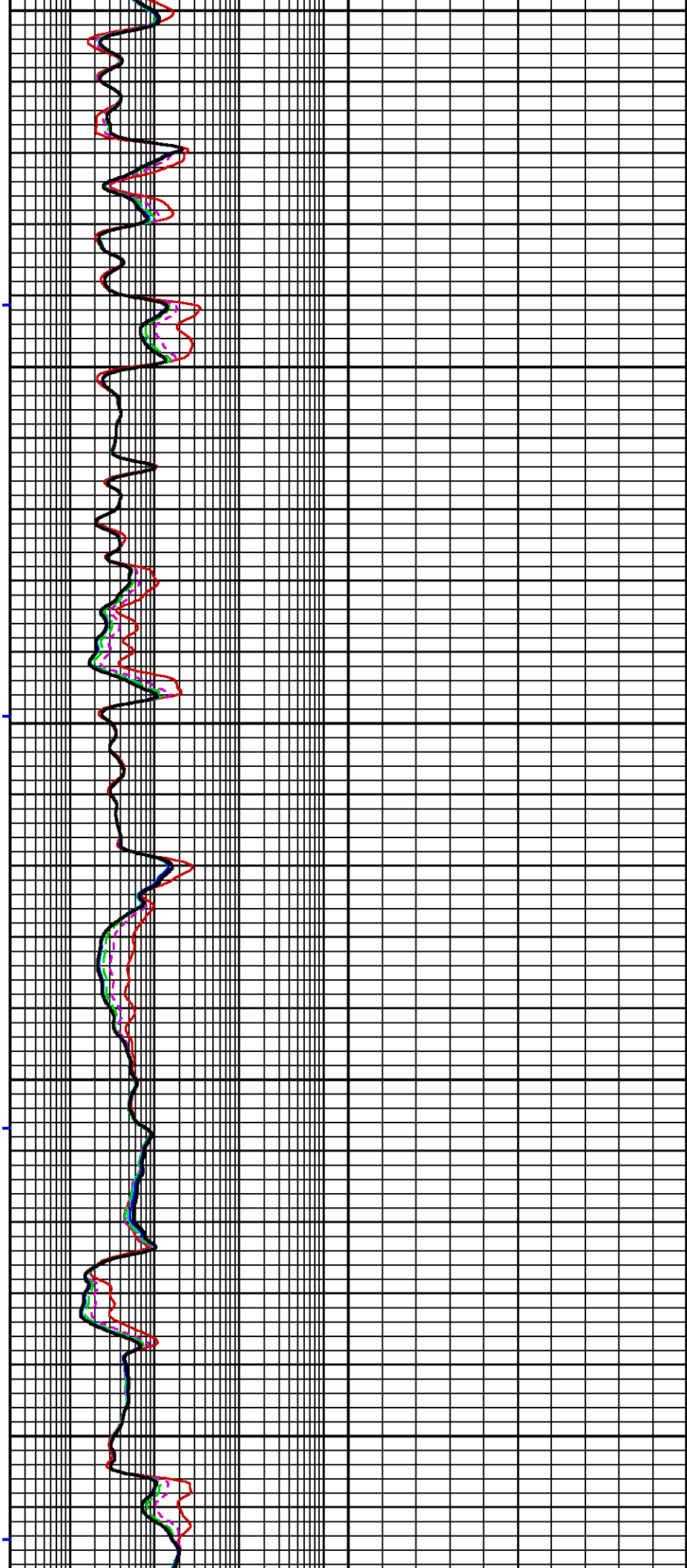


2800

2900

500

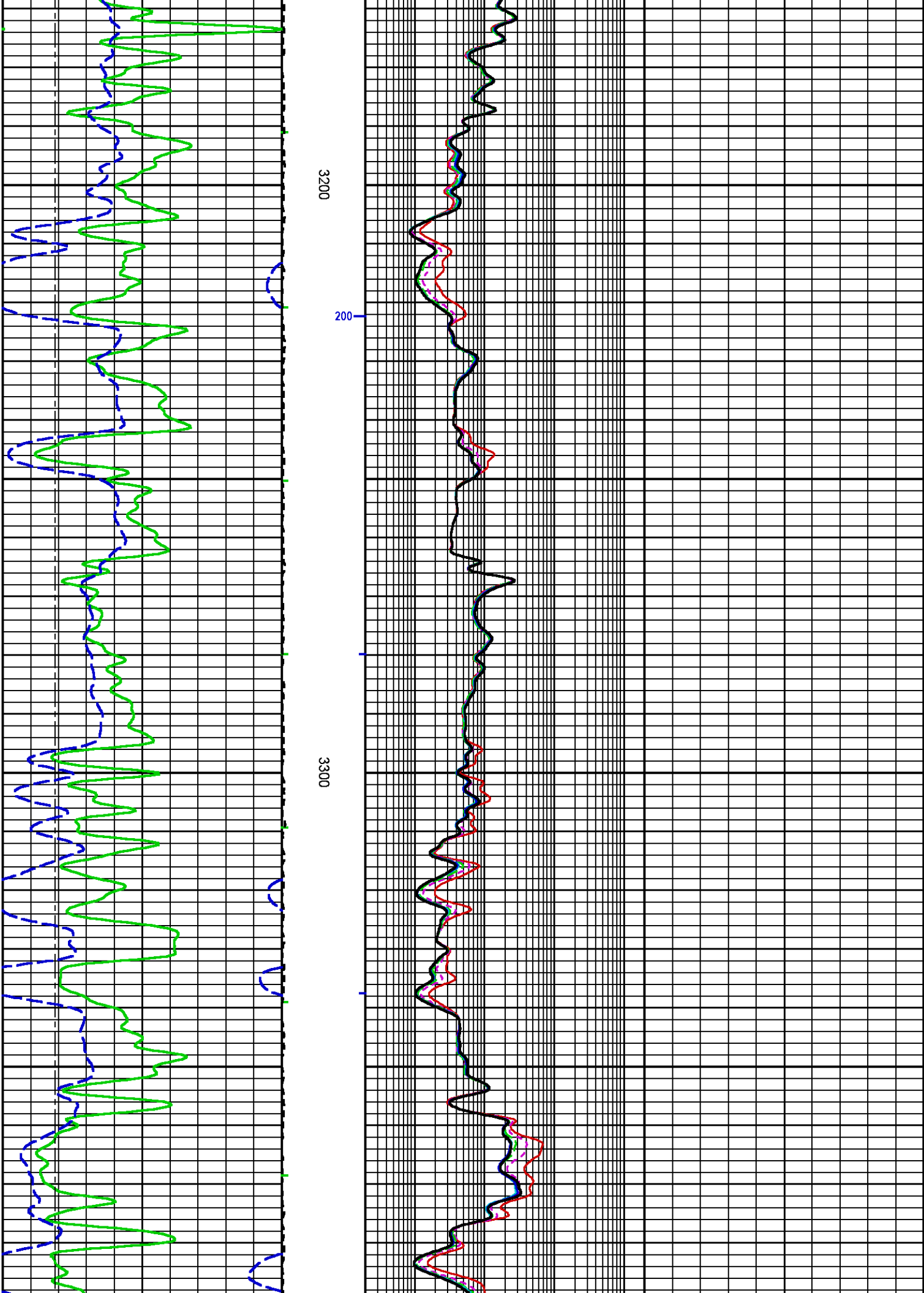


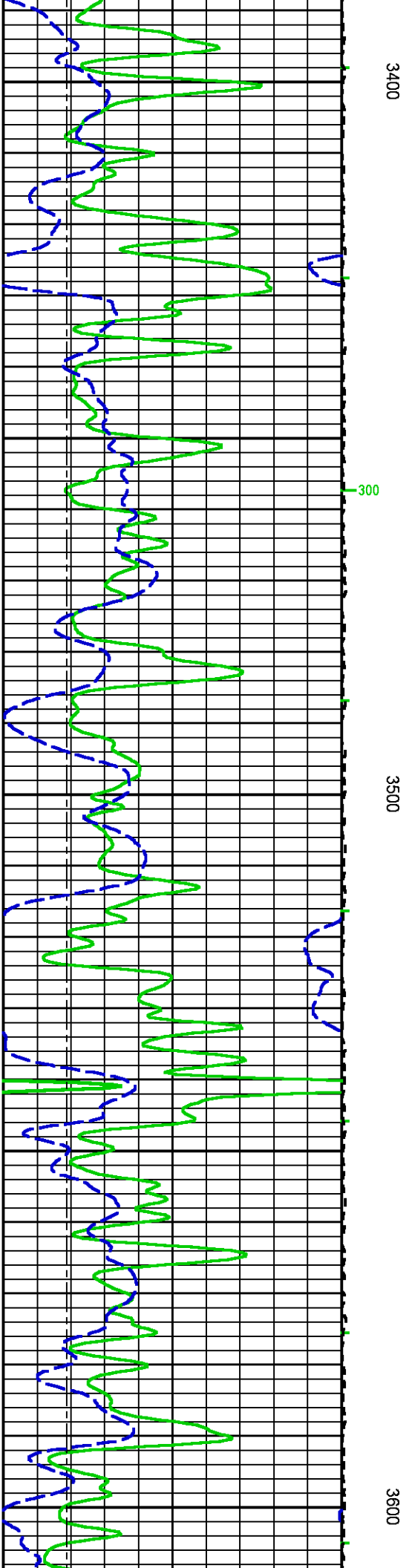
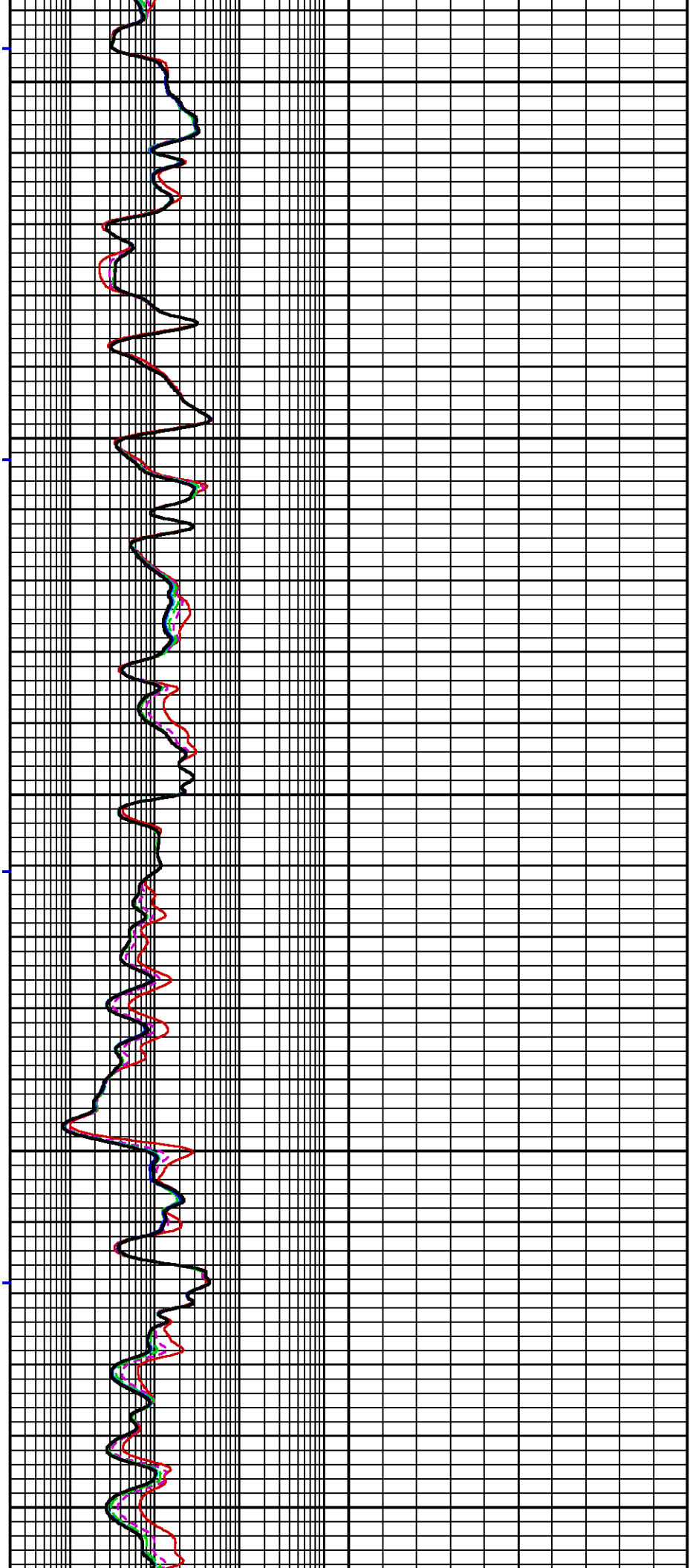


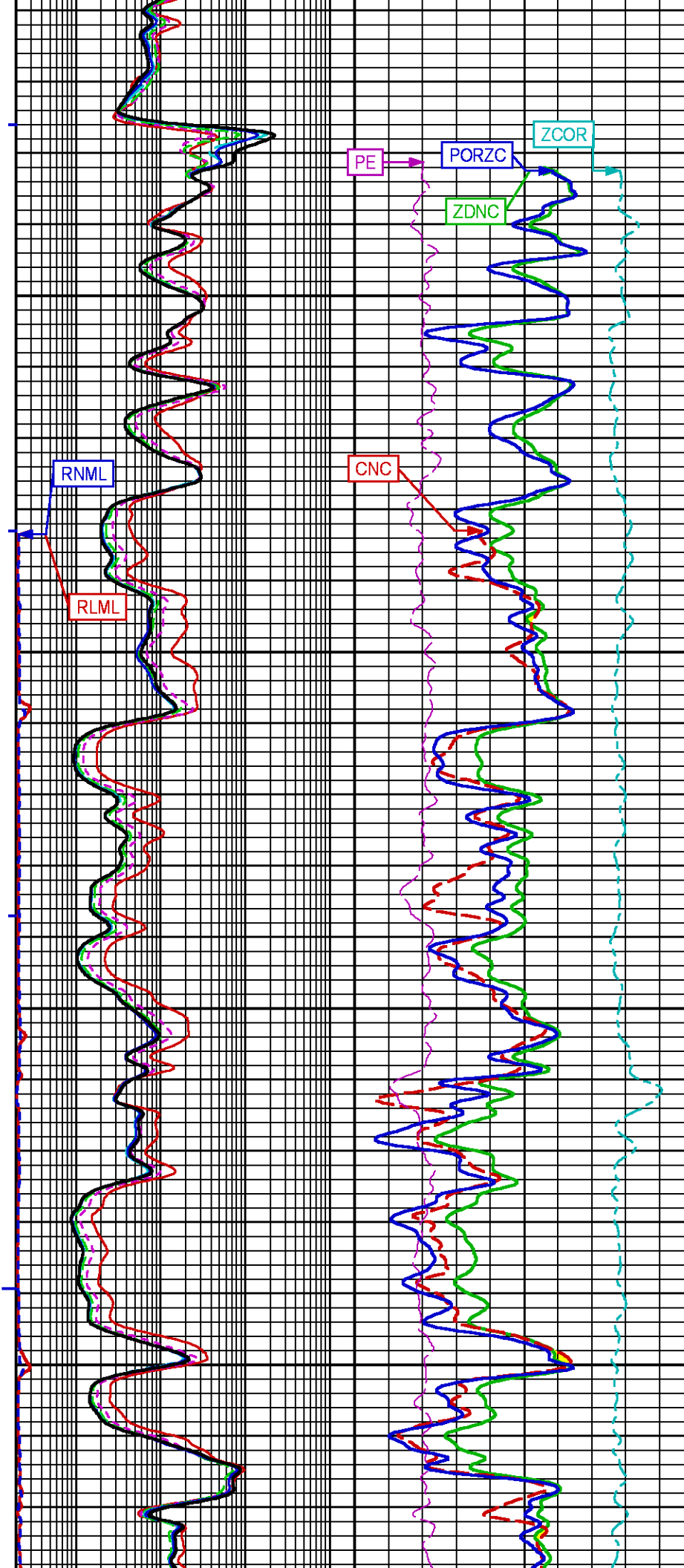
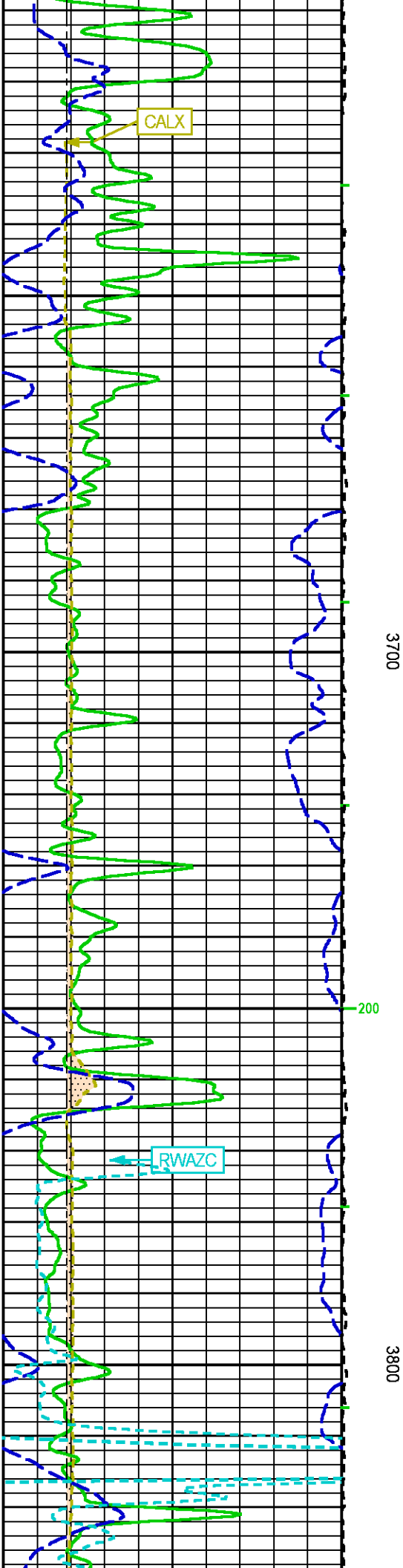
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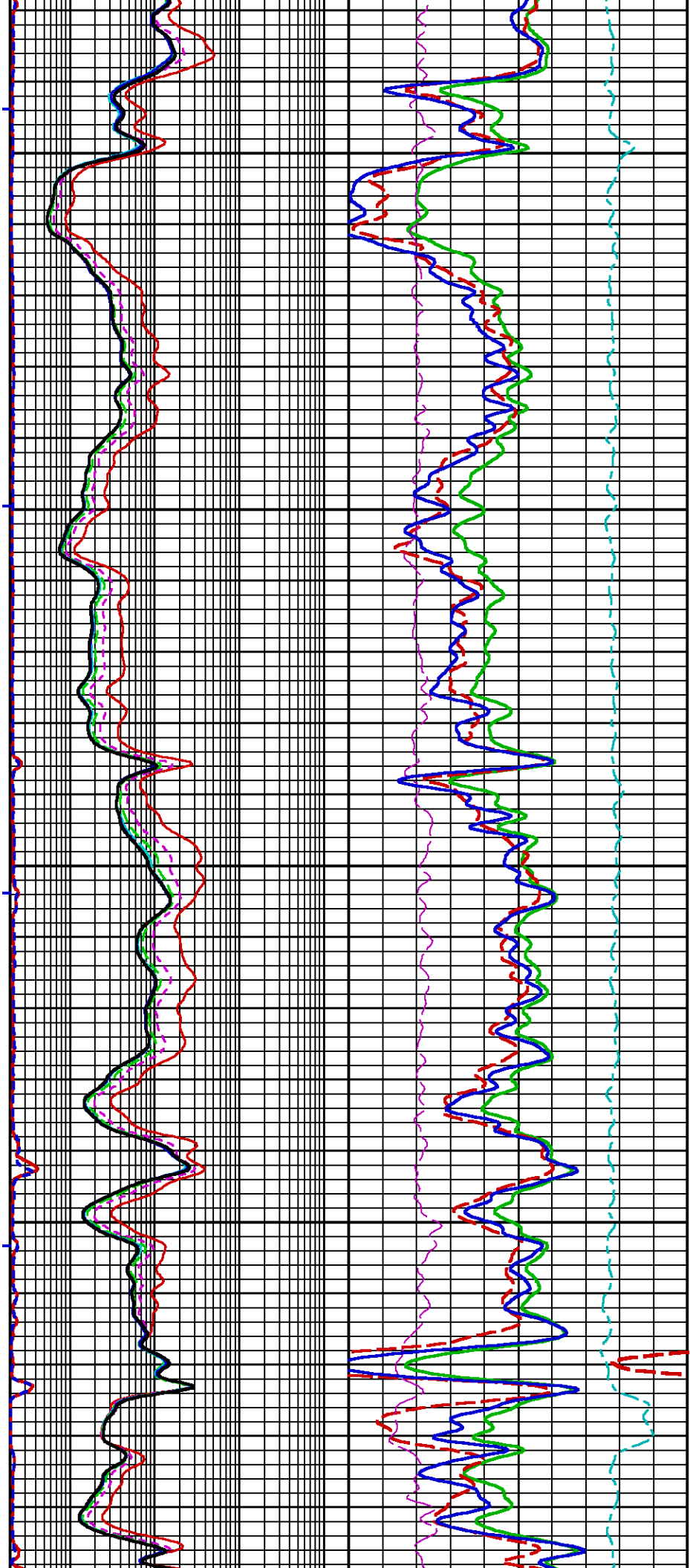
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400



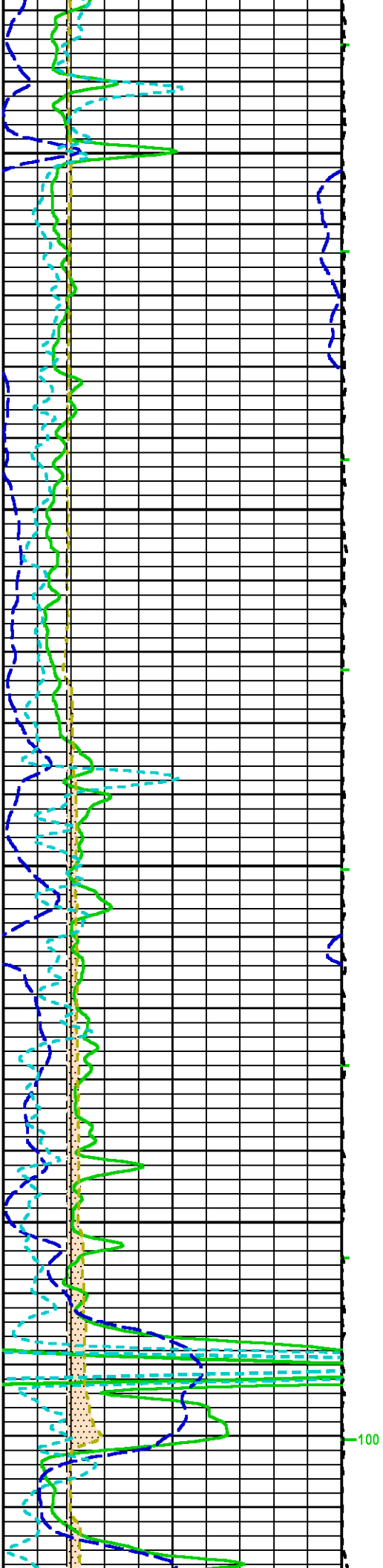


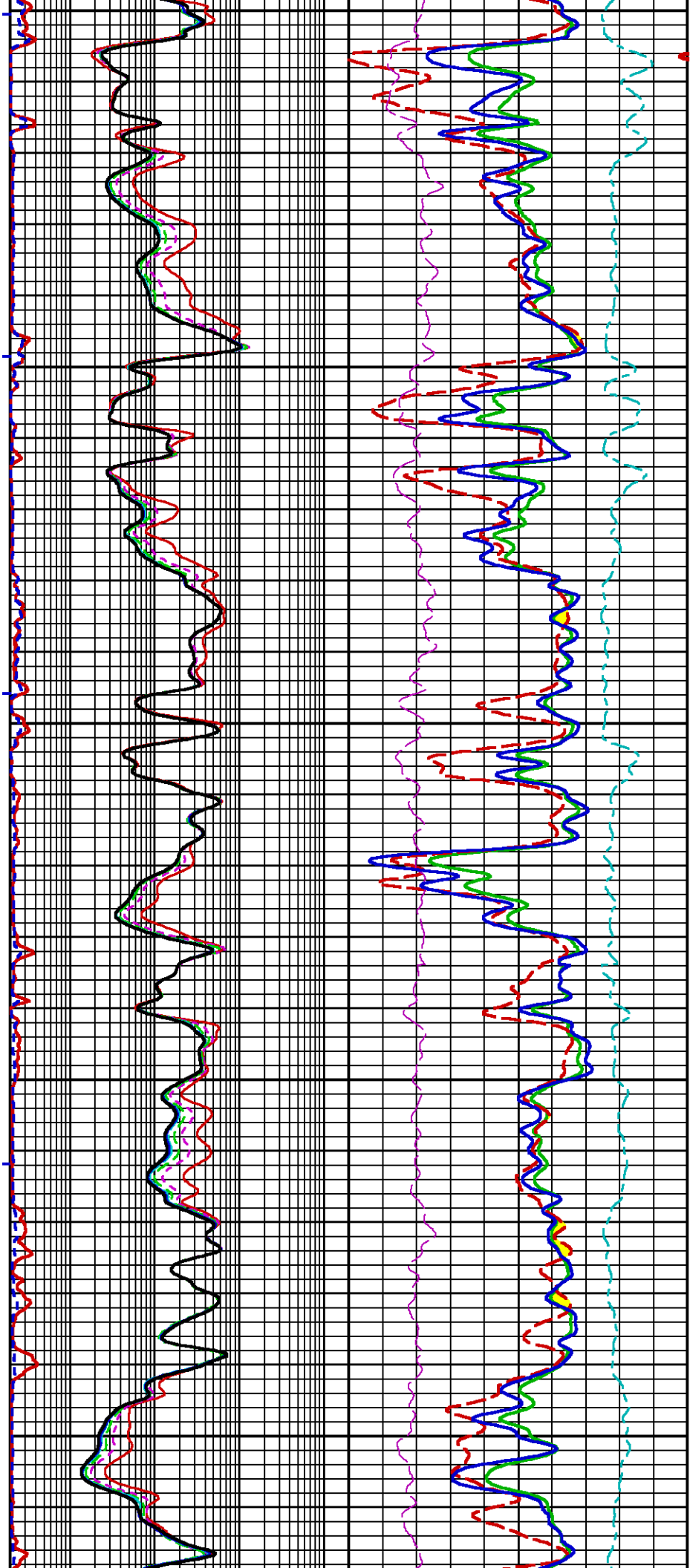




3900

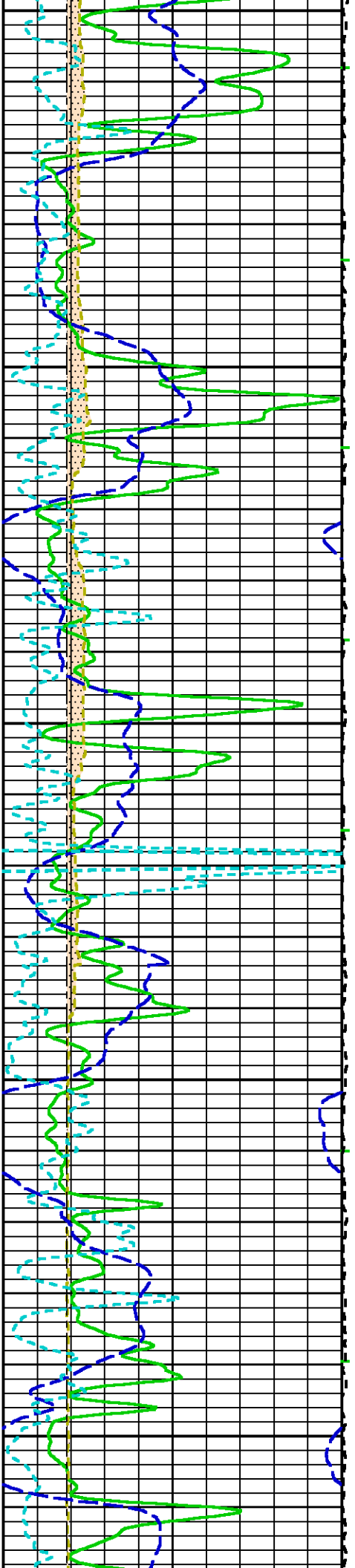
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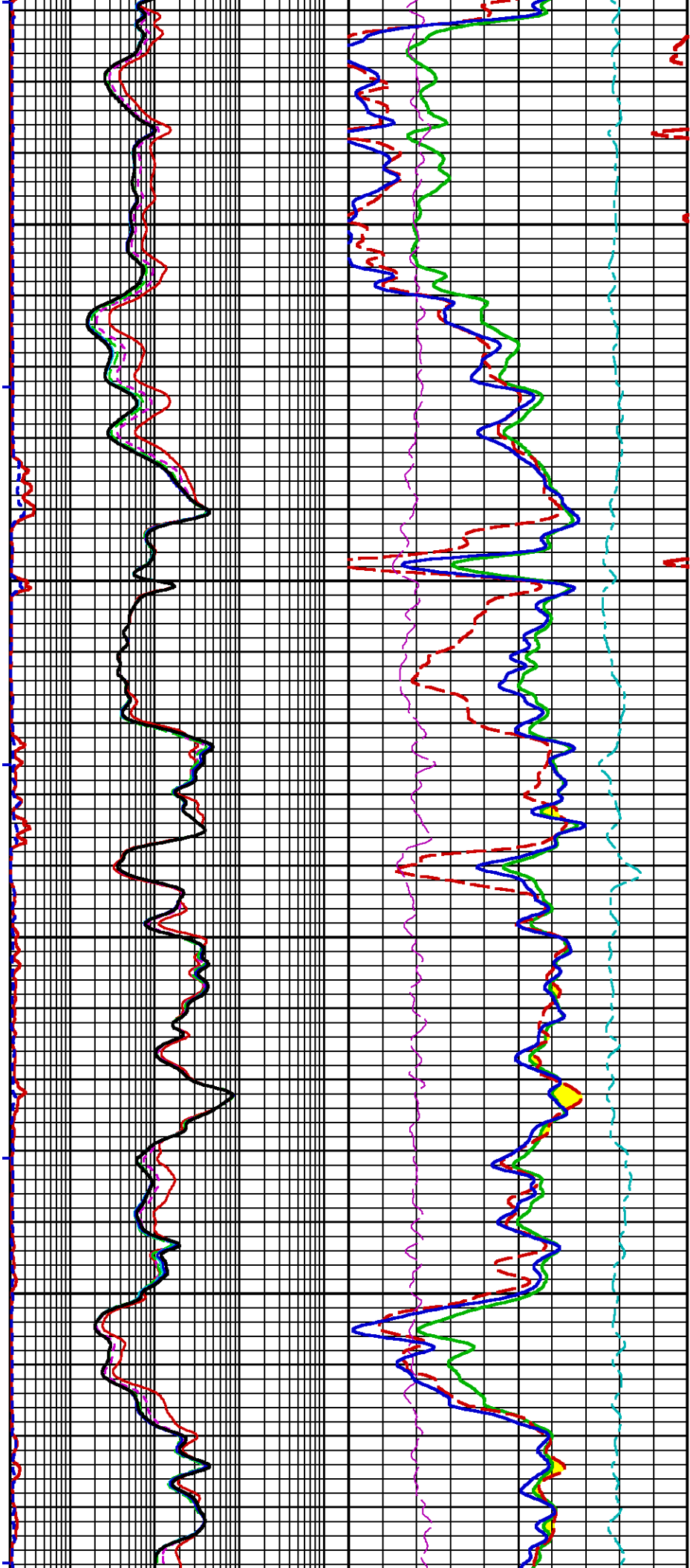




4100

4200

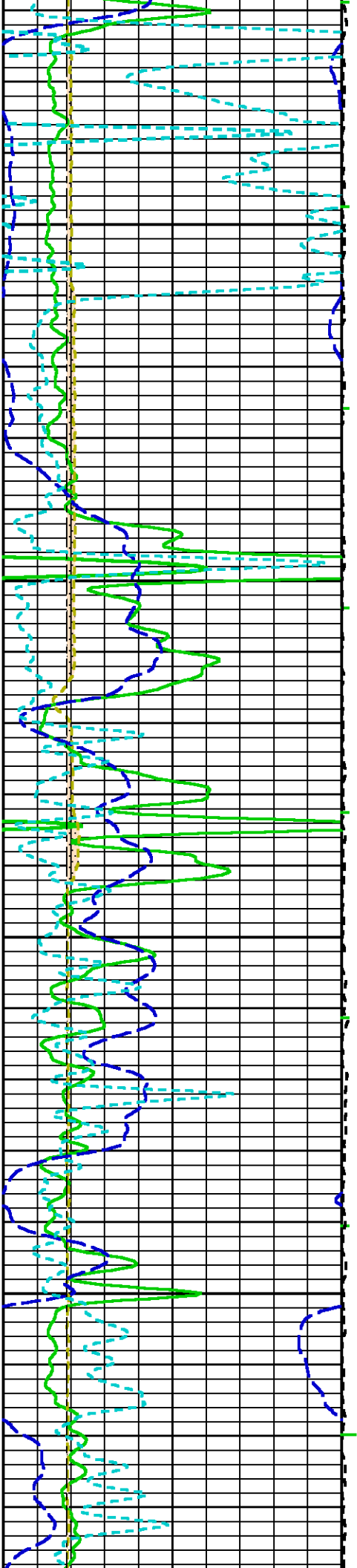


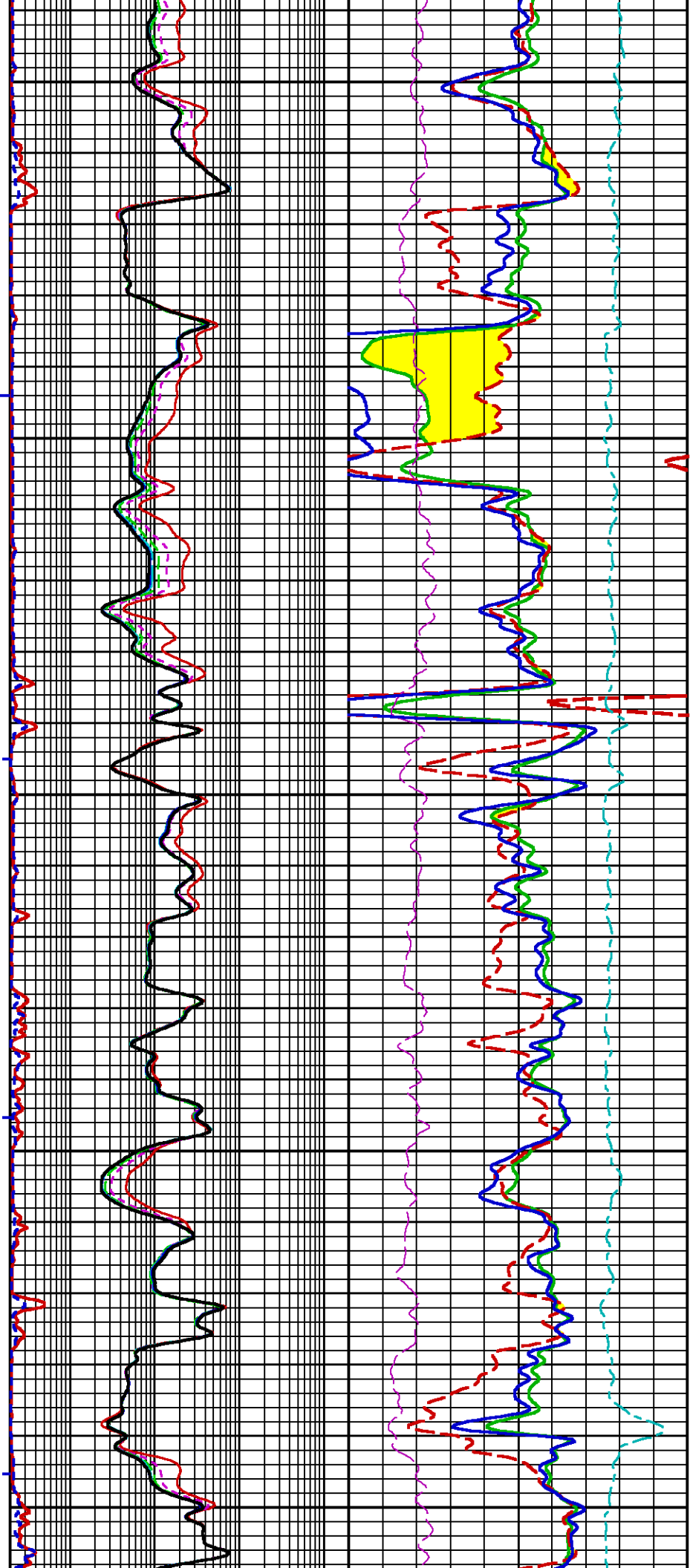


4300

4400

400



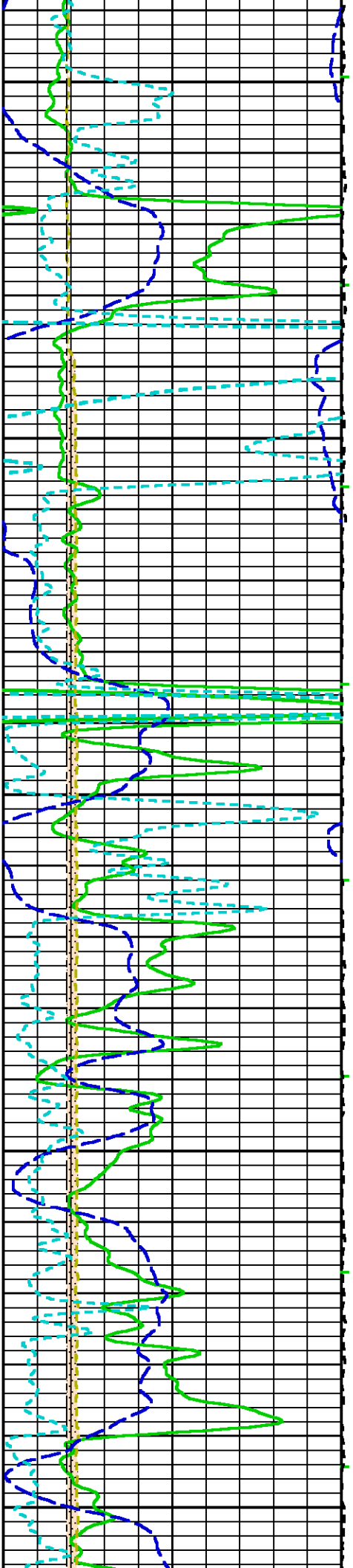


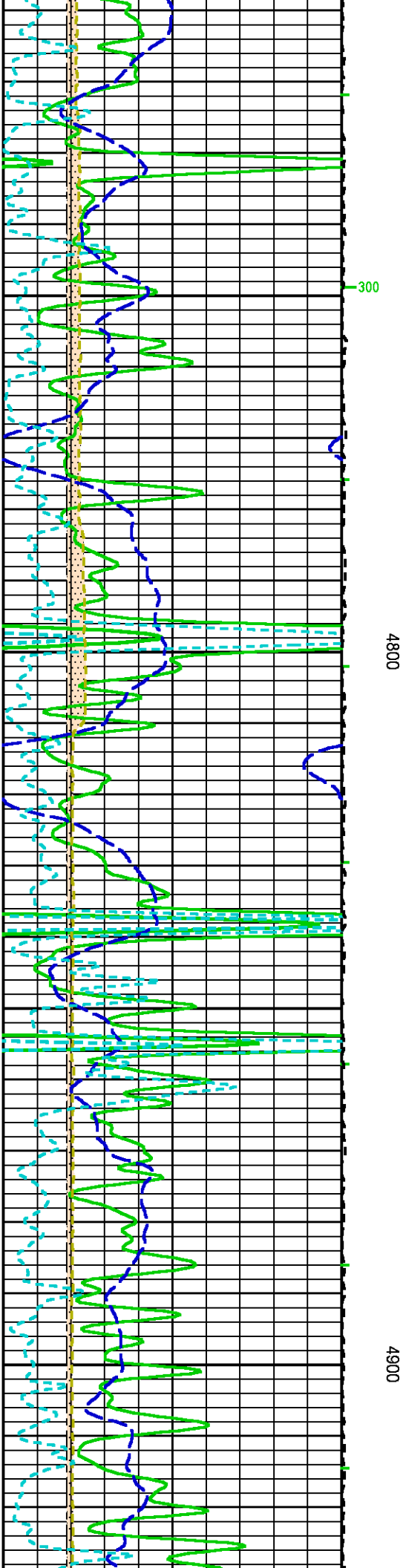
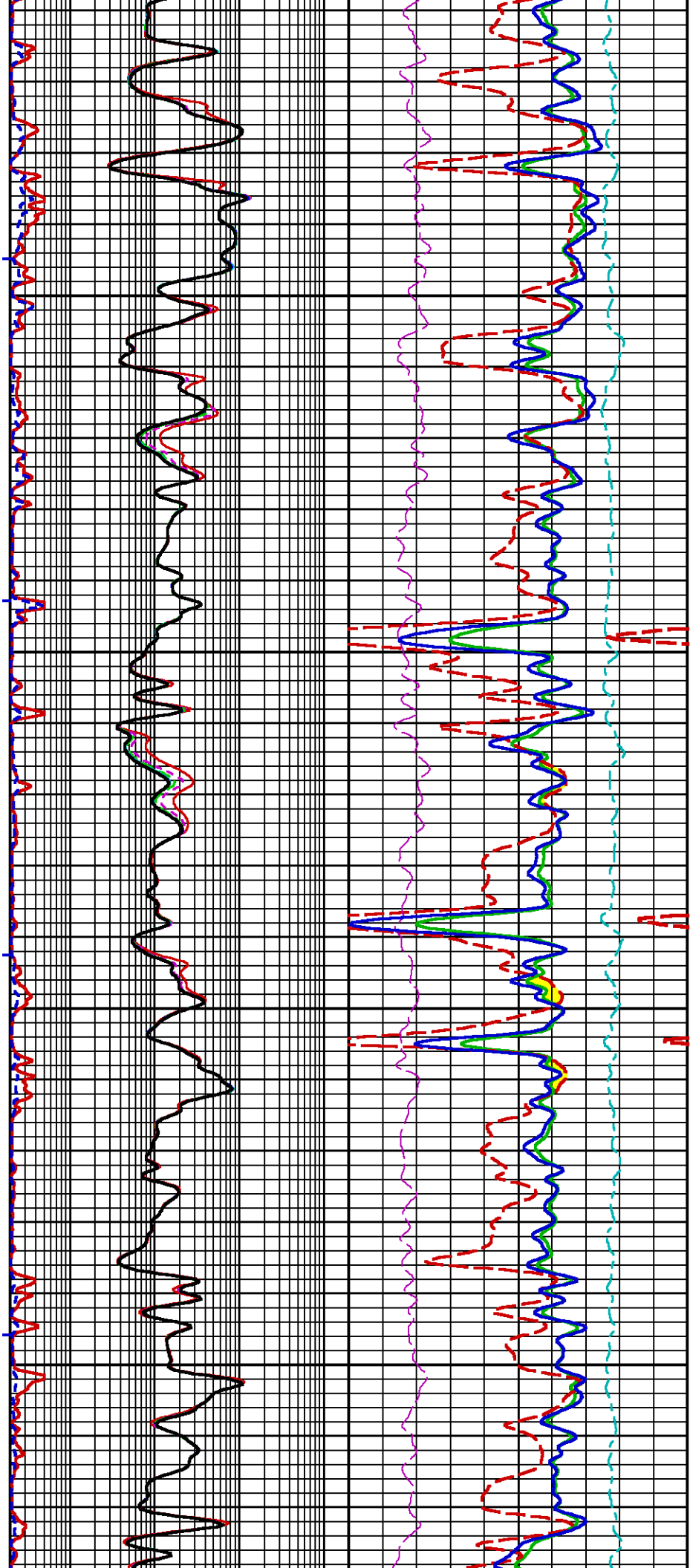
4500

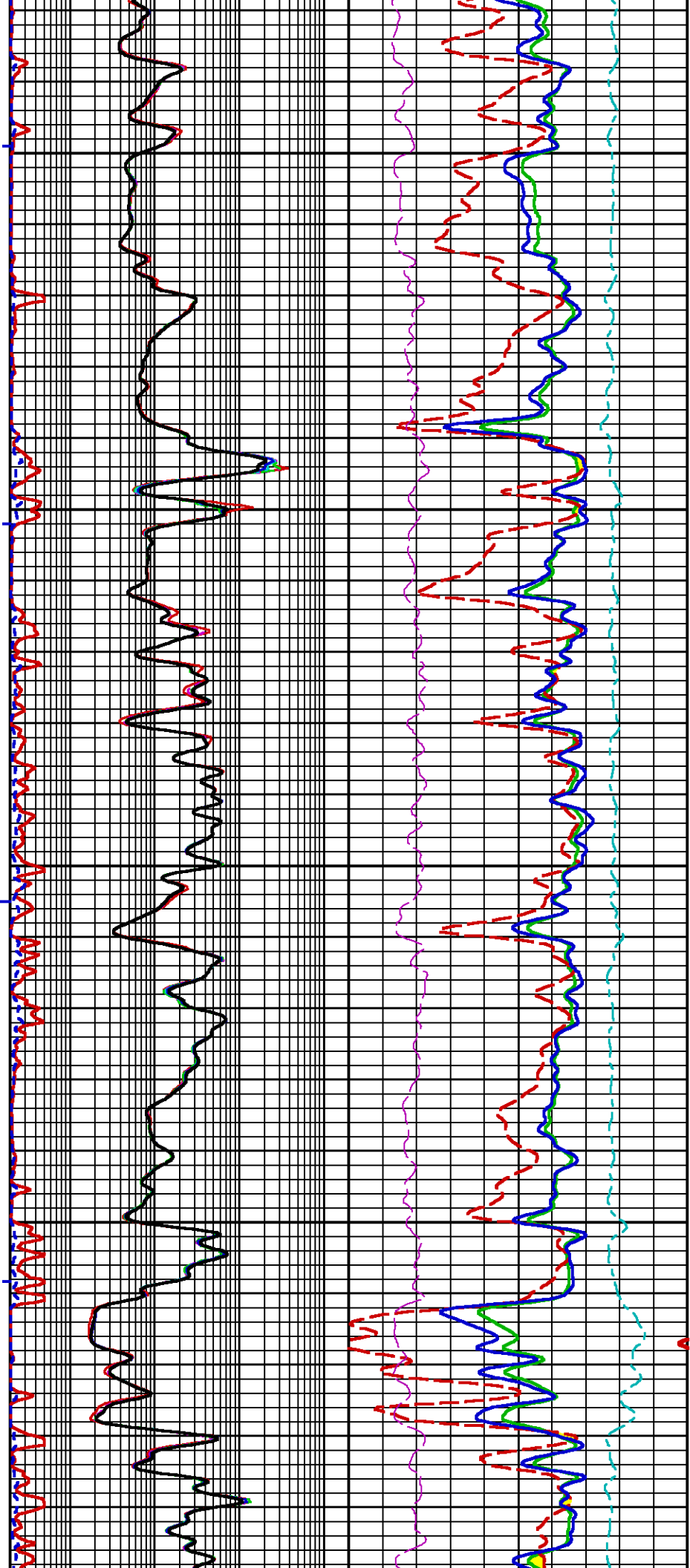
200

4600

4700





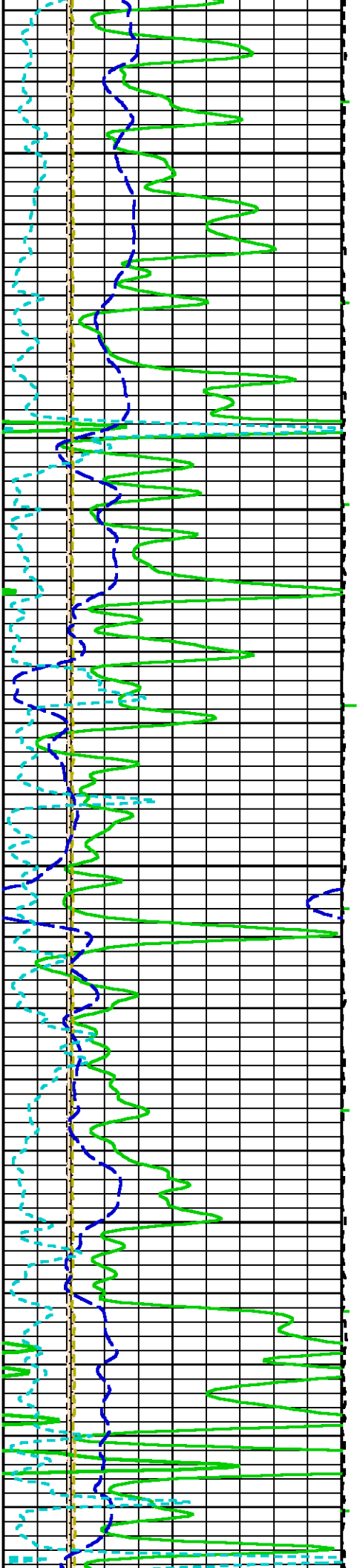


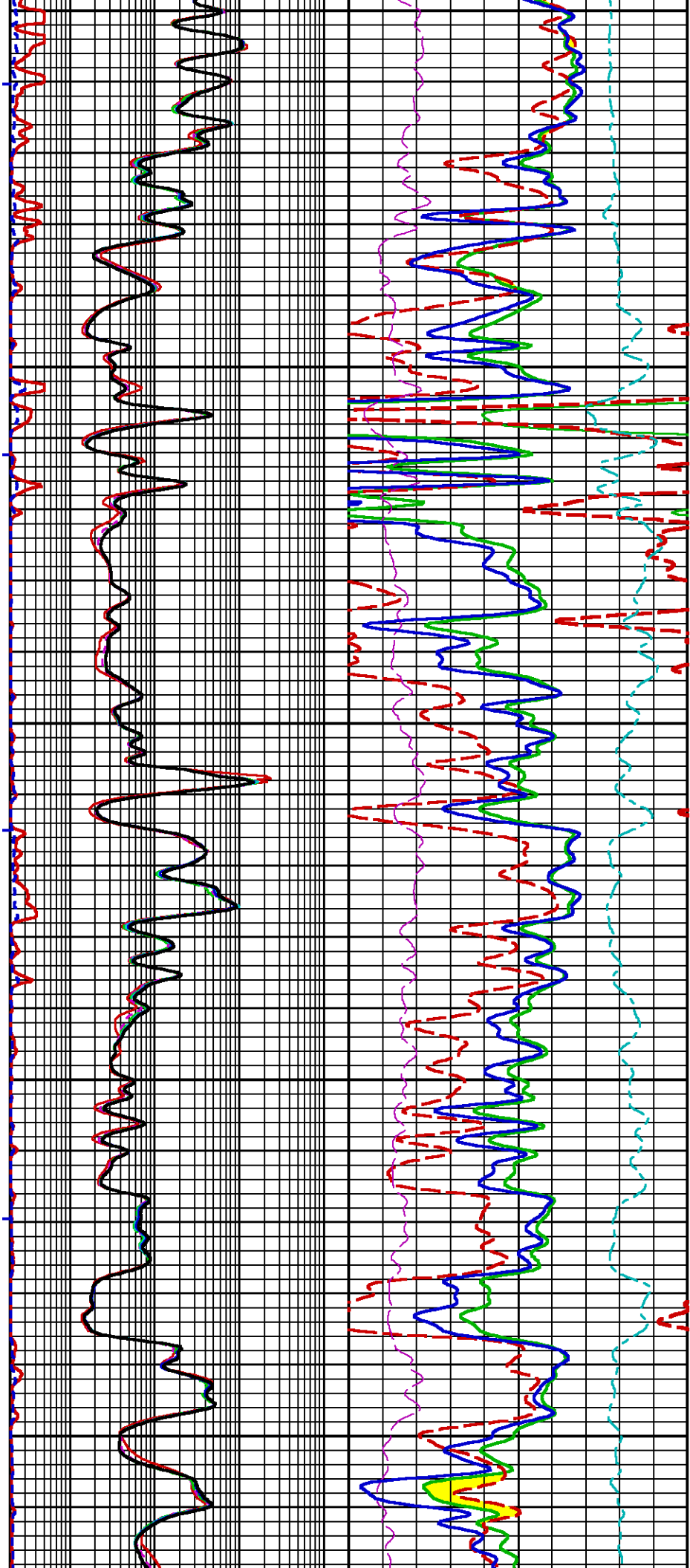
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200

100

5100

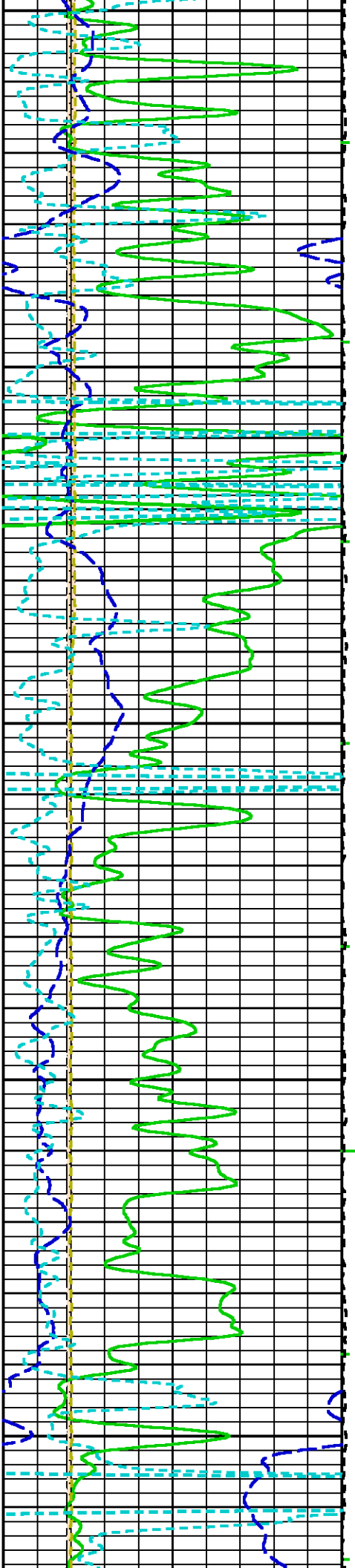


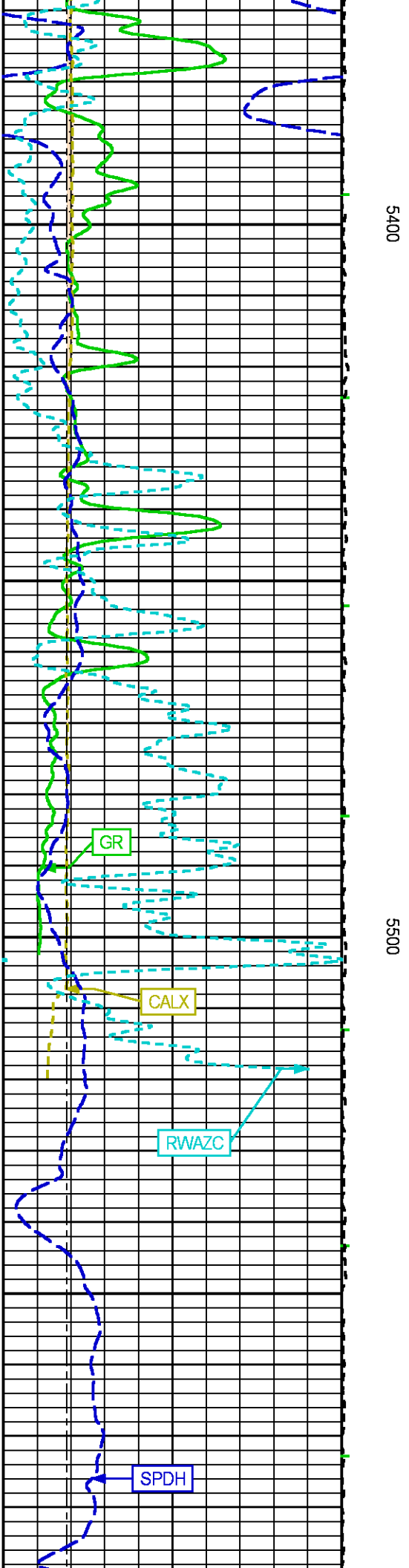
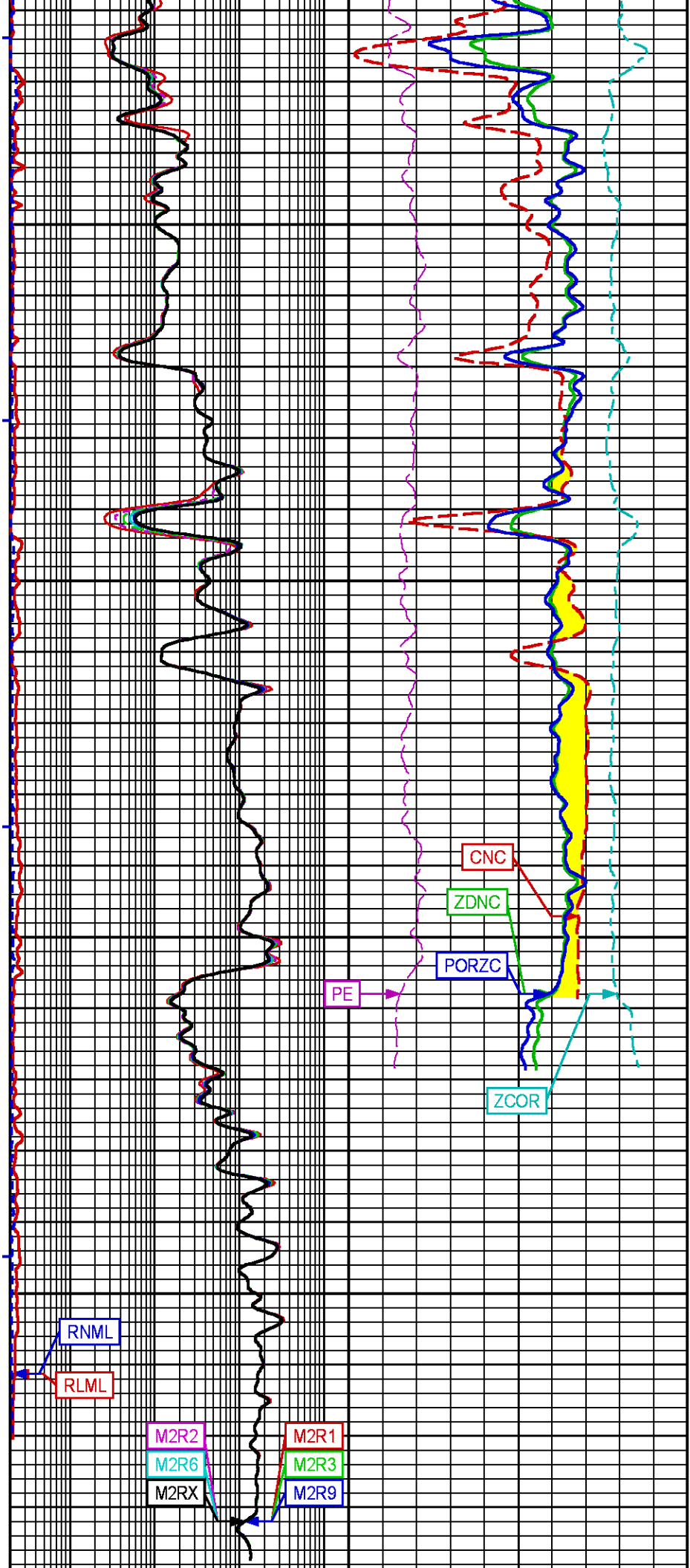


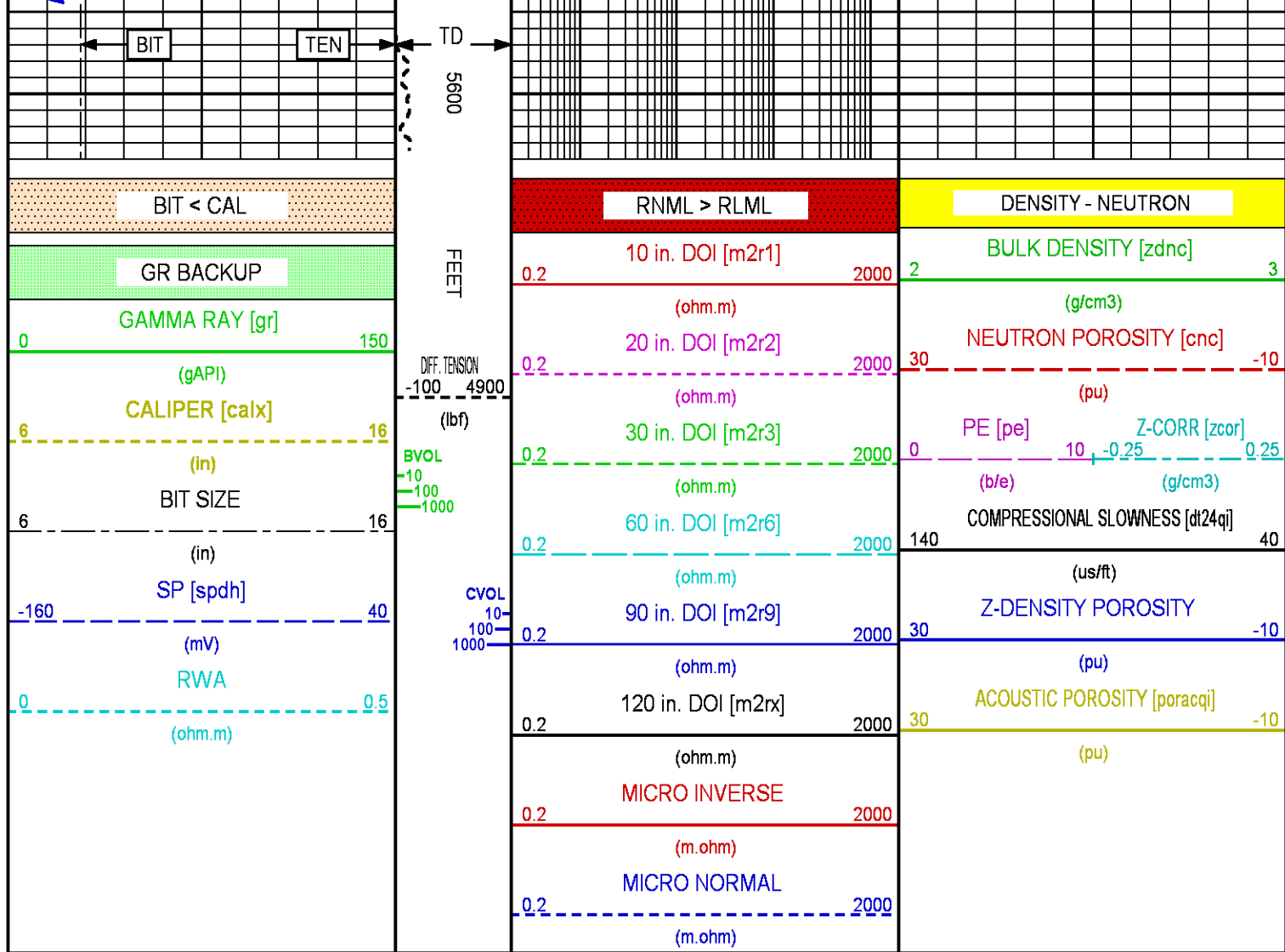
5200

5300

100







REPEAT LOG 5"/100' SCALE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Updates: 1,32,34,39 Patches: 5

Plotted: Thu Feb 13 15:37:38 2020

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/MERIT/Wenu_103/p87cb02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4768.500 ft BOTTOM DEPTH: 5603.500 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FILTER ()	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
3D L-MER RES	FILTER (.h)	medium (1)		"	"

ZDL MED RES	FILTER (hrd1s*)	medium	"	"
	FILTER (hrd2s*)	medium	"	"
	FILTER (hrd2s*)	medium	"	"
	FILTER (soft*)	medium	"	"
DT24	FILTER ()	light (2)	"	"
SP-SPDH	FILTER ()	medium (1)	"	"
ML	FILTER ()	light (2a)	"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	5.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	35.0	degF	"	"
	MUD SAMPLE RES	0.689	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calml*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	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		"	"
	RMUD SOURCE	TOOL MEASURED		"	"

GENERAL & MULTI-SERVICE

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
FORMATION FACTOR	A	1.000		TOP	BOTTOM
	M	2.000		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BH SIZE ON		"	"
	SALINITY	1700	ppm	"	"
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)	
MUD DENSITY	MUD DENSITY	9.20	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOfmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

ACOUSTIC POROSITY

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACOUSTIC POROSITY	POROSITY TYPE	WYLLIE		TOP	BOTTOM
	DTmatrix	47.60	us/ft	"	"
	DTfluid	190.00	us/ft	"	"
	DTshale	100.00	us/ft	"	"
	MOD. WYLLIE PARM	2.25		"	"
	MOD. R-H-G PARM	2.00		"	"
DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24		"	"

ACOUSTIC AVAN CORRELATON

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MONOPOLE COMPRESSIONAL	FORMATION TYPE	GENERIC (MEDIUM)		TOP	BOTTOM
	CORRELATION METHOD	NTH ROOT		"	"
	RESET TABERS			"	"

	RESET TAPERS	50	us/ft	"	"
	TAPER - LEFT END	180	us/ft	"	"
	TAPER - RIGHT END	180	us/ft	"	"
	FLOOR (UNIV. OPTION)	0.050		"	"

ACOUSTIC PICK CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM
	REJECTION DTmax	180	us/ft	"	"
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	"	"
	SEARCH START OFFSET (sfan2*)	0	us	"	"
	SEARCH START OFFSET (sfan3*)	0	us	"	"
	SEARCH START OFFSET (sfan4*)	0	us	"	"
	SEARCH WINDOW LENGTH	1200	us	"	"
	THRESHOLD FACTOR	0.30		"	"
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	"	"
	E3 THRESHOLD	OFF		"	"

ACOUSTIC QUALITY CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM

ACOUSTIC WAVEFORM FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM
	LOW FREQ CUTOFF	4000	Hz	"	"
	HIGH FREQ CUTOFF	20000	Hz	"	"
WAVEFORM FILTER - FULLWAVE	SURFACE WAVE FILTER	ON		"	"
	LOW FREQ CUTOFF	2000	Hz	"	"
	HIGH FREQ CUTOFF	20000	Hz	"	"

ACOUSTIC TCC CONTROL PARAMETERS					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GENERAL TCC PARAMETERS	AGC	ON		TOP	BOTTOM
	SUBCYCLE LENGTH	50		"	"
	SUBSET			"	"
GENERAL MONOPOLE TCC PARAMETERS	STACK LEVEL	2		"	"
	DSP FILTER	ON		"	"
DELTA T TCC PARAMETERS	ACG WINDOW	832	us	"	"
	MOVEOUT	16	us/ft	"	"
	SAMPLE PERIOD	16		"	"
	RX DELAY	240	us	"	"
FULL WAVE MONOPOLE TCC PARAMETERS	ACG WINDOW	8064	us	"	"
	SAMPLE PERIOD	24		"	"
	RX DELAY	0	us	"	"

HDIL PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	CENTRALIZED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL High RESISTIVITY Normalization	VRM Norm	ON		"	"

ML PARMS					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ML BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP	BOTTOM

CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
E1-BIT	Feb 13 08:30:32 2020	BIT SIZE

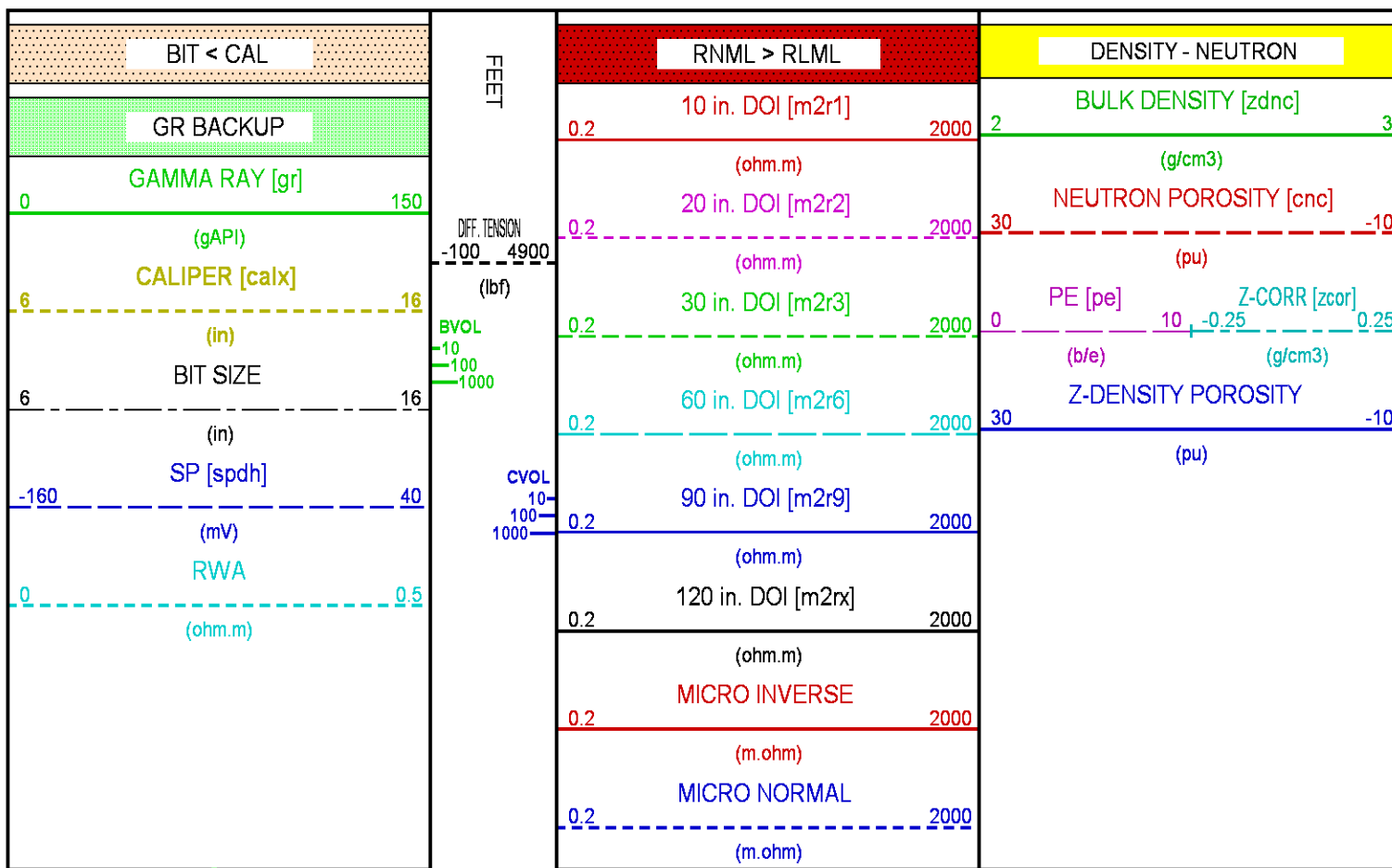
F1:BIT	Feb 13 08:30:32 2020	BIT SIZE
F1:BVOL	Feb 13 08:30:32 2020	BOREHOLE VOLUME
F1:CALX	Feb 13 08:30:32 2020	CALIPER FROM X-AXIS OF XY CALIPER(S)
F1:CNC	Feb 13 08:30:32 2020	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Feb 13 08:30:32 2020	CEMENT VOLUME
F1:GR	Feb 13 08:30:32 2020	GAMMA RAY
F1:M2R1	Feb 13 08:30:32 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Feb 13 08:30:32 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Feb 13 08:30:32 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Feb 13 08:30:32 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Feb 13 08:30:32 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Feb 13 08:30:32 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Feb 13 08:30:32 2020	PHOTO ELECTRIC CROSS-SECTION
F1:PORZC	Feb 13 08:30:32 2020	CORRECTED POROSITY
F1:RLML	Feb 13 08:30:32 2020	1-INCH LATERAL RESISTIVITY
F1:RNML	Feb 13 08:30:32 2020	2-INCH NORMAL RESISTIVITY
F1:RWAZC	Feb 13 08:30:32 2020	APPARENT FORMATION WATER RESISTIVITY (CORRECTED)
F1:SPDH	Feb 13 08:30:32 2020	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Feb 13 08:30:32 2020	DIFFERENTIAL TENSION
F1:ZCOR	Feb 13 08:30:32 2020	DENSITY CORRECTION
F1:ZDNC	Feb 13 08:30:32 2020	BOREHOLE SIZE/MUD WEIGHT CORRECTED DENSITY

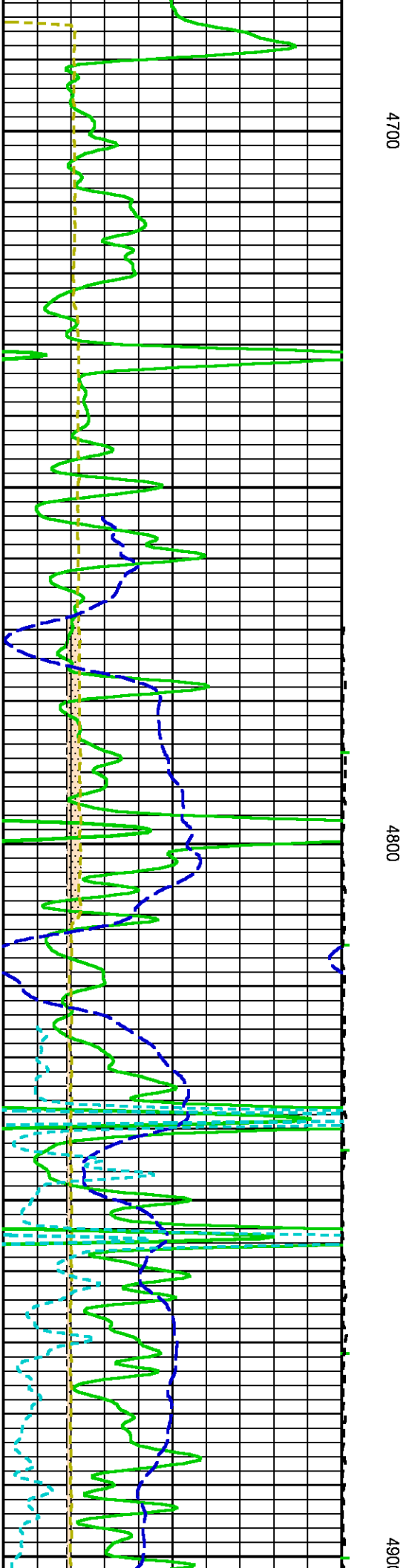
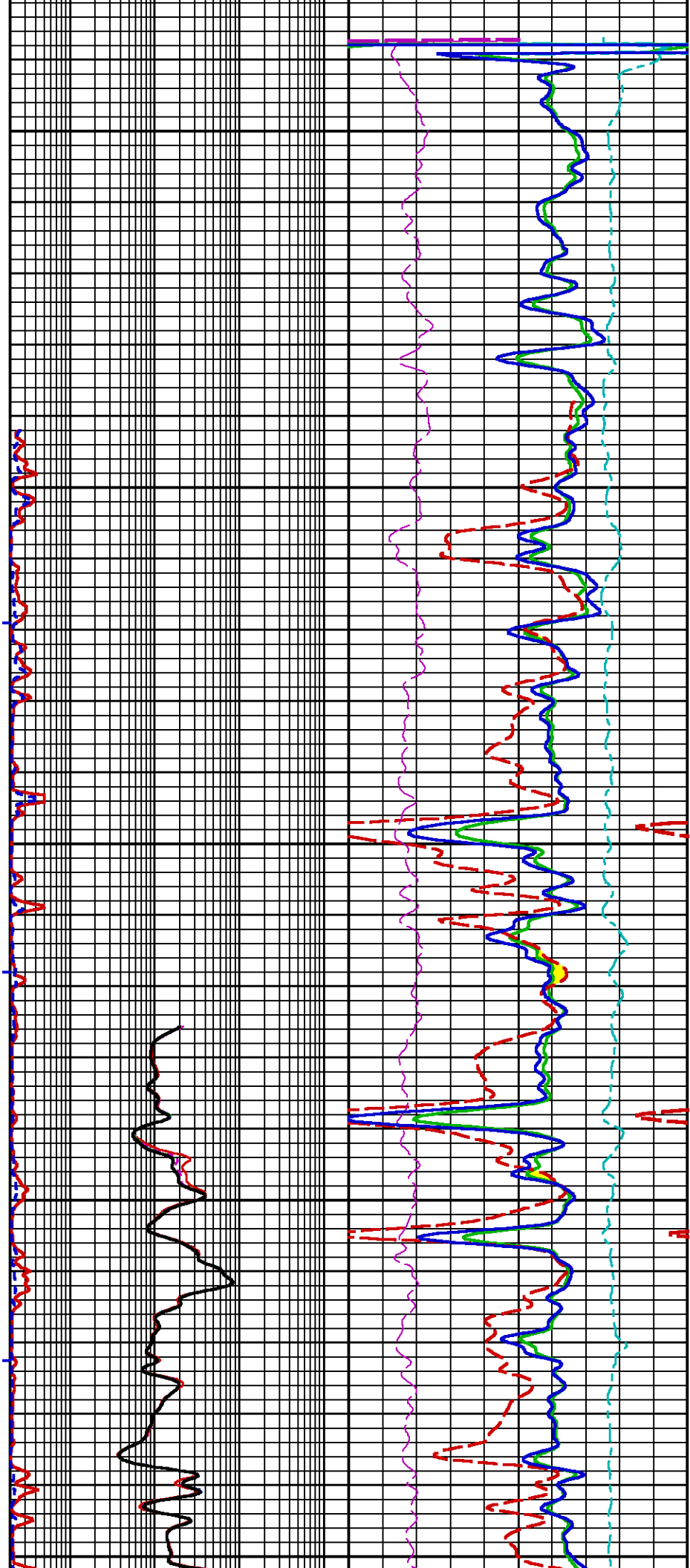
CURVE MEASURE POINT OFFSET

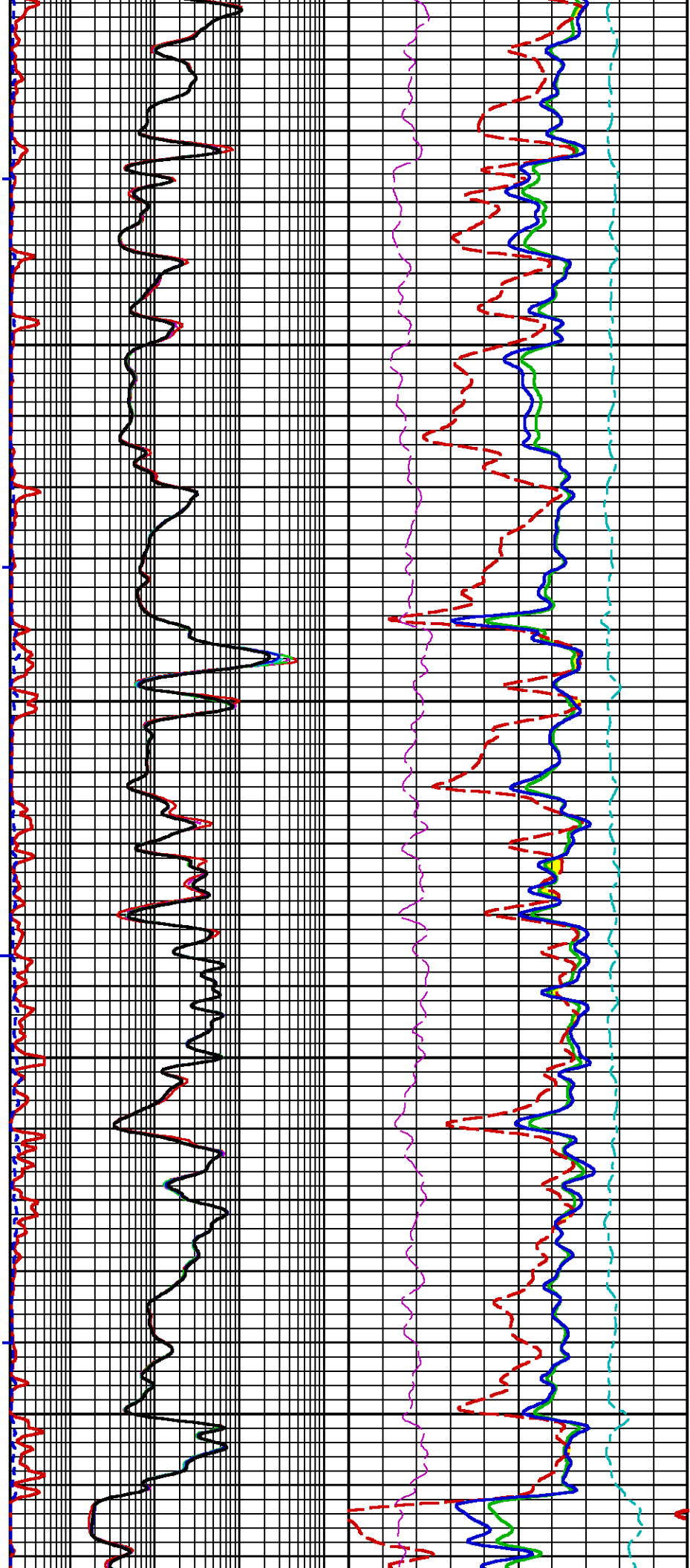
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R2	-12.00	PE	-86.00	SPDH	-18.00
CALX	-86.75	M2R3	-12.00	PORZC	-86.00	TEN	0.00
CNC	-96.88	M2R6	-12.00	RLML	-32.75	ZCOR	-86.00
GR	-103.75	M2R9	-12.00	RNML	-32.75	ZDNC	-86.00
M2R1	-12.00	M2RX	-12.00	RWAZC	-12.00		

Presentation : SysA:/dat1a/MERIT/Wenu_103/MERIT_v1_TCOMBOM-ML_500_REPEAT.fvpdf [5"/100' Scale]
Plot Interval : 4680 - 5603.5 Feet

Data File 1 : F1 : SysA:/dat1a/MERIT/Wenu_103/15081222090000_Wenu-103_TCombo_Repeat.xtf
Created On : Feb 13 08:30:32 2020
Company : MERIT ENERGY CO
Well : WENU 103
Field : EUBANK NORTH
File Interval : 4651.25 - 5603.5 Feet
OCT : p87cb



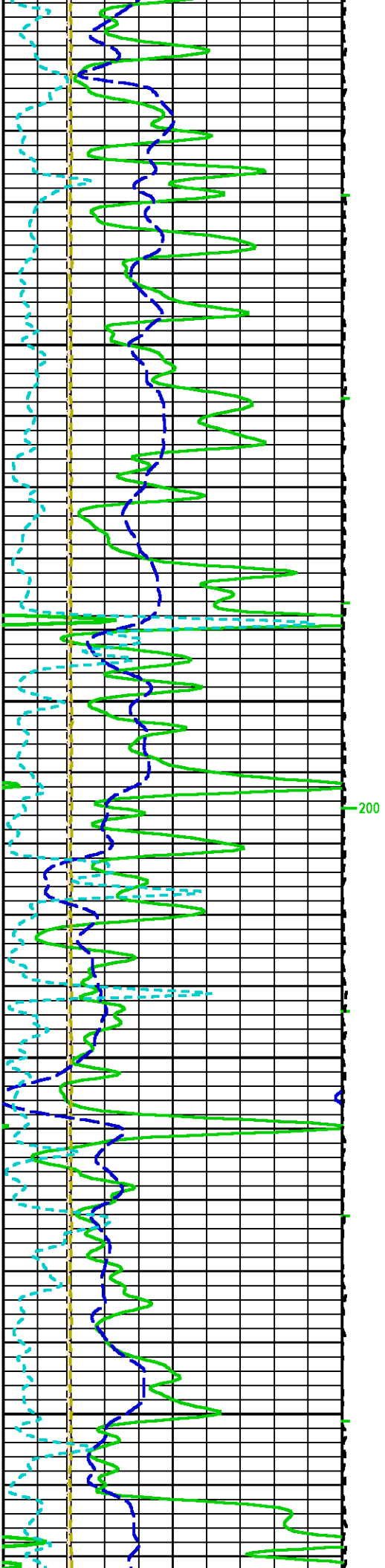




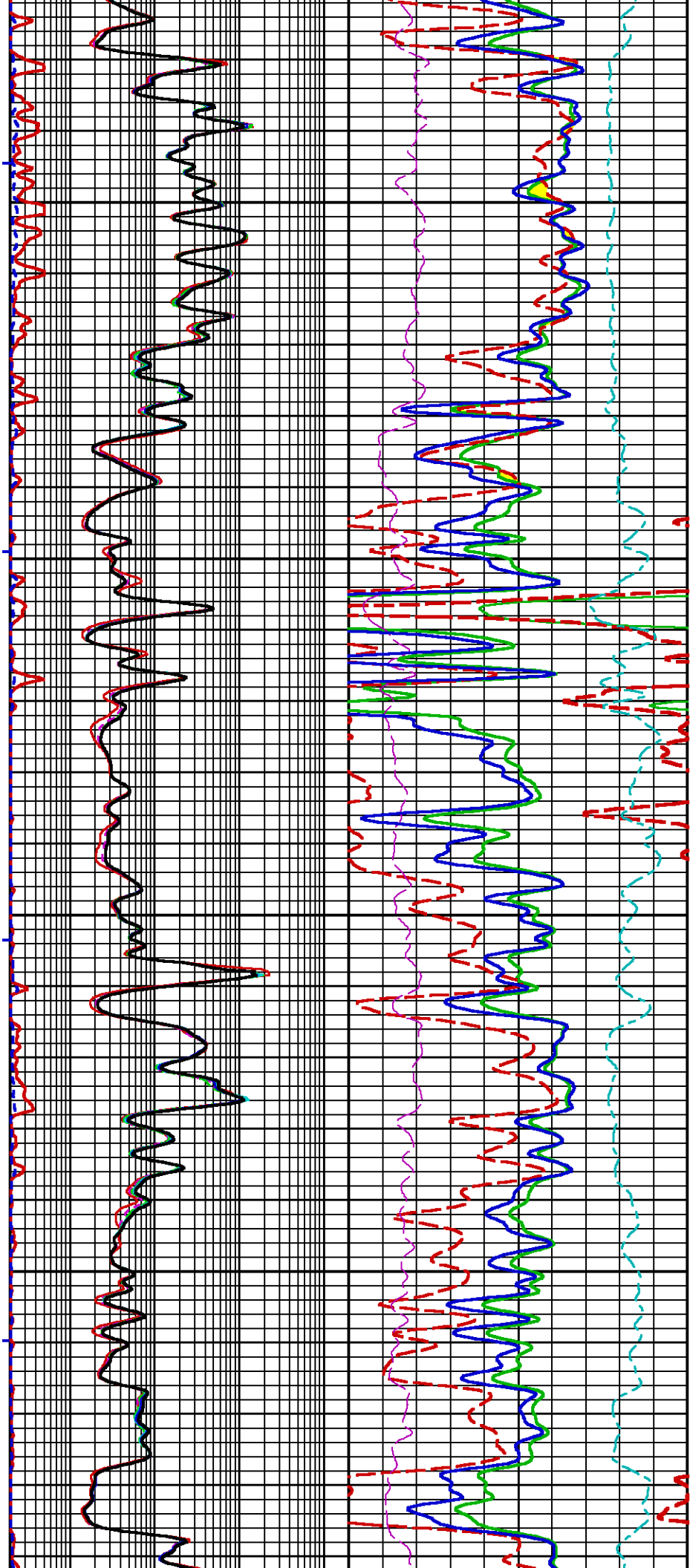
5000

100

5100



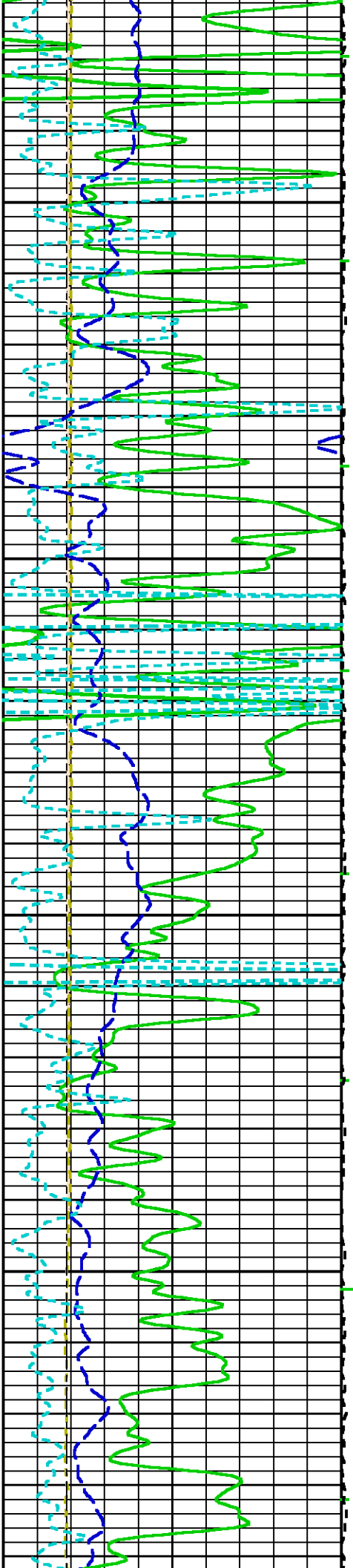
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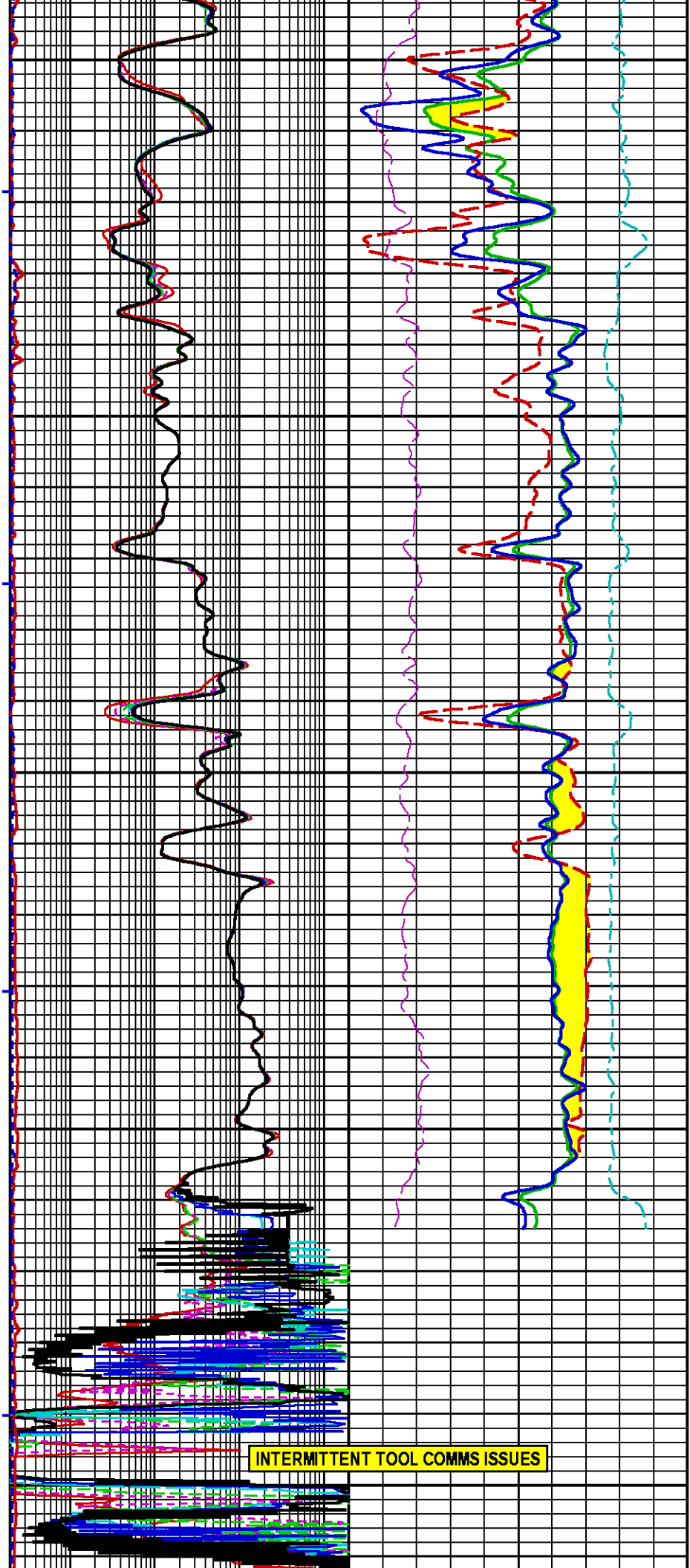


5200

5300

100

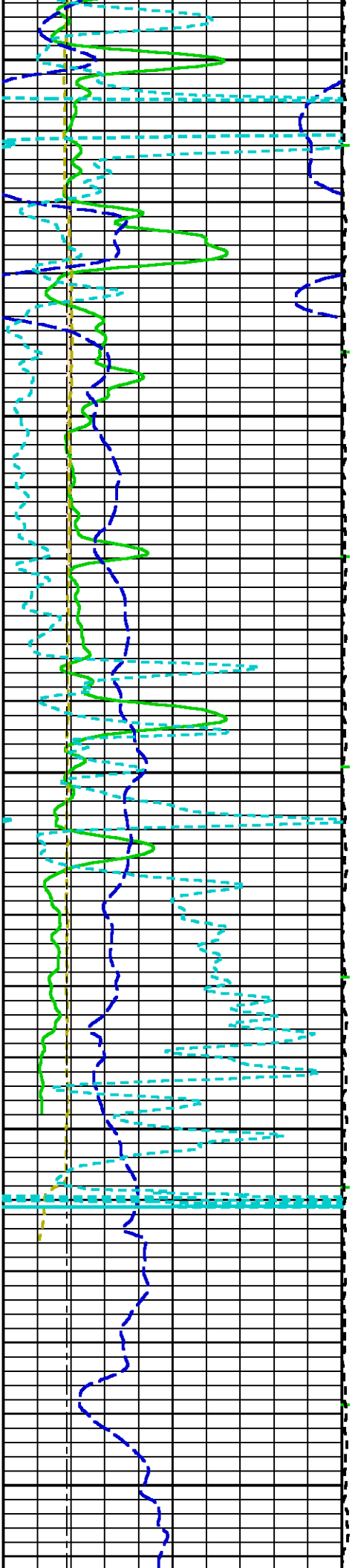


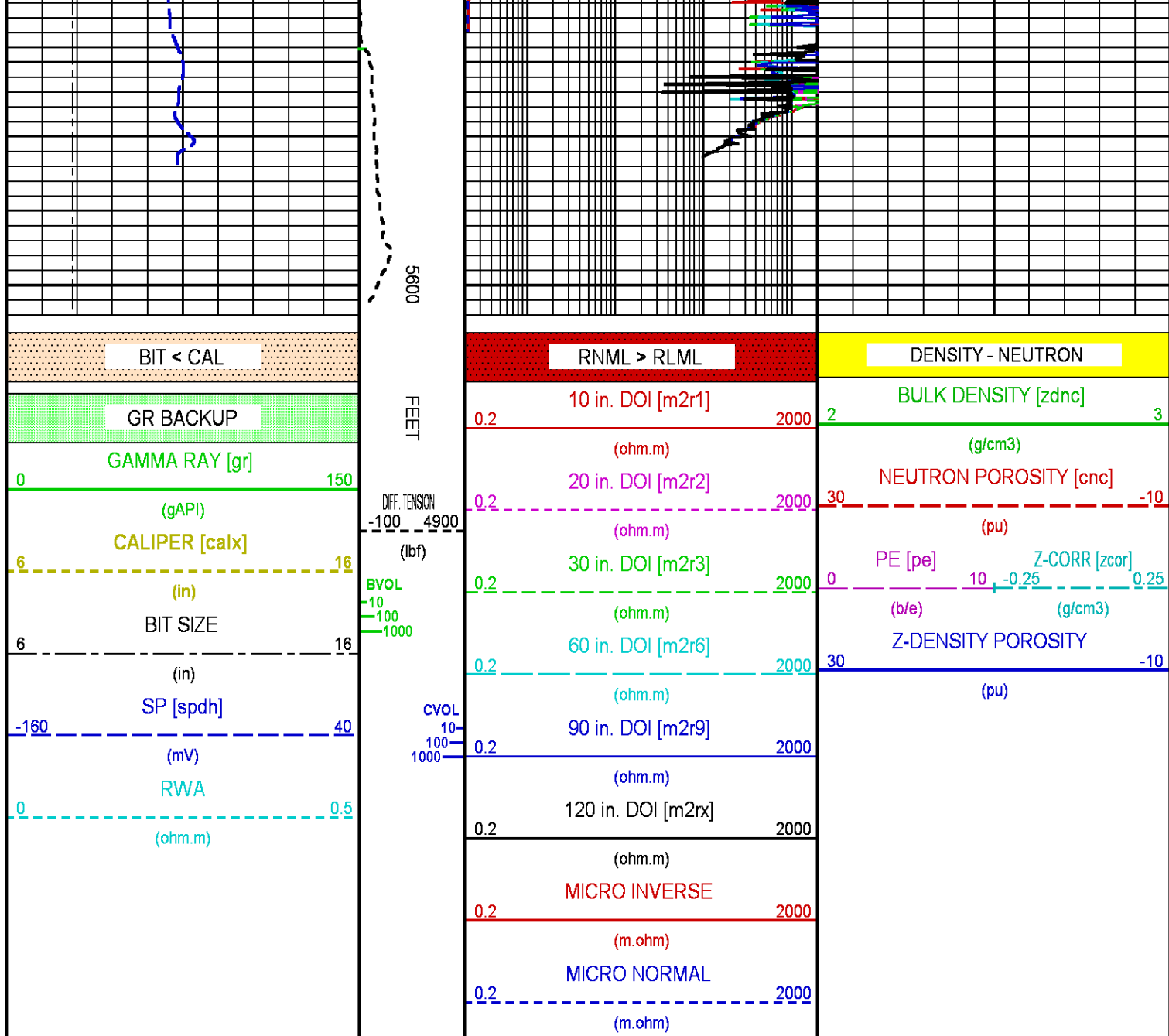


INTERMITTENT TOOL COMMS ISSUES

5400

5500





MAIN LOG 2"/100' SCALE

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Updates: 1,32,34,39 Patches: 5

Plotted: Thu Feb 13 15:24:16 2020

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data1a/MERIT/Wenu_103/p87cb03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 3330.500 ft BOTTOM DEPTH: 5607.000 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
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TTRM	FILTER ()	medium (1)	"	"
	FILTER (.h)	medium (1)	"	"
	FILTER (.i)	medium (1)	"	"
TENSION	FILTER ()	medium (1)	"	"
GR	FILTER ()	medium (1)	"	"
CN	FILTER ()	medium (1)	"	"
CALIPER	FILTER ()	medium (1)	"	"
ZDL MED RES	FILTER (hrd1*)	medium	"	"
	FILTER (hrd1s*)	medium	"	"
	FILTER (hrd2*)	medium	"	"
	FILTER (hrd2s*)	medium	"	"
	FILTER (soft*)	medium	"	"
DT24	FILTER ()	light (2)	"	"
SP-SPDH	FILTER ()	medium (1)	"	"
ML	FILTER ()	light (2a)	"	"

BOREHOLE & CEMENT

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	5.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	35.0	degF	"	"
	MUD SAMPLE RES	0.689	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calml*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	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		"	"
	RMUD SOURCE	TOOL MEASURED		"	"

GENERAL & MULTI-SERVICE

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
FORMATION FACTOR	A	1.000		TOP	BOTTOM
	M	2.000		"	"

CN PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BH SIZE ON		"	"
	SALINITY	1700	ppm	"	"
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)	
MUD DENSITY	MUD DENSITY	9.20	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOmatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"
ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"

ACOUSTIC POROSITY

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACOUSTIC POROSITY	POROSITY TYPE	WYLLIE		TOP	BOTTOM
	DTmatrix	47.60	us/ft	"	"
	DTfluid	190.00	us/ft	"	"
	DTshale	100.00	us/ft	"	"
	MOD. WYLLIE PARM	2.25		"	"
	MOD. R-H-G PARM	2.00		"	"

DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24	"	"
ACOUSTIC AVAN CORRELATON				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
MONOPOLE COMPRESSIONAL	FORMATION TYPE	GENERIC (MEDIUM)		TOP BOTTOM
	CORRELATION METHOD	NTH ROOT		" "
	RESET TAPERS			" "
	TAPER - LEFT END	50	us/ft	" "
	TAPER - RIGHT END	180	us/ft	" "
	FLOOR (UNIV. OPTION)	0.050		" "
ACOUSTIC PICK CONTROL				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP BOTTOM
	REJECTION DTmax	180	us/ft	" "
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	" "
	SEARCH START OFFSET (sfan2*)	0	us	" "
	SEARCH START OFFSET (sfan3*)	0	us	" "
	SEARCH START OFFSET (sfan4*)	0	us	" "
	SEARCH WINDOW LENGTH	1200	us	" "
	THRESHOLD FACTOR	0.30		" "
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	" "
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	" "
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	" "
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	" "
	E3 THRESHOLD	OFF		" "
ACOUSTIC QUALITY CONTROL				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP BOTTOM
ACOUSTIC WAVEFORM FILTER				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP BOTTOM
	LOW FREQ CUTOFF	4000	Hz	" "
	HIGH FREQ CUTOFF	20000	Hz	" "
WAVEFORM FILTER - FULLWAVE	SURFACE WAVE FILTER	ON		" "
	LOW FREQ CUTOFF	2000	Hz	" "
	HIGH FREQ CUTOFF	20000	Hz	" "
ACOUSTIC TCC CONTROL PARAMETERS				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GENERAL TCC PARAMETERS	AGC	ON		TOP BOTTOM
	SUBCYCLE LENGTH	50		" "
	SUBSET			" "
GENERAL MONOPOLE TCC PARAMETERS	STACK LEVEL	2		" "
	DSP FILTER	ON		" "
DELTA T TCC PARAMETERS	ACG WINDOW	832	us	" "
	MOVEOUT	16	us/ft	" "
	SAMPLE PERIOD	16		" "
	RX DELAY	240	us	" "
FULL WAVE MONOPOLE TCC PARAMETERS	ACG WINDOW	8064	us	" "
	SAMPLE PERIOD	24		" "
	RX DELAY	0	us	" "
HDIL PROCESSING				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		" "
	ABC to CALCULATE	MUD CONDUCTIVITY		" "
	STANDOFF	1.50	in	" "
	TOOL POSITION	CENTRALIZED		" "
	Rmud MULTIPLIER	1.000		" "
HDIL High RESISTIVITY Normalization	VRM Norm	ON		" "
ML PARMS				
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)

ML BOREHOLE CORRECTION	BOREHOLE CORR	ON	TOP	BOTTOM
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PARAMETER AND FILTER SUMMARY REPORT

FILE:	/dat1a/MERIT/Wenu_103/p87cb04.prm		
LOGGING MODE:	DEPTH	DIRECTION:	UP
TOP DEPTH:	1638.500 ft	BOTTOM DEPTH:	4312.750 ft

SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
TTRM	FILTER ()	medium (1)		TOP	BOTTOM
	FILTER (.h)	medium (1)		"	"
	FILTER (.i)	medium (1)		"	"
TENSION	FILTER ()	medium (1)		"	"
GR	FII TFR ()	medium (1)		"	"
CN	FILTER ()	medium (1)		"	"
CALIPER	FILTER ()	medium (1)		"	"
ZDL MED RES	FILTER (hrd1*)	medium		"	"
	FILTER (hrd1s*)	medium		"	"
	FILTER (hrd2*)	medium		"	"
	FILTER (hrd2s*)	medium		"	"
	FILTER (soft*)	medium		"	"
DT24	FILTER ()	light (2)		"	"
SP-SPDH	FILTER ()	medium (1)		"	"
ML	FILTER ()	light (2a)		"	"

BOREHOLE & CEMENT					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CASING - BOREHOLE & CEMENT VOLUME	CASING O.D.	5.500	in	TOP	BOTTOM
	CASING THICKNESS	0.000	in	"	"
X-Y COMBINED CALIPER PROCESSING	X-Y Caliper	X-Axis		"	"
BIT SIZE	BIT SIZE	7.875	in	"	"
MUD SAMPLE RESISTIVITY	MUD SAMPLE TEMP	35.0	degF	"	"
	MUD SAMPLE RES	0.689	ohm.m	"	"
BOREHOLE TEMP from GRADIENT	Known BH REF TEMP	77.0	degF	"	"
	at BH REF DEPTH	0.0	ft	"	"
	with TEMP GRADIENT	1.200	0.01 degF/ft	"	"
BOREHOLE CORR DIAMETER SOURCE	CALIPER/FIXED DIA. (calml*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (cnbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (mbh*)	USE CALIPER		"	"
	CALIPER/FIXED DIA. (zdbh*)	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		"	"
	RMUD SOURCE	TOOL MEASURED		"	"

GENERAL & MULTI-SERVICE					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
FORMATION FACTOR	A	1.000		TOP	BOTTOM
	M	2.000		"	"

CN PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
2446 CN MATRIX	2446 MATRIX	LIMESTONE		TOP	BOTTOM
CN SALINITY CORRECTION	SALINITY CORR (2446)	SAL & BH SIZE ON		"	"
	SALINITY	1700	ppm	"	"
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)	
MUD DENSITY	MUD DENSITY	9.20	lbm/gal	TOP	BOTTOM
DENSITY POROSITY	RHOMatrix	2.710	g/cm3	"	"
	RHOfluid	1.000	g/cm3	"	"

ZDL	DENX TRACKING	ON		"	"
TRACKING TIME	Logging Spd for Gain	Over 10 ft/min		"	"
ACOUSTIC POROSITY					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ACOUSTIC POROSITY	POROSITY TYPE	WYLLIE		TOP	BOTTOM
	DTmatrix	47.60	us/ft	"	"
	DTfluid	190.00	us/ft	"	"
	DTshale	100.00	us/ft	"	"
	MOD. WYLLIE PARM	2.25		"	"
	MOD. R-H-G PARM	2.00		"	"
DELTA T CURVE SELECTION	DT24 SOURCE	FIRST ARRIVAL DT24		"	"
ACOUSTIC AVAN CORRELATON					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
MONOPOLE COMPRESSIONAL	FORMATION TYPE	GENERIC (MEDIUM)		TOP	BOTTOM
	CORRELATION METHOD	NTH ROOT		"	"
	RESET TAPERS			"	"
	TAPER - LEFT END	50	us/ft	"	"
	TAPER - RIGHT END	180	us/ft	"	"
	FLOOR (UNIV. OPTION)	0.050		"	"
ACOUSTIC PICK CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
DELTA-T REJECTION RANGE	REJECTION DTmin	40	us/ft	TOP	BOTTOM
	REJECTION DTmax	180	us/ft	"	"
FIRST ARRIVAL PICK	SEARCH START OFFSET (sfan1*)	0	us	"	"
	SEARCH START OFFSET (sfan2*)	0	us	"	"
	SEARCH START OFFSET (sfan3*)	0	us	"	"
	SEARCH START OFFSET (sfan4*)	0	us	"	"
	SEARCH WINDOW LENGTH	1200	us	"	"
	THRESHOLD FACTOR	0.30		"	"
	THRESHOLD MINIMUM (sfan1*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan2*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan3*)	1.8	pct	"	"
	THRESHOLD MINIMUM (sfan4*)	1.8	pct	"	"
	E3 THRESHOLD	OFF		"	"
ACOUSTIC QUALITY CONTROL					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CYCLE SKIP LIMIT	CYCLE SKIP LIMIT	100	us	TOP	BOTTOM
ACOUSTIC WAVEFORM FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
WAVEFORM FILTER - DELTA T	SURFACE WAVE FILTER	ON		TOP	BOTTOM
	LOW FREQ CUTOFF	4000	Hz	"	"
	HIGH FREQ CUTOFF	20000	Hz	"	"
WAVEFORM FILTER - FULLWAVE	SURFACE WAVE FILTER	ON		"	"
	LOW FREQ CUTOFF	2000	Hz	"	"
	HIGH FREQ CUTOFF	20000	Hz	"	"
ACOUSTIC TCC CONTROL PARAMETERS					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GENERAL TCC PARAMETERS	AGC	ON		TOP	BOTTOM
	SUBCYCLE LENGTH	50		"	"
	SUBSET			"	"
GENERAL MONOPOLE TCC PARAMETERS	STACK LEVEL	2		"	"
	DSP FILTER	ON		"	"
DELTA T TCC PARAMETERS	ACG WINDOW	832	us	"	"
	MOVEOUT	16	us/ft	"	"
	SAMPLE PERIOD	16		"	"
	RX DELAY	240	us	"	"
FULL WAVE MONOPOLE TCC PARAMETERS	ACG WINDOW	8064	us	"	"
	SAMPLE PERIOD	24		"	"
	RX DELAY	0	us	"	"
HDIL PROCESSING					

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
HDIL TEMPERATURE CORRECTION	TEMP CORR SOURCE	USE RXTEMP		TOP	BOTTOM
ADAPTIVE BOREHOLE CORRECTION	ABC PROCESSING	ON		"	"
	ABC to CALCULATE	MUD CONDUCTIVITY		"	"
	STANDOFF	1.50	in	"	"
	TOOL POSITION	CENTRALIZED		"	"
	Rmud MULTIPLIER	1.000		"	"
HDIL High RESISTIVITY Normalization	VRM Norm	ON		"	"

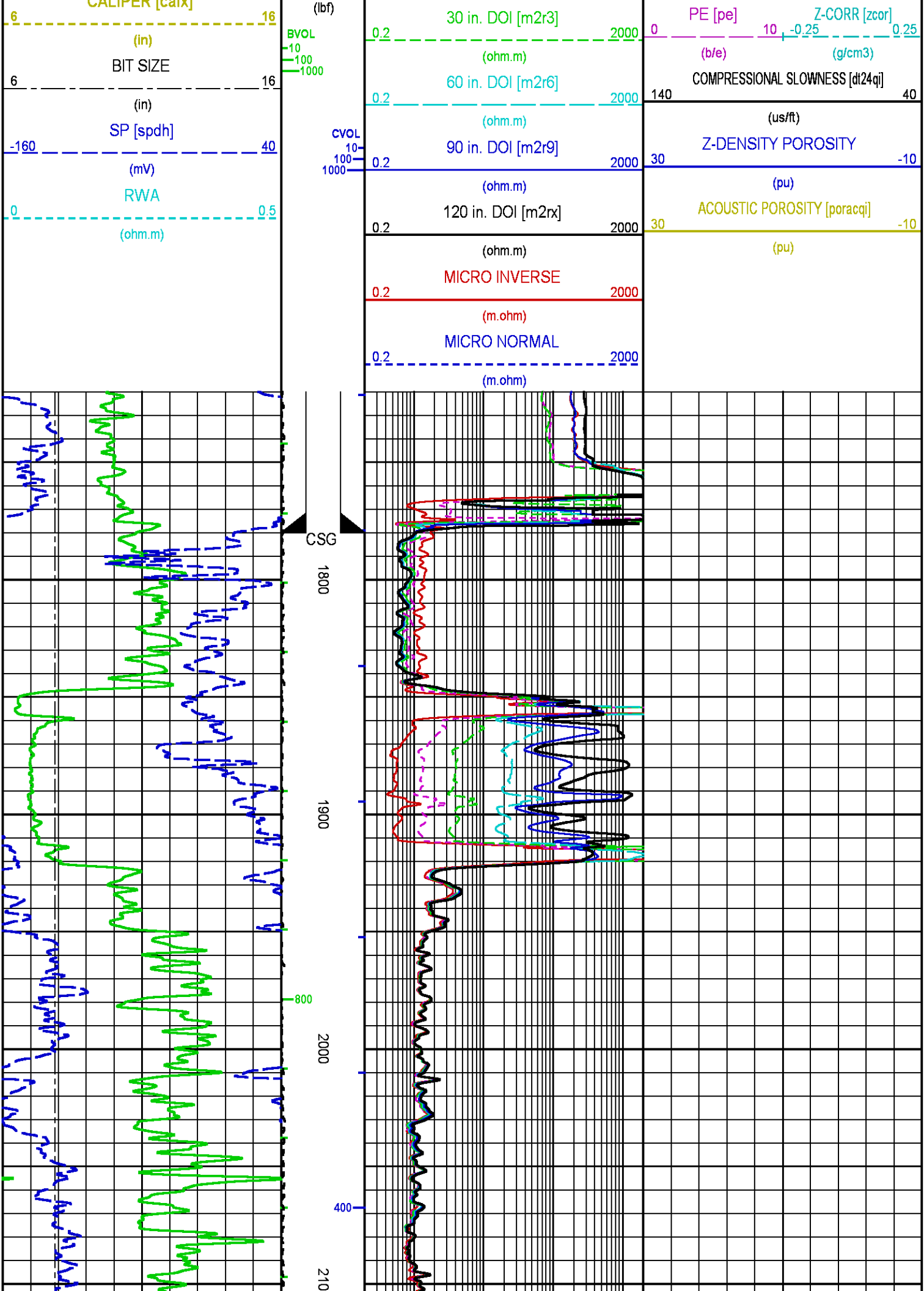
ML PARMS					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
ML BOREHOLE CORRECTION	BOREHOLE CORR	ON		TOP	BOTTOM

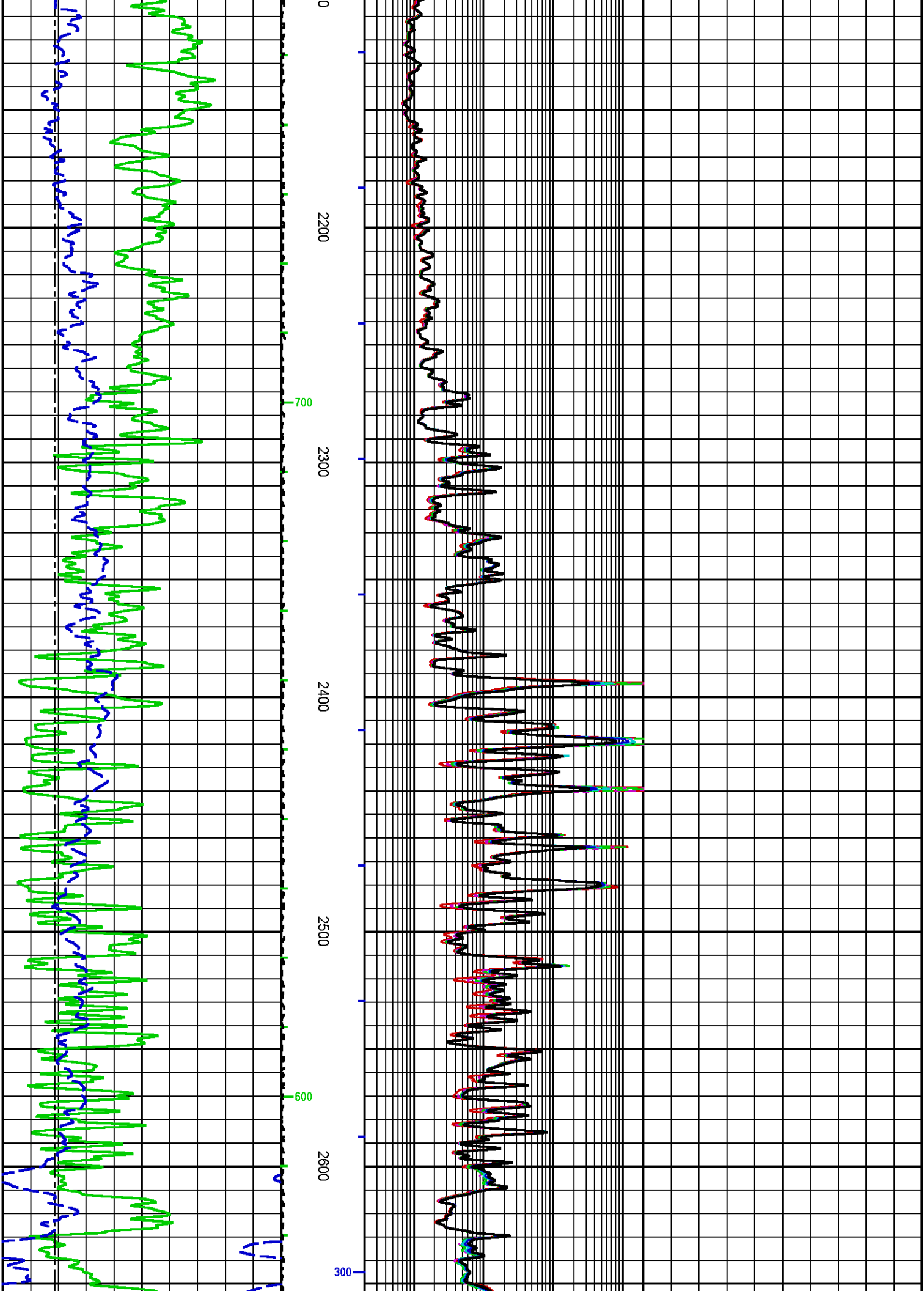
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:BIT	Feb 13 11:53:33 2020	BIT SIZE
F1:BVOL	Feb 13 11:53:33 2020	BOREHOLE VOLUME
F1:CALX	Feb 13 11:53:33 2020	CALIPER FROM X-AXIS OF XY CALIPER(S)
F1:CNC	Feb 13 11:53:33 2020	BOREHOLE SIZE CORRECTED COMPENSATED NEUTRON POROSITY
F1:CVOL	Feb 13 11:53:33 2020	CEMENT VOLUME
F1:DT24QI	Feb 13 09:48:14 2020	SLOWNESS OVER 24-INCH INTERVAL
F1:GR	Feb 13 11:53:33 2020	GAMMA RAY
F1:M2R1	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 10-INCH DOI
F1:M2R2	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 20-INCH DOI
F1:M2R3	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 30-INCH DOI
F1:M2R6	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 60-INCH DOI
F1:M2R9	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 90-INCH DOI
F1:M2RX	Feb 13 11:53:33 2020	VERTICAL 2-FOOT RESOLUTION MATCHED RESISTIVITY, 120-INCH DOI
F1:PE	Feb 13 11:53:33 2020	PHOTO ELECTRIC CROSS-SECTION
F1:PORACQI	Feb 13 09:48:14 2020	ACOUSTIC POROSITY FROM 8 WAVE MONOPOLE
F1:PORZC	Feb 13 11:53:33 2020	CORRECTED POROSITY
F1:RLML	Feb 13 11:53:33 2020	1-INCH LATERAL RESISTIVITY
F1:RNML	Feb 13 11:53:33 2020	2-INCH NORMAL RESISTIVITY
F1:RWAZC	Feb 13 11:53:33 2020	APPARENT FORMATION WATER RESISTIVITY (CORRECTED)
F1:SPDH	Feb 13 11:53:33 2020	SPONTANEOUS POTENTIAL PROCESSED IN COMMON REMOTE
F1:TEN	Feb 13 11:53:33 2020	DIFFERENTIAL TENSION
F1:ZCOR	Feb 13 11:53:33 2020	DENSITY CORRECTION
F1:ZDNC	Feb 13 11:53:33 2020	BOREHOLE SIZE/MUD WEIGHT CORRECTED DENSITY

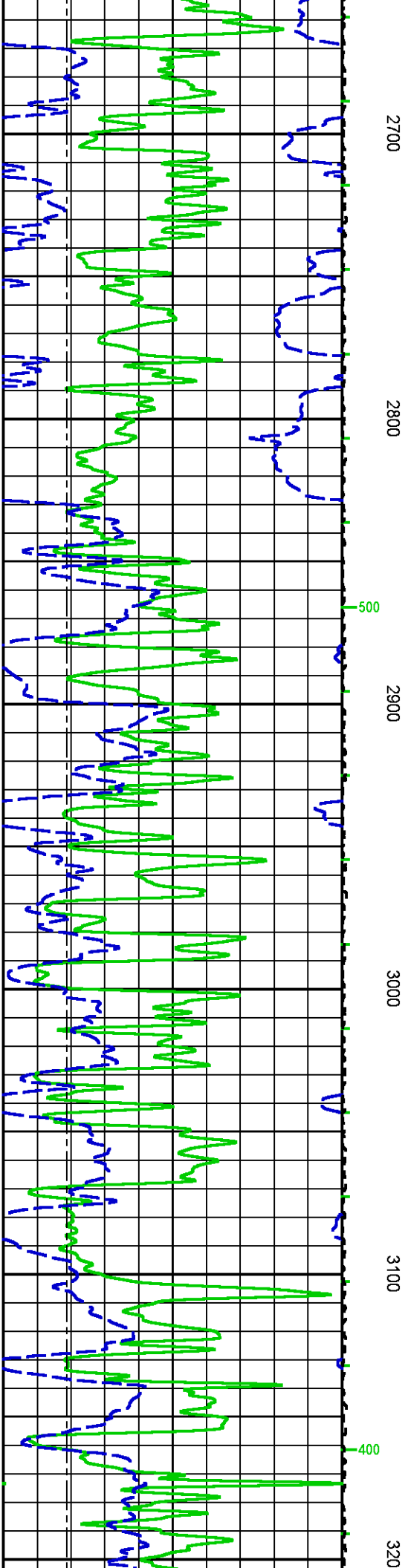
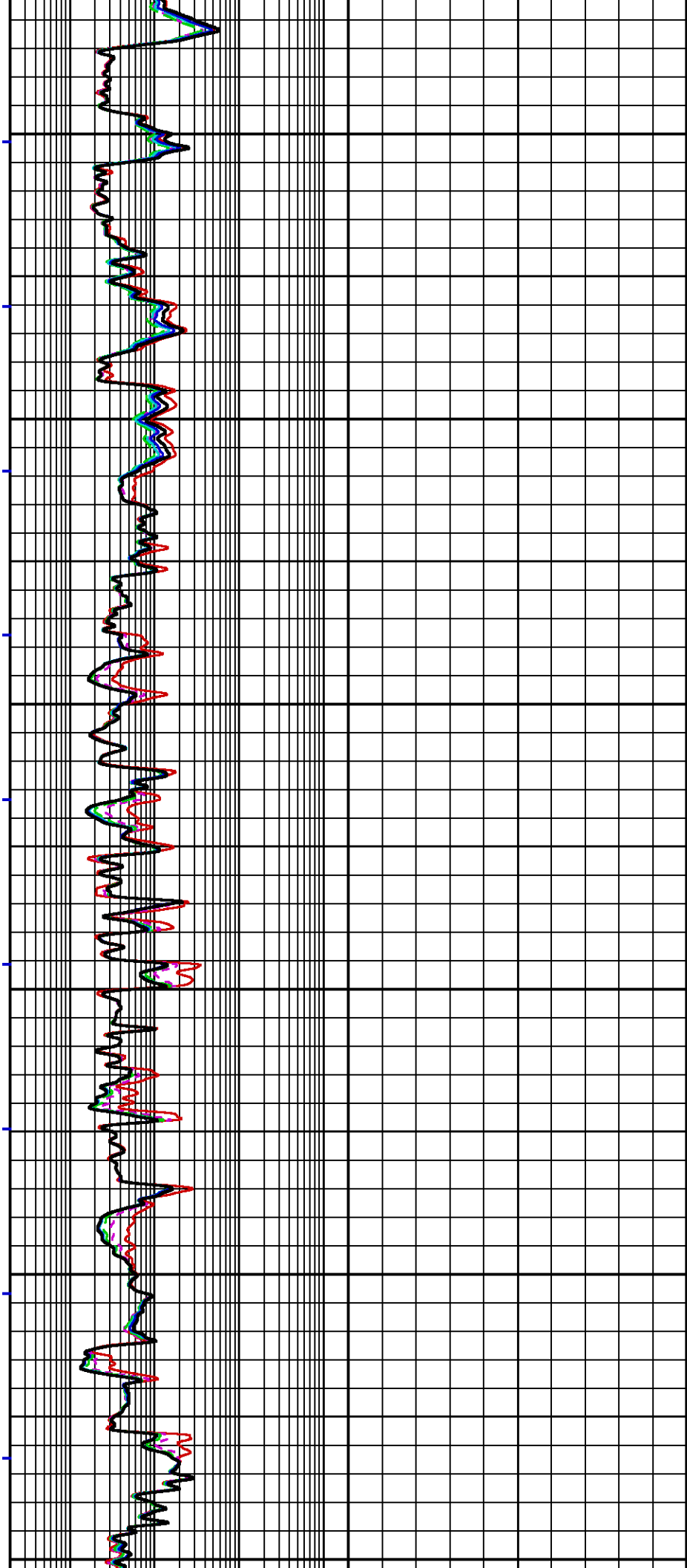
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
BIT	0.00	M2R2	-12.00	PORACQI	-63.00	TEN	0.00
CALX	-86.75	M2R3	-12.00	PORZC	-86.00	ZCOR	-86.00
CNC	-96.88	M2R6	-12.00	RLML	-32.75	ZDNC	-86.00
DT24QI	-55.00	M2R9	-12.00	RNML	-32.75		
GR	-103.75	M2RX	-12.00	RWAZC	-12.00		
M2R1	-12.00	PE	-86.00	SPDH	-18.00		

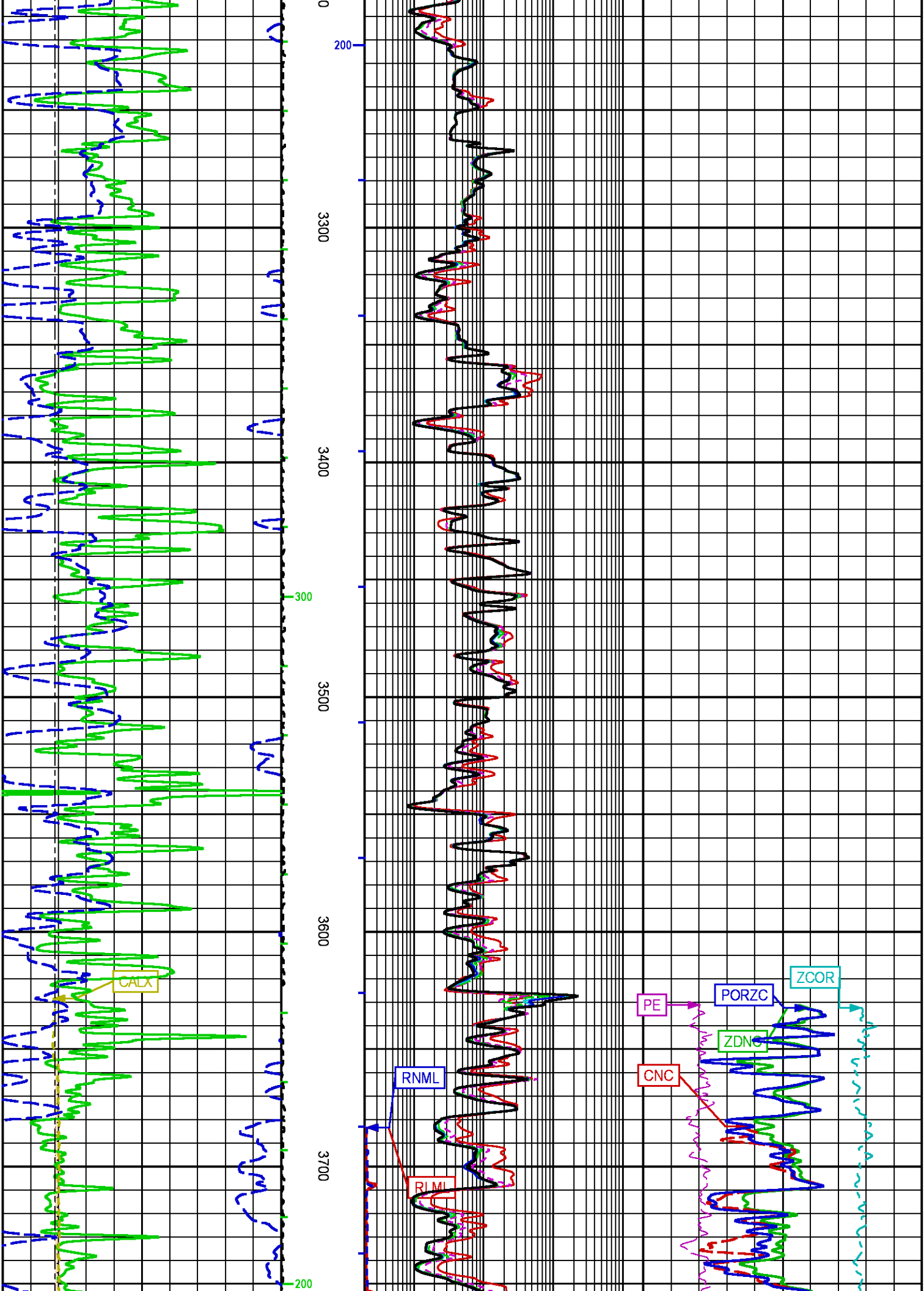
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Plot Interval	: 1720 - 5608 Feet
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Created On	: Feb 13 09:48:14 2020
Company	: MERIT ENERGY CO
Well	: WENU 103
Field	: EUBANK NORTH
File Interval	: 1524 - 5608 Feet
OCT	: p87cb

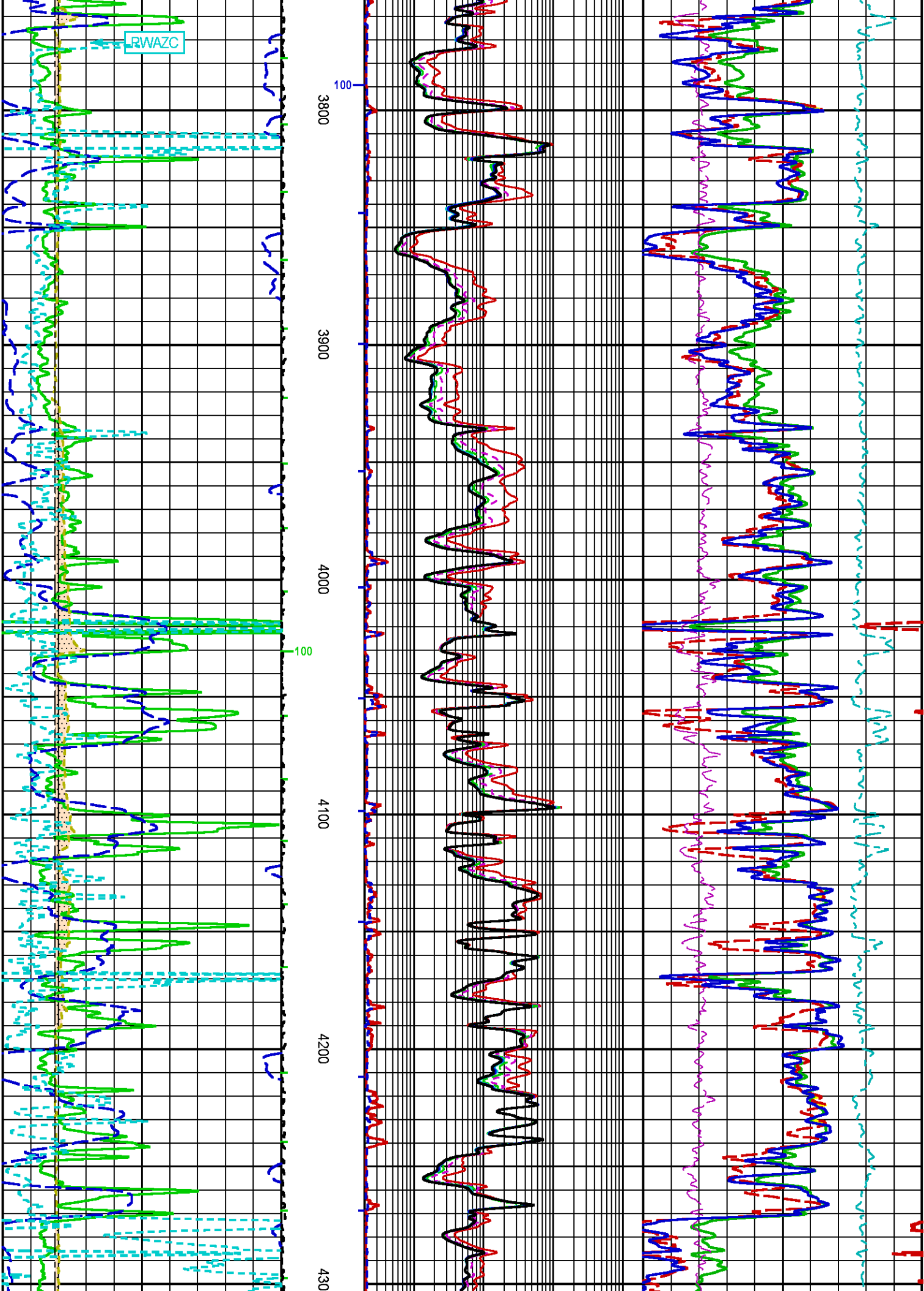
BIT < CAL		FEET	RNML > RLML		DENSITY - NEUTRON	
GR BACKUP			10 in. DOI [m2r1]		BULK DENSITY [zdnc]	
GAMMA RAY [gr]			0.2	2000	2	3
(gAPI)			(ohm.m)		(g/cm3)	
CALIPER [calh]			20 in. DOI [m2r2]		NEUTRON POROSITY [cnc]	
DIFF. TENSION		0.2	2000	30	-10	
-100 - 4900		(ohm.m)		(pu)		

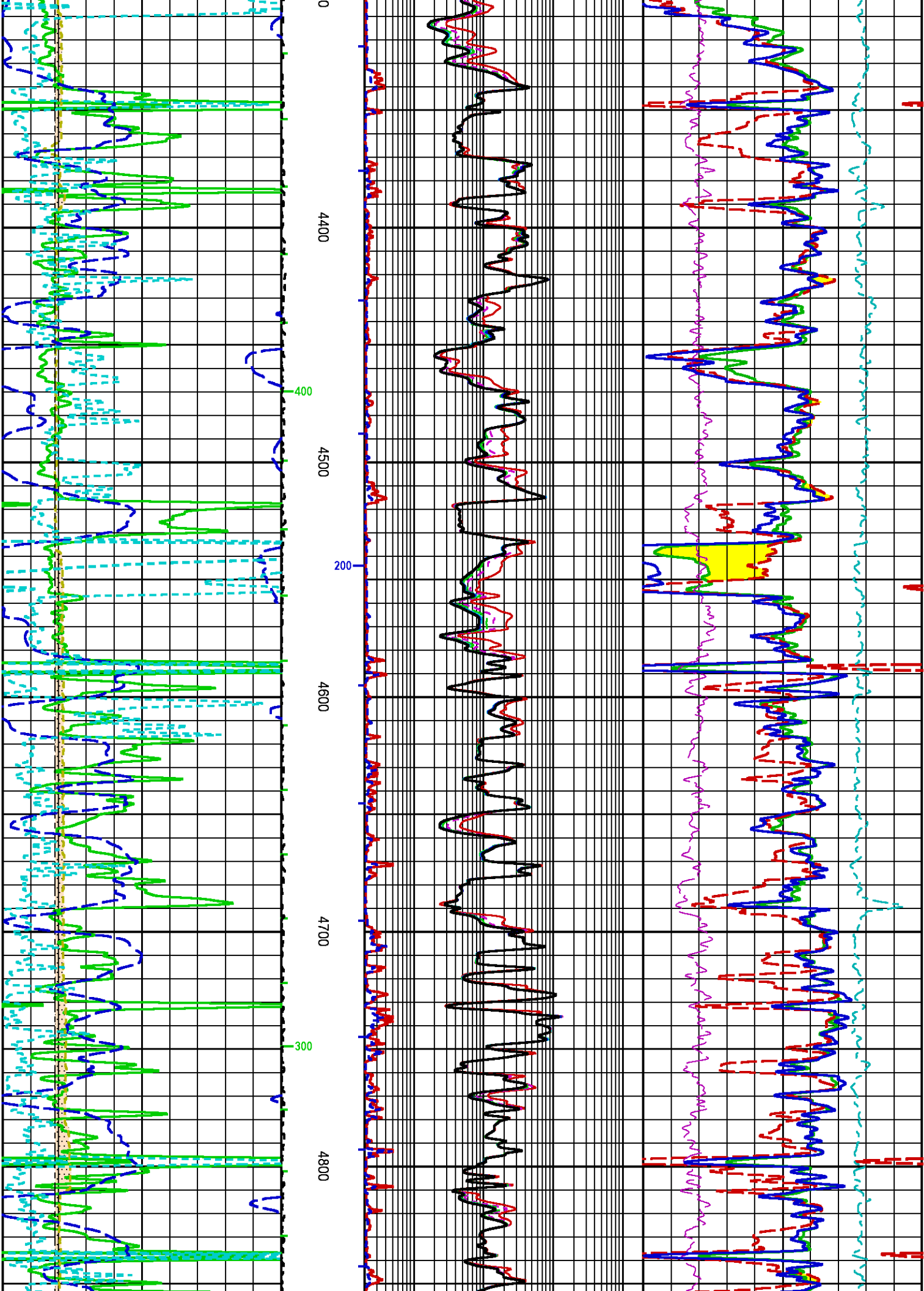


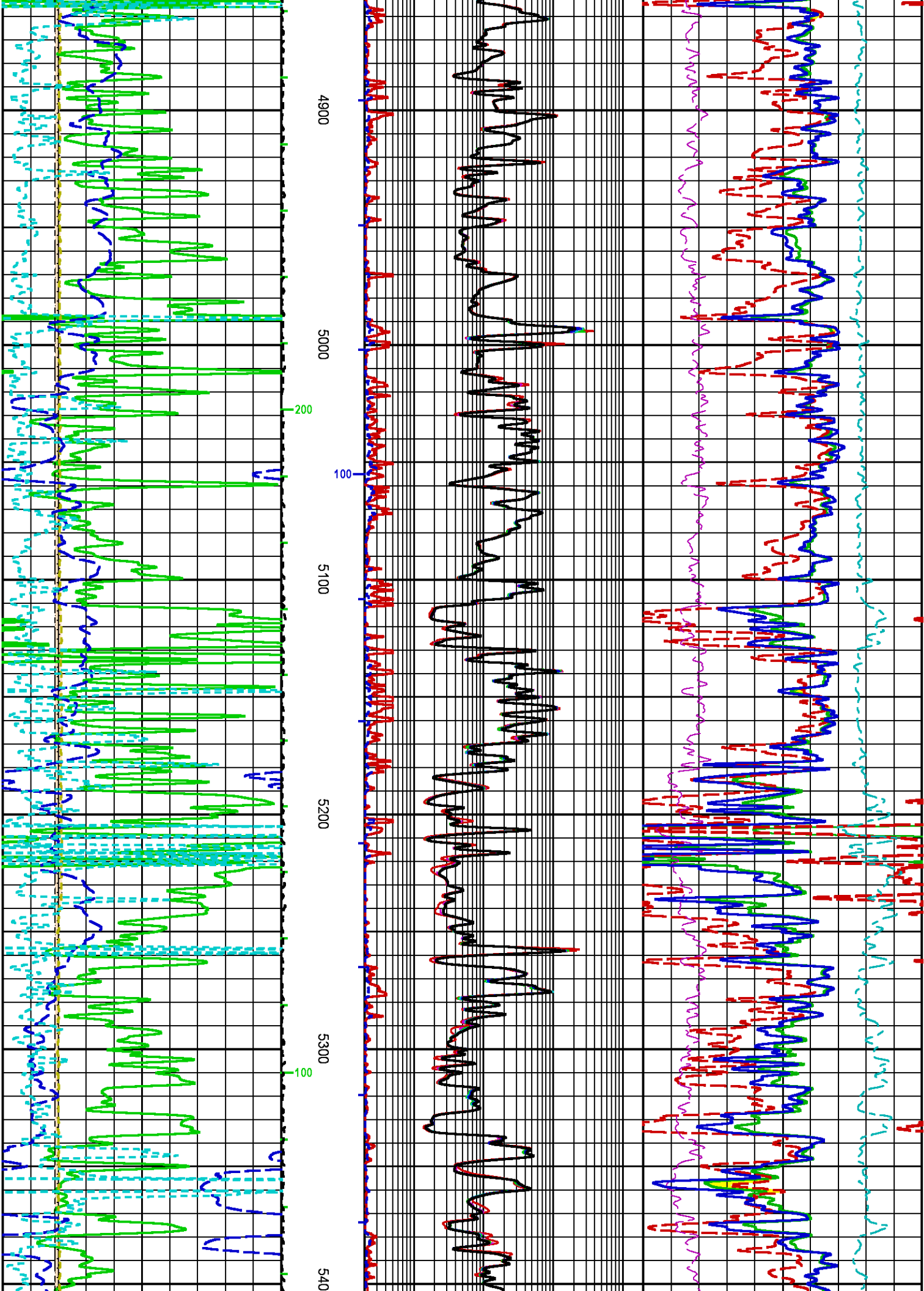


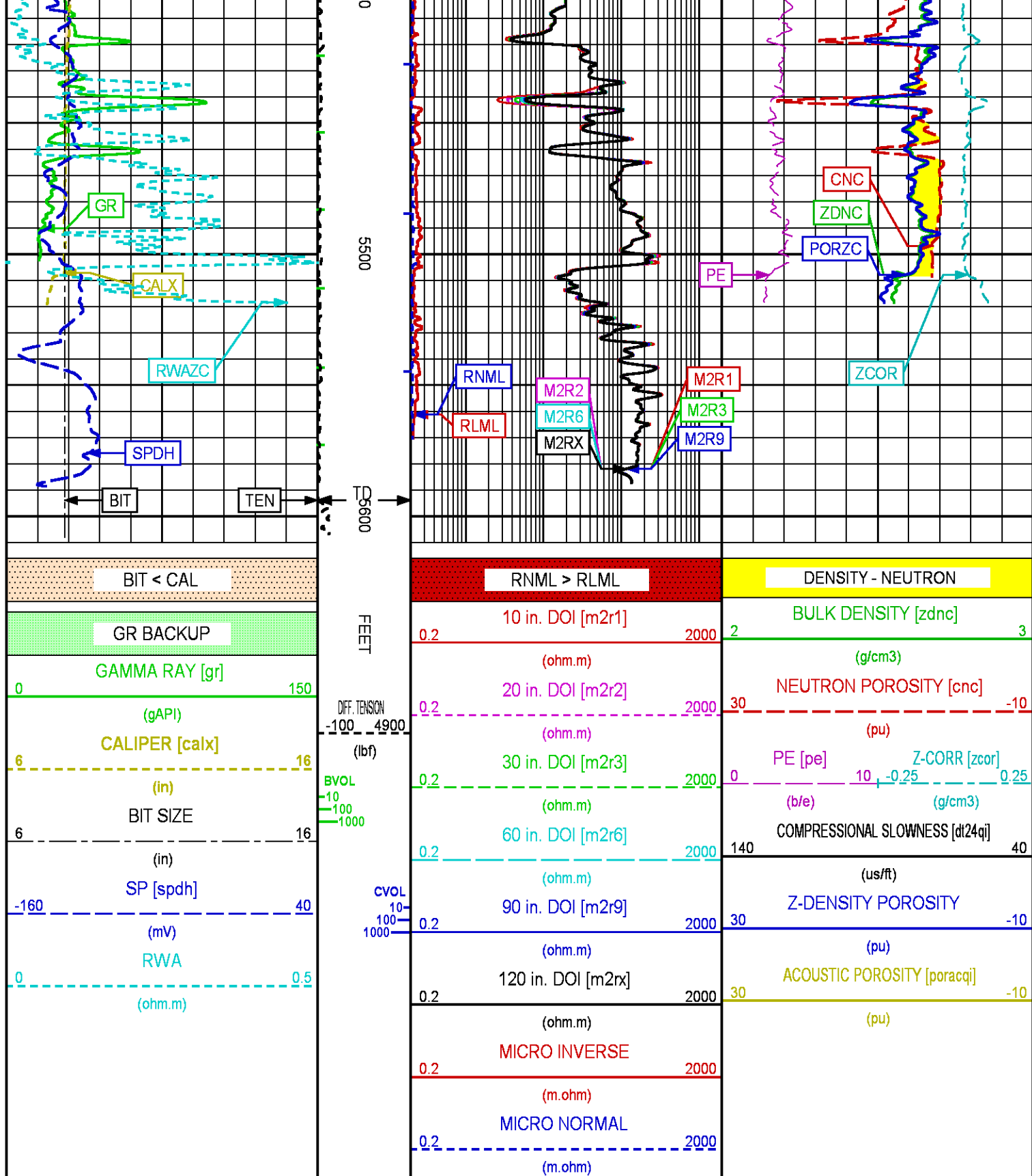












CALIBRATION / VERIFICATION SUMMARY

CHT PRIMARY CALIBRATION SUMMARY

TOOL #: 3981XA 10203374

DATE/TIME PERFORMED: Fri Jan 18 00:20:46 2019

UNIT #: 5753XD 10412898

	Signal Low (raw)	Signal High (raw)	Scale Mult	Scale Add	Engr Low (lbf)	Engr High (lbf)
CHT	73.19	305.36	5.56	-586.67	-180.00	1110.00

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XB 10202999

DATE/TIME PERFORMED: Tue Feb 4 15:43:14 2020

UNIT #: 3880TA ML9991

CALB JIG #: 4702NK BA-869

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	324.78	1209.18	884.4 830.0 960.0	0.170	55.08	205.08	150

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1329XB 10202999

DATE/TIME PERFORMED: Tue Feb 4 15:50:11 2020

UNIT #: 3880TA ML9991

VERI JIG #: 4702NK BA-869

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	319.49	1214.87	0.170	54.19	206.05	151.86 140.00 160.00

SLSP PRIMARY CALIBRATION SUMMARY

TOOL #: 1329XB 10202999

DATE/TIME PERFORMED: Tue Feb 4 15:46:29 2020

UNIT #: 3880TA ML9991

CALIBRATOR ID: 4702NA BA-869

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	322.29	1202.65	0.170	54.91	204.91	150

Std Rate (cts/s)	Meas Rate (cts/s)	Tool Norm	Std Mult	Log Mult	App Con (pct ppm)
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E (.25-3.0)	554	546.4	1.014	0.900	1.100
K			0.01602	0.01624	8.900
U			0.03851	0.03905	21.300
TH			0.10135	0.10277	56.100

	Mult chnl/MeV	Add chnls	QSA	QCAL	GAIN	U Pk Res %	Flask Temp (degF)
SPECTRUM	71.480	1.457	0.394	1.002	2943	10.64	66.63
				0.980 1.020	2850 3050		

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00
Meas Pk	26.12	45.04	82.27	127.68	158.63
	22.80 28.80	40.20 48.20	76.00 86.00	121.40 133.40	152.00 166.00
Fit Pk	26.62	44.99	81.52	127.62	159.00

SLSP PRIMARY VERIFICATION SUMMARY

TOOL #:	1329XB 10202999	DATE/TIME PERFORMED:	Tue Feb 4 15:50:22 2020
UNIT #:	3880TA ML9991	CALIBRATOR ID:	4702NA BA-869

	Bkgnd (cts/s)	Cal ON (cts/s)	Mult (gAPI/(cts/s))	Bkgnd (gAPI)	Cal ON (gAPI)	Cal Value (gAPI)
GR-SL (.06-3.5)	317.97	1211.32	0.170	53.97	205.74	152
						135 165

	Std rate	Meas rate	Tool norm	Std Mult	Log Mult	App Con (pct ppm)
E (.25-3.0)	554	547.3	1.014			
K				0.01602	0.01624	8.891
						8.010 9.790
U				0.03851	0.03905	21.372
						19.170 23.430
TH				0.10135	0.10277	56.246
						50.490 61.710

	Mult chnl/MeV	Add chnls	QSA	QCAL	GAIN	U Pk Res %	Flask Temp (degF)
SPECTRUM	71.127	1.661	0.933	0.999	2943	8.77	66.63
				0.980 1.020			

	P1 .352 MeV	P2 .609 MeV	P3 1.120 MeV	P4 1.765 MeV	P5 2.204 MeV
Std Pk	25.80	44.20	81.00	127.40	159.00

Meas Pk	26.03	45.03	82.09	127.91	157.56
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Meas 1 R	20.00	40.00	60.00	80.00	100.00	120.00	140.00	160.00
	22.80	28.80	40.20	48.20	76.00	86.00	121.40	133.40
							152.00	166.00
Fit Pk	26.70	44.98	81.32	127.20	158.42			

CN PRIMARY CALIBRATION SUMMARY

TOOL #: 2446XA 10400611 DATE/TIME PERFORMED: Fri Feb 7 16:29:22 2020

UNIT #: 3880TA MD4291 CALIBRATOR #: 2437XB 112674 SOURCE #: 4717XS SN-981

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	NOMINAL SSN/LSN	CORRECTION FACTOR	POROSITY (pu)
LSN	614.35	623.54				
SSN	1567.12	1617.83				
RATIO			2.59458	2.75100	1.06029	
					0.97000 1.07000	
CN						21.358

CN PRIMARY VERIFICATION SUMMARY

TOOL #: 2446XA 10400611 DATE/TIME PERFORMED: Fri Feb 7 16:36:55 2020

UNIT #: 3880TA MD4291 ICE BLOCK #: 4717ND VD-438

	MEASURED CPS	DEADTM CORR CPS	DTC SSN/LSN	CORRECTION FACTOR	DTC CORR SSN/LSN	POROSITY (pu)
LSN	2030.18	2134.22				
SSN	4604.11	5071.16				
RATIO			2.37612	1.06029	2.52071	
CN						18.139

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 2234XA Z118201 DATE/TIME PERFORMED: Sat Jan 18 16:45:44 2020

UNIT #: 3880TA MD4291

	SMALL RING (in)	LARGE RING (in)	MULT	ADD	SMALL RING (in)	LARGE RING (in)
CALIPER	2137.6	3036.4	0.00793	-9.07026	7.875	15.000

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA Z118201

DATE/TIME PERFORMED: Thu Feb 13 07:20:43 2020

DAYS SINCE CAL: 25

UNIT #: 3880TA MD4291

	I.D.	MULT	ADD	I.D. (in)
CALIPER	2115.6	0.00793	-8.67387	8.097

ZDL PRIMARY CALIBRATION SUMMARY

TOOL: 2234XA Z118201

DATE/TIME PERFORMED: Sat Jan 18 16:31:05 2020

UNIT: 3880TA MD4291

CALB BLKS: 2225XA Z112390

CS SRC: 4703NT PP16055B

	SS CS PK (Channel)	LS CS PK (Channel)	SS_BKGD (cps)	LS BKGD (cps)		
	223.1	225.4	1056.9	1843.2		
	220.0 230.0	220.0 230.0				
	SS (cps)	LS (cps)	SHR	DEN (g/cm3)	CORR (g/cm3)	PE (b/e)
MG (LO PE)	19483.9	10801.8	0.578	1.699	0.002	2.120
			0.565 0.665			
AL	11340.2	1098.7		2.695	-0.007	
AL + SHIM	15714.5	1947.2		2.612	0.157	
MG + SHIM (HI PE)	9366.4	5013.1	0.225			8.290
			0.210 0.270			
RATIO AL + SHIM/AL	1.39	1.77				
	1.32 1.42	1.64 1.84				
RATIO MG/AL	1.72	9.83				
	1.65 1.78	9.40 10.20				

ZDL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 2234XA Z118201

DATE/TIME PERFORMED: Thu Feb 13 06:51:48 2020

DAYS SINCE CAL: 25

UNIT #: 3880TA MD4291

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1848.6	225.0	1278.0
	1743.2 1943.2	220.0 230.0	1100.0 1550.0
SS	1053.2	223.7	1292.8
	956.9 1156.9	220.0 230.0	1100.0 1550.0

LV (V)		PAD CURRENT (mA)	
5.0		76.6	
4.8	5.2	50.0	120.0

ZDL AFTER LOG VERIFICATION SUMMARY

TOOL #: 2234XA Z118201

DATE/TIME PERFORMED: Thu Feb 13 14:03:25 2020

DAYS SINCE CAL: 25

UNIT #: 3880TA MD4291

	TOTAL (cps)	CSPK (Channel)	HV (V)
LS	1852.7	226.7	1278.0
	1743.2 1943.2	220.0 230.0	1100.0 1550.0
SS	1056.0	225.8	1296.0
	956.9 1156.9	220.0 230.0	1100.0 1550.0

LV (V)		PAD CURRENT (mA)	
5.0		74.8	
4.8	5.2	50.0	120.0

CAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1243XA 10546566

DATE/TIME PERFORMED: Thu Aug 15 19:21:24 2019

UNIT #: 3880TA MD4291

	SIZE (in)	VALUE (mV)	MULTIPLIER	ADD
SMALL RING	7.875	650		
LARGE RING	15.000	1230	0.01228	-0.10340

CAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1243XA 10546566

DATE/TIME PERFORMED: Thu Feb 13 07:27:48 2020

DAYS SINCE CAL: 181

UNIT #: 3880TA MD4291

ACT SIZE	VALUE (mV)	MULTIPLIER	ADD	SIZE (in)
8.097	619.6	0.01228	0.48932	8.10
				7.75 8.45

ML PRIMARY CALIBRATION SUMMARY

TOOL #: 1243XA 10546566

DATE/TIME PERFORMED: Thu Feb 13 08:10:39 2020

UNIT #: 3880TA MD4291

	Raw Low (mV/mA)	Raw High (mV/mA)	Mult	Add	K-factor	Eng Low (ohm.m)	Eng High (ohm.m)
NORMAL	0.51 0.45 0.55	148.9 135.0 165.0	1.008	-0.011	0.417	0.21 0.19 0.23	62.5 56.2 68.8
LATERAL	0.51 0.45 0.55	148.1 135.0 165.0	1.013	-0.015	0.333	0.17 0.15 0.18	50.0 45.0 55.0

ML AFTER LOG VERIFICATION SUMMARY

TOOL #: 1243XA 10546566

DATE/TIME PERFORMED: Thu Feb 13 13:40:05 2020

DAYS SINCE CAL: 0

UNIT #: 3880TA MD4291

	Raw Low (mV/mA)	Raw High (mV/mA)	Mult	Add	Eng Low (ohm.m)	Eng High (ohm.m)
NORMAL	0.51 0.45 0.55	148.9 135.0 165.0	1.008	-0.011	0.21 0.19 0.23	62.5 56.2 68.8
LATERAL	0.51 0.45 0.55	148.1 135.0 165.0	1.013	-0.015	0.17 0.15 0.18	50.0 45.0 55.0

HDIL PRIMARY CALIBRATION SUMMARY

TOOL #: 1515MA 11831570

DATE/TIME PERFORMED: Fri Jan 31 13:12:52 2020

UNIT #: 3880TA MD4291

GRCOND ID & DATE: 110 083096

ZERO DATA(mv)		10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.004	0.003	0.005	0.002	0.001	0.001	-0.000	-0.001	
	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 0 Q	0.005	0.006	0.003	0.002	0.004	0.003	0.002	0.000	
	-1.000 1.000	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 1 R	0.005	0.007	0.006	0.005	0.001	0.000	0.000	0.001	
	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 1 Q	0.000	0.001	0.004	0.002	0.005	0.003	0.000	-0.001	
	-1.000 1.000	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 2 R	0.009	0.004	0.002	0.000	0.000	0.002	0.004	0.009	
	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 2 Q	-0.003	-0.000	0.001	-0.000	-0.002	-0.005	-0.003	-0.002	
	-1.000 1.000	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 3 R	0.006	0.009	0.008	0.009	0.009	0.005	0.003	0.002	
	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	
Coil 3 Q	-0.008	-0.005	-0.002	0.002	-0.001	0.005	0.003	0.001	
	-0.500 0.500	-0.200 0.200	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	-0.100 0.100	

Coil 4 R	-0.000	0.005	0.003	0.006	0.001	0.007	0.008	0.007
	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200
Coil 4 Q	-0.008	0.003	-0.000	-0.002	0.003	-0.003	-0.001	0.001
	-1.000 1.000	-0.400 0.400	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200	-0.200 0.200
Coil 5 R	-0.006	0.008	0.010	0.018	0.010	0.009	-0.001	-0.005
	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400
Coil 5 Q	-0.006	-0.008	0.006	0.008	-0.000	0.005	0.012	0.005
	-2.000 2.000	-0.800 0.800	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400	-0.400 0.400
Coil 6 R	-0.020	-0.018	-0.025	-0.018	-0.022	0.011	0.012	0.013
	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000
Coil 6 Q	-0.007	-0.008	0.005	-0.015	-0.023	-0.016	-0.003	-0.004
	-5.000 5.000	-2.000 2.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000	-1.000 1.000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	127.02	125.91	123.77	120.37	116.12	110.56	104.38	96.71
	100.00 150.00	100.00 150.00	98.00 150.00	96.00 140.00	92.00 140.00	87.00 130.00	82.00 120.00	76.00 110.00
Coil 0 P	7.391	23.327	39.052	54.746	70.391	86.111	101.695	117.303
	6.000 9.000	19.000 28.000	32.000 47.000	44.000 66.000	57.000 85.000	70.000 100.000	82.000 120.000	95.000 140.000
Coil 1 M	220.92	218.30	213.33	205.80	196.64	185.27	172.89	158.44
	180.00 270.00	180.00 270.00	170.00 260.00	170.00 250.00	160.00 250.00	160.00 230.00	150.00 220.00	140.00 200.00
Coil 1 P	7.903	24.863	41.539	58.061	74.467	90.795	106.836	122.818
	6.000 9.000	19.000 28.000	32.000 48.000	45.000 67.000	57.000 86.000	70.000 110.000	83.000 120.000	96.000 140.000
Coil 2 M	450.24	445.34	435.97	421.38	403.62	381.27	356.60	327.27
	360.00 540.00	360.00 540.00	350.00 530.00	340.00 510.00	330.00 500.00	310.00 470.00	300.00 440.00	270.00 410.00
Coil 2 P	7.905	24.888	41.597	58.219	74.730	91.201	107.443	123.672
	6.000 9.000	19.000 29.000	32.000 48.000	45.000 67.000	58.000 87.000	71.000 110.000	84.000 130.000	96.000 140.000
Coil 3 M	716.15	708.71	694.52	672.74	645.74	611.11	573.07	527.65
	590.00 880.00	580.00 870.00	570.00 850.00	550.00 830.00	530.00 800.00	500.00 780.00	470.00 710.00	440.00 650.00
Coil 3 P	7.821	24.724	41.344	57.895	74.351	90.820	107.082	123.321
	6.000 10.000	20.000 29.000	33.000 49.000	46.000 69.000	59.000 89.000	72.000 110.000	85.000 130.000	98.000 150.000
Coil 4 M	1140.5	1128.3	1105.4	1069.6	1026.2	971.1	911.5	840.7
	900.0 1400.0	900.0 1300.0	900.0 1300.0	850.0 1300.0	800.0 1200.0	800.0 1200.0	750.0 1100.0	700.0 1000.0
Coil 4 P	7.859	24.759	41.383	57.902	74.300	90.653	106.775	122.838
	6.000 10.000	20.000 30.000	33.000 50.000	46.000 70.000	60.000 90.000	73.000 110.000	86.000 130.000	99.000 150.000
Coil 5 M	2305.7	2283.9	2241.8	2174.8	2090.7	1981.8	1860.3	1713.5
	1900.0 2800.0	1800.0 2800.0	1800.0 2700.0	1800.0 2600.0	1700.0 2500.0	1600.0 2400.0	1500.0 2200.0	1400.0 2100.0
Coil 5 P	8.036	25.346	42.418	59.468	76.447	93.477	110.311	127.140
	6.000 10.000	20.000 31.000	34.000 51.000	48.000 72.000	62.000 93.000	76.000 110.000	89.000 130.000	100.000 150.000
Coil 6 M	5984.4	5904.9	5755.5	5532.2	5264.6	4939.8	4594.6	4196.9
	4700.0 7100.0	4700.0 7000.0	4600.0 6900.0	4400.0 6600.0	4200.0 6400.0	4000.0 6000.0	3700.0 5600.0	3400.0 5100.0
Coil 6 P	8.281	26.347	44.011	61.473	78.711	95.779	112.565	129.180
	7.000 10.000	22.000 32.000	36.000 54.000	51.000 76.000	65.000 98.000	80.000 120.000	94.000 140.000	110.000 160.000

AM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	516	-103	-171	-190	-195	-197	-197	-197
	-200 800	-500 200	-600 100	-600 50	-500 20	-500 20	-500 20	-500 20
Coil 0 Q	1024	410	219	119	53	3	-38	-74
	-3000 6000	-1000 2000	-1000 1200	-500 900	-400 700	-400 600	-400 500	-400 400
Coil 1 R	544	74	14	-6	-15	-20	-23	-25
	450 650	20 130	-30 60	-50 40	-55 30	-60 20	-60 10	-60 10
Coil 1 Q	1030	420	261	187	142	112	90	73
	0 2500	0 900	0 600	0 450	0 350	0 300	0 250	0 250
Coil 2 R	182.5	26.4	7.0	0.5	-2.6	-4.1	-5.0	-5.3
	140.0 230.0	0.0 51.0	-10.0 25.0	-15.0 15.0	-16.0 10.0	-16.0 7.0	-16.0 5.0	-16.0 3.0
Coil 3 R	222.5	122.5	102.5	72.5	52.5	32.5	12.5	2.5
	180.0 260.0	180.0 260.0	170.0 250.0	160.0 240.0	150.0 230.0	140.0 210.0	130.0 190.0	120.0 170.0
Coil 3 Q	1030	420	261	187	142	112	90	73
	0 2500	0 900	0 600	0 450	0 350	0 300	0 250	0 250
Coil 4 R	516	-103	-171	-190	-195	-197	-197	-197
	-200 800	-500 200	-600 100	-600 50	-500 20	-500 20	-500 20	-500 20
Coil 4 Q	1024	410	219	119	53	3	-38	-74
	-3000 6000	-1000 2000	-1000 1200	-500 900	-400 700	-400 600	-400 500	-400 400
Coil 5 R	544	74	14	-6	-15	-20	-23	-25
	450 650	20 130	-30 60	-50 40	-55 30	-60 20	-60 10	-60 10
Coil 5 Q	1030	420	261	187	142	112	90	73
	0 2500	0 900	0 600	0 450	0 350	0 300	0 250	0 250
Coil 6 R	516	-103	-171	-190	-195	-197	-197	-197
	-200 800	-500 200	-600 100	-600 50	-500 20	-500 20	-500 20	-500 20
Coil 6 Q	1024	410	219	119	53	3	-38	-74
	-3000 6000	-1000 2000	-1000 1200	-500 900	-400 700	-400 600	-400 500	-400 400

Coil 2 Q	389.9 -200.01000.0	158.3 0.0350.0	101.7 0.0220.0	76.3 0.0180.0	62.6 0.0130.0	54.0 0.0110.0	48.7 0.0100.0	44.8 0.090.0
Coil 3 R	48.4 37.062.0	5.3 0.012.0	0.8 -3.06.0	-0.9 -4.04.0	-1.4 -5.02.0	-1.5 -5.01.0	-2.2 -6.01.0	-3.2 -6.01.0
Coil 3 Q	156.0 -140.0280.0	61.4 -40.0100.0	41.4 -20.070.0	34.1 -10.060.0	29.8 -10.050.0	28.3 -10.050.0	28.0 -10.050.0	28.0 -10.050.0
Coil 4 R	10.25 2.0018.00	-0.15 -3.006.00	-0.18 -3.503.00	-0.85 -3.902.00	-1.07 -4.202.00	-0.85 -4.502.00	-1.14 -4.702.00	-1.13 -5.002.00
Coil 4 Q	37.91 -100.00100.00	17.11 -30.0050.00	14.41 -20.0040.00	15.02 -10.0040.00	15.44 -10.0040.00	16.67 -10.0045.00	18.46 -10.0050.00	20.58 -10.0060.00
Coil 5 R	1.90 -2.005.80	-0.13 -3.202.40	-0.40 -4.503.10	-0.44 -4.703.20	-0.51 -4.803.20	-0.42 -5.003.30	-0.65 -5.203.40	-0.52 -5.403.50
Coil 5 Q	21.59 -60.0070.00	10.42 -20.0030.00	9.84 -20.0030.00	10.91 -20.0035.00	12.26 -20.0045.00	14.12 -20.0050.00	16.31 -20.0060.00	18.02 -30.0070.00
Coil 6 R	-3.17 -4.801.00	-1.01 -5.703.80	-0.61 -6.504.90	-0.59 -6.905.40	-0.44 -7.305.80	-0.36 -7.506.00	-0.52 -7.706.10	-0.60 -7.906.30
Coil 6 Q	-5.00 -30.0030.00	0.37 -20.0025.00	3.38 -20.0035.00	6.17 -30.0050.00	8.58 -35.0060.00	10.97 -40.0070.00	13.27 -50.0080.00	15.50 -60.00100.00
MM Factor	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	1.001 0.9001.100	0.997 0.9001.100	0.993 0.9001.100	0.993 0.9001.100	0.991 0.9001.100	0.990 0.9001.100	0.989 0.9001.100	0.990 0.9001.100
Coil 0 P	0.254 -2.0002.000	0.298 -2.0002.000	0.329 -2.0002.000	0.340 -2.0002.000	0.270 -2.0002.000	0.227 -2.0002.000	0.247 -2.0002.000	0.208 -2.0002.000
Coil 1 M	1.001 0.9001.100	0.999 0.9001.100	0.995 0.9001.100	0.995 0.9001.100	0.993 0.9001.100	0.993 0.9001.100	0.992 0.9001.100	0.992 0.9001.100
Coil 1 P	0.138 -2.0002.000	0.248 -2.0002.000	0.304 -2.0002.000	0.287 -2.0002.000	0.283 -2.0002.000	0.256 -2.0002.000	0.222 -2.0002.000	0.164 -2.0002.000
Coil 2 M	1.015 0.9001.100	1.012 0.9001.100	1.011 0.9001.100	1.010 0.9001.100	1.009 0.9001.100	1.009 0.9001.100	1.008 0.9001.100	1.006 0.9001.100
Coil 2 P	0.118 -2.0002.000	0.104 -2.0002.000	0.125 -2.0002.000	0.153 -2.0002.000	0.161 -2.0002.000	0.148 -2.0002.000	0.166 -2.0002.000	0.143 -2.0002.000
Coil 3 M	1.014 0.9001.100	1.012 0.9001.100	1.012 0.9001.100	1.010 0.9001.100	1.009 0.9001.100	1.008 0.9001.100	1.008 0.9001.100	1.009 0.9001.100
Coil 3 P	0.096 -2.0002.000	0.022 -2.0002.000	-0.011 -2.0002.000	-0.053 -2.0002.000	-0.131 -2.0002.000	-0.214 -2.0002.000	-0.299 -2.0002.000	-0.410 -2.0002.000
Coil 4 M	1.019 0.9001.100	1.019 0.9001.100	1.018 0.9001.100	1.017 0.9001.100	1.016 0.9001.100	1.014 0.9001.100	1.014 0.9001.100	1.013 0.9001.100
Coil 4 P	0.100 -2.0002.000	0.090 -2.0002.000	0.090 -2.0002.000	0.104 -2.0002.000	0.109 -2.0002.000	0.106 -2.0002.000	0.086 -2.0002.000	0.042 -2.0002.000
Coil 5 M	1.041 0.9001.100	1.041 0.9001.100	1.041 0.9001.100	1.039 0.9001.100	1.039 0.9001.100	1.039 0.9001.100	1.038 0.9001.100	1.038 0.9001.100
Coil 5 P	-0.001 -2.0002.000	-0.155 -2.0002.000	-0.204 -2.0002.000	-0.289 -2.0002.000	-0.452 -2.0002.000	-0.615 -2.0002.000	-0.671 -2.0002.000	-0.800 -2.0002.000
Coil 6 M	1.023 0.9001.100	1.024 0.9001.100	1.022 0.9001.100	1.020 0.9001.100	1.020 0.9001.100	1.025 0.9001.100	1.025 0.9001.100	1.023 0.9001.100
Coil 6 P	0.015 -2.0002.000	0.116 -2.0002.000	0.053 -2.0002.000	0.118 -2.0002.000	0.003 -2.0002.000	-0.113 -2.0002.000	-0.080 -2.0002.000	-0.252 -2.0002.000
PARMS								
TCID 0			TCID 1			Cal Temp		
						(degF)		
IDs			1.679	0.869	52.3	T Factor		
						1.04		

TOOL #: 1515MA 11831570

DATE/TIME PERFORMED: Thu Feb 13 07:55:28 2020

DAYS SINCE CAL: 12

UNIT #: 3880TA MD4291

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	-0.002 -0.200 0.200	0.004 -0.100 0.100	0.007 -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	-0.001 -0.100 0.100
Coil 0 Q	0.006 -1.000 1.000	0.009 -0.200 0.200	0.004 -0.100 0.100	0.004 -0.100 0.100	0.005 -0.100 0.100	0.004 -0.100 0.100	0.001 -0.100 0.100	0.000 -0.100 0.100
Coil 1 R	-0.000 -0.200 0.200	0.002 -0.100 0.100	-0.001 -0.100 0.100	0.000 -0.100 0.100	-0.004 -0.100 0.100	-0.004 -0.100 0.100	-0.004 -0.100 0.100	-0.003 -0.100 0.100
Coil 1 Q	-0.001 -1.000 1.000	0.002 -0.200 0.200	0.003 -0.100 0.100	0.004 -0.100 0.100	0.004 -0.100 0.100	0.001 -0.100 0.100	-0.001 -0.100 0.100	-0.001 -0.100 0.100
Coil 2 R	0.015 -0.200 0.200	0.011 -0.100 0.100	0.012 -0.100 0.100	0.009 -0.100 0.100	0.011 -0.100 0.100	0.012 -0.100 0.100	0.015 -0.100 0.100	0.016 -0.100 0.100
Coil 2 Q	-0.001 -1.000 1.000	0.001 -0.200 0.200	0.001 -0.100 0.100	0.001 -0.100 0.100	-0.003 -0.100 0.100	-0.002 -0.100 0.100	0.000 -0.100 0.100	0.001 -0.100 0.100
Coil 3 R	0.007 -0.100 0.100	0.008 -0.100 0.100	0.011 -0.100 0.100	0.012 -0.100 0.100	0.012 -0.100 0.100	0.009 -0.100 0.100	0.009 -0.100 0.100	0.009 -0.100 0.100
Coil 3 Q	-0.011 -0.500 0.500	-0.007 -0.200 0.200	-0.005 -0.100 0.100	-0.001 -0.100 0.100	0.003 -0.100 0.100	0.003 -0.100 0.100	0.002 -0.100 0.100	0.001 -0.100 0.100
Coil 4 R	-0.010 -0.200 0.200	-0.003 -0.200 0.200	-0.001 -0.200 0.200	-0.003 -0.200 0.200	-0.001 -0.200 0.200	-0.002 -0.200 0.200	0.000 -0.200 0.200	0.002 -0.200 0.200
Coil 4 Q	-0.013 -1.000 1.000	0.000 -0.400 0.400	-0.004 -0.200 0.200	0.002 -0.200 0.200	-0.004 -0.200 0.200	-0.006 -0.200 0.200	-0.004 -0.200 0.200	-0.003 -0.200 0.200
Coil 5 R	-0.006 -0.400 0.400	0.001 -0.400 0.400	0.004 -0.400 0.400	0.012 -0.400 0.400	0.006 -0.400 0.400	0.001 -0.400 0.400	0.002 -0.400 0.400	0.002 -0.400 0.400
Coil 5 Q	-0.001 -2.000 2.000	-0.001 -0.800 0.800	-0.002 -0.400 0.400	0.010 -0.400 0.400	0.006 -0.400 0.400	0.007 -0.400 0.400	0.010 -0.400 0.400	0.008 -0.400 0.400
Coil 6 R	-0.014 -1.000 1.000	-0.016 -1.000 1.000	-0.006 -1.000 1.000	-0.002 -1.000 1.000	0.001 -1.000 1.000	0.010 -1.000 1.000	0.013 -1.000 1.000	0.013 -1.000 1.000
Coil 6 Q	-0.012 -5.000 5.000	-0.006 -2.000 2.000	0.012 -1.000 1.000	-0.011 -1.000 1.000	-0.024 -1.000 1.000	-0.028 -1.000 1.000	0.003 -1.000 1.000	0.009 -1.000 1.000

ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	127.09 100.00 150.00	125.97 100.00 150.00	123.84 98.00 150.00	120.45 96.00 140.00	116.12 92.00 140.00	110.60 87.00 130.00	104.41 82.00 120.00	96.69 76.00 110.00
Coil 0 P	7.411 6.000 9.000	23.381 19.000 28.000	39.132 32.000 47.000	54.853 44.000 66.000	70.558 57.000 85.000	86.315 70.000 100.000	101.890 82.000 120.000	117.587 95.000 140.000
Coil 1 M	221.17 180.00 270.00	218.53 180.00 270.00	213.57 170.00 260.00	205.99 170.00 250.00	196.79 160.00 250.00	185.36 160.00 230.00	172.85 150.00 220.00	158.35 140.00 200.00
Coil 1 P	7.927 6.000 9.000	24.928 19.000 28.000	41.641 32.000 48.000	58.190 45.000 67.000	74.666 57.000 86.000	91.023 70.000 110.000	107.056 83.000 120.000	123.136 96.000 140.000
Coil 2 M	449.09 360.00 540.00	444.18 360.00 540.00	434.83 350.00 530.00	420.29 340.00 510.00	402.60 330.00 500.00	380.26 310.00 470.00	355.37 300.00 440.00	326.26 270.00 410.00
Coil 2 P	7.926 6.000 9.000	24.942 19.000 29.000	41.684 32.000 48.000	58.340 45.000 67.000	74.887 58.000 87.000	91.396 71.000 110.000	107.688 84.000 130.000	124.012 96.000 140.000
Coil 3 M	716.56 580.00 880.00	709.03 580.00 870.00	694.77 570.00 850.00	672.95 550.00 830.00	645.90 530.00 800.00	611.36 500.00 780.00	573.26 470.00 710.00	527.31 440.00 650.00
Coil 3 P	7.845 6.000 10.000	24.779 20.000 29.000	41.427 33.000 49.000	57.992 46.000 69.000	74.489 59.000 89.000	91.002 72.000 110.000	107.280 85.000 130.000	123.605 98.000 150.000
Coil 4 M	1140.6 880.0 1400.0	1128.3 880.0 1200.0	1105.3 880.0 1200.0	1069.6 850.0 1200.0	1026.0 800.0 1200.0	971.2 800.0 1200.0	911.2 750.0 1100.0	839.9 700.0 1000.0

Coil 4 P	7.879	24.813	41.465	58.010	74.444	90.839	106.981	123.106
	6.000 10.000	20.000 30.000	33.000 50.000	46.000 70.000	60.000 90.000	73.000 110.000	86.000 130.000	99.000 150.000
Coil 5 M	2308.2	2286.0	2243.9	2176.6	2092.1	1982.9	1861.2	1713.2
	1900.0 2800.0	1800.0 2800.0	1800.0 2700.0	1800.0 2600.0	1700.0 2500.0	1600.0 2400.0	1500.0 2200.0	1400.0 2100.0
Coil 5 P	8.066	25.427	42.541	59.635	76.678	93.754	110.622	127.520
	6.000 10.000	20.000 31.000	34.000 51.000	48.000 72.000	62.000 93.000	76.000 110.000	89.000 130.000	100.000 150.000
Coil 6 M	5994.3	5913.6	5764.8	5541.5	5272.1	4946.8	4599.6	4201.2
	4700.0 7100.0	4700.0 7000.0	4600.0 6900.0	4400.0 6600.0	4200.0 6400.0	4000.0 6000.0	3700.0 5600.0	3400.0 5100.0
Coil 6 P	8.307	26.407	44.107	61.597	78.875	95.985	112.758	129.460
	7.000 10.000	22.000 32.000	36.000 54.000	51.000 76.000	65.000 98.000	80.000 120.000	94.000 140.000	110.000 160.000

HDIL AFTER LOG VERIFICATION SUMMARY

TOOL #: 1515MA 11831570 DATE/TIME PERFORMED: Thu Feb 13 13:55:00 2020 DAYS SINCE CAL: 13

UNIT #: 3880TA MD4291

ZERO DATA(mv)	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 R	0.003	0.009	0.012	0.011	0.009	0.010	0.010	0.008
	-0.082 0.078	-0.056 0.064	-0.023 0.037	-0.027 0.033	-0.029 0.031	-0.029 0.031	-0.030 0.030	-0.031 0.029
Coil 0 Q	0.004	0.005	0.002	0.001	0.005	0.004	0.005	0.005
	-0.034 0.046	-0.111 0.129	-0.026 0.034	-0.026 0.034	-0.025 0.035	-0.026 0.034	-0.029 0.031	-0.030 0.030
Coil 1 R	0.001	0.003	0.002	0.002	0.003	0.002	0.002	0.001
	-0.080 0.080	-0.048 0.052	-0.031 0.029	-0.030 0.030	-0.034 0.026	-0.034 0.026	-0.034 0.026	-0.033 0.027
Coil 1 Q	-0.002	0.001	0.001	0.001	0.002	0.001	0.000	0.002
	-0.401 0.399	-0.098 0.102	-0.027 0.033	-0.026 0.034	-0.026 0.034	-0.029 0.031	-0.031 0.029	-0.031 0.029
Coil 2 R	0.030	0.028	0.026	0.026	0.025	0.023	0.028	0.029
	-0.055 0.085	-0.019 0.041	-0.018 0.042	-0.021 0.039	-0.019 0.041	-0.018 0.042	-0.015 0.045	-0.014 0.046
Coil 2 Q	-0.003	-0.001	0.004	0.006	0.002	0.001	0.004	0.005
	-0.351 0.349	-0.099 0.101	-0.029 0.031	-0.029 0.031	-0.033 0.027	-0.032 0.028	-0.030 0.030	-0.029 0.031
Coil 3 R	0.016	0.024	0.024	0.024	0.027	0.020	0.019	0.019
	-0.033 0.047	-0.032 0.048	-0.029 0.051	-0.028 0.052	-0.028 0.052	-0.031 0.049	-0.031 0.049	-0.031 0.049
Coil 3 Q	-0.006	-0.006	-0.001	0.002	0.004	0.008	0.007	0.004
	-0.211 0.189	-0.087 0.073	-0.045 0.035	-0.041 0.039	-0.037 0.043	-0.037 0.043	-0.038 0.042	-0.039 0.041
Coil 4 R	-0.001	0.004	0.001	-0.001	-0.002	0.001	0.004	0.008
	-0.070 0.050	-0.063 0.057	-0.061 0.059	-0.063 0.057	-0.061 0.059	-0.062 0.058	-0.060 0.060	-0.058 0.062
Coil 4 Q	-0.006	-0.002	-0.004	-0.001	-0.001	-0.005	-0.005	-0.004
	-0.313 0.287	-0.100 0.100	-0.064 0.056	-0.058 0.062	-0.064 0.056	-0.066 0.054	-0.064 0.056	-0.063 0.057
Coil 5 R	0.013	0.023	0.020	0.024	0.026	0.002	-0.000	-0.001
	-0.126 0.114	-0.119 0.121	-0.116 0.124	-0.108 0.132	-0.114 0.126	-0.119 0.121	-0.118 0.122	-0.118 0.122
Coil 5 Q	0.003	-0.005	-0.011	0.011	0.014	0.011	0.004	-0.003
	-0.601 0.599	-0.251 0.249	-0.122 0.118	-0.110 0.130	-0.114 0.126	-0.113 0.127	-0.110 0.130	-0.112 0.128
Coil 6 R	-0.006	-0.006	-0.007	-0.014	-0.013	0.009	0.013	0.031
	-0.314 0.286	-0.316 0.284	-0.306 0.294	-0.302 0.298	-0.299 0.301	-0.280 0.310	-0.287 0.313	-0.287 0.313
Coil 6 Q	-0.004	0.006	0.001	-0.027	-0.017	-0.012	-0.005	-0.003
	-1.512 1.488	-0.606 0.594	-0.288 0.312	-0.311 0.299	-0.324 0.276	-0.328 0.272	-0.297 0.303	-0.291 0.309
ELEC. GAINS	10 KHz	30 KHz	50 KHz	70 KHz	90 KHz	110 KHz	130 KHz	150 KHz
Coil 0 M	127.05	125.87	123.57	120.13	115.65	110.02	103.59	95.86
	124.55 129.64	123.45 128.49	121.36 126.32	118.04 122.86	113.80 118.44	108.39 112.82	102.32 106.50	94.76 98.63
Coil 0 P	7.447	23.465	39.238	54.958	70.673	86.382	101.985	117.593
	4.411 10.411	20.381 26.381	36.132 42.132	51.853 57.853	67.558 73.558	83.315 89.315	98.890 104.890	114.587 120.587

Coil 1 M	221.10 216.74 225.59	218.35 214.16 222.90	213.09 209.30 217.84	205.47 201.87 210.11	195.95 192.86 200.73	184.55 181.66 189.07	171.60 169.39 176.30	157.06 155.18 161.51
Coil 1 P	7.963 4.927 10.927	25.008 21.928 27.928	41.735 38.641 44.641	58.298 55.190 61.190	74.762 71.666 77.666	91.055 88.023 94.023	107.168 104.056 110.056	123.149 120.136 126.136
Coil 2 M	449.17 440.11 458.07	444.02 435.30 453.07	434.08 426.14 443.53	419.36 411.89 428.70	401.01 394.55 410.65	378.43 372.65 387.86	352.80 348.26 362.48	323.36 319.74 332.79
Coil 2 P	7.961 4.926 10.926	25.027 21.942 27.942	41.789 38.684 44.684	58.441 55.340 61.340	75.008 71.887 77.887	91.472 88.396 94.396	107.776 104.688 110.688	123.959 121.012 127.012
Coil 3 M	716.21 702.23 730.90	708.27 694.85 723.22	693.11 680.88 708.67	671.12 659.49 686.40	643.02 632.98 658.82	608.26 599.14 623.59	568.66 561.79 584.72	522.97 516.76 537.85
Coil 3 P	7.882 4.845 10.845	24.865 21.779 27.779	41.532 38.427 44.427	58.104 54.992 60.992	74.615 71.489 77.489	91.088 88.002 94.002	107.379 104.280 110.280	123.596 120.605 126.605
Coil 4 M	1140.5 1117.8 1163.4	1127.5 1105.7 1150.8	1103.1 1083.2 1127.4	1067.0 1048.2 1091.0	1021.7 1005.5 1046.6	966.6 951.8 990.6	904.4 893.0 929.4	833.0 823.1 856.7
Coil 4 P	7.921 4.879 10.879	24.903 21.813 27.813	41.570 38.465 44.465	58.119 55.010 61.010	74.573 71.444 77.444	90.926 87.839 93.839	107.069 103.981 109.981	123.109 120.106 126.106
Coil 5 M	2307.5 2262.0 2354.4	2284.1 2240.3 2331.8	2239.0 2199.0 2288.8	2171.0 2133.1 2220.1	2083.2 2050.3 2134.0	1973.5 1943.3 2022.6	1846.5 1823.9 1898.4	1698.3 1678.9 1747.5
Coil 5 P	8.106 5.066 11.066	25.517 22.427 28.427	42.655 39.541 45.541	59.746 56.635 62.635	76.805 73.678 79.678	93.844 90.754 96.754	110.737 107.622 113.622	127.541 124.520 130.520
Coil 6 M	5991.9 5874.4 6114.2	5907.6 5795.4 6031.9	5751.5 5649.5 5860.1	5525.3 5430.7 5652.3	5249.1 5168.7 5377.6	4922.8 4847.8 5045.7	4563.4 4507.6 4691.6	4161.3 4117.2 4285.2
Coil 6 P	8.344 5.307 11.307	26.499 23.407 29.407	44.217 41.107 47.107	61.702 58.597 64.597	79.004 75.875 81.875	96.074 92.985 98.985	112.881 109.758 115.758	129.493 126.460 132.460

INSTRUMENT CONFIGURATION

Source File: /dat1a/MERIT/Wenu_103/ZSLAM_ML_TDG-tdg

CABLEHEAD

Diameter : 3.38"
Length : 5.50'
Weight : 24 lbs
Series : CABL338
Mnemonic : CBLH
Measure Point: 2.75': CABLEHEAD TOP
Tensile Str. : 120000 lbs

DOWNHOLE POWER ADAPTER

Diameter : 3.62"
Length : 5.27'
Weight : 86 lbs
Series : 4430XB
Mnemonic : DHPA
Tensile Str. : 137000 lbs
Compressive : 98000 lbs

SWIVEL

Diameter : 3.38"
Length : 3.00'
Weight : 65 lbs
Series : 3944XA

TTRM SUB

Diameter : 3.63"
Length : 3.83'
Weight : 62 lbs
Series : 3981XA
Mnemonic : TTRM

133.88'

CABLEHEAD TOP 131.13'

TEMP MP 117.66'
RM MP 117.41'

WIS COMMON REMOTE

Diameter : 3.63"
Length : 6.36'
Weight : 126 lbs
Series : 3514XB
Mnemonic : WTS
Tensile Str. : 78000 lbs
Compressive : 114000 lbs

DIGITAL SPECTRALOG

Diameter : 3.63"
Length : 7.31'
Weight : 130 lbs
Series : 1329XB
Mnemonic : DSL
Measure Point: 1.60': GR MP
Tensile Str. : 78000 lbs
Compressive : 85000 lbs

COMPENSATED NEUTRON

Diameter : 3.63"
Length : 7.59'
Weight : 150 lbs
Series : 2446XA
Mnemonic : CN
Measure Point: 2.63': LSN MP
Measure Point: 2.24': SSN MP
Tensile Str. : 78000 lbs
Compressive : 78000 lbs

Z-DENSILOG

Diameter : 4.88"
Length : 11.22'
Weight : 360 lbs
Series : 2234XA
Mnemonic : ZDL
Measure Point: 3.19': CAL MP
Measure Point: 2.47': LSD MP
Measure Point: 2.07': SSD MP
Tensile Str. : 78000 lbs
Compressive : 74500 lbs

SHEAR WAVE ACOUSTILOG

Diameter : 3.63"
Length : 5.00'
Weight : 135 lbs
Series : 1678PB
Mnemonic : XMAC
Tensile Str. : 45000 lbs
Compressive : 45000 lbs

ARRAY ACOUSTILOG ELECTRONICS, 8 CHANNEL

Diameter : 3.38"
Length : 7.82'
Weight : 102 lbs
Series : 1677EA
Mnemonic : XMAC
Tensile Str. : 78000 lbs
Compressive : 72000 lbs

CROSS MULTIPOLE ARRAY ACOUSTILOG

Diameter : 3.75"
Length : 10.91'
Weight : 224 lbs
Series : 1678MC
Mnemonic : XMF1
Measure Point: 5.50': R8
Measure Point: 5.00': R7
Measure Point: 4.50': R6
Measure Point: 4.00': R5
Measure Point: 3.50': R4

GR MP — 104.20'

LSN MP — 97.65'

SSN MP — 97.25'

CAL MP — 86.99'

LSD MP — 86.27'

SSD MP — 85.87'

R8 — 65.57'

R7 — 65.07'

R6 — 64.57'

R5 — 64.07'

R4 — 63.57'

R3 — 63.07'

R2 — 62.57'

R1 — 62.07'

Measure Point: 3.00': R3
Measure Point: 2.50': R2
Measure Point: 2.00': R1

SHEAR WAVE ACOUSTILOG

Diameter : 3.63"
Length : 5.00'
Weight : 135 lbs
Series : 1678PB
Mnemonic : XMAC
Tensile Str. : 45000 lbs
Compressive : 45000 lbs

MULTI-POLE ARRAY ACOUSTIC

Diameter : 3.88"
Length : 7.92'
Weight : 170 lbs
Series : 1678BA
Mnemonic : XMAC
Measure Point: 6.42': QUADRUPOLE T5
Measure Point: 6.42': MONOPOLE T2
Measure Point: 4.67': Y-DIPOLE T4
Measure Point: 4.67': X-DIPOLE T3
Measure Point: 2.92': MONOPOLE T1

MULTI-POLE ARRAY ACOUSTIC

Diameter : 3.38"
Length : 4.32'
Weight : 58 lbs
Series : 1678FA
Mnemonic : MAC
Tensile Str. : 78000 lbs

WTS MINILOG

Diameter : 4.00"
Length : 11.25'
Weight : 258 lbs
Series : 1243XA
Mnemonic : ML
Measure Point: 1.63': MP
Tensile Str. : 78000 lbs
Compressive : 36000 lbs

HIGH DEFINITION INDUCTION TOOL

Diameter : 3.62"
Length : 27.13'
Weight : 415 lbs
Series : 1515XA
Mnemonic : HDIL
Measure Point: 13.91': SP MP
Measure Point: 7.44': XMTR MP
Tensile Str. : 36000 lbs
Compressive : 1900 lbs

MONOPOLE T2
QUADRUPOLE T5 53.57'
53.57'

X-DIPOLE T3 51.82'
Y-DIPOLE T4 51.82'

MONOPOLE T1 50.07'

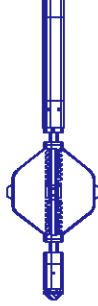
MP 33.22'

SP MP 18.37'

XMTR MP 11.90'

4 ARM BOW SPRING CENTRALIZER

Diameter : 3.38"
Length : 4.12'
Weight : 72 lbs
Series : 4341XA
Mnemonic : CENT
Tensile Str. : 78000 lbs

**BULL PLUG 3 3/8**

0.00'

TOTAL LENGTH: 133.88'
TOTAL WEIGHT: 2610 lbs
MAX DIAMETER: 0'4.88"

**BAKER
HUGHES**
a GE company

**COMPANY** MERIT ENERGY CO**WELL** WENU 103**FIELD** EUBANK NORTH**COUNTY** HASKELL **STATE** KANSAS**FILE NO:**OH162460**API NO:**15-081-22209-0000**LOCATION:**

LAT/LONG: 37.643651 N / 101.045965 W

X = 1262921.69

Y = 365797.39

SEC 04 TWP 28S RGE 34W**ELEVATIONS:**

KB 3093.0 FT

DF

GL 3081.0 FT

SCALES: 5":100'

2":100'

FIELD PRINT

DATE 12-FEB-2020