

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 24-1A (K19CNE)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 2387 FSL & 324 FWL

Well: ENCANA FEE 24-1A (K19CNE)

Company: ENCANA OIL & GAS (USA) INC

RESERVOIR SATURATION LOG

SIGMA MODE

GAMMA RAY – CCL

SHL: 2387 FSL & 324 FWL

BHL: 640 FNL & 640 FEL

Elev.: K.B. 5688.00 ft

G.L. 5666.00 ft

D.F. 5686.00 ft

Permanent Datum: GROUND LEVEL

Elev.: 5666.00 ft

Log Measured From: KELLY BUSHING

22.00 ft above Perm. Datum

Drilling Measured From: KELLY BUSHING

API Serial No. 05-045-20753-0C

Section 19

Township 6S

Range 92W

PVT DATA			Run 1	Run 2	Run 3
Oil Density					
Water Salinity					
Gas Gravity					
Bo					
Bw					
1/Bg					
Bubble Point Pressure					
Bubble Point Temperature					
Solution GOR					
Maximum Deviation					
CEMENTING DATA					
Primary/Squeeze	Primary				
Casing String No					
Lead Cement Type					
Volume					
Density					
Water Loss					
Additives					
Tail Cement Type					
Volume					
Density					
Water Loss					
Additives					
Expected Cement Top					

Logging Date 2-May-2013

Run Number 1

Depth Driller 9505 ft

Schlumberger Depth 9435 ft

Bottom Log Interval 9401 ft

Top Log Interval 2000 ft

Casing Fluid Type FRESH WATER

Salinity

Density 8.4 lbm/gal

Fluid Level 60 ft

BIT/CASING/TUBING STRING

Bit Size 7.875 in

From 6547 ft

To 9505 ft

Casing/Tubing Size 4.500 in

Weight 11.6 lbm/ft

Grade

From 22 ft

To 9497 ft

Maximum Recorded Temperatures 237 degF

Logger On Bottom 2-May-2013

Time 11:00

Unit Number 391

Location GRAND JUNCTION

Recorded By KIRSTIE BUNTING

Witnessed By EUGENE

Logging Date					
Run Number					
Depth Driller					
Schlumberger Depth					
Bottom Log Interval					
Top Log Interval					
Casing Fluid Type					
Salinity					
Density					
Fluid Level					
BIT/CASING/TUBING STRING					
Bit Size					
From					
To					
Casing/Tubing Size					
Weight					
Grade					
From					
To					
Maximum Recorded Temperatures					
Logger On Bottom					
Time					
Unit Number					
Location					
Recorded By					
Witnessed By					

## DEPTH SUMMARY LISTING

Date Created: 30-APR-2013 11:07:37

## Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6214	Serial Number:	3421	Serial Number:	112136
Calibration Date:	24-APR-2012	Calibration Date:	30-APR-201	Length:	19500 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-3	Calibration RMS:	7		
Wheel Correction 2:	-4	Calibration Peak Error:	15		

## Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
<b>Stretch Correction:</b>	
Tool Zero Check At Surface:	

### Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

## DISCLAIMER

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OTHER SERVICES1	OTHER SERVICES2
OS1: SLIM CEMENT MAPPING	OS1:
OS2: LOG	OS2:
OS3: CBL-VDL	OS3:
OS4:	OS4:
OS5:	OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE CORRELATED TO DOWN LOG	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 10:30	
TIME ON BOTTOM: 11:00	
EXIT TIME: 13:30	

MAX RECORDED TEMPERATURE: 237 DEGF	
MAX RECORDED PRESSURE: 3789 PSIA	
SHORT JOINTS: 5979 FT & 7010 FT	
SANDSTONE MATRIX USED	
CREW: J BARRY, K BUNTING, K JOHNS, K BOZARTH, T LEGGITT	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	

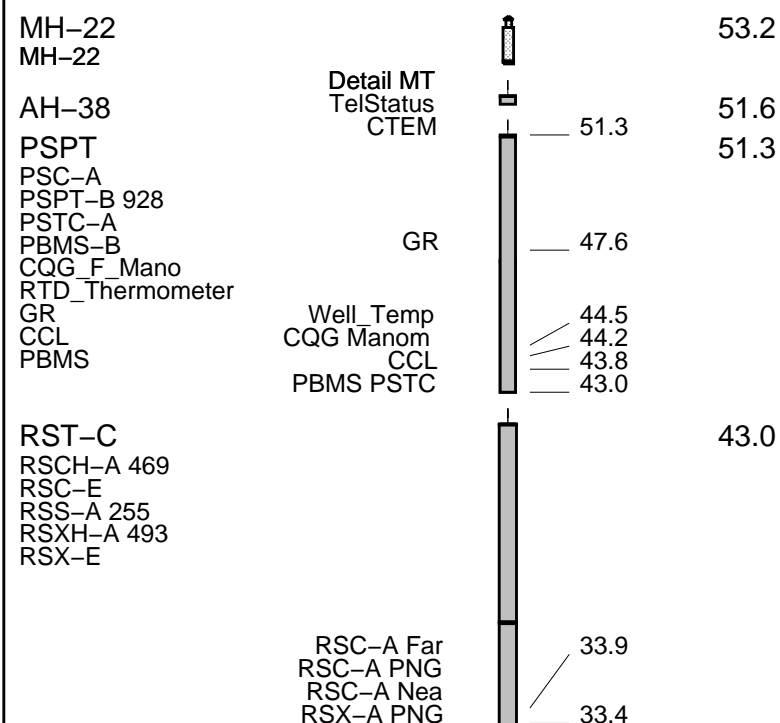
RUN 1 SERVICE ORDER #: C920-00063 PROGRAM VERSION: 19C0-187 FLUID LEVEL: 60 ft			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT	DESCRIPTION

	RUN 1	RUN 2
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
20	1	1
21	1	1
22	1	1
23	1	1
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100	1	1

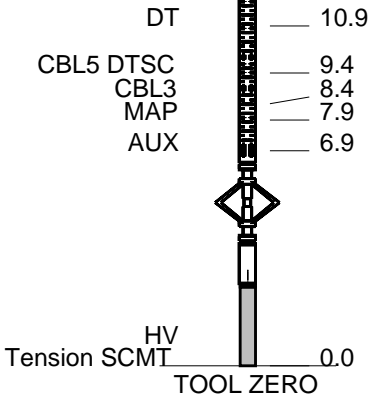
SURFACE EQUIPMENT		
WITM-A		
PSC_16MHZ		

## DOWNHOLE EQUIPMENT



SCMT-CB  
SCMC-CA 8317  
SECH-CA  
CMIR-AG  
SCMS-CB 8303  
SCMX-CA

20.0



MAXIMUM STRING DIAMETER 1.72 IN  
MEASUREMENTS RELATIVE TO TOOL ZERO  
ALL LENGTHS IN FEET

Schlumberger

MAIN PASS RST SIGMA

MAXIS Field Log

Input DLIS Files

DEFAULT	SCMT_RST_PSP_065LUP	FN:63	PRODUCER	02-May-2013 11:00	9441.5 FT	9.0 FT
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Output DLIS Files

DEFAULT	SCMT_RST_PSP_070PUP	FN:68	PRODUCER	02-May-2013 13:38	9445.5 FT	-31.5 FT
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OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
PSPT	SRPC-5214-H2-2012-OP1!		

Changed Parameter Summary

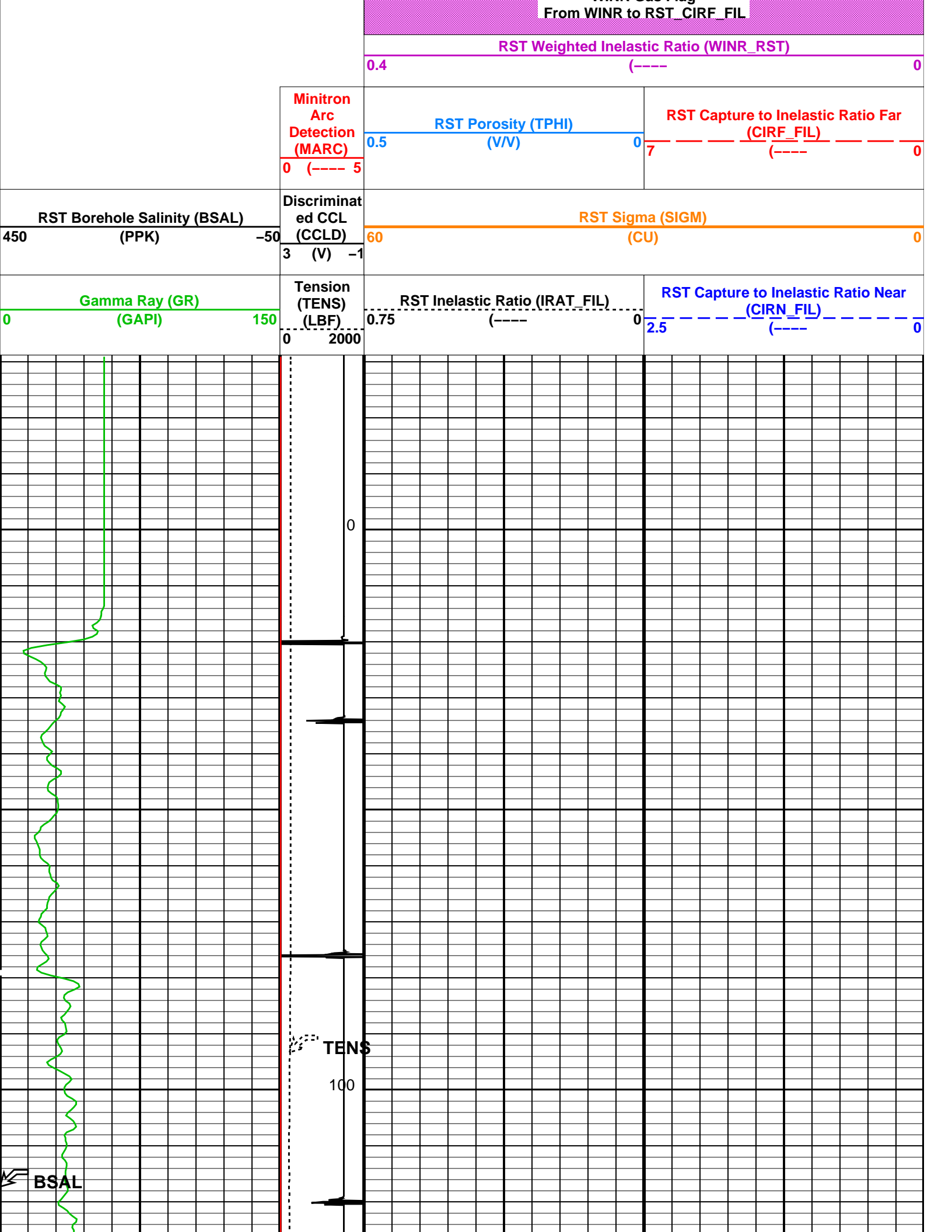
DLIS Name	New Value	Previous Value	Depth & Time
BS	7.875 IN	7.875 IN	9445.5 13:38:19
	8.750 IN	7.875 IN	6547.0 13:41:10

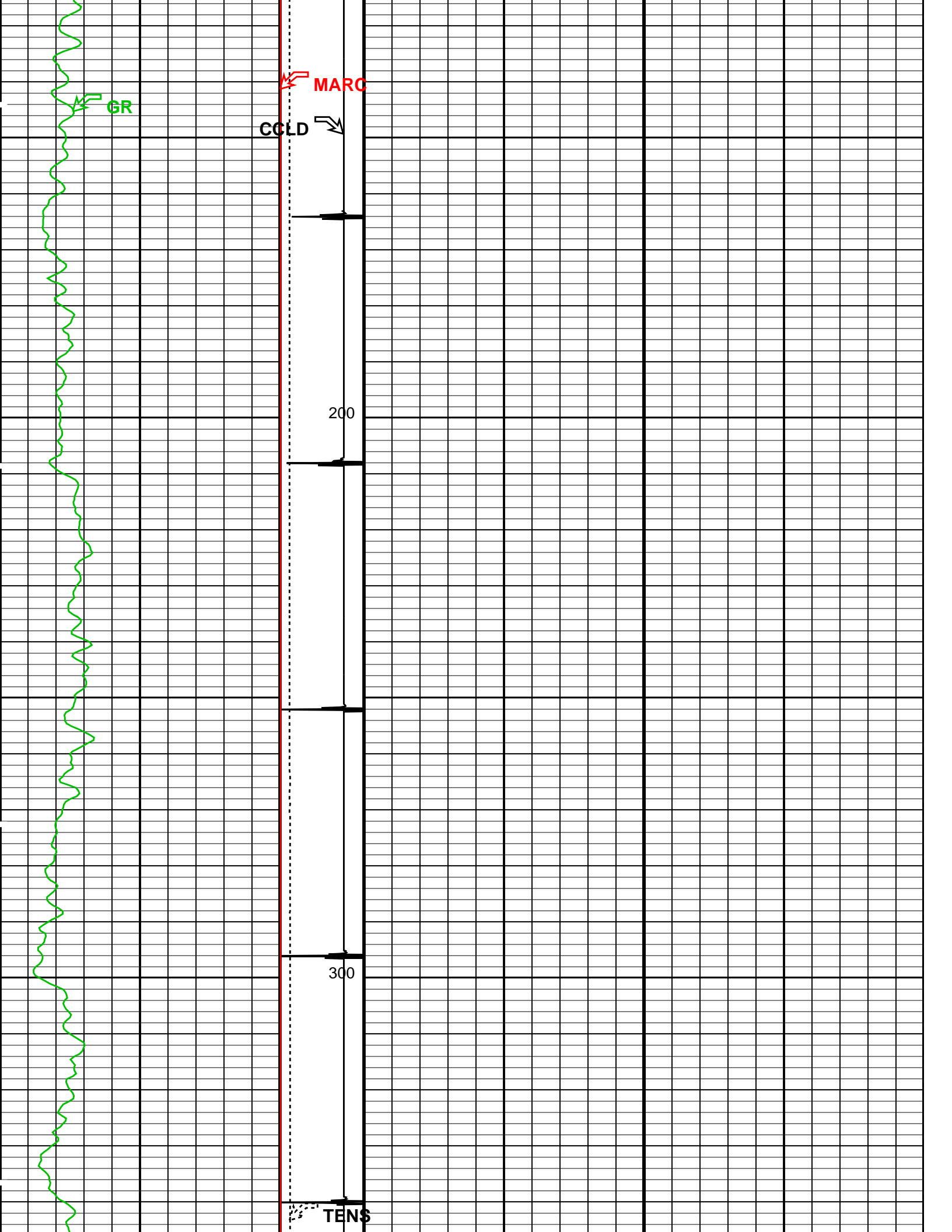
PIP SUMMARY

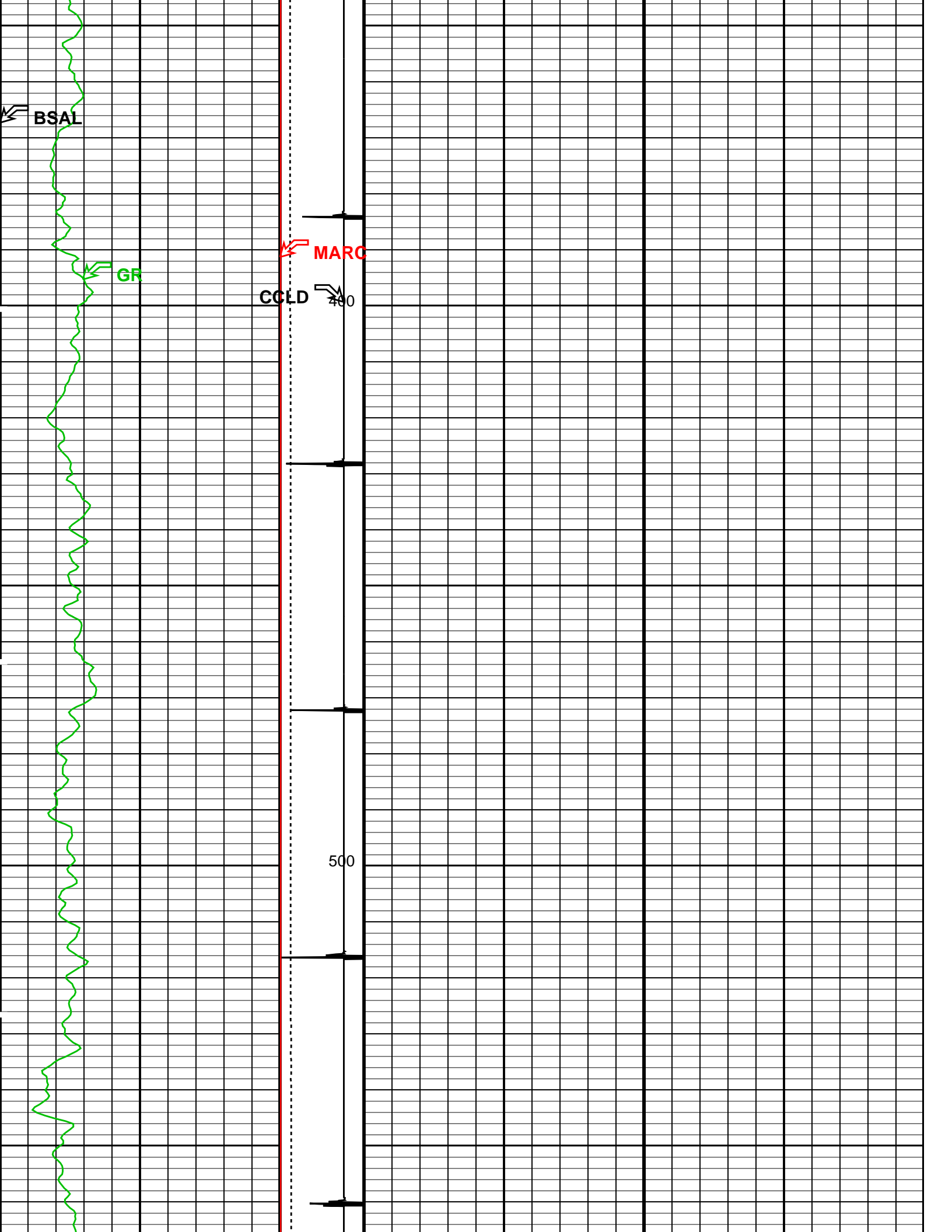
Time Mark Every 60 S

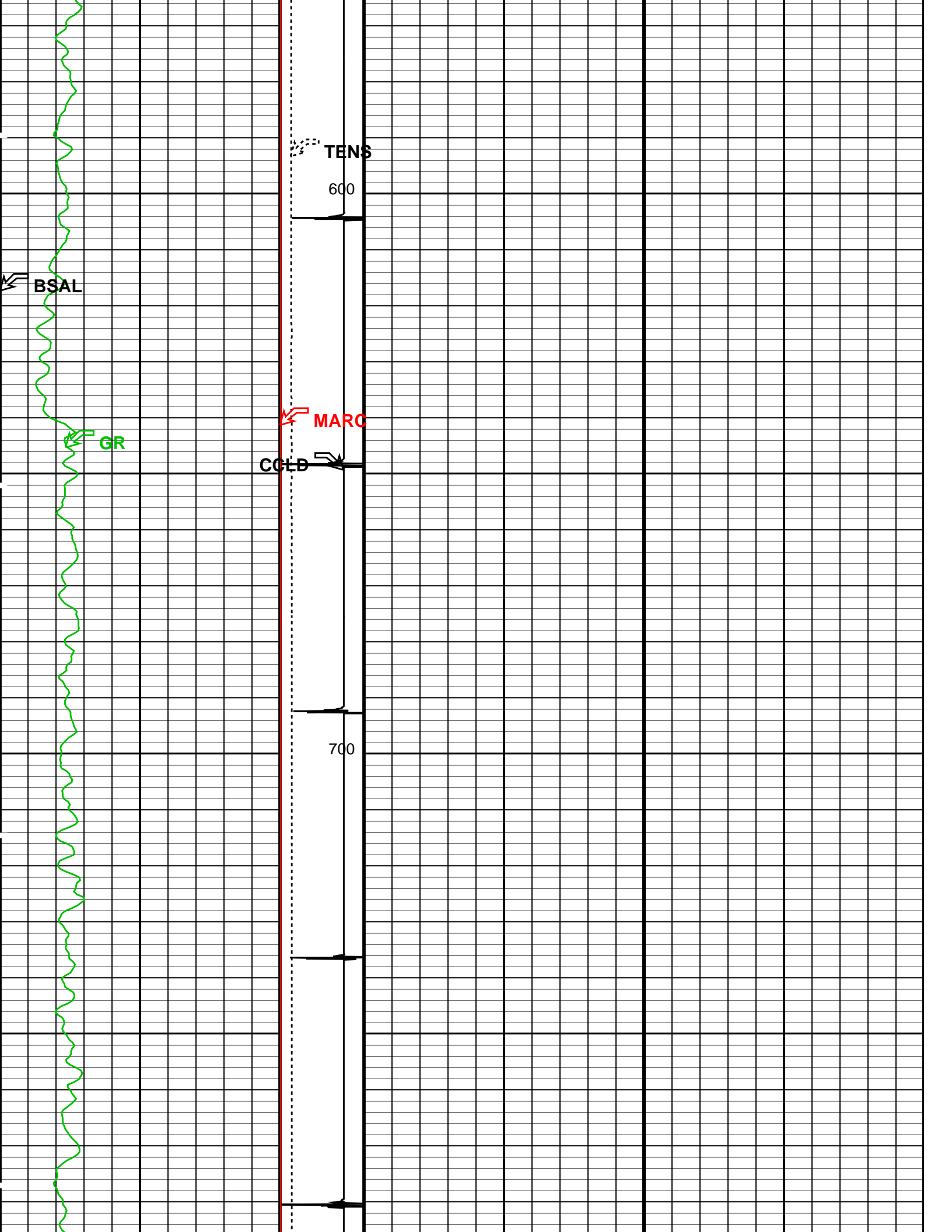
Crossover in sand  
From RST\_CIRF\_FIL to RST\_CIRN\_FIL

WINR Gas Flag

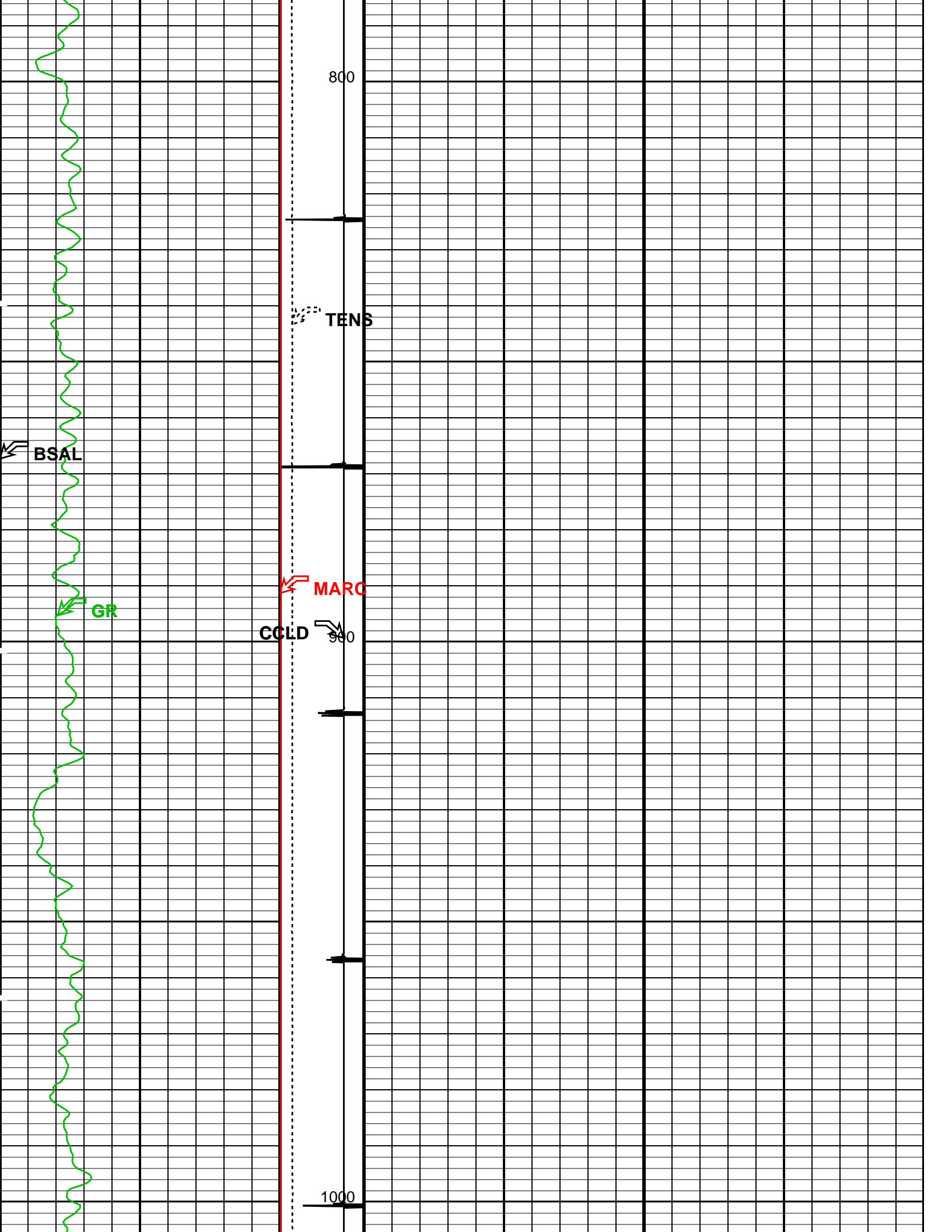


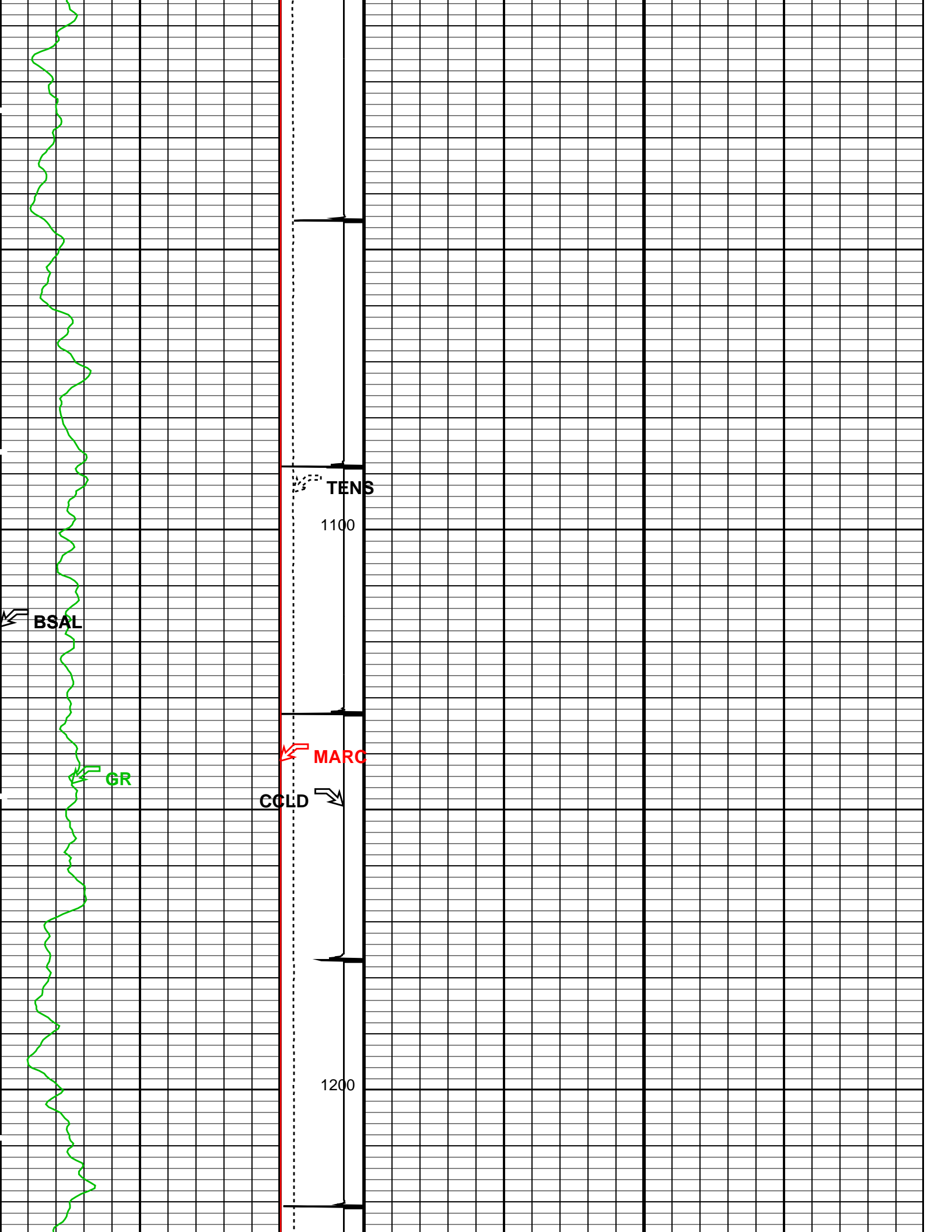


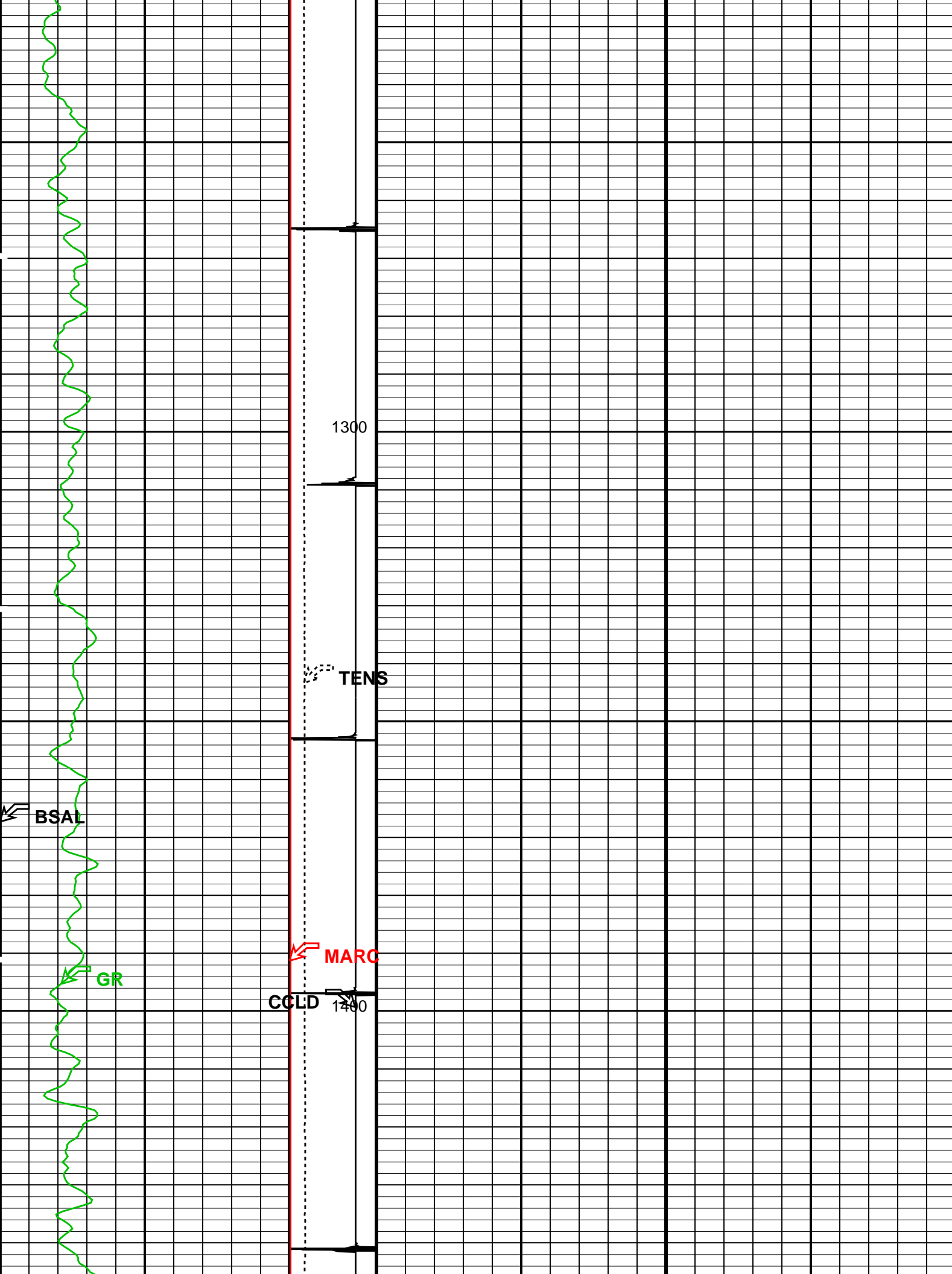


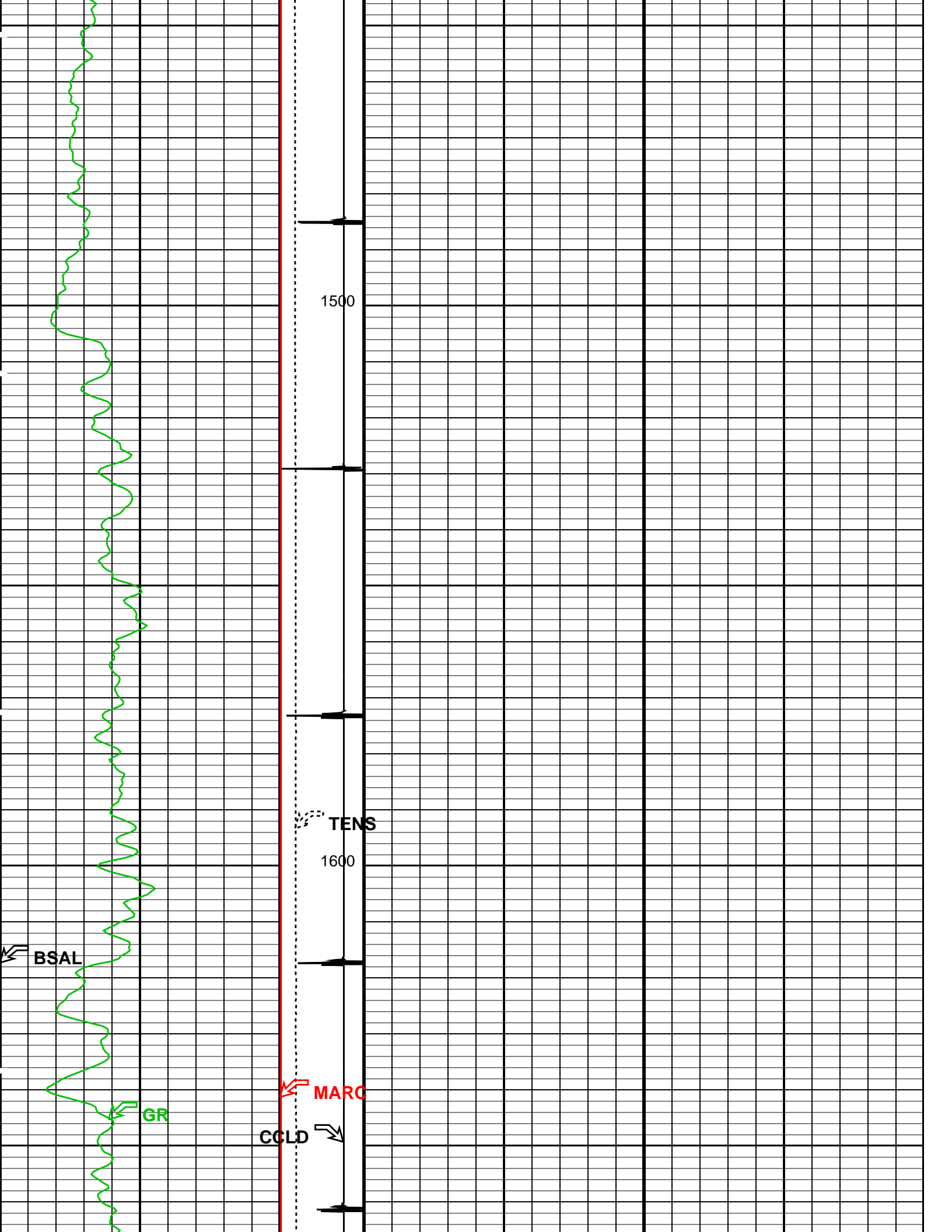


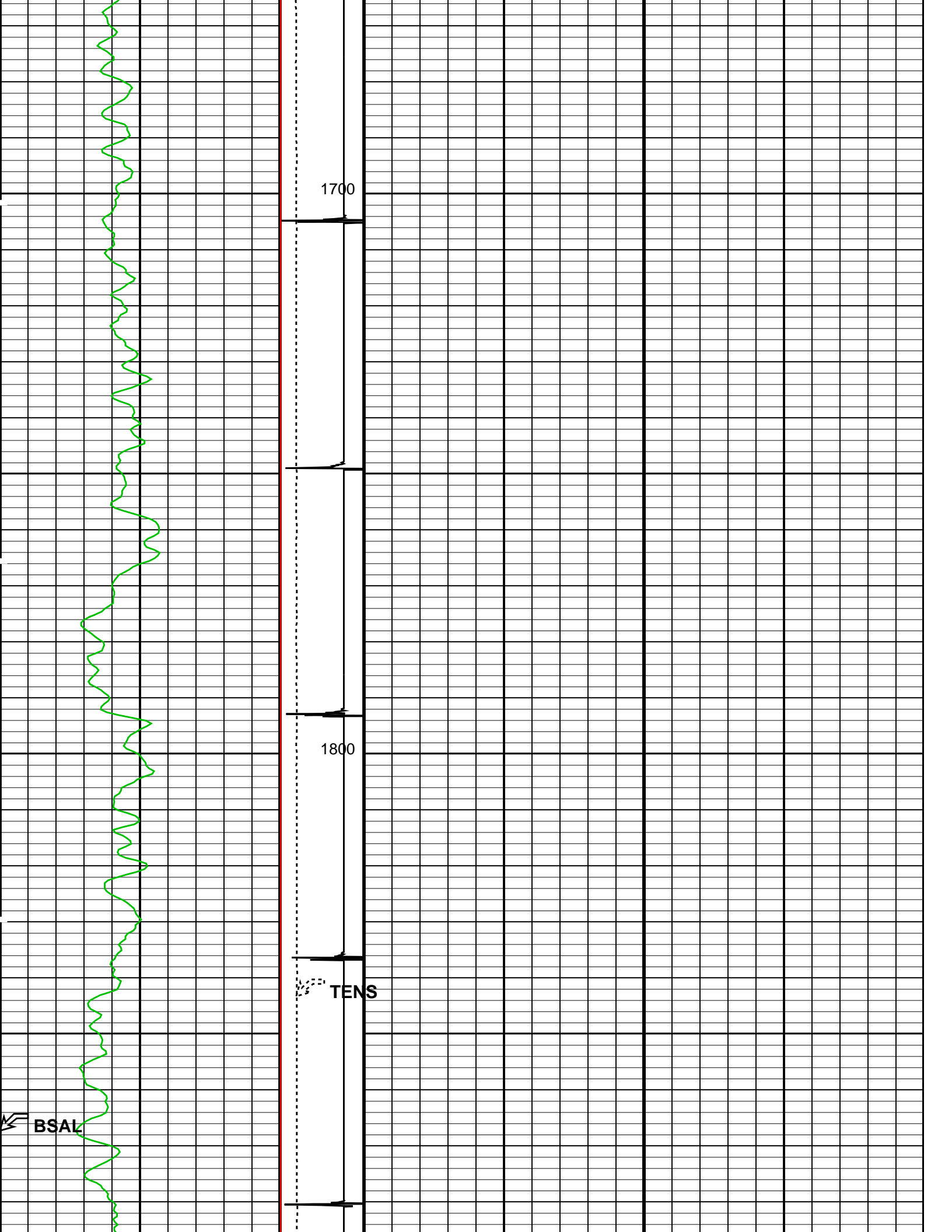


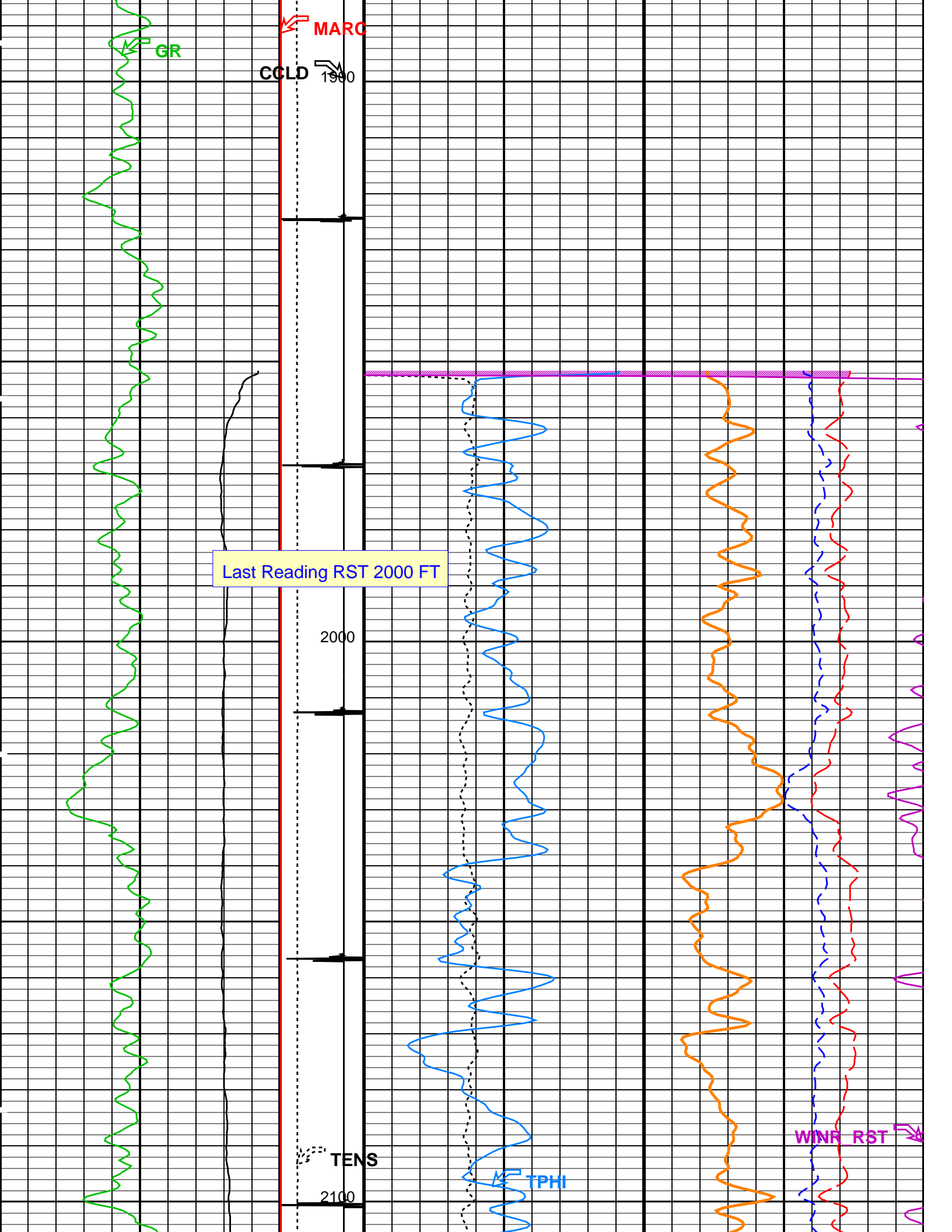


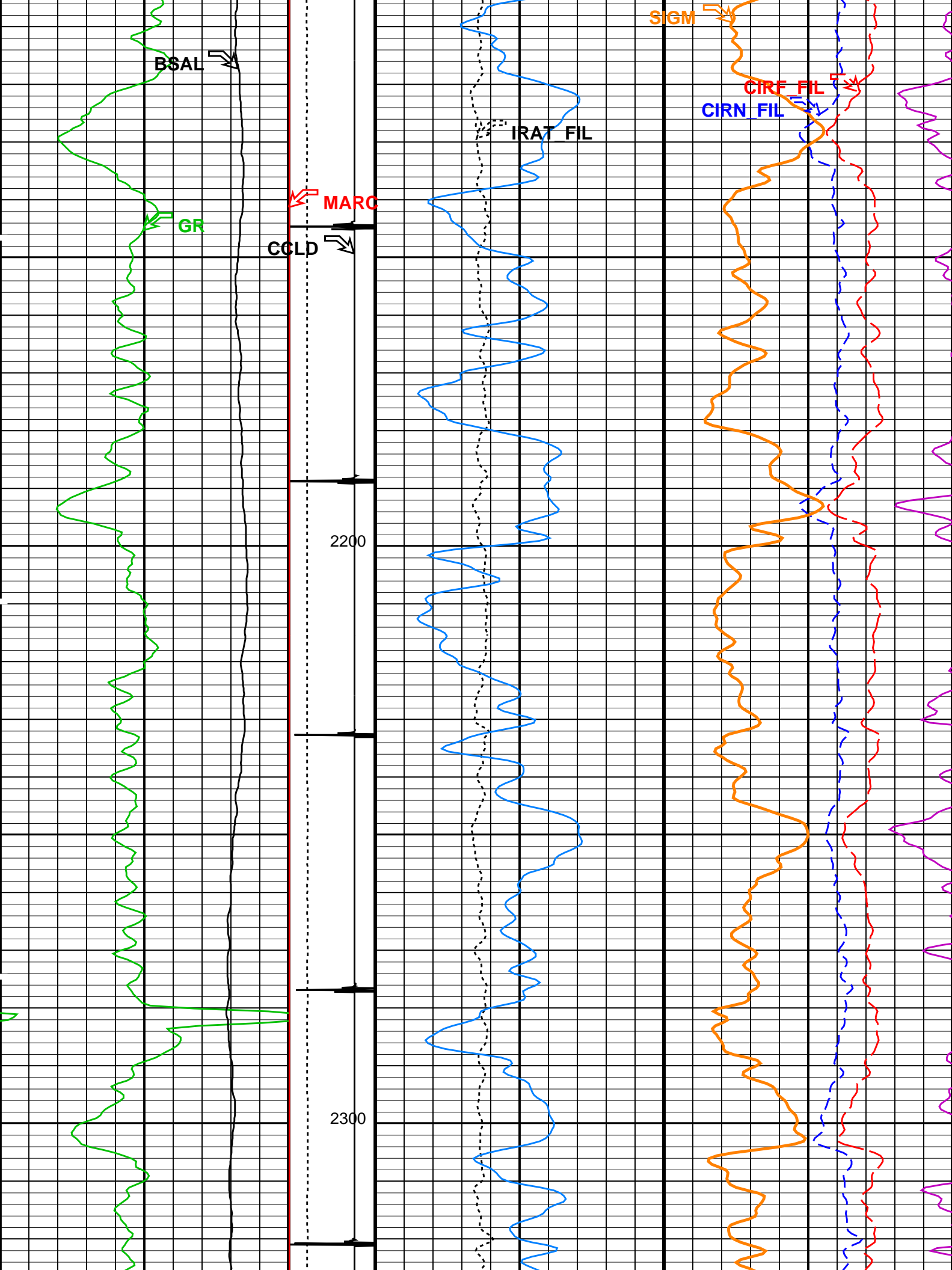


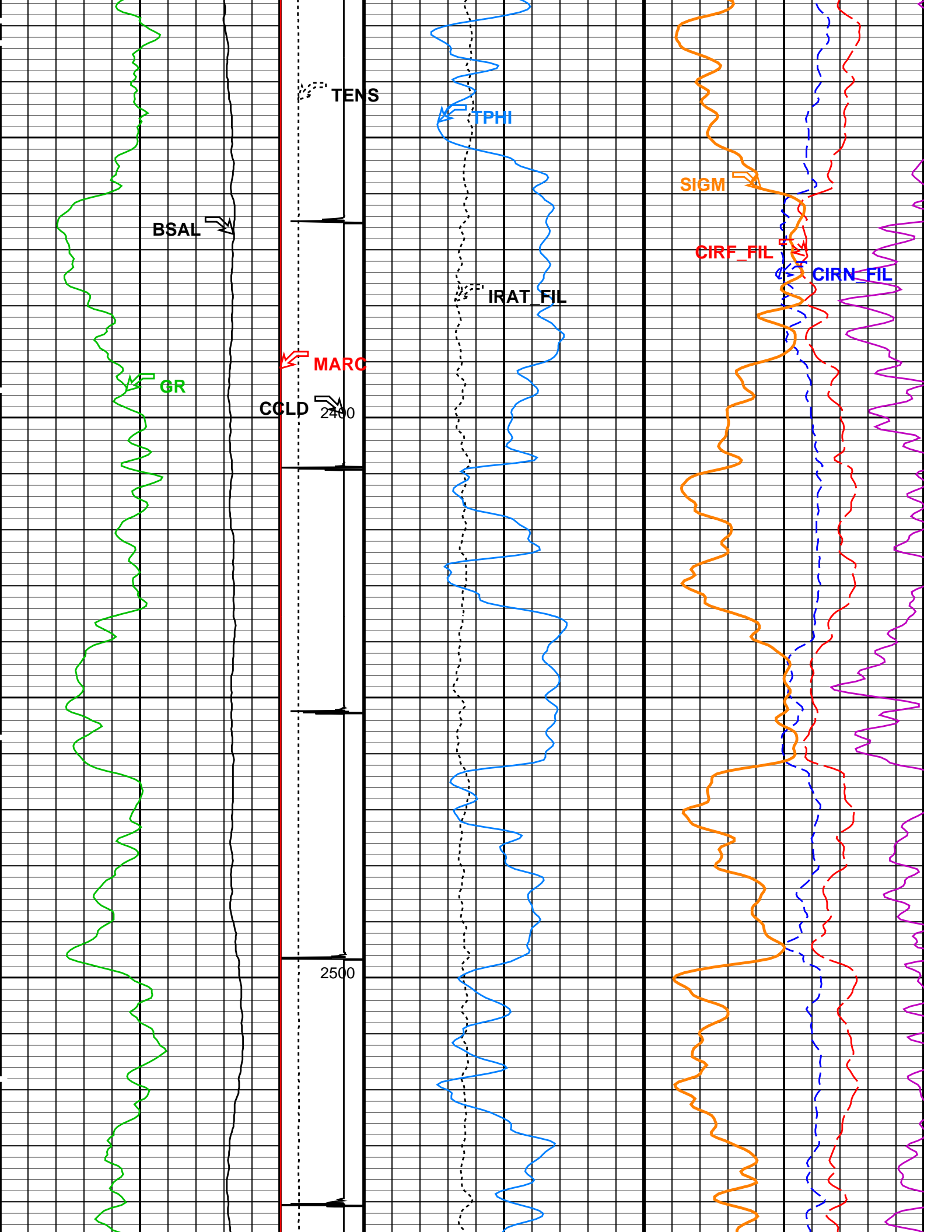




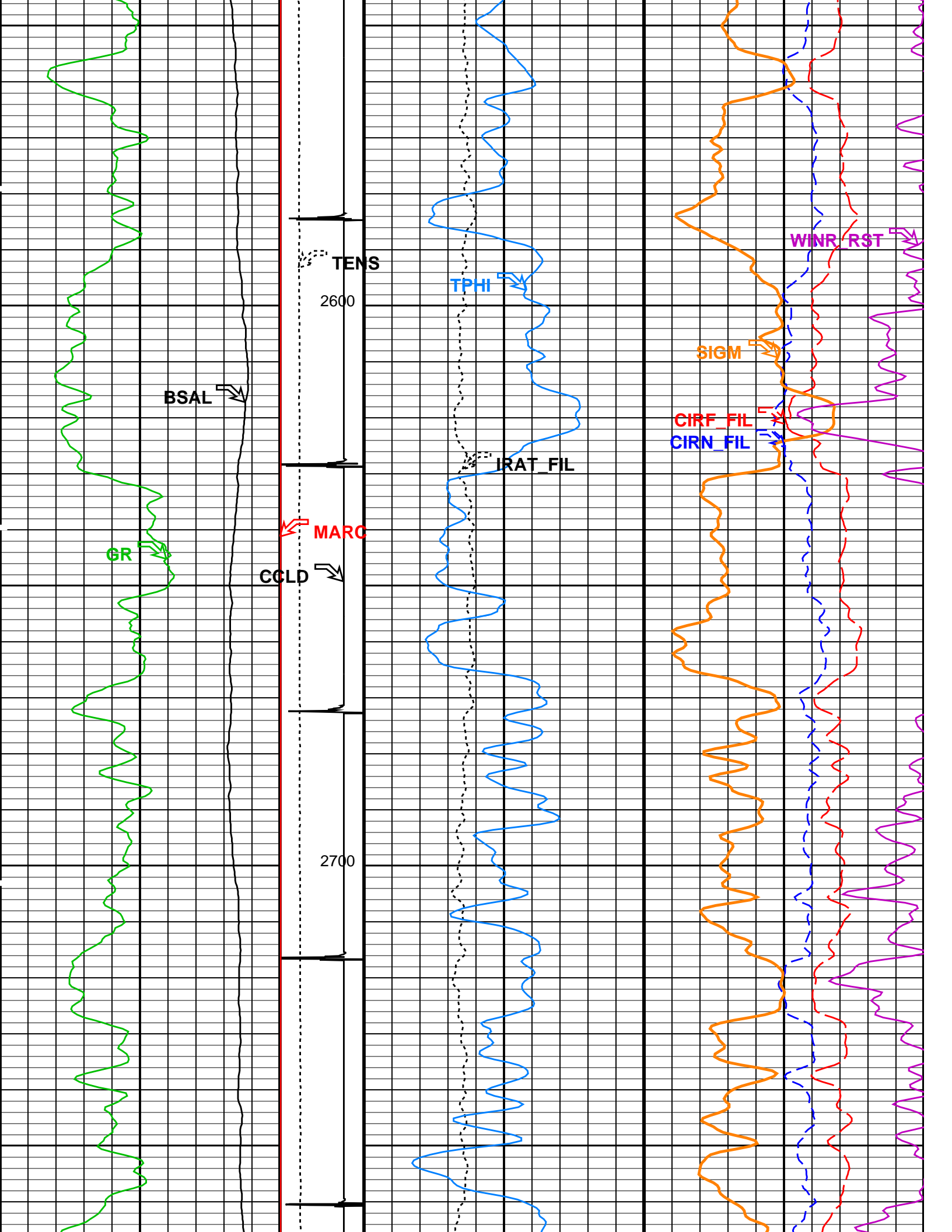


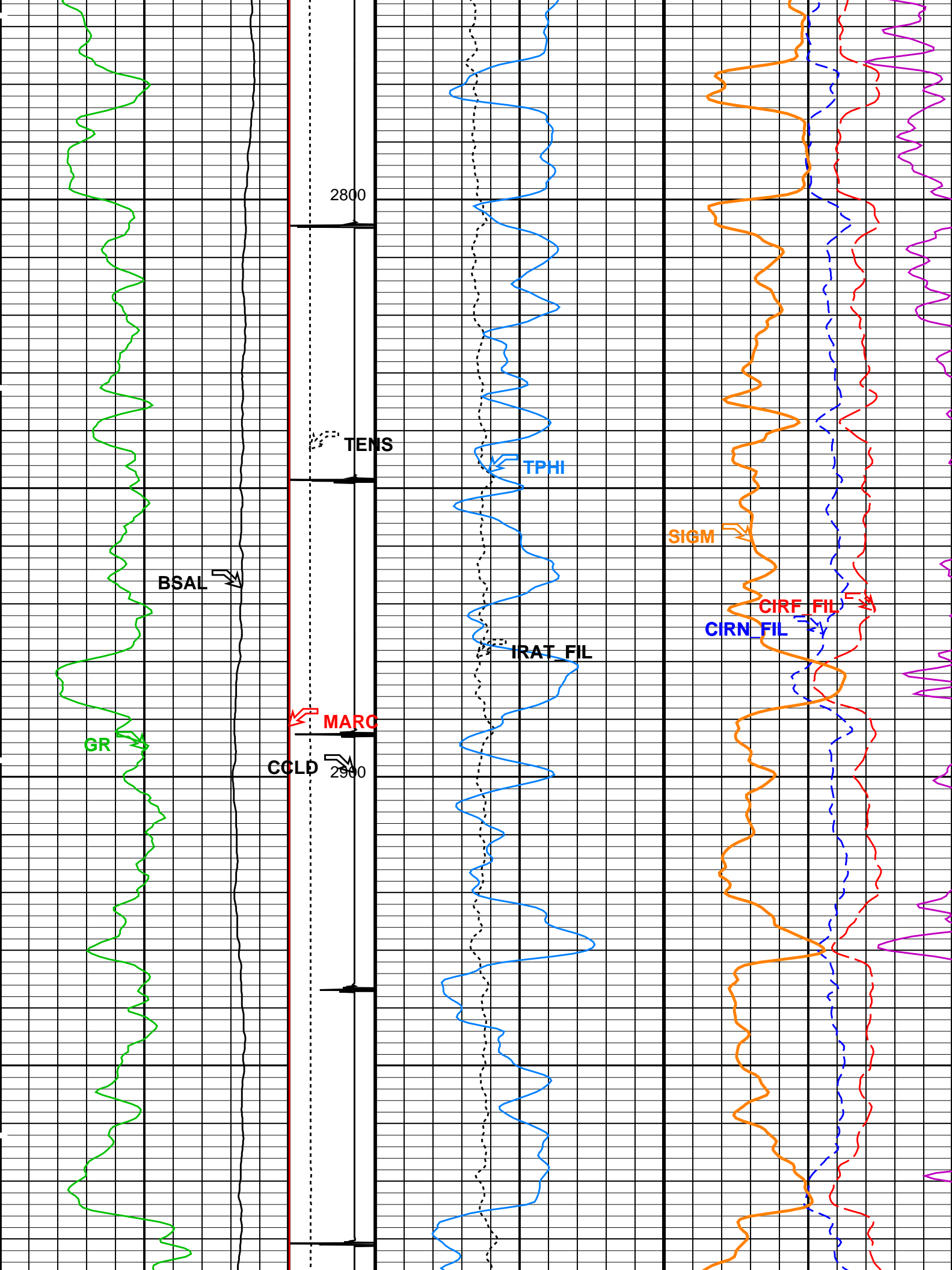


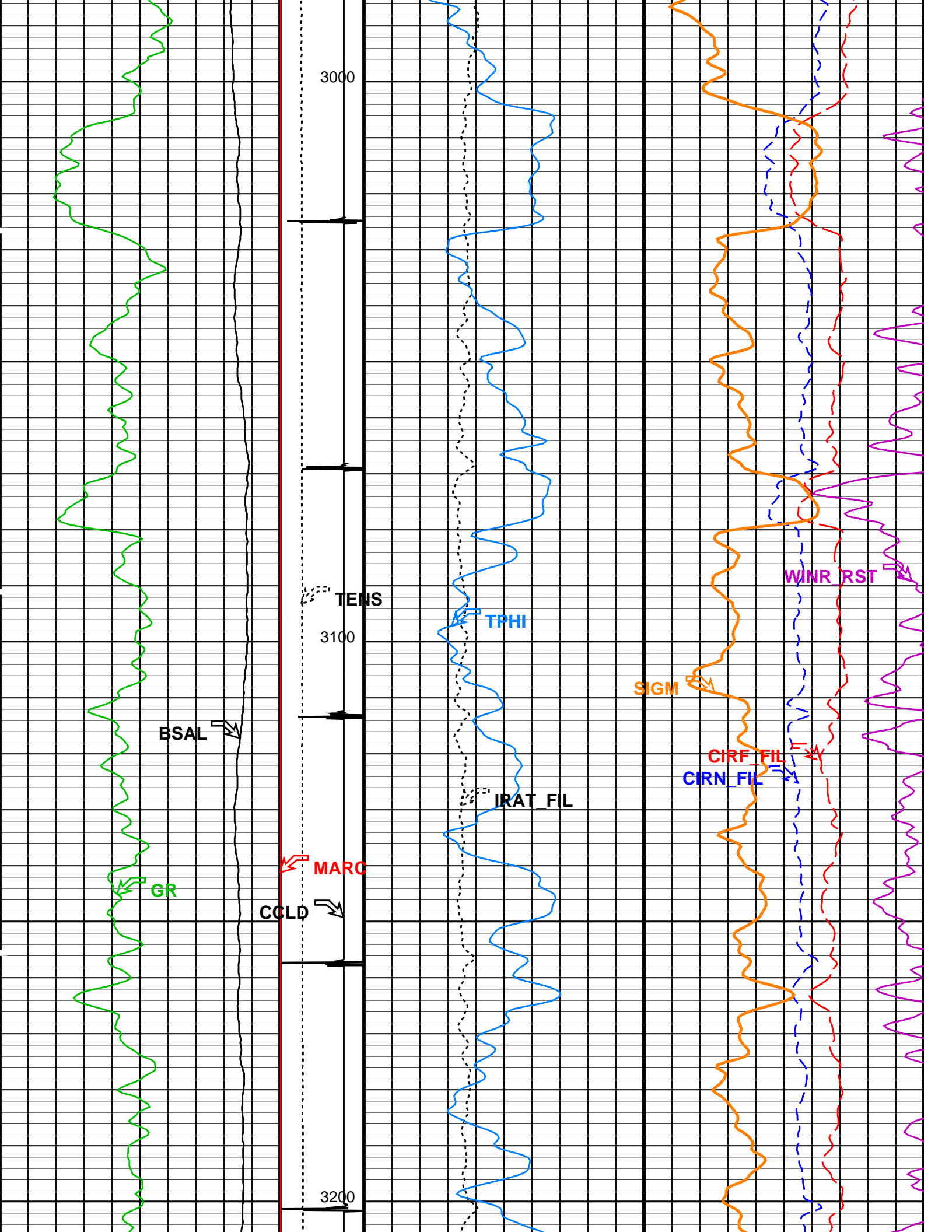


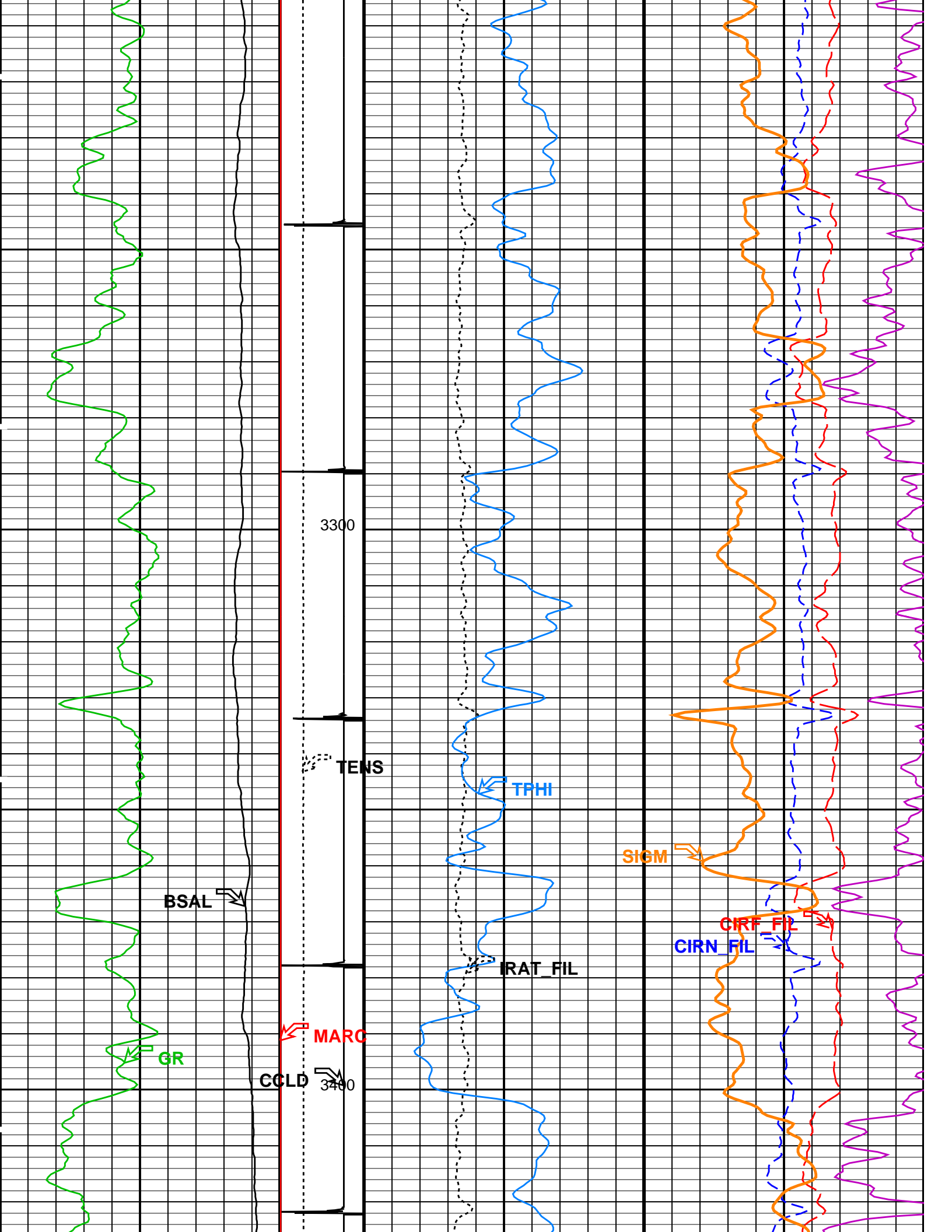


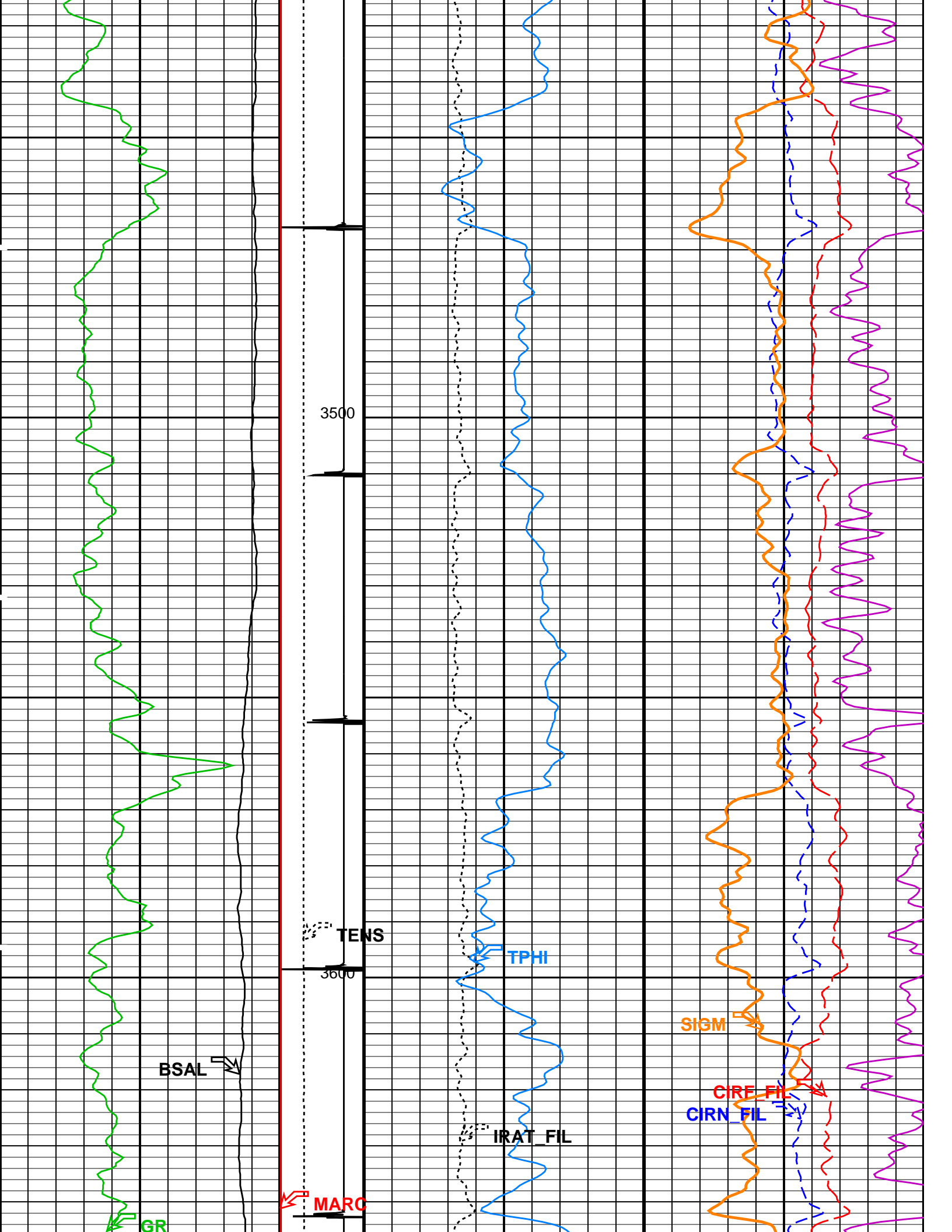


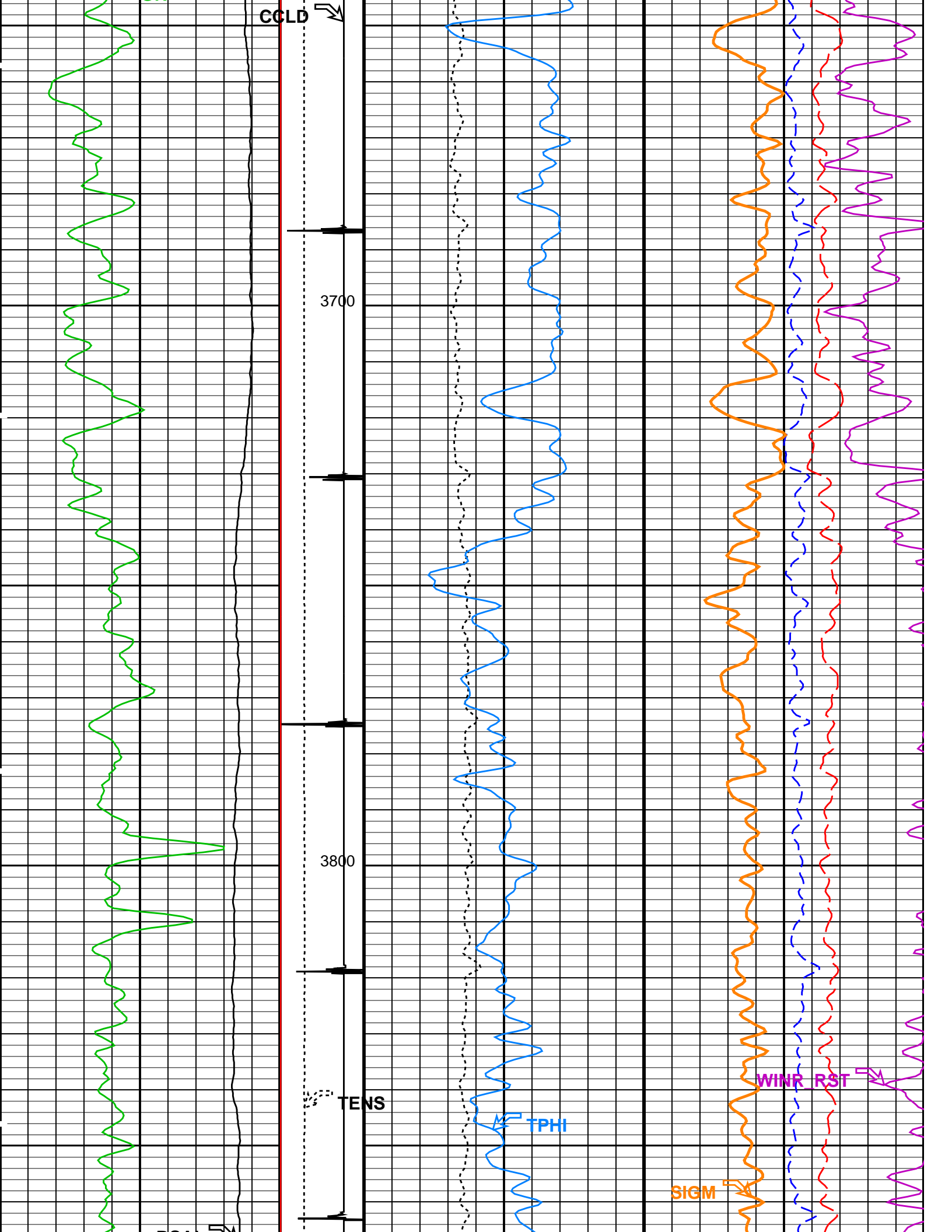


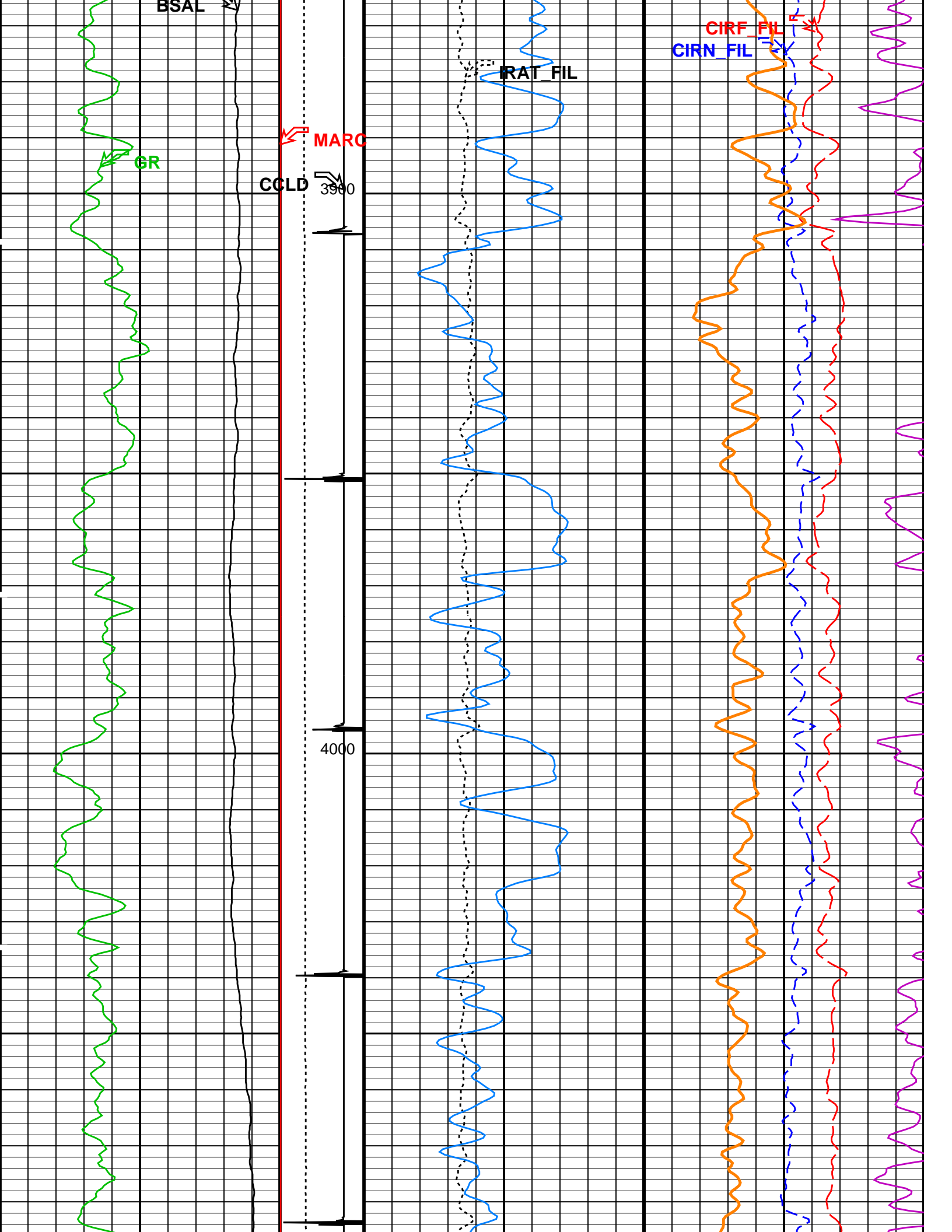


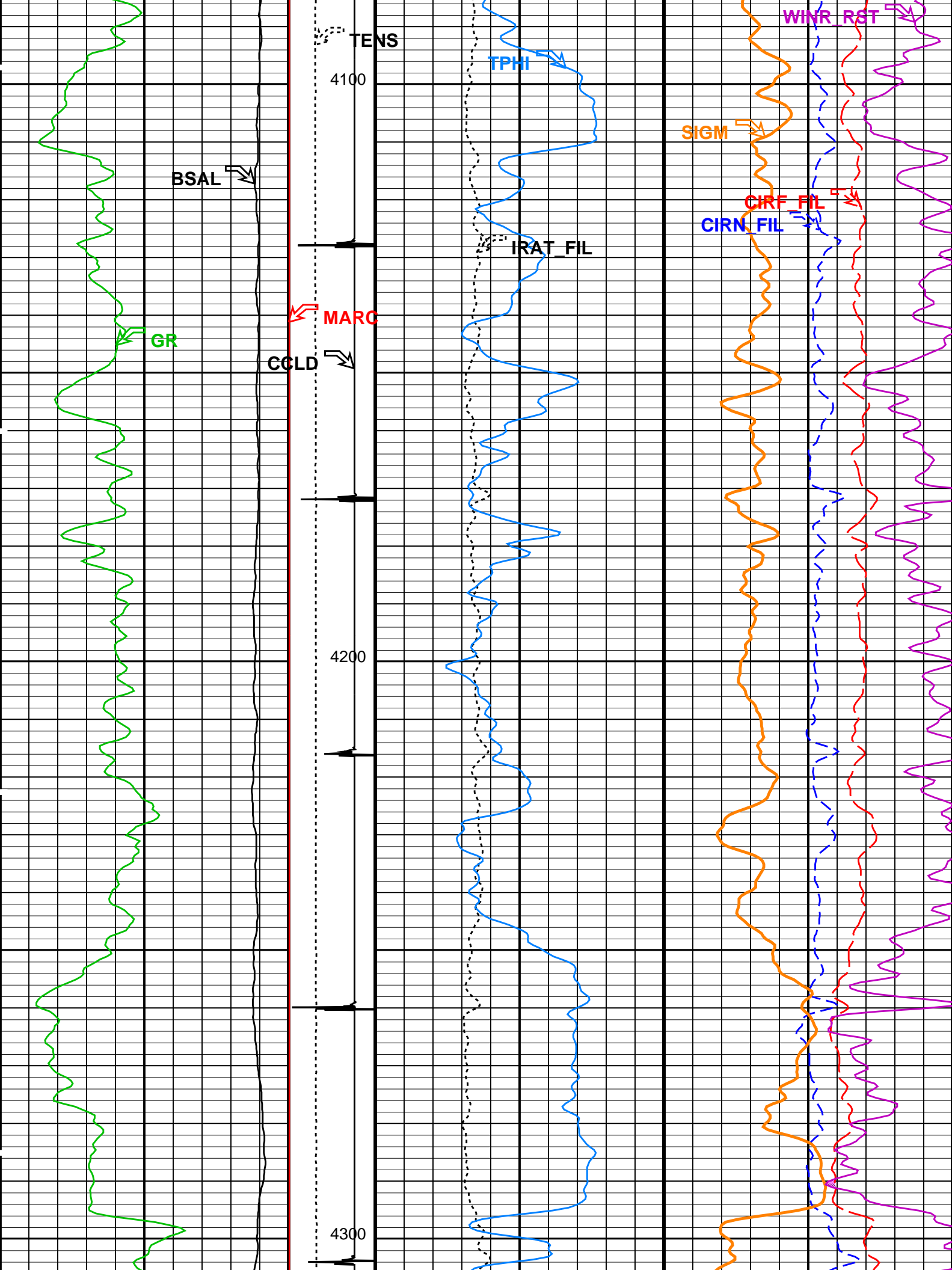




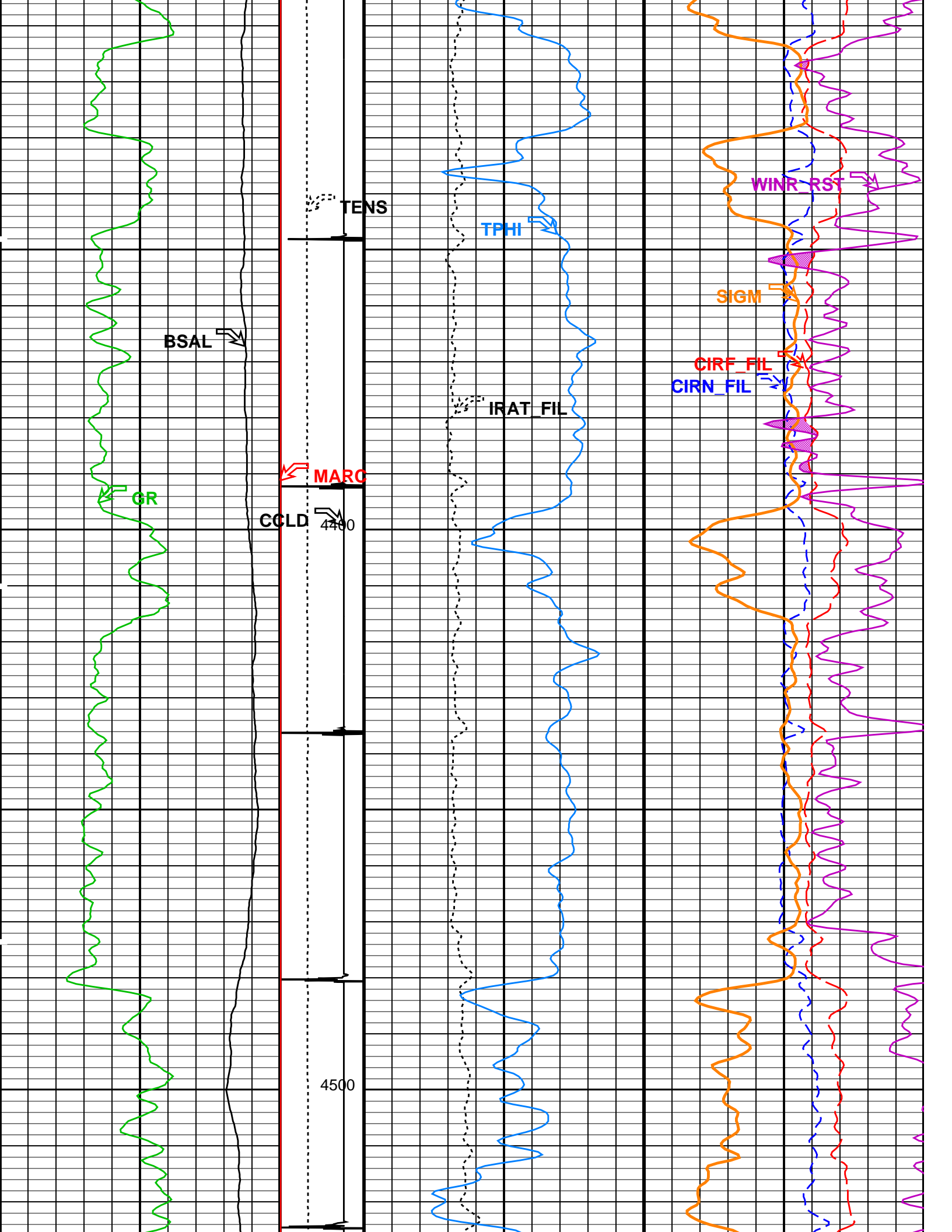


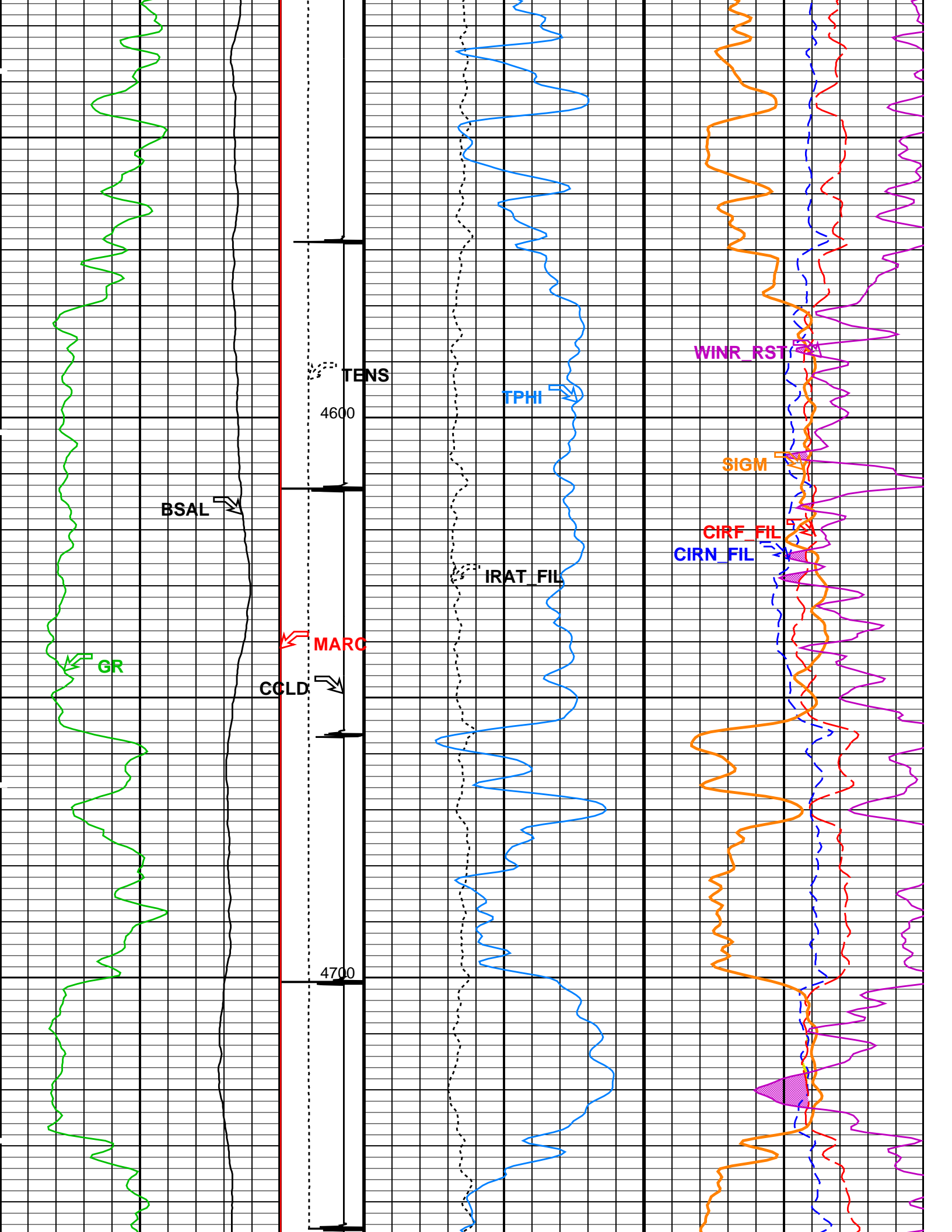


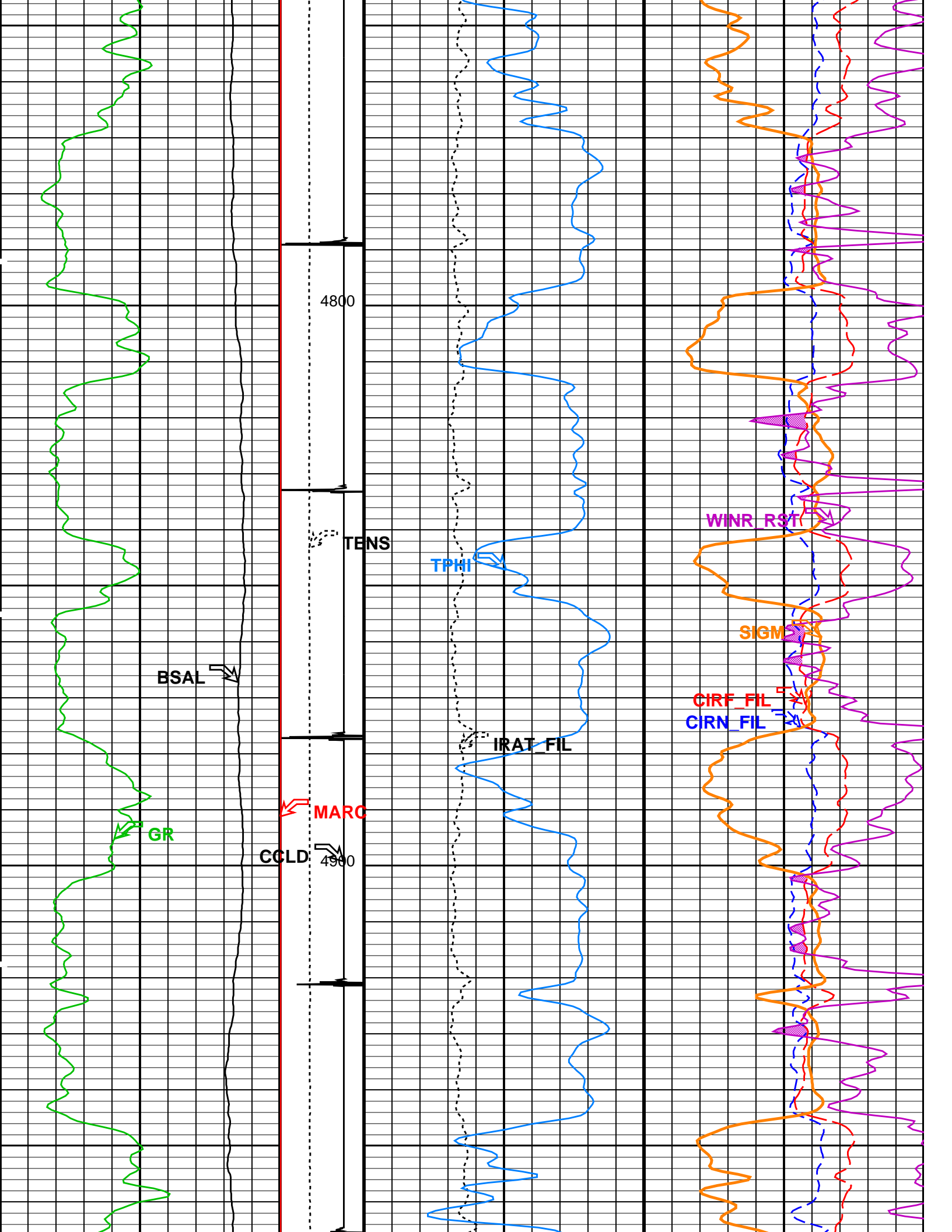


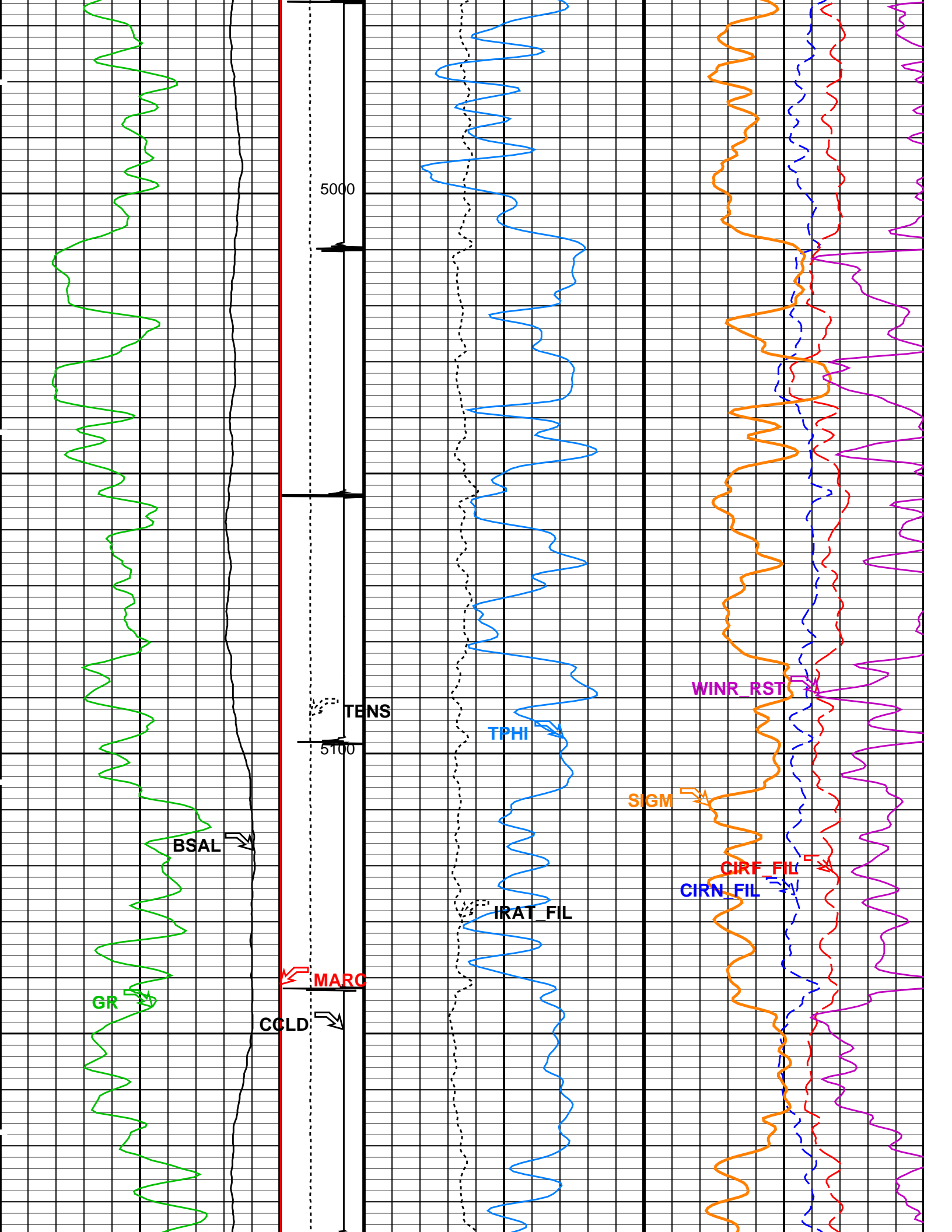


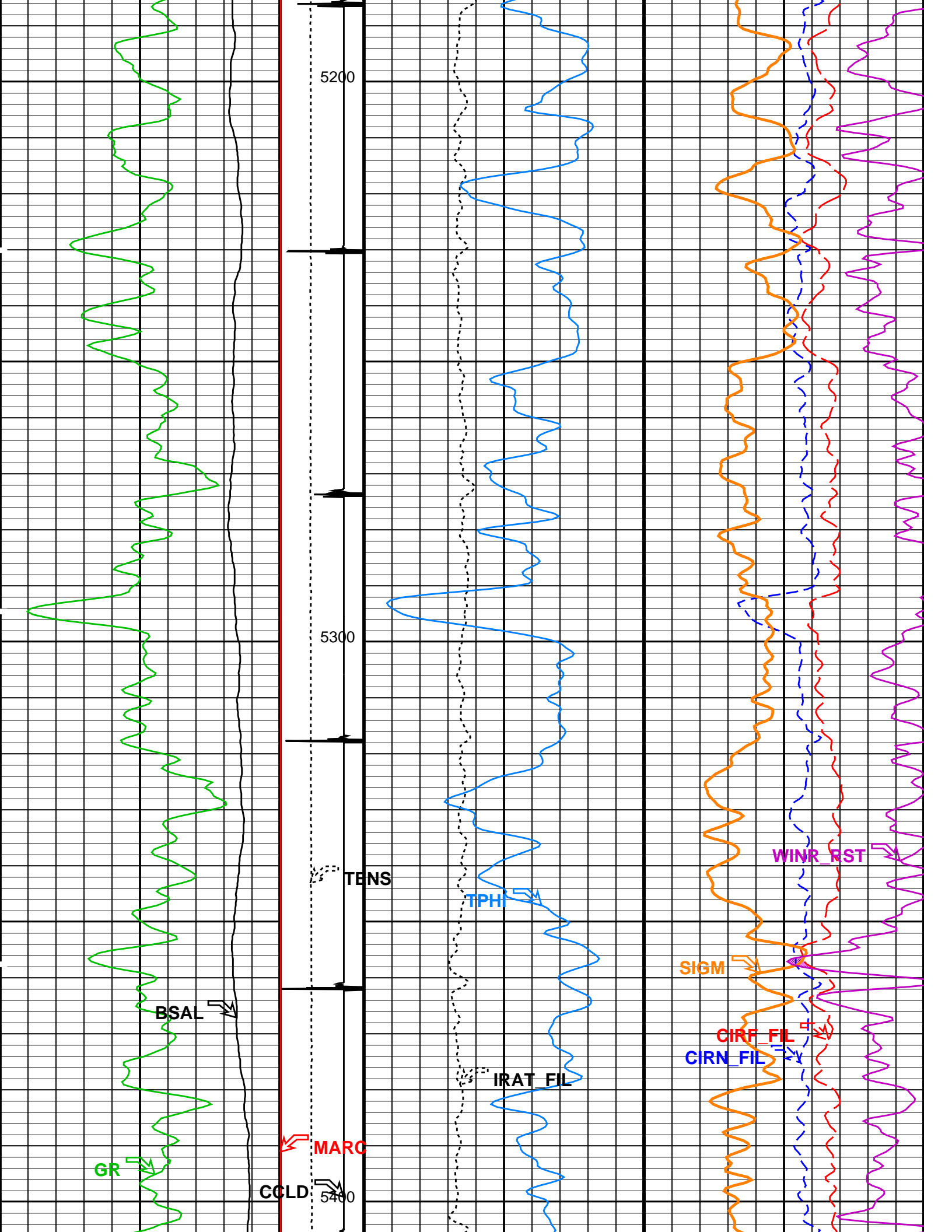


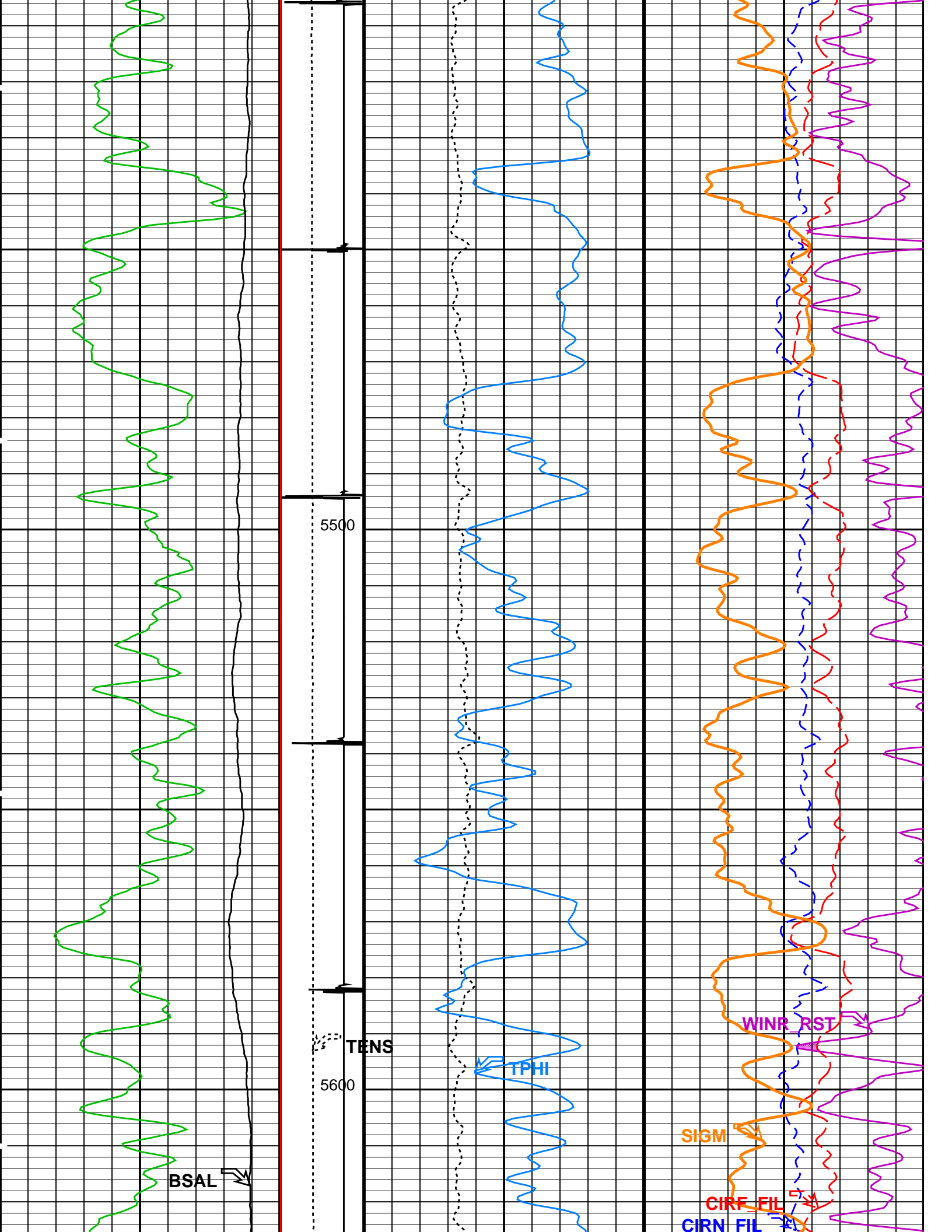


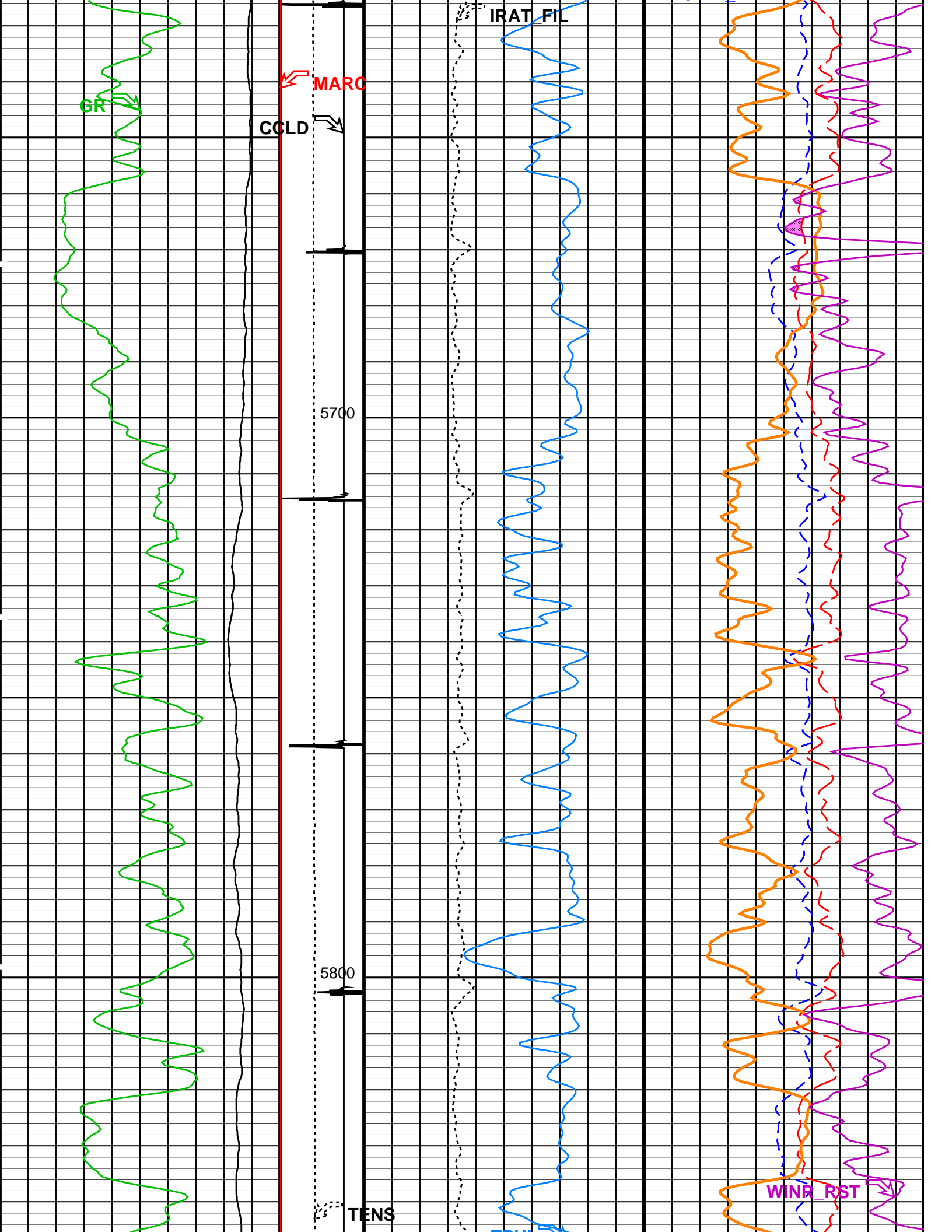


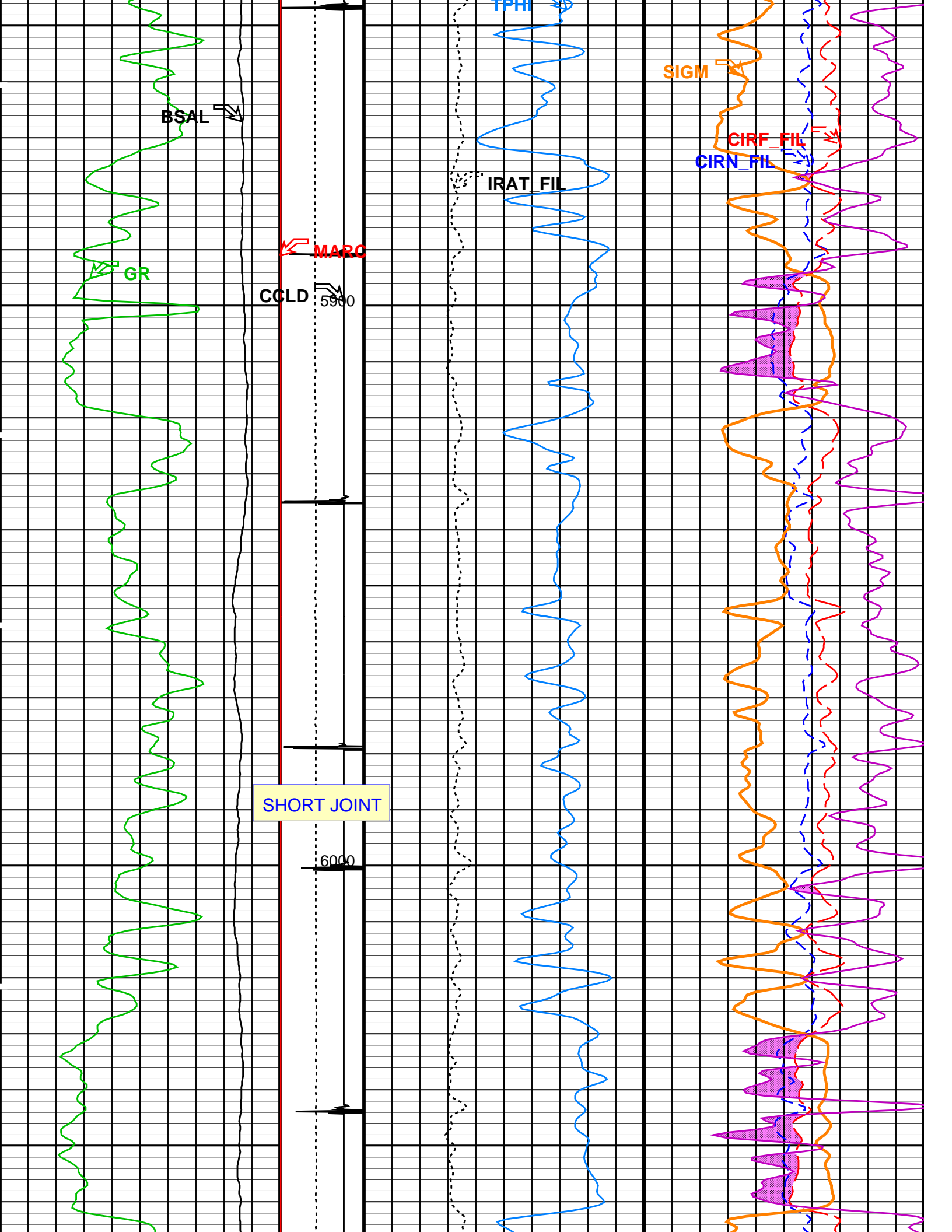




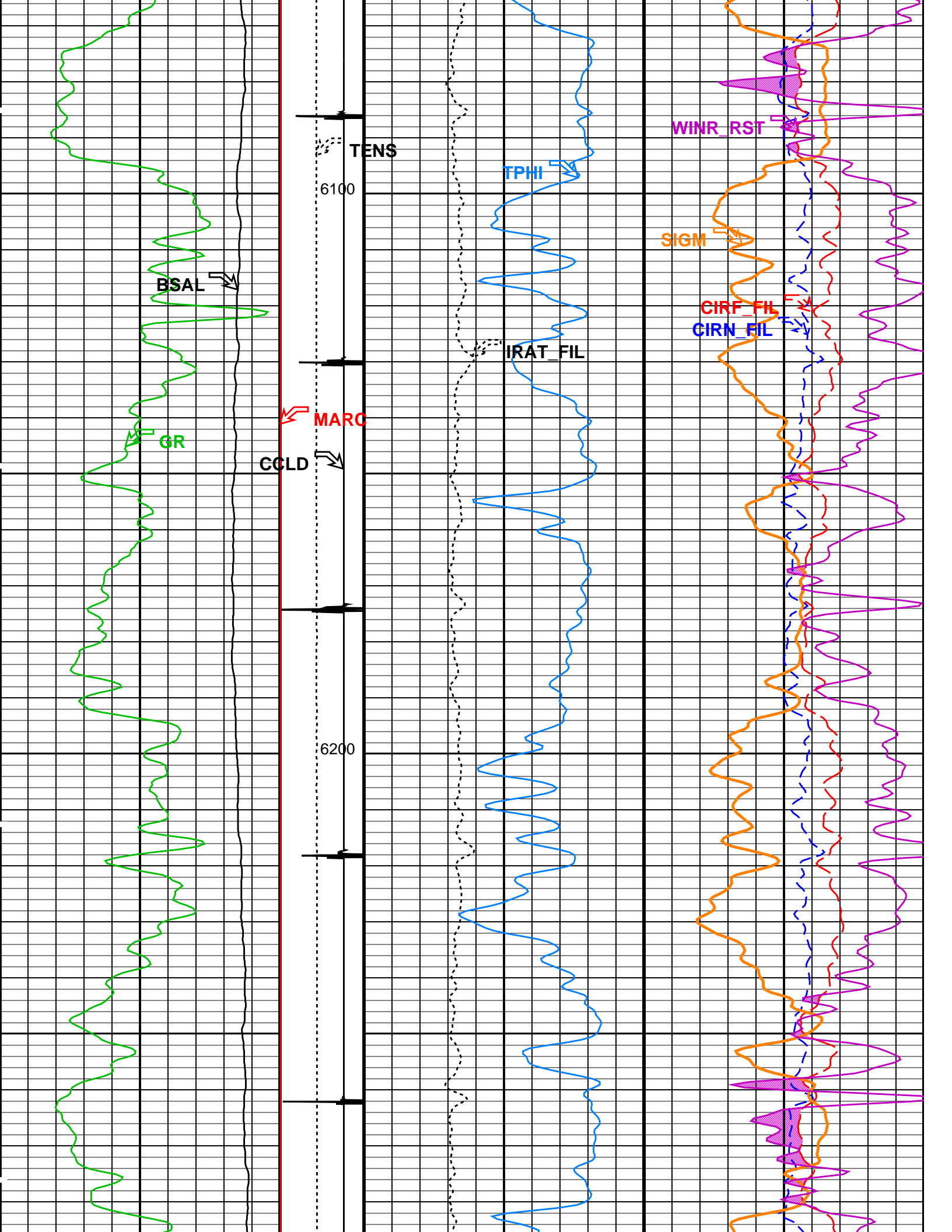


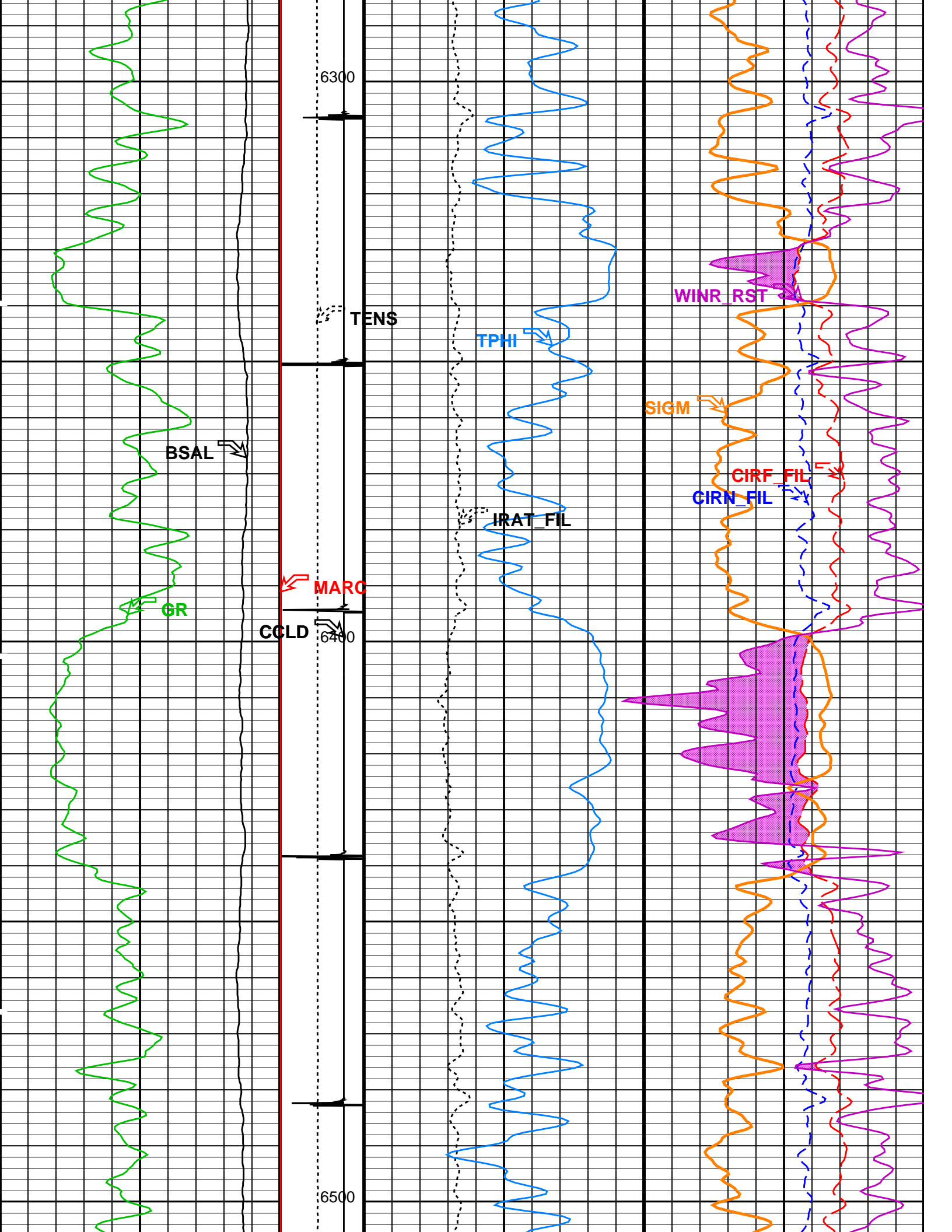


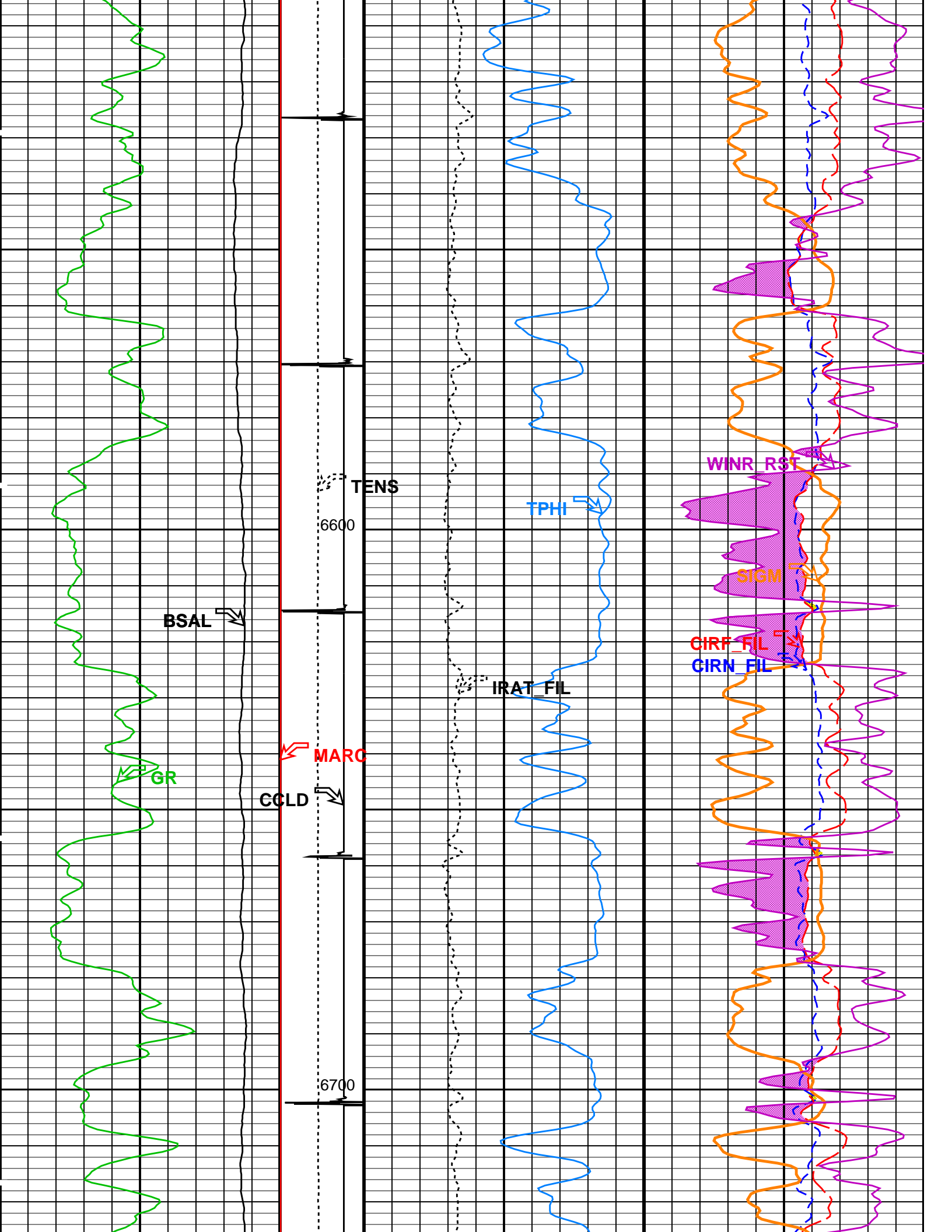


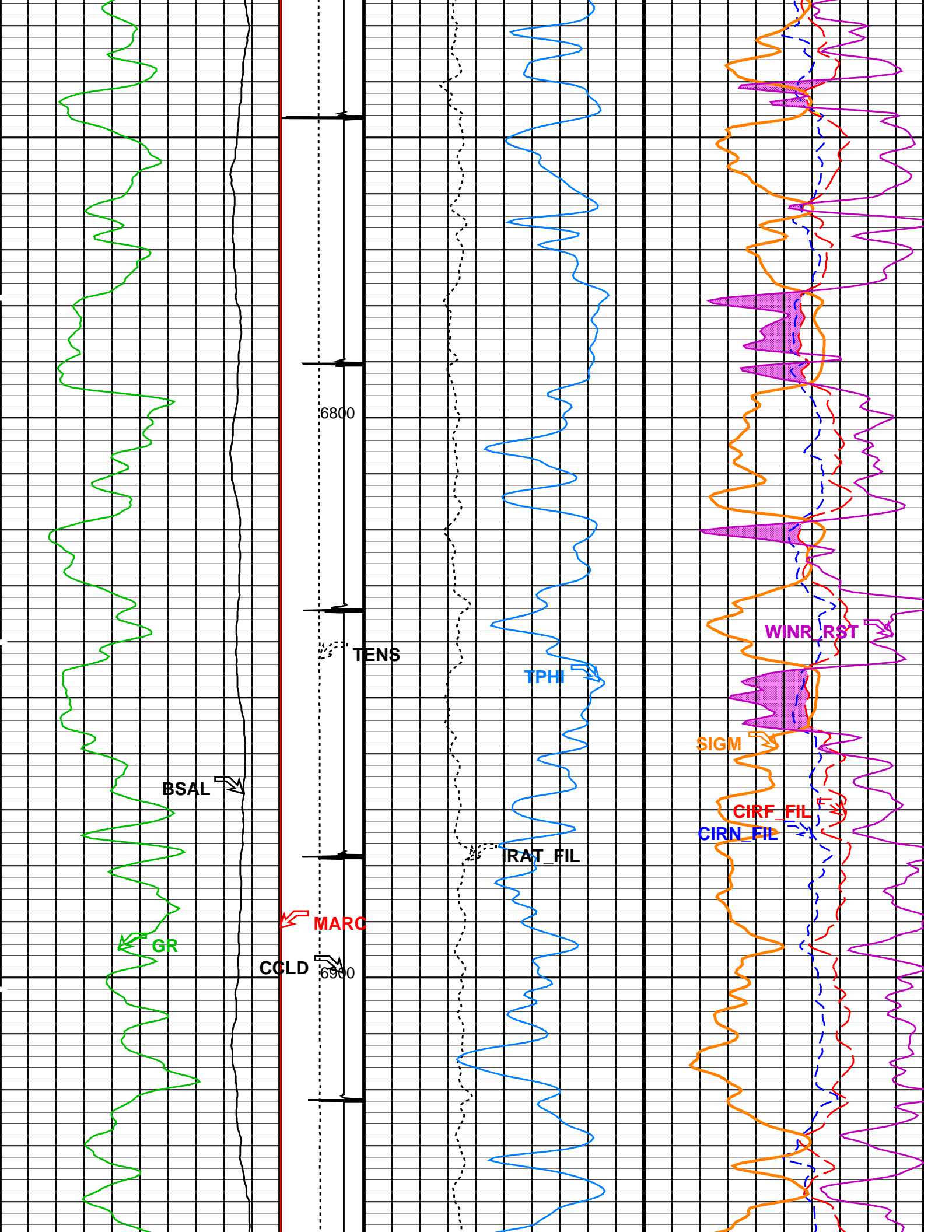


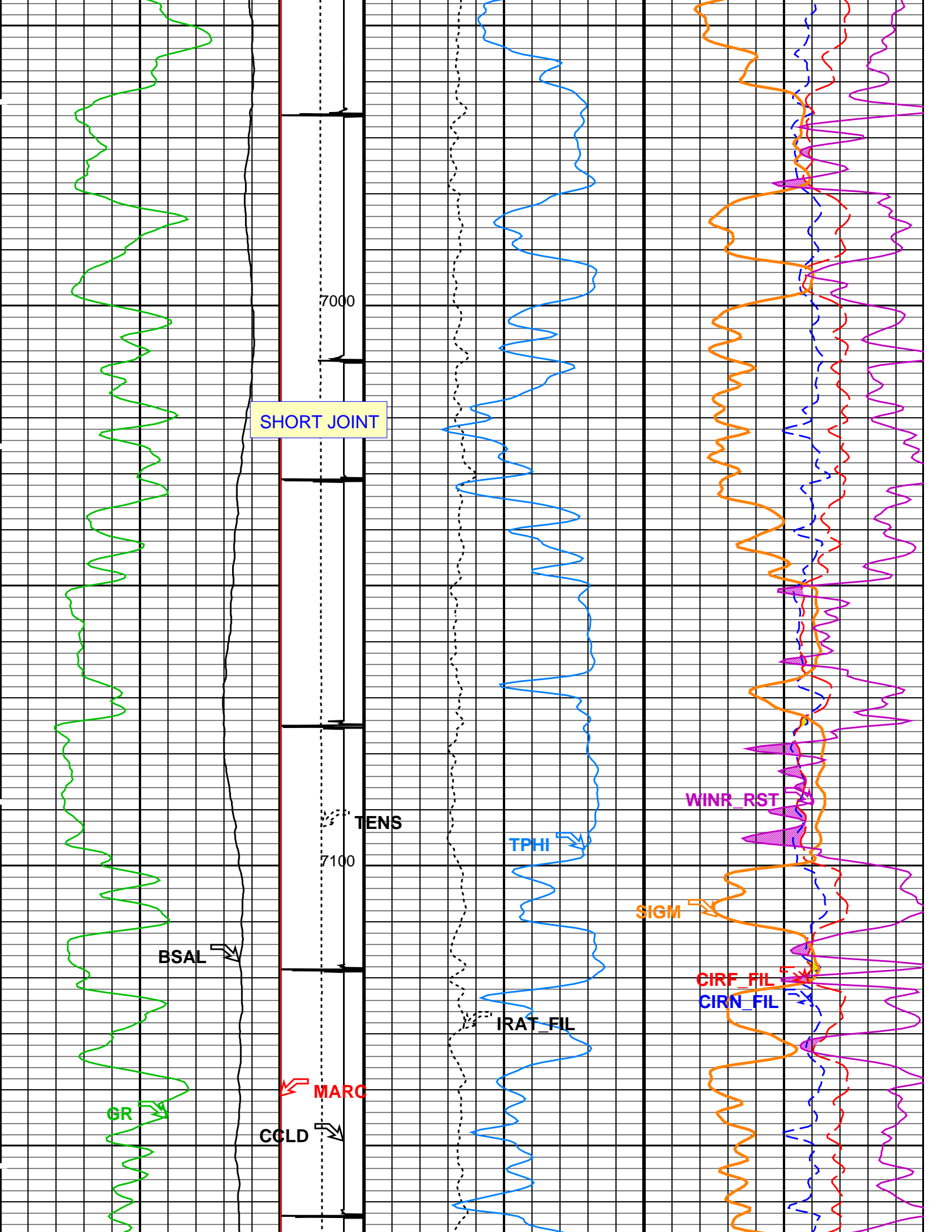


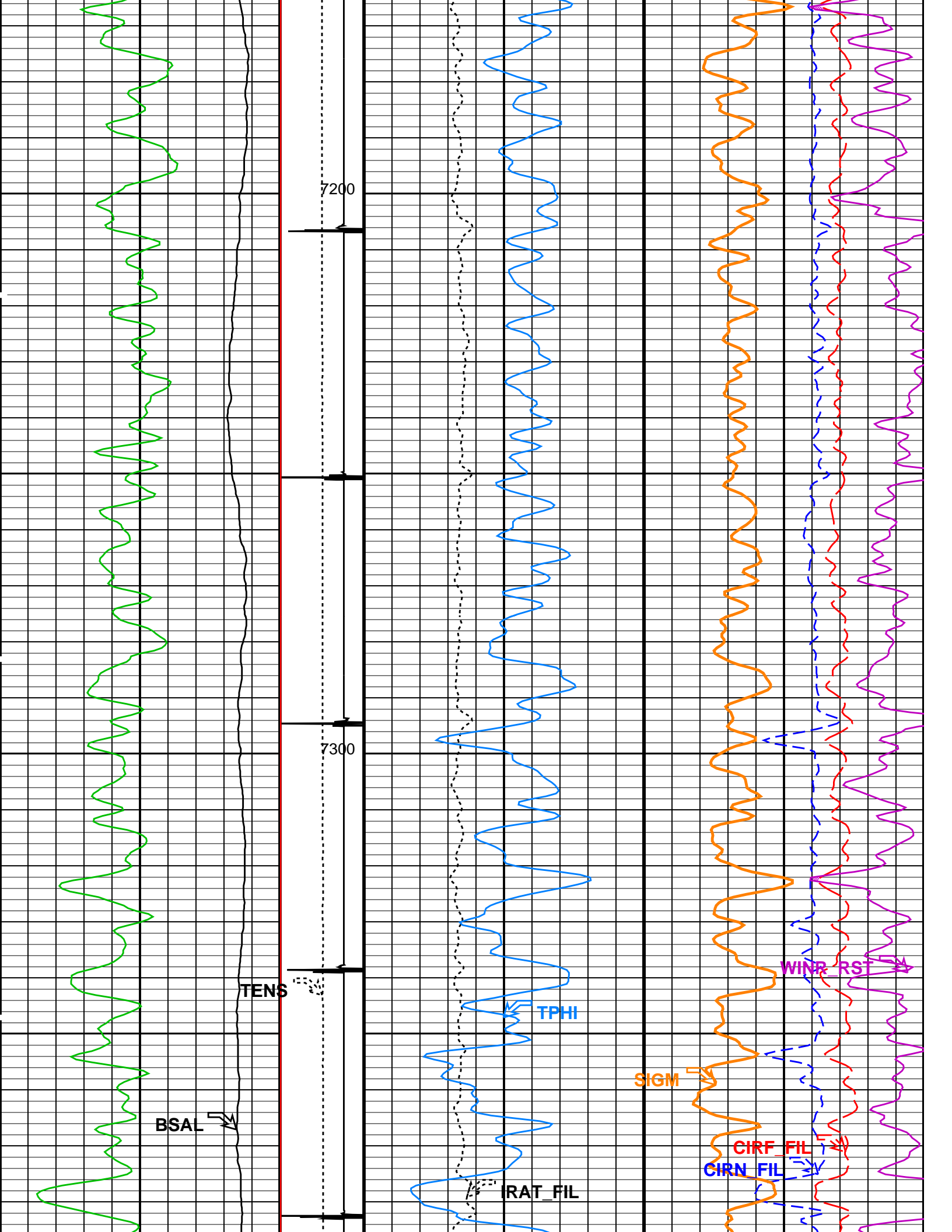


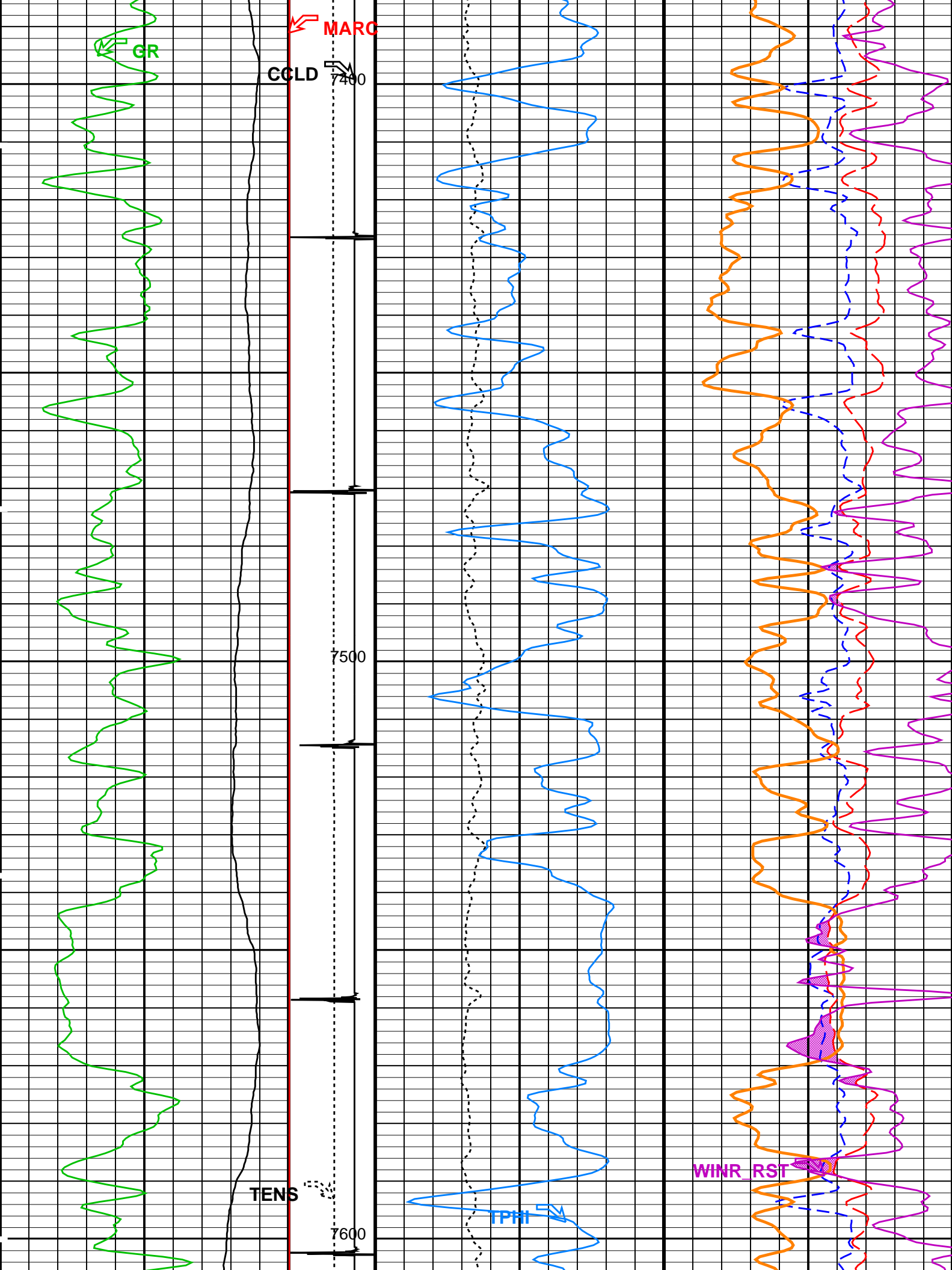


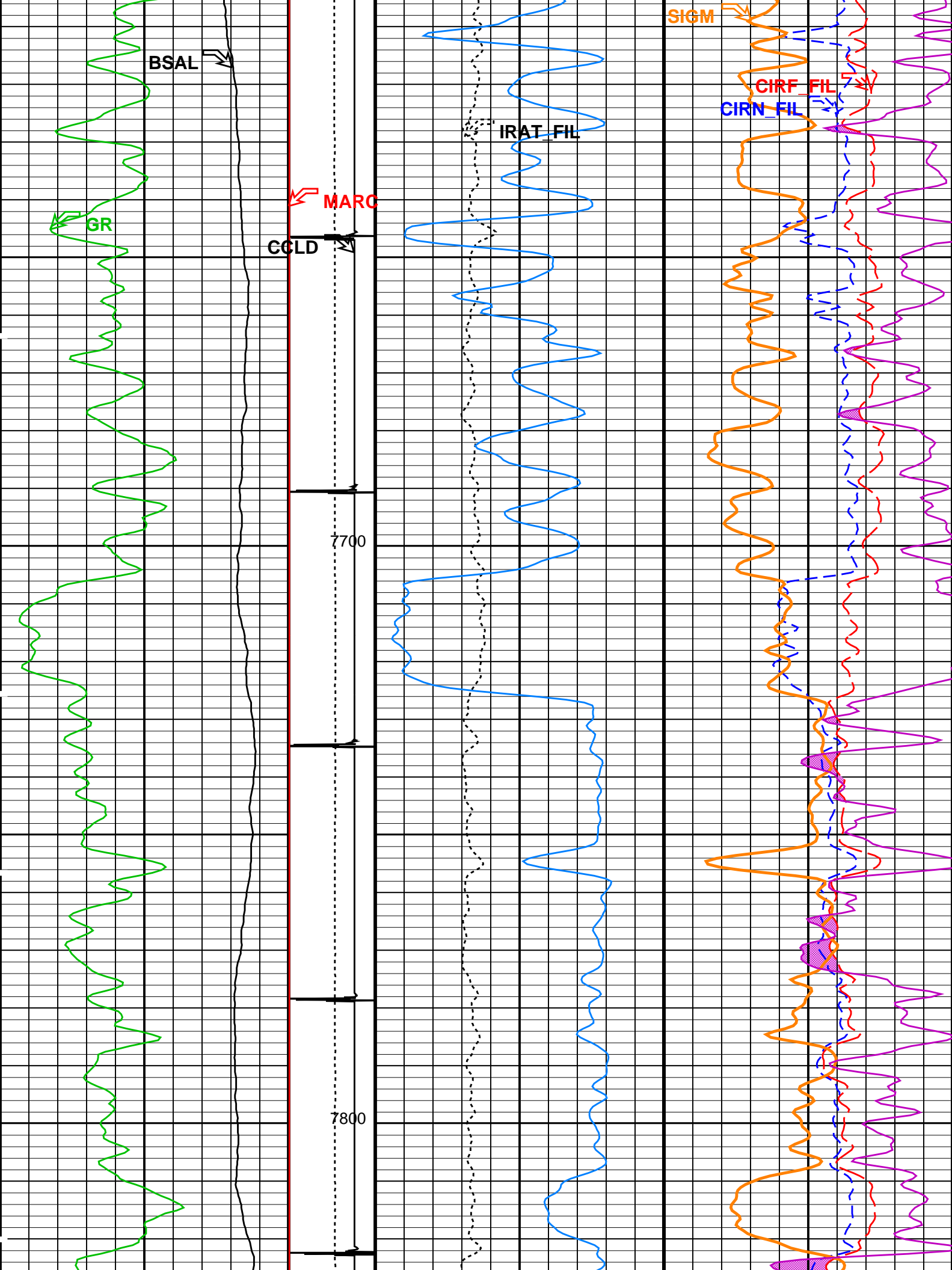




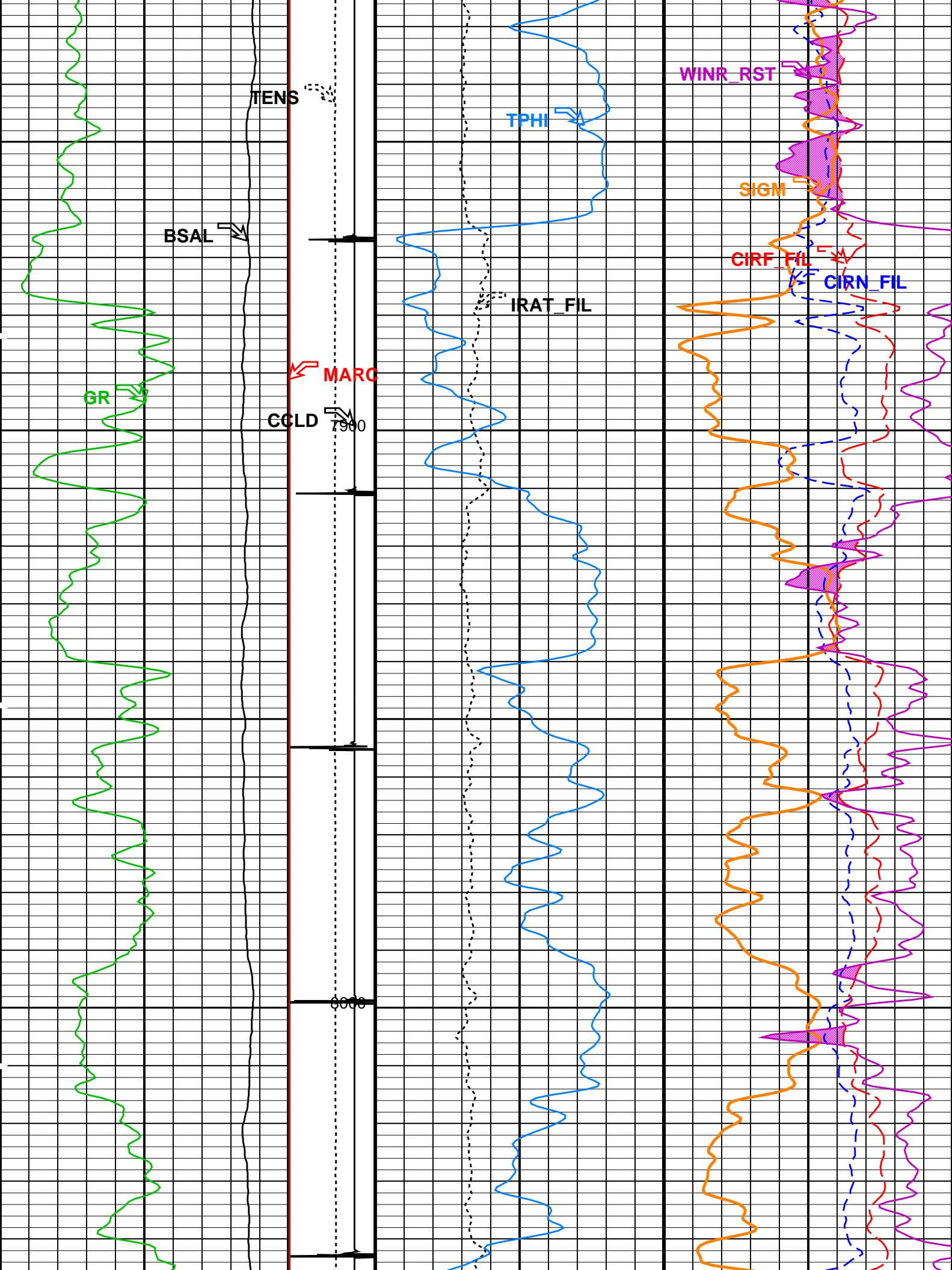


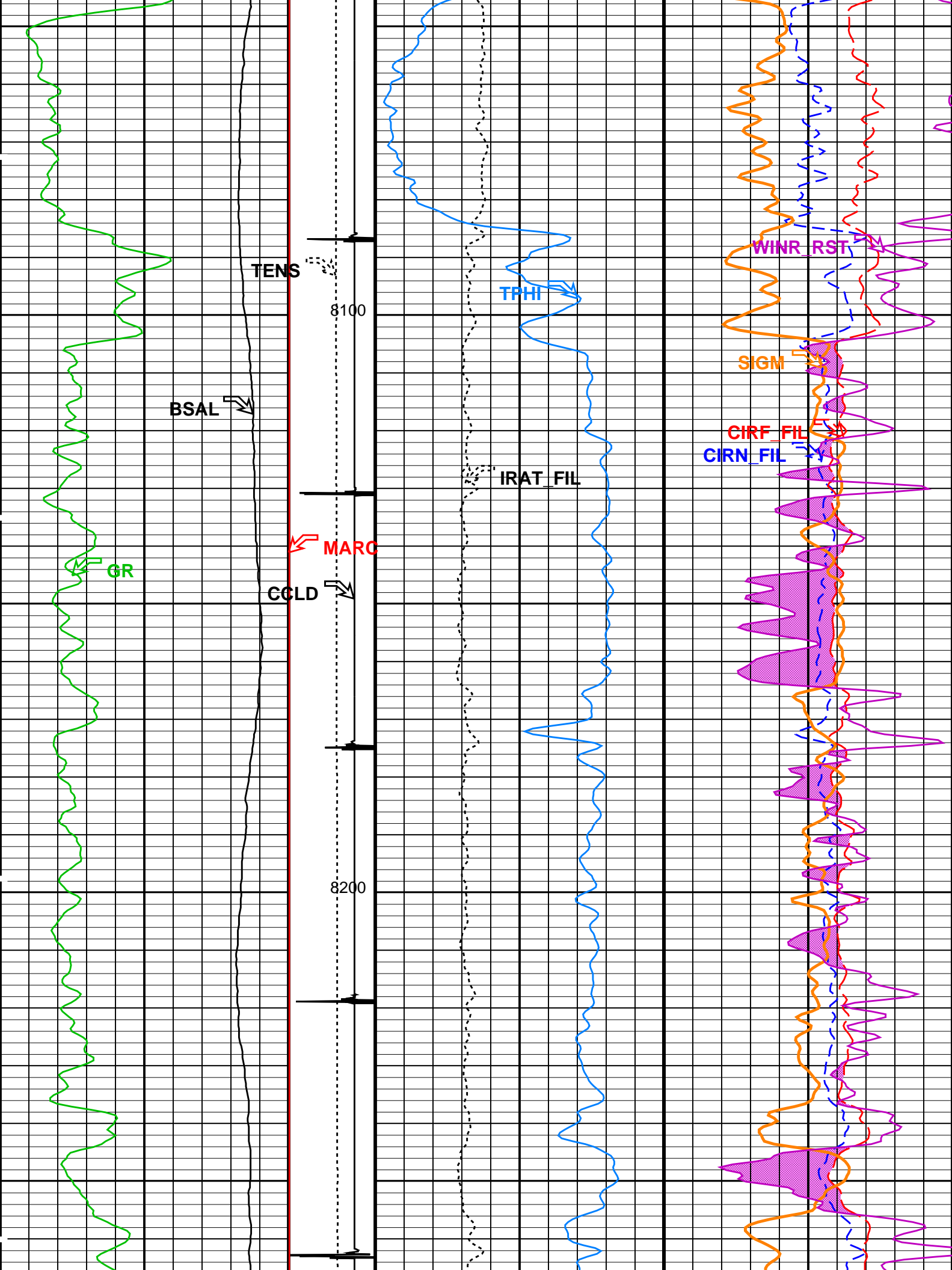


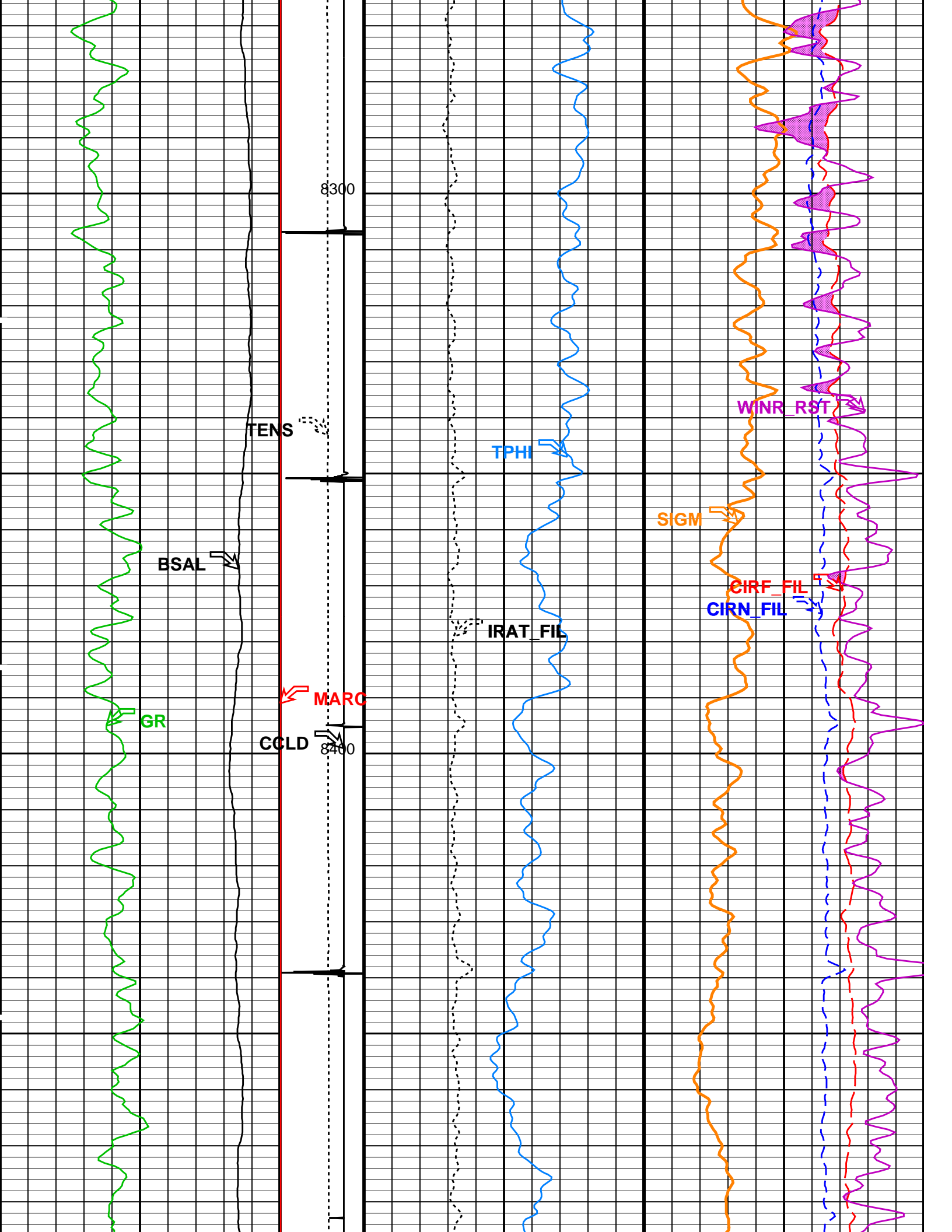


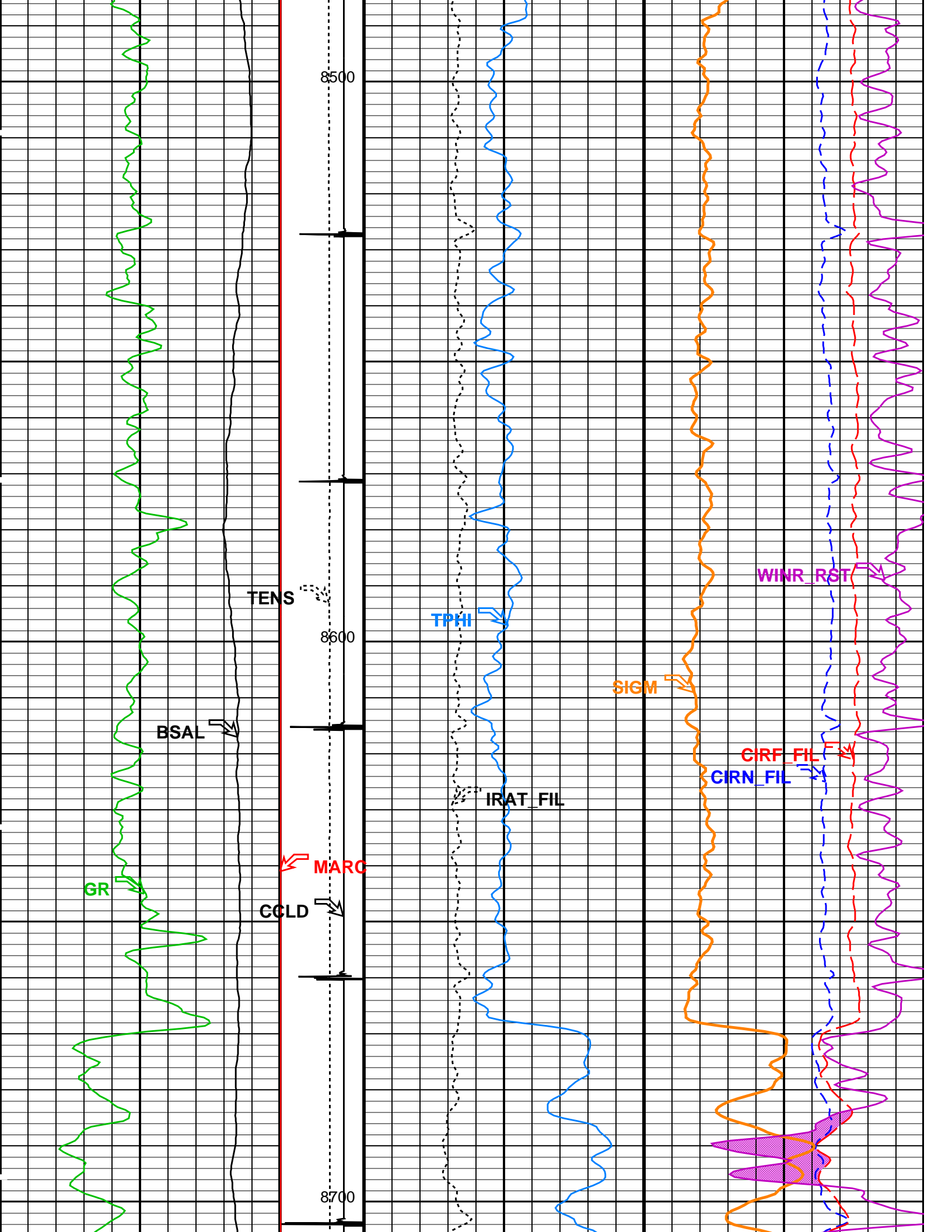


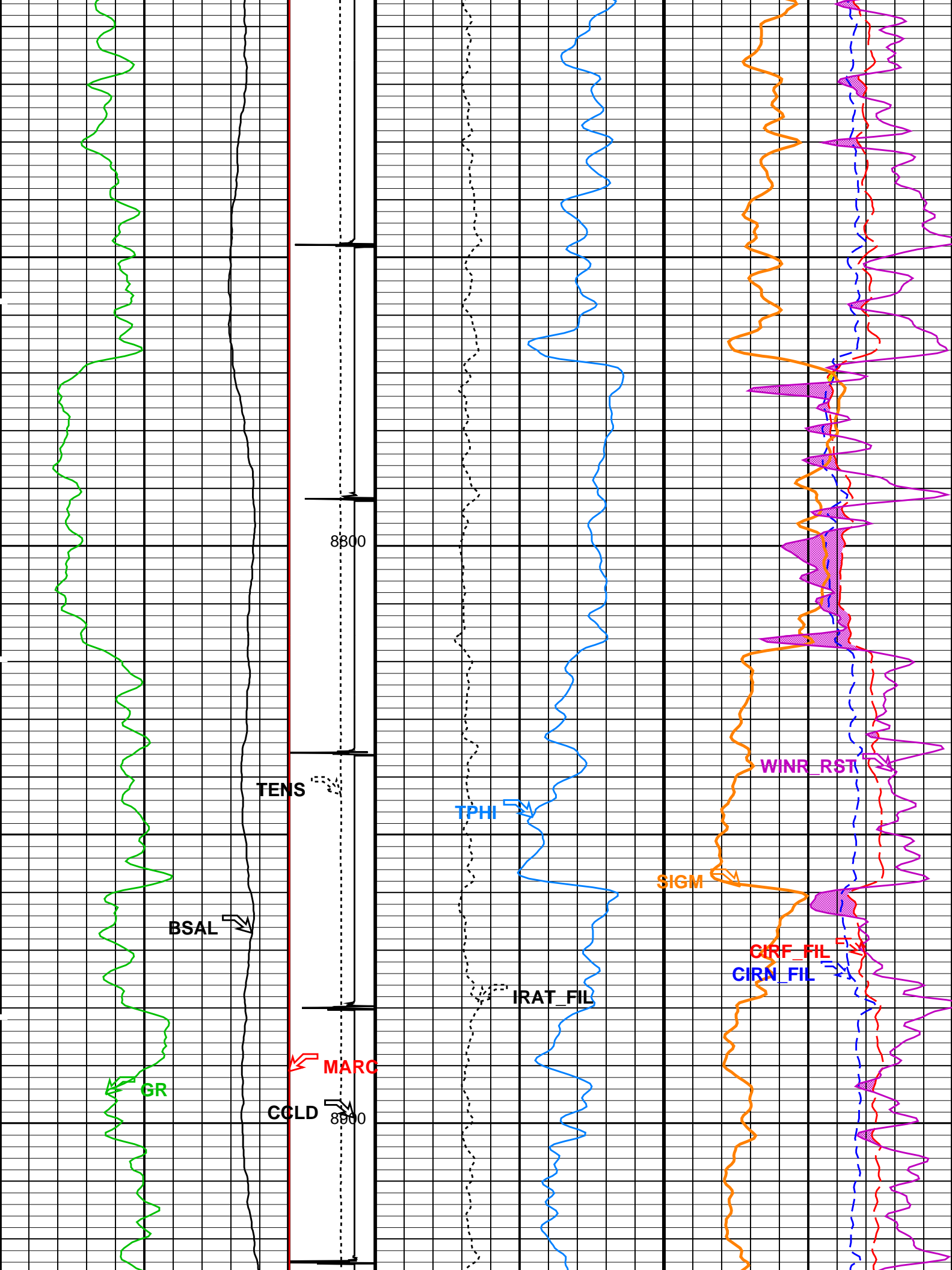


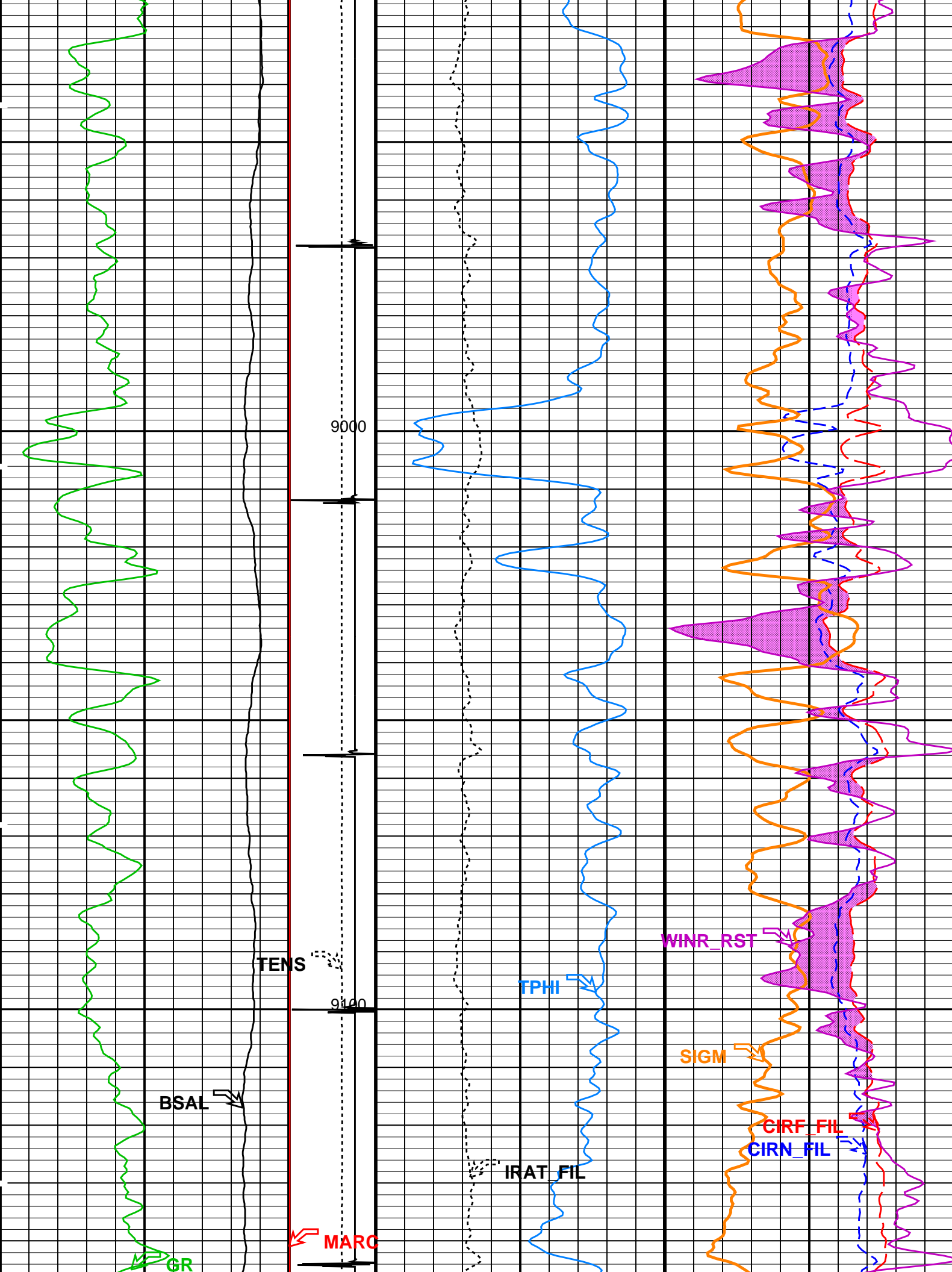


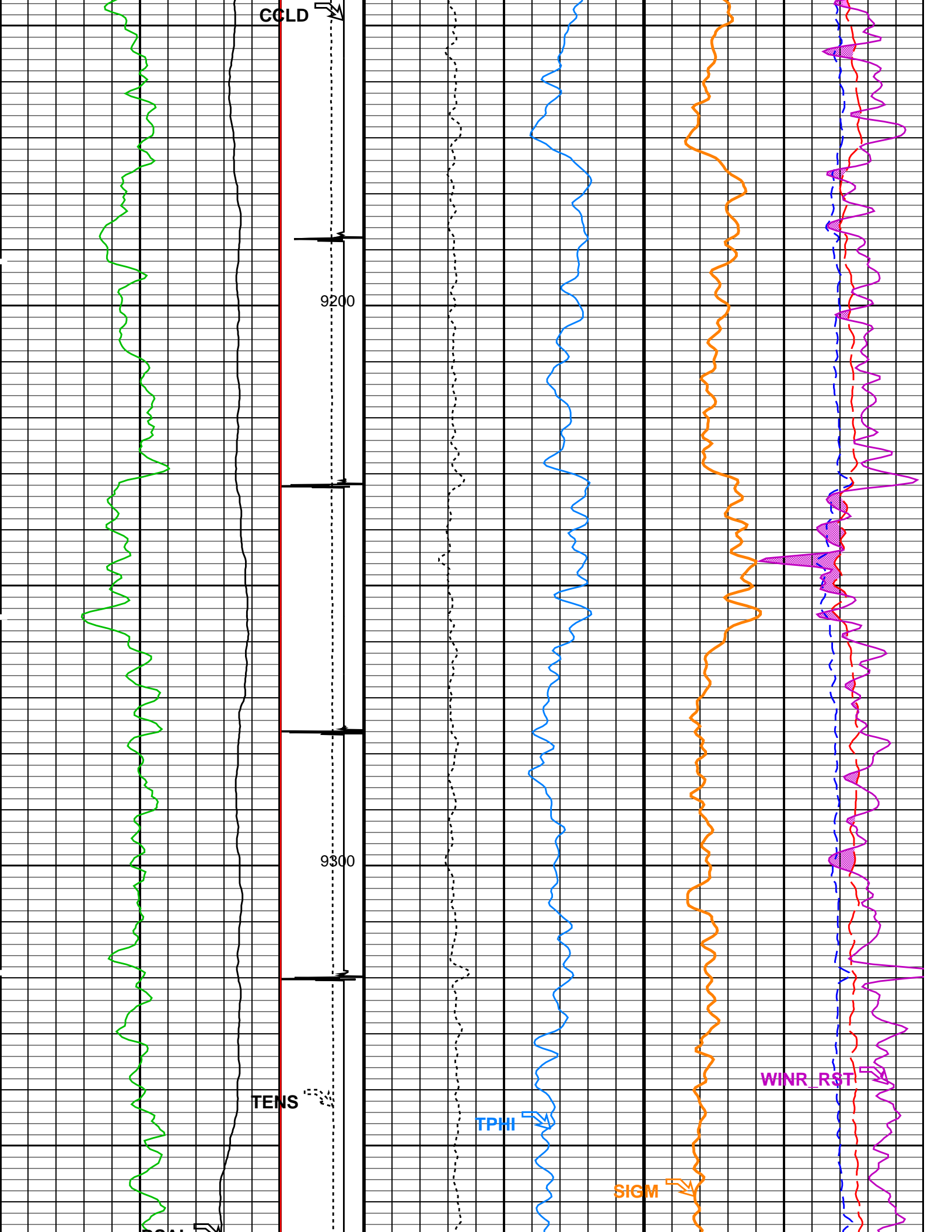


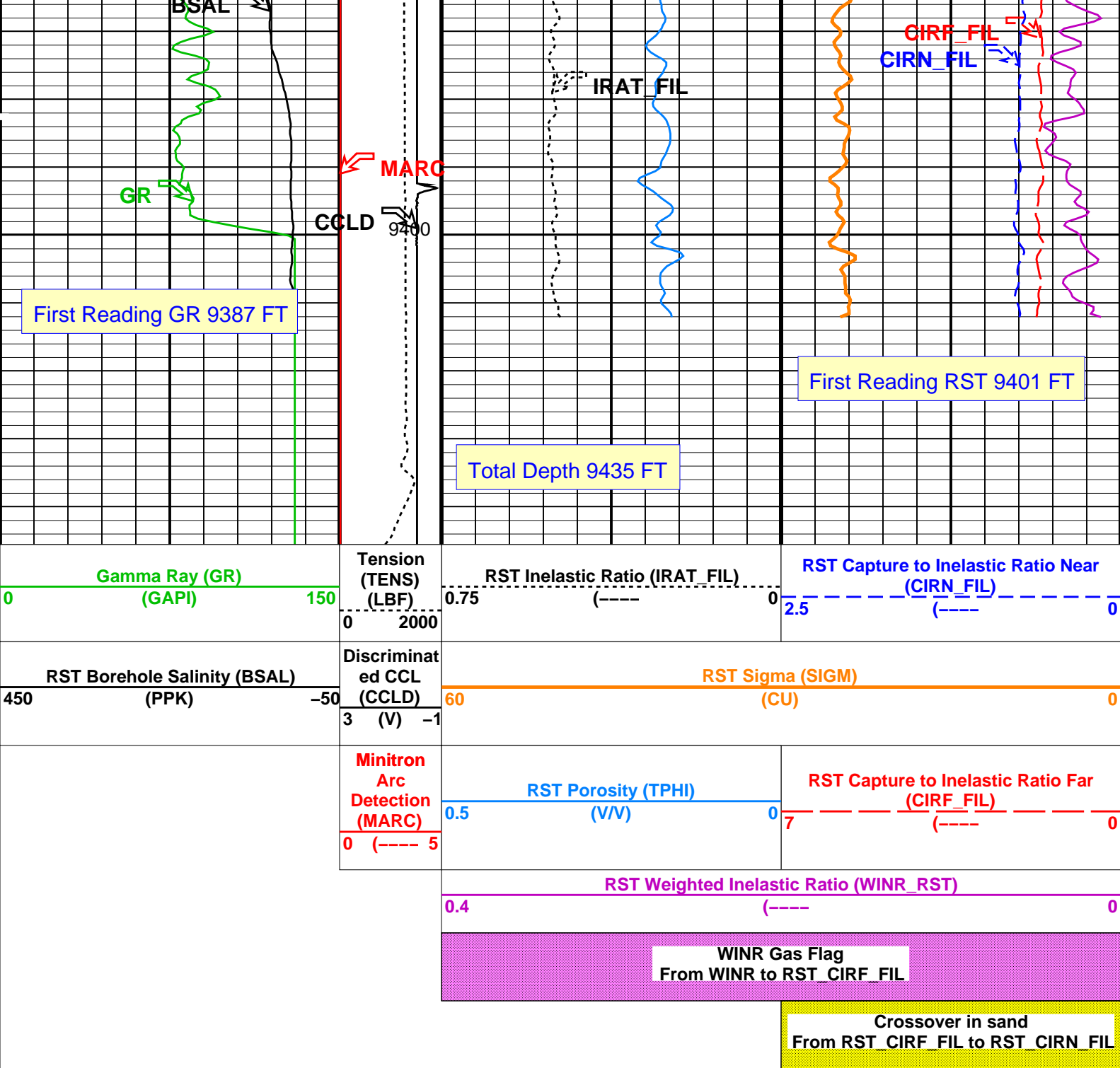












#### PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value	
SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD			
BILI	Bond Index Level for Zone Isolation	0.8	
BISS	Bond Index Source Selection for BIQL	BI	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CMTP	SCMT Tool position on CAN	5	
SCMT	SCMT Slow Channel Multiplexer Mode	SCAN	



CSCS	SCMT Slow Channel Index	0.255617	VCC	IN
CTHI	Casing Thickness	189	US/F	
DTF	Delta-T Fluid	0	DB/F	
FATT	Acoustic Attenuation due to Fluid	0.924277		
FCF	CBL Fluid Compensation Factor	1.55185	MV	
GOBO	Good Bond	PEAK		
MAPD	SCMT MAP Peak Detection Mode	167.559	US	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	30	MV	
MAPT	SCMT MAP Fixed Threshold Level	16.5449	DB/F	
MATT	Maximum Attenuation	1		
MCCF	MAP Cement Type Compensation Factor	1.25	FT	
MCI	Minimum Cemented Interval for Isolation	4.32284	MV	
MMSA	MAP Minimum Sonic Amplitude	0.579149	MV	
MSA	Minimum Sonic Amplitude	OFF		
PEDE	Peak Detection On/Off Switch in Playback	ALLOW		
RBC	Relative Bearing Correction Allow/Disallow	5		
VDLG	VDL Manual Gain	6.8	MRAY	
ZCMT	Acoustic Impedance of Cement			
RST-C: Reservoir Saturation Pro Tool C				
	Tractor Available in Tool String	NO		
AIRB	RST Air Borehole	No		
BHS	Borehole Status	CASED		
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF	
BSALOPT	RST Borehole Salinity Option	Unknown		
BSFL	RST Borehole Salinity Filter Length	51		
CSID	Casing Size I.D.	4	IN	
DFPC	RST Depth Filter Processing Constant	One		
DFPC_TDTL	RST Depth Filter Processing Constant (TDT-like)	Two		
GCSE	Generalized Caliper Selection	BS		
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG	
GGRD	Geothermal Gradient	0.01	DF/F	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48		
NORM_SIGM_RST	RST Normalized Sigma	30	CU	
PTIER	RST Tiered Presentation Selection	0_Customer		
PVL_PSNT_PRST	PVL Peak Signal/Noise Threshold	3		
RGAI	Near/Far Gain Calibration Ratio	1		
SHT	Surface Hole Temperature	68	DEGF	
TIER_IC	RST IC Acquisition Mode	0_CO_Yield_and_Spectrolith		
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma		
WOFSL_PRST	RST WFL-Off Subcycle Length	0		
WONSL_PRST	RST WFL-On Subcycle Length	0		
WSCOM_PRST	RST Station Log Comment			
PSPT: Production Services Logging Platform				
BHS	Borehole Status	CASED		
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF	
CSID	Casing Size I.D.	4	IN	
GCSE	Generalized Caliper Selection	BS		
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG	
GGRD	Geothermal Gradient	0.01	DF/F	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
PBPO	PBMS Tool position on CAN	2		
PCCG	PBMS CCL Gain	DB0		
PSTP	PSTC Tool Position on CAN Bus	1		
SHT	Surface Hole Temperature	68	DEGF	
System and Miscellaneous				
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth		
BS	Bit Size	7.875	IN	
BSAL	Borehole Salinity	-50000.00	PPM	
CSIZ	Current Casing Size	4.500	IN	
CWEI	Casing Weight	11.60	LB/F	
DFD	Drilling Fluid Density	8.40	LB/G	
DO	Depth Offset for Playback	4.0	FT	
FLEV	Fluid Level	60.00	FT	
MST	Mud Sample Temperature	-50000.00	DEGF	
PBVSADP	Use alternate depth channel for playback	NO		
PP	Playback Processing	RECOMPUTE		
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM	
RW	Resistivity of Connate Water	1.0000	OHMM	
TD	Total Depth	9435	FT	
TDD	Total Depth - Driller	9505.00	FT	
TDL	Total Depth - Logger	9435.00	FT	
TWS	Temperature of Connate Water Sample	100.00	DEGF	

Format: RST\_SIGMA\_S5      Vertical Scale: 5" per 100'      Graphics File Created: 02-May-2013 13:38

SCMT-CB PSPT	SRPC-5214-H2-2012-OP1! SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
Input DLIS Files			
DEFAULT	SCMT_RST_PSP_065LUP	FN:63 PRODUCER	02-May-2013 11:00 9441.5 FT 9.0 FT
Output DLIS Files			
DEFAULT	SCMT_RST_PSP_070PUP	FN:68 PRODUCER	02-May-2013 13:38

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REPEAT ANALYSIS RST SIGMA

MAXIS Field Log

Input DLIS Files			
DEFAULT	SCMT_RST_PSP_063LUP	FN:61 PRODUCER	02-May-2013 10:39 6154.5 FT 5738.2 FT
DEFAULT	SCMT_RST_PSP_070PUP	FN:68 PRODUCER	02-May-2013 13:38 9445.5 FT -31.5 FT
Output DLIS Files			
DEFAULT	SCMT_RST_PSP_071PUP	FN:69 PRODUCER	02-May-2013 13:45 6155.5 FT 5695.0 FT

OP System Version: 19C0-187

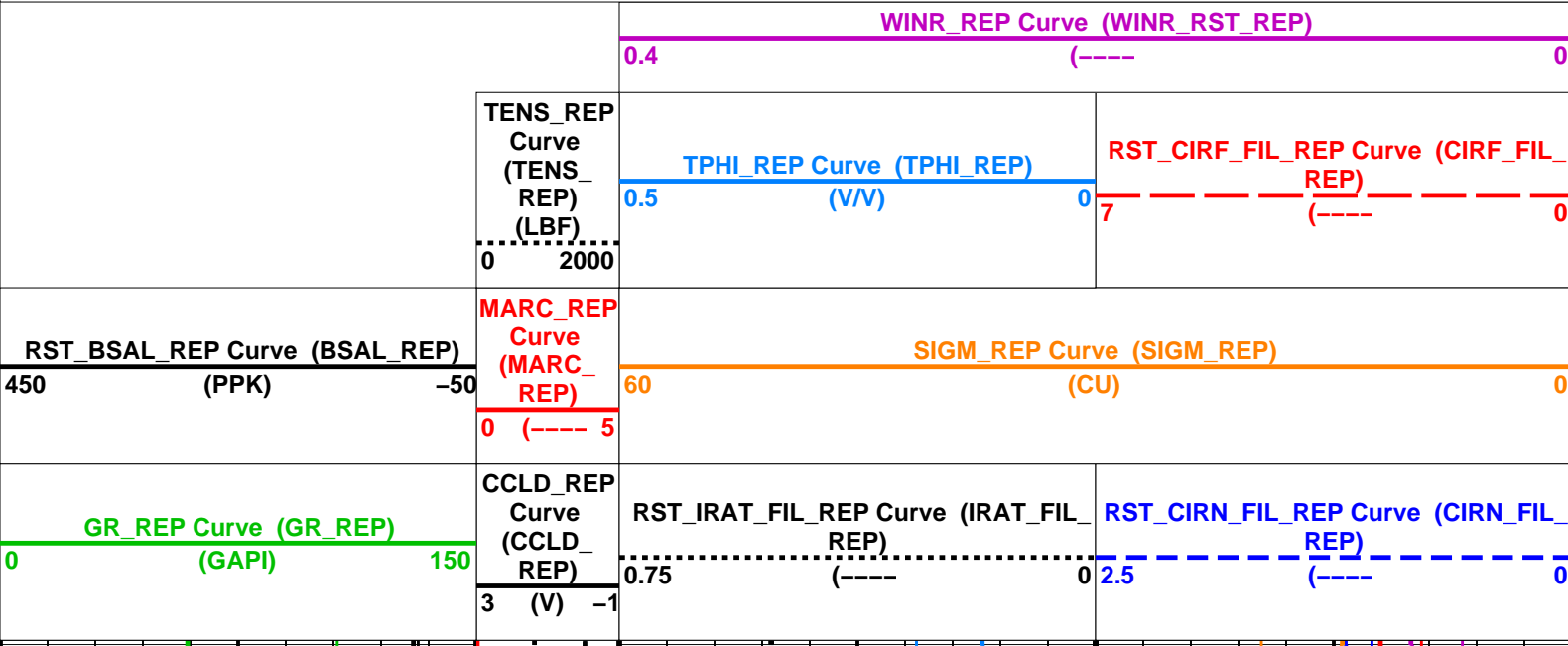
SCMT-CB PSPT	SRPC-5214-H2-2012-OP1! SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
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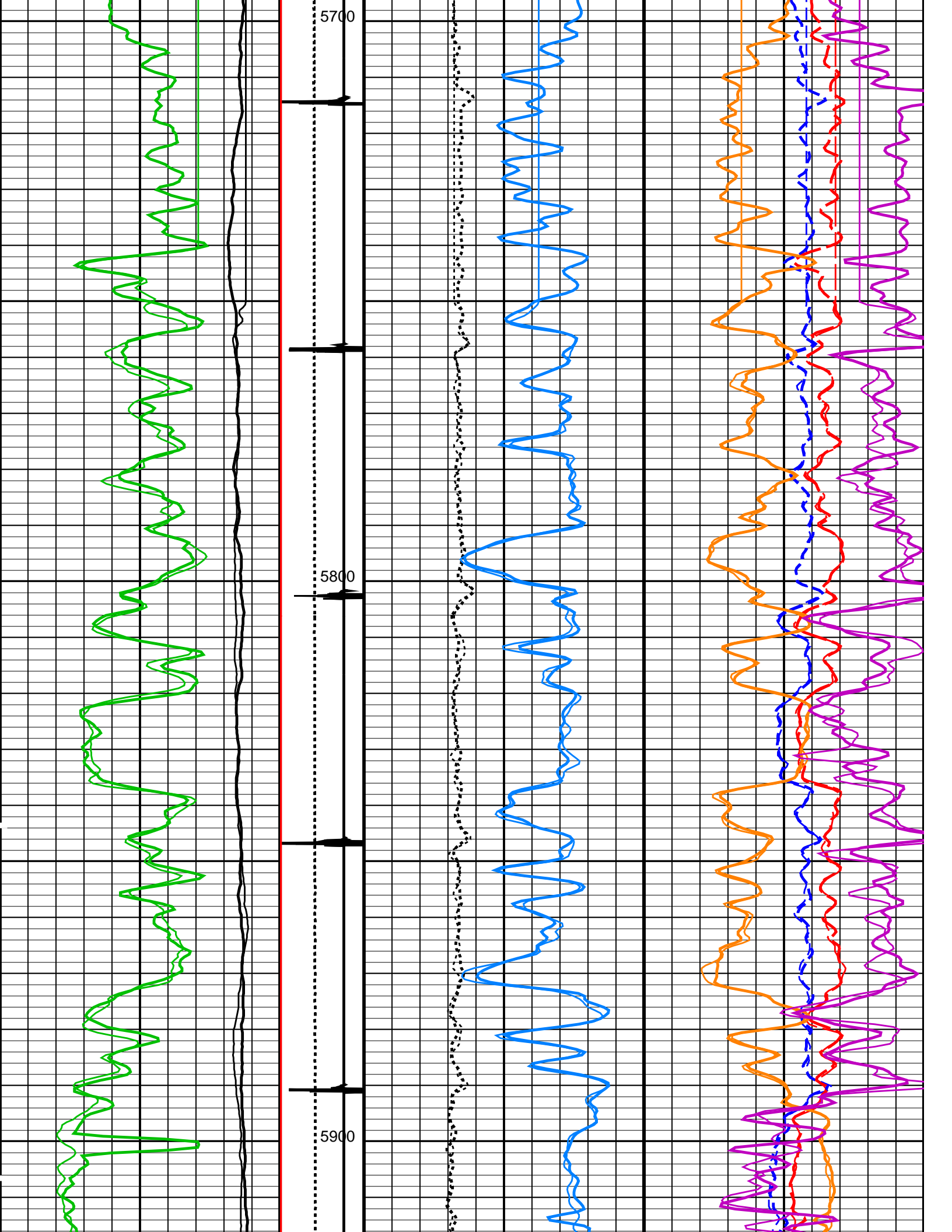
Changed Parameter Summary

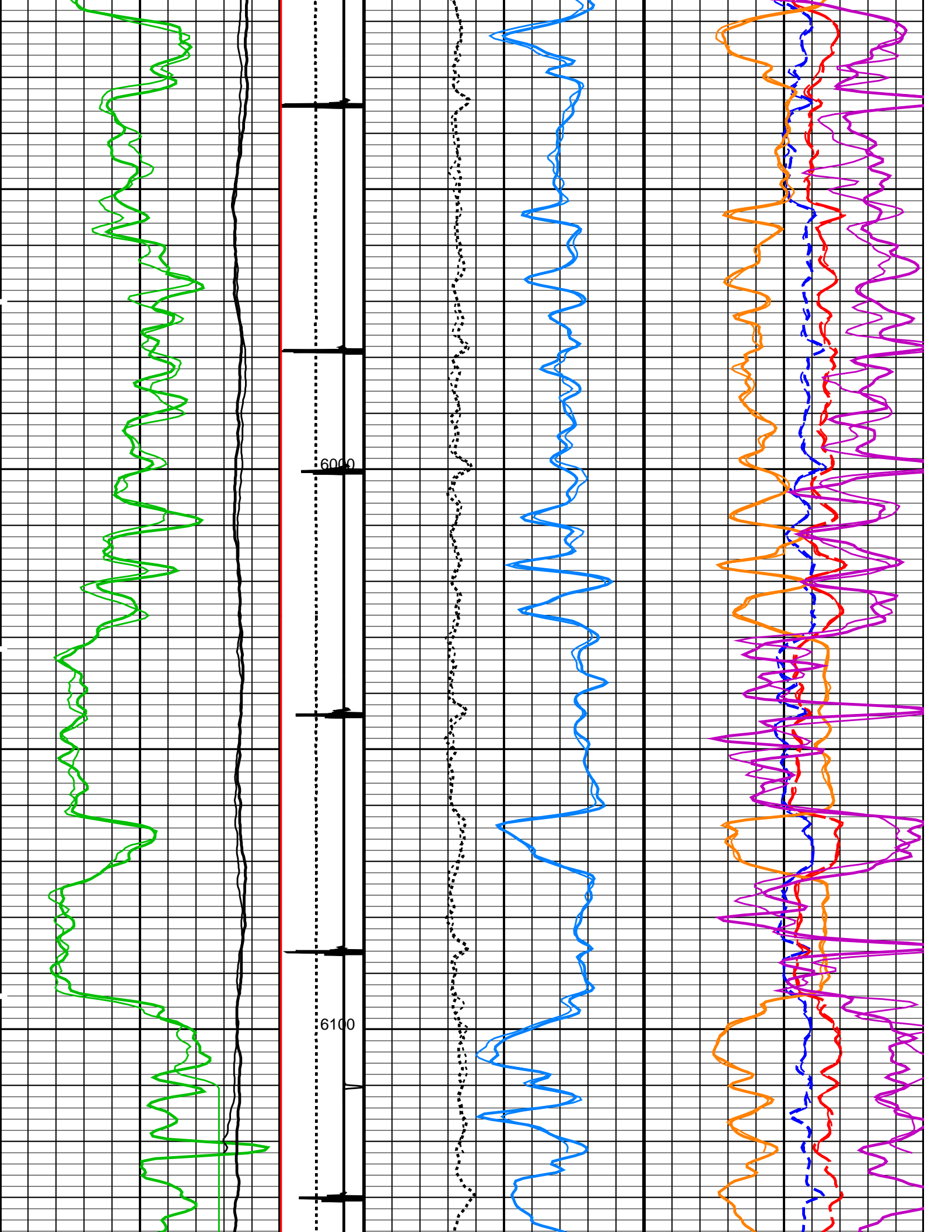
DLIS Name	New Value	Previous Value	Depth & Time
BS	8.750 IN	8.750 IN	6155.5 13:45:13

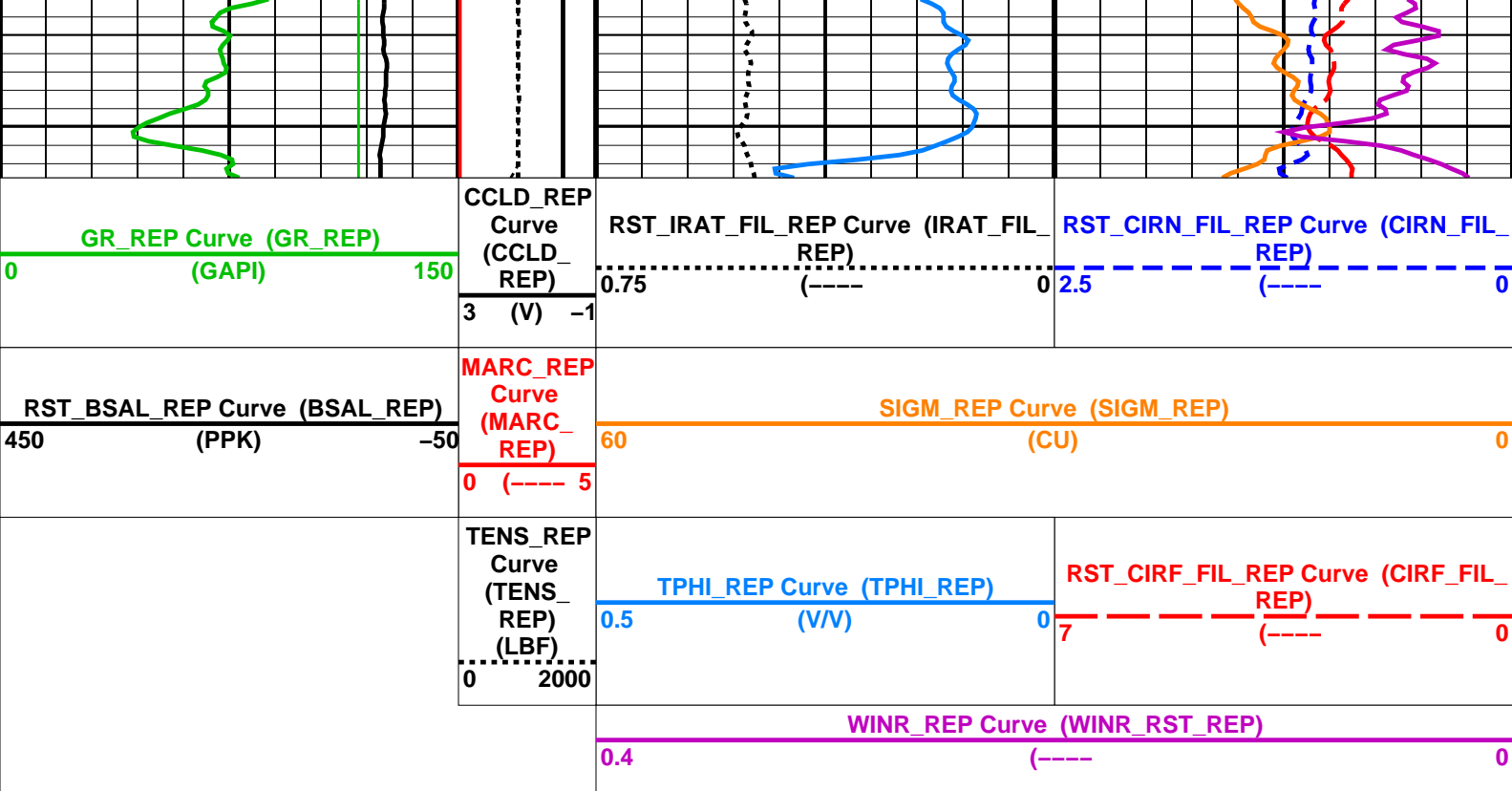
PIP SUMMARY

Time Mark Every 60 S









#### PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value	
SCMT-CB: Slim Cement Mapping Tool, 1-11/16 OD			
BILI	Bond Index Level for Zone Isolation	0.8	
BISS	Bond Index Source Selection for BIQL	BI	
CB3D	SCMT CBL 3 ft Peak Detection Mode	PEAK	
CB3G	SCMT CBL 3 ft Peak Detection T0_Delay and Noise Gate	224.559	US
CB3T	SCMT CBL 3 ft Fixed Threshold Level	20	MV
CB5D	SCMT CBL 5 ft Peak Detection Mode	PEAK	
CB5G	SCMT CBL 5 ft Peak Detection T0_Delay and Noise Gate	338.559	US
CB5T	SCMT CBL 5 ft Fixed Threshold Level	20	MV
CBLG	CBL Gate Width	40	US
CBRA	CBL LQC Reference Amplitude in Free Pipe	80	MV
CMCF	CBL Cement Type Compensation Factor	1	
CMTC	SCMT Slow Channel Multiplexer Mode	SCAN	
CMTM	SCMT Operating Mode	LOG	
CMTT	SCMT Tool position on CAN	5	
CSCS	SCMT Slow Channel Index	VCC	
CTHI	Casing Thickness	0.255617	IN
DTF	Delta-T Fluid	189	US/F
FATT	Acoustic Attenuation due to Fluid	0	DB/F
FCF	CBL Fluid Compensation Factor	0.924277	
GOBO	Good Bond	1.55185	MV
MAPD	SCMT MAP Peak Detection Mode	PEAK	
MAPG	SCMT MAP Peak Detection T0_Delay and Noise Gate	167.559	US
MAPT	SCMT MAP Fixed Threshold Level	30	MV
MATT	Maximum Attenuation	16.5449	DB/F
MCCF	MAP Cement Type Compensation Factor	1	
MCI	Minimum Cemented Interval for Isolation	1.25	FT
MMSA	MAP Minimum Sonic Amplitude	4.32284	MV
MSA	Minimum Sonic Amplitude	0.579149	MV
PEDE	Peak Detection On/Off Switch in Playback	OFF	
RBC	Relative Bearing Correction Allow/Disallow	ALLOW	
VDLG	VDL Manual Gain	5	
ZCMT	Acoustic Impedance of Cement	6.8	MRAY
RST-C: Reservoir Saturation Pro Tool C			
	Tractor Available in Tool String	NO	
AIRB	RST Air Borehole	No	
BHS	Borehole Status	CASED	
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF
BSALOPT	RST Borehole Salinity Option	Unknown	
BSFL	RST Borehole Salinity Filter Length	51	
CSID	Casing Size I.D.	4	IN
DFPC	RST Depth Filter Processing Constant	One	
DEPC TDTI	RST Depth Filter Processing Constant (TDTI-like)	Two	

GCSE	RST Depth Filter Processing Constant (FDT-like)	1.00	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG	
GGRD	Geothermal Gradient	0.01	DF/F	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
NORM_IRAT_RST	RST Normalized Inelastic Ratio	0.48		
NORM_SIGM_RST	RST Normalized Sigma	30	CU	
PTIER	RST Tiered Presentation Selection	0_Customer		
PVL_PSNT_PRST	PVL Peak Signal/Noise Threshold	3		
RGAI	Near/Far Gain Calibration Ratio	1		
SHT	Surface Hole Temperature	68	DEGF	
TIER_IC	RST IC Acquisition Mode	0_CO_Yield_and_Spectrolith		
TIER_SIGM	RST Sigma Acquisition Mode	0_RST_Sigma		
WOFSL_PRST	RST WFL-Off Subcycle Length	0		
WONSL_PRST	RST WFL-On Subcycle Length	0		
WSCOM_PRST	RST Station Log Comment			
PSPT: Production Services Logging Platform				
BHS	Borehole Status	CASED		
BHT	Bottom Hole Temperature (used in calculations)	212	DEGF	
CSID	Casing Size I.D.	4	IN	
GCSE	Generalized Caliper Selection	BS		
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG	
GGRD	Geothermal Gradient	0.01	DF/F	
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
ISSBAR	Barite Mud Switch	NOBARITE		
MATR	Rock Matrix for Neutron Porosity Corrections	SANDSTONE		
PBPO	PBMS Tool position on CAN	2		
PCCG	PBMS CCL Gain	DB0		
PSTP	PSTC Tool Position on CAN Bus	1		
SHT	Surface Hole Temperature	68	DEGF	
System and Miscellaneous				
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth		
BS	Bit Size	8.750	IN	
BSAL	Borehole Salinity	-50000.00	PPM	
CSIZ	Current Casing Size	4.500	IN	
CWEI	Casing Weight	11.60	LB/F	
DFD	Drilling Fluid Density	8.40	LB/G	
DO	Depth Offset for Playback	1.0	FT	
DORL	Depth Offset for Repeat Analysis	0.0	FT	
FLEV	Fluid Level	60.00	FT	
MST	Mud Sample Temperature	-50000.00	DEGF	
PBVSADP	Use alternate depth channel for playback	NO		
PP	Playback Processing	RECOMPUTE		
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM	
RW	Resistivity of Connate Water	1.0000	OHMM	
TD	Total Depth	9435	FT	
TDD	Total Depth - Driller	9505.00	FT	
TDL	Total Depth - Logger	9435.00	FT	
TWS	Temperature of Connate Water Sample	100.00	DEGF	

Format: RST\_SIGMA\_S5\_REP    Vertical Scale: 5" per 100'    Graphics File Created: 02-May-2013 13:45

## OP System Version: 19C0-187

SCMT-CB	SRPC-5214-H2-2012-OP1!	RST-C	SRPC-5214-H2-2012-OP1!
PSPT	SRPC-5214-H2-2012-OP1!		

### Input DLIS Files

DEFAULT	SCMT_RST_PSP_063LUP	FN:61	PRODUCER	02-May-2013 10:39	6154.5 FT	5738.2 FT
DEFAULT	SCMT_RST_PSP_070PUP	FN:68	PRODUCER	02-May-2013 13:38	9445.5 FT	-31.5 FT

### Output DLIS Files

DEFAULT	SCMT_RST_PSP_071PUP	FN:69	PRODUCER	02-May-2013 13:45
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**Schlumberger**

**PBMS COEFFICIENTS**

Client: ENCANA OIL & GAS (USA) INC  
Field: MAMM CREEK  
Well: ENCANA FEE 24-1A (K19CNE)  
Run date: 2-May-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: GR

## PBMS Gamma Ray

Sonde Serial NB RESISTORS FOR GR SENSOR N.33223, TOOL PBMS-BA0928. SENSOR S/N:  
Sensor Serial NB 33223  
Calib Date ddmmyy 090800  
Matrix Size 12  
Coeff CRC CFE2

## GR HV Rt

Rt\*\*0

Rt\*\*1

Rt\*\*0

+.182000000000e+04

+.332000000000e+04

Client: ENCANA OIL & GAS (USA) INC  
Field: MAMM CREEK  
Well: ENCANA FEE 24-1A (K19CNE)  
Run date: 2-May-2013

Tool: PSP  
Sub Type: PBMS  
Sensor: WellTemp RTD

## PBMS RTD Well Thermometer

Sonde Serial NB COEFFICIENTS FOR RTD THERMOMETER PBMS-B.928 S/N:  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 16  
Coeff CRC A24E

## WTemp Coeff

Tt\*\*0

Tt\*\*1

Tt\*\*2

Tt\*\*0

-.391987973189E+03

+.191346892512E+03

-.440920753451E+02

	Tt**3	Tt**4	Tt**5
Tt**0	+.957191300908E+01	-.711421725686E+00	0.0

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	MAMM CREEK	Sub Type:	PBMS
Well:	ENCANA FEE 24-1A (K19CNE)	Sensor:	CQG
Run date:	2-May-2013		

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

Pres Coeff

COEFFICIENTS FOR CQG PBMS-B.928 S/N:

928

280612

66

9DC3

	Fb**0	Fb**1	Fb**2
Fc**0	+.714463802232E+04	+.183434658655E-01	-.156620073569E-06
Fc**1	-.100638308957E+01	-.119899563644E-04	-.912155899025E-10
Fc**2	+.936268101283E-06	+.423898071451E-10	+.958076371919E-15
Fc**3	+.185123362373E-11	+.203107925433E-15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	-.746577997611E-10	-.588773826860E-15	-.622250441458E-19
Fc**1	-.120636521092E-15	+.400325894750E-19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0



PBMS Quartz Gauge type F  
Sonde Serial NB :  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 66  
Coeff CRC 283B

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.117016867873E+03	-.284359629614E-03	+.604391180345E-08
Fb**1	-.598309140812E-02	+.182731130848E-07	+.160166486172E-12
Fb**2	-.307621454576E-07	+.300601550309E-12	+.311233548560E-17
Fb**3	-.419658736767E-12	+.117473708647E-16	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+.114322792679E-12	+.153807711176E-17	-.736714260866E-21
Fb**1	-.528037875456E-18	-.220337637519E-21	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F  
Sonde Serial NB :  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 16  
Coeff CRC 093F

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+.310874009898E+05	+.288920923041E-02	+.697940727038E-06

	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	-.657432344763E-10	-.412920638782E-15	+.213369826099E-20

PBMS Quartz Gauge type F  
Sonde Serial NB :  
Sensor Serial NB 928  
Calib Date ddmmyy 280612  
Matrix Size 16

Coeff CRC 8419

Clock Temp Coeff

	(Fb'–Fc')**0	(Fb'–Fc')**1	(Fb'–Fc')**2
(Fb'–Fc')**0	+ .115369519827E+03	– .565338877075E–02	– .333717531829E–07
	(Fb'–Fc')**3	(Fb'–Fc')**4	(Fb'–Fc')**5
(Fb'–Fc')**0	– .124387135327E–12	+ .713102327208E–16	– .316084316842E–20

Company: ENCANA OIL & GAS (USA) INC

Schlumberger

Well: ENCANA FEE 24–1A (K19CNE)  
Field: MAMM CREEK  
County: GARFIELD  
State: COLORADO

RESERVOIR SATURATION LOG  
SIGMA MODE  
GAMMA RAY – CCL