



RADIAL CEMENT BOND LOG GAMMA RAY LOG

FILE NO: US824381		COMPANY: FIRST LIBERTY ENERGY INC	
API NO: 05105060180000		WELL: BASIN #1	
Ver: 3.87		FIELD: DEL NORTE	
Dbl #1		COUNTY: RIO GRANDE	
LOCATION: NESE S9: T40N; R3E 1900' FSL, 680 FEL LAT: 37.728122 LON: -108.425207 SEC 9 TWP 40N RGE SE		STATE: COLORADO	
PERMANENT DATUM: GL ELEVATION 8176 FT		OTHER SERVICES: HD14/ZDL/CN/GR	
LOG MEASURED FROM: KB 18.5 FT ABOVE P.D.		ELEVATIONS: KB 8183.5 FT DF OL 8176 FT	
DRILL MEAS. FROM: KB			
DATE: 21-MAR-2013	TRIP: 4		
SERVICE ORDER: US824381	DEPTH DRILLER: 9270 FT		
DEPTH LOGGER: 4780 FT	BOTTOM LOGGED INTERVAL: 4780 FT		
TOP LOGGED INTERVAL: 18.5 FT	TIME STARTED: 1330		
TIME FINISHED: 1800	OPERATOR RIG TIME: 3.5 HRS		
TYPE OF FLUID IN HOLE: NBM	FLUID DENSITY: 8.8 LB/G		
FLUID SALINITY: 700 PPM	FLUID LEVEL: 16.5 FT		
LOGGED CEMENT TOP: NA	WELLHEAD PRESSURE: 0 PSI		
NOMINAL LOGGING SPEED: 6.5 DEG	MAX. RECORDED TEMP.: 45 F/MN		
REFERENCE LOG: BHL HD11/ZDL/CN/GR	REFERENCE LOG DATE: 03-21-2013		
EQUIP. NO.: 6885	LOCATION: GRAND JUNCT		
RECORDED BY: RENEAU/SMITH/PATTON	WITNESSED BY: S. OSBORNE/R. SAY		

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

BOREHOLE RECORD

BIT SIZE	FROM	TO
12.25 IN	80 FT	1243 FT
8.75 IN	1220 FT	4812 FT

CASING RECORD

SIZE	WEIGHT	GRADE	FROM	TO
18 IN	75 LB/F		0 FT	80 FT
8.625 IN	38 LB/F	J-55	0 FT	1220 FT
7 IN	23 LB/F	J-55	0 FT	4374 FT
7 IN	28 LB/F	J-55	4374 FT	4788 FT

REMARKS

RUN 4 TRIP 1: CORRELATED LOG TO BAKER HUGHES OPEN HOLE LOG DATED 7/MAR/2013
SHIFTED LOG -8.5'
LOGGED WITH ZERO PSI

THANKS YOU FOR CHOOSING BAKER HUGHES WIRELINE

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
4	1	GR/CCL	1353A	10580209	CENT
4	1	VOL	1426A	10154957	CENT

MAIN LOG 5"/100FT SCALE

ECLIPS 6.11 Aug 06, 2010
Updates: 1,2 Patches: 2

Thu Mar 21 16:24:14 2013

Perplot /main/62

Cplot

Plot_Cpp /main/16

Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

FILE: /data/624381/main_rdr01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 0.750 ft BOTTOM DEPTH: 4790.000 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	medium (1)		"	"
TRAVEL TIME	FILTER ()	medium (1)		"	"

RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0		TOP	BOTTOM

ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	213	uV	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	213	uV	"	"
	AMP WINDOW START (fgp3*)	213	uV	"	"
	AMP WINDOW START (fgp4*)	213	uV	"	"
	AMP WINDOW START (fgp5*)	213	uV	"	"
	AMP WINDOW START (fgp6*)	213	uV	"	"
	AMP WINDOW START (fgp7*)	213	uV	"	"
	AMP WINDOW START (fgp8*)	213	uV	"	"
	AMP WINDOW START (fgpn*)	213	uV	"	"
	AMP WINDOW LENGTH	25	uV	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttn*)	186	uV	"	"
	TT WINDOW LENGTH	500	uV	"	"
	FIRST BRK THRESHOLD (ttn*)	6	mV	"	"
RAL CASING PARAMETERS	PPT NEAR	226.084	uV	"	"
RAL TOOL DELAY	TOOL DELAY (str1*)	-66	uV	"	"
	TOOL DELAY (str2*)	-66	uV	"	"
	TOOL DELAY (str3*)	-66	uV	"	"
	TOOL DELAY (str4*)	-66	uV	"	"
	TOOL DELAY (str5*)	-66	uV	"	"
	TOOL DELAY (str6*)	-66	uV	"	"
	TOOL DELAY (str7*)	-66	uV	"	"
	TOOL DELAY (str8*)	-66	uV	"	"
BASELINE NOISE (NEAR)	NOISE WINDOW START	151	uV	"	"
	NOISE WINDOW LENGTH	25	uV	"	"

PERCENT BOND CEMENT MAP

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TOP	BOTTOM
	FREE AMP REC 2	80	mV	"	"
	FREE AMP REC 3	80	mV	"	"
	FREE AMP REC 4	80	mV	"	"

FREE AMP REC 5	80	mV	..	..
FREE AMP REC 6	80	mV	..	..
FREE AMP REC 7	80	mV	..	..
FREE AMP REC 8	80	mV	..	..
RAL FULL BOND AMPLITUDE				
FULL BOND AMP REC 1	2	mV	..	..
FULL BOND AMP REC 2	2	mV	..	..
FULL BOND AMP REC 3	2	mV	..	..
FULL BOND AMP REC 4	2	mV	..	..
FULL BOND AMP REC 5	2	mV	..	..
FULL BOND AMP REC 6	2	mV	..	..
FULL BOND AMP REC 7	2	mV	..	..
FULL BOND AMP REC 8	2	mV	..	..

CURVE DESCRIPTION REPORT

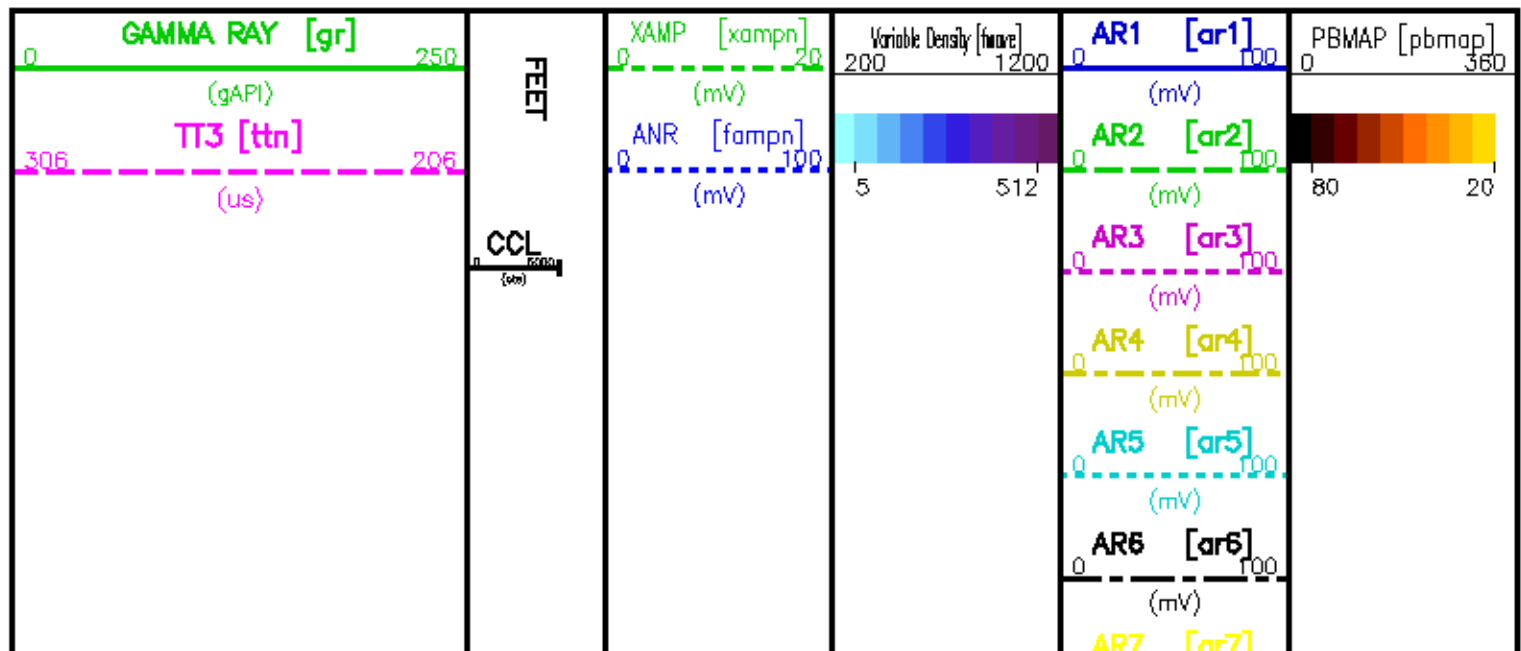
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R1
F1:AR2	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R2
F1:AR3	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R3
F1:AR4	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R4
F1:AR5	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R5
F1:AR6	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R6
F1:AR7	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R7
F1:AR8	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE T-R8
F1:CCL	Mar 21 15:48:34 2013	CASING COLLAR LOCATOR
F1:FAMPN	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FMAVE	Mar 21 15:48:34 2013	FAR WAVE FORM
F1:GR	Mar 21 15:48:34 2013	GAMMA RAY
F1:PBMAP	Mar 21 15:48:34 2013	PERCENT BOND CEMENT MAP
F1:TTN	Mar 21 15:48:34 2013	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Mar 21 15:48:34 2013	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

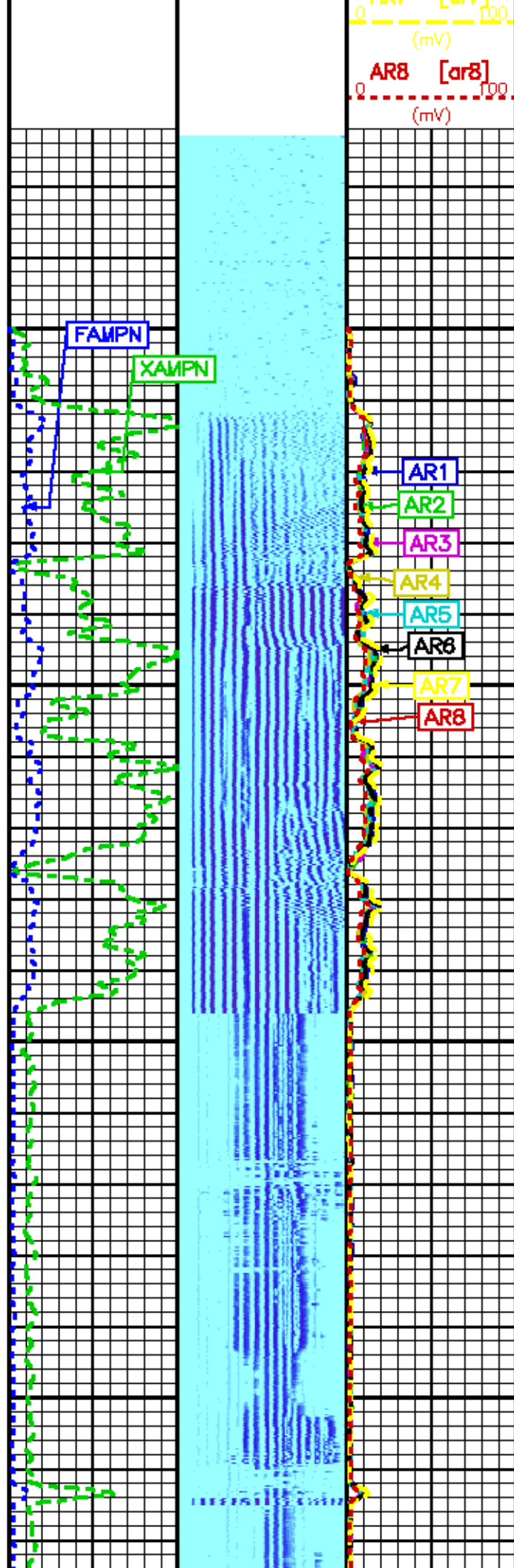
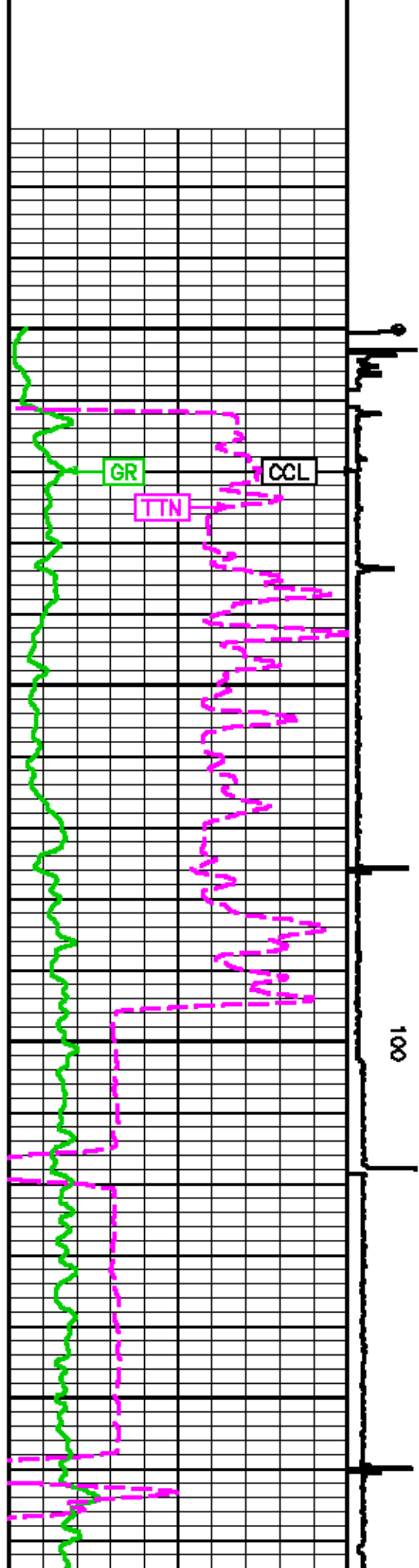
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	14.00	AR5	14.00	CCL	5.75	XAMPN	14.00
AR2	14.00	AR6	14.00	FAMPN	14.00		
AR3	14.00	AR7	14.00	GR	1.75		
AR4	14.00	AR8	14.00	TTN	14.00		

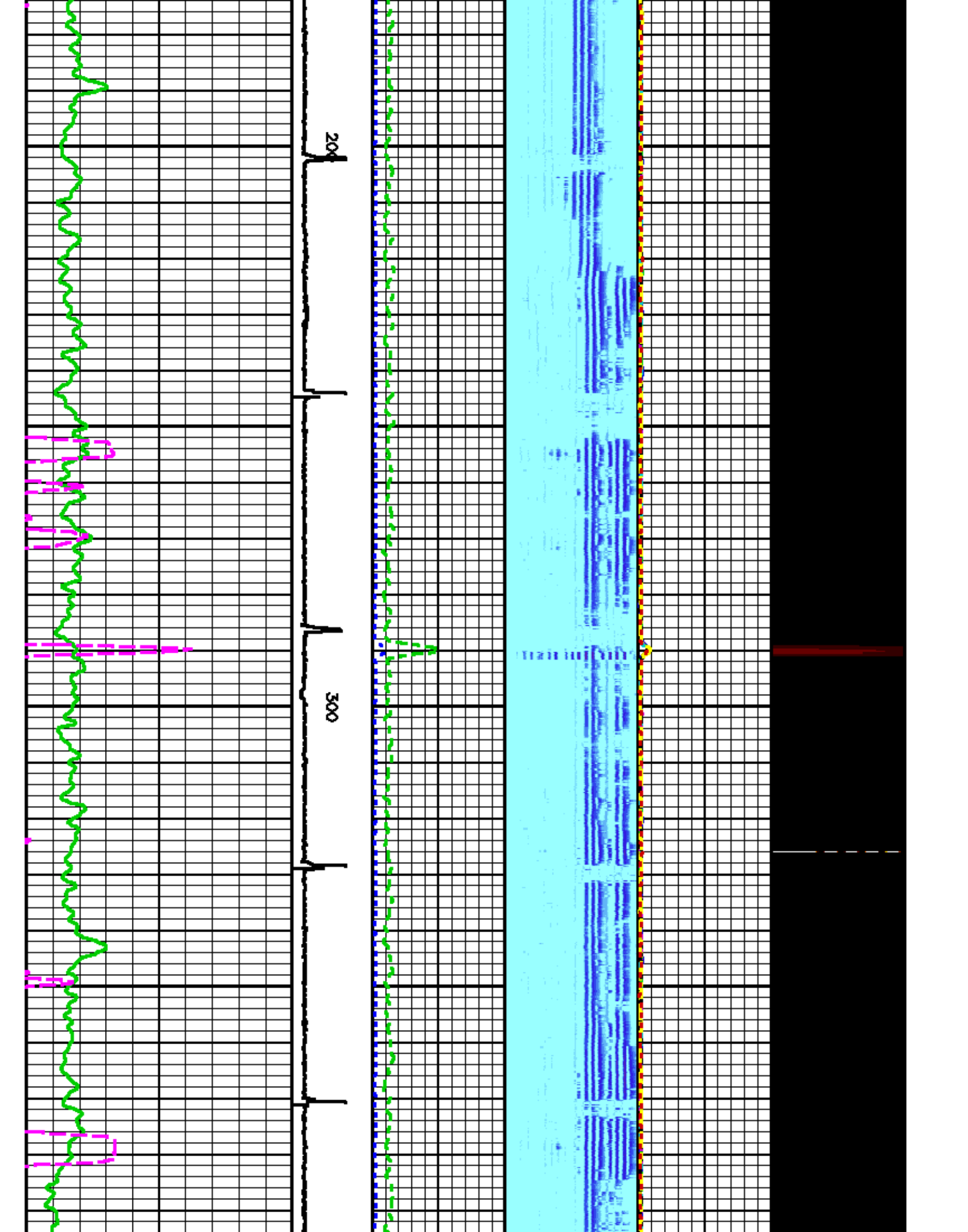
Presentation : rla6885c\data\824381\ral_delivarable_main.pdf [5"/100' Scale]
 Plot Interval : -27 - 4782.25 Feet

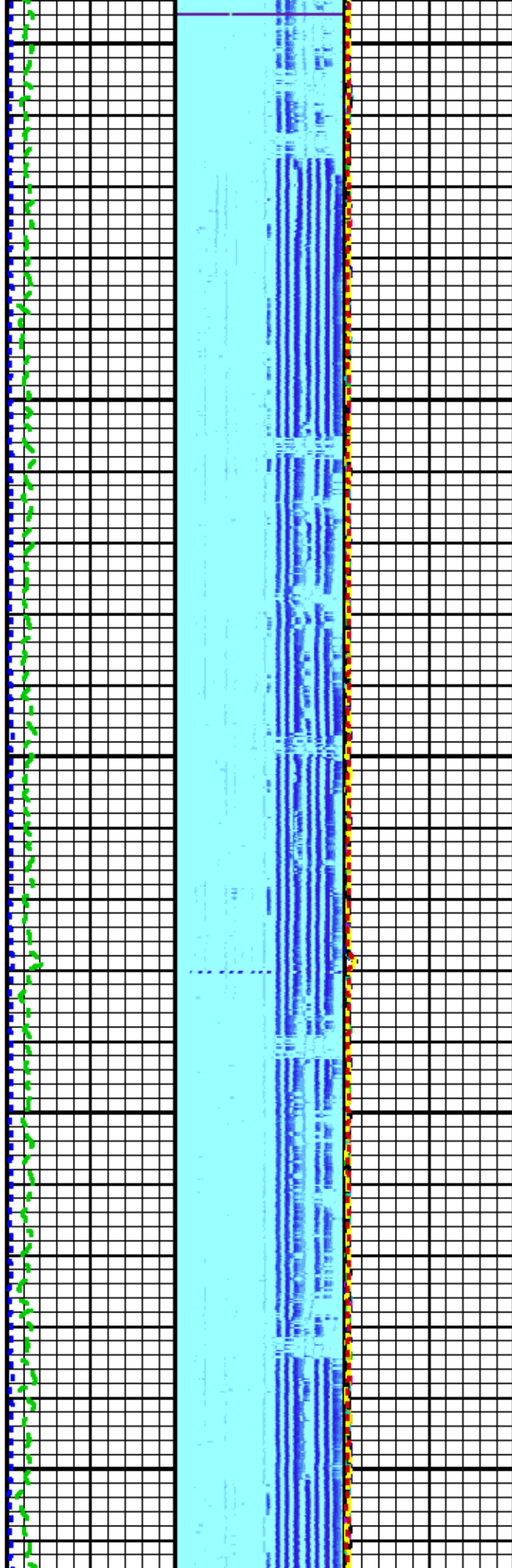
Data File 1 : F1 : rla6885c\data\824381\main_rdr01.xif
 Created On : Mar 21 15:48:34 2013
 Company : FIRST LIBERTY ENERGY INC
 Well : BASIN #1
 Field : DEL NORTE
 File Interval : -25 - 4783.5 Feet
 Oct : m012g





0 100 (mV)
AR8 [ar8]
0 100 (mV)

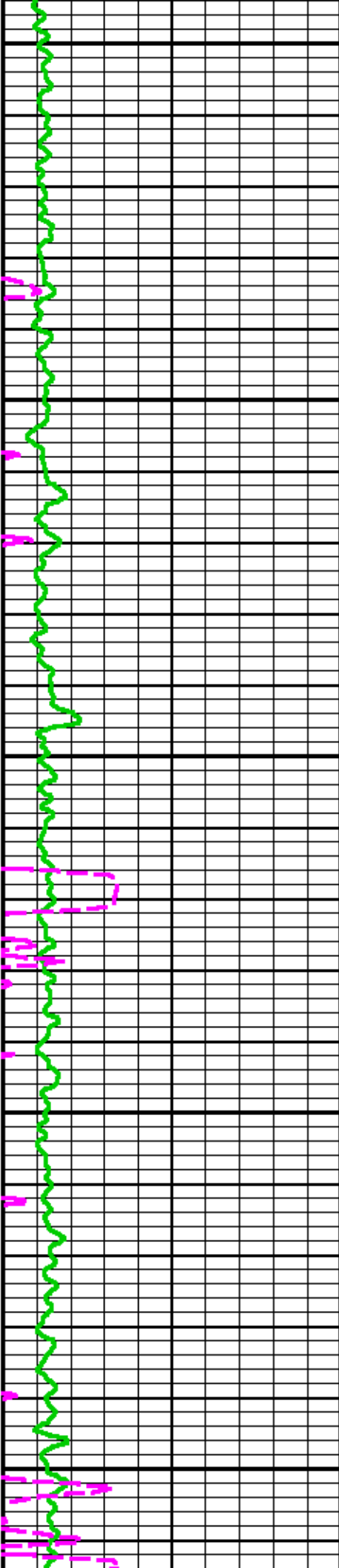


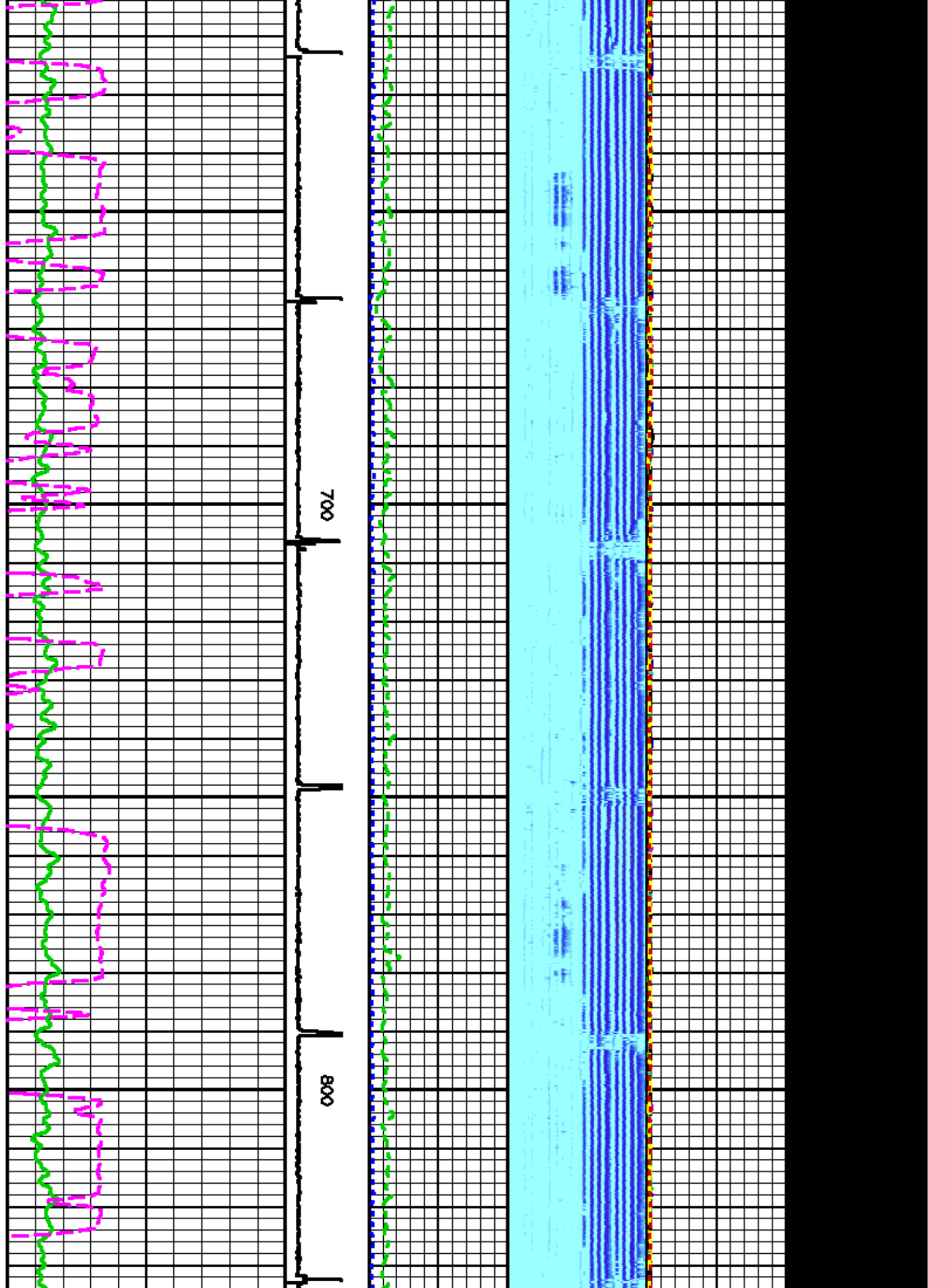


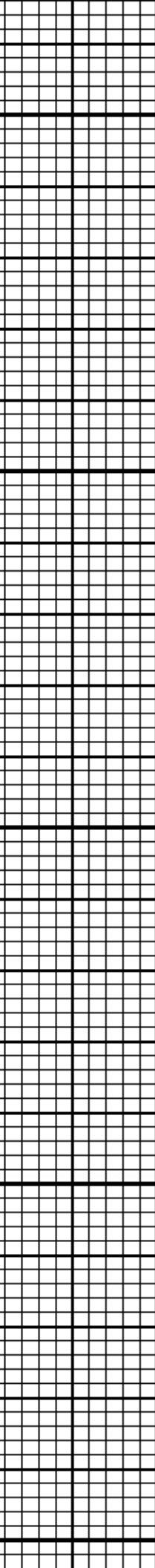
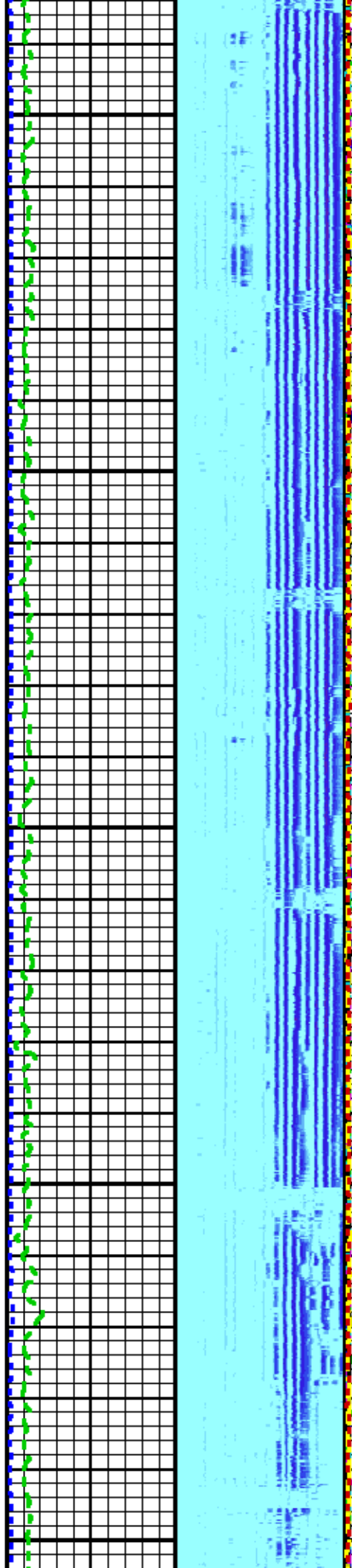
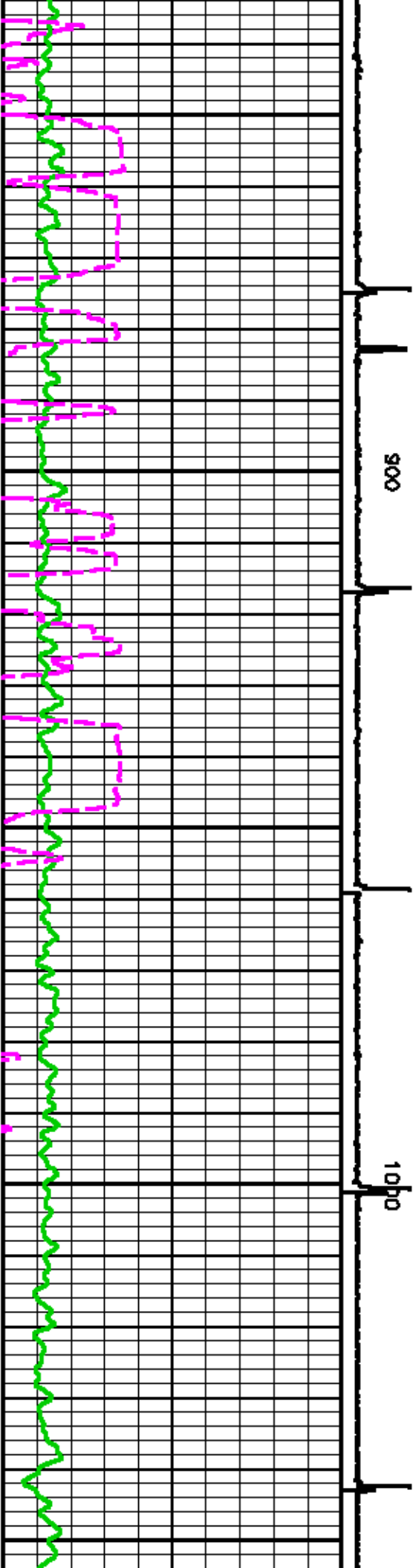
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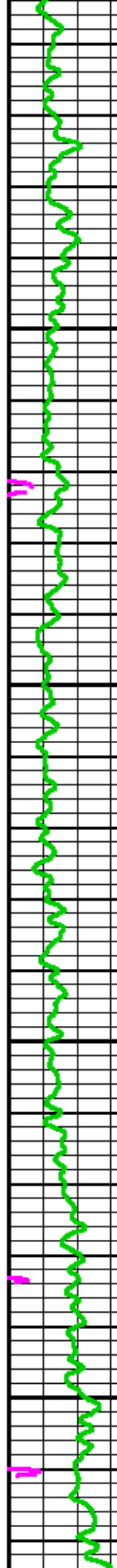
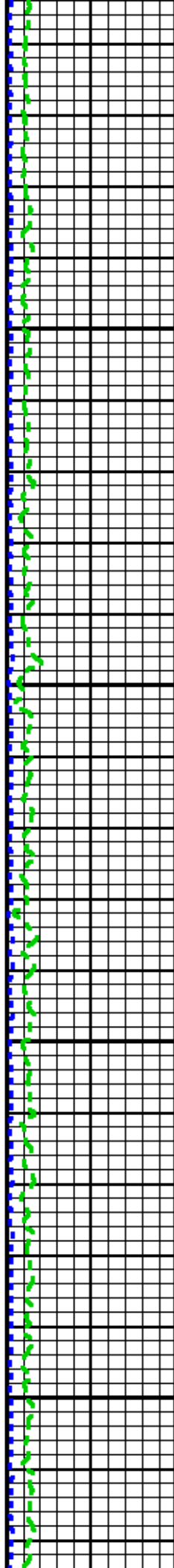
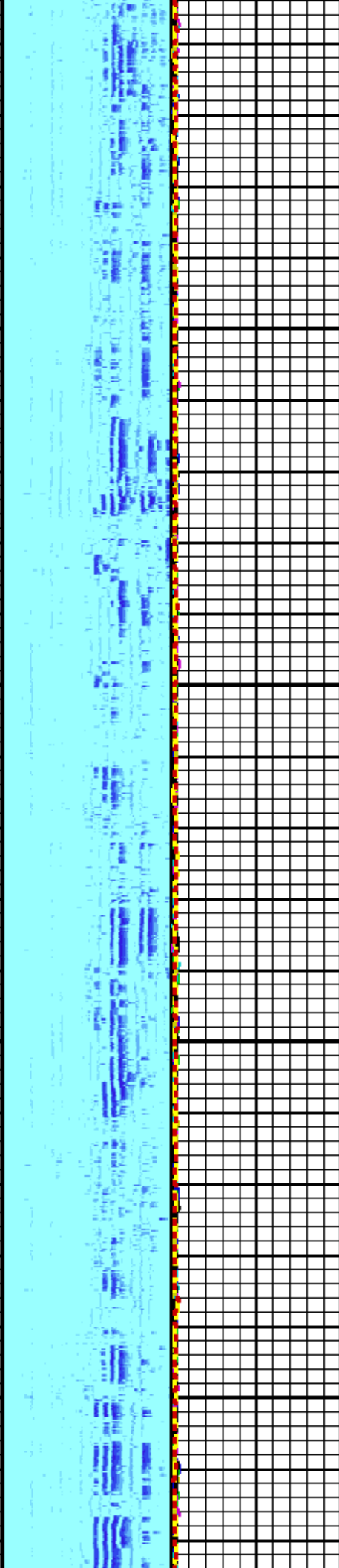
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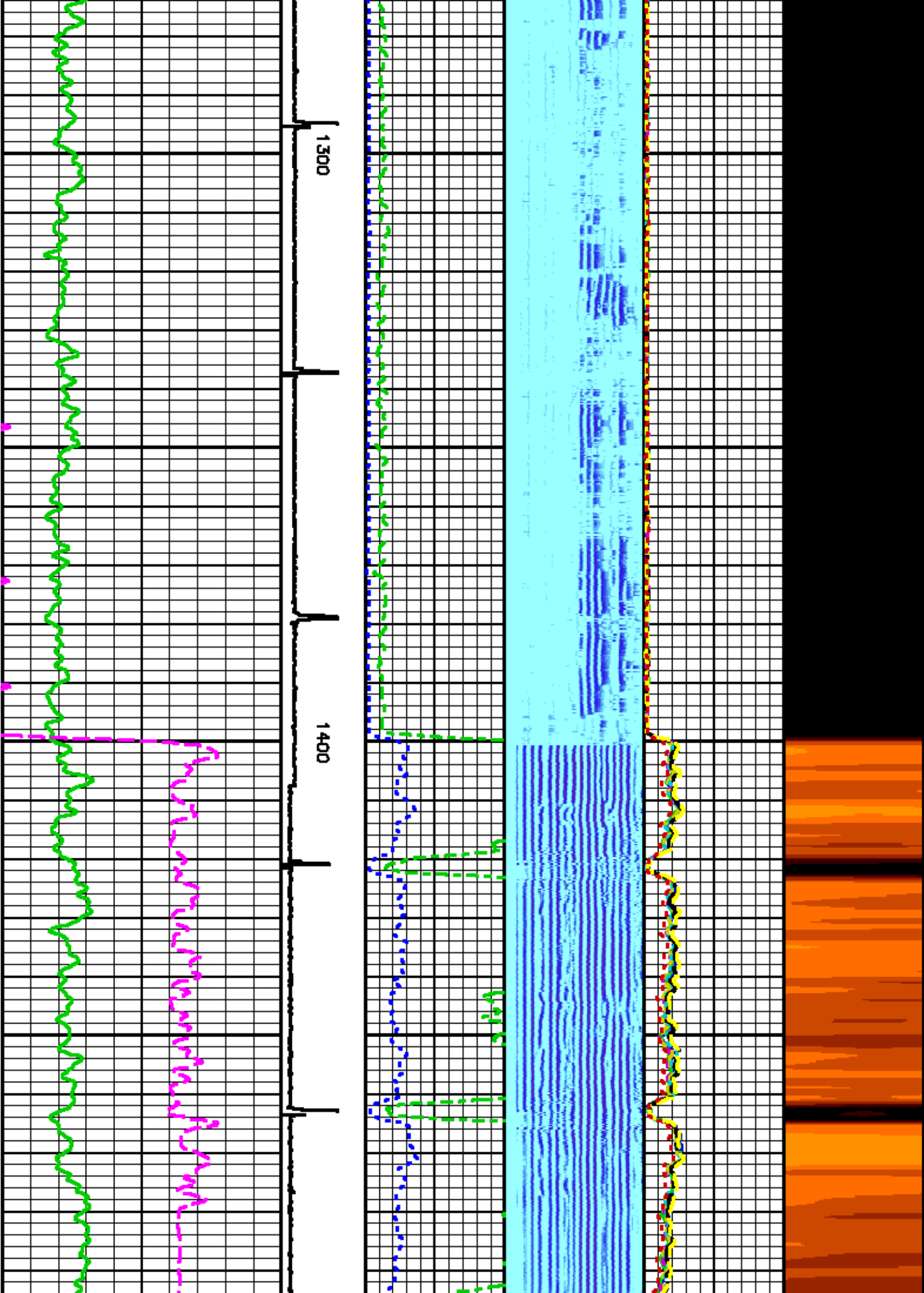
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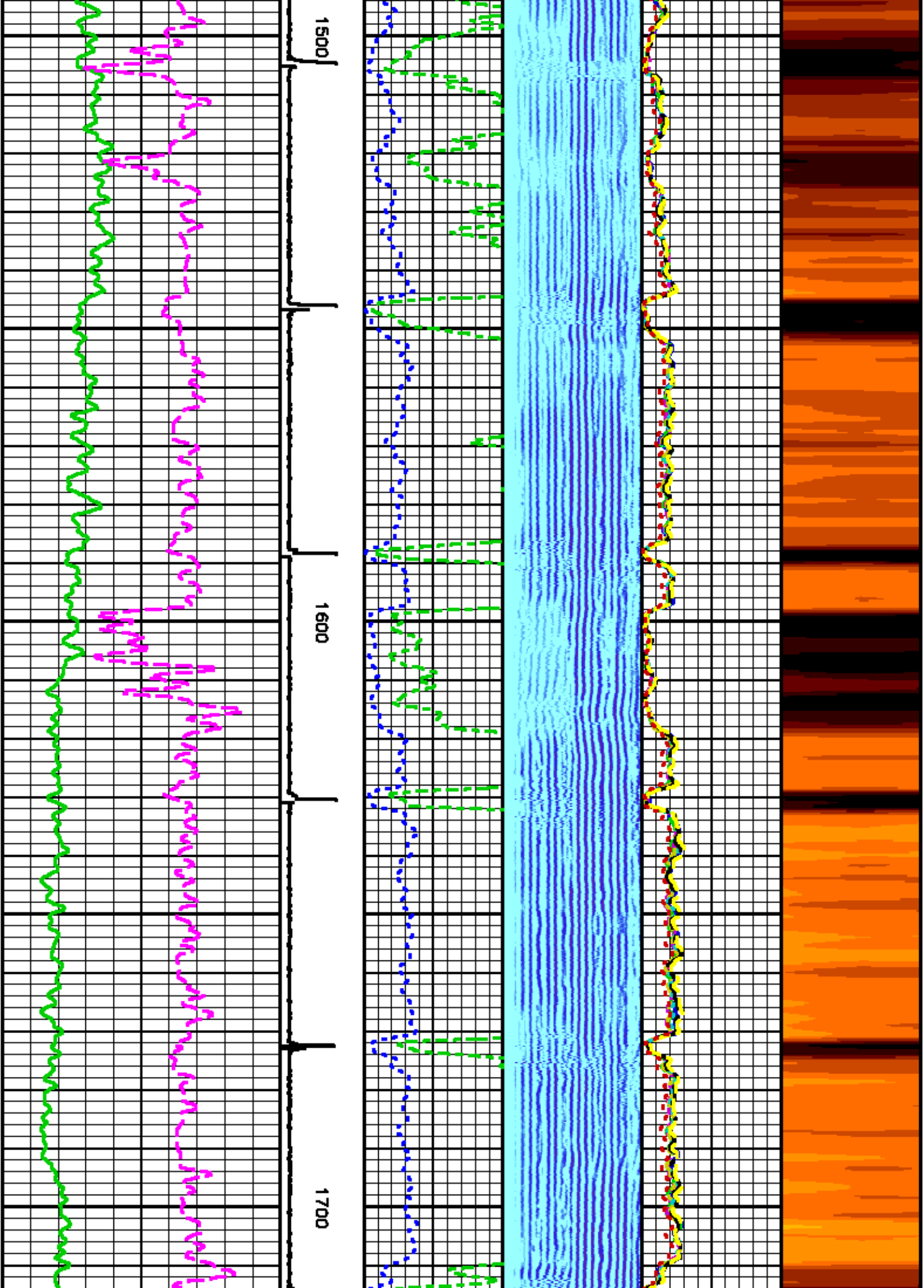


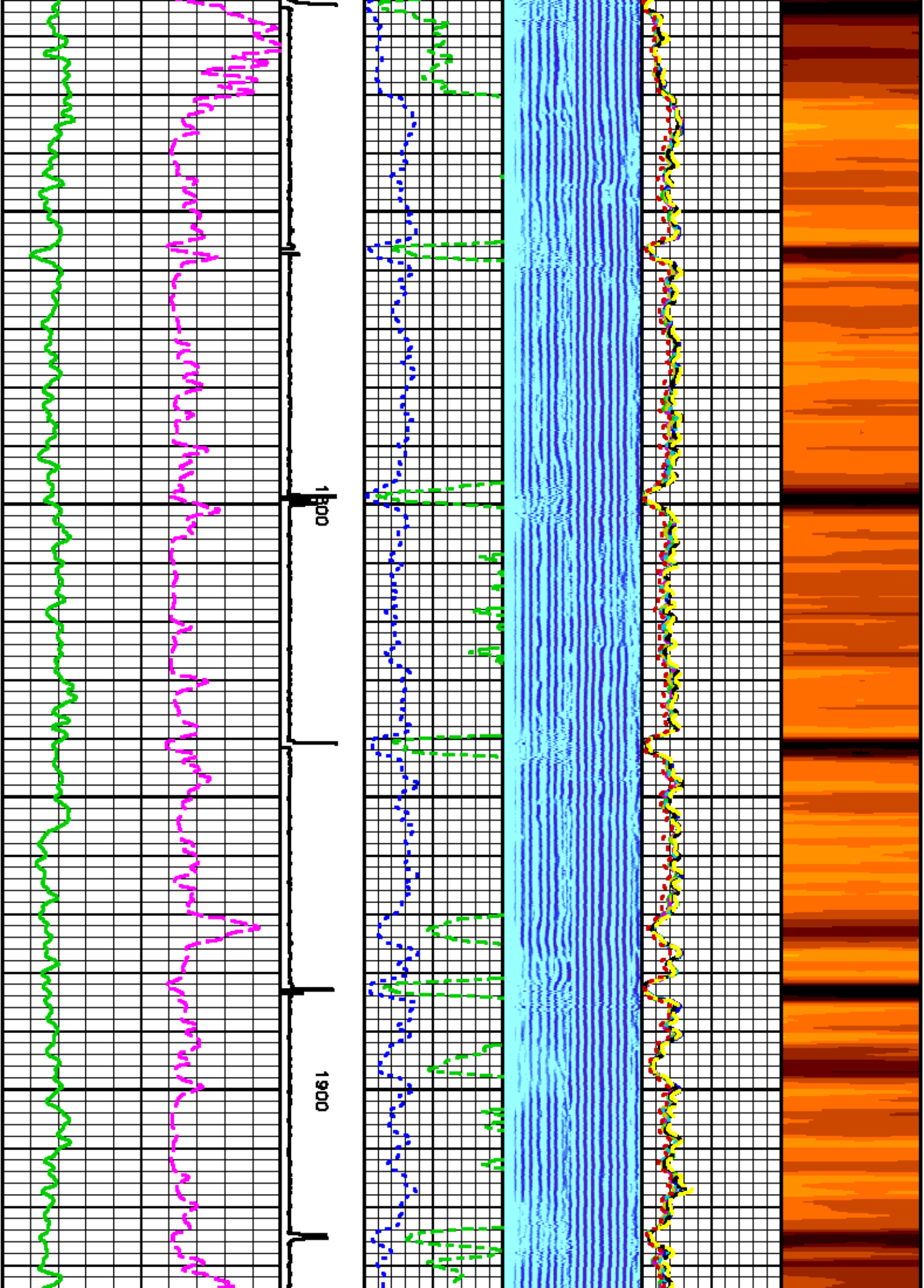


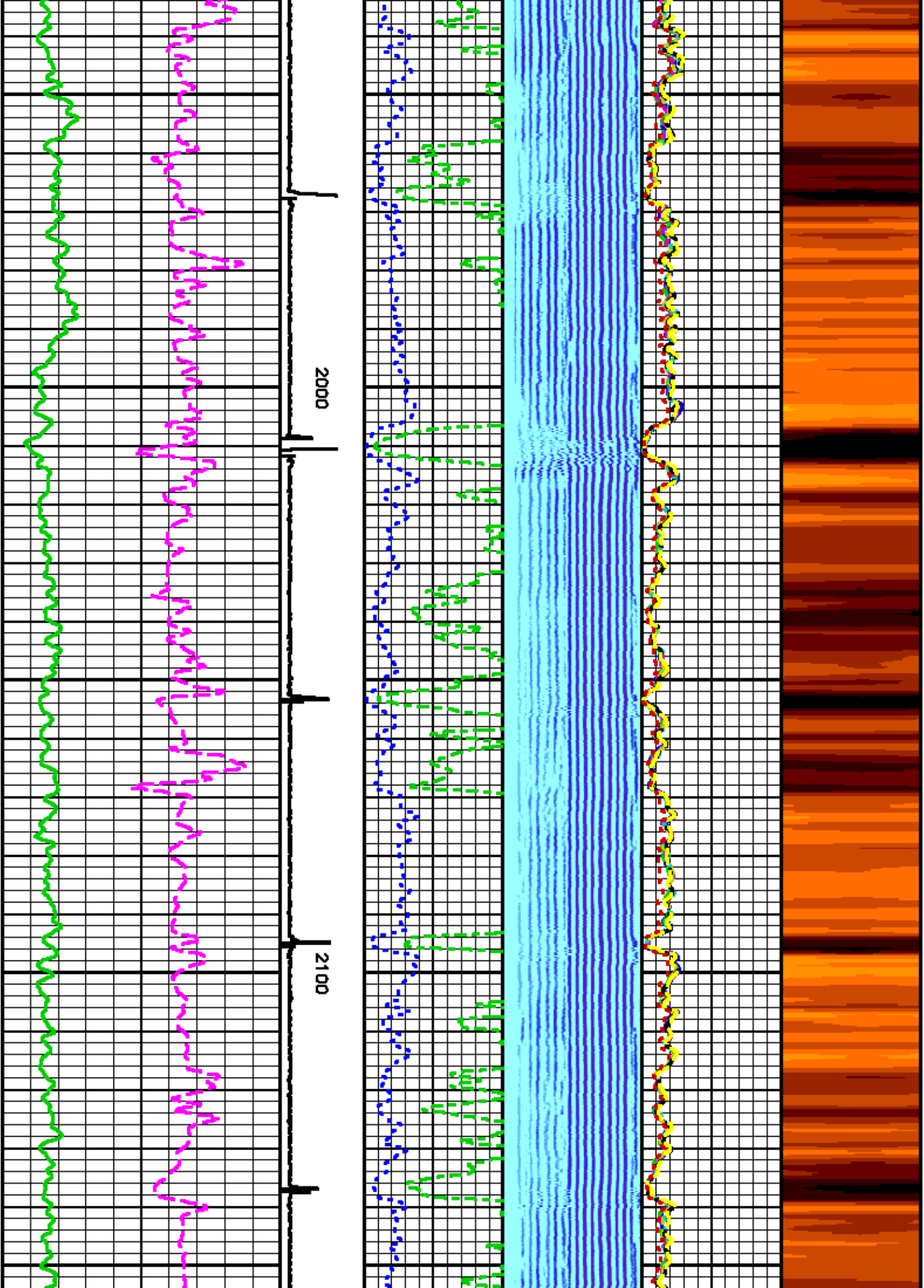


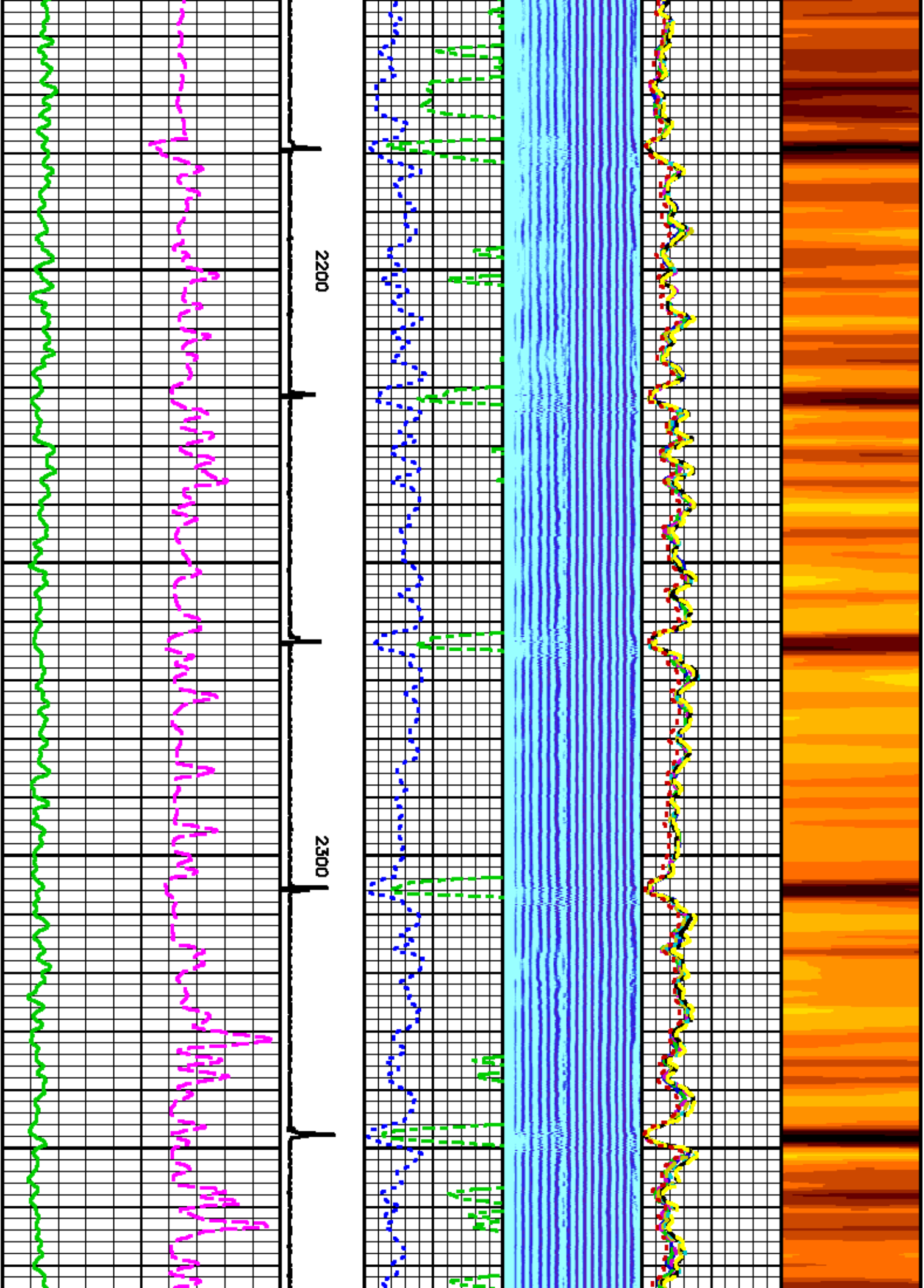


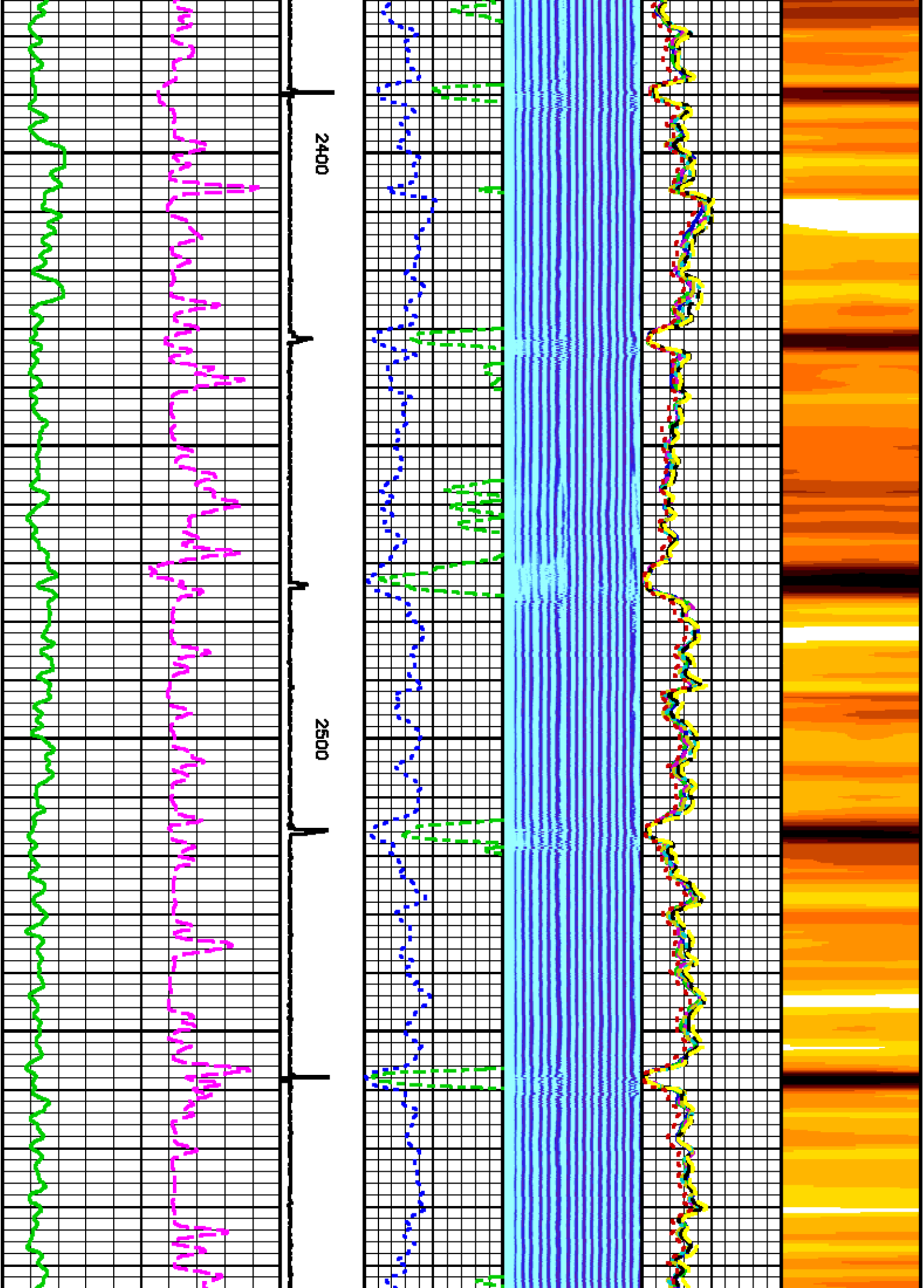


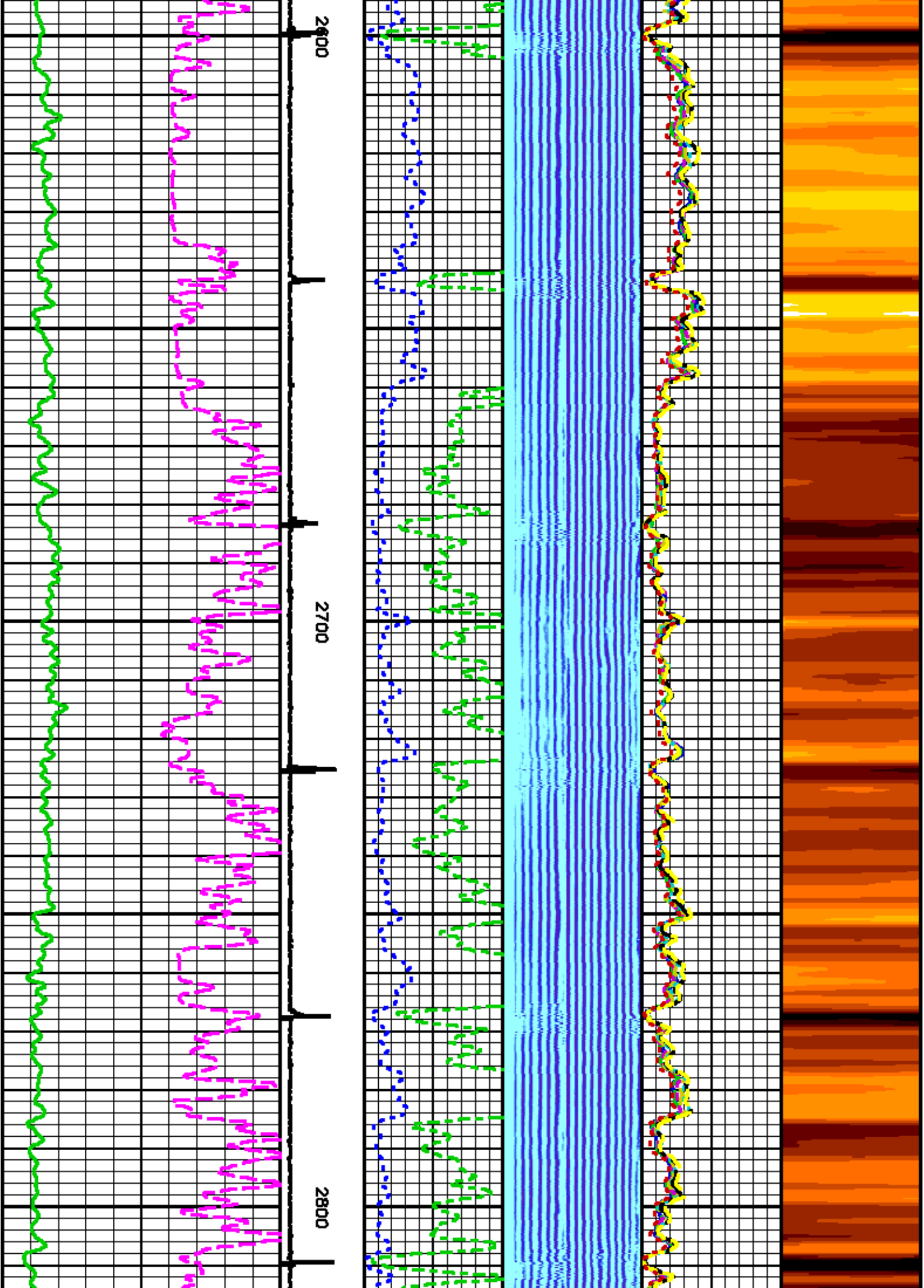


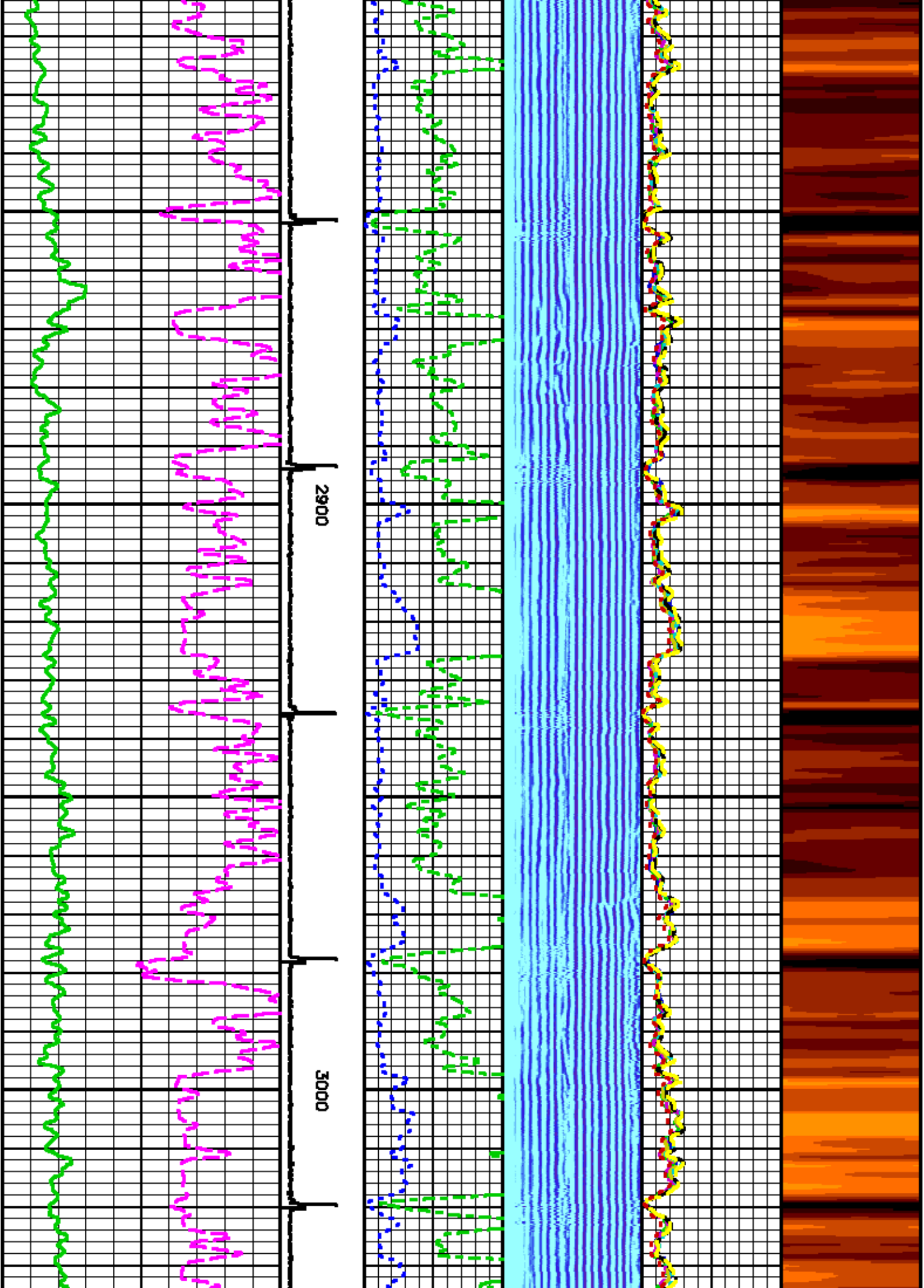


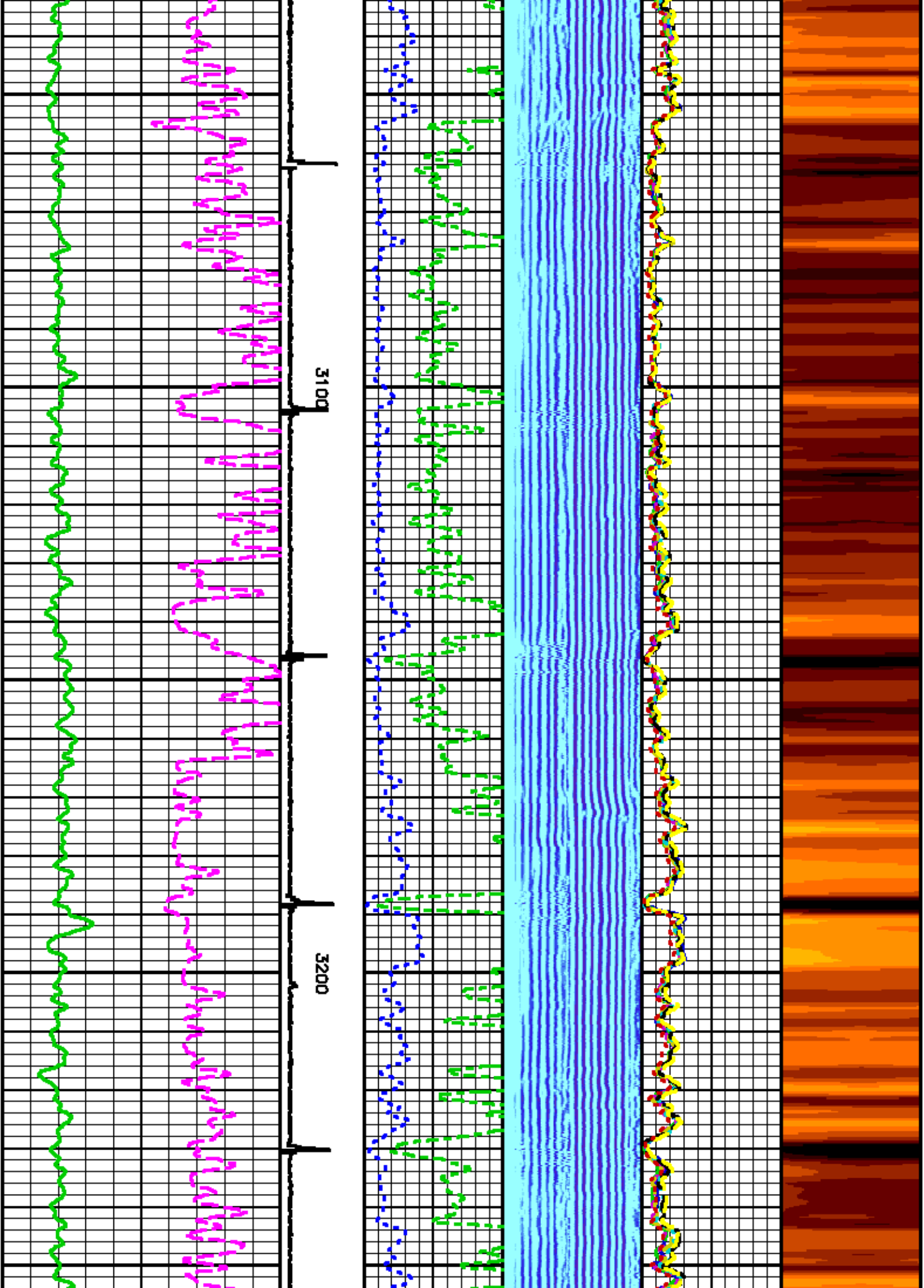


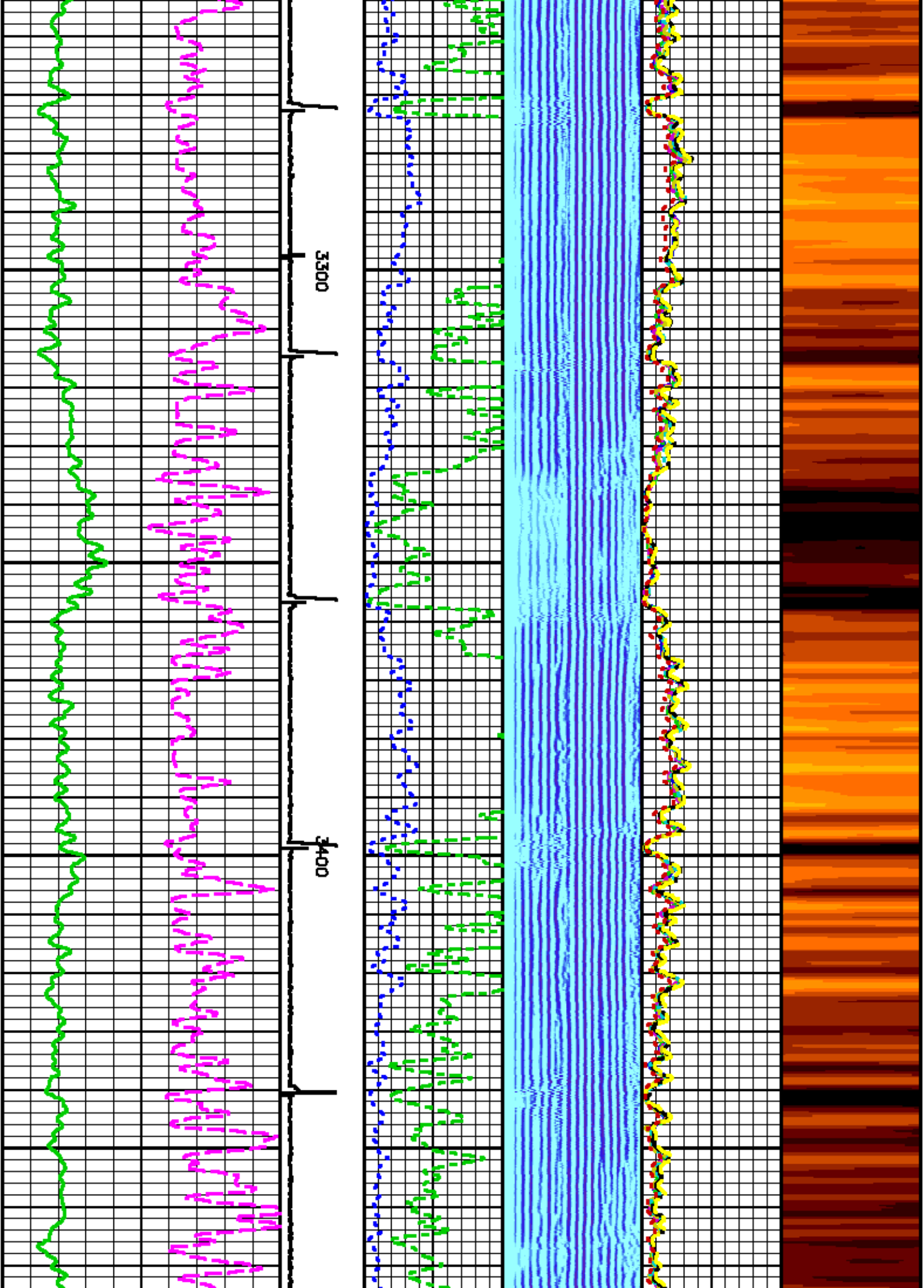


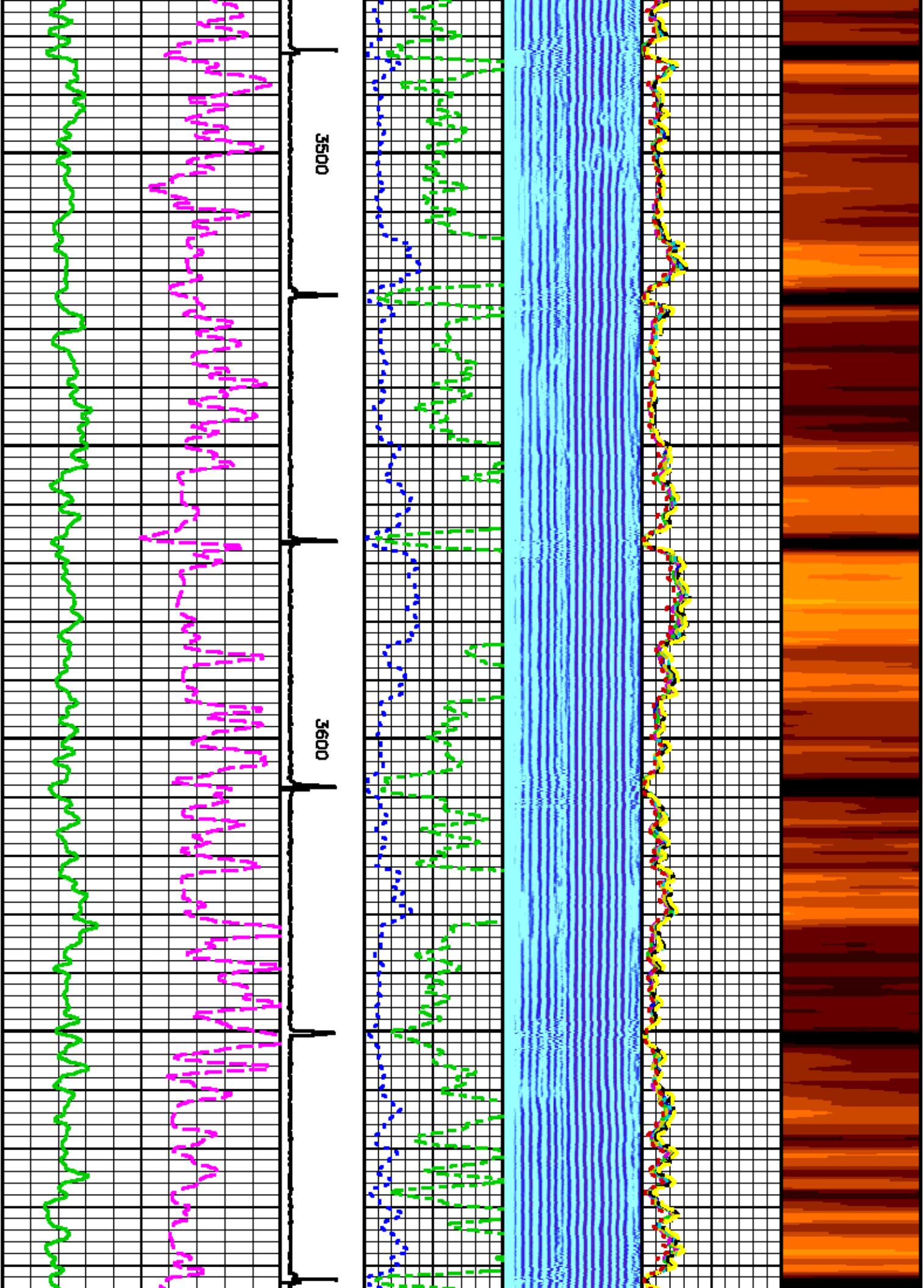


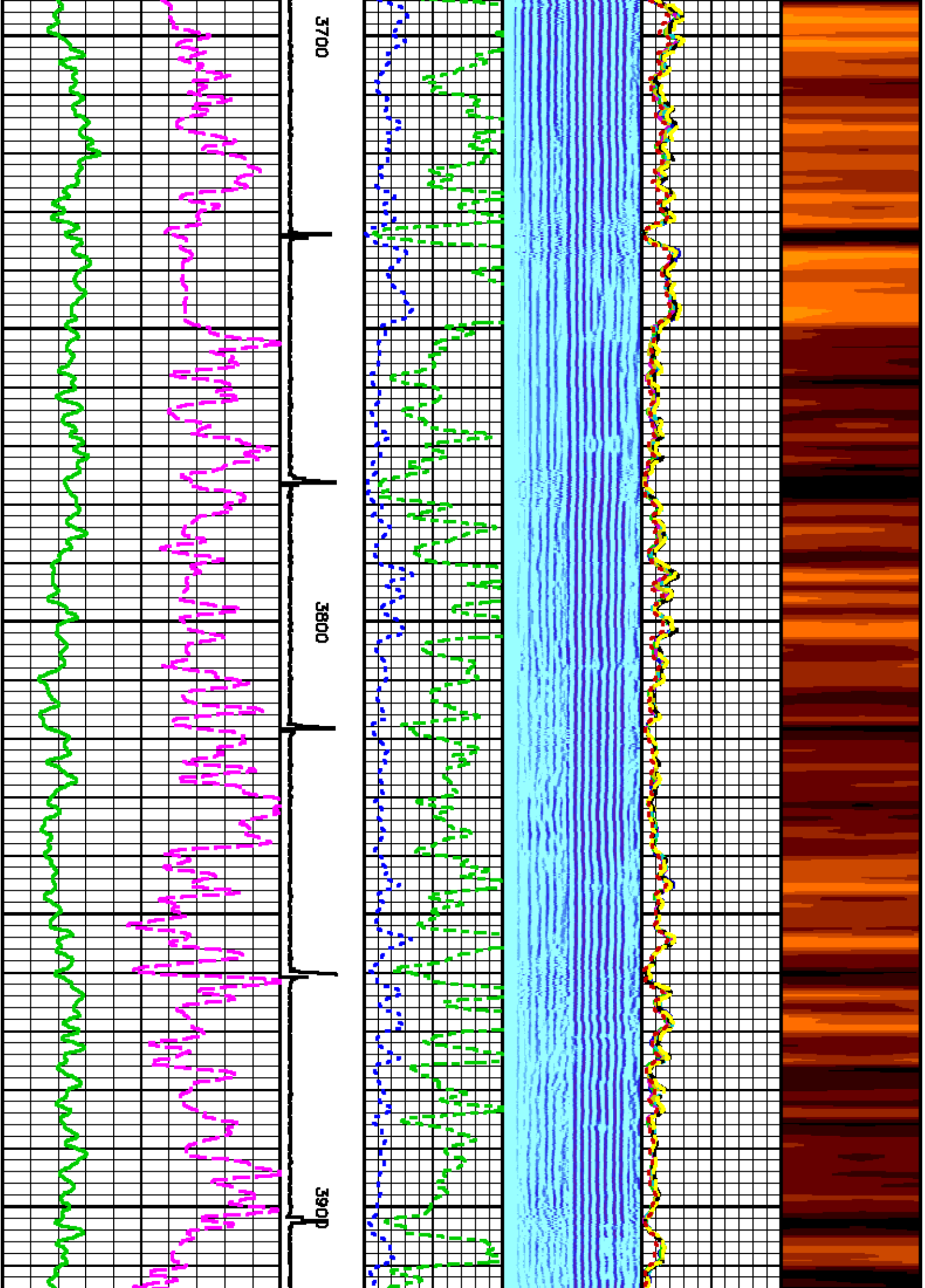


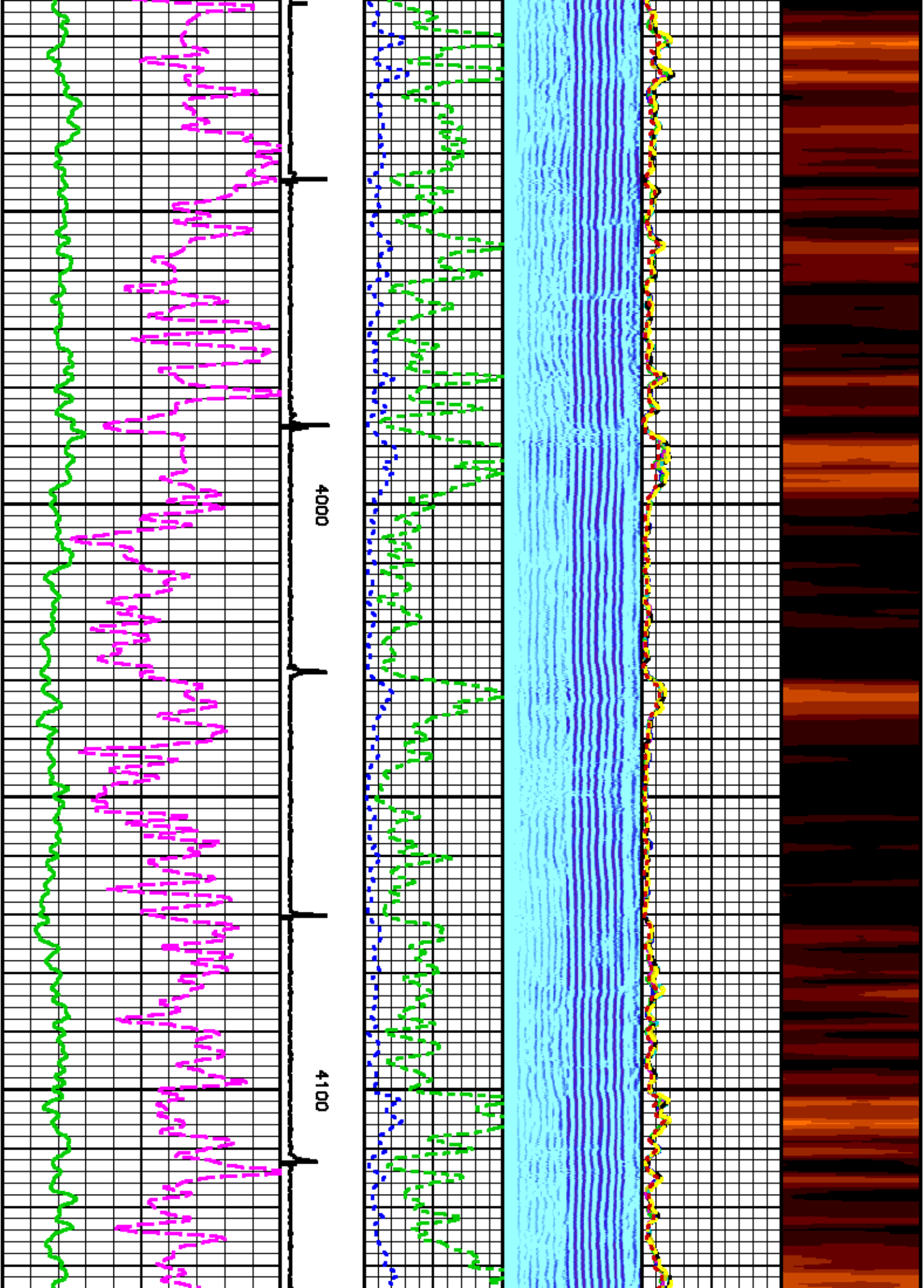


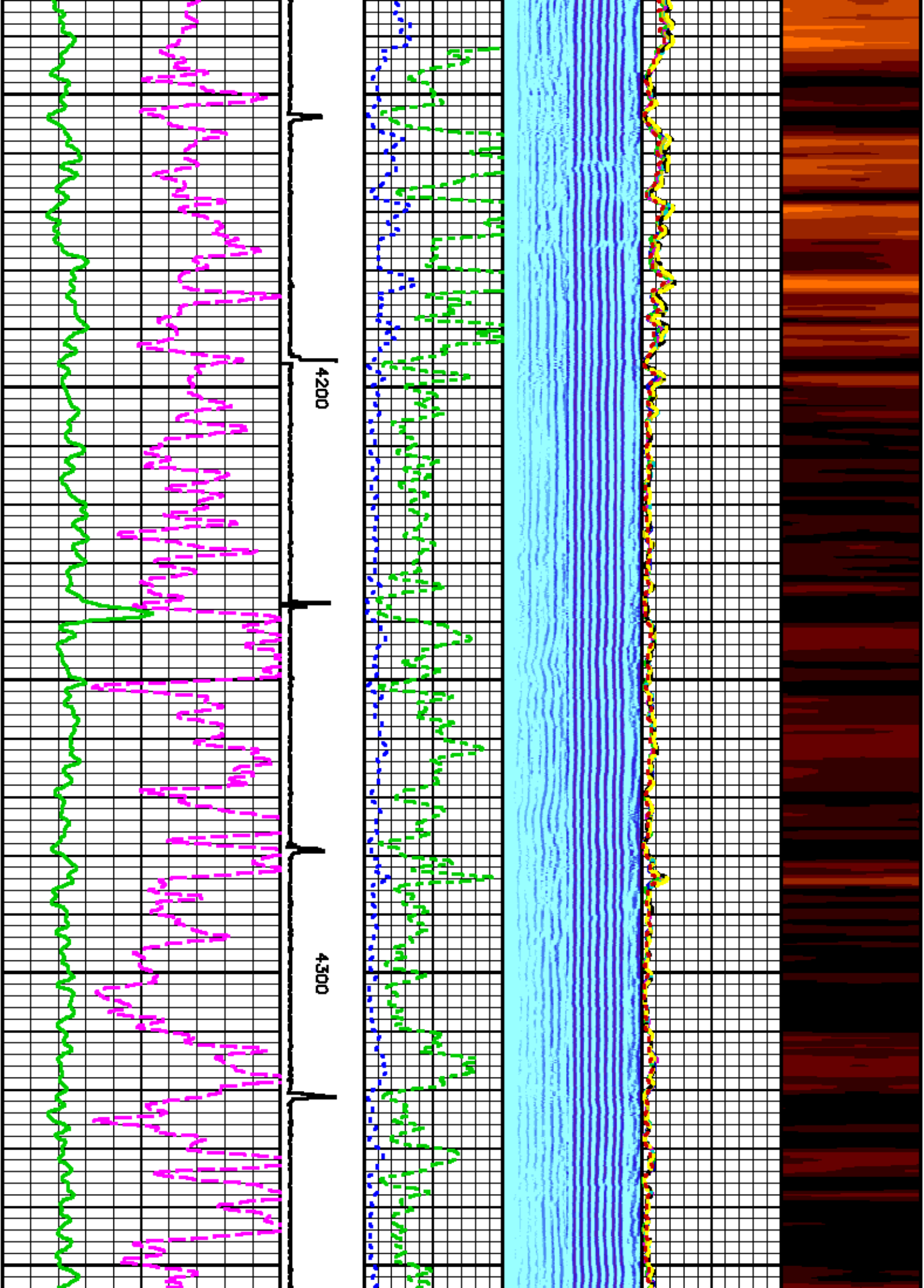


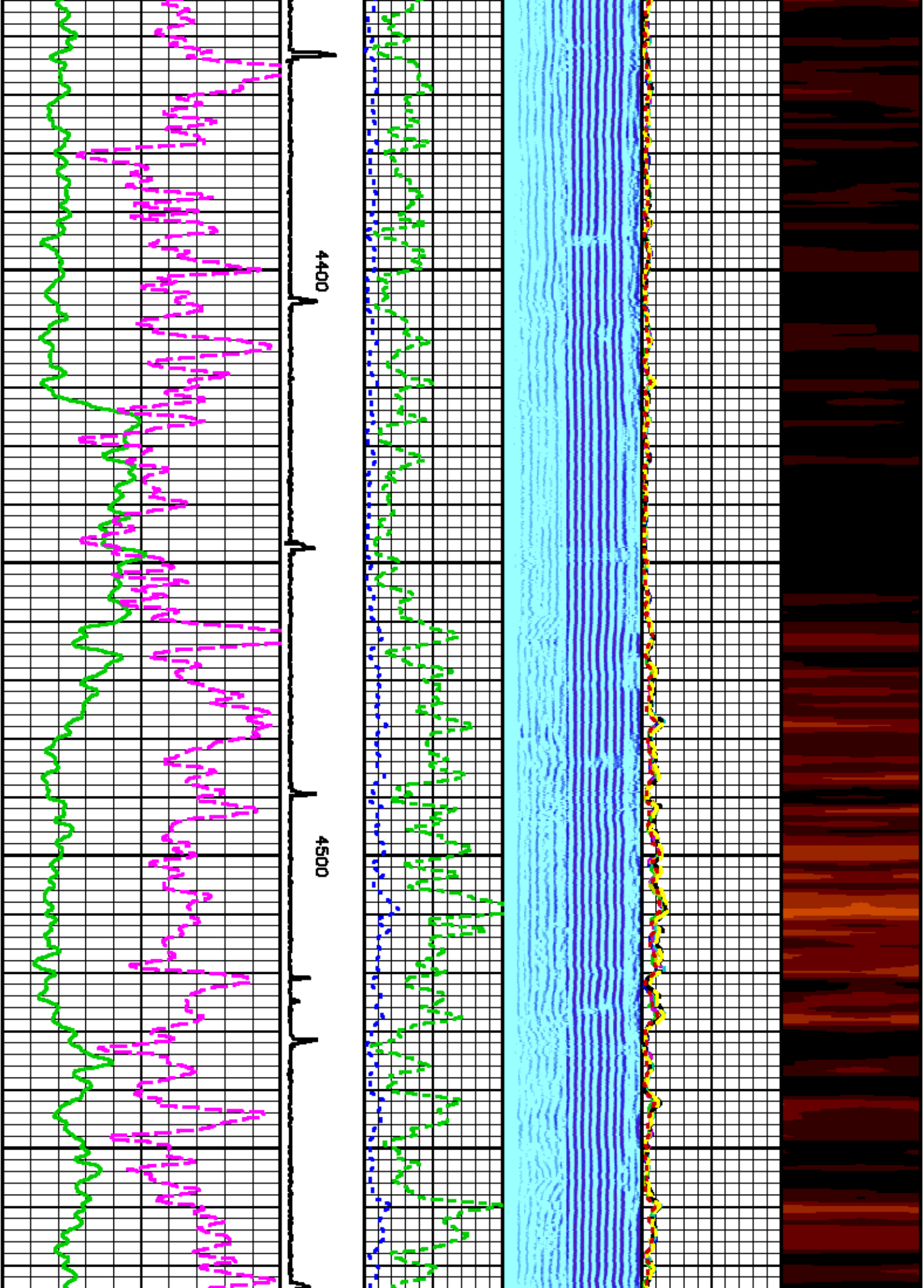


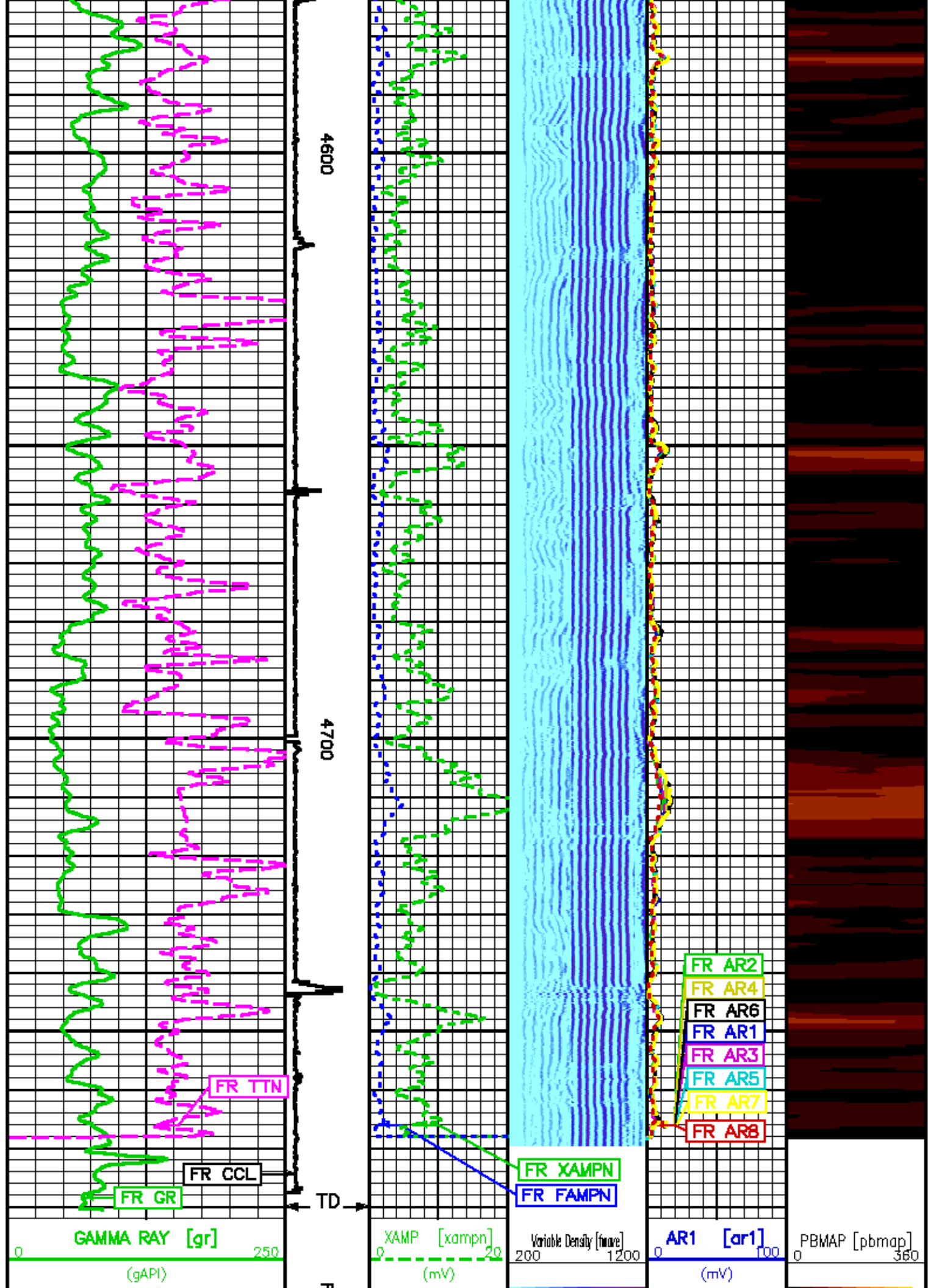


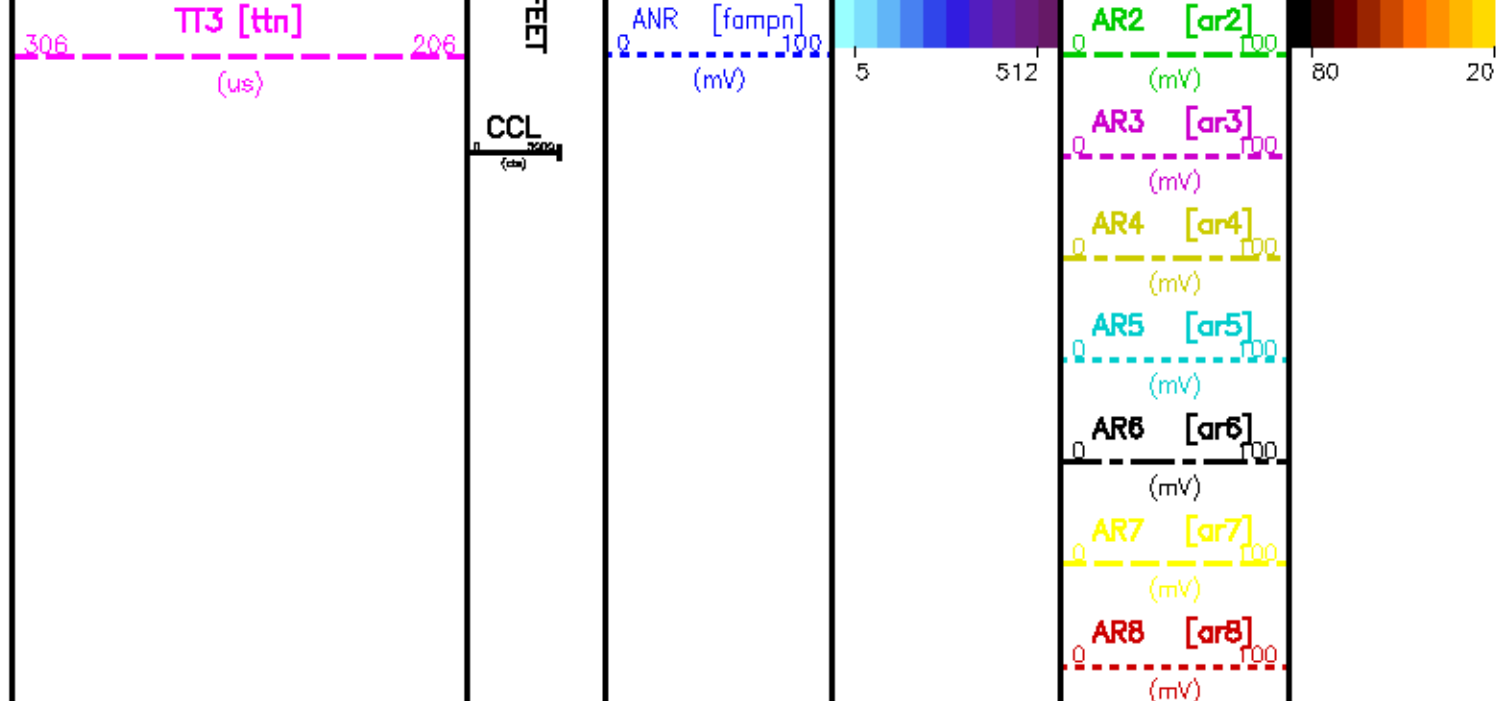












REPEAT LOG

ECLIPS 6.11 Aug 06, 2010
Updates: 1,2 Patches: 2

Thu Mar 21 16:24:53 2013

Perplf /main/62

Cplot

Pdf_Cpp /main/16

Fileview 5.61

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/624381/repeat_rdr02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4590.500 ft BOTTOM DEPTH: 4790.000 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
AMPLITUDE	FILTER ()	medium (1)		"	"
TRAVEL TIME	FILTER ()	medium (1)		"	"

RAL CCL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
CCL FLOOR	CCL FLOOR	0		TOP	BOTTOM

ANALOG RAL PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
AMPLITUDE WINDOW (NEAR)	AMP WINDOW START (fgp1*)	213	us	TOP	BOTTOM
	AMP WINDOW START (fgp2*)	213	us	"	"
	AMP WINDOW START (fgp3*)	213	us	"	"
	AMP WINDOW START (fgp4*)	213	us	"	"
	AMP WINDOW START (fgp5*)	213	us	"	"
	AMP WINDOW START (fgp6*)	213	us	"	"
	AMP WINDOW START (fgp7*)	213	us	"	"
	AMP WINDOW START (fgp8*)	213	us	"	"
	AMP WINDOW START (fgpn*)	213	us	"	"
	AMP WINDOW LENGTH	25	us	"	"
TRAVEL TIME WINDOW (NEAR)	TT WINDOW START (ttm*)	186	us	"	"

TRAPLINE STAGE (NEAR)	TT WINDOW START (ftin)	100	LN		
	TT WINDOW LENGTH	500	LN		
	FIRST BRK THRESHOLD (ftin*)	6	mV		
RAL CASING PARAMETERS	PPT NEAR	226.084	LN		
RAL TOOL DELAY	TOOL DELAY (str1*)	-66	LN		
	TOOL DELAY (str2*)	-66	LN		
	TOOL DELAY (str3*)	-66	LN		
	TOOL DELAY (str4*)	-66	LN		
	TOOL DELAY (str5*)	-66	LN		
	TOOL DELAY (str6*)	-66	LN		
	TOOL DELAY (str7*)	-66	LN		
	TOOL DELAY (str8*)	-66	LN		
	TOOL DELAY (strn*)	-66	LN		
BASILINE NOISE (NEAR)	NOISE WINDOW START	151	LN		
	NOISE WINDOW LENGTH	25	LN		

PERCENT BOND CEMENT MAP

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
RAL FREE PIPE AMPLITUDE	FREE AMP REC 1	80	mV	TCP	BOTTOM
	FREE AMP REC 2	80	mV		
	FREE AMP REC 3	80	mV		
	FREE AMP REC 4	80	mV		
	FREE AMP REC 5	80	mV		
	FREE AMP REC 6	80	mV		
	FREE AMP REC 7	80	mV		
	FREE AMP REC 8	80	mV		
RAL FULL BOND AMPLITUDE	FULL BOND AMP REC 1	2	mV		
	FULL BOND AMP REC 2	2	mV		
	FULL BOND AMP REC 3	2	mV		
	FULL BOND AMP REC 4	2	mV		
	FULL BOND AMP REC 5	2	mV		
	FULL BOND AMP REC 6	2	mV		
	FULL BOND AMP REC 7	2	mV		
	FULL BOND AMP REC 8	2	mV		

CURVE DESCRIPTION REPORT

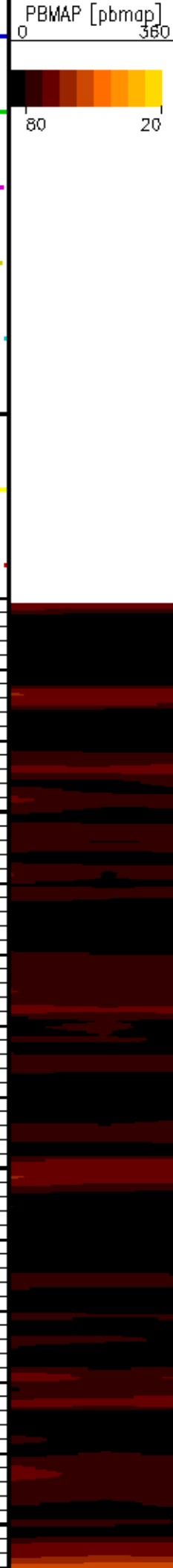
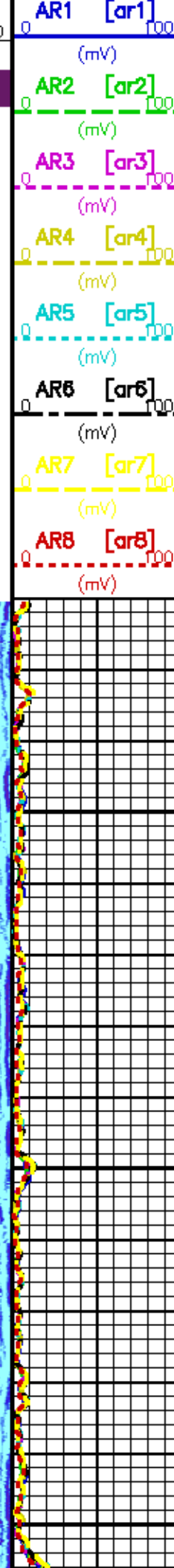
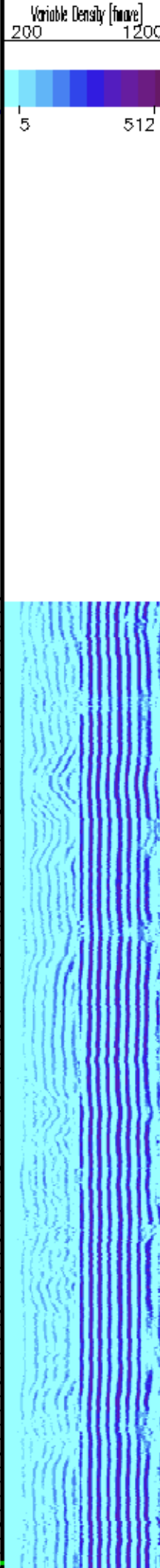
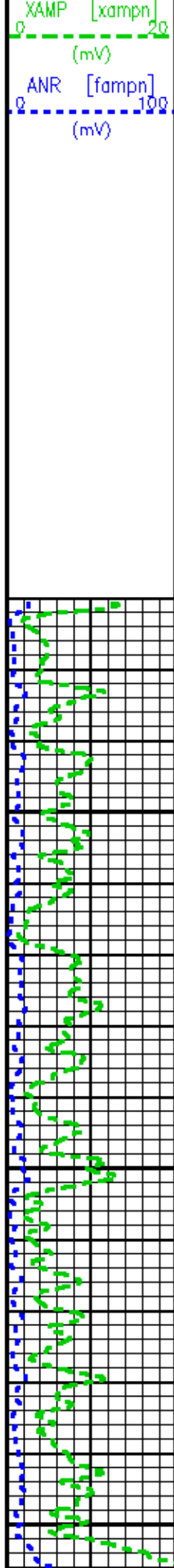
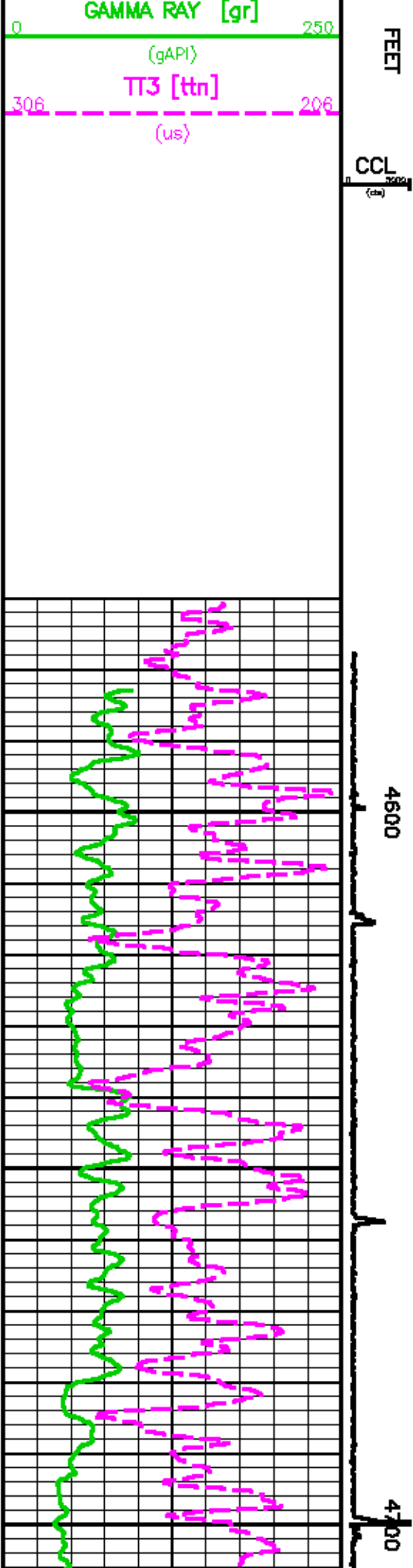
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:AR1	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R1
F1:AR2	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R2
F1:AR3	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R3
F1:AR4	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R4
F1:AR5	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R5
F1:AR6	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R6
F1:AR7	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R7
F1:AR8	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE T-R8
F1:CCL	Mar 21 15:57:34 2013	CASING COLLAR LOCATOR
F1:FAMPN	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE NEAR RECEIVER
F1:FNAVE	Mar 21 15:57:34 2013	FAR WAVE FORM
F1:GR	Mar 21 15:57:34 2013	GAMMA RAY
F1:PBMAP	Mar 21 15:57:34 2013	PERCENT BOND CEMENT MAP
F1:TTN	Mar 21 15:57:34 2013	TRAVELTIME FROM NEAR TRANSMITTER-RECEIVER
F1:XAMPN	Mar 21 15:57:34 2013	FIXED GATE AMPLITUDE NEAR RECEIVER TIMES FIVE

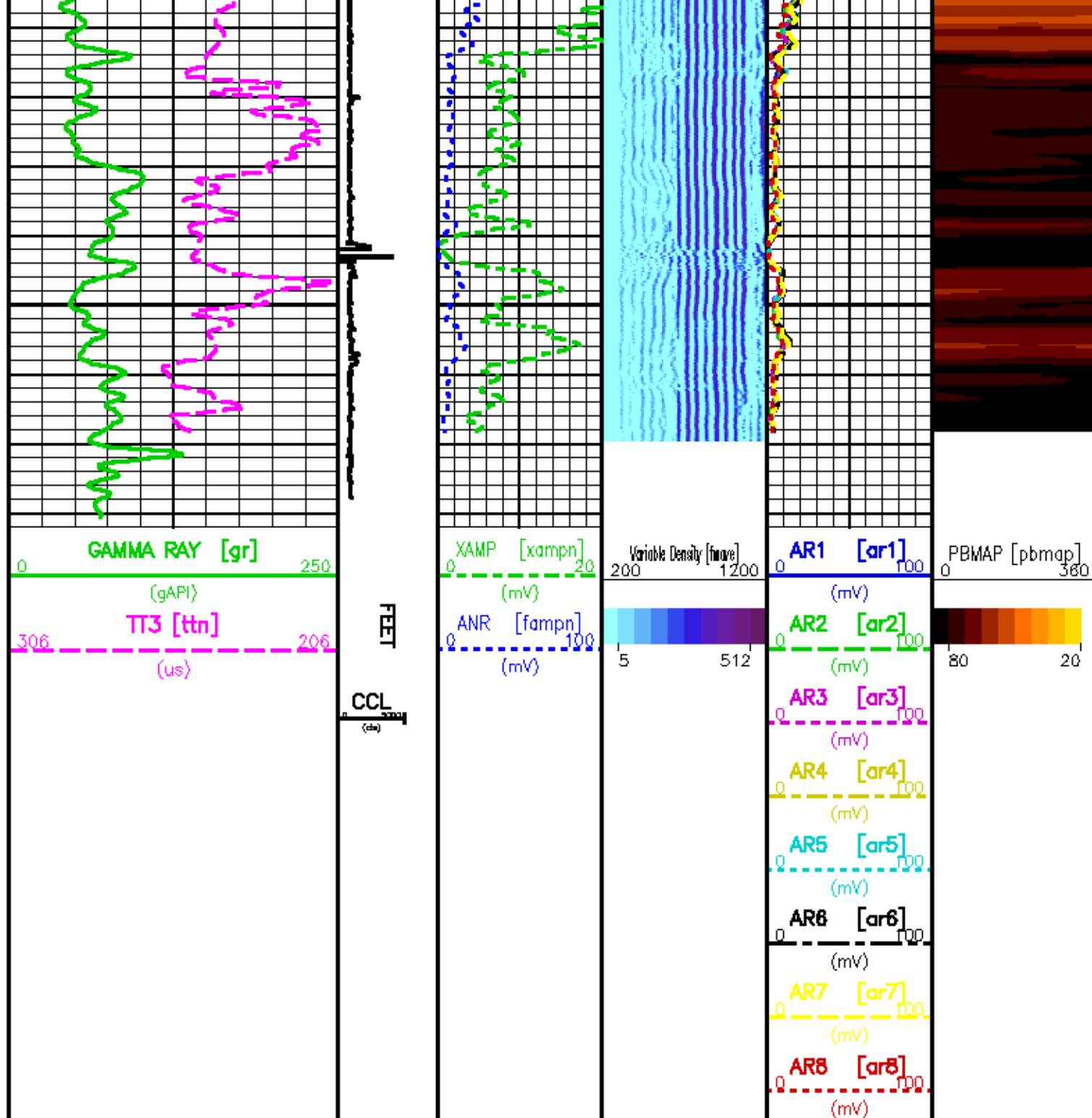
CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
AR1	14.00	AR5	14.00	CCL	5.75	XAMPN	14.00
AR2	14.00	AR6	14.00	FAMPN	14.00		
AR3	14.00	AR7	14.00	GR	1.75		
AR4	14.00	AR8	14.00	TTN	14.00		

Presentation : rca8885/dot1a/824381/rcl_defvariable_repeat.pdf [3"/100' Scale]
Plot Interval : 4570.5 - 4782.25 Feet

Data File 1 : F1 : rca8885/dot1a/824381/repeat_rdr02.xtf
Created On : Mar 21 15:57:34 2013
Company : FIRST LIBERTY ENERGY INC
Well : BASIN #1
Field : DEL NORTE
File Interval : 4569.5 - 4783.5 Feet
Out : m012g





CALIBRATION / VERIFICATION SUMMARY

Source File: /cd11a/024381/m012a.t01

RAL PRIMARY CALIBRATION SUMMARY

TOOL #: 1426XA 10154957

DATE/TIME PERFORMED: Wed Mar 20 14:49:49 2013

UNIT #: 3855TC HL6685

	NEAR (mV)	RADIAL (mV)	FAR (mV)
TARGETS	100.00	100.00	150.00

	NEAR	R1	R2	R3	R4	R5	R6	R7	R8	FAR	CAL
ZERO (mV)	-0.02	0.01	-0.04	-0.00	0.00	-0.01	-0.02	-0.00	0.00	-8.80	-0.00
AMP FLUID (mV)	64	67	67	68	69	70	71	71	70	167	68
TT (us)	214	219	218	218	217	217	217	217	219	312	218
M FACTOR	1.56	1.50	1.48	1.47	1.45	1.43	1.42	1.41	1.43	0.86	1.52

RAL BEFORE LOG VERIFICATION SUMMARY

TOOL #: 1426XA 10154957 DATE/TIME PERFORMED: Thu Mar 21 15:44:49 2013 DAYS SINCE CAL: 1
 UNIT #: 3865TC HL6655 CABLE #: 7H472K HL6655

	NEAR (mV)	R1 (mV)	R2 (mV)	R3 (mV)	R4 (mV)	R5 (mV)	R6 (mV)	R7 (mV)	R8 (mV)	FAR (mV)	CAL (mV)
ZERO	-0.03	-0.01	0.03	-0.02	-0.05	0.01	-0.01	0.08	-0.06	-0.48	0.00
AMP AIR	1.11	1.41	1.08	1.33	1.09	1.07	0.74	1.18	0.87	2.20	104.47

	SHOP M FACTOR	SHOP A FACTOR	WIRELINE FACTOR
	1.52	0.00	0.95

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 1355XA 10580209 DATE/TIME PERFORMED: Wed Mar 20 14:56:53 2013
 UNIT #: 3865TC HL6655 CALB JIG #: 4702NK VBA-905

	BACKGROUND (cts)	CALBTR ON (cts)	GR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)	CALBTR (gAPI)
GR	143.24	584.89	421.6	0.439	62.85	247.85	185

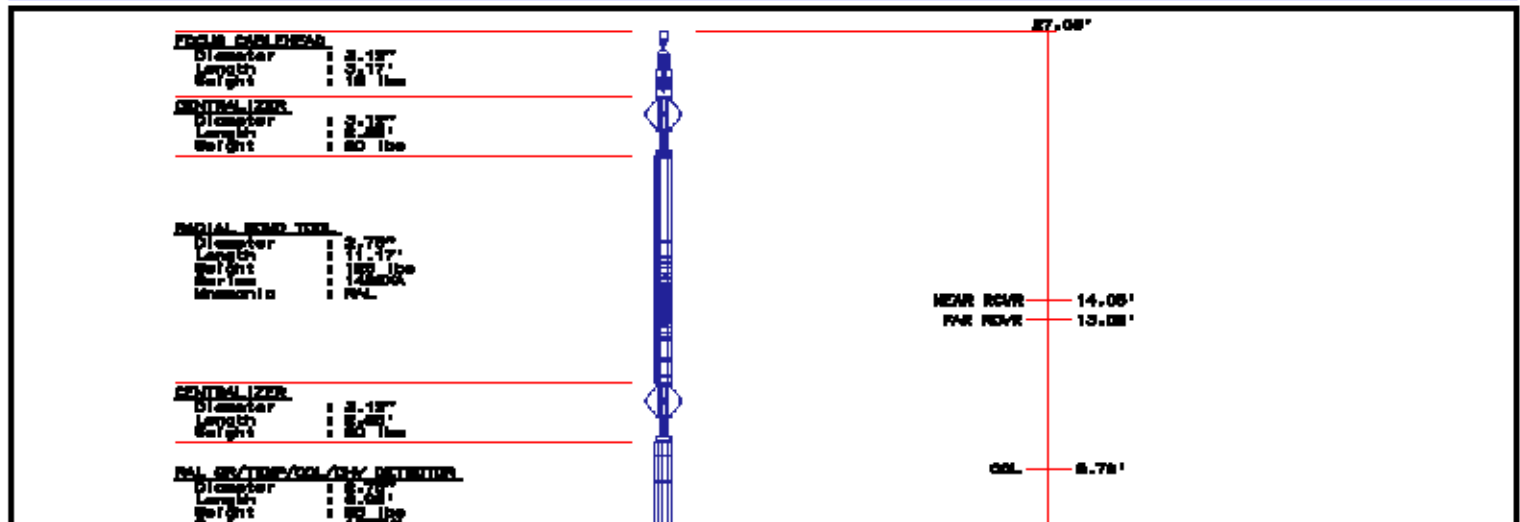
GR PRIMARY VERIFICATION SUMMARY

TOOL #: 1355XA 10580209 DATE/TIME PERFORMED: Wed Mar 20 15:00:29 2013
 UNIT #: 3865TC HL6655 VERI JIG #: 4702NK VBA-905

	BACKGROUND (cts)	CALBTR ON (cts)	MULT	BACKGROUND (gAPI)	CALBTR ON (gAPI)	DIFF. (gAPI)
GR	140.04	570.36	0.439	61.45	250.25	188.80

INSTRUMENT CONFIGURATION


Source File: /ch11a/924381/m012a-44a



SERIES 1 125000
MAGNETIC 1 NCL

WK 1.87'
TRMP 8.38'

TOTAL LENGTH: 27.48'
TOTAL AREA: 0.2121
TOTAL PERIMETER: 0.2121

	COMPANY	FIRST LIBERTY ENERGY INC		FILE NO:	US624381
	WELL	BASIN #1		API NO:	05105060190000
	FIELD	DEL NORTE			
	COUNTY	RIO GRANDE	STATE	COLORADO	
LOCATION:		ELEVATIONS:		D&W #1	
NESE S9; T40N; R5E		KB 8193.5 FT			
1900' FSL, 880 FEL		DF			
LAT: 37.728122 LONG: -108.425207		GL 8178 FT			
SEC 9 TWP 40N RGE 5E		DATE		21-MAR-2013	