



FILE NO: CH108535	COMPANY WELL FIELD COUNTY	TERRA ENERGY PARTNERS LLC FEDERAL GM 432-9 GRAND VALLEY GARFIELD	STATE CO
API NO: 05045225350000			

Ver. 4.06 9 7S 96W MV 16-9 PAD H&P 318 RIG	LOCATION: SHL: 650' FNL & 574' FWL BHL: 1960' FNL & 1535' FEL SEC 9 TWP 7S RGE 96W	OTHER SERVICES CBL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KB KB	ELEVATION 24 FT ABOVE P.D.	ELEVATIONS: KB 6110 FT DF GL 6086 FT
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DATE	28-Jul-2016		
RUN	TRIP	1	1
SERVICE ORDER	US108535		
DEPTH DRILLER	7887 FT		
DEPTH LOGGER	7810 FT		
BOTTOM LOGGED INTERVAL	7808 FT		
TOP LOGGED INTERVAL	4545 FT		
TIME STARTED	10:00		
TIME FINISHED	14:30		
OPERATOR RIG TIME	4.5 HOURS		
TYPE OF FLUID IN HOLE	WATER		
FLUID DENSITY	NA		
FLUID SALINITY	NA		
FLUID LEVEL	47 FT		
LOGGED CEMENT TOP	NA		
WELLHEAD PRESSURE	0 PSI		
MAXIMUM HOLE DEVIATION	NA		
NOMINAL LOGGING SPEED	10 FMIN		
MAX. RECORDED TEMP.	203 DEGF		
REFERENCE LOG	BAKER HUGHES BOND LOG		
REFERENCE LOG DATE	28-Jul-2016		
EQUIP. NO.	HL-6685	GRAND JCT.	
RECORDED BY	T. NEWELL		
WITNESSED BY	D. WELSH		

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

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO

REMARKS
RUN 1 TRIP 1: ALL DATA ON THIS LOG HAS BEEN DEPTH MATCHED WITH THE GAMMA RAY CURVE ON THE BAKER HUGHES BOND LOG DATED 28-JUL-2016. DEPTH MATCHING MAY ALTER COLLAR LENGTHS. AMOUNT OF LINEAR SHIFT = +8 FEET LOGGED WITH 0PSI AT SURFACE LOGGED IN PNC-3D MODE BHT = 203 DEGF SJ = 4826' - 4848' THANKS FOR CHOOSING BAKER HUGHES WIRELINE CREW: SPENCER / COATE

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11745584	FREE
1	1	TEL / CCL	8248ED	11908681	FREE
1	1	GR	8262XA	10317216	FREE
1	1	RPM ELEC.	8281EA	10294755	FREE
1	1	RPM SOURCE	8283PA	10160383	FREE
1	1	RPM TMTR.	8281FA	10401926	FREE
1	1	TEMP	8255XA	Z166341	FREE

MAIN SECTION PNC-3D MODE

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

Updates: 1,36 Patches: 9

Plotted: Thu Jul 28 14:17:06 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108535/n353hx02.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 4539.000 ft BOTTOM DEPTH: 7815.000 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM

RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP BOTTOM
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	8.75	in	" "
	CASING SIZE	4.50	in	" "
	MATRIX	SANDSTONE		" "
	CORRECTION BUFFER	11		" "

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jul 28 11:01:02 2016	CASING COLLAR LOCATOR
F1:GR	Jul 28 11:01:02 2016	GAMMA RAY
F1:ISS	Jul 28 11:01:02 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jul 28 11:01:02 2016	LONG SPACE COUNT RATE
F1:RATO	Jul 28 11:01:02 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jul 28 11:01:02 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jul 28 11:01:02 2016	CORRECTED FORMATION SIGMA
F1:SS	Jul 28 11:01:02 2016	SHORT SPACE COUNT RATE

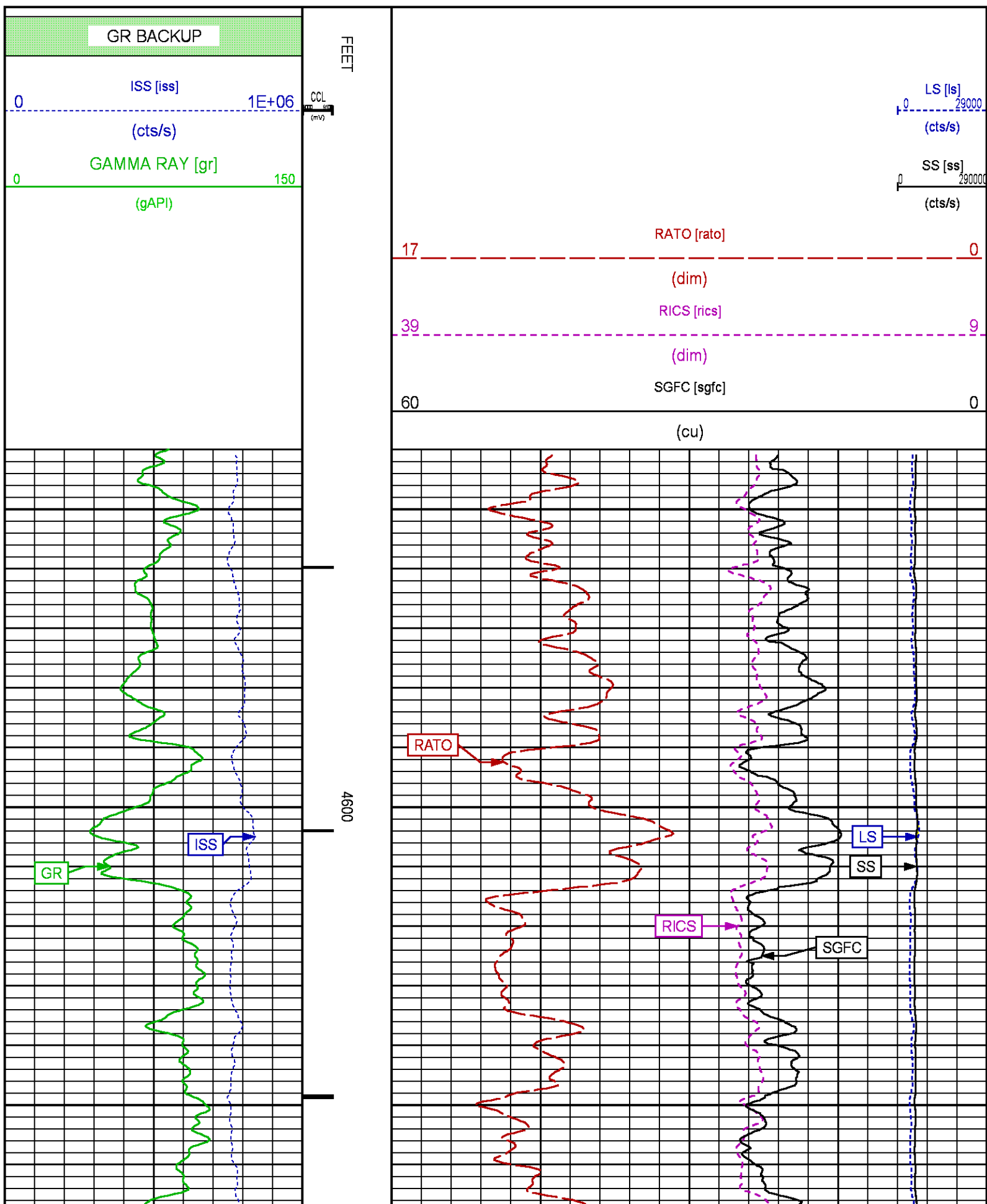
CURVE MEASURE POINT OFFSET

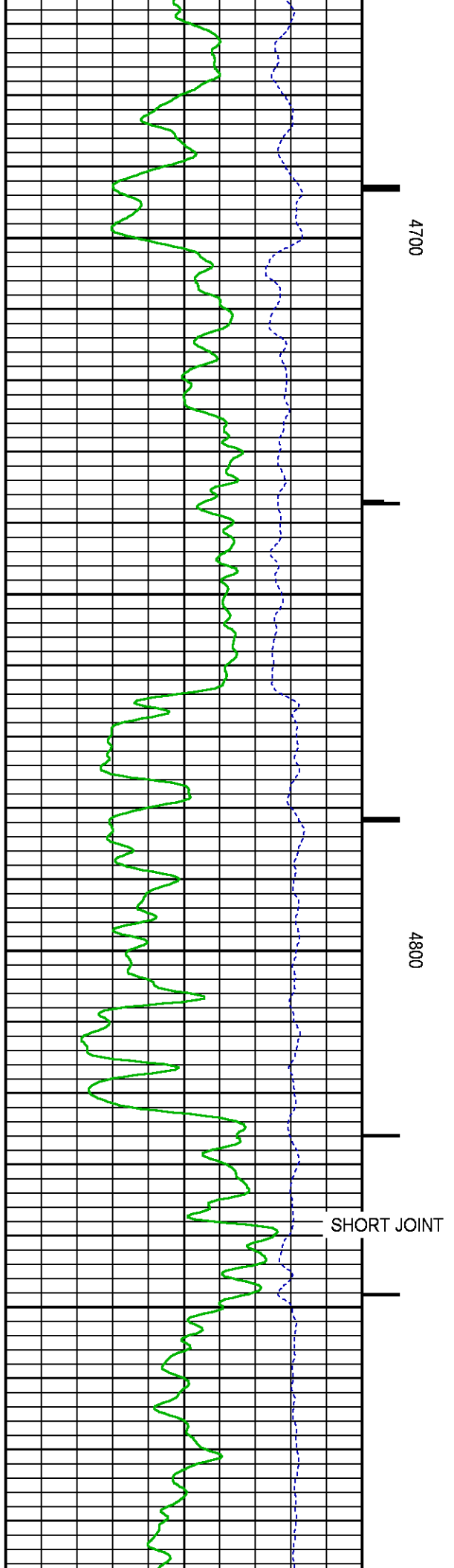
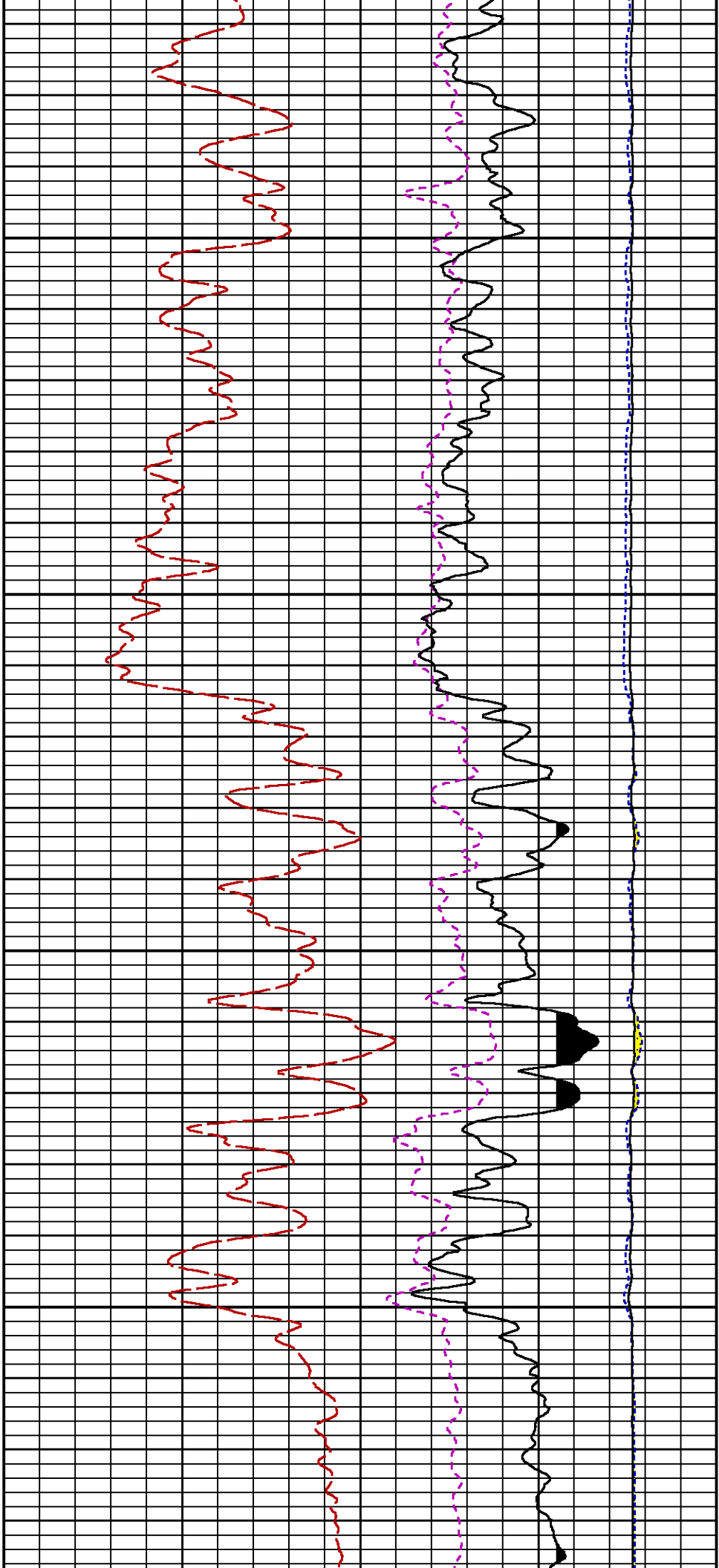
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
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GR	23.00	LS	12.75	RICS	12.75	SS	12.75

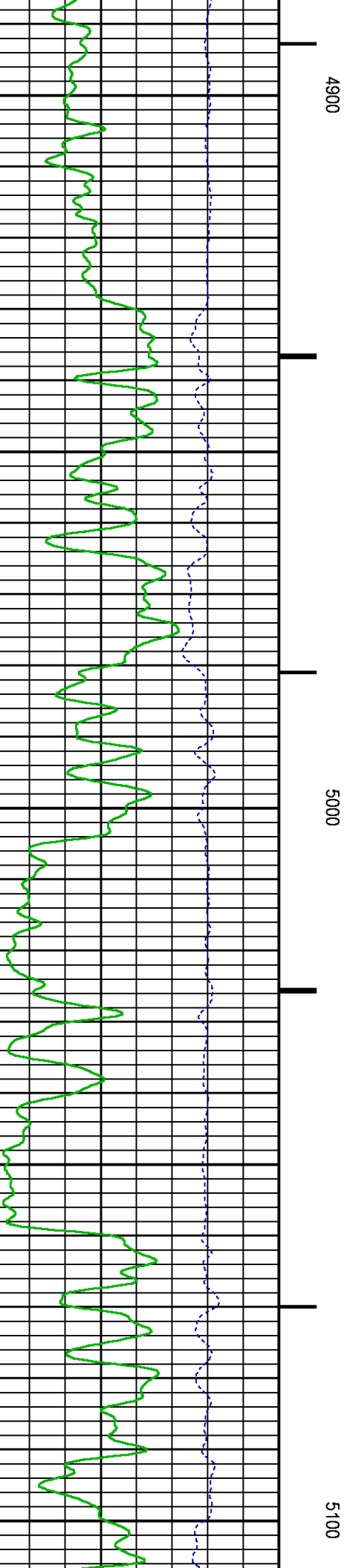
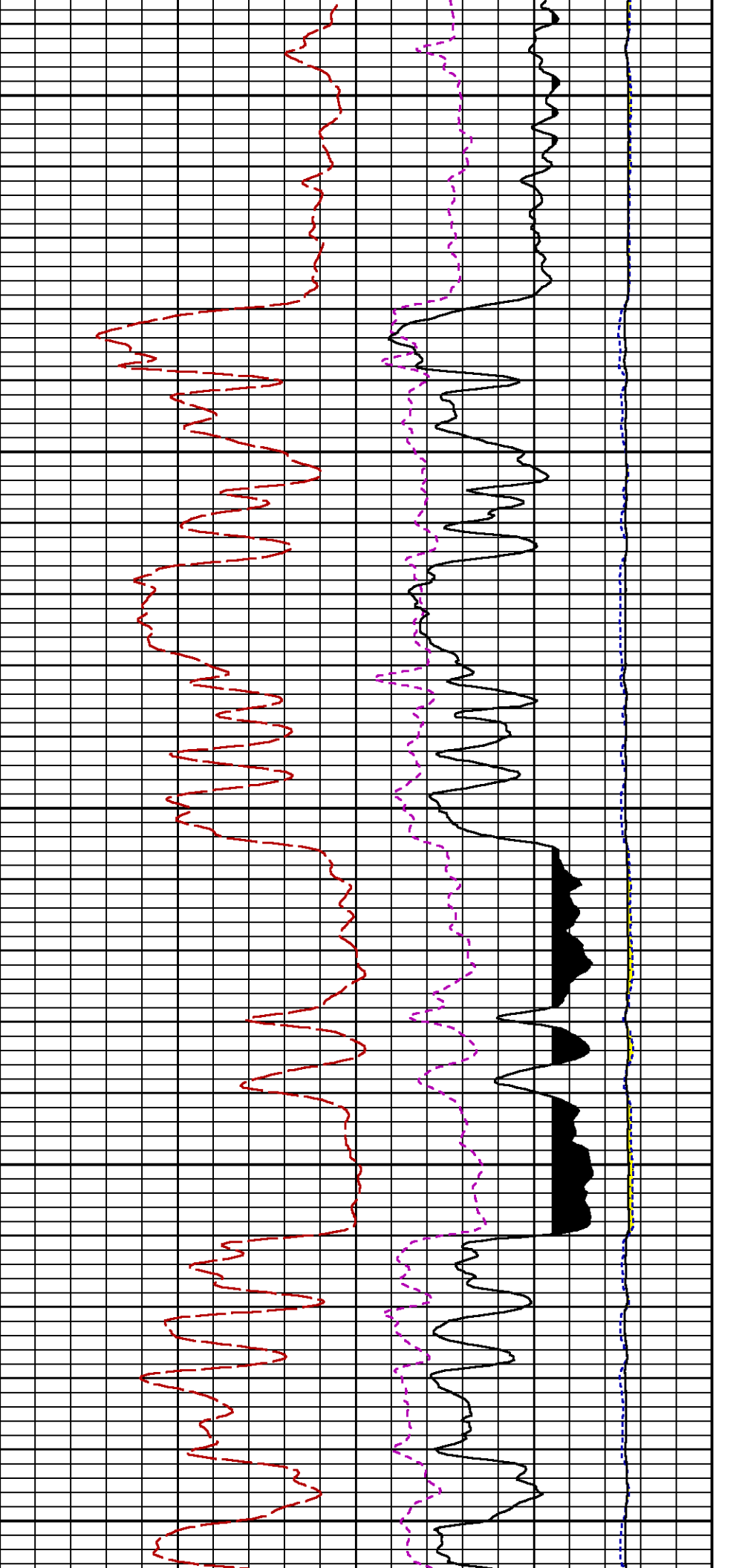
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 Plot Interval : 4540 - 7820 Feet

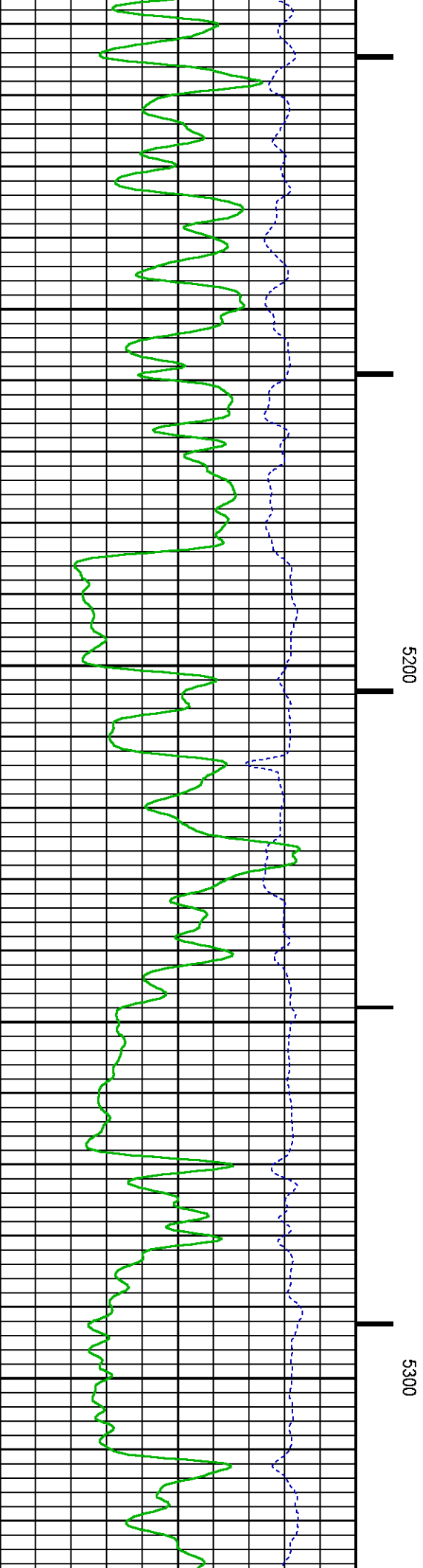
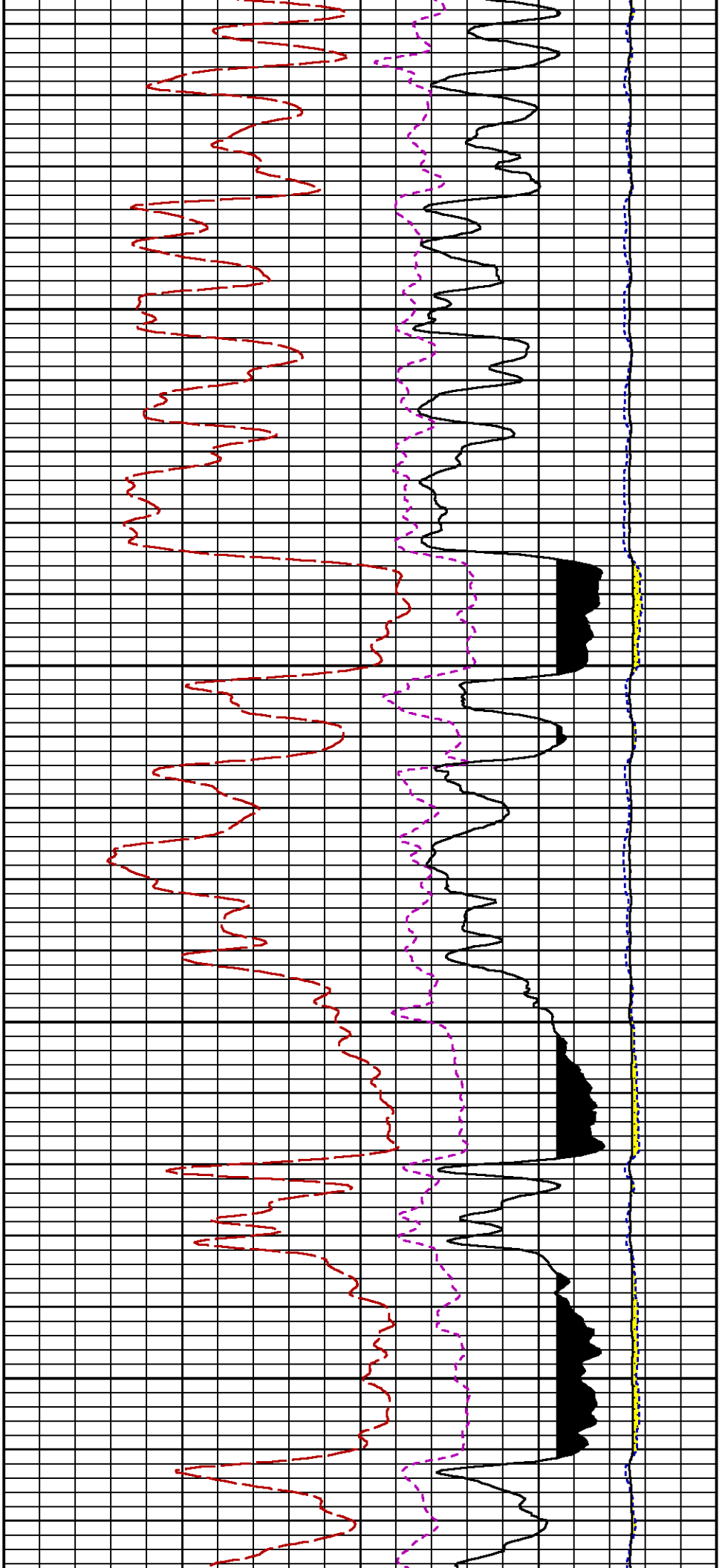
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 Created On : Jul 28 11:01:02 2016

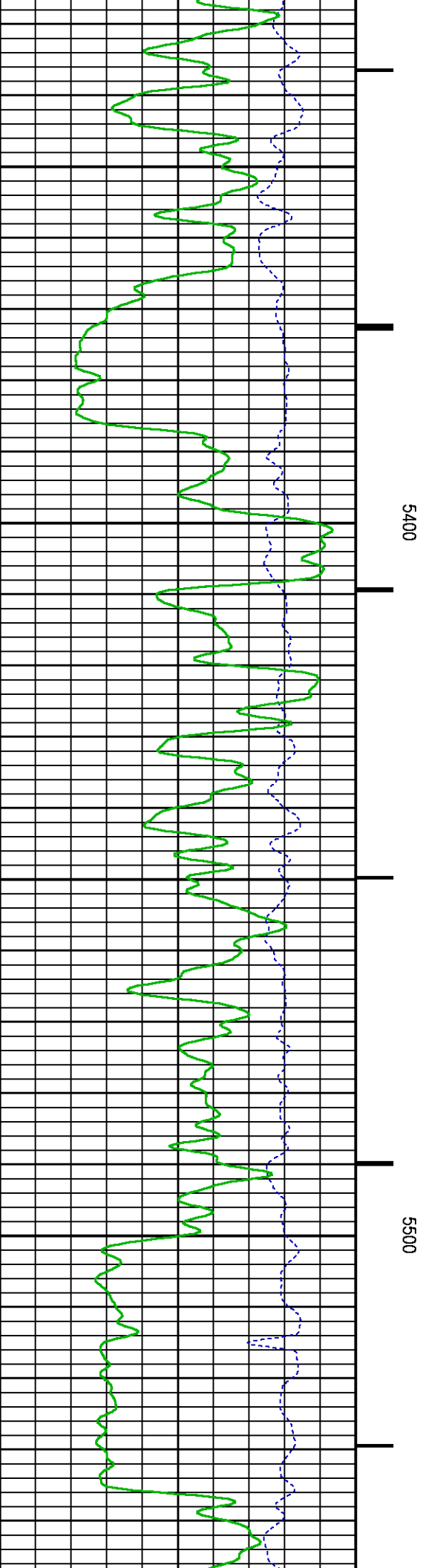
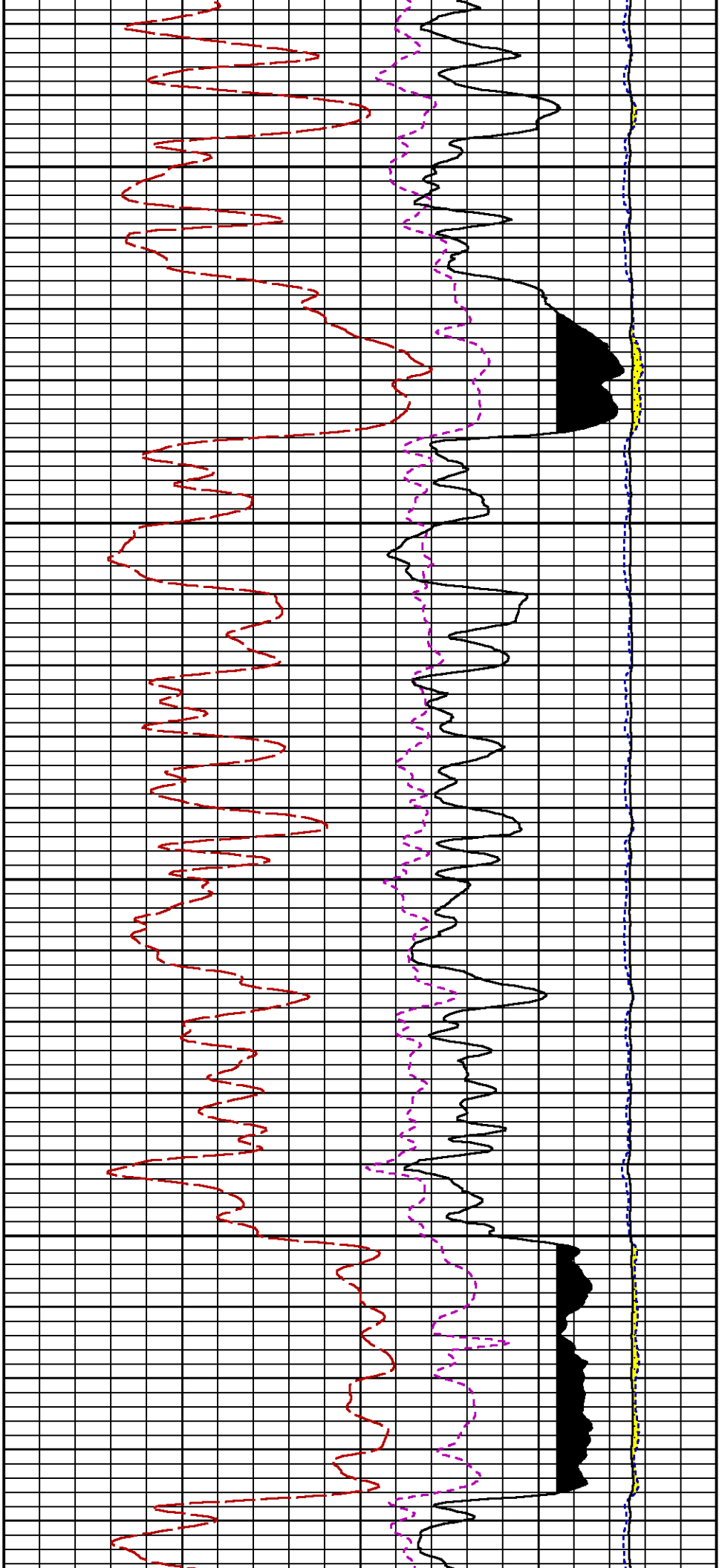
Created On : Jul 28 11:01:02 2016
Company : TERRA ENERGY PARTNERS LLC
Well : FEDERAL GM 432-9
Field : GRAND VALLEY
File Interval : 4514.25 - 7815.75 Feet
OCT : n353hx

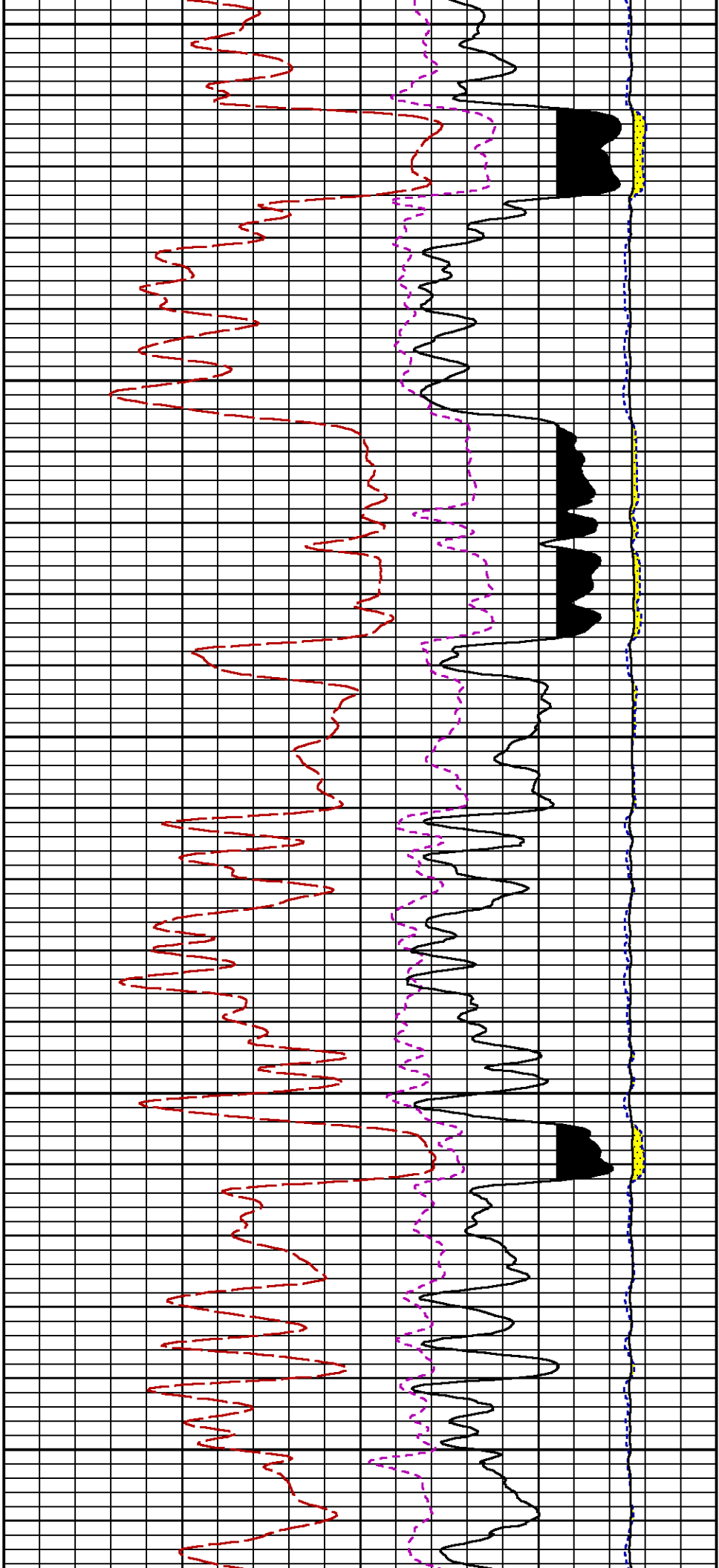






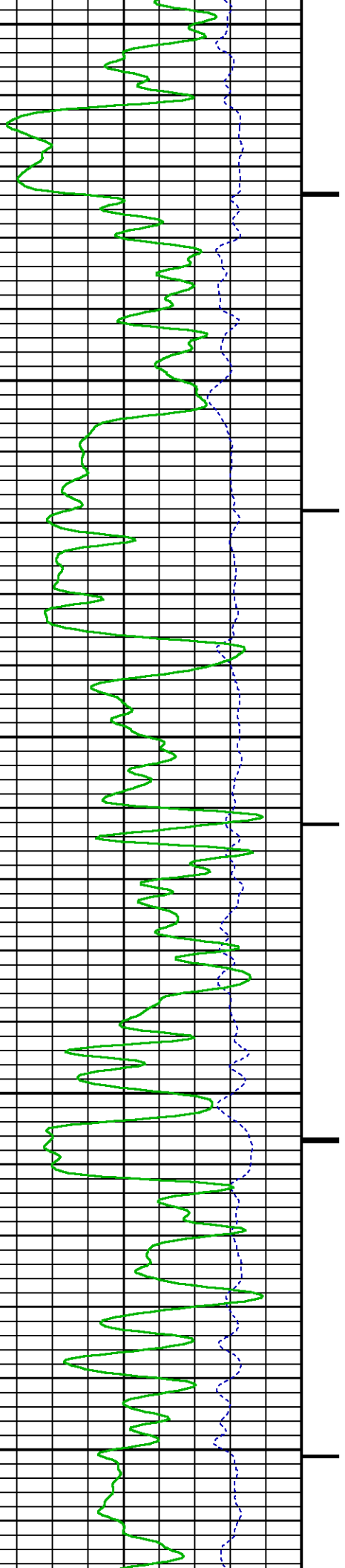


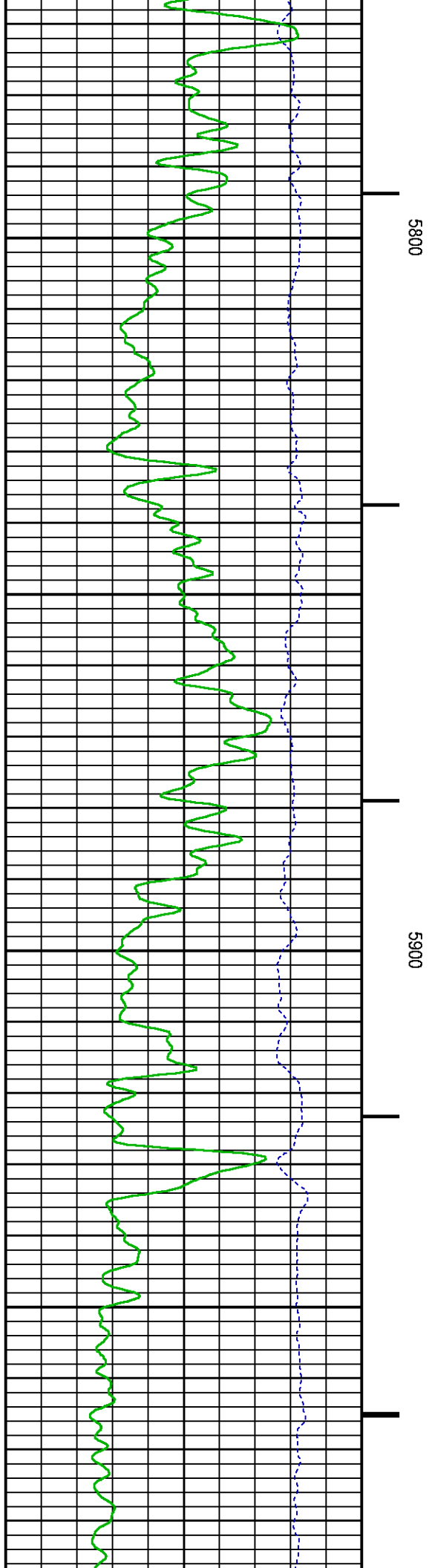
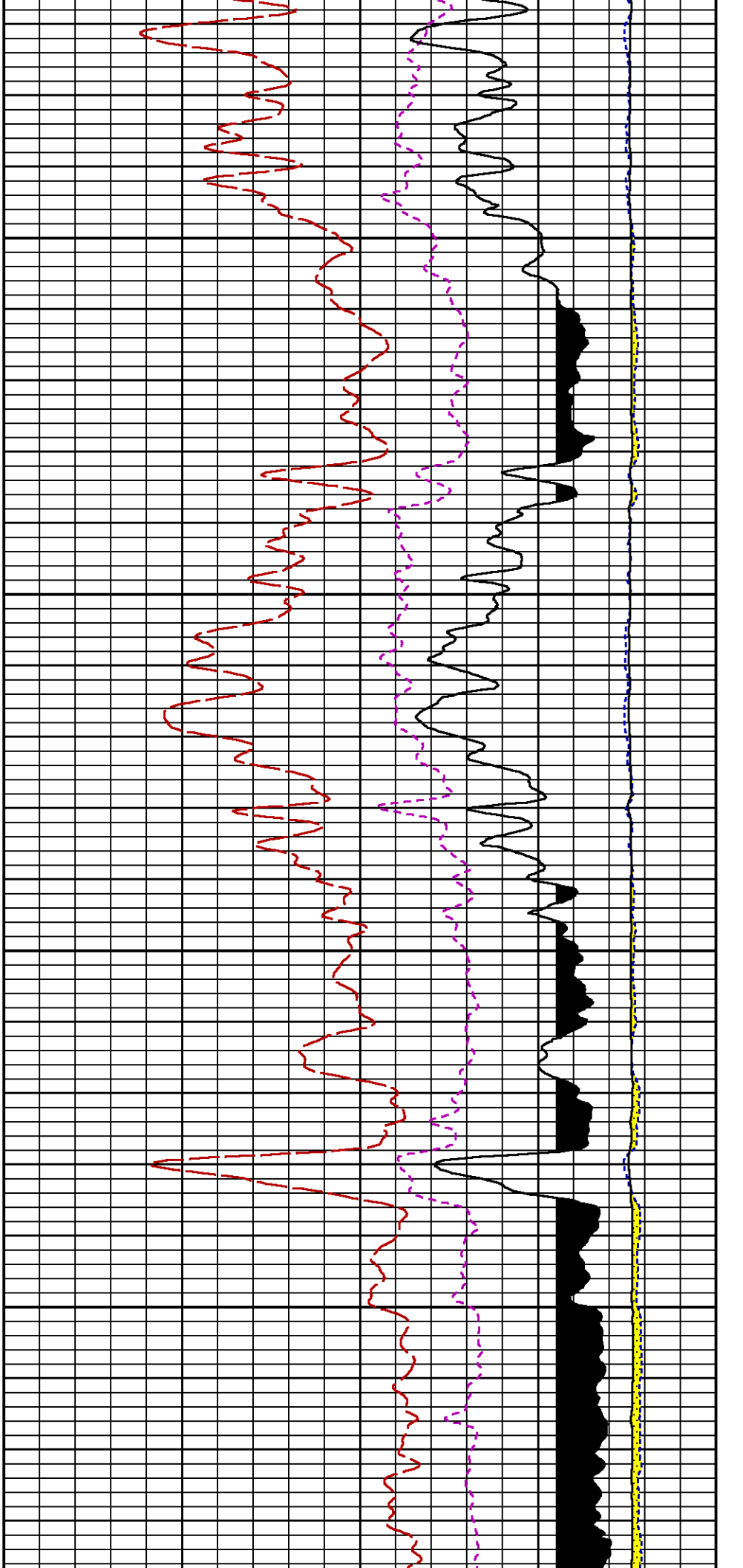


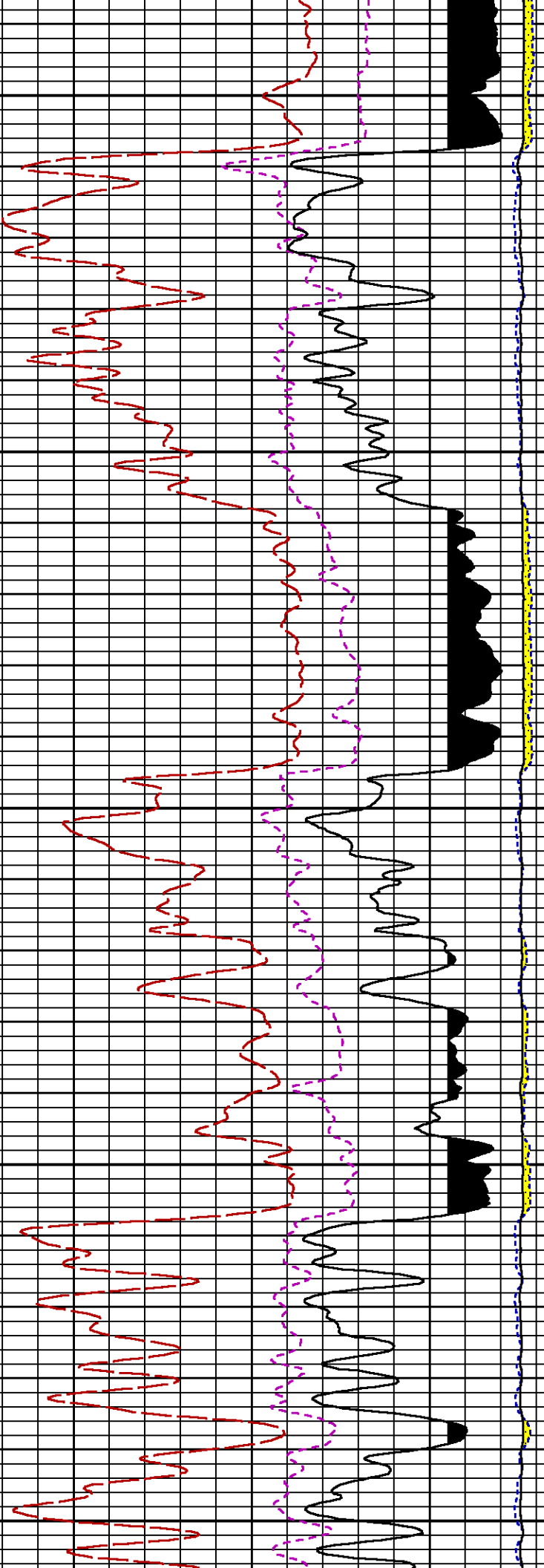


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5700



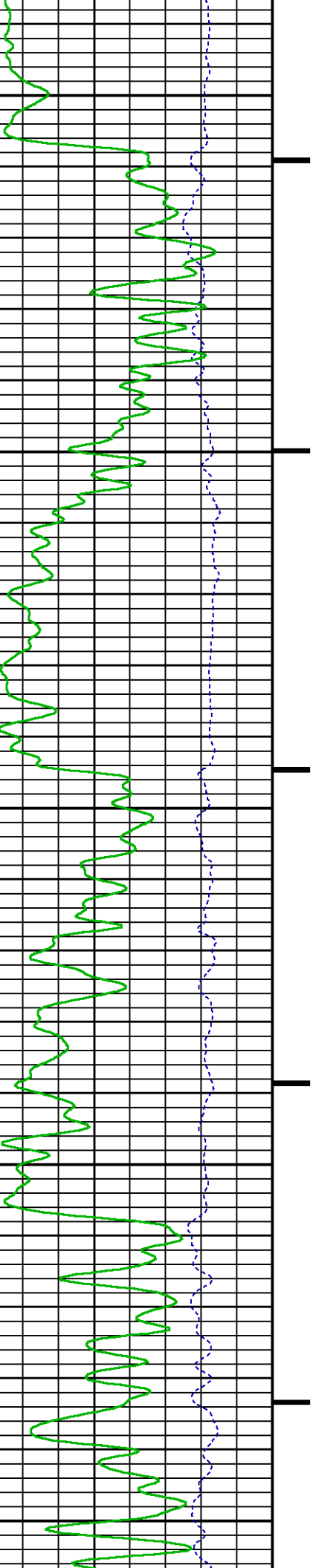


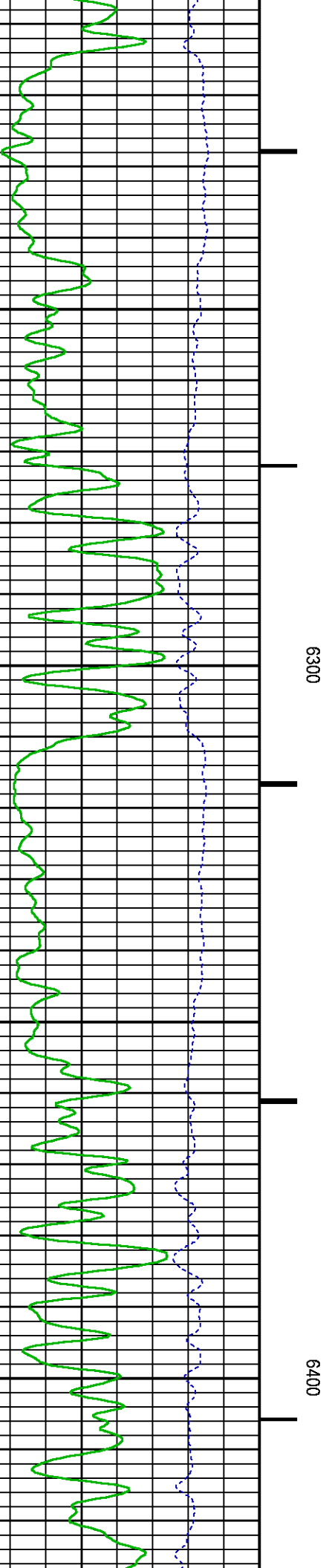
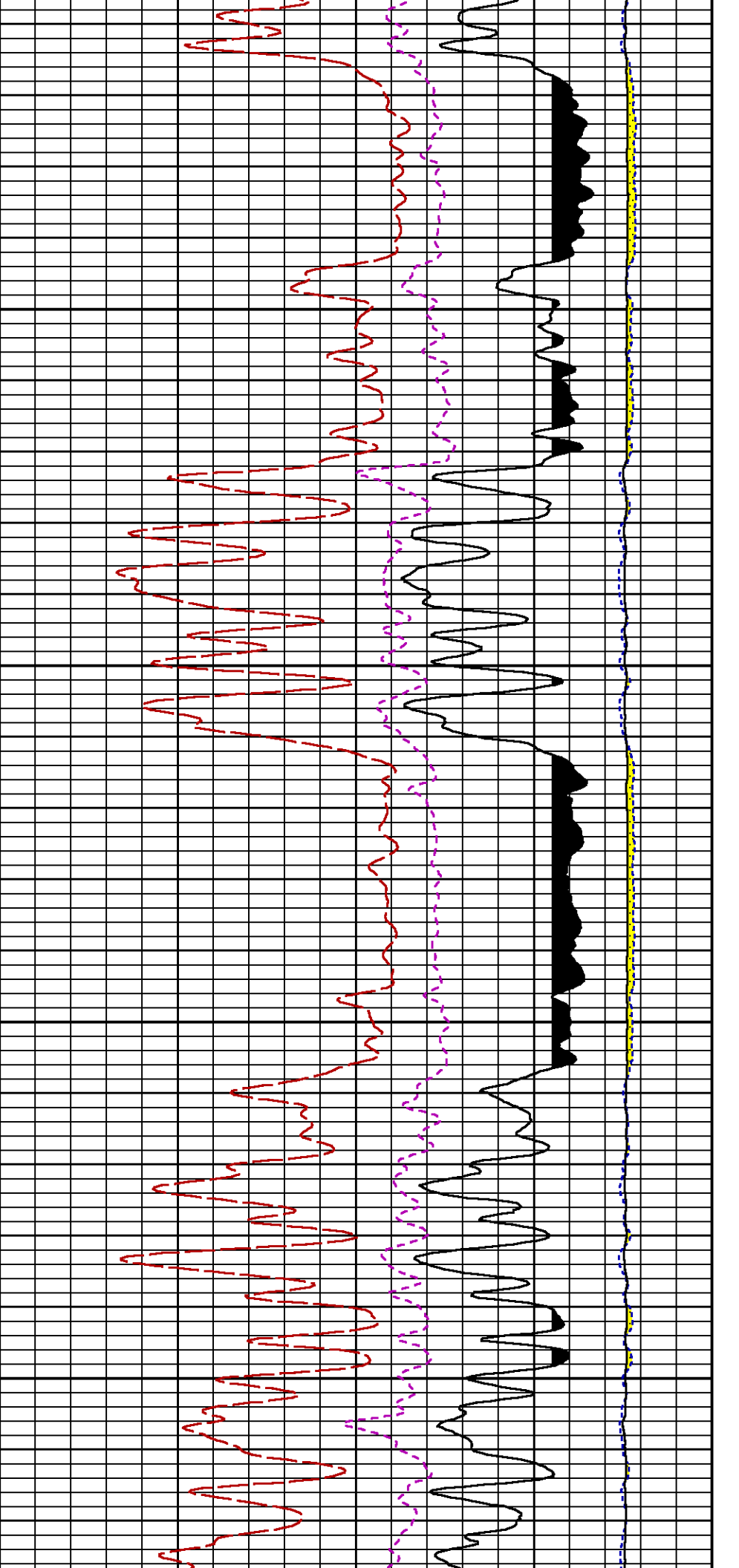


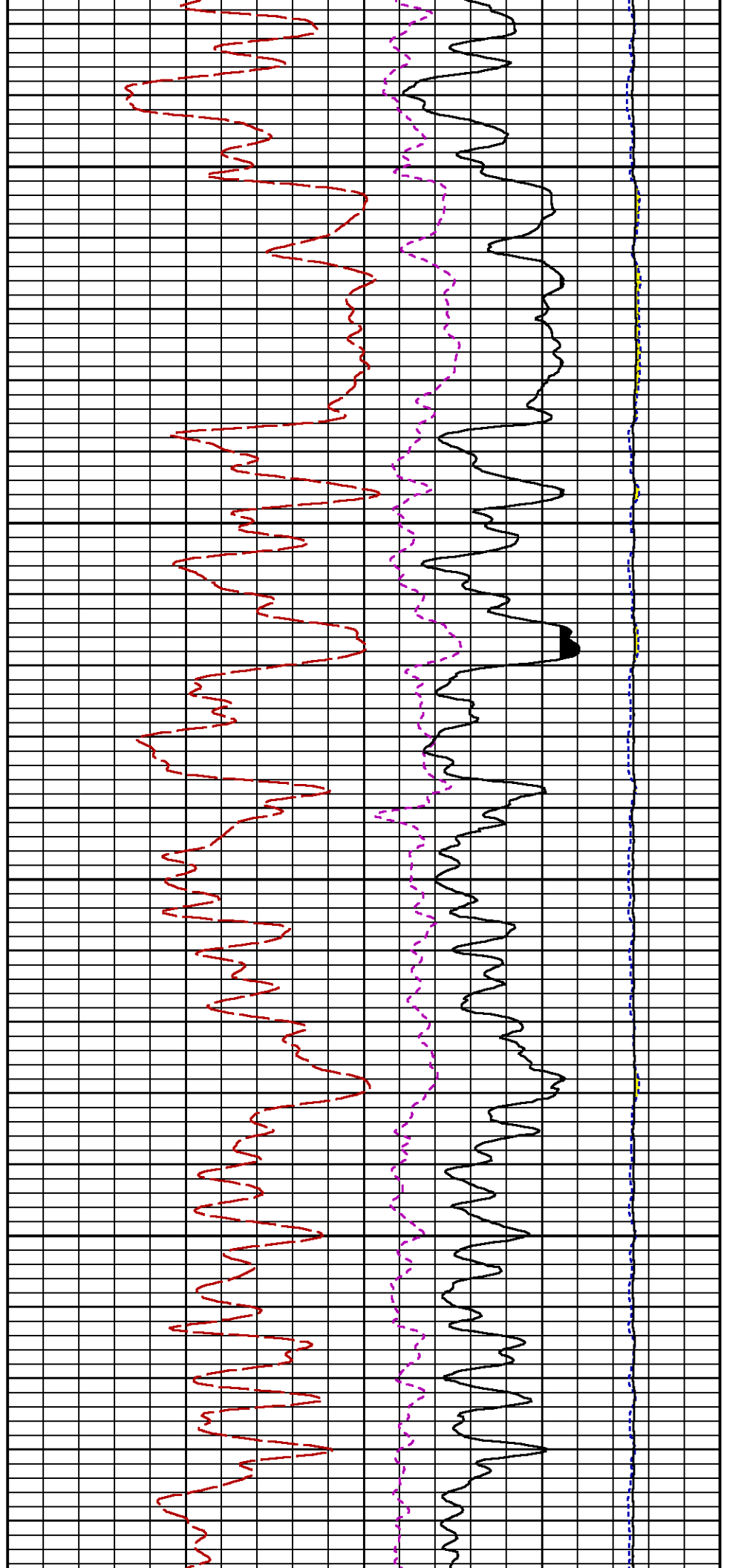
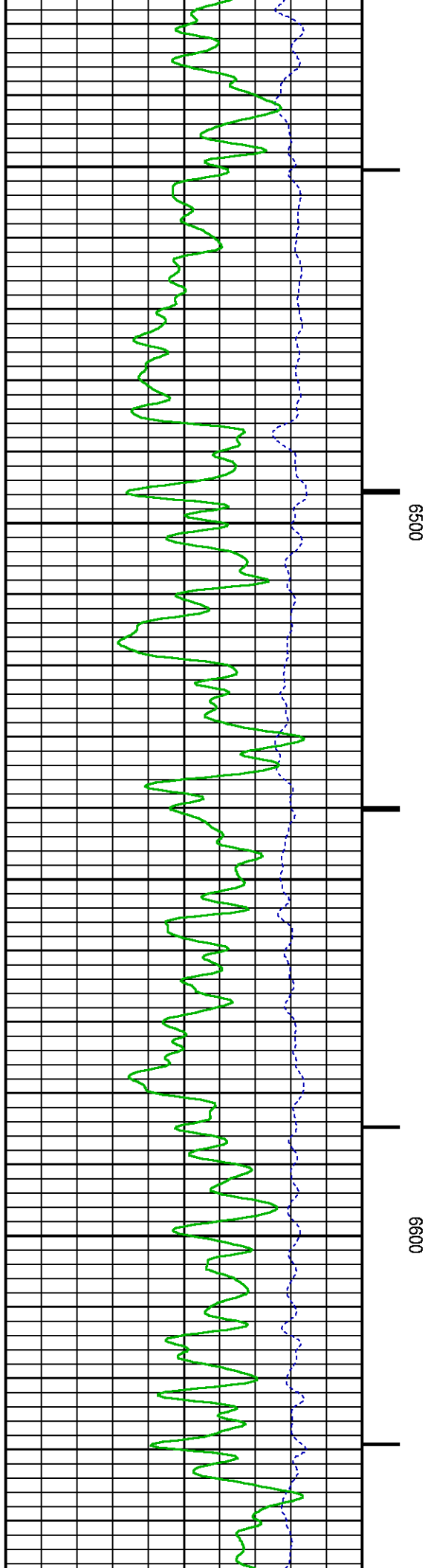
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6100

6200

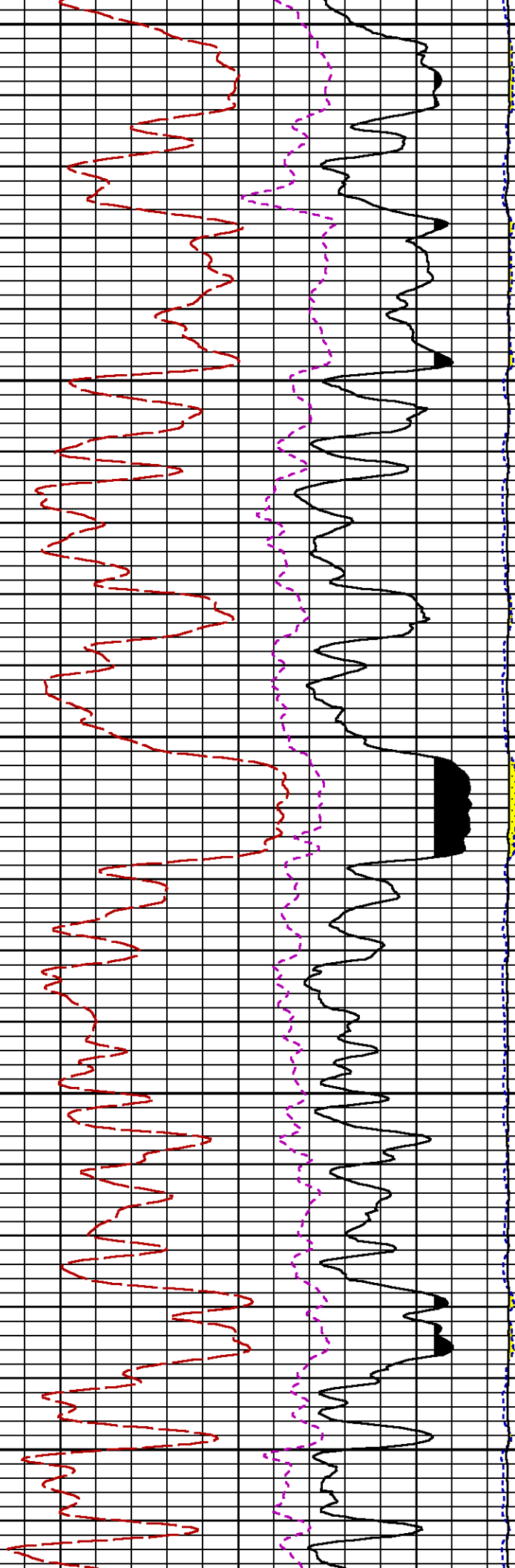
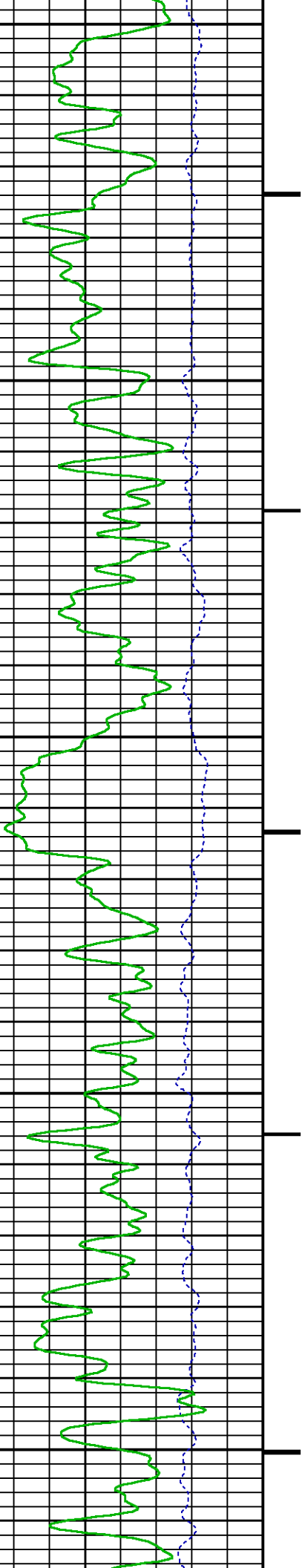


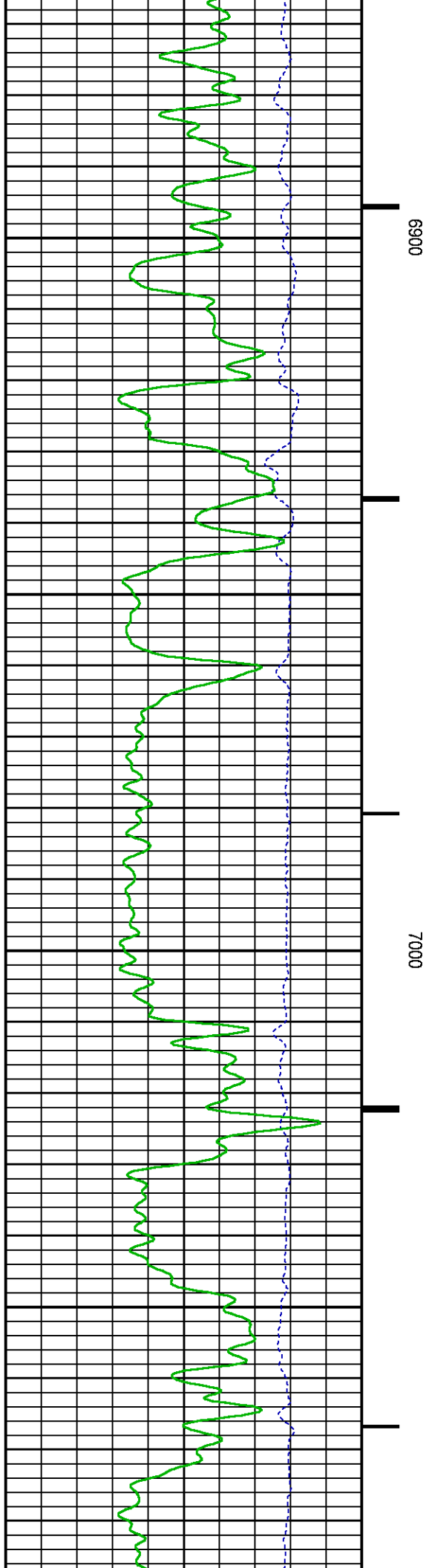
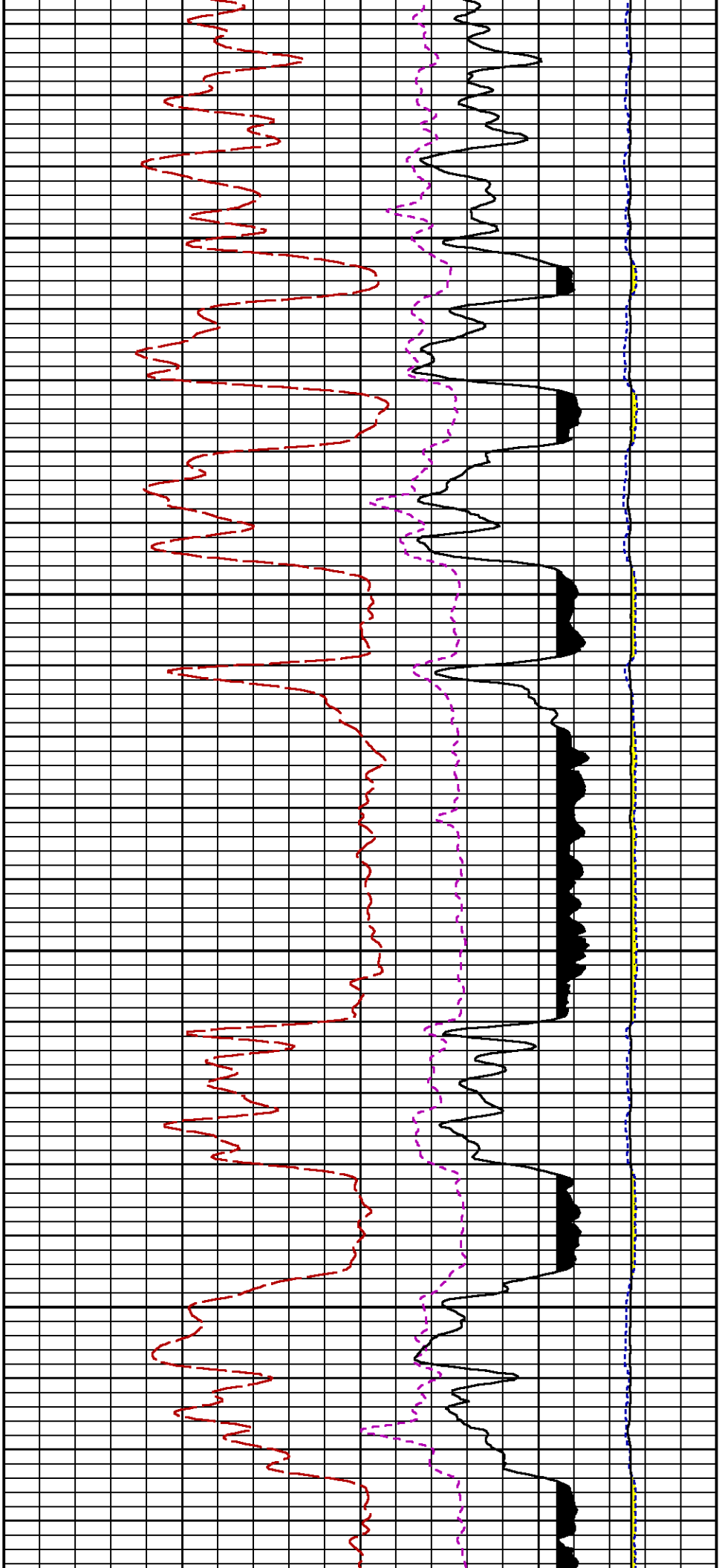


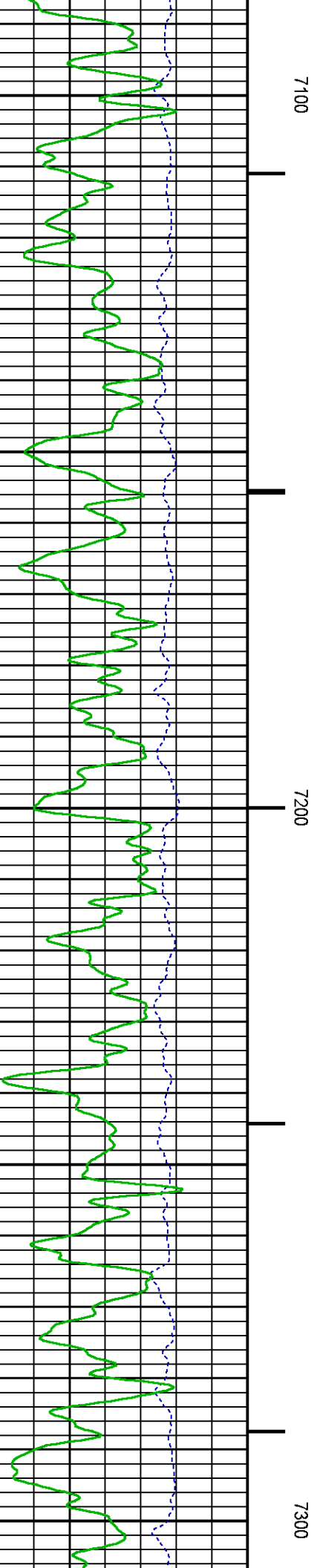
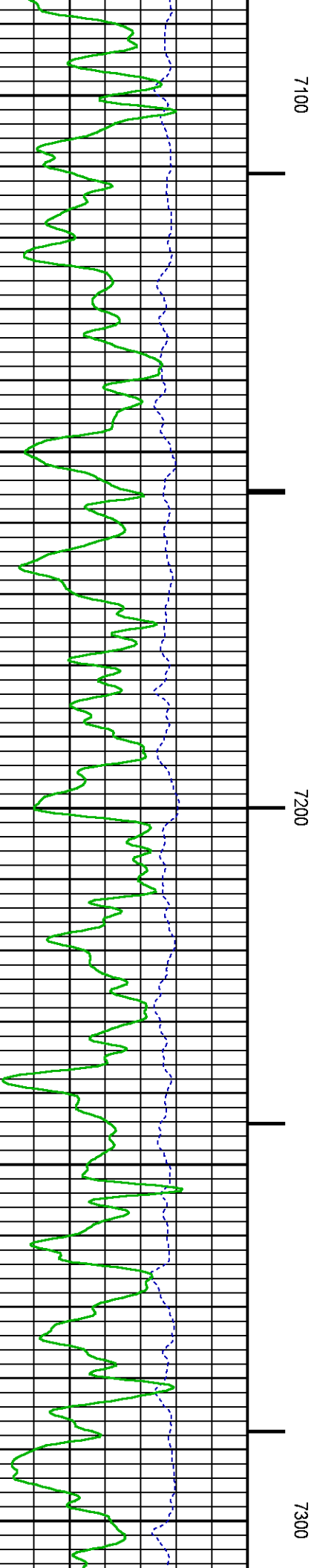
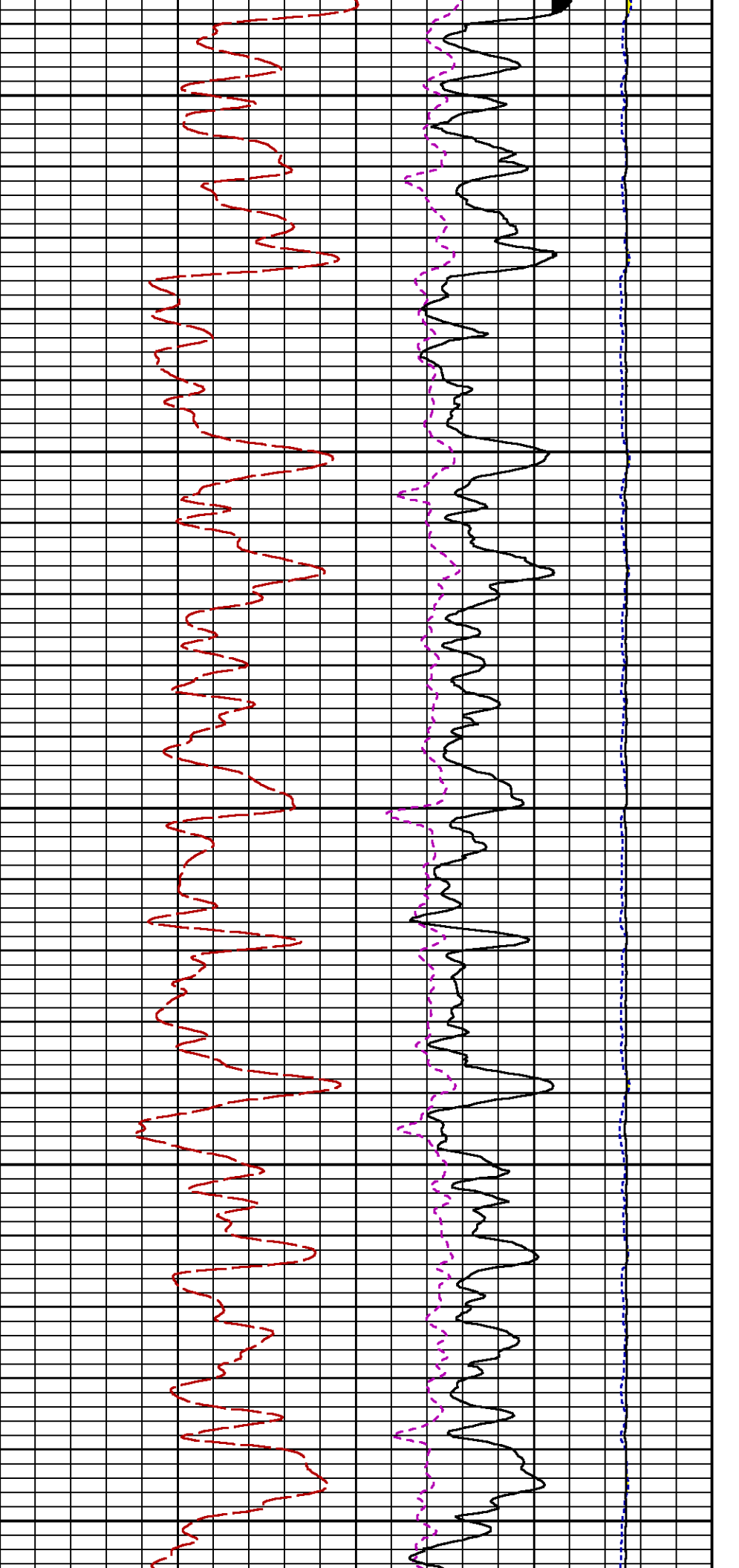


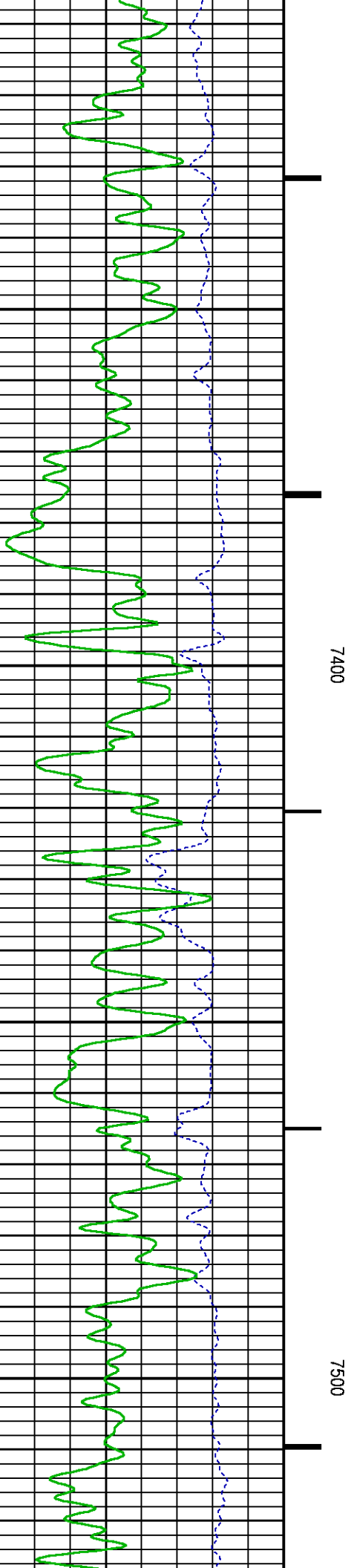
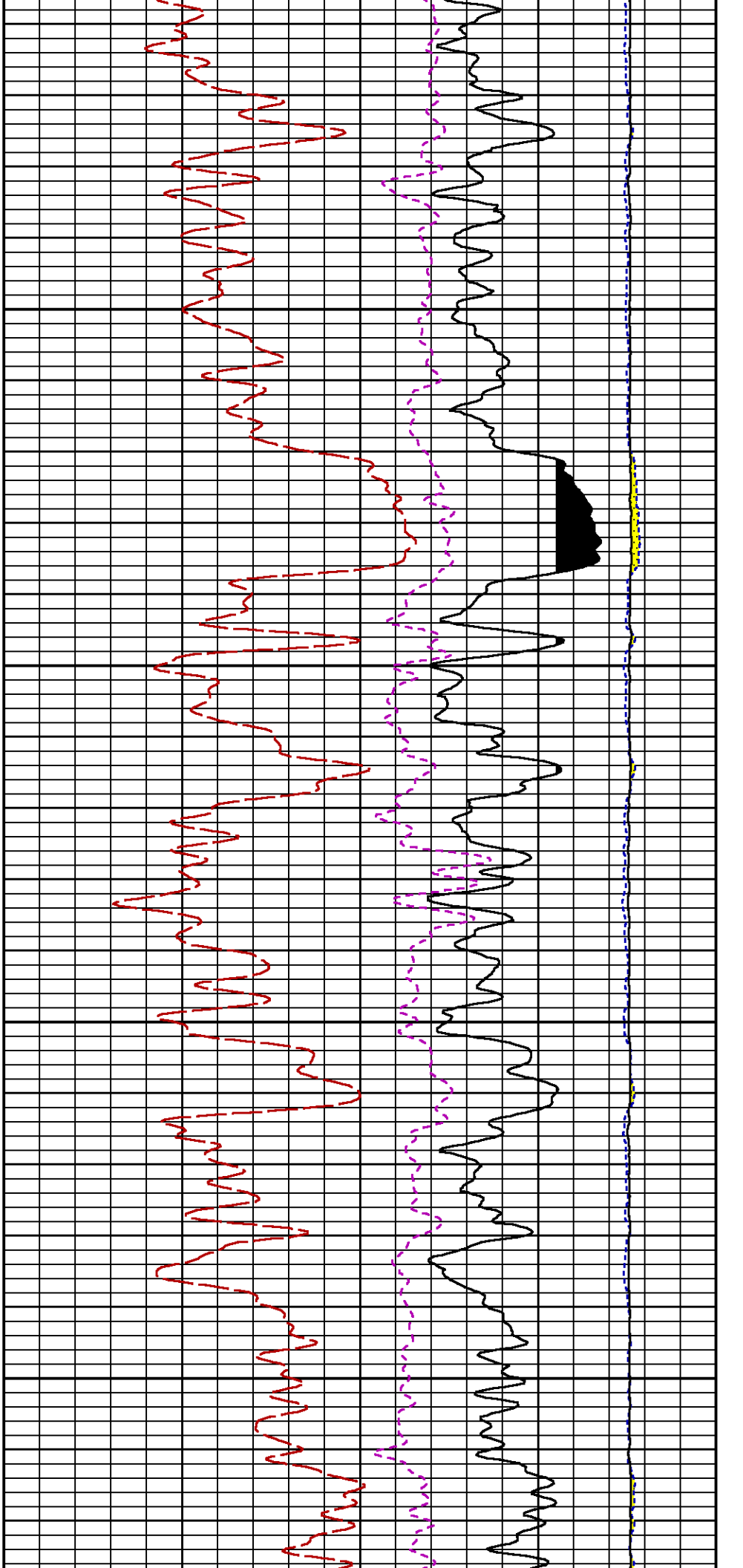
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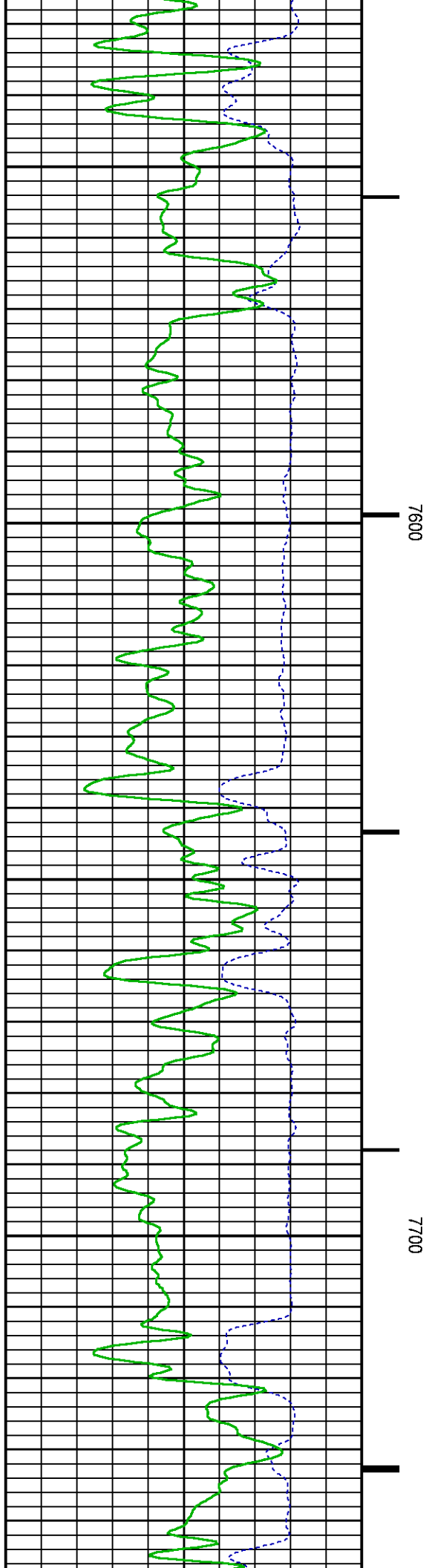
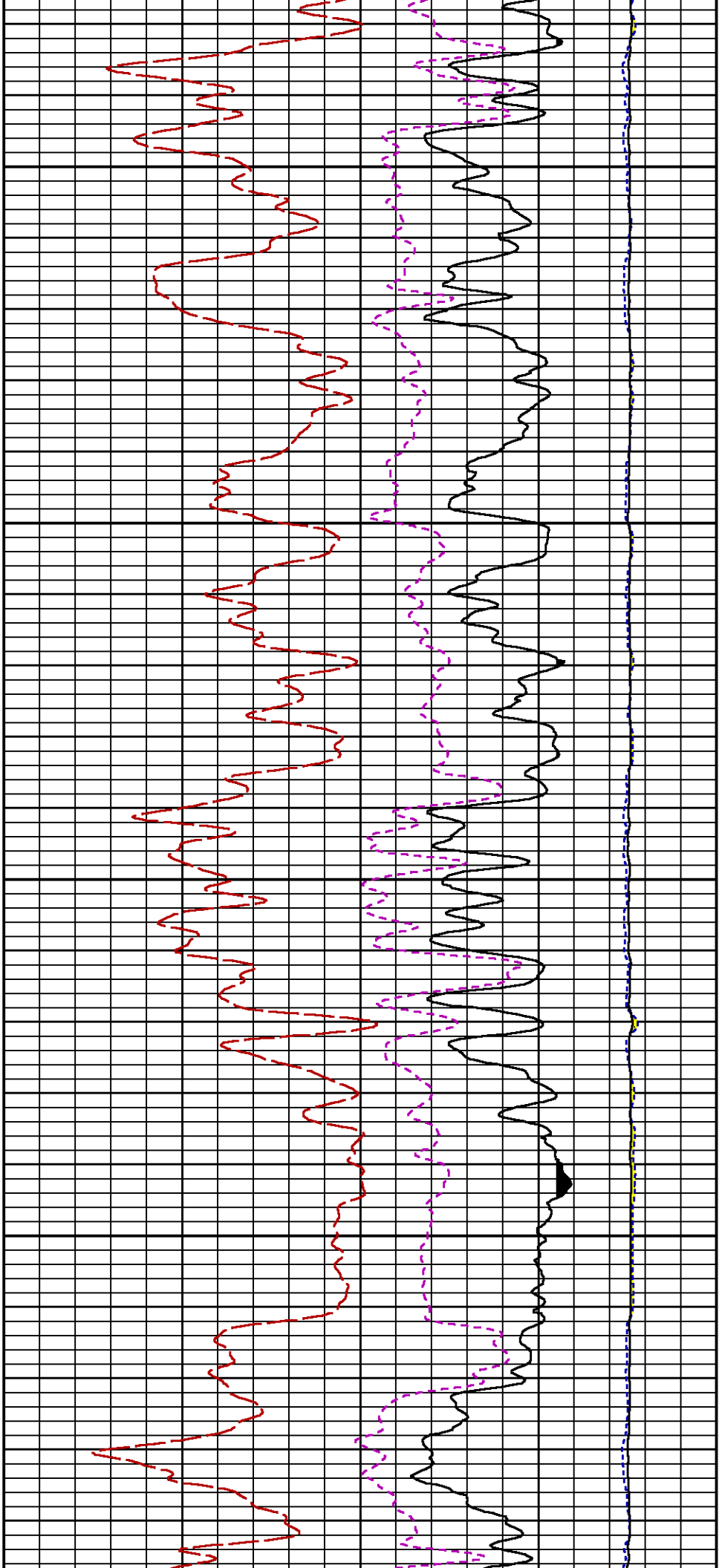
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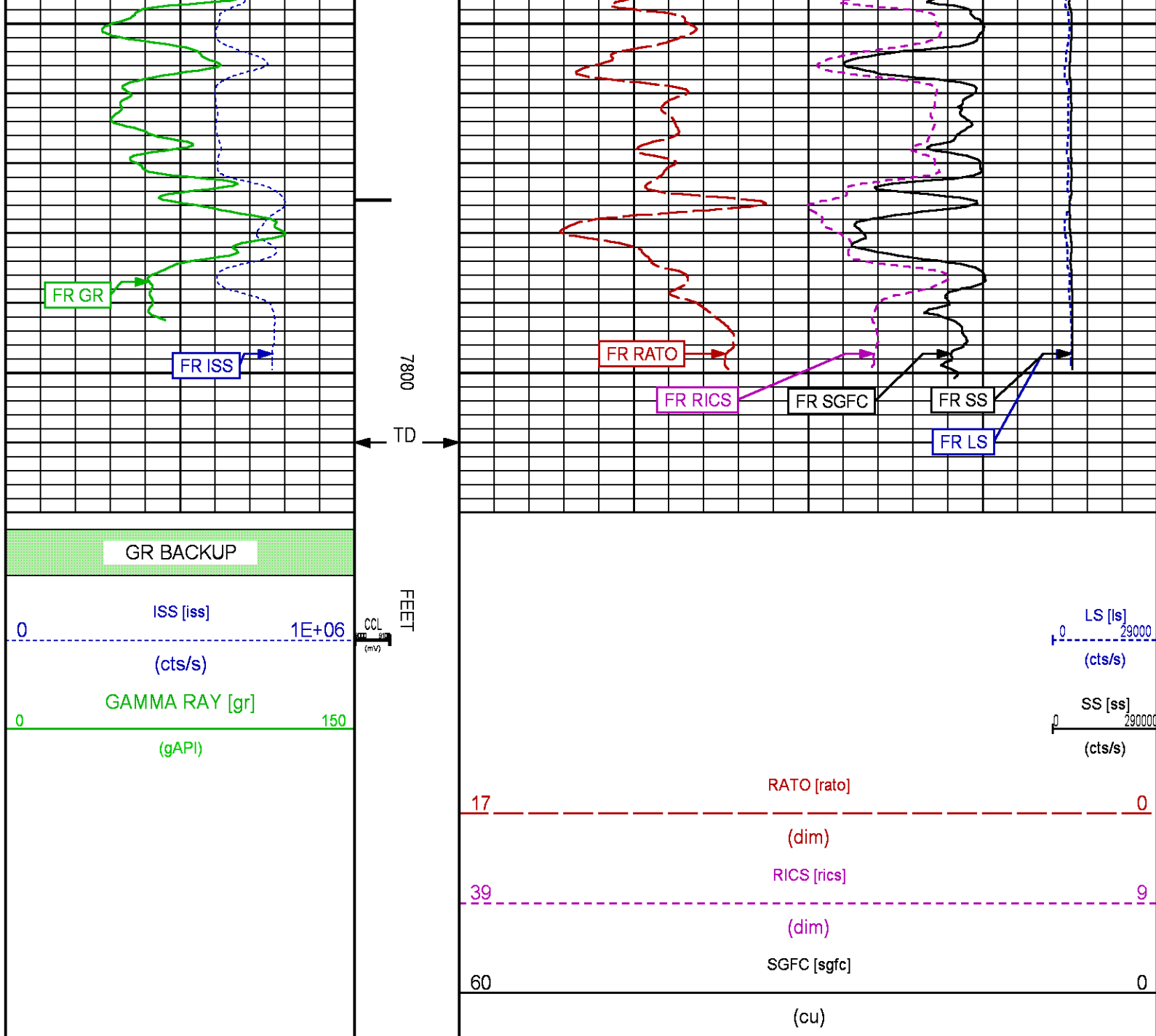












REPEAT SECTION PNC-3D MODE

ECLIPS 6.2i ECLIPS General Release Rel 6.2i Wed Jun 12 12:21:40 CDT 2013
Updates: 1,36 Patches: 9

Plotted: Thu Jul 28 11:38:23 2016

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH108535/n353hx01.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 6823.500 ft BOTTOM DEPTH: 7181.892 ft

SYMMETRIC FILTER

SYMMETRIC FILTER

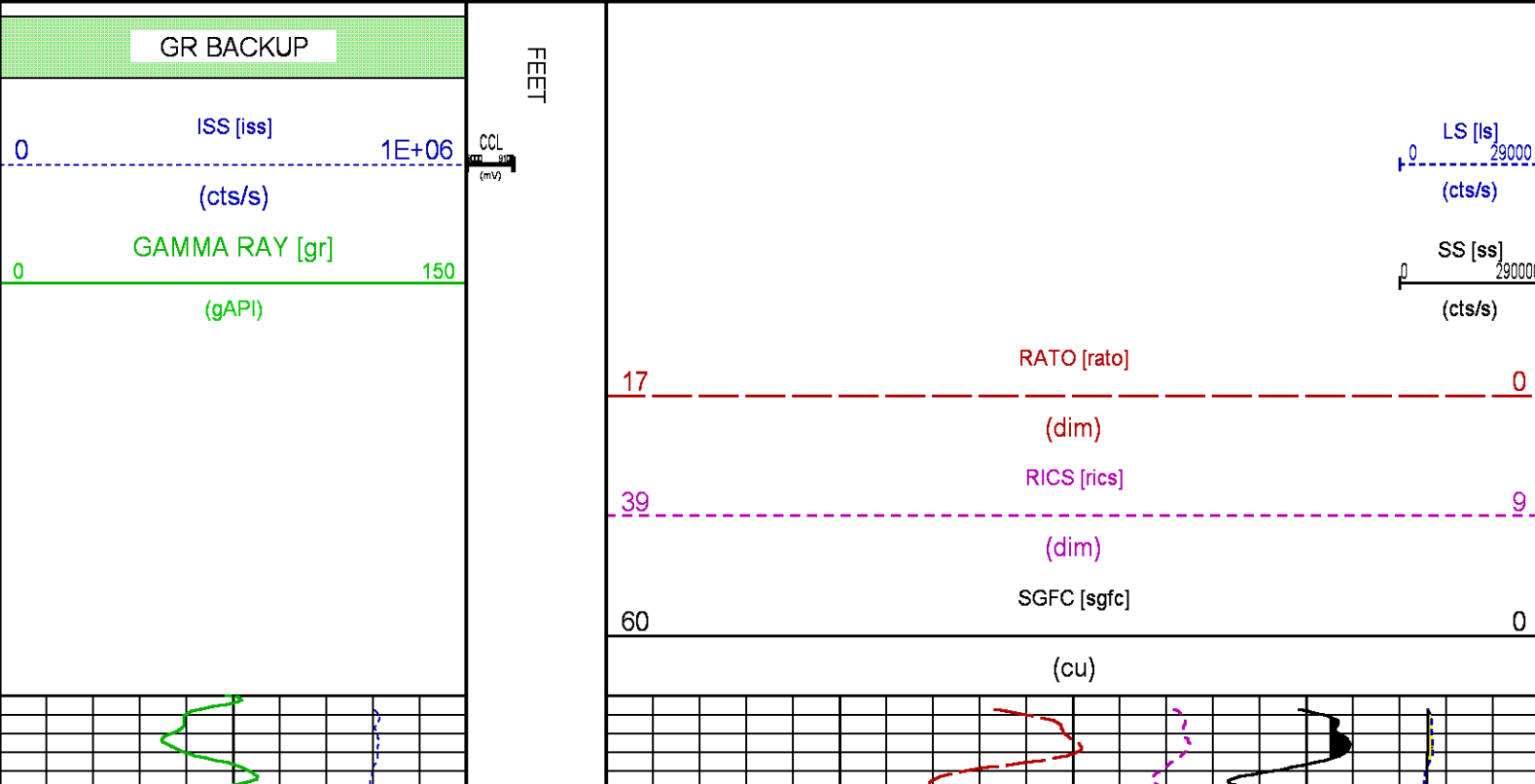
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM

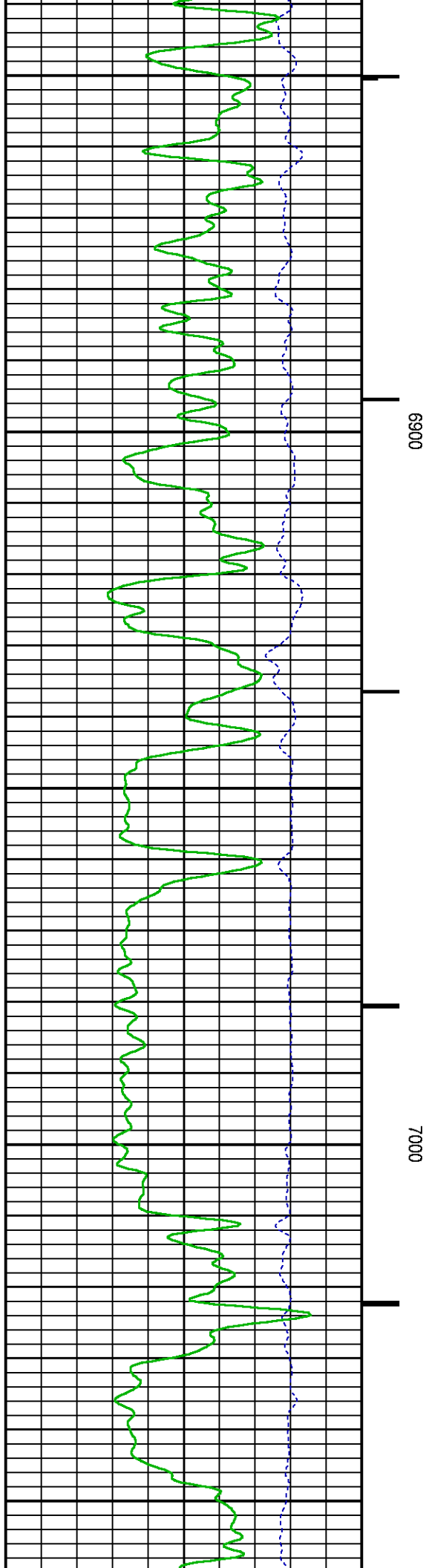
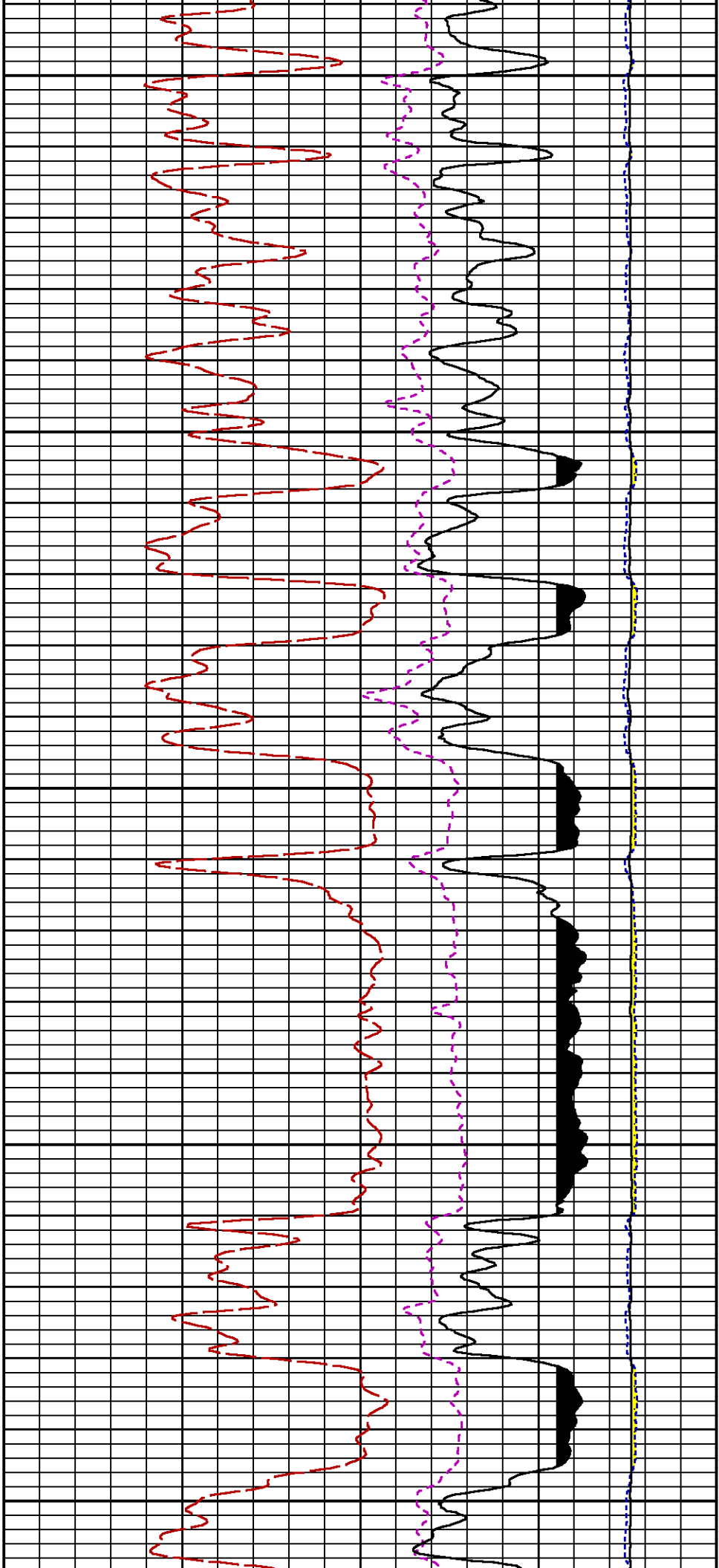
RPM PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	8.75	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

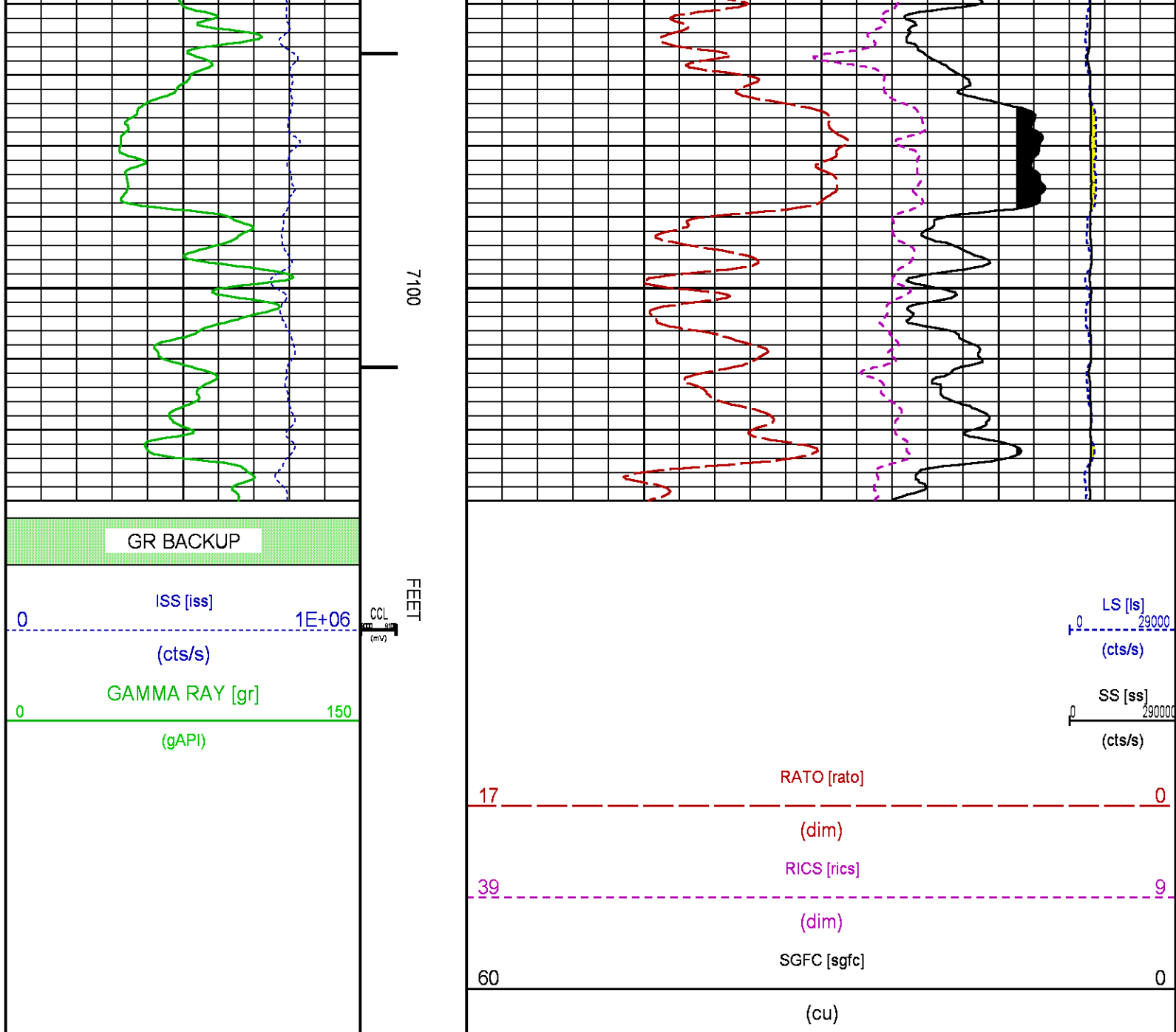
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Jul 28 10:33:48 2016	CASING COLLAR LOCATOR
F1:GR	Jul 28 10:33:48 2016	GAMMA RAY
F1:ISS	Jul 28 10:33:48 2016	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Jul 28 10:33:48 2016	LONG SPACE COUNT RATE
F1:RATO	Jul 28 10:33:48 2016	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Jul 28 10:33:48 2016	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Jul 28 10:33:48 2016	CORRECTED FORMATION SIGMA
F1:SS	Jul 28 10:33:48 2016	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET					
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	26.00	ISS	12.75	RATO	12.75
GR	23.00	LS	12.75	RICS	12.75
				SGFC	12.75
				SS	12.75

Presentation	: cas6685:/dat1a/CH108535/432RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 6830 - 7130 Feet
Data File 1	: F1 : cas6685:/dat1a/CH108535/432RPM_REPEAT.xtf
Created On	: Jul 28 10:33:48 2016
Company	: TERRA ENERGY PARTNERS LLC
Well	: FEDERAL GM 432-9
Field	: GRAND VALLEY
File Interval	: 6804.75 - 7185.5 Feet
OCT	: n353hx







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/CH108535/n353hx.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Mon Jul 25 09:52:18 2016

UNIT #: 3885TC 6685

CALB JIG #: 4702NK BA-905

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	111.69	457.64	346.0	0.520	58.11	238.11	180

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 8262XA 10317216

DATE/TIME PERFORMED: Mon Jul 25 09:54:51 2016

UNIT #: 3885TC 6685

VERI JIG #: 4702NK BA-905

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	114.13	462.96	0.520	59.38	240.87	181.49
						170.00 190.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10160383

DATE/TIME PERFORMED: Fri Jun 17 12:45:25 2016

UNIT: 3885TC 6685

CALIBRATOR: 2437XB GJ_SHOP

SOURCE: 8281AA 10148476

HOURS: 8281AA 586

	ISS	Mtr VIts (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	794956	122	2314	2246	2197	124	7.0	0.9852
Interpolated	1300000	142	2297	2240	2195			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794956	6080	963	132	25.94	0.15	24.12	0.33
					25.35 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	794956	163446	25264	84936	30293	7960	51434	12703
Fit Quality %		0.408	0.339	0.327	0.295	0.417	0.280	0.403

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	794956	1.43	4.86	31.48	15.46	10.67	3.81	4.05
		1.42 1.45	3.55 5.52	22.20 32.70	10.99 16.34	10.06 11.10	3.57 3.95	3.76 4.22
Fit Quality %		0.016	0.325	0.292	0.322	0.069	0.094	0.097
Reduced	1401134	1.43	4.87	31.50	15.45	10.68	3.81	4.06
		1.42 1.45	4.33 5.52	27.60 32.70	13.70 16.34	10.06 11.10	3.57 3.95	3.76 4.22

TPSETEMP PRIMARY CALIBRATION SUMMARY

TOOL #: 8255XA Z166341

DATE/TIME PERFORMED: Wed Oct 21 14:25:56 2015

UNIT #: 3885TC 6685

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Temp	-1.828341E+01	9.988427E-02	8.122243E-07	-3.138442E-11

INSTRUMENT CONFIGURATION

PCM POWER SUPPLY

Diameter : 1.70"
Length : 3.86'
Weight : 18 lbs
Series : 8250EA
Mnemonic : PCM

TELEMETRY / CCL

Diameter : 1.70"
Length : 4.46'
Weight : 20 lbs
Series : 8248ED
Mnemonic : PCM
Measure Point: 1.00': CCL MP

CCL MP — 26.03'

GAMMA RAY

Diameter : 1.70"
Length : 3.02'
Weight : 15 lbs
Series : 8262XA
Mnemonic : GR
Measure Point: 0.89': GR MP

GR MP — 22.90'

RPM ELECTRONICS

Diameter : 1.70"
Length : 4.48'
Weight : 16 lbs
Series : 8281EA
Mnemonic : RPM

RPM C DETECTOR SECTION

Diameter : 1.70"
Length : 9.40'
Weight : 41 lbs
Series : 8283PA
Mnemonic : RPM
Measure Point: 5.45': XLS DETECTOR
Measure Point: 5.04': LS DETECTOR
Measure Point: 4.79': SS DETECTOR

XLS DETECTOR — 13.58'
LS DETECTOR — 13.16'
SS DETECTOR — 12.91'

RPM SOURCE SECTION

Diameter : 1.70"
Length : 4.70'
Weight : 18 lbs
Series : 8281FA
Mnemonic : RPM

TEMPERATURE / PRESSURE


Diameter : 1.70"
Length : 3.30'
Weight : 13 lbs
Series : 8255XA
Mnemonic : SRPL
Measure Point: 1.52': TEMP MP

TEMP MP — 1.65'
PRES MP —

BULL PLUG 1 11/16

0.00'

TOTAL LENGTH: 34.08'
TOTAL WEIGHT: 144 lbs
MAX DIAMETER: 0'1.70"

	COMPANY	TERRA ENERGY PARTNERS LLC		FILE NO:	
	WELL	FEDERAL GM 432-9			CH108535
	FIELD	GRAND VALLEY		API NO:	
	COUNTY	GARFIELD	STATE	CO	05045225350000
LOCATION:		ELEVATIONS:		9 7S 96W	
SHL: 650' FNL & 574' FWL		KB 6110 FT		MV 16-9 PAD	
BHL: 1960' FNL & 1535' FEL		DF		H&P 318 RIG	
GL 6086 FT		DATE		28-Jul-2016	
SEC 9 TWP 7S RGE 96W					