



FILE NO: CH100245	COMPANY WELL FIELD COUNTY	LARAMIE ENERGY PICEANCE 28-06M VEGA MESA	STATE COLORADO
API NO: 05077097790000			

Ver. 4.01 28-9S 93W 28-05 PAD PATTERSON 306	LOCATION: SHL: LAT 39.250997 LONG -107.779442 BHL: 39.251525 LONG -107.774672 SEC 28 TWP 9S RGE 93W	OTHER SERVICES BOND LOG
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KB	ELEVATION 22 FT 7578 FT ABOVE P.D.	ELEVATIONS: KB 7600 FT DF GL 7578 FT
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DATE	20-Oct-2015
RUN	1
SERVICE ORDER	US100245
DEPTH DRILLER	7946 FT
DEPTH LOGGER	7939 FT
BOTTOM LOGGED INTERVAL	7929 FT
TOP LOGGED INTERVAL	2636 FT
TIME STARTED	11:30
TIME FINISHED	17:00
OPERATOR RIG TIME	5.5 HOURS
TYPE OF FLUID IN HOLE	WATER
FLUID DENSITY	NA
FLUID SALINITY	NA
FLUID LEVEL	43 FT
LOGGED CEMENT TOP	NA
WELLHEAD PRESSURE	0 PSI
MAXIMUM HOLE DEVIATION	NA
NOMINAL LOGGING SPEED	10 FMIN
MAX. RECORDED TEMP.	228 DEGF
REFERENCE LOG	BAKER HUGHES BOND LOG
REFERENCE LOG DATE	20-Oct-2015
EQUIP. NO.	HL-6670
LOCATION	GRAND JCT.
RECORDED BY	T. NEWELL
WITNESSED BY	JOHN GRUBICH

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

BOREHOLE RECORD		
BIT SIZE	FROM	TO
7.875 IN	22 FT	8036 FT

CASING RECORD				
SIZE	WEIGHT	GRADE	FROM	TO
4.5 IN	11.6 LB/F		22 FT	8036 FT

REMARKS

RUN 1 TRIP 1: All data on this log is shifted at TD, using the gamma ray curve, to the Baker Hughes bond log dated 20/OCT/2015 at the client's request.

Amount of linear shift is 1 foot.

Logged in PNC-3D mode.

BHT = 228 degF

SJ = 6283' - 6305'

SJ = 7155' - 7177'

Thank you for choosing Baker Hughes ... The best choice!

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	Z166326	FREE
1	1	TEL/CCL	8248ED	10387150	FREE
1	1	GR	8262XA	10274382	FREE
1	1	RPM	8281EA	10190984	FREE
1	1	RPM	8283PA	10169251	FREE
1	1	RPM	8281FA	10307727	FREE
1	1	TEMP	8255XA	Z120516	FREE

G-SAND SECTION PNC-3D MODE

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

Plotted: Tue Oct 20 16:20:45 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100245/n354h03.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 2633.500 ft BOTTOM DEPTH: 3270.028 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	7.88	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

CURVE DESCRIPTION REPORT

CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Oct 20 15:37:19 2015	CASING COLLAR LOCATOR
F1:GR	Oct 20 15:37:19 2015	GAMMA RAY
F1:ISS	Oct 20 15:37:19 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 20 15:37:19 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 20 15:37:19 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 20 15:37:19 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 20 15:37:19 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 20 15:37:19 2015	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET

CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100245/6M_RPM_GSAND.fvpdf [5"/100' Scale]
Plot Interval : 2630 - 3240 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100245/06M_RPM_GSAND.xtf
Created On : Oct 20 15:37:19 2015
Company : LARAMIE ENERGY
Well : RICEANCE 28-06M

Well : PICEANCE 28-06M
Field : VEGA
File Interval : 2606.75 - 3265.5 Feet
OCT : n354h

GR BACKUP

ISS [iss]

0 1E+06

(1)

GAMMA RAY [gr]

0 150

(gAPI)

FEET

CCL
(mV)

2700

LS [ls]

0 29000

(1)

SS [ss]

0 290000

(1)

RATO [rato]

17 0

(1)

RICS [rics]

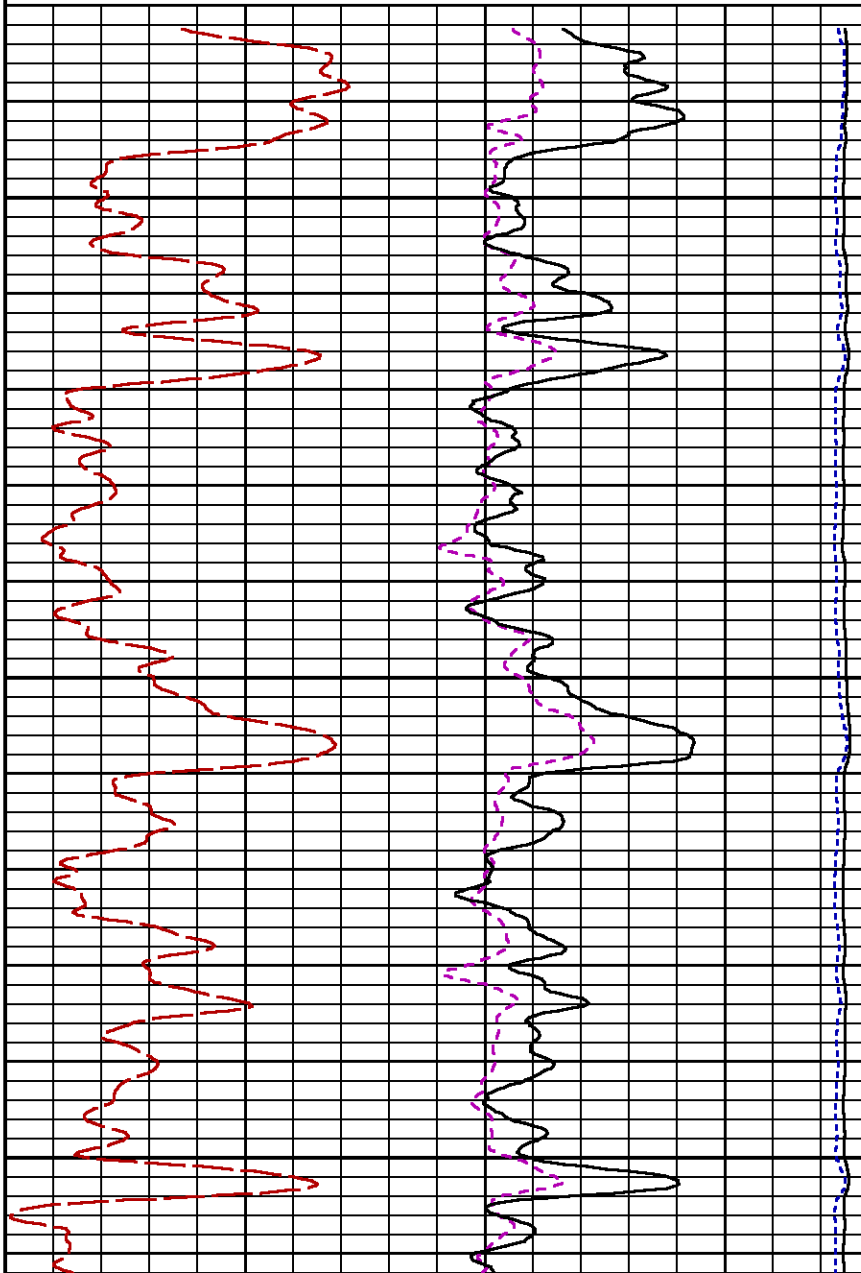
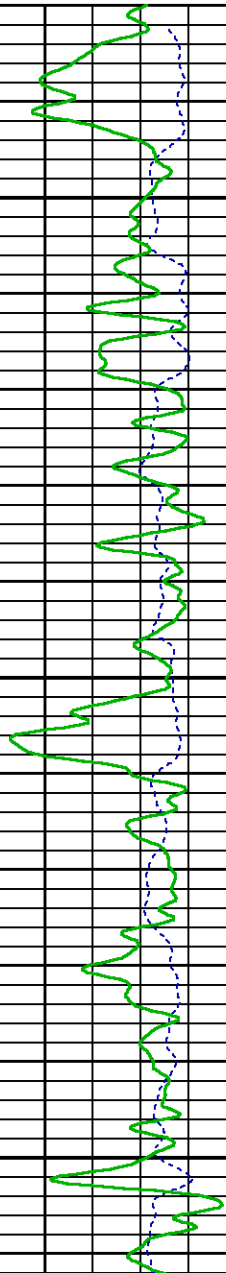
39 9

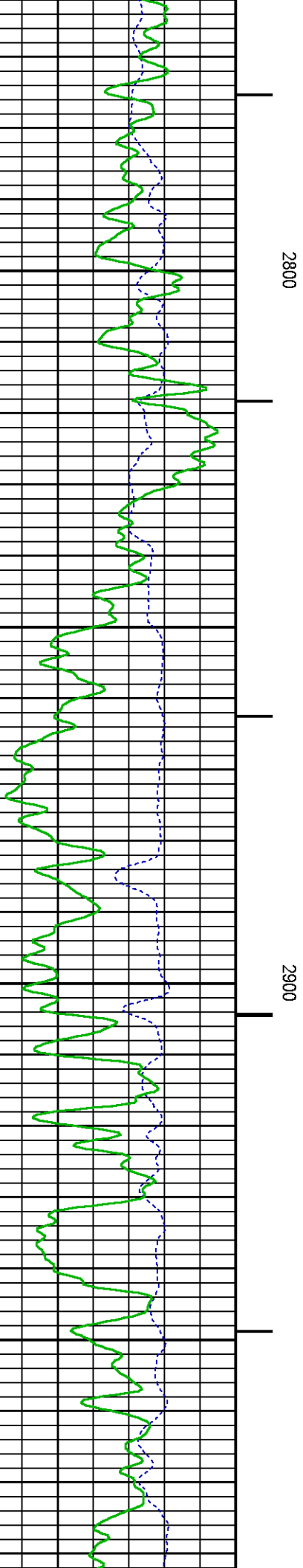
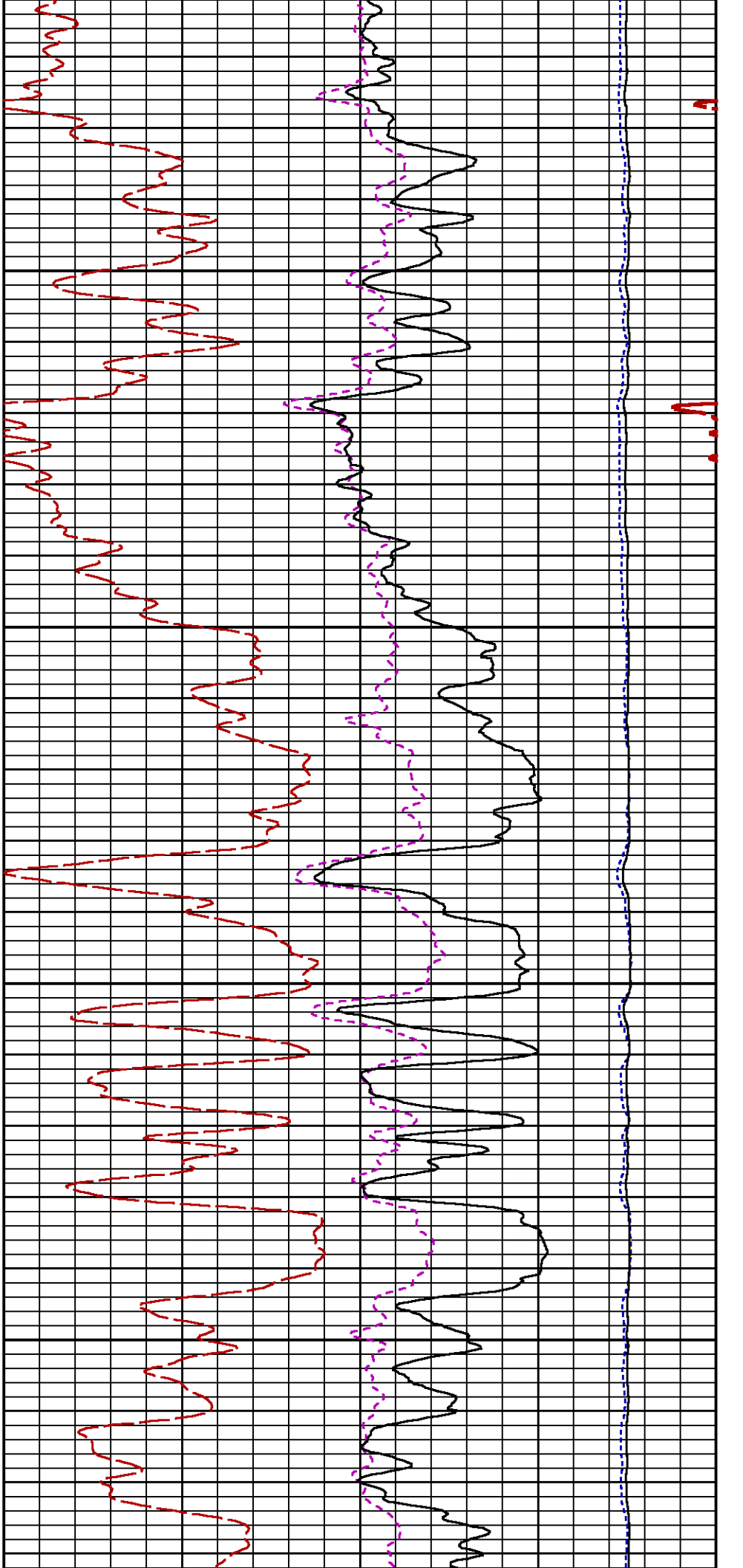
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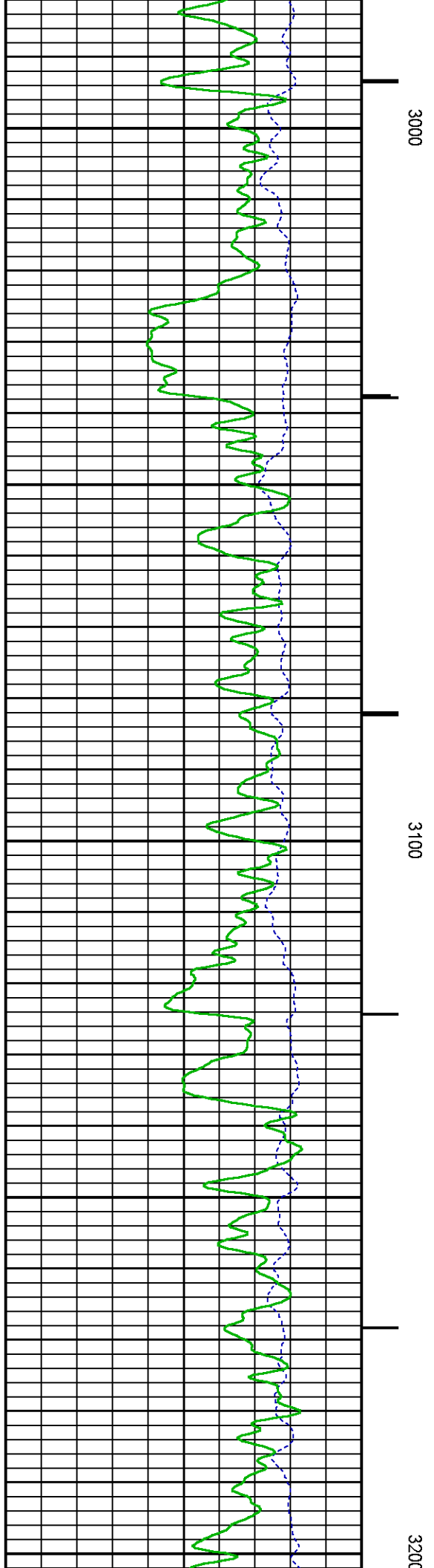
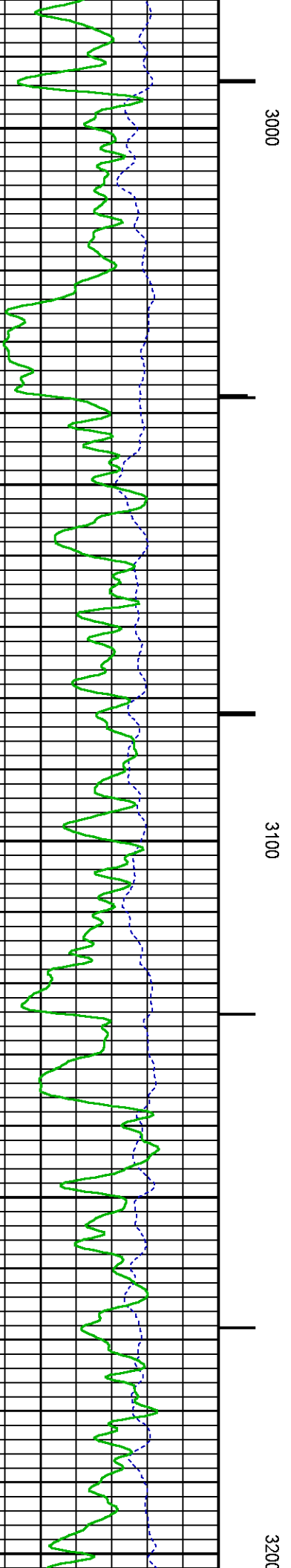
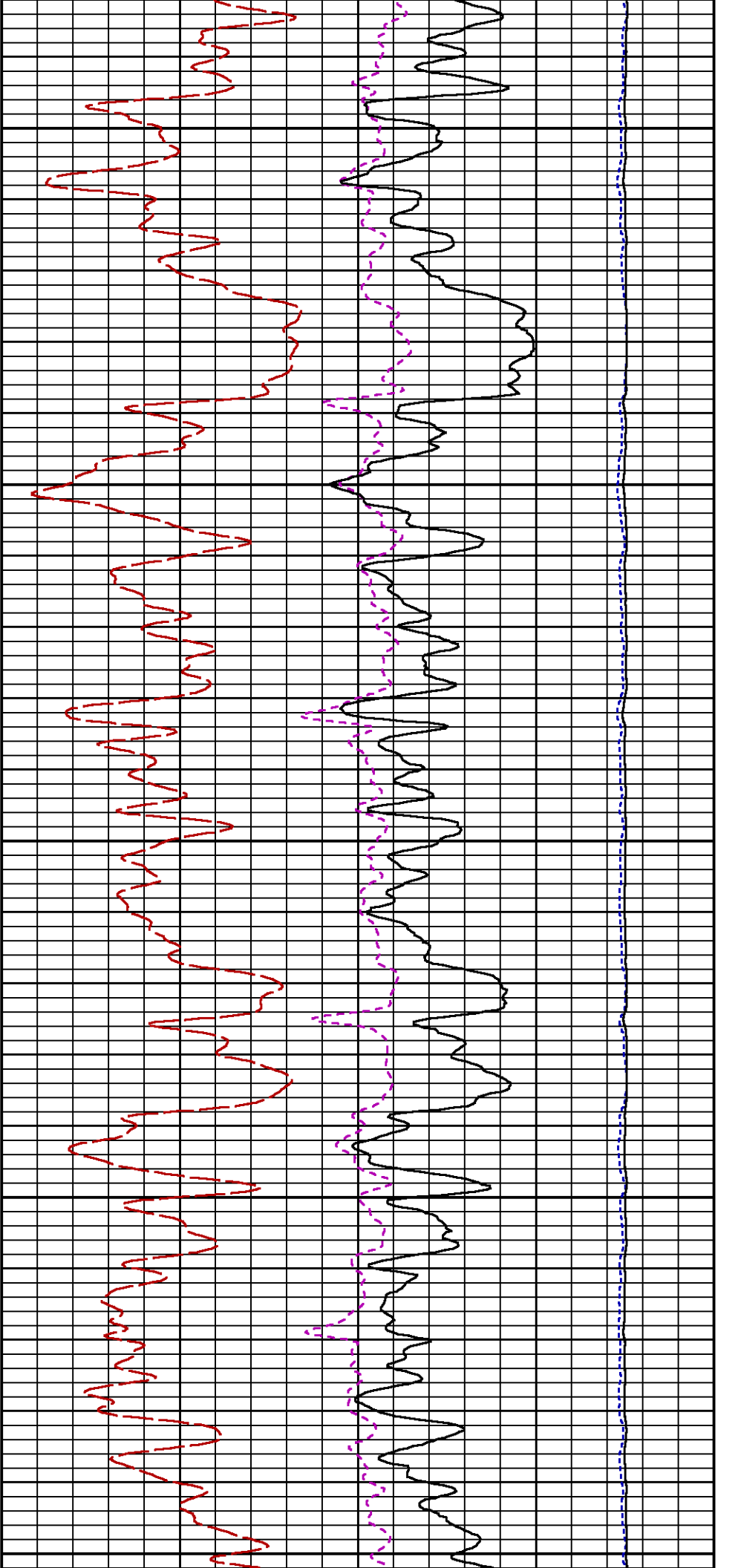
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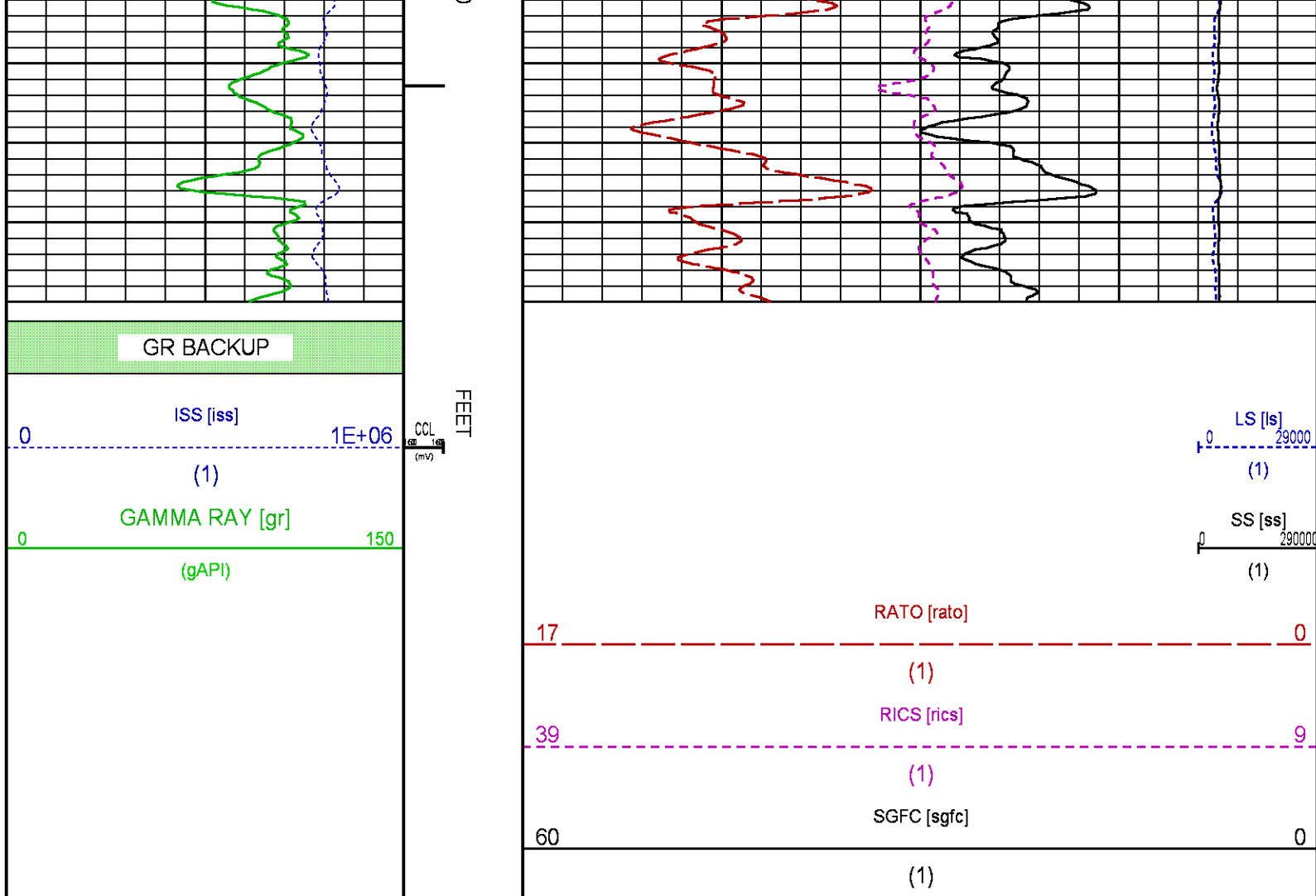
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MAIN SECTION PNC-3D MODE

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

Updates: 1 Patches: 6

Plotted: Tue Oct 20 15:50:58 2015

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/CH100245/n354h02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4658.500 ft BOTTOM DEPTH: 7955.404 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	7.88	in	" "
	CASING SIZE	4.50	in	" "

CURVE DESCRIPTION REPORT

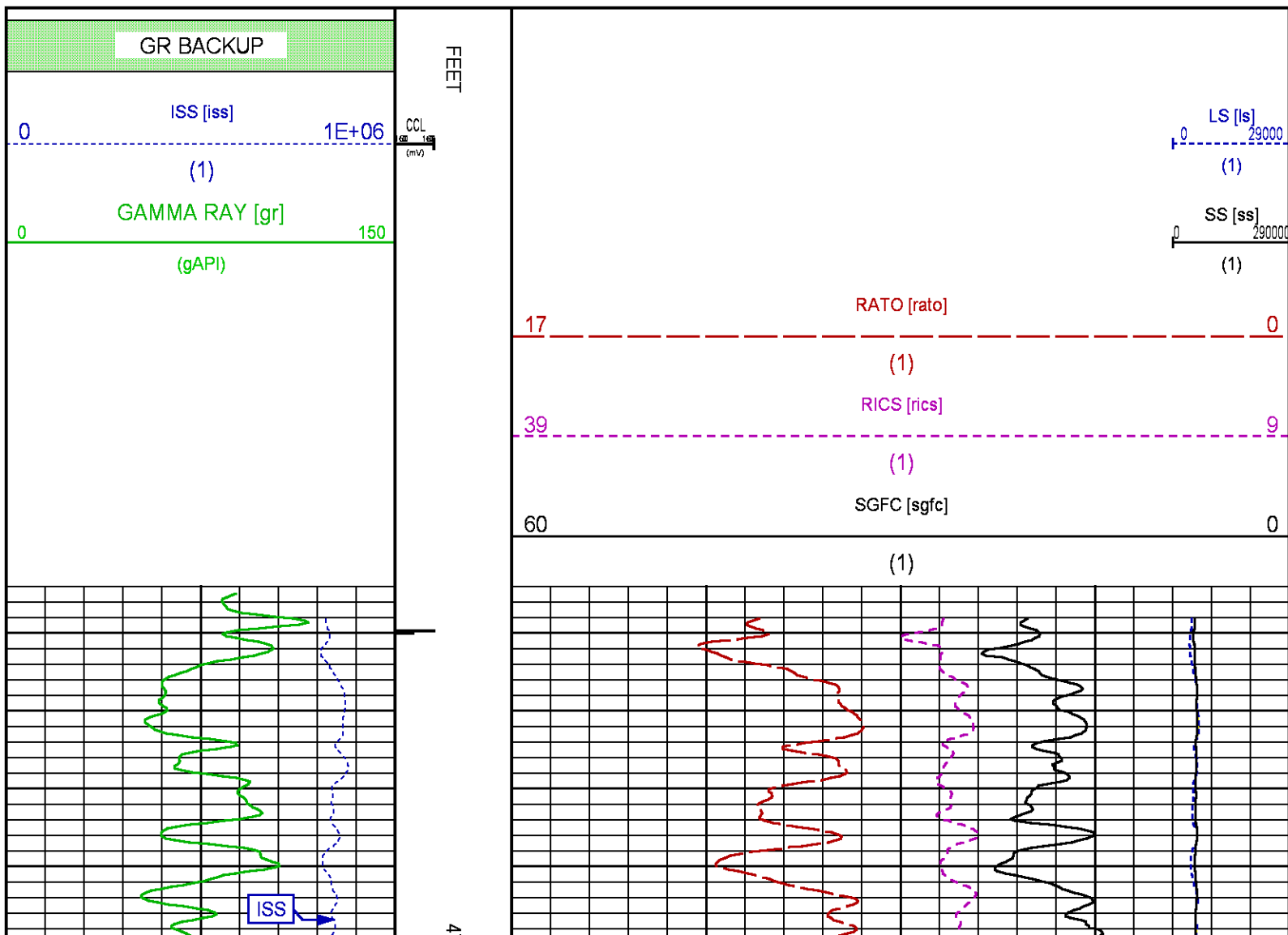
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Oct 20 12:12:23 2015	CASING COLLAR LOCATOR
F1:GR	Oct 20 12:12:23 2015	GAMMA RAY
F1:ISS	Oct 20 12:12:23 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 20 12:12:23 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 20 12:12:23 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 20 12:12:23 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 20 12:12:23 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 20 12:12:23 2015	SHORT SPACE COUNT RATE

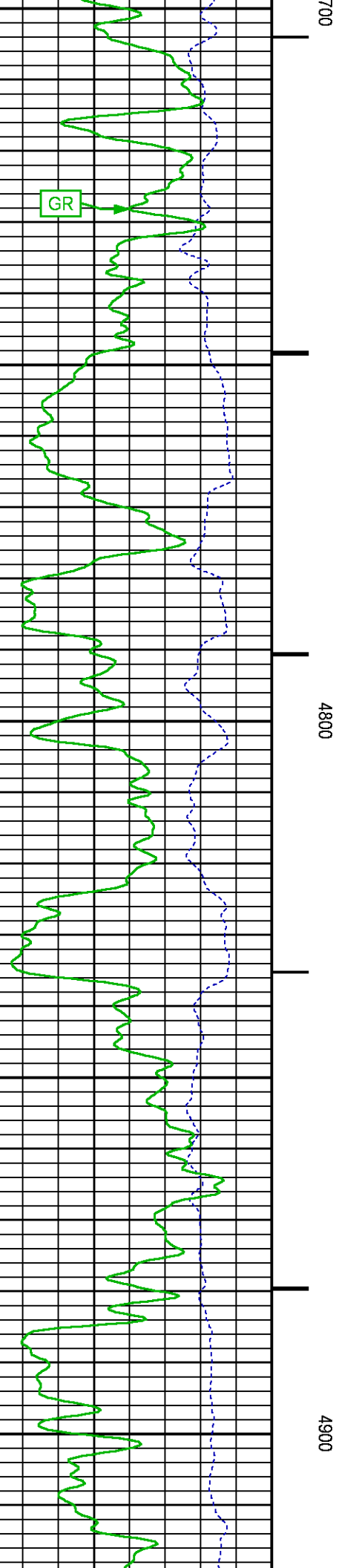
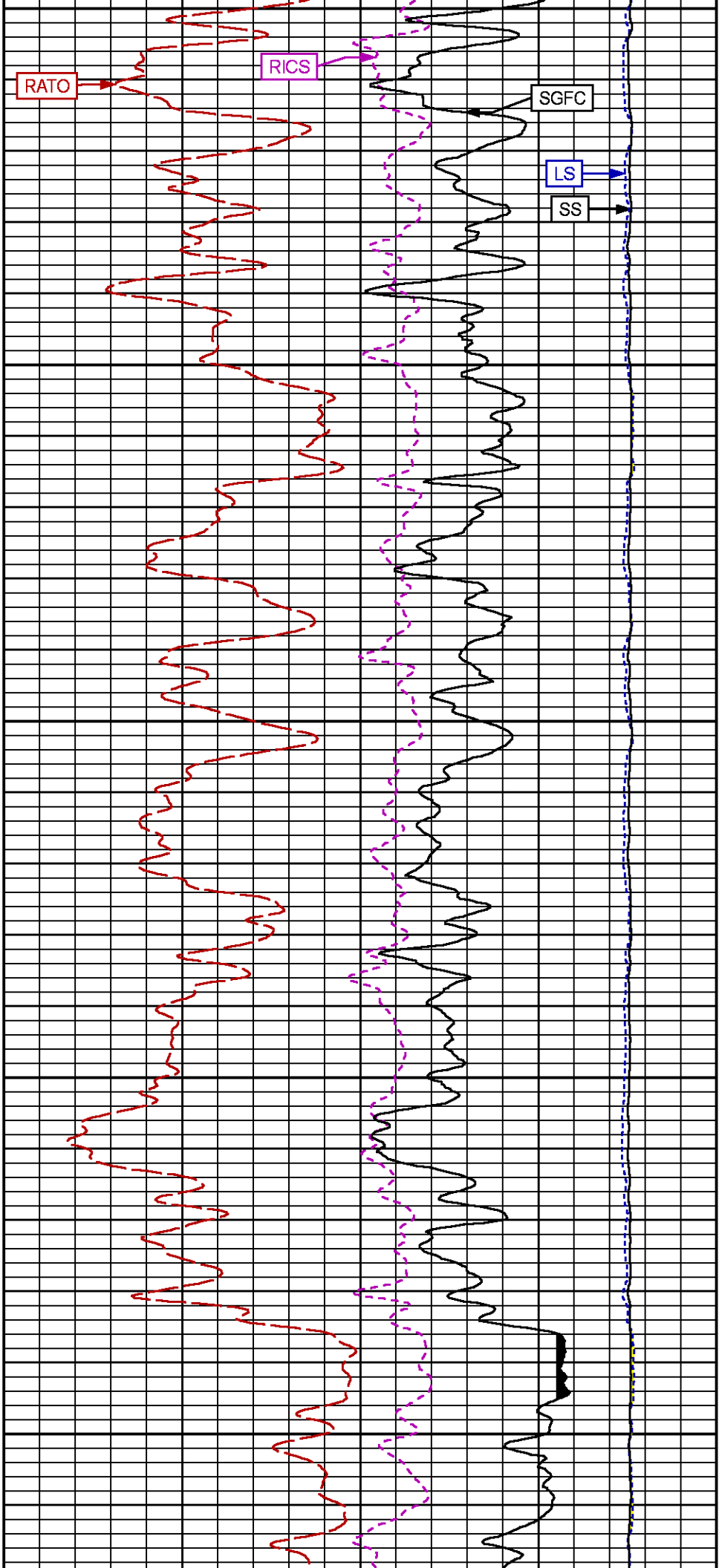
CURVE MEASURE POINT OFFSET

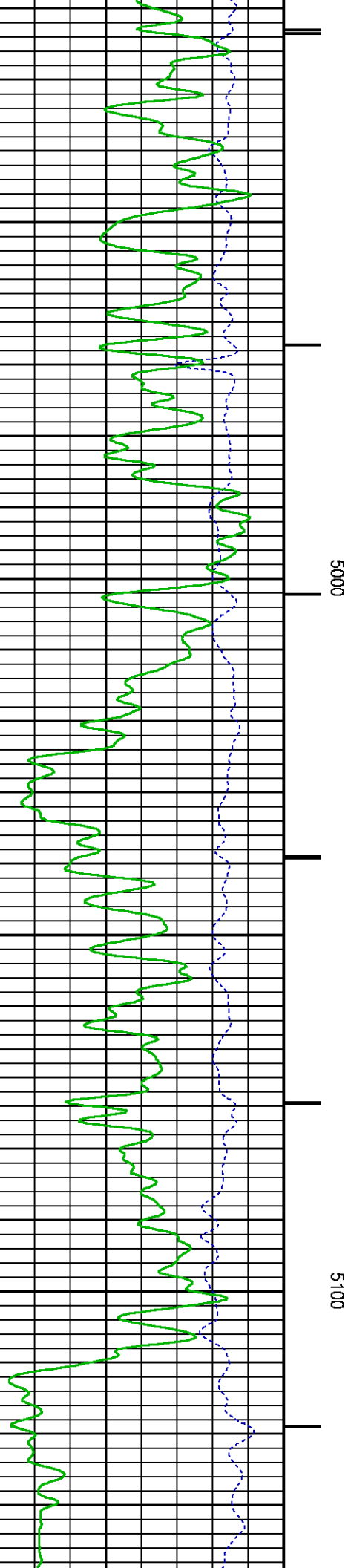
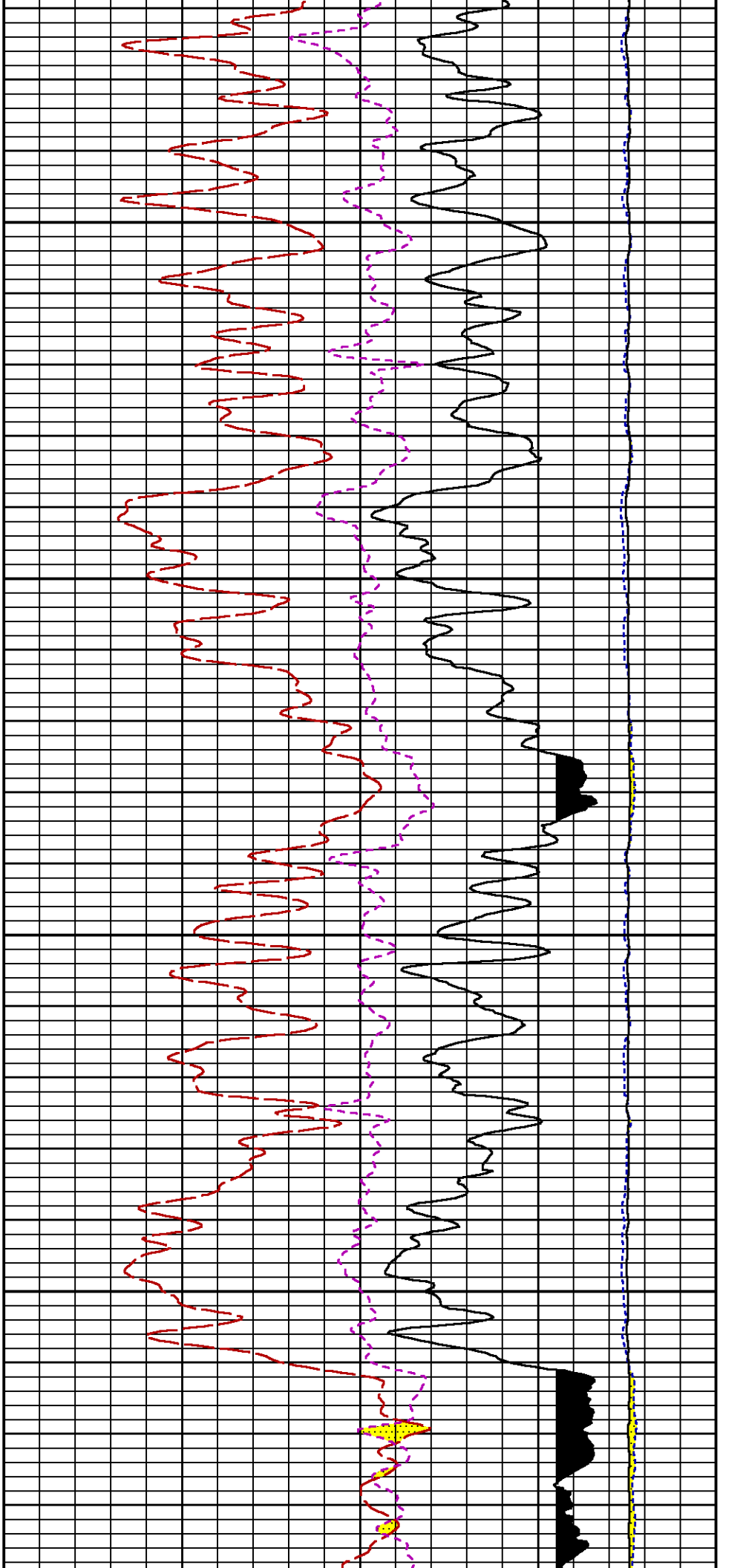
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

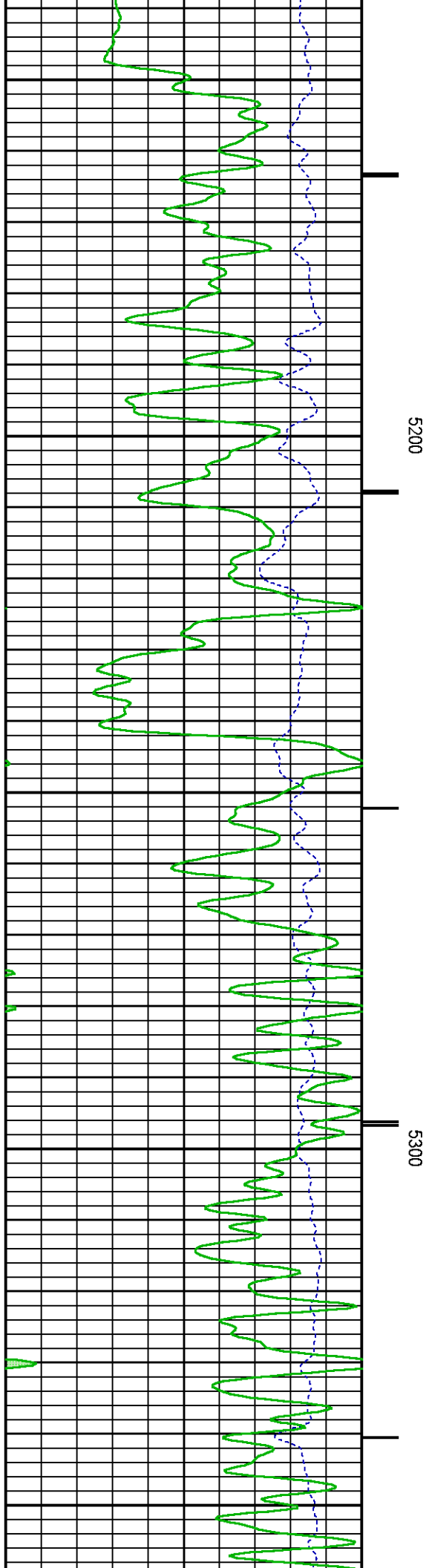
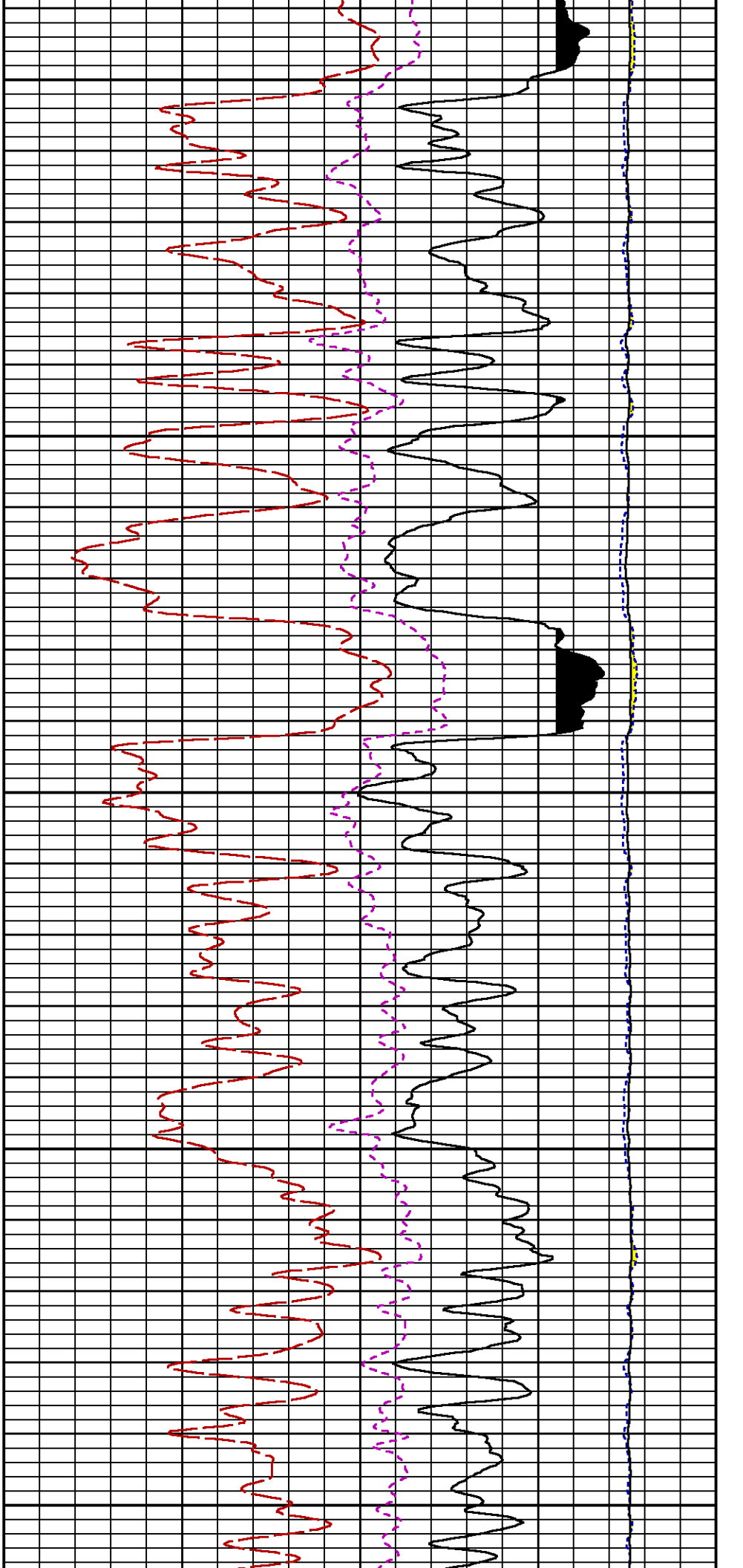
Presentation : HL6670:/dat1a/CH100245/6M_RPM_MAIN.fvpdf [5"/100' Scale]
Plot Interval : 4655 - 7945 Feet

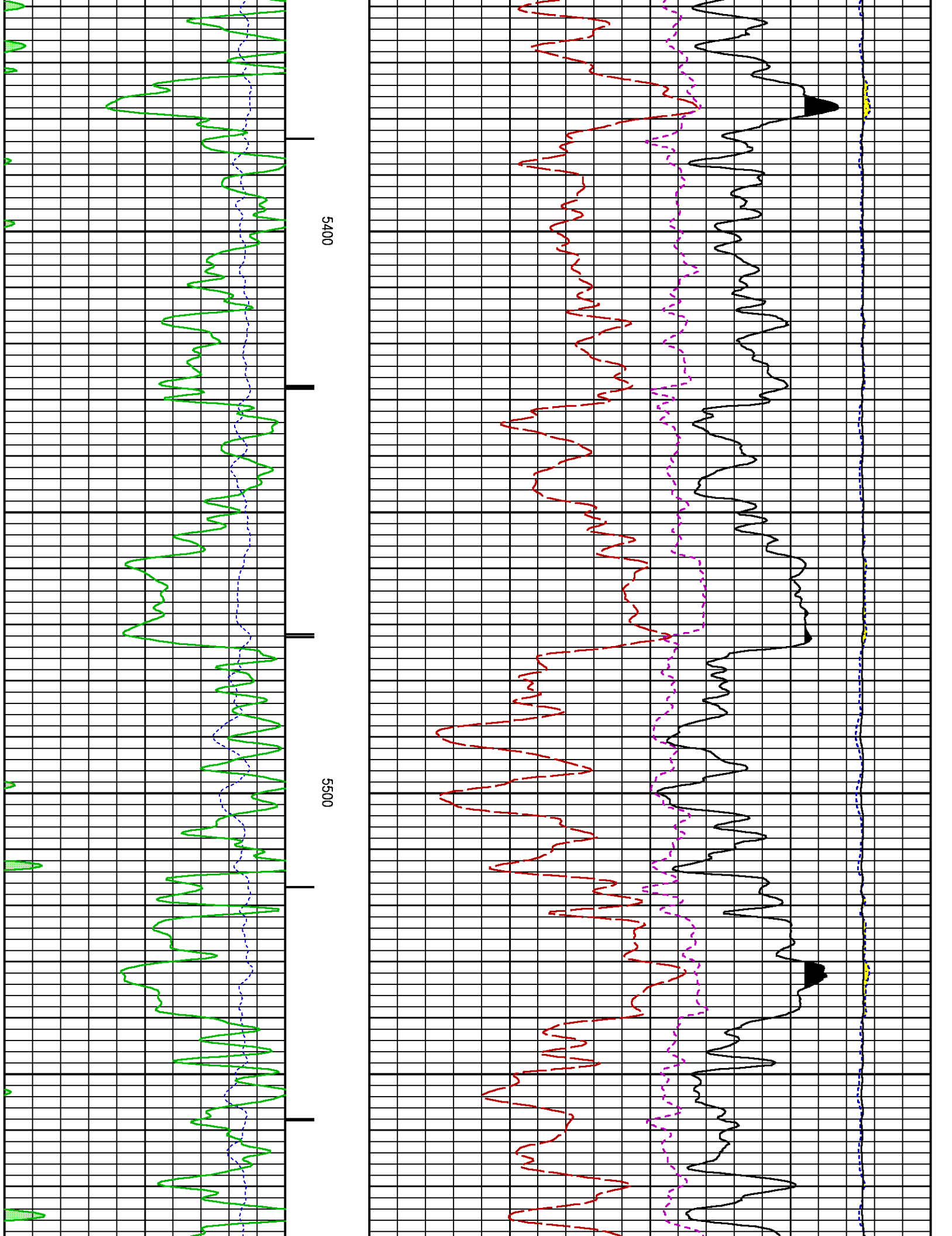
Data File 1 : F1 : HL6670:/dat1a/CH100245/06M_RPM_MAIN.xtf
Created On : Oct 20 12:12:23 2015
Company : LARAMIE ENERGY
Well : PICEANCE 28-06M
Field : VEGA
File Interval : 4632.5 - 7952.75 Feet
OCT : n354h

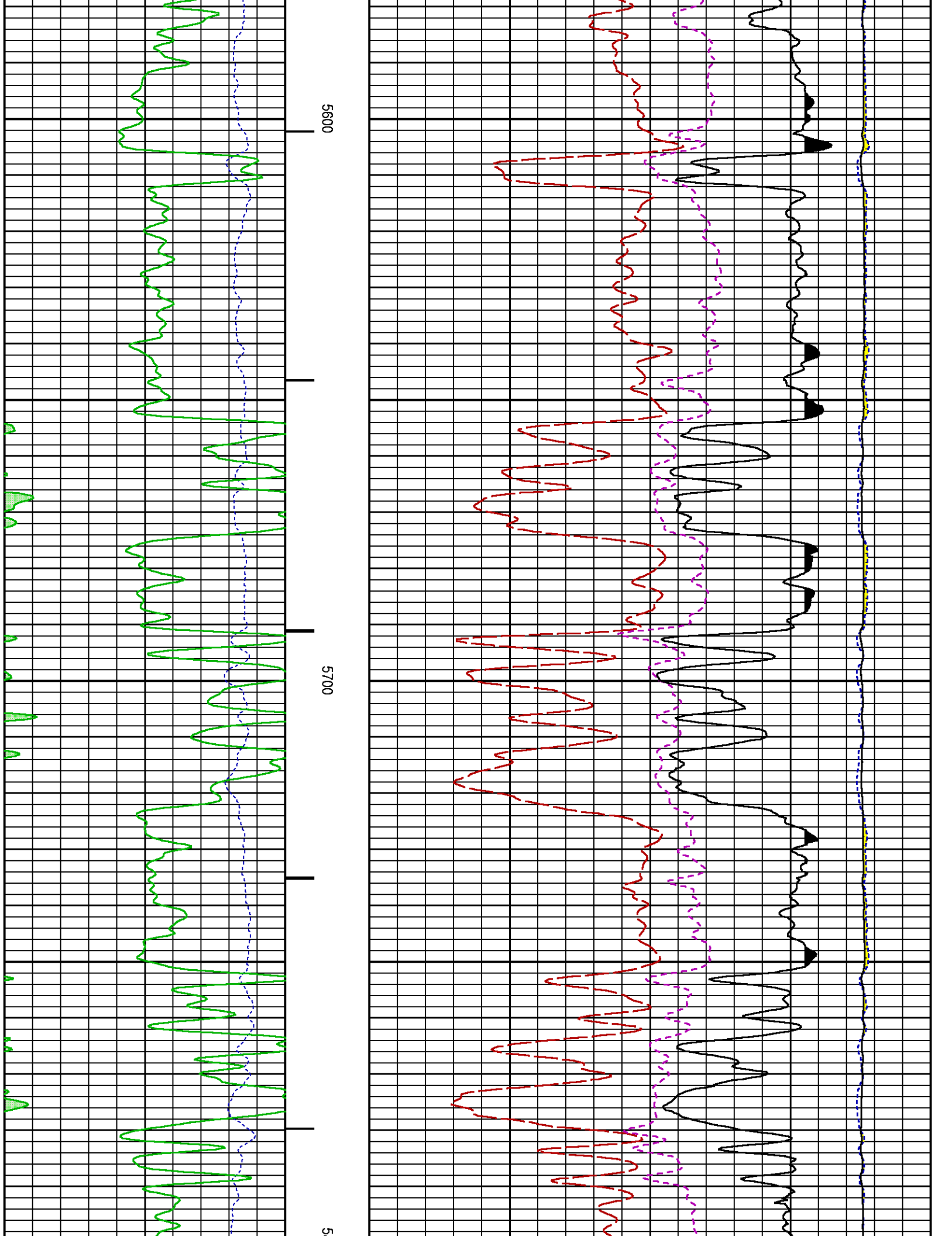


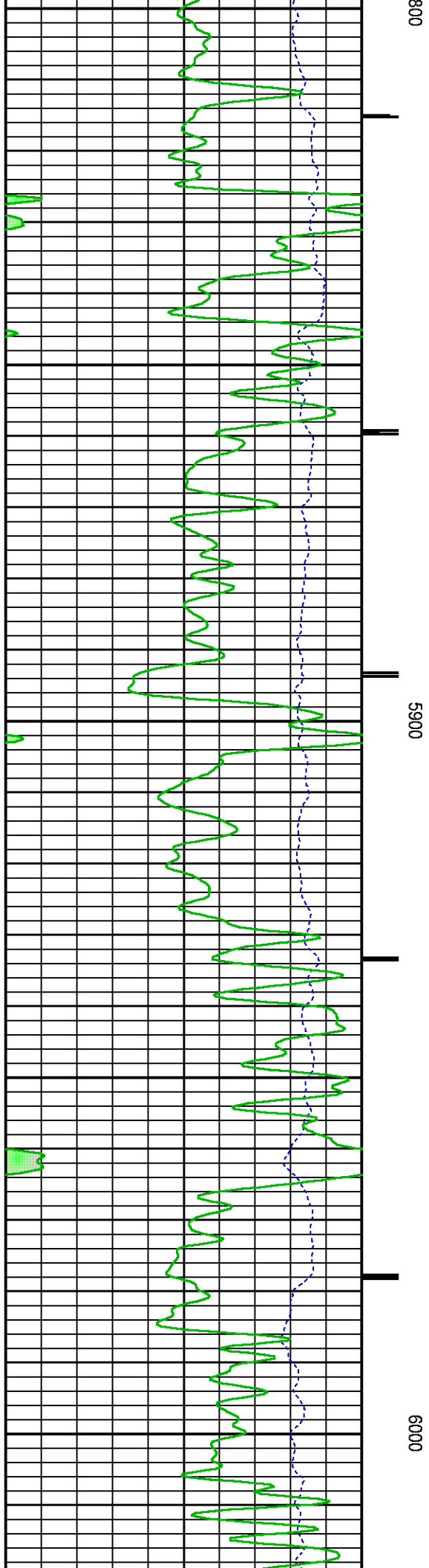
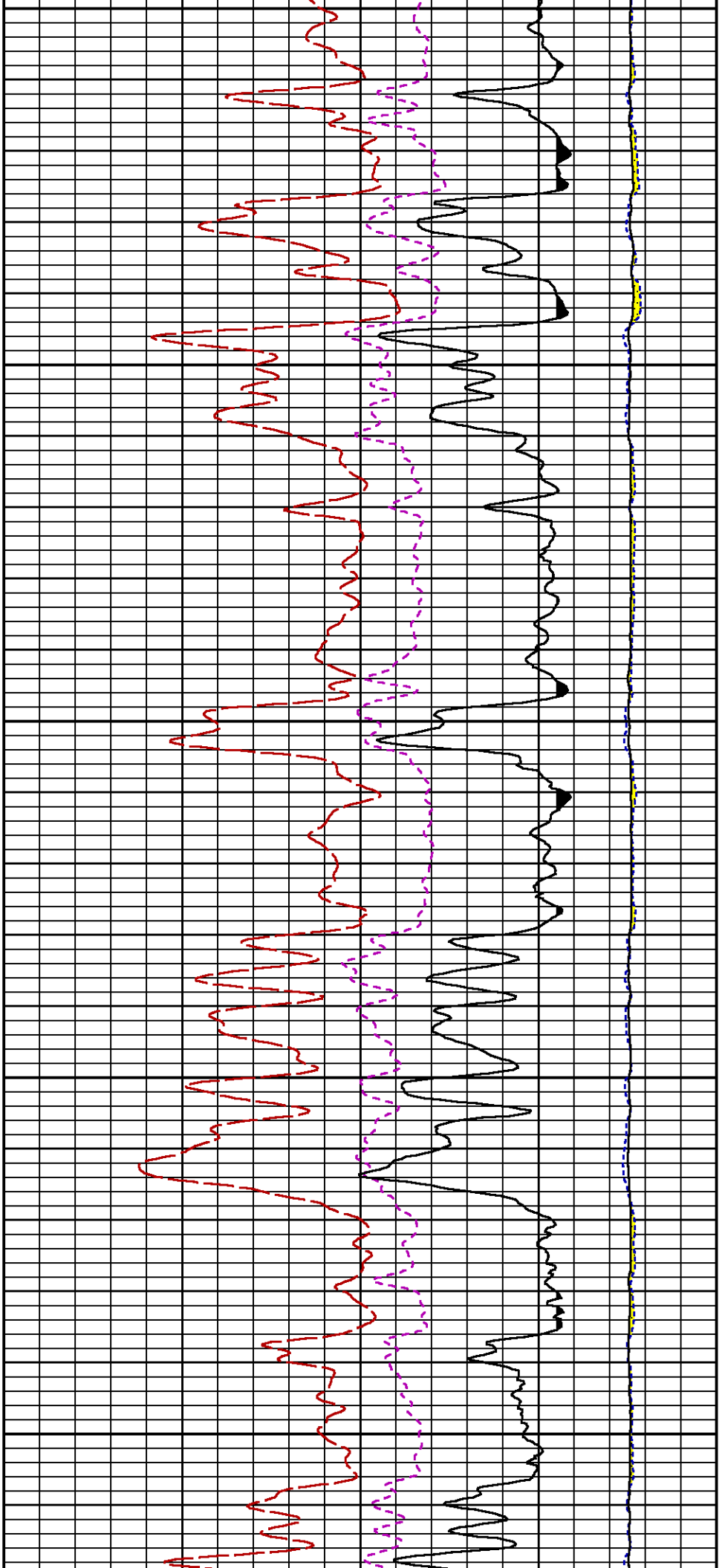


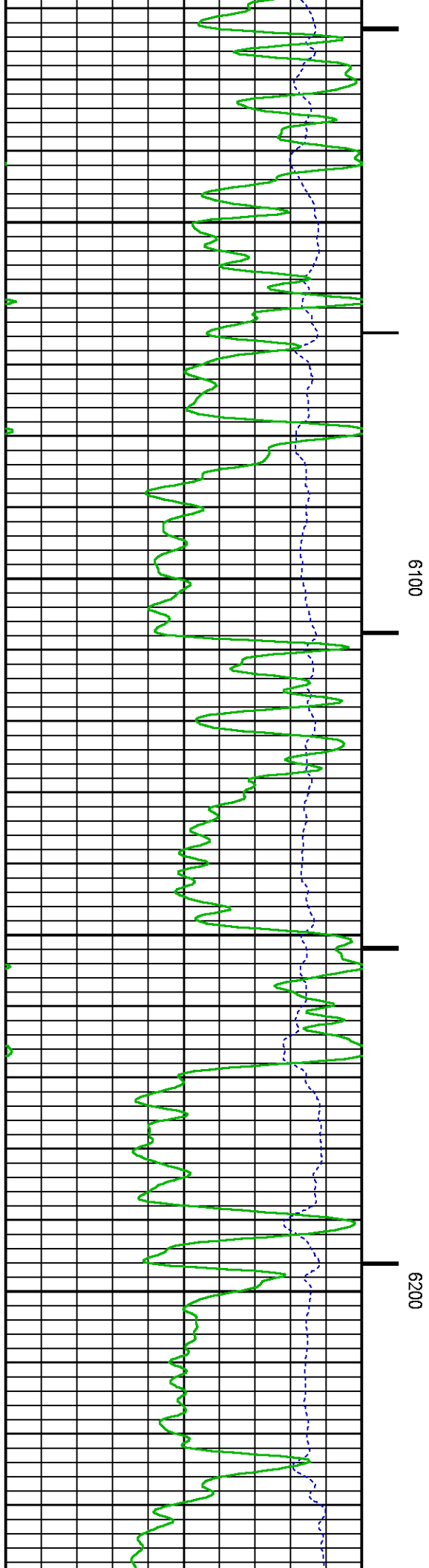
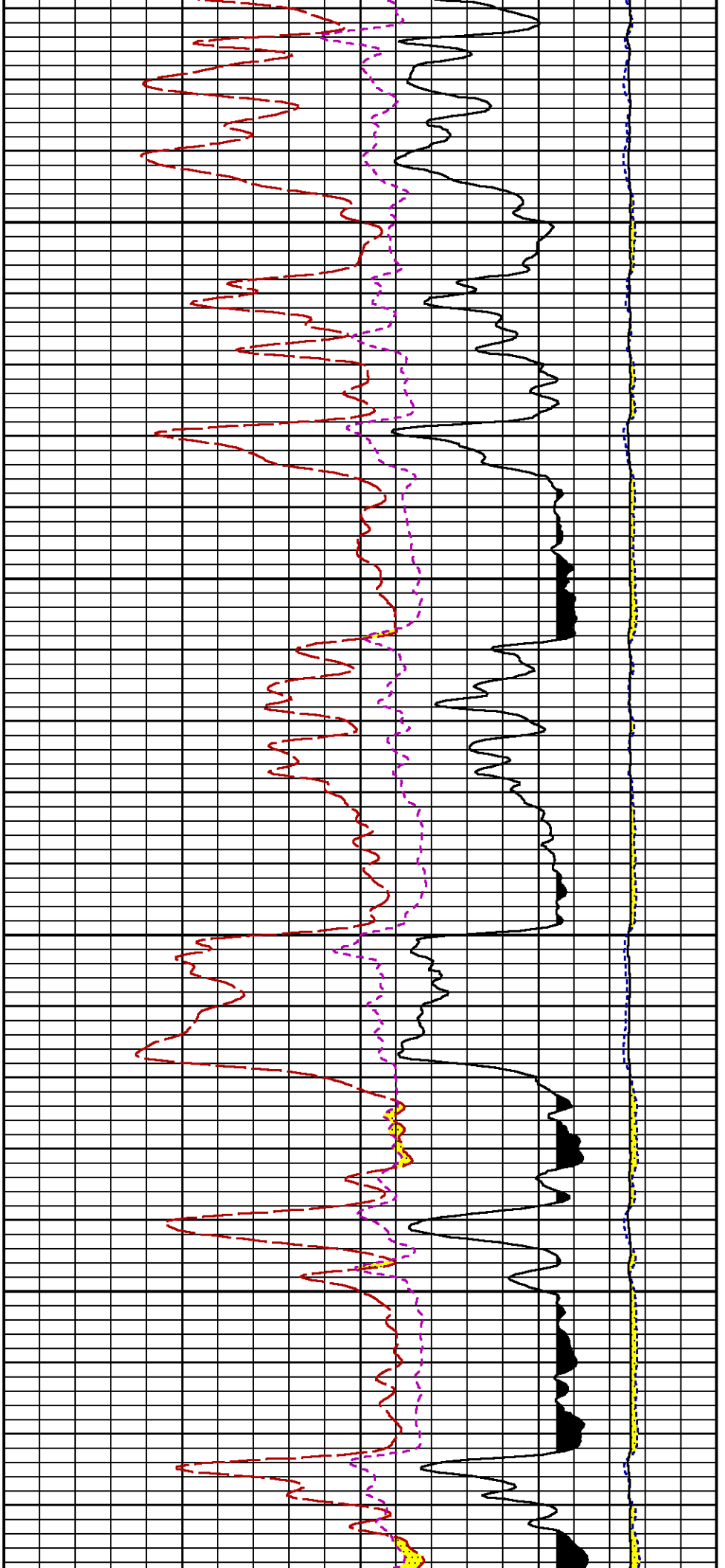


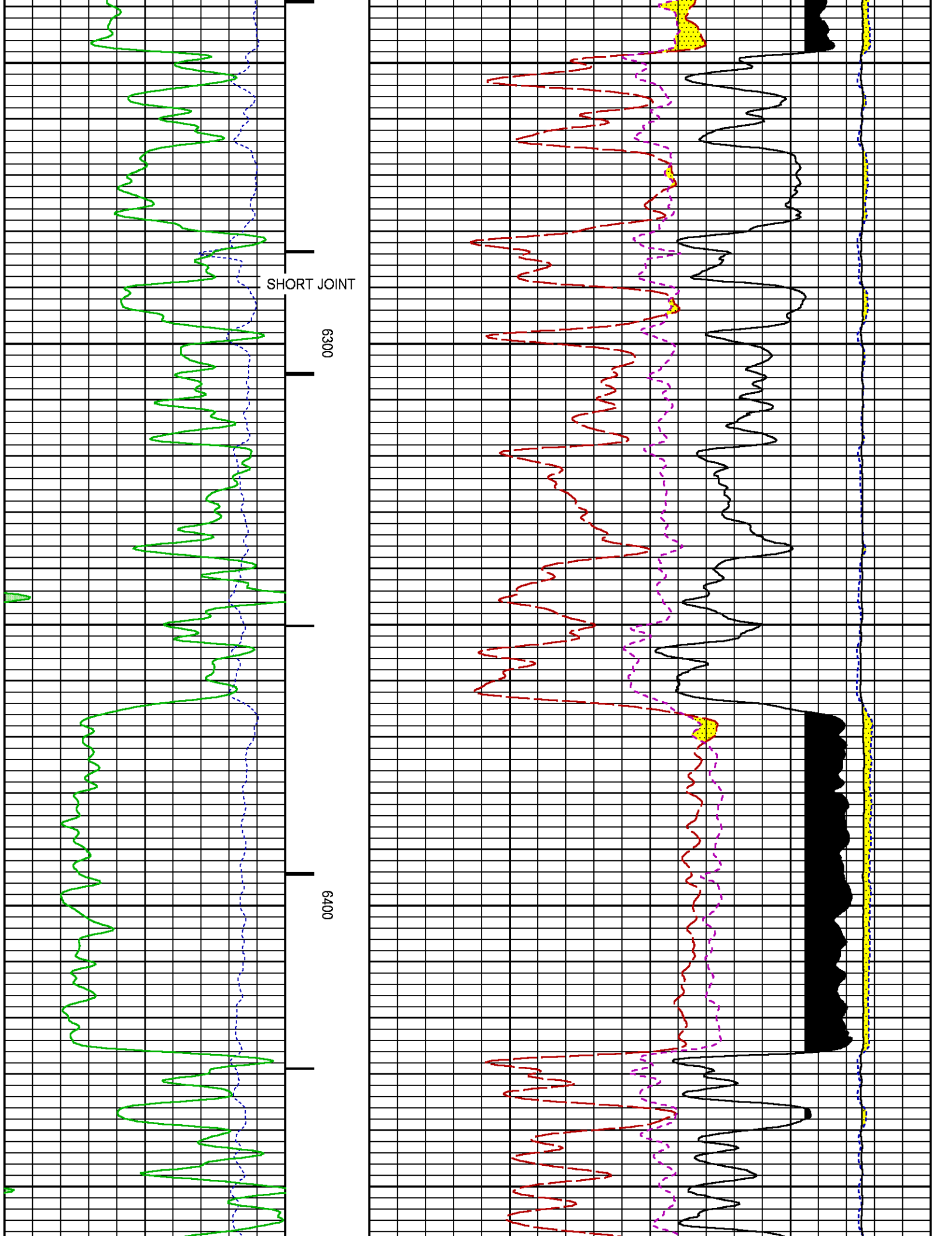


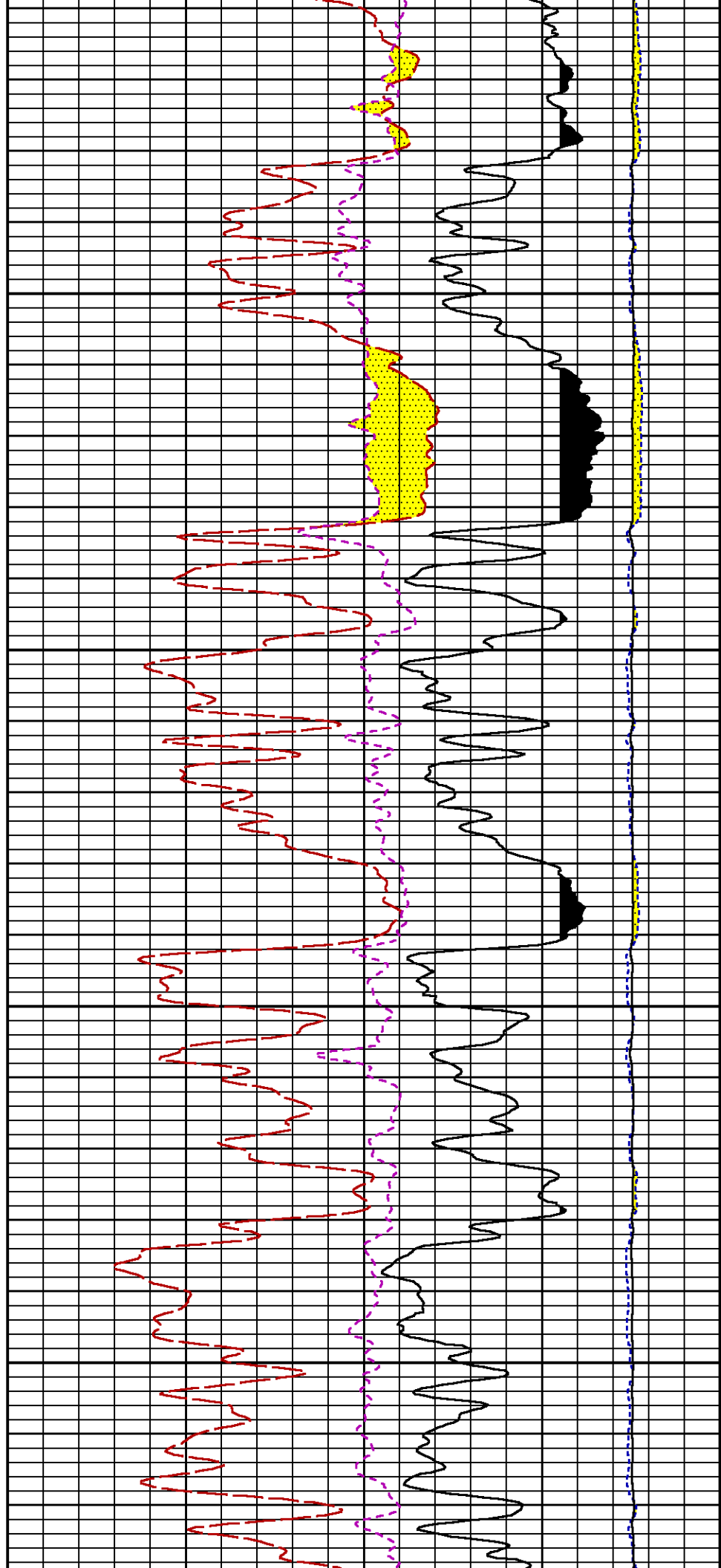
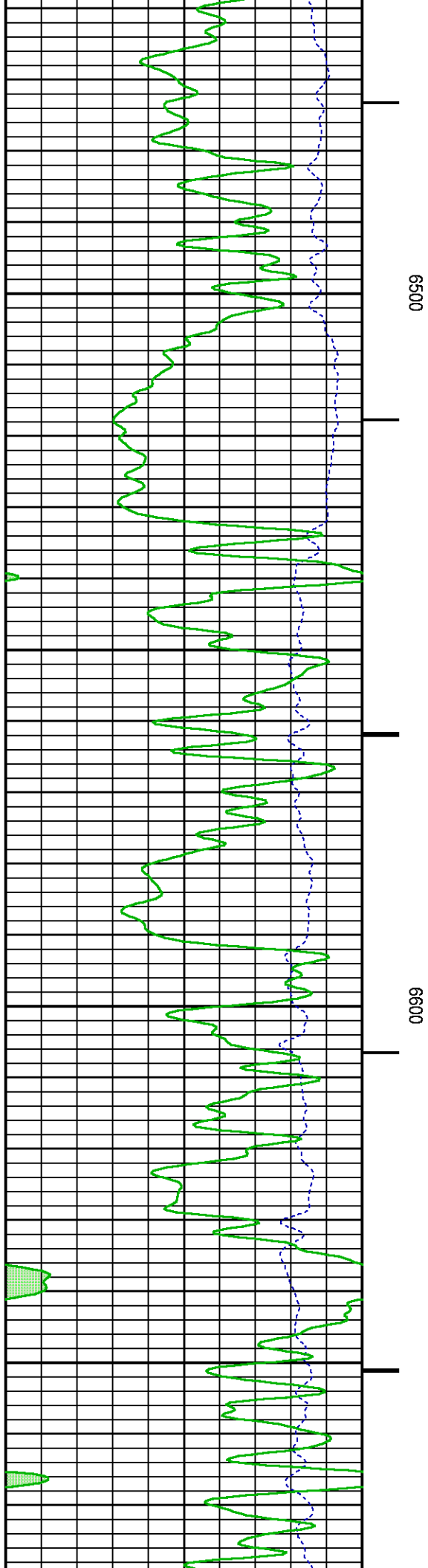


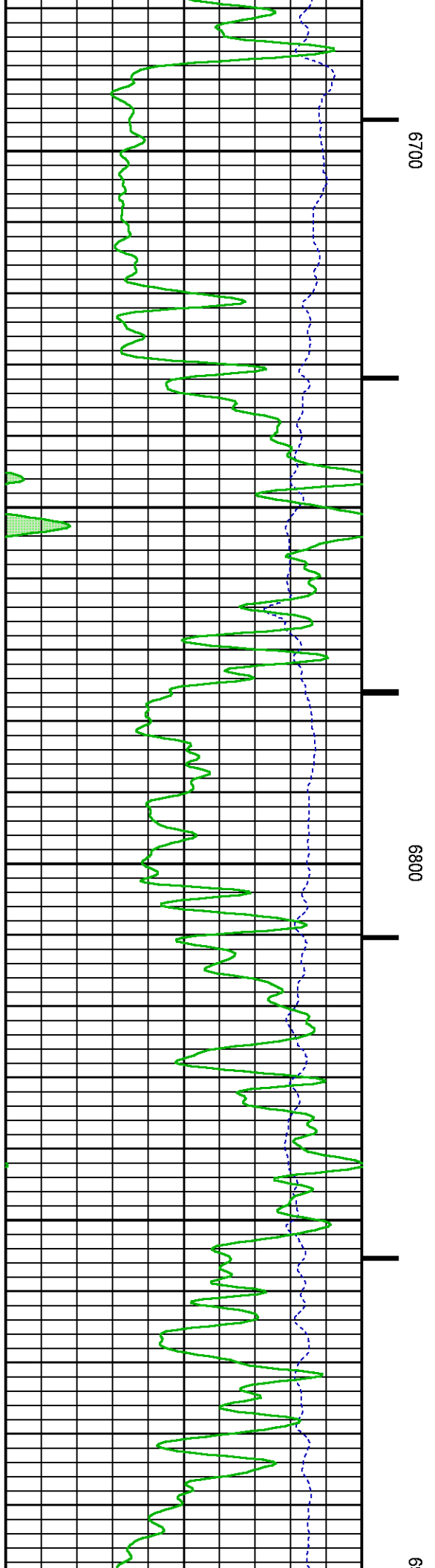
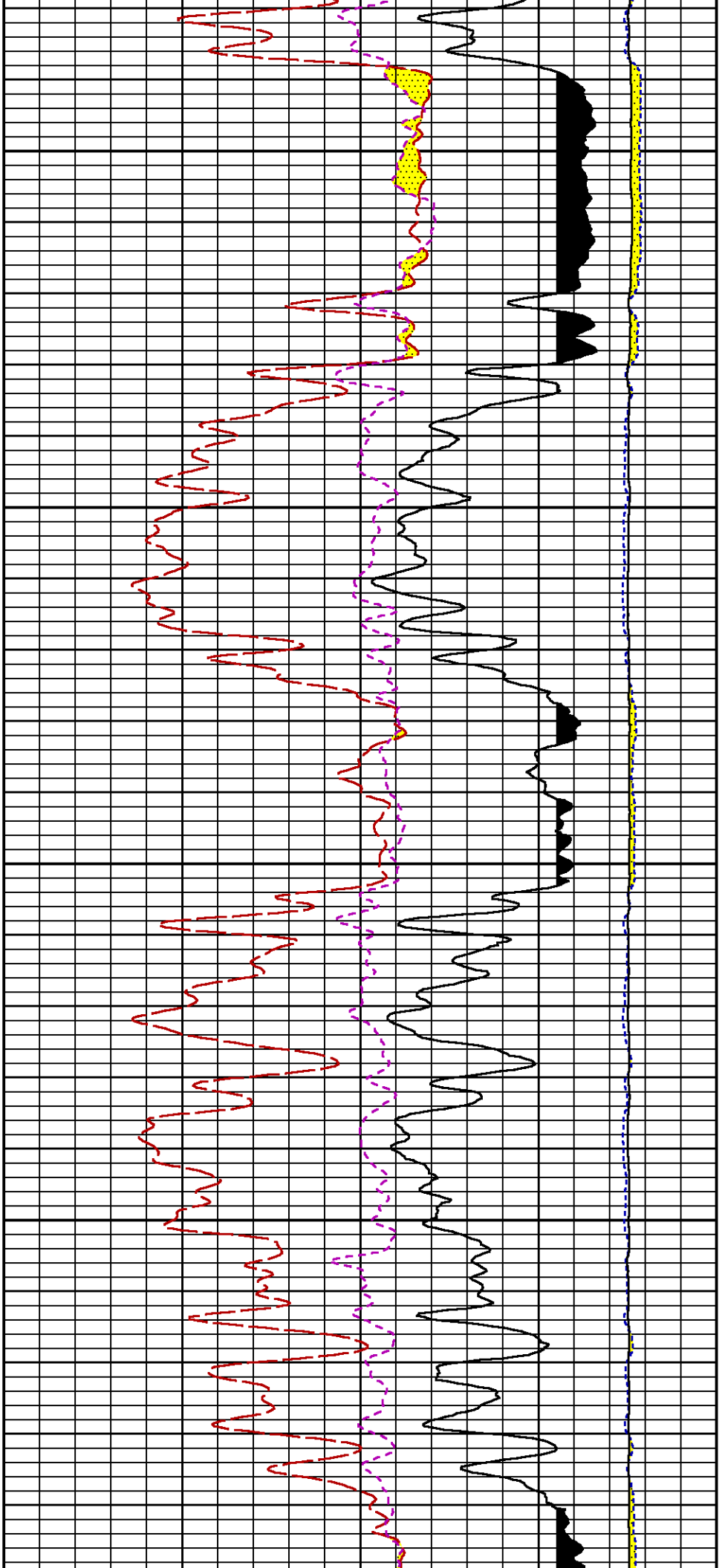


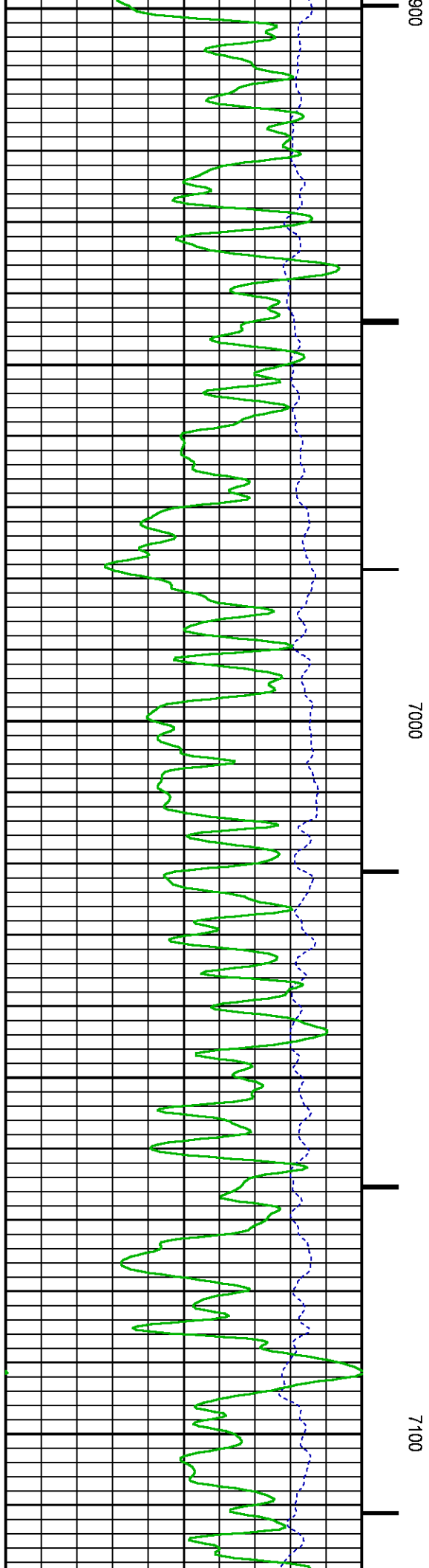
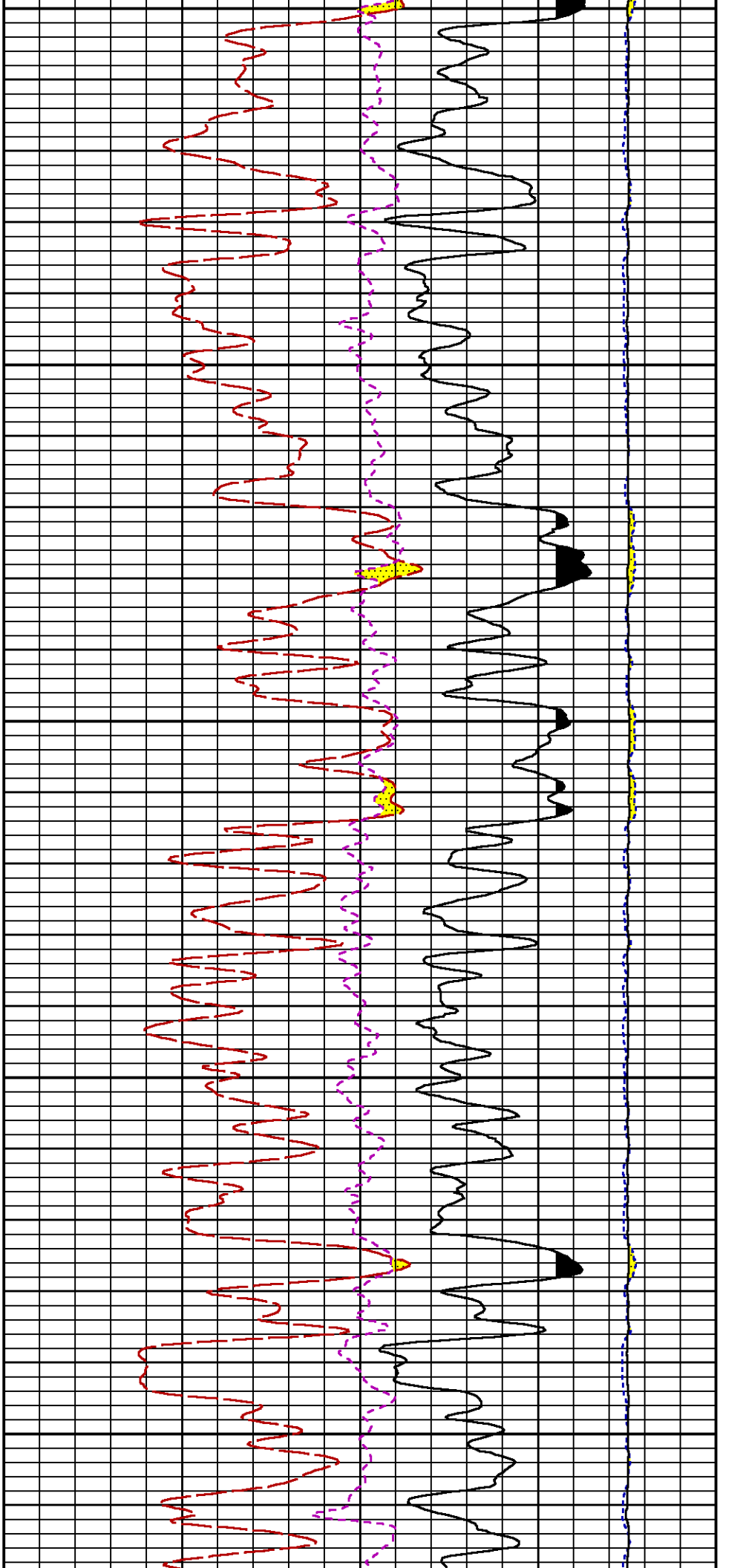


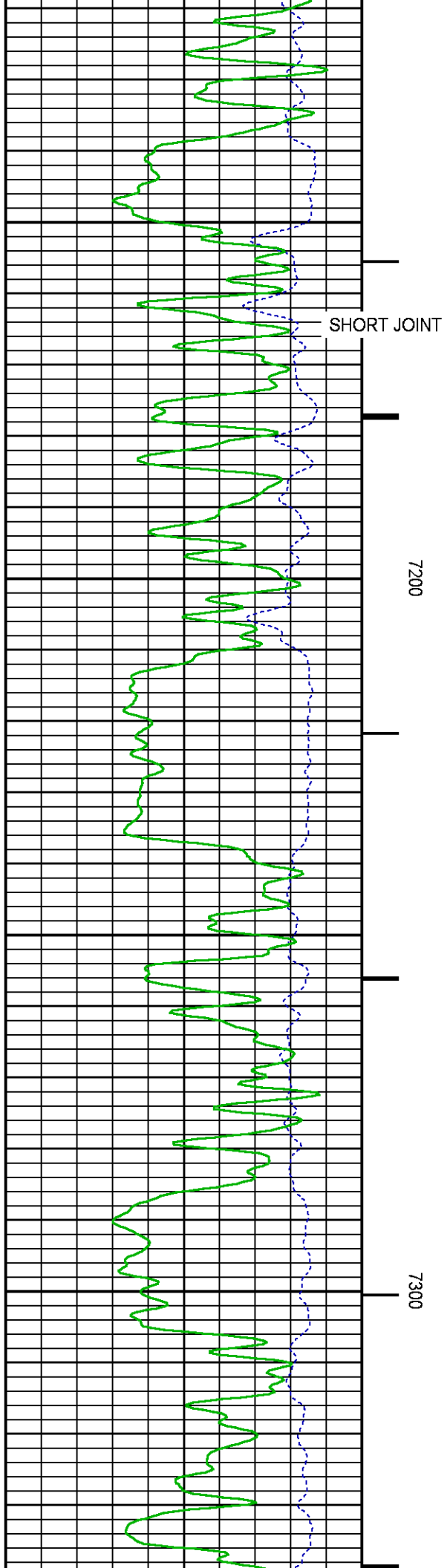
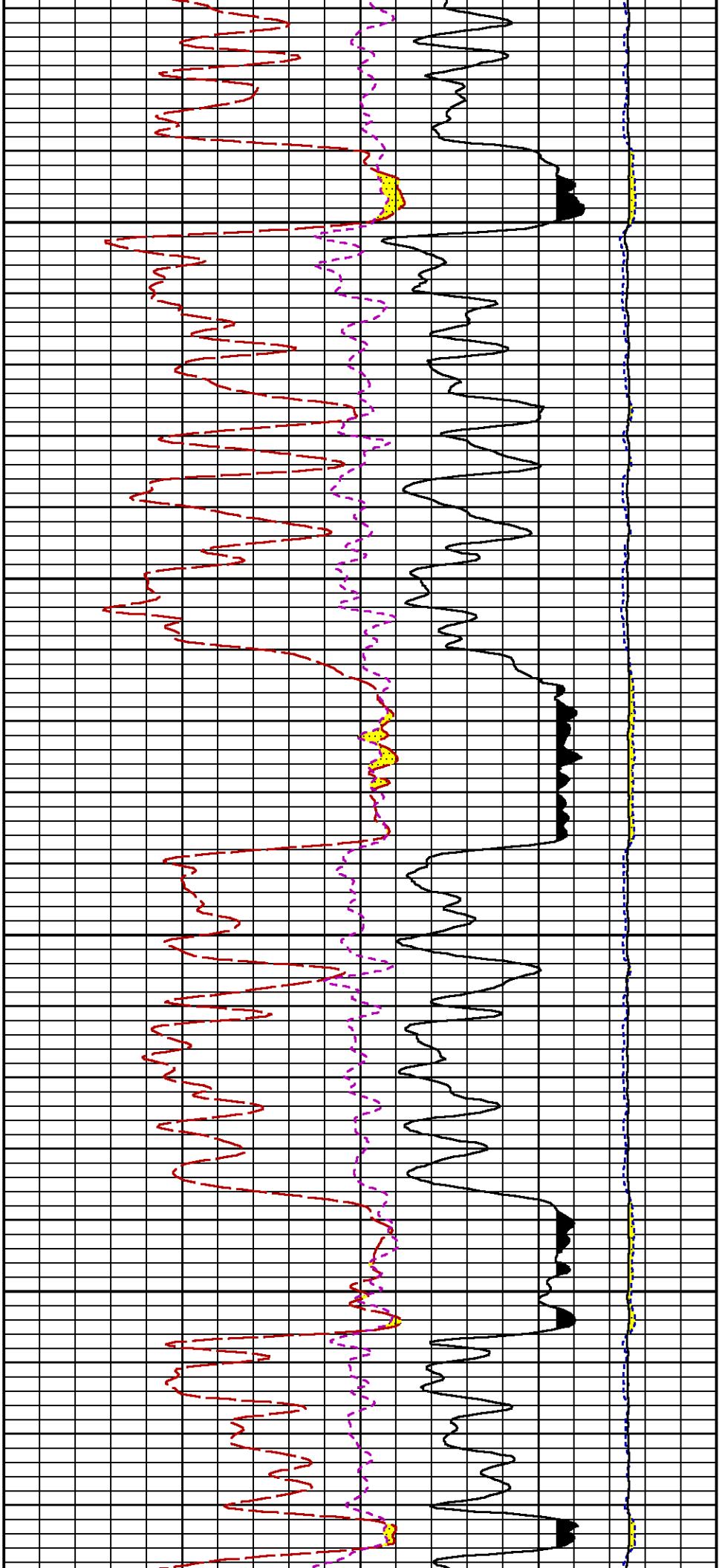


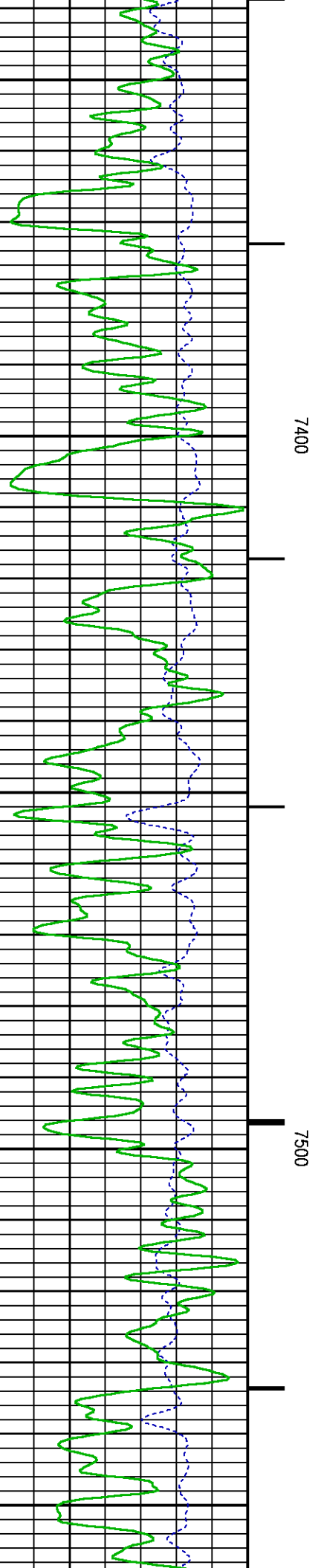
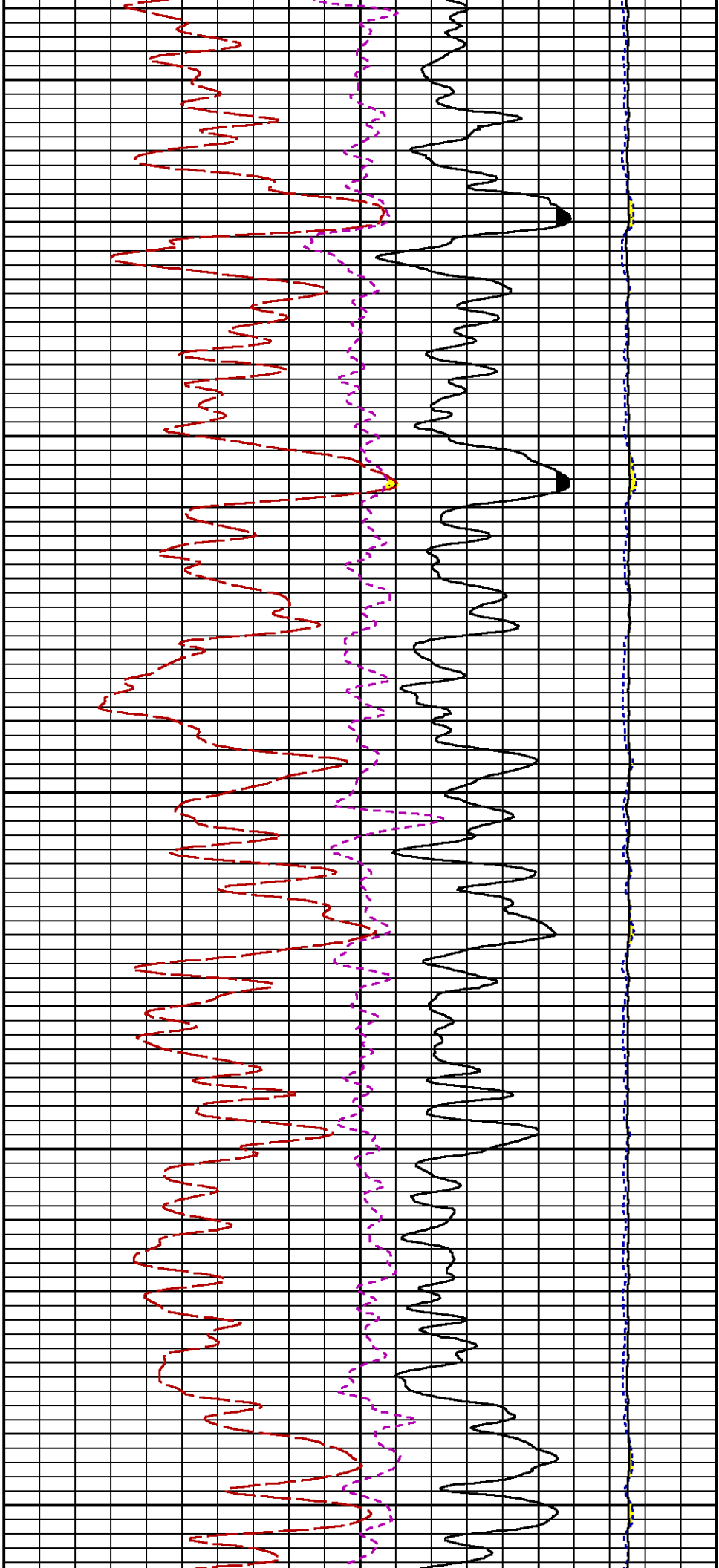


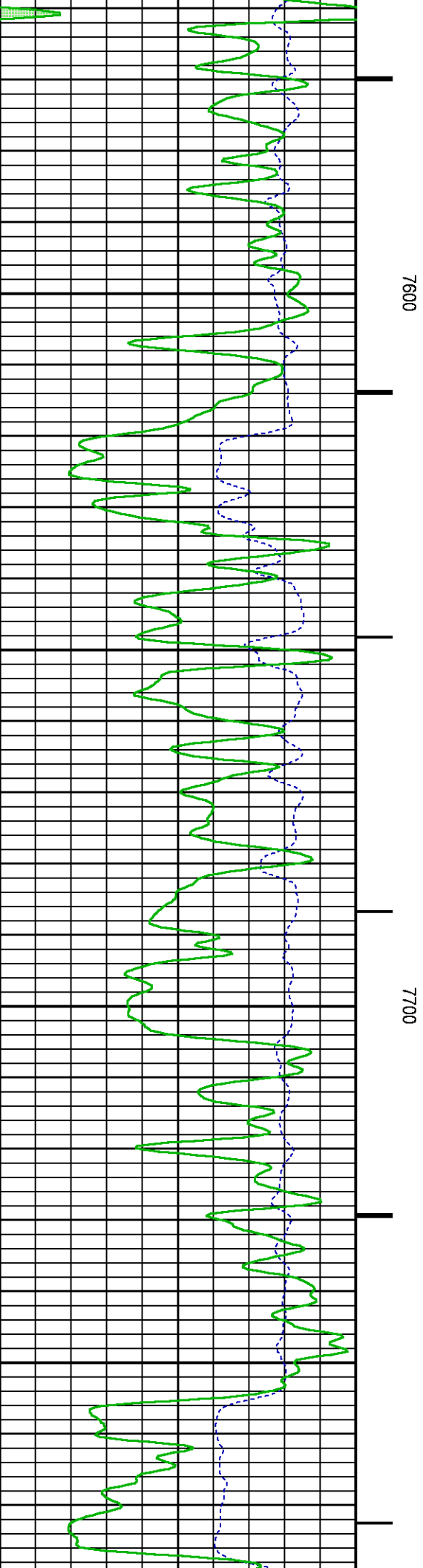
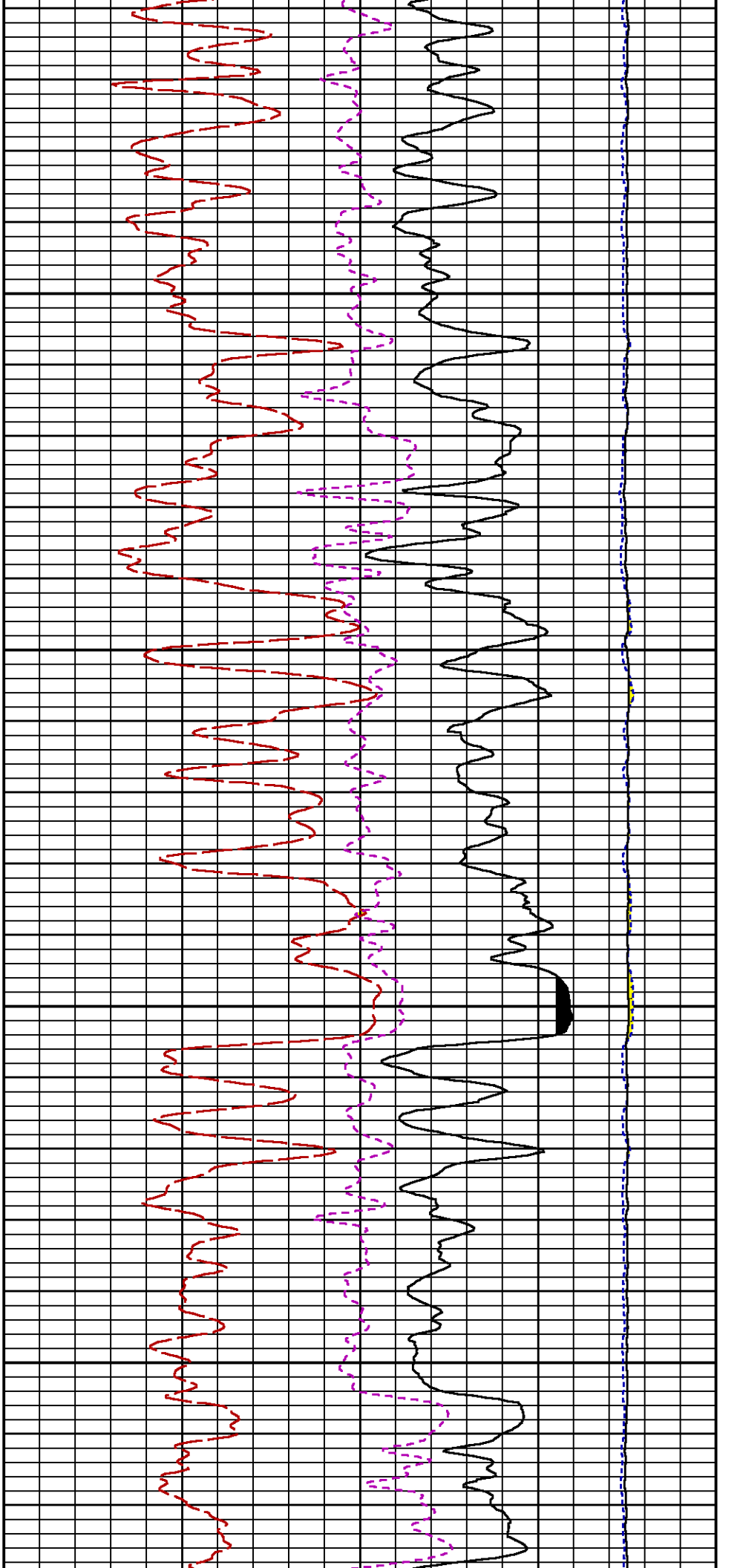


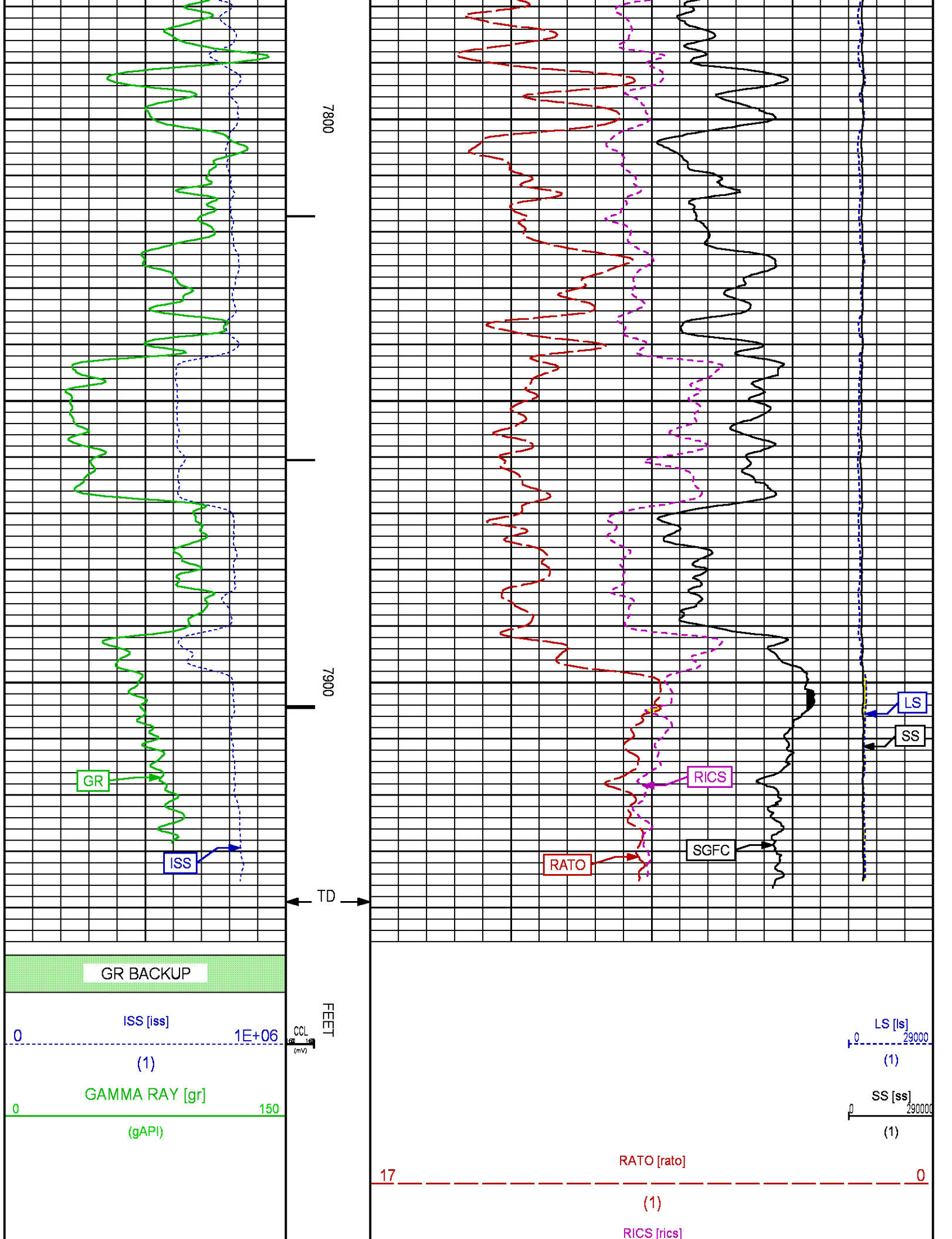












		39		9
		(1)		
		60	SGFC [sgfc]	0
		(1)		

REPEAT SECTION PNC-3D MODE

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

Plotted: Tue Oct 20 14:15:26 2015

PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/CH100245/n354h01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 0.000 ft BOTTOM DEPTH: 0.000 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	7.88	in	"	"
	CASING SIZE	4.50	in	"	"
	MATRIX	SANDSTONE		"	"
	CORRECTION BUFFER	11		"	"

CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	Oct 20 11:43:16 2015	CASING COLLAR LOCATOR
F1:GR	Oct 20 11:43:16 2015	GAMMA RAY
F1:ISS	Oct 20 11:43:16 2015	INELASTIC SHORT SPACE COUNT RATE
F1:LS	Oct 20 11:43:16 2015	LONG SPACE COUNT RATE
F1:RATO	Oct 20 11:43:16 2015	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	Oct 20 11:43:16 2015	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	Oct 20 11:43:16 2015	CORRECTED FORMATION SIGMA
F1:SS	Oct 20 11:43:16 2015	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	25.00	ISS	12.75	RATO	12.75	SGFC	12.75
GR	22.75	LS	12.75	RICS	12.75	SS	12.75

Presentation : HL6670:/dat1a/CH100245/6M_RPM_REPEAT.fvpdf [5"/100" Scale]
 Plot Interval : 7700 - 7942.5 Feet

Data File 1 : F1 : HL6670:/dat1a/CH100245/06M_RPM_REPEAT.xtf
 Created On : Oct 20 11:43:16 2015
 Company : LARAMIE ENERGY
 Well : PICEANCE 28-06M
 Field : VEGA

GR BACKUP

ISS [iss]

1E+06

(1)

GAMMA RAY [gr]

(gAPI)

FEET

CCL
(m)

7700

7800

LS [ls]

29000

(1)

SS [ss]

290000

(1)

RATO [rato]

17

0

(1)

RICS [rics]

39

9

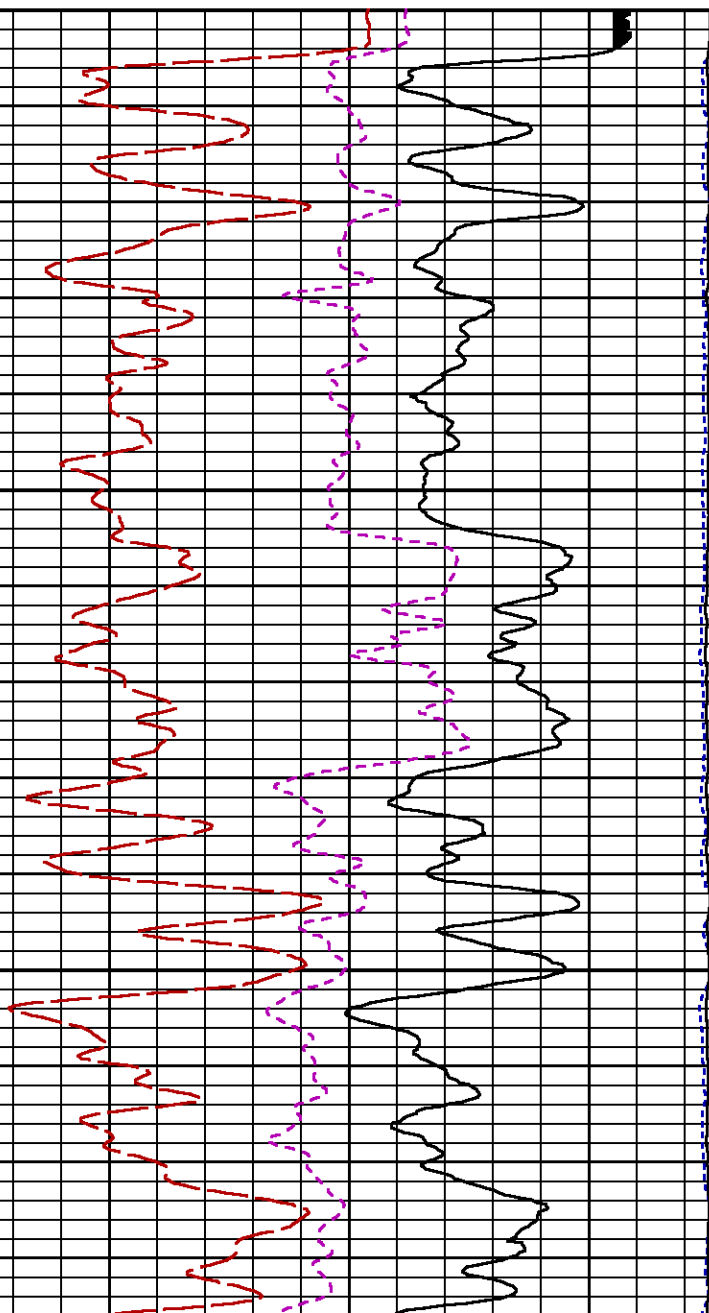
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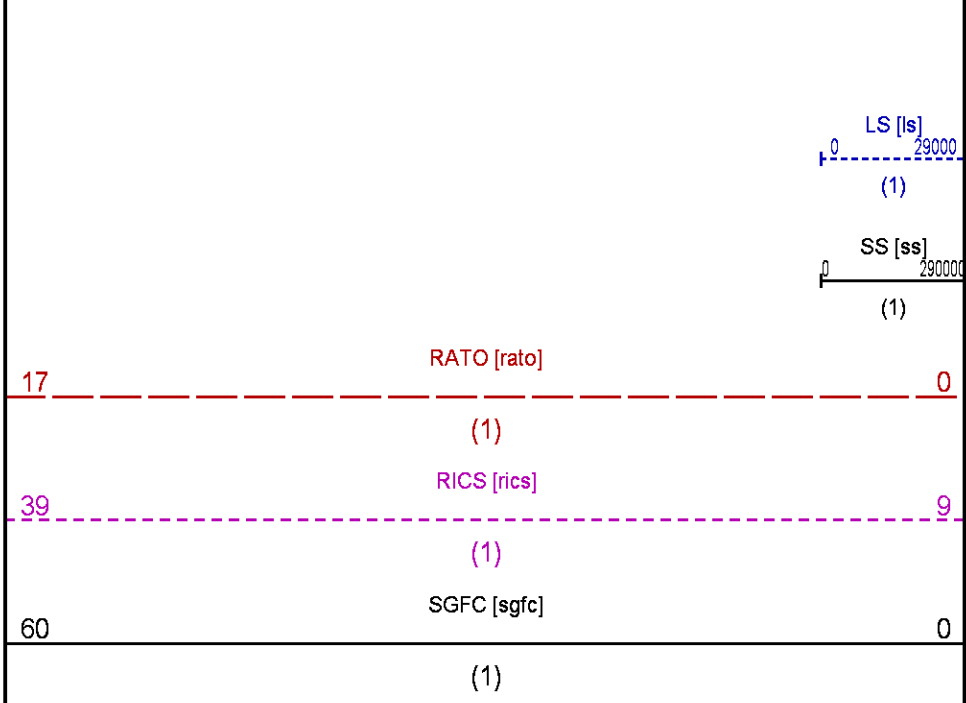
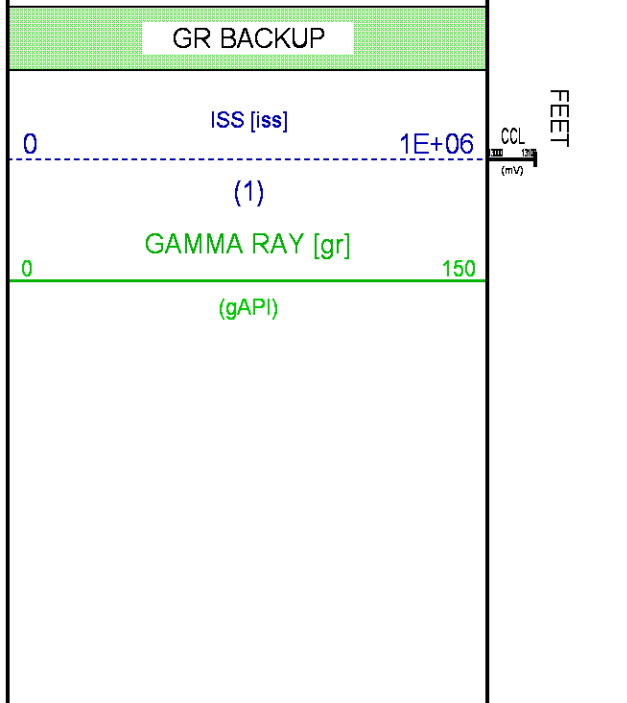
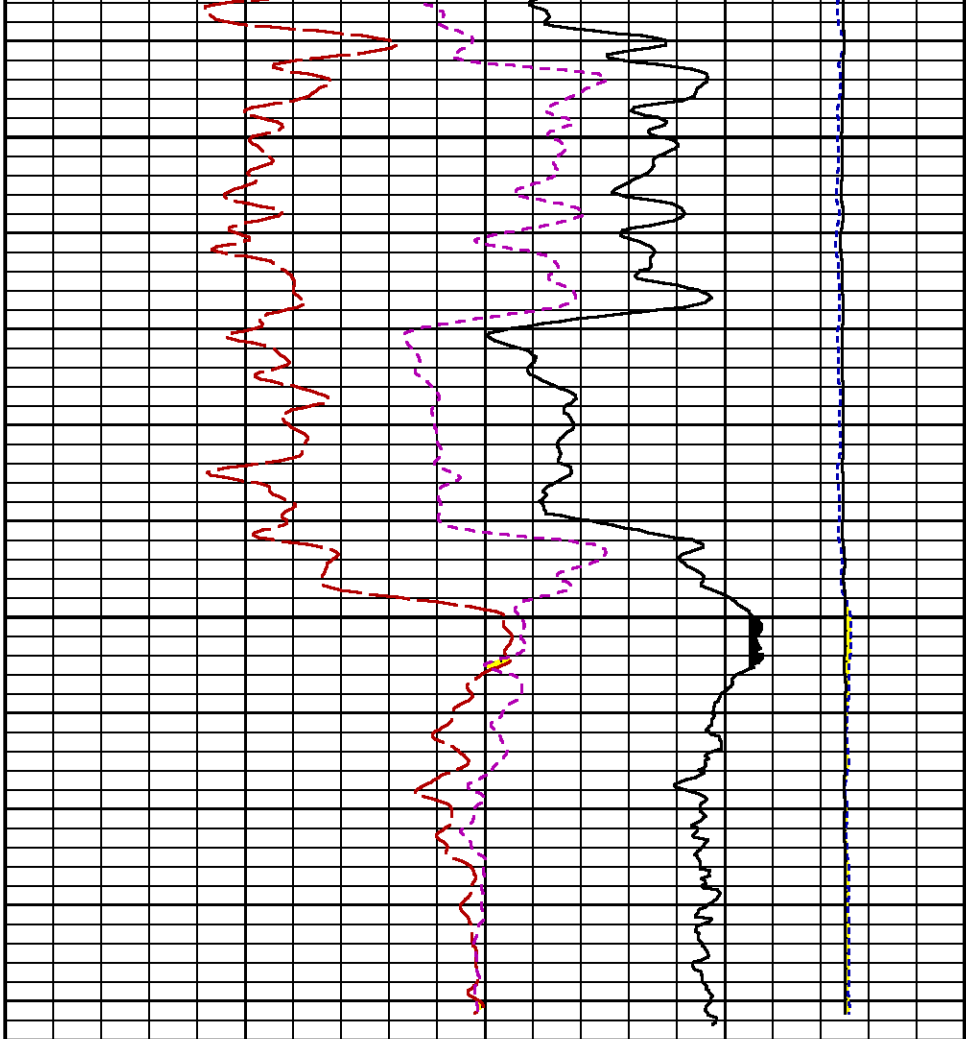
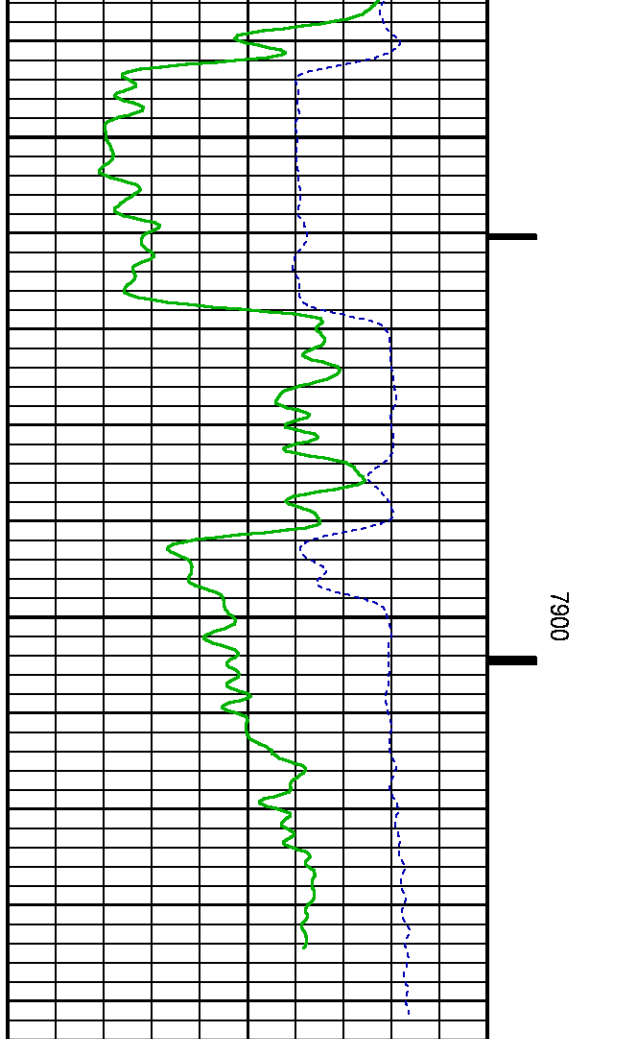
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CALIBRATION / VERIFICATION SUMMARY

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Fri Oct 9 13:18:59 2015

UNIT #: 3880TA HL6670

CALB JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	47.82	238.76	190.9	1.100	52.60	262.60	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LA 10274382

DATE/TIME PERFORMED: Fri Oct 9 13:21:02 2015

UNIT #: 3880TA HL6670

VERI JIG #: 4702NK WA-612

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	48.98	234.73	1.100	53.87	258.17	204.31
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10169251

DATE/TIME PERFORMED: Thu Oct 8 10:31:28 2015

UNIT: 3885TC 6685

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 11765055

HOURS: 8281AA 64

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	794094	124	2318	2302	2313	89	7	0.9708
Interpolated	1300000	146	2294	2295	2306			

	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	794094	7648	1253	160	26.05	0.15	24.33	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	794094	164038	25399	87325	31076	8040	52891	12871
Fit Quality %		0.835	0.945	0.905	0.908	0.767	0.832	0.802

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	794094	1.44	4.84	31.28	15.01	10.87	3.87	4.11
		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 %		0.069	0.196	0.156	0.174	0.096	0.105	0.067
Reduced	1398936	1.43	4.83	31.18	14.97	10.87	3.87	4.11
		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 120516

DATE/TIME PERFORMED: Fri Oct 9 14:47:11 2015

UNIT #: 3880TA HL6670

	T(0)	T(1)	T(2)	T(3)
Corr Coeff for Temp	-2.032071E+01	1.041576E-01	1.407105E-06	-1.763022E-10

INSTRUMENT CONFIGURATION

Source File: /dat1a/CH100245/RPM-tdg

A3 CABLEHEAD

Diameter : 1.37"

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

SONDEX GAMMA RAY

Diameter : 1.69"
Length : 2.17'
Weight : 10 lbs
Series : 2812LA
Mnemonic : GR
Measure Point: 0.62': GR MP

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

33.24'

CCL MP — 25.19'

GR MP — 22.64'

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
PRES MP

1.65'

BULL PLUG 1 11/16

0.00'

TOTAL LENGTH: 33.24'
TOTAL WEIGHT: 140 lbs
MAX DIAMETER: 0'1.70"

	COMPANY	<u>LARAMIE ENERGY</u>		FILE NO:	<u>CH100245</u>
	WELL	<u>PICEANCE 28-06M</u>		API NO:	<u>05077097790000</u>
	FIELD	<u>VEGA</u>			
	COUNTY	<u>MESA</u>	STATE	<u>COLORADO</u>	
	LOCATION:	SHL: LAT 39.250997 LONG -107.779442 BHL: 39.251525 LONG -107.774672		ELEVATIONS:	28 9S 93W 28-05 PAD PATTERSON 306
	SEC <u>28</u>	TWP <u>9S</u>	RGE <u>93W</u>	DATE	20-Oct-2015