HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY

COMPANY	GREAT BEAR PETROLEUM
WELL	ALCOR #1
FIELD	WILDCAT
COUNTY	NORTH SLOPE
STATE	ALASKA

COMPANY **GREAT BEAR PETROLEUM**

WELL **ALCOR #1**

FIELD **WILDCAT**

COUNTY **NORTH SLOPE** STATE **ALASKA**

API No. 50029200260000

Location SURFACE: 2452' FSL & 652' FEL

Other Services: WSTT CSNG

Sect. 5 Twp. 7N Rge. 14E

Permanent Datum	GL	Elev. 178.00 ft	Elev.: K.B. 187.00 ft
Log measured from	DF	21.00 ft above perm. Datum	D.F. 186.00 ft
Drilling measured from	DF		G.L. 163.70 ft

Date	10-Jul-12					
Run No.	ONE					
Depth - Driller	8320.00 ft					
Depth - Logger	8319.00 ft					
Bottom - Logged Interval	8310.0 ft					
Top - Logged Interval	CASING					
Casing - Driller	9.625 in @ 2491.00 ft		@		@	
Casing - Logger	2491.00 ft					
Bit Size	8.500 in		@		@	
Type Fluid in Hole	ENVIROMUL					
Density / F. Viscosity	9.5 ppg	85.00 spqt				
Alkalinity / P. Viscosity		38.0 cP				
HTHP @ Meas. Temperature	2.4 mptm @ 200.00 degF		@		@	
Solids / Wgt. Material		BARITE				
Oil / Water Ratio	80	20				
Water Phase Salinity	234.00 ppm Cl-					
Oil Type / Brine Type						
Electrical Stability	720 V					
Time Since Circulation	12.0 hr					
Time on Bottom	10-Jul-12 12:28					
Max. Rec. Temperature	180.0 degF @ 8319.0 ft		@		@	
Equipment / Location	11640435	PRUDHOE BA				
Recorded By	C. GULLETT					
Witnessed By	P. STILES					

Fold here

Service Ticket No.: N/A API Serial No.: 50029200260000 PGM Version: WL INSITE R3.6.0 (Build 3)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE					
Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	F. Viscosity				
Alkalinity	P. Viscosity				
HTHP @ Meas. Temp.		@		@	
Solids	Wgt. Mat.				
Oil	Water Ratio				
Water Phase Salinity					
Oil Type	Water Type				
Electrical Stability					

RESISTIVITY SCALE CHANGES			
Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA				
Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
ONE	ACRt-	N/A	1.5" STANDOFF	N/A
	E7818-S1994			

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE
Serial No.	10995697	Serial No.	126	Serial No.	10951320	Serial No.	11059108
Model No.	GTET	Model No.	WSTT	Model No.	SDLT	Model No.	DSNT
Diameter	3.625"	No. of Cent.	2	Diameter	4.5"	Diameter	3.625"
Detector Model No.	102-T	Spacing	0.5'	Log Type	GAMMA-GAMMA	Log Type	THERMAL
Type	SCINT.			Source Type	Cs137	Source Type	Am241Be
Length	8"	LSA [Y/N]	Y	Serial No.	5176 GW	Serial No.	21484B
Distance to Source	17'	FWDA [Y/N]	Y	Strength	1.5 Ci	Strength	15 Ci

LOGGING DATA

GENERAL	GAMMA	ACOUSTIC	DENSITY	NEUTRON

GENERAL				GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	T.D.	CSG.	REC.	0	200	30	190	55.5 usec	45	-15	2.65 g/cc	45	-15	SAND
ONE	T.D.	SURF.	REC.	0	200									

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks:

RWCH-SWIVEL-GTET-WSTT-OMRI WERE RAN IN COMBINATION.

ANNULAR VOLUME CALCULATED FOR 7" CASING.

TOOL STRING AND LOG PRESENTATION PER CUSTOMER REQUEST.

LATITUDE: 69º 59' 22.812" N

LONGITUDE: 148º 40' 54.588" W

YOUR CREW TODAY: D. CLEARY AND J. CUNNINGHAM. RIG: NABORS #105.

THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - PRUDHOE BAY, AK.

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	8.500	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Oil	
	SHARED	MDWT	Borehole Fluid Weight	9.500	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	WPHS	OBM Water Phase Salinity NaCl	0.00	ppm
	SHARED	OFOW	Base Oil Fraction from Oil/Water Ratio	1.00	
	SHARED	OBMT	Oil based Mud Type	Diesel	
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	7.000	in
	SHARED	ST	Surface Temperature	50.0	degF
	SHARED	TD	Total Well Depth	8320.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	NONE	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
	SHARED	TEMM	Temperature Master Tool	NONE	
	SHARED	BHSM	Borehole Size Master Tool	NONE	
	Rwa / CrossPlot	XPOK	Process Crossplot?	Yes	
	Rwa / CrossPlot	FCHO	Select Source of F	Automatic	

Rwa / CrossPlot	AFAC	Archie A factor	0.6200	
Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GRSO	Gamma Tool Standoff	0.000	in
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
CSNG	CGOK	Process CSNG Data?	Yes	
CSNG	CENT	Is Tool Centralized?	No	
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.00	
CSNG	ORDG	Use Fixed Gain	No	
CSNG	ORDO	Use Fixed Offset	No	
CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Sandstone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.000	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT Pad	DNOK	Process Density?	Yes	
SDLT Pad	DNOK	Process Density EVR?	No	
SDLT Pad	CB	Logging Calibration Blocks?	No	
SDLT Pad	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT Pad	DTWN	Disable temperature warning	No	
SDLT Pad	DMA	Formation Density Matrix	2.650	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	AFIL	Adaptive Filtering?	No	
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	Sandstone 55.5	
Wavesonic-I	DTMA	Delta -T Matrix	55.50	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.6500	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	SMTH	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wylie	
Wavesonic-I	NAVS	Navigation Source Tool	NONE	
ACRt Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt Sonde	TPOS	Tool Position	Free Hanging	

	ACRt Sonde	RMOP	Rmud Source	Mud Cell	
	ACRt Sonde	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt Sonde	THQY	Threshold Quality	0.50	
	ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm

BOTTOM

Data: GB_ALCOR_#1\0001 QUAD\IDLE **Date: 10-Jul-12 14:18:59**

HALLIBURTON

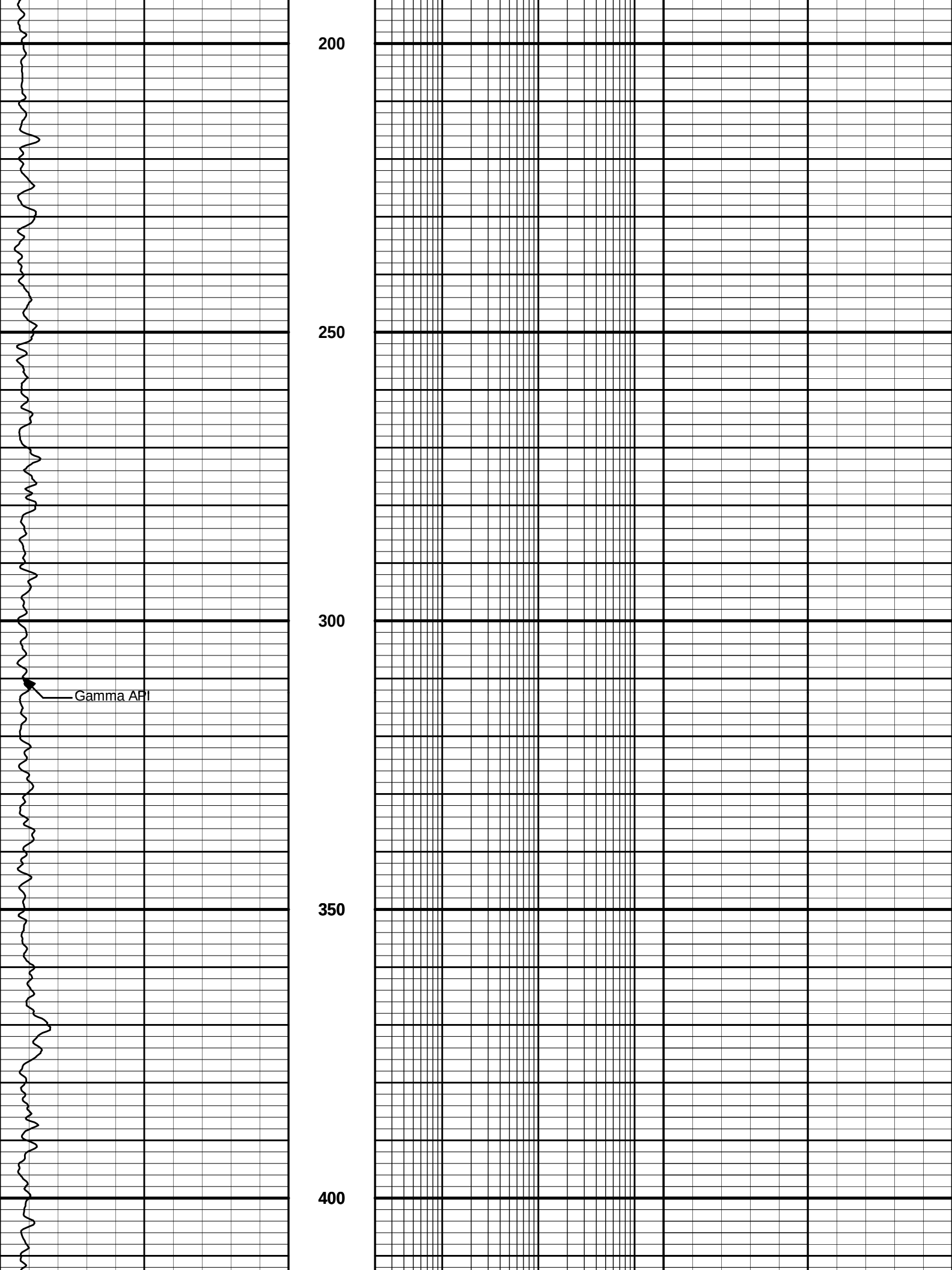
Plot Time: 26-Jul-12 13:07:07
Plot Range: 100 ft to 8330.75 ft
Data: {ActiveWell}\Well Based**
Plot File: \\COMP_5IN\IQ_COMP_5IN_RM

MAIN PASS 5" = 100'

		0.2 **RT10** 200 Ohm-m		
		0.2 **RT20** 200 Ohm-m	45 **Neutron Porosity** -15 percent	
10K Tens 0 pounds	**AHVT**	0.2 **RT30** 200 Ohm-m	45 **Density Porosity** -15 percent	
6 **Caliper** 16 inches	**BHVT**	0.2 **RT60** 200 Ohm-m	0 **Pe** 10	
0 **Gamma API** 200 api	1 : 240	0.2 **RT90** 200 Ohm-m	-0.25 **DensityCorr** 0.25 **gram per cc**	

100

150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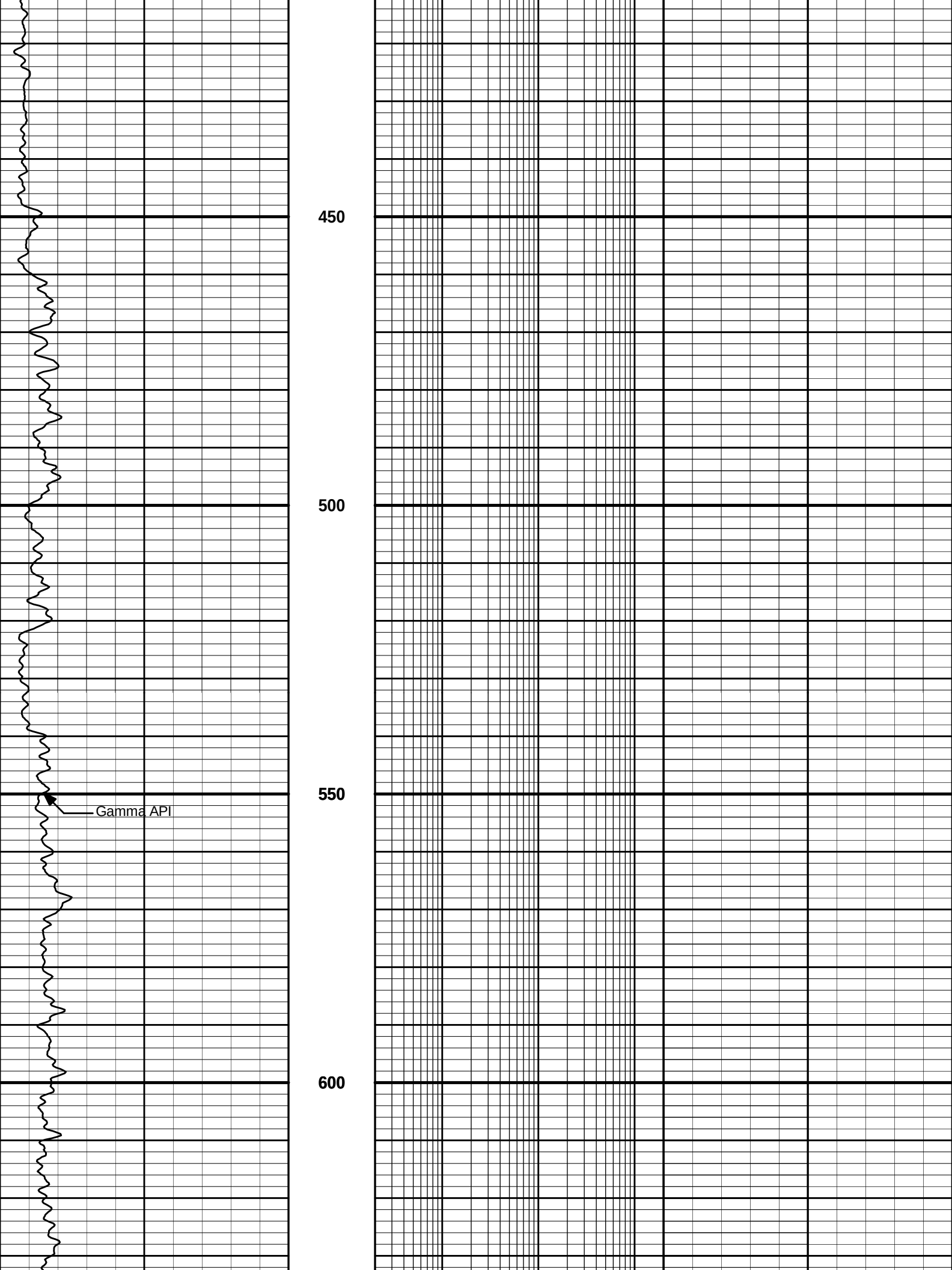
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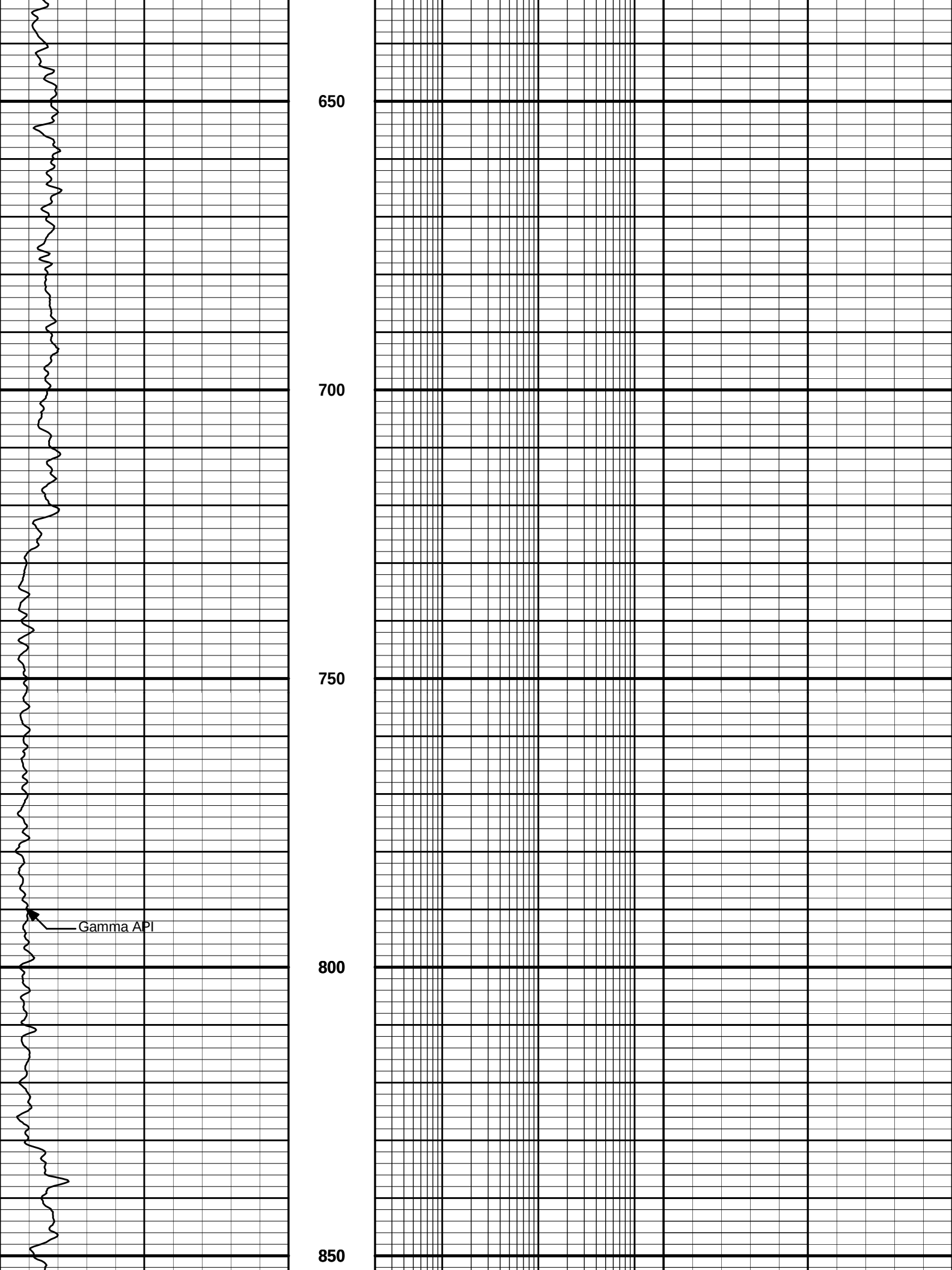
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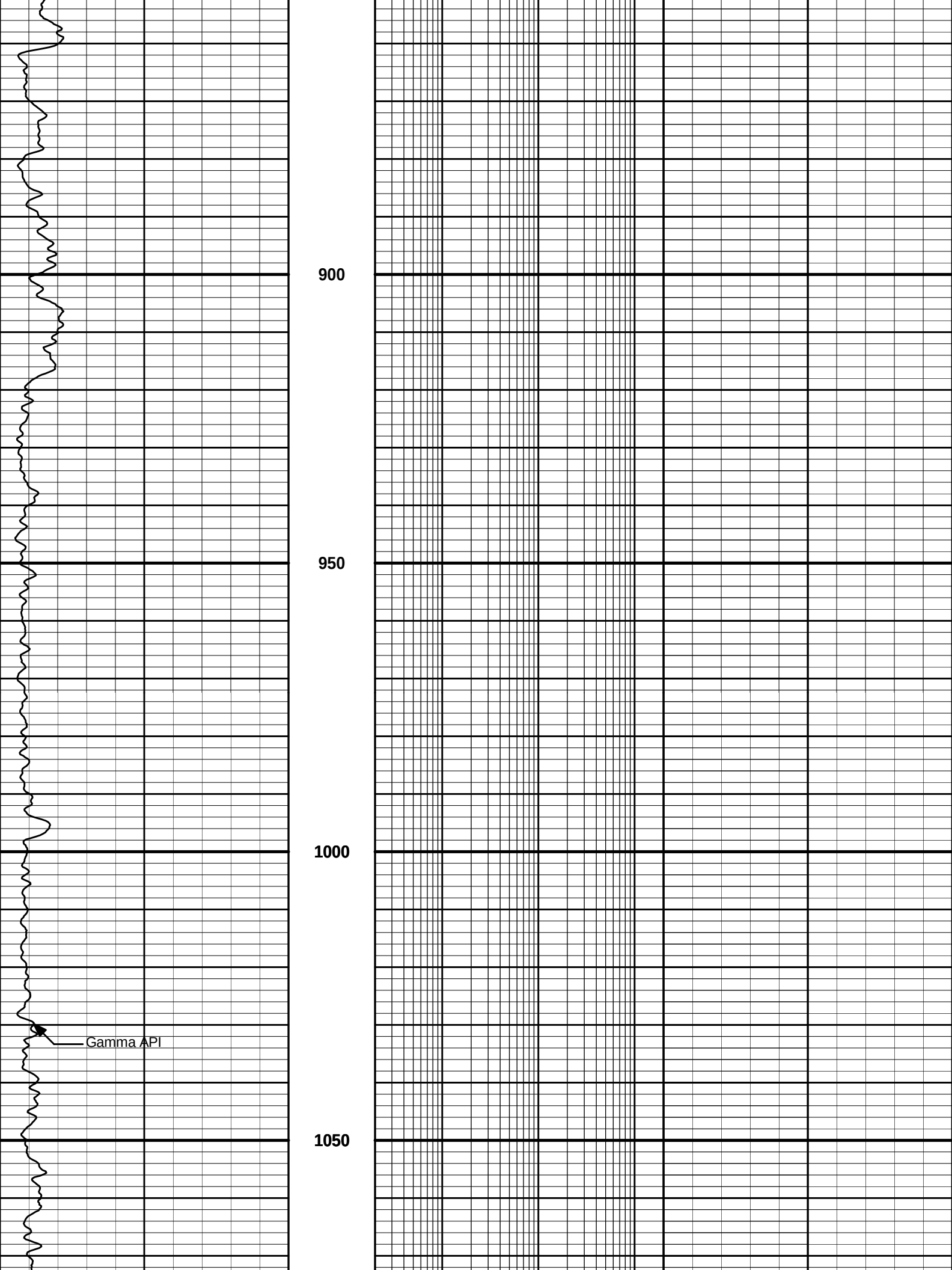
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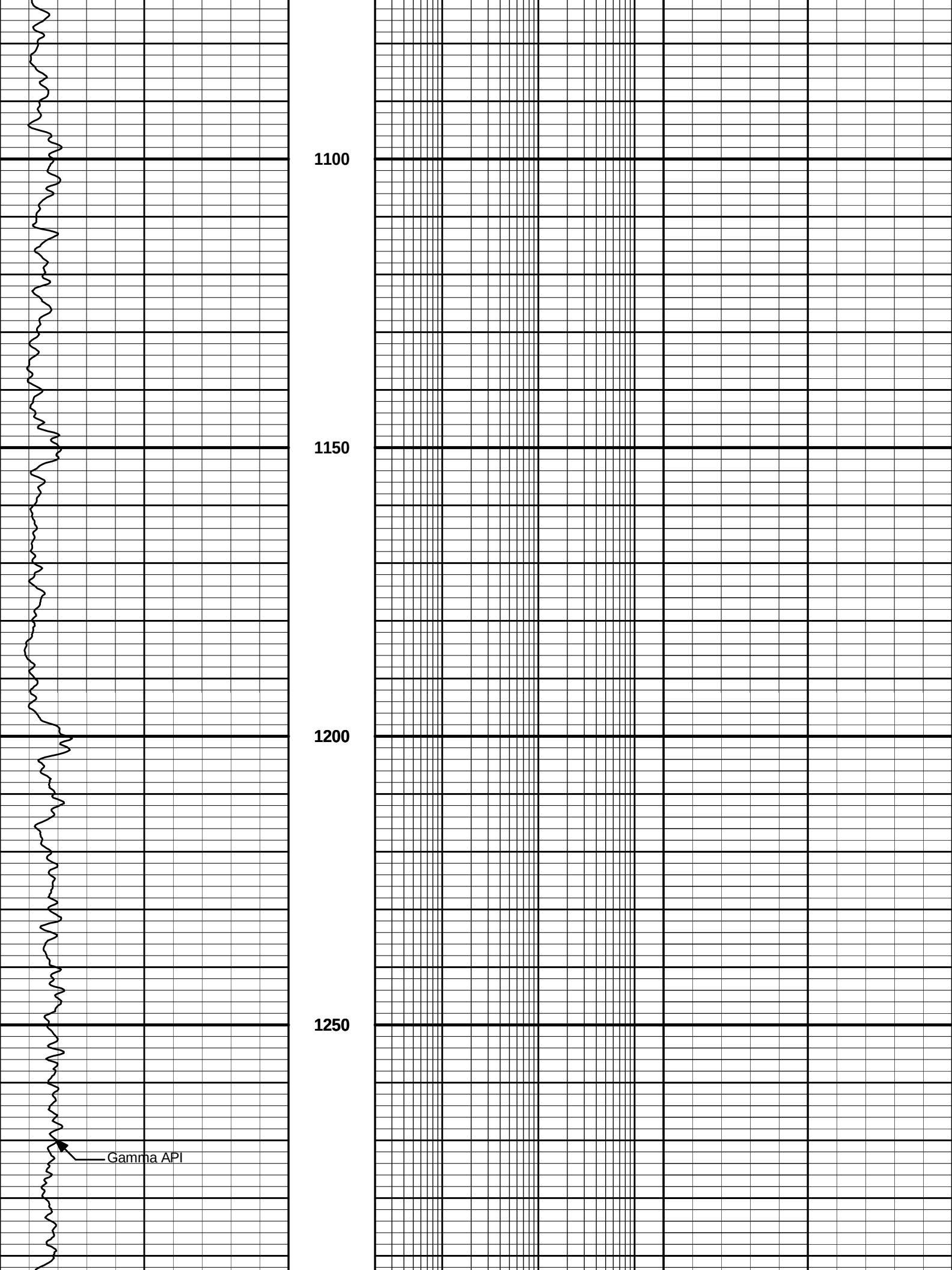
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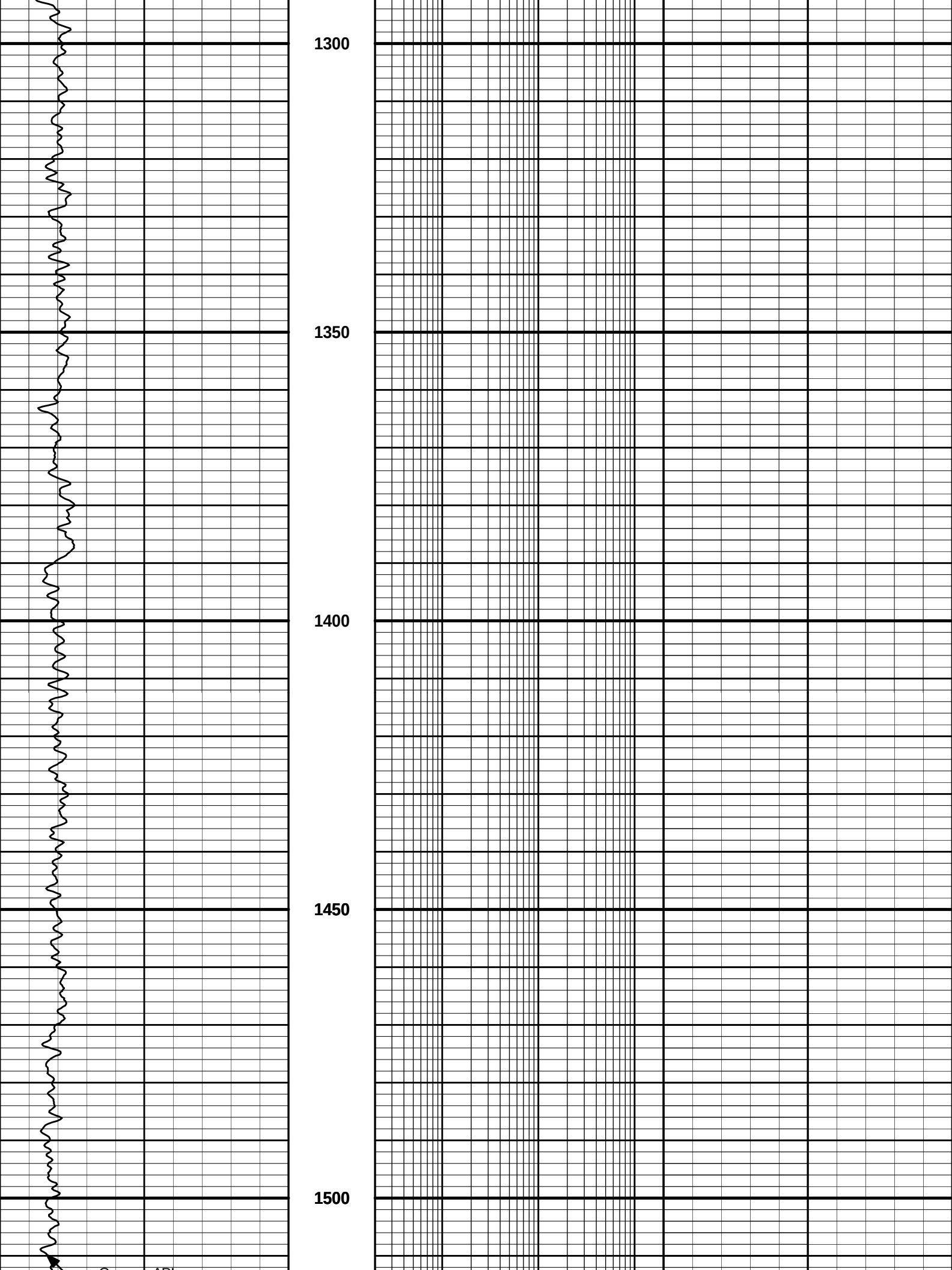
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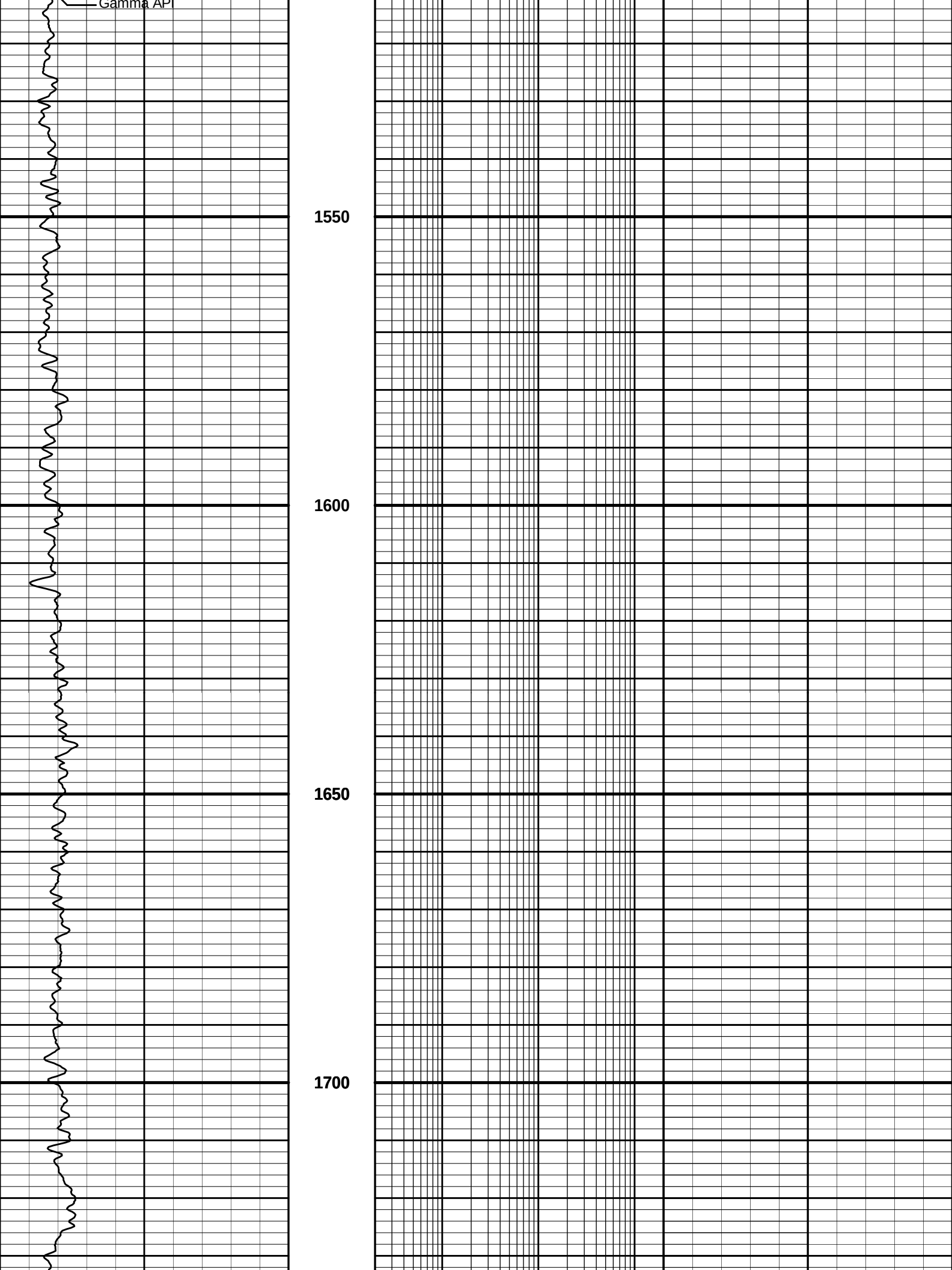
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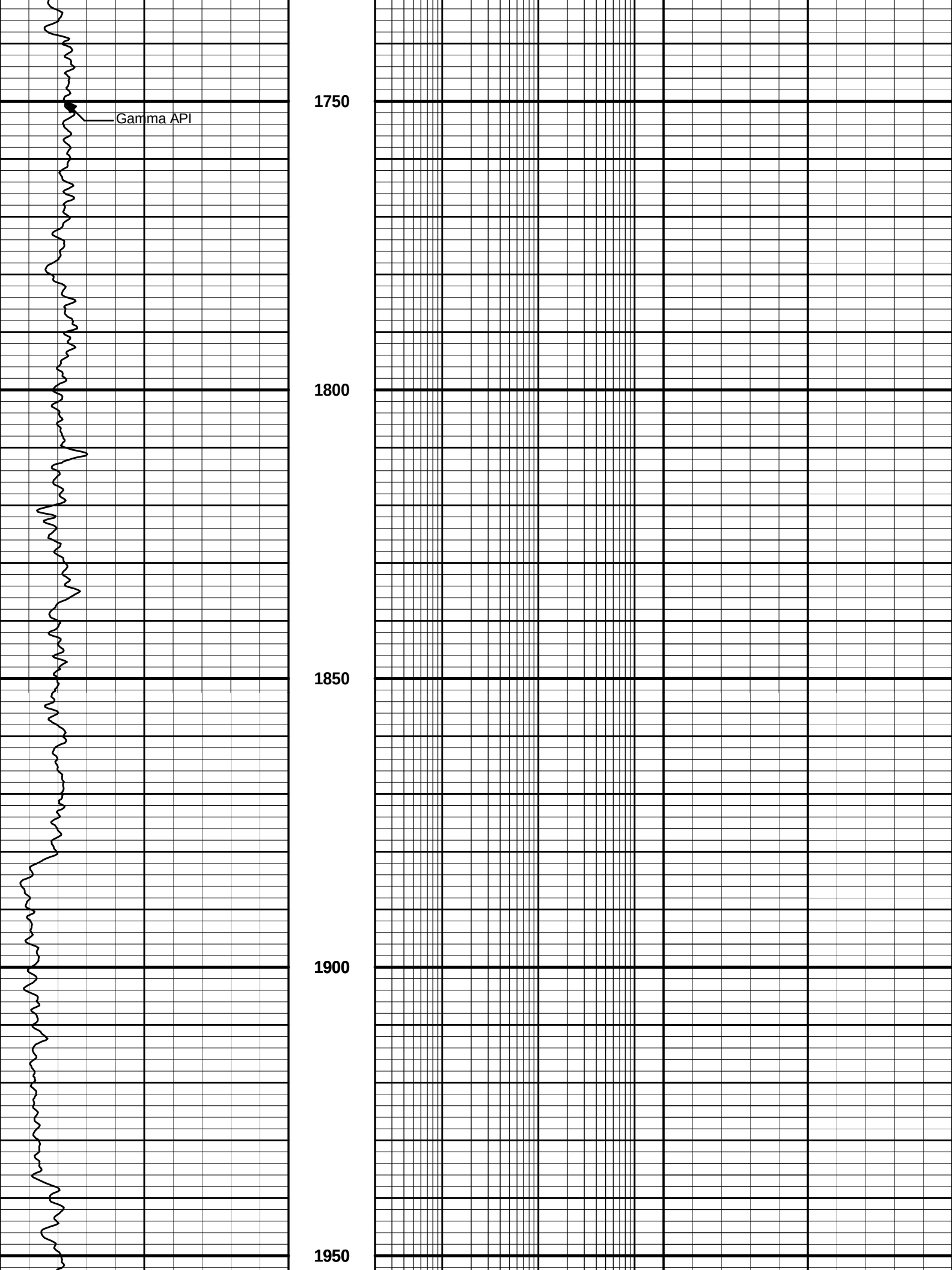
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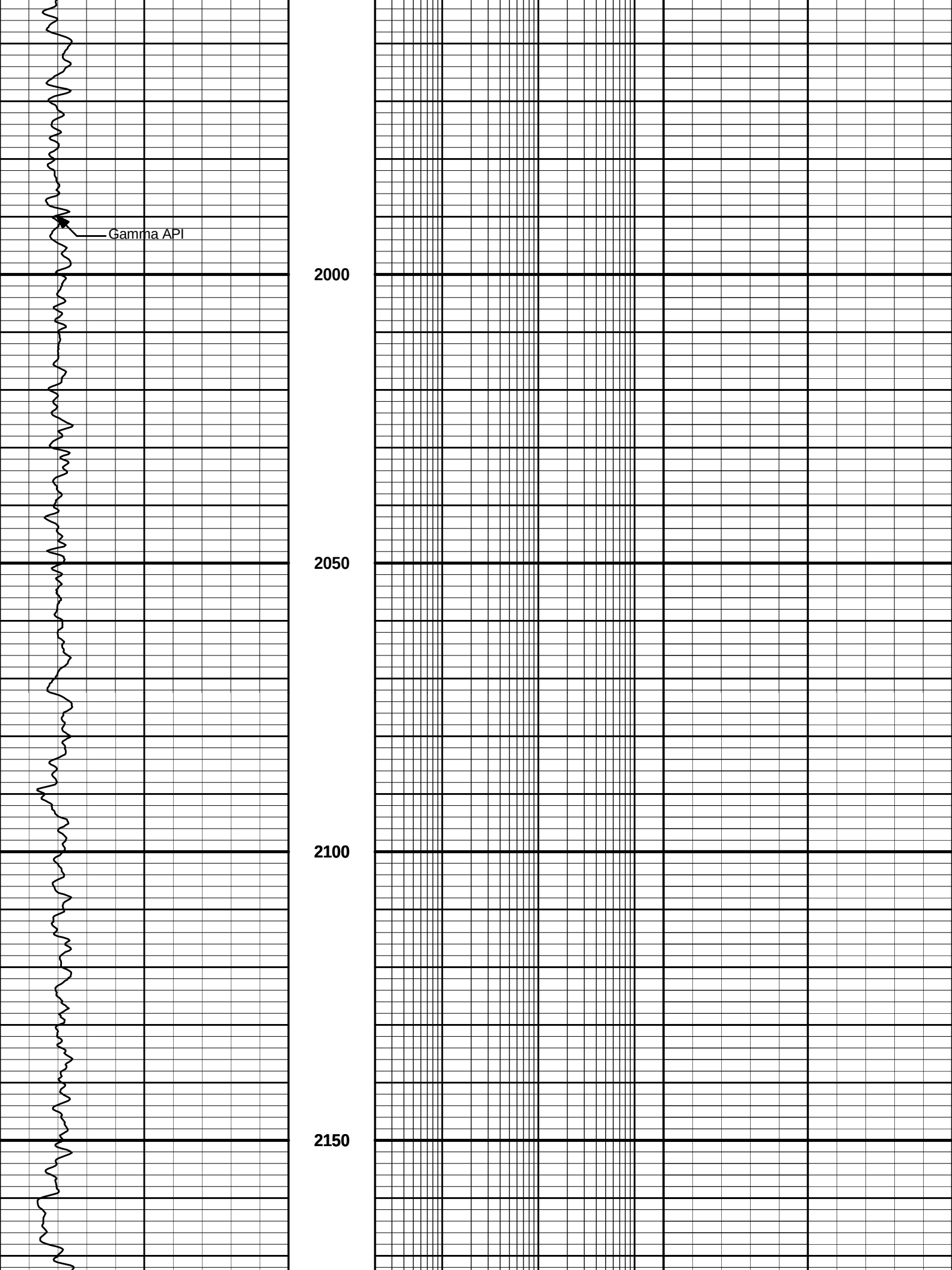
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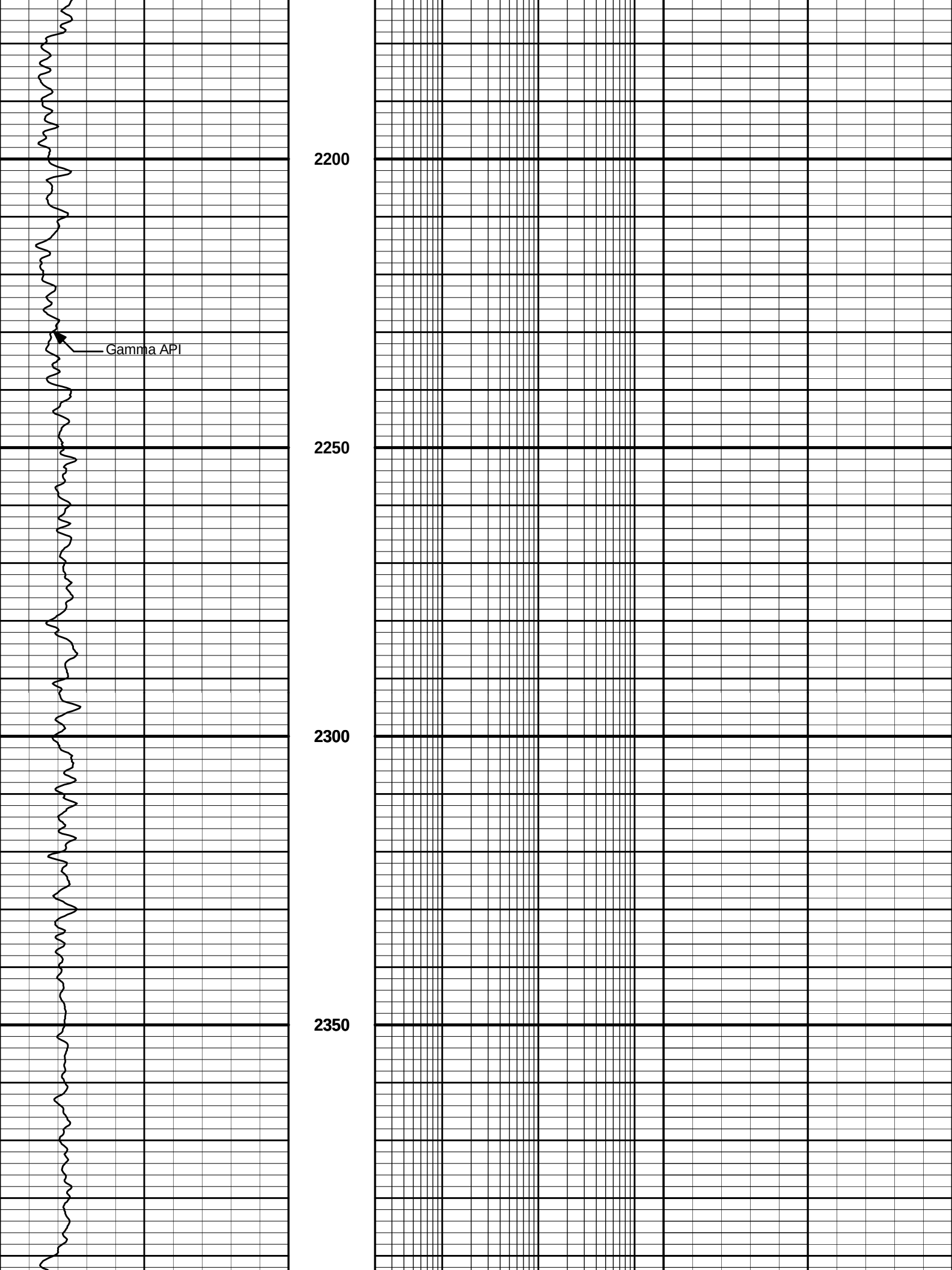
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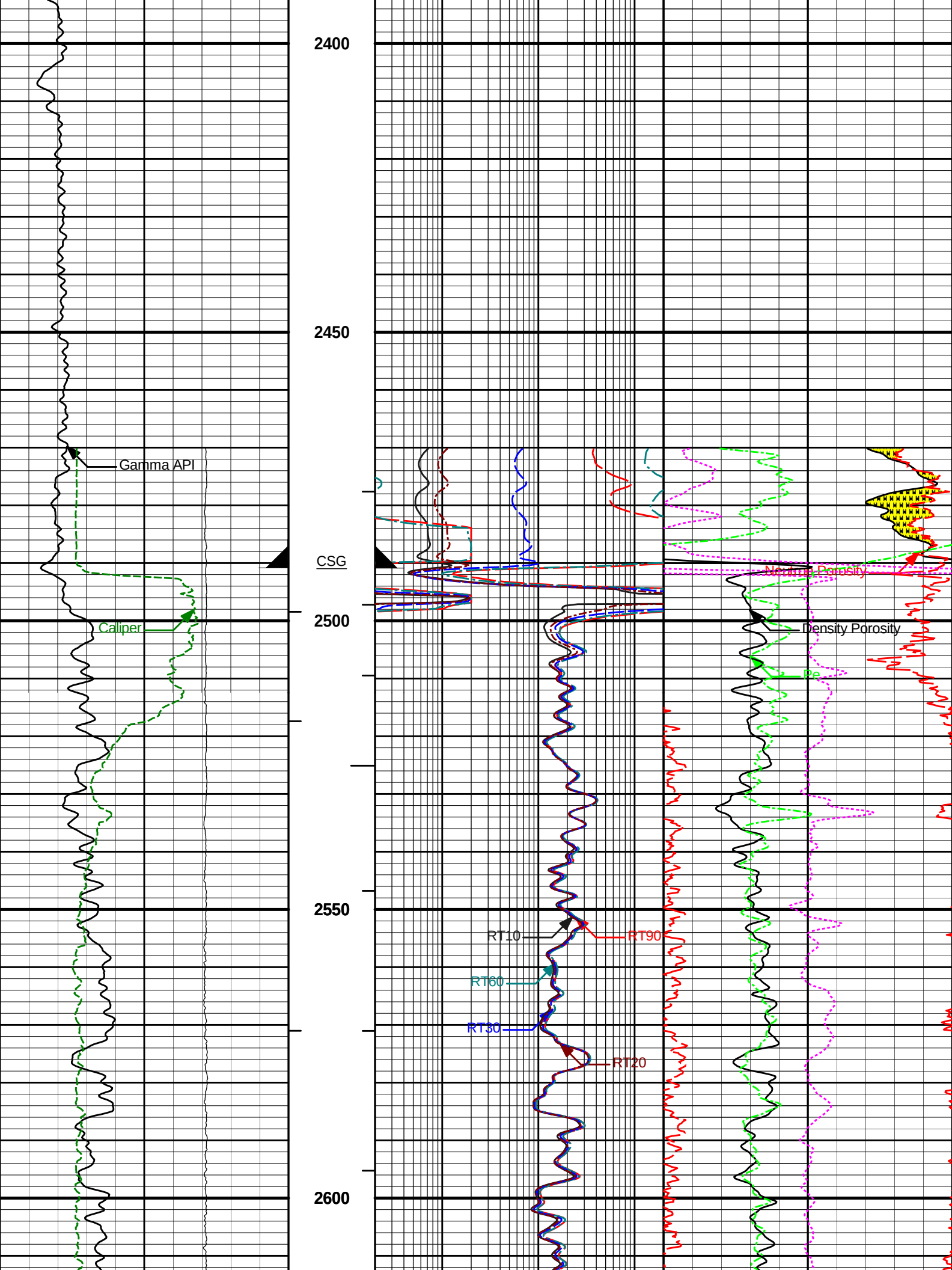
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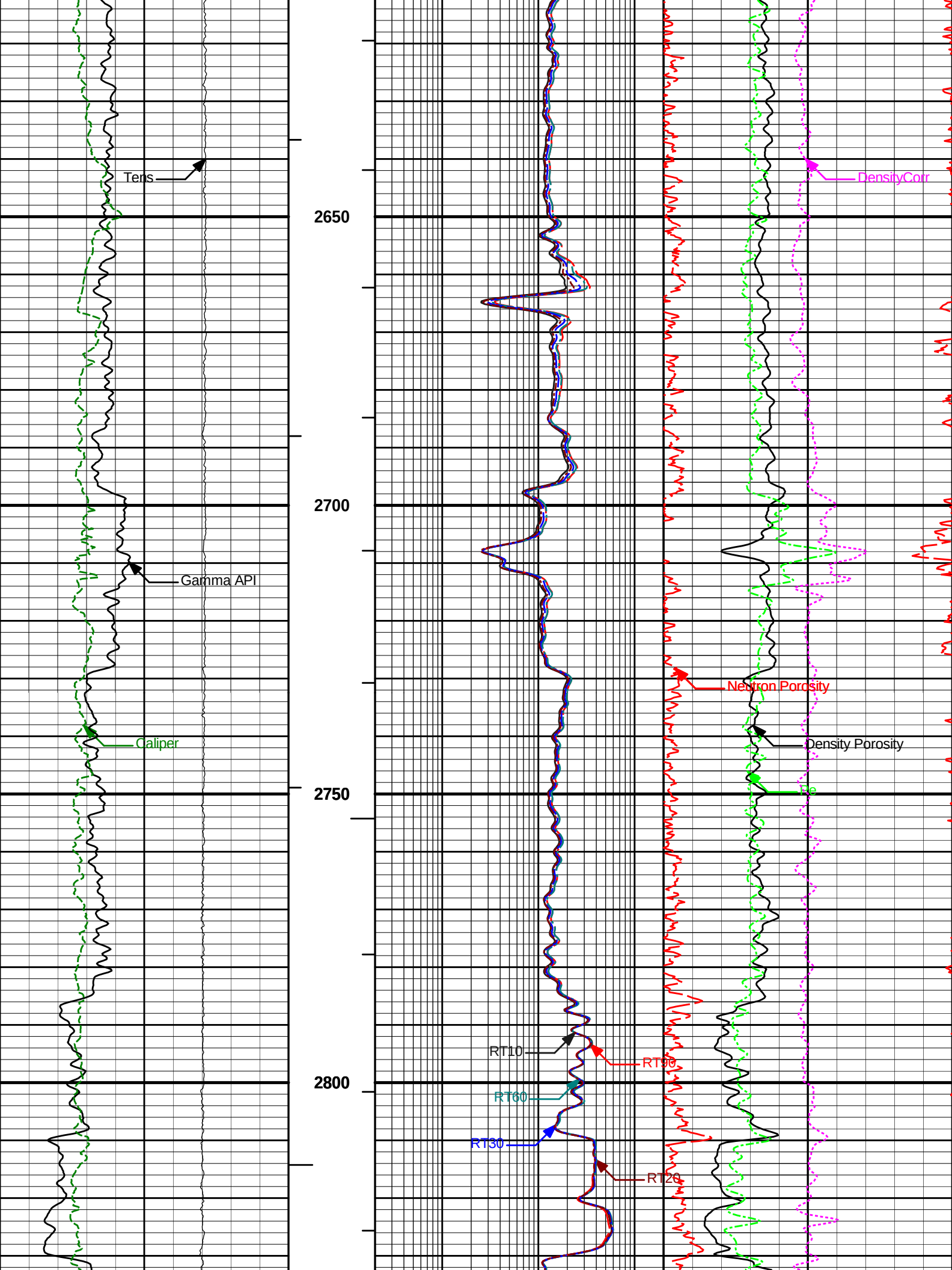
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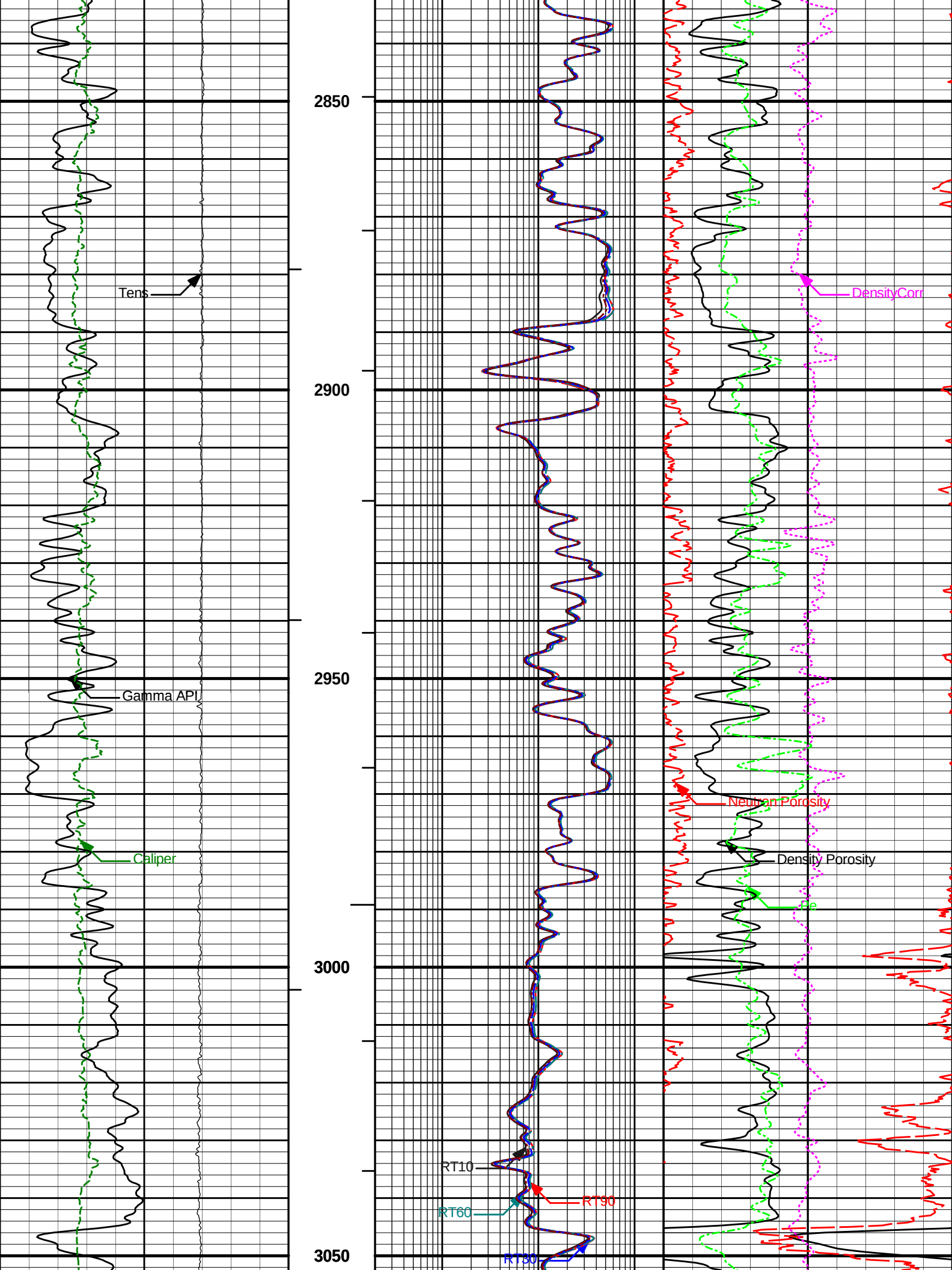
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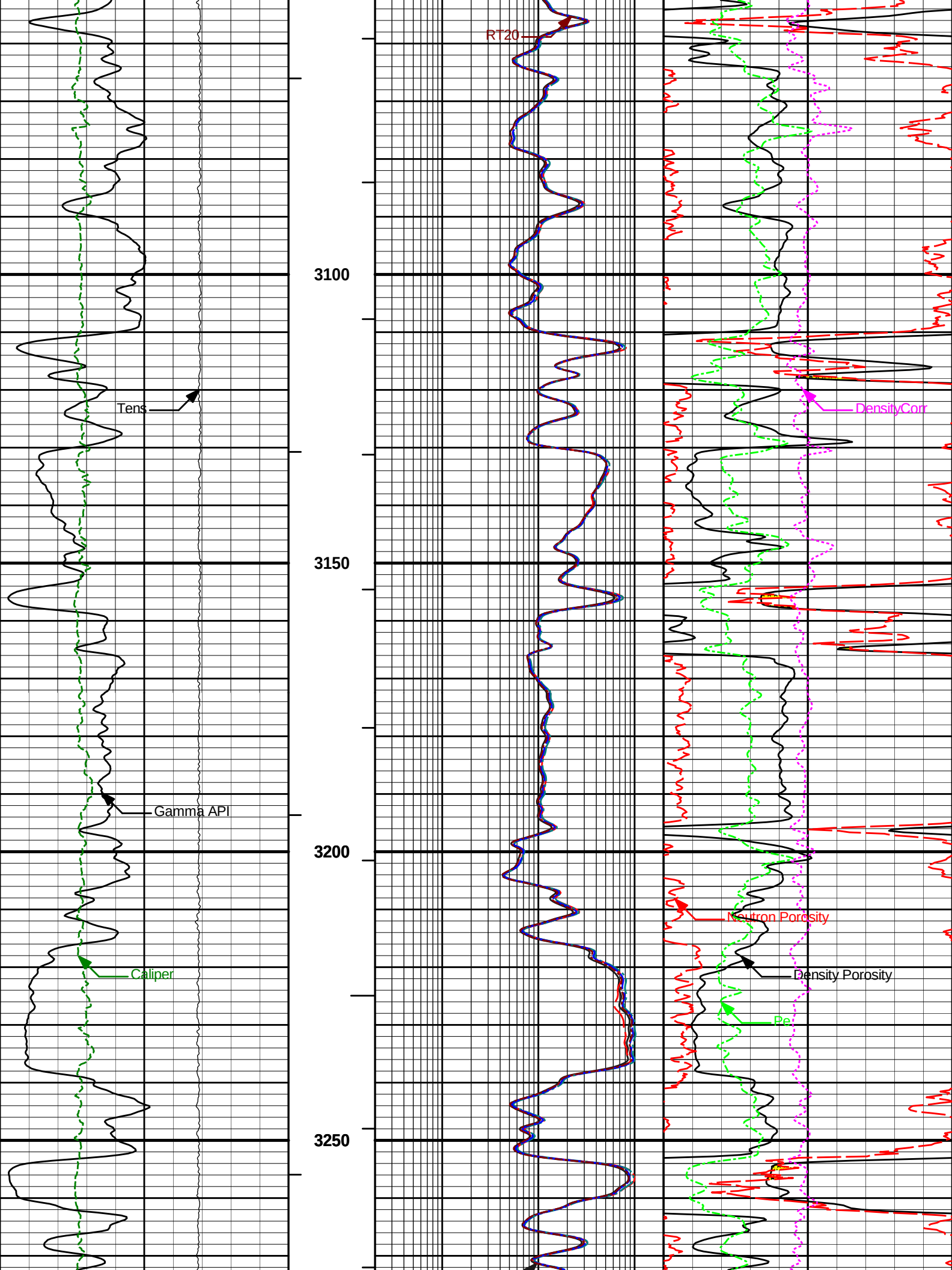
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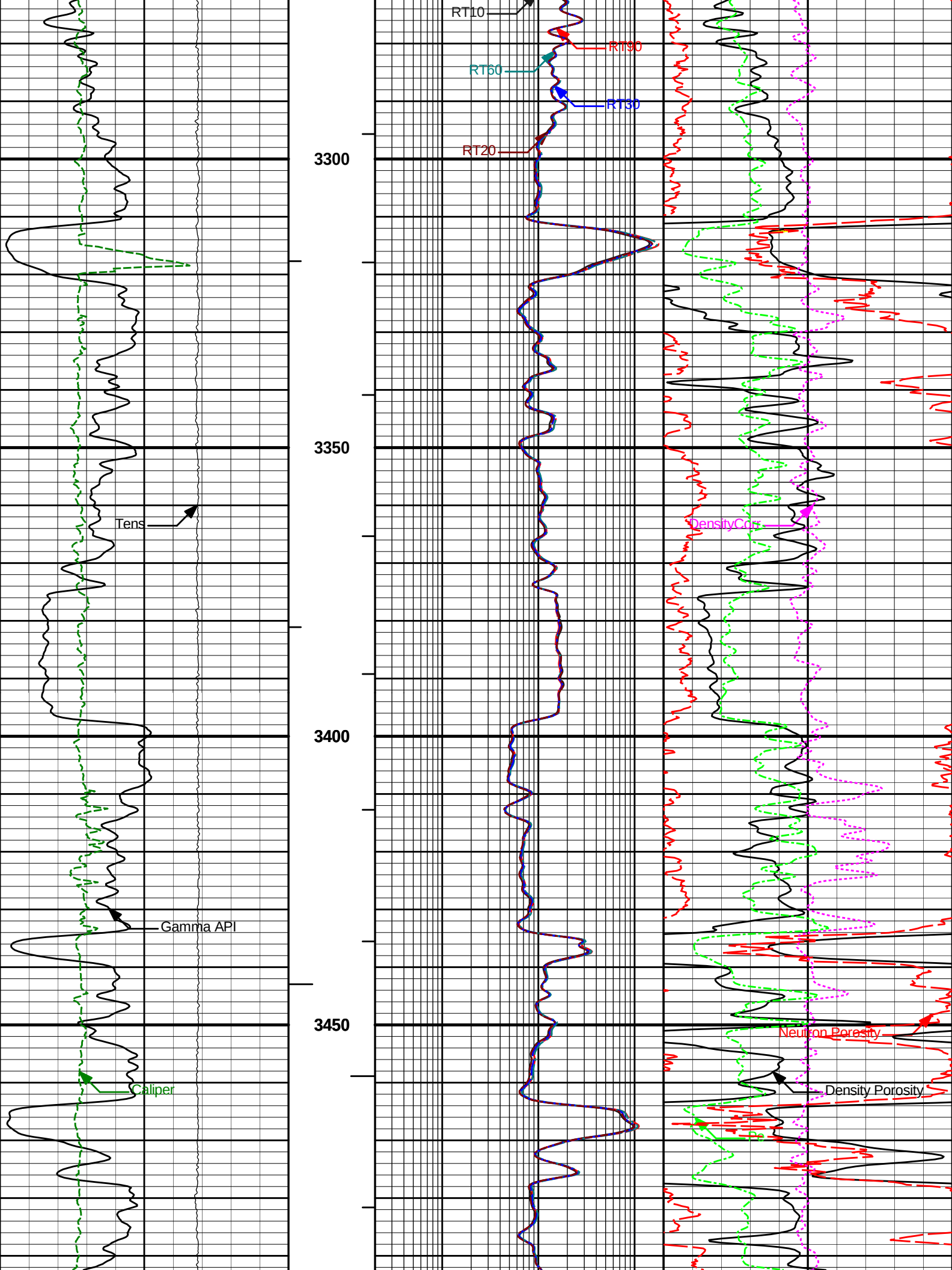
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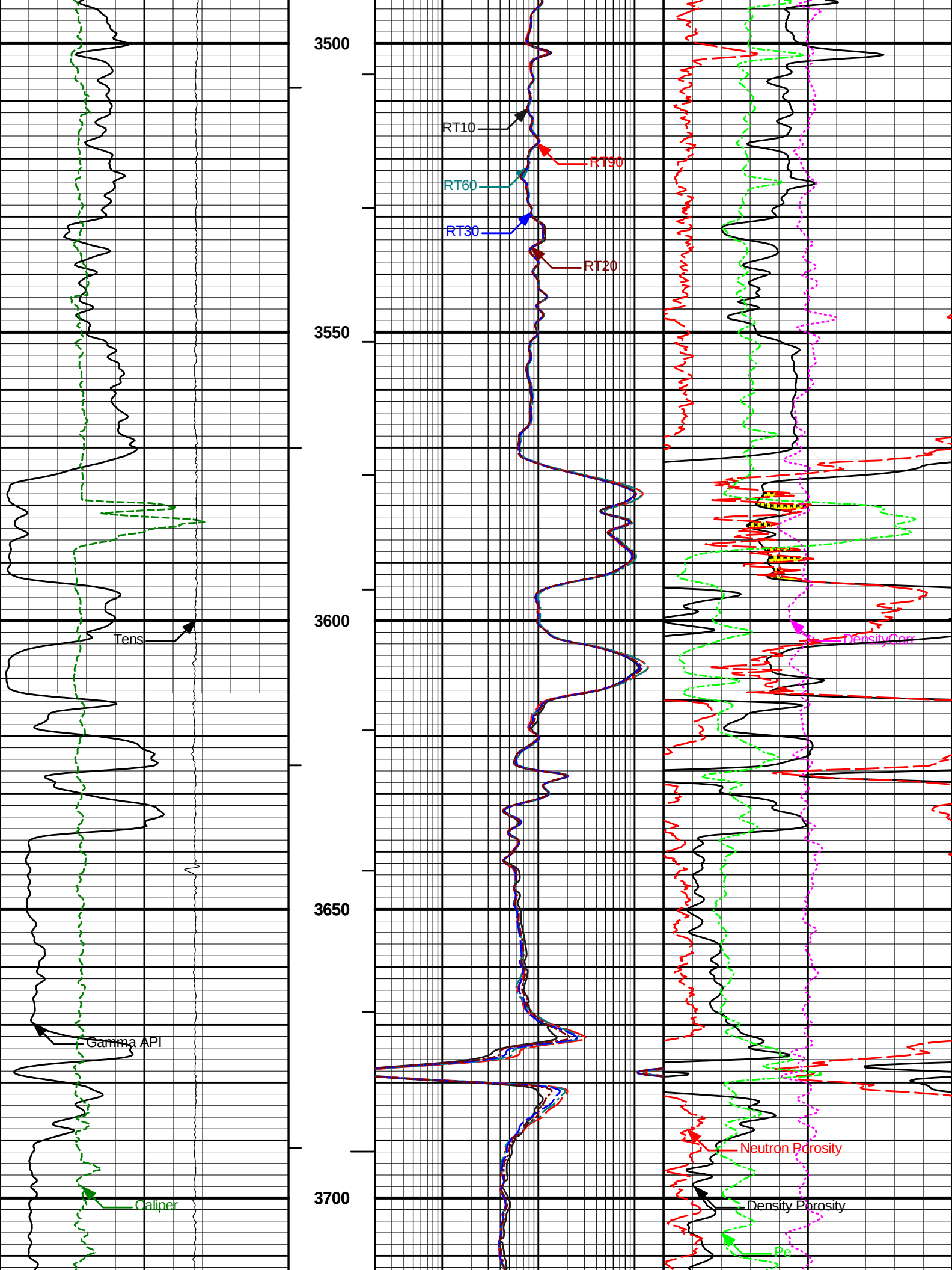
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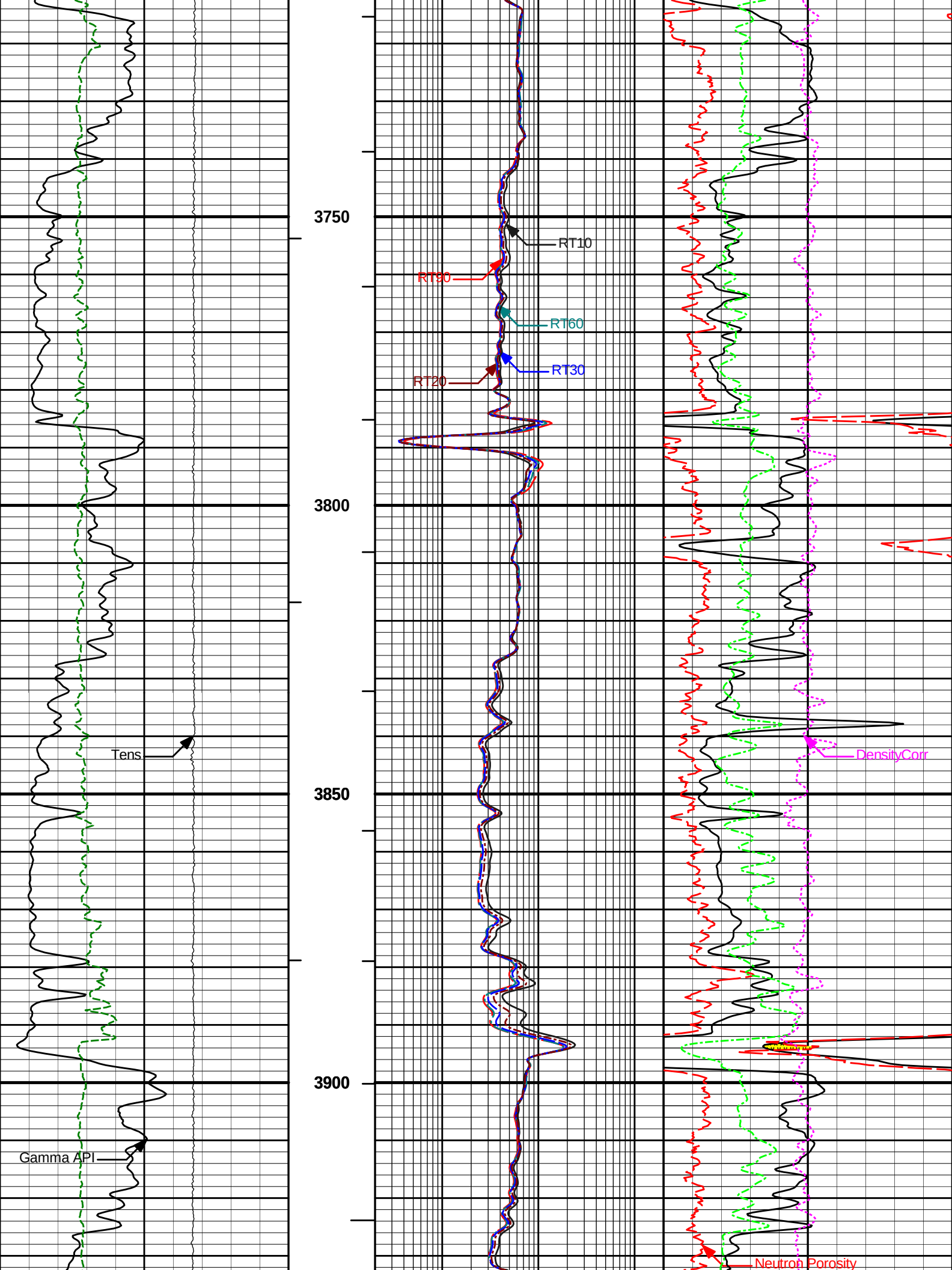
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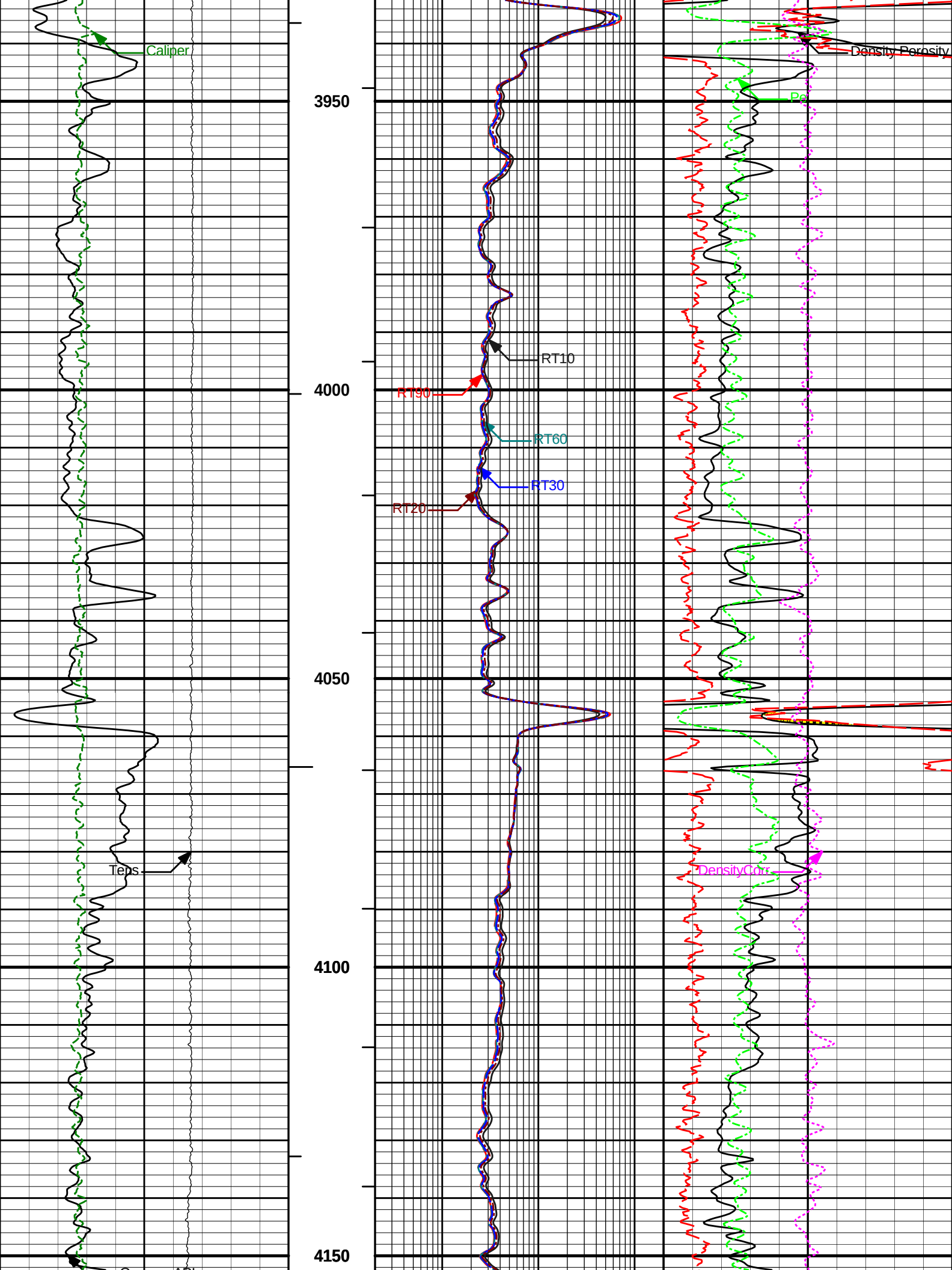
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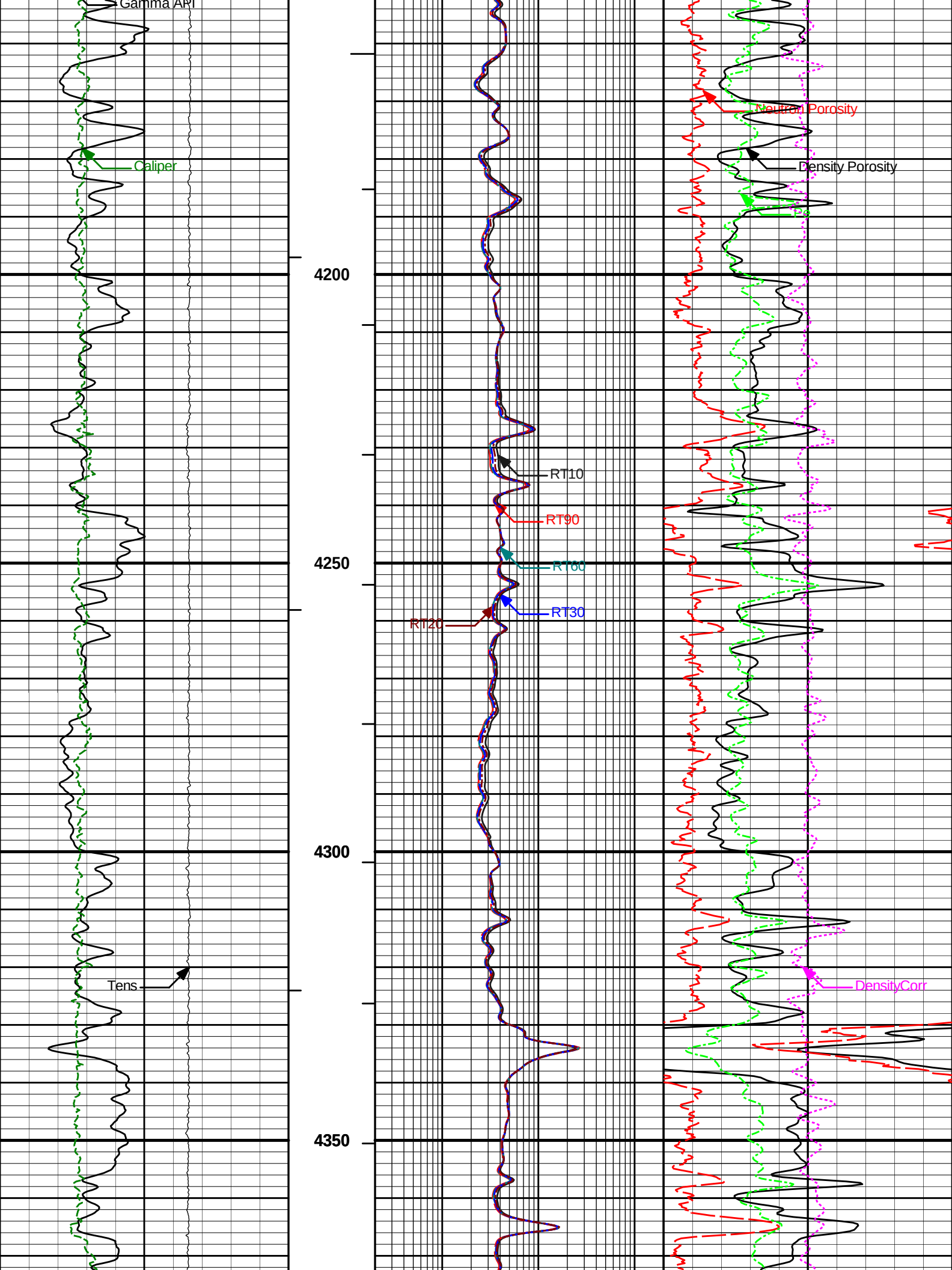
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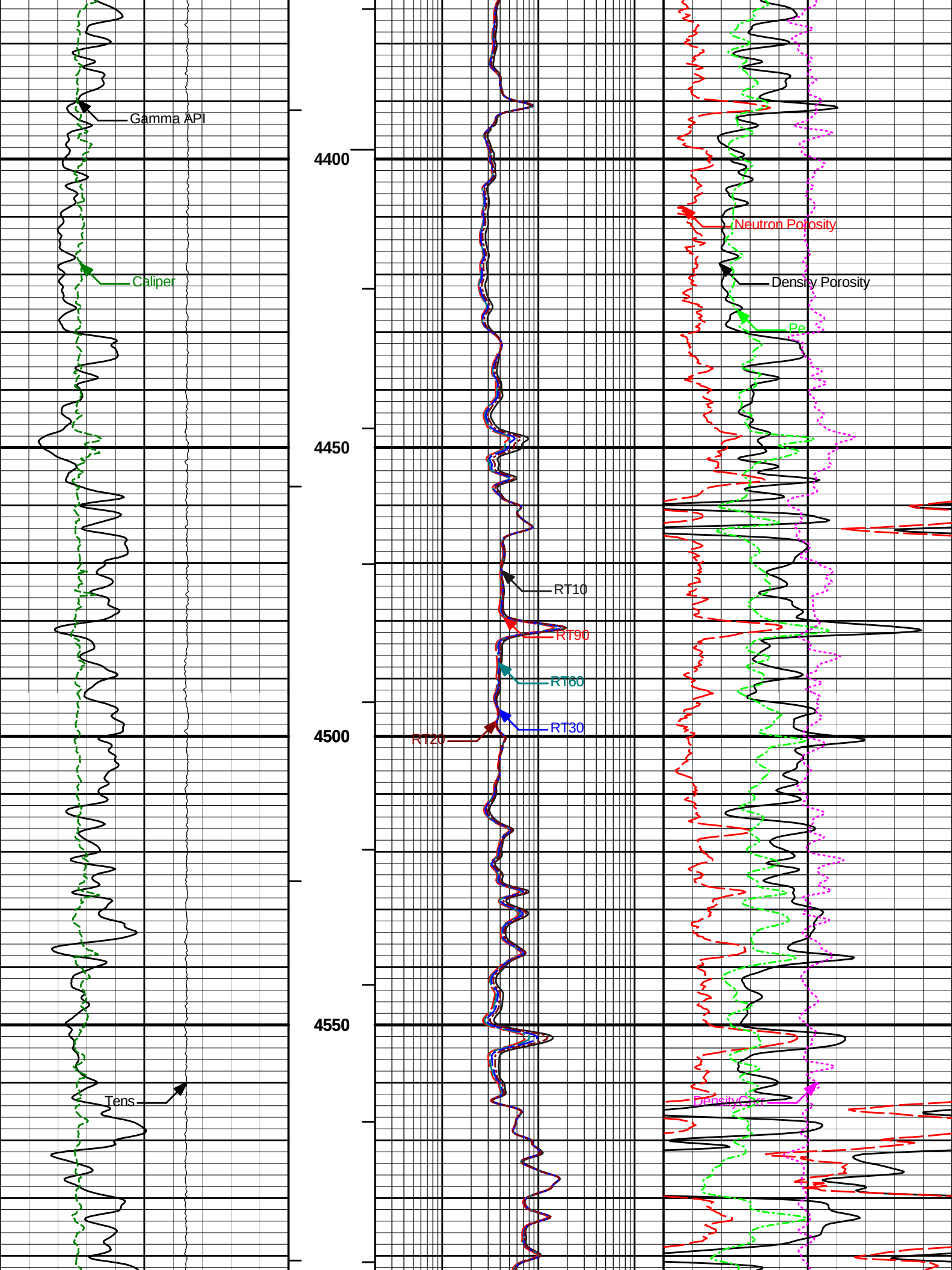
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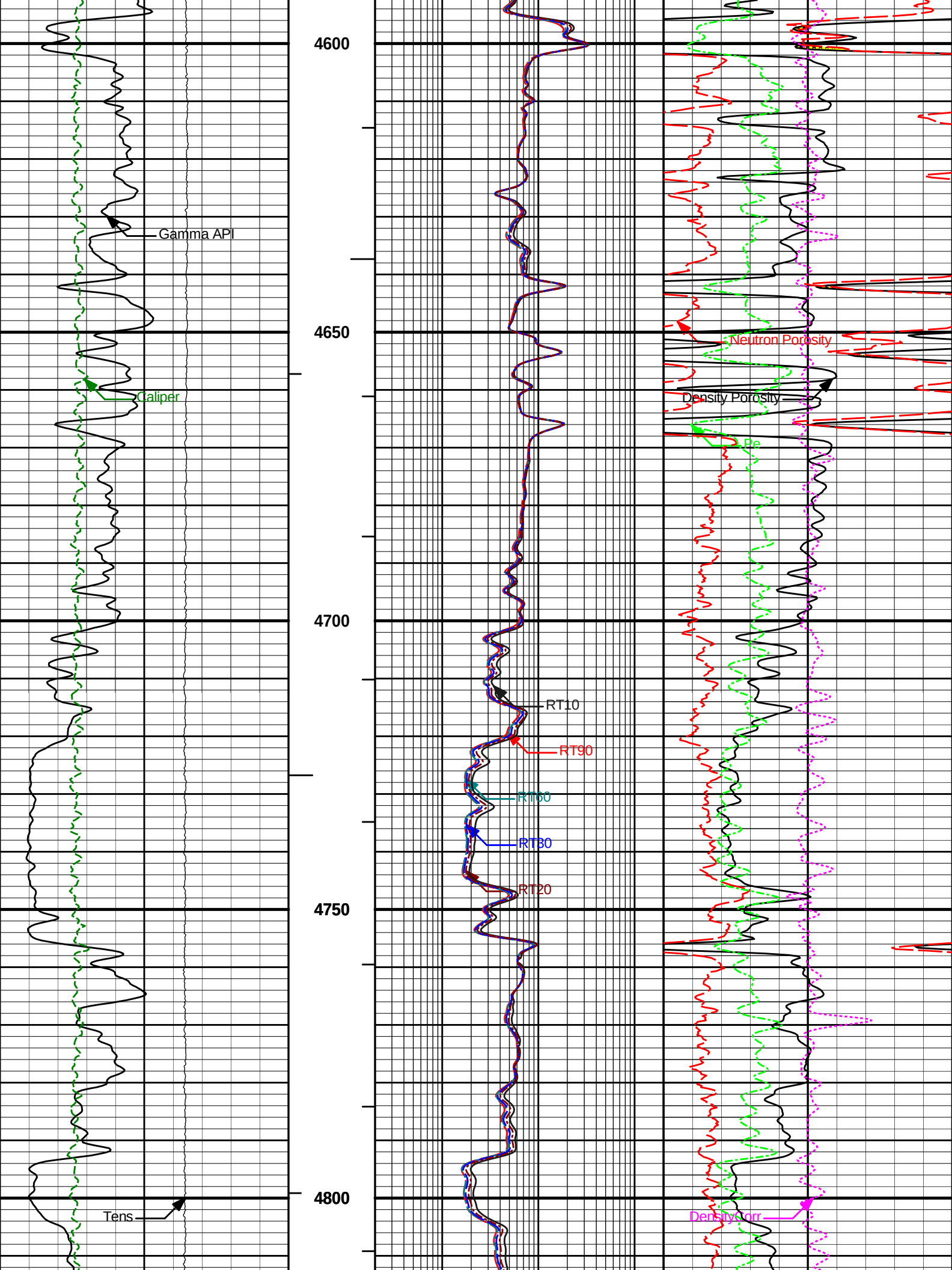
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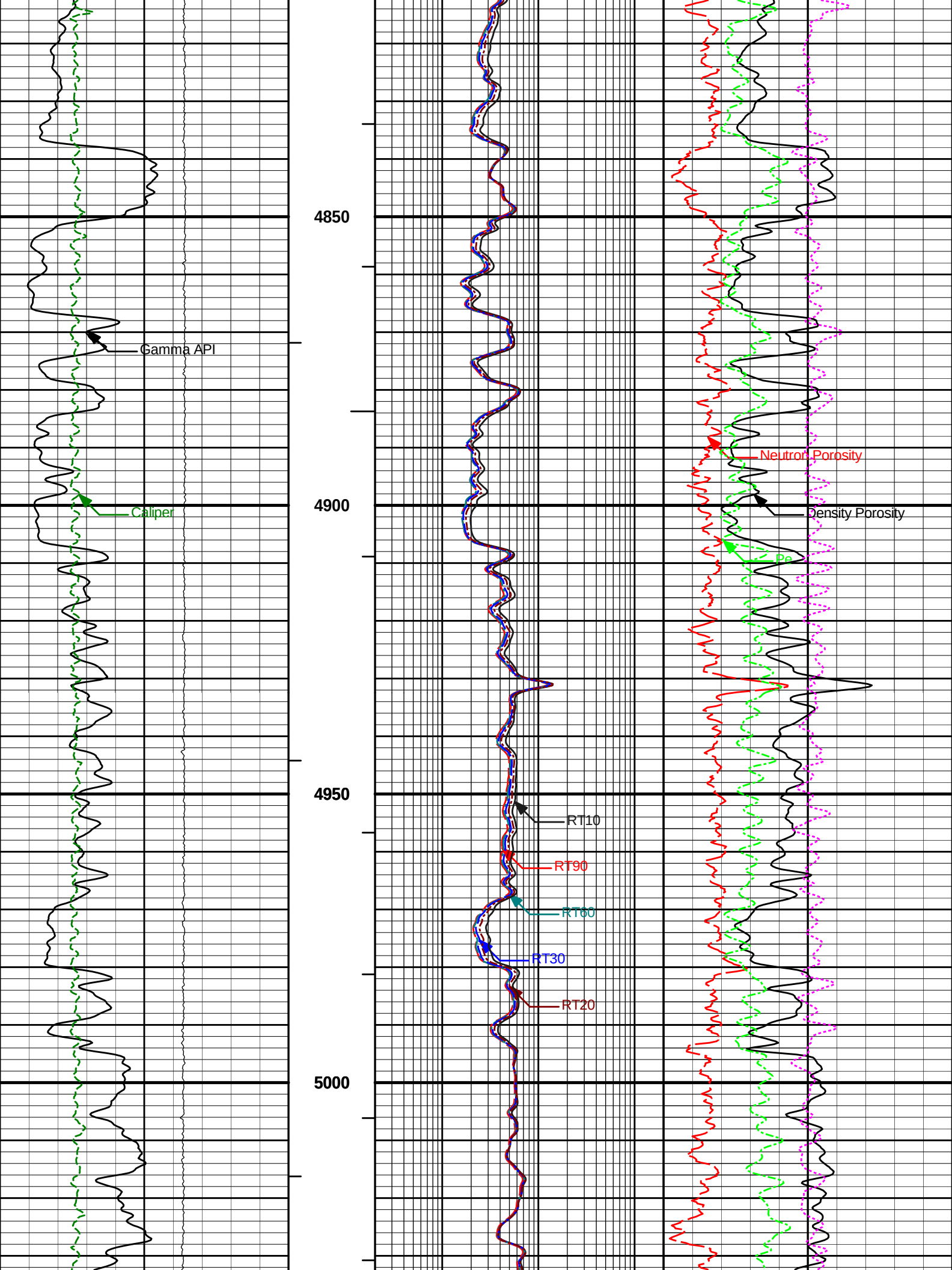
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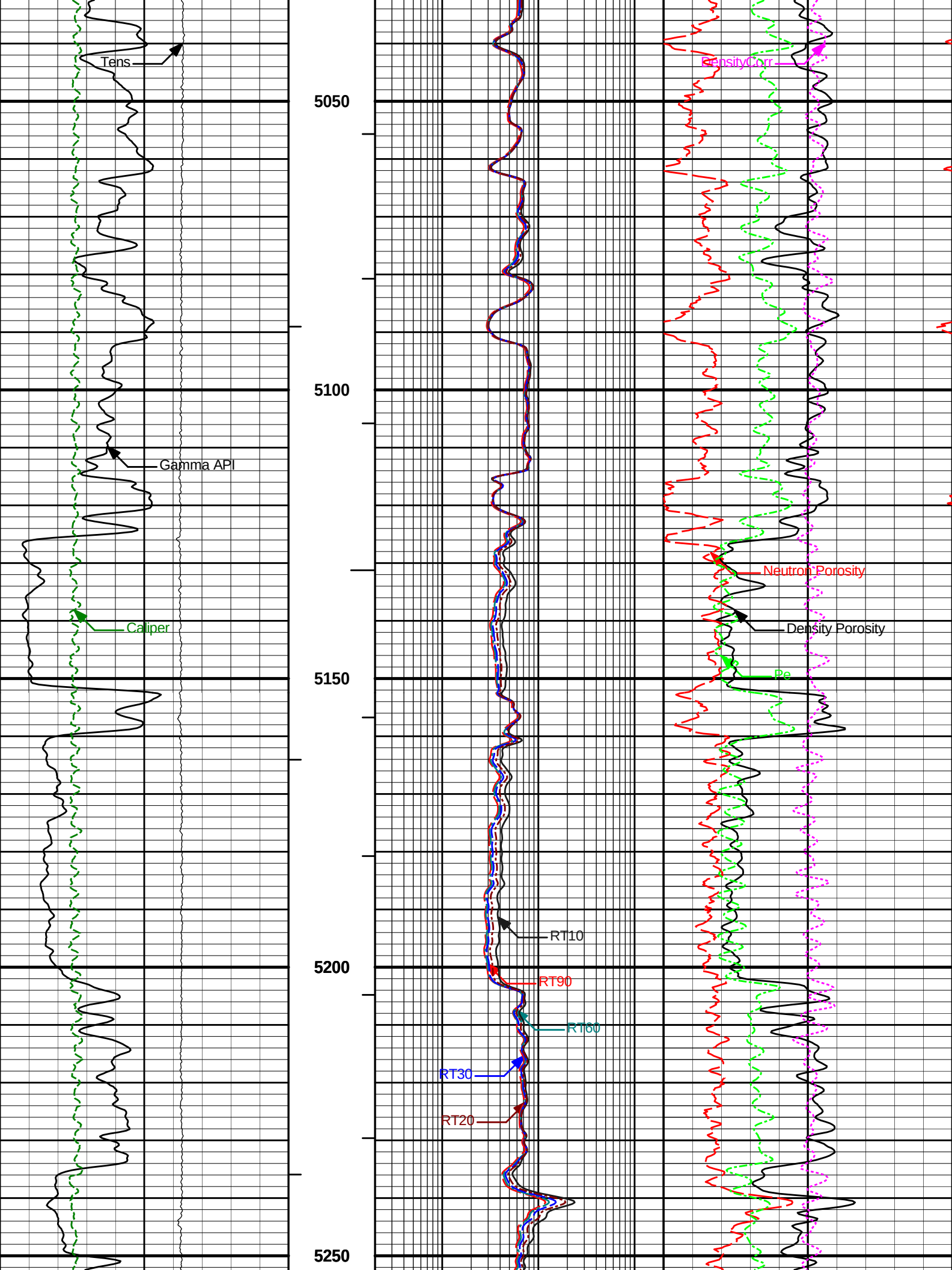
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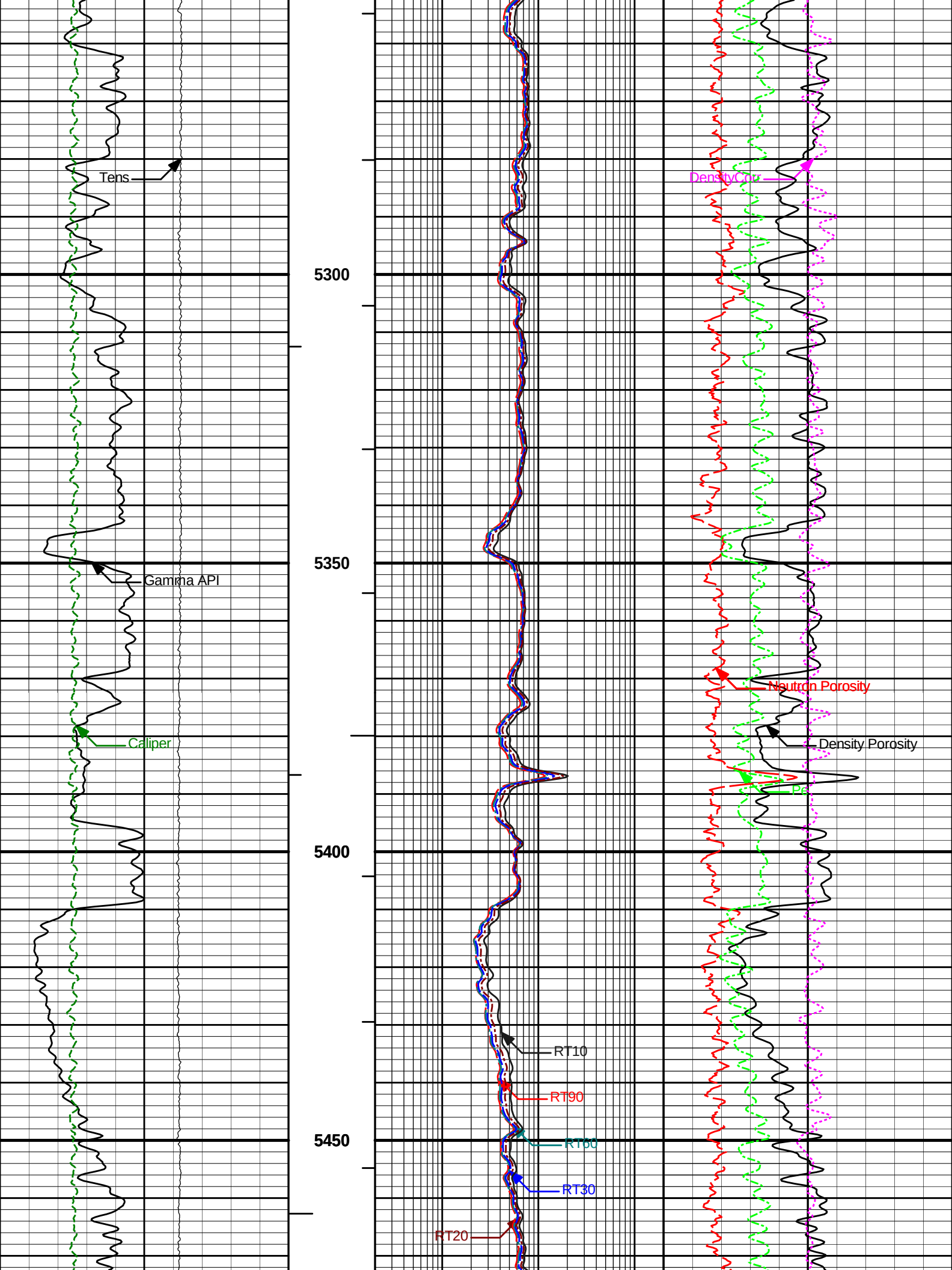
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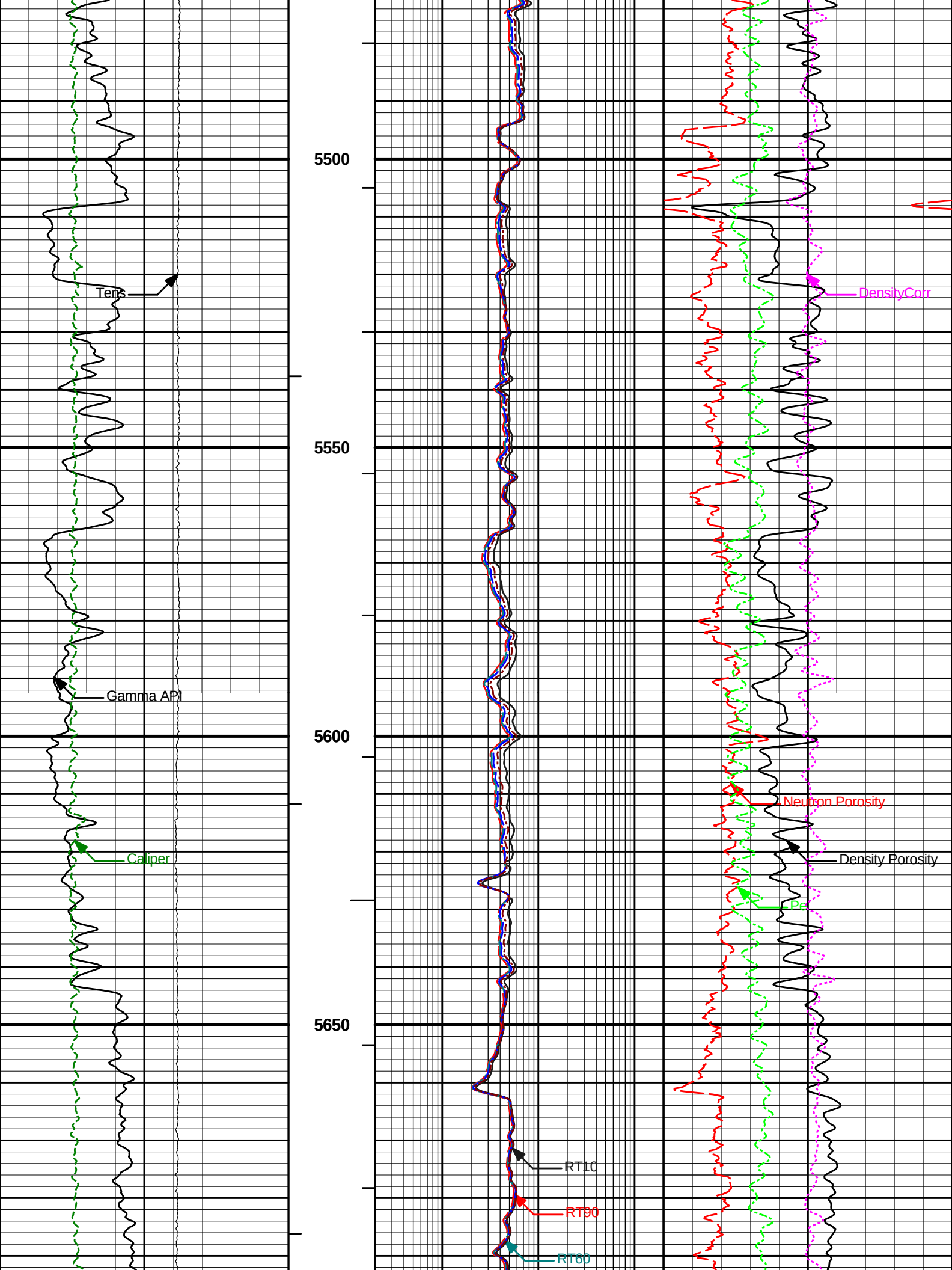
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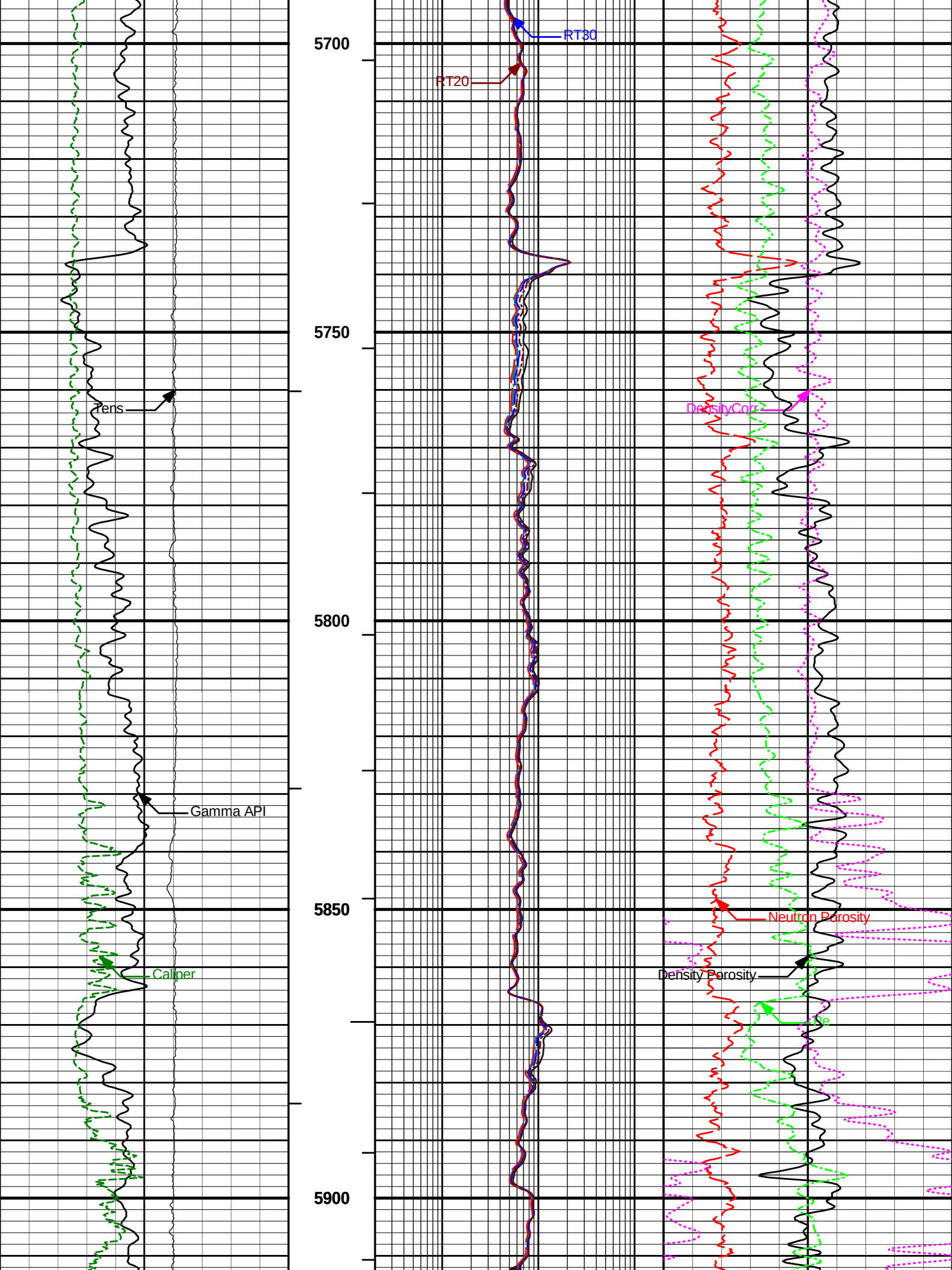
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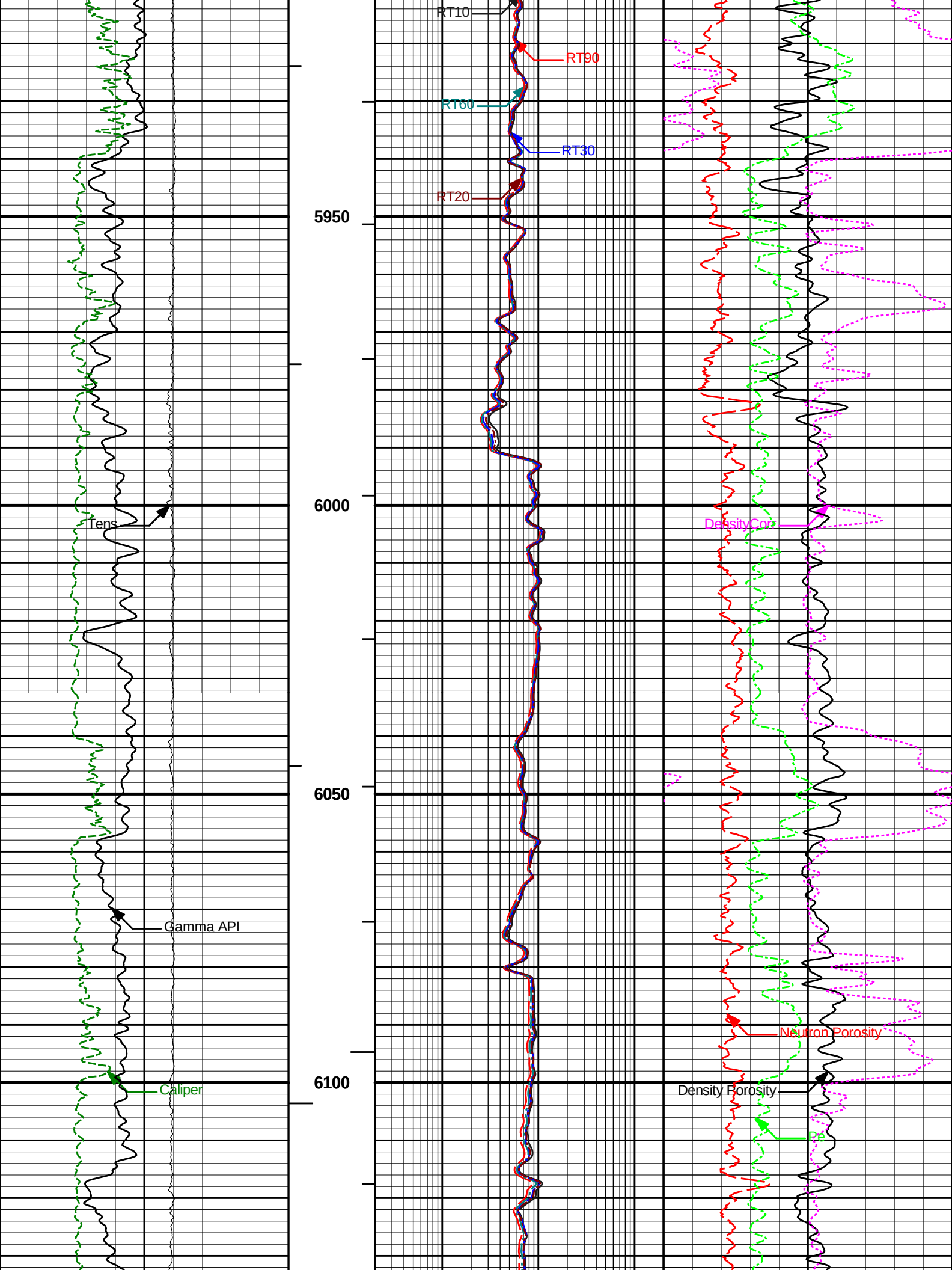
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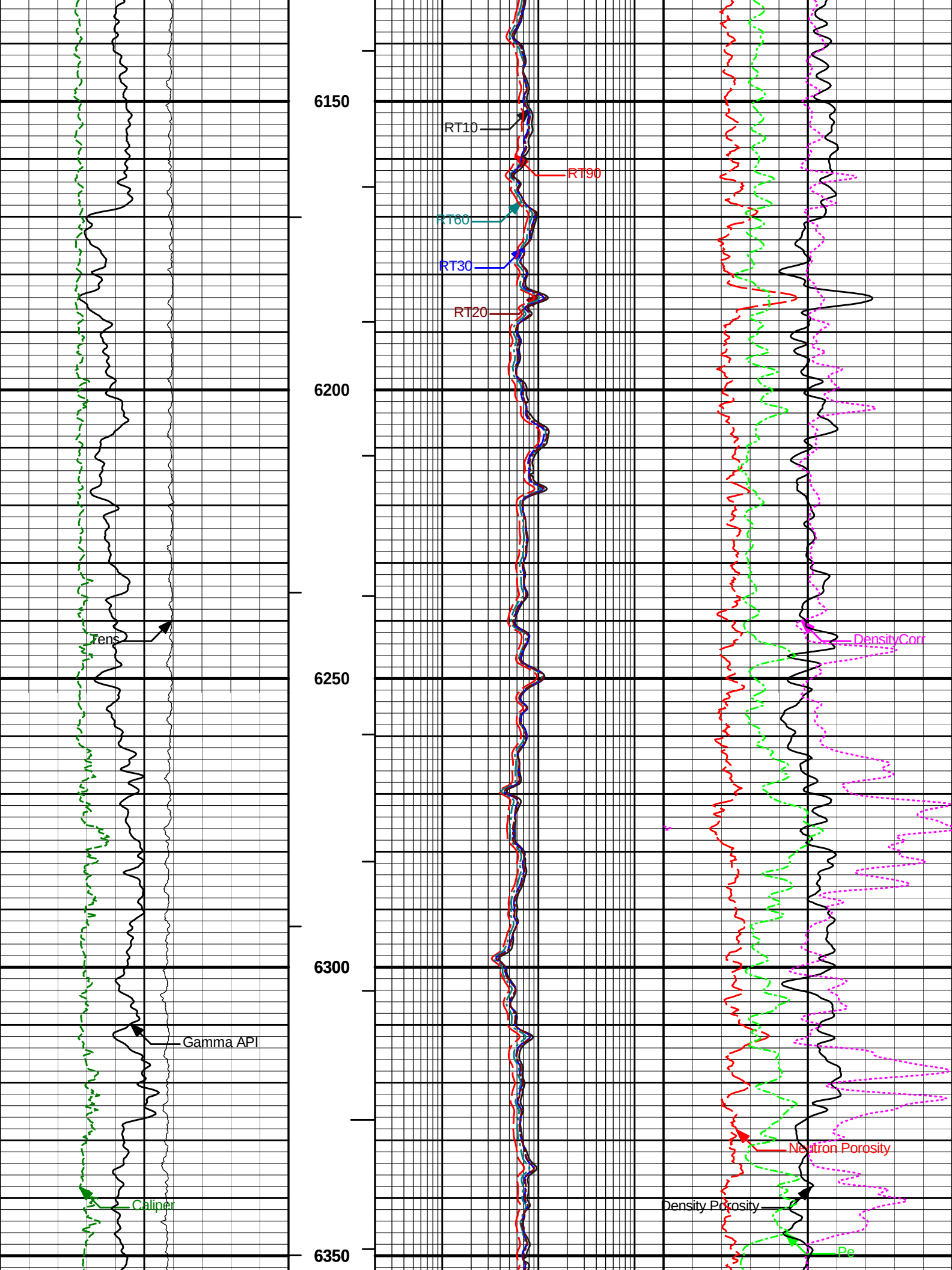
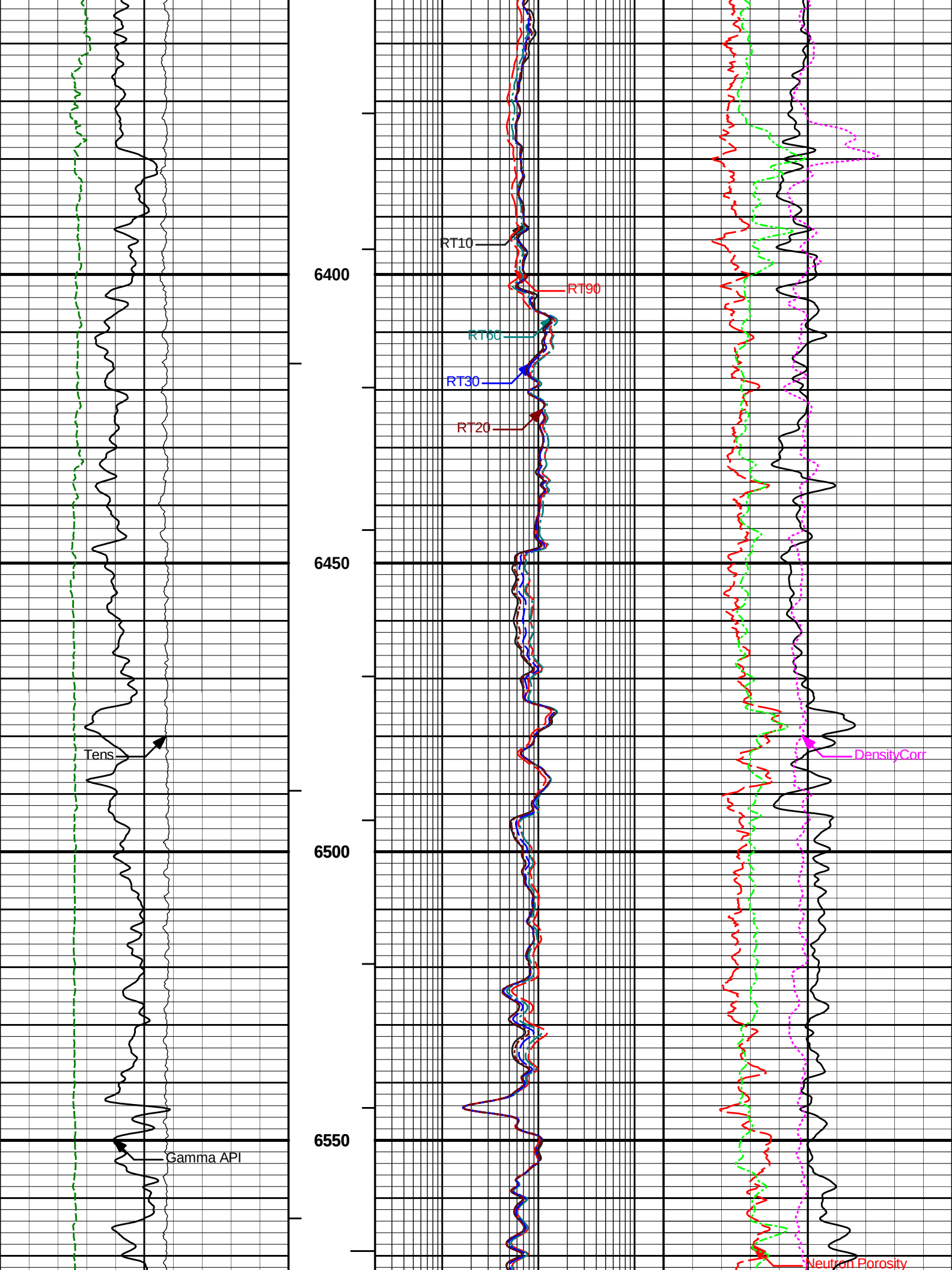
Caliper
DensityCorr
Neutron Porosity
Density Porosity
Pe


6150
6200
6250
6300
6350
RT10
RT90
RT60
RT30
RT20
Tens
Gamma API
Caliper
DensityCorr
Neutron Porosity
Density Porosity
Pe


RT10
RT90
RT60
RT30
RT20
6400
6450
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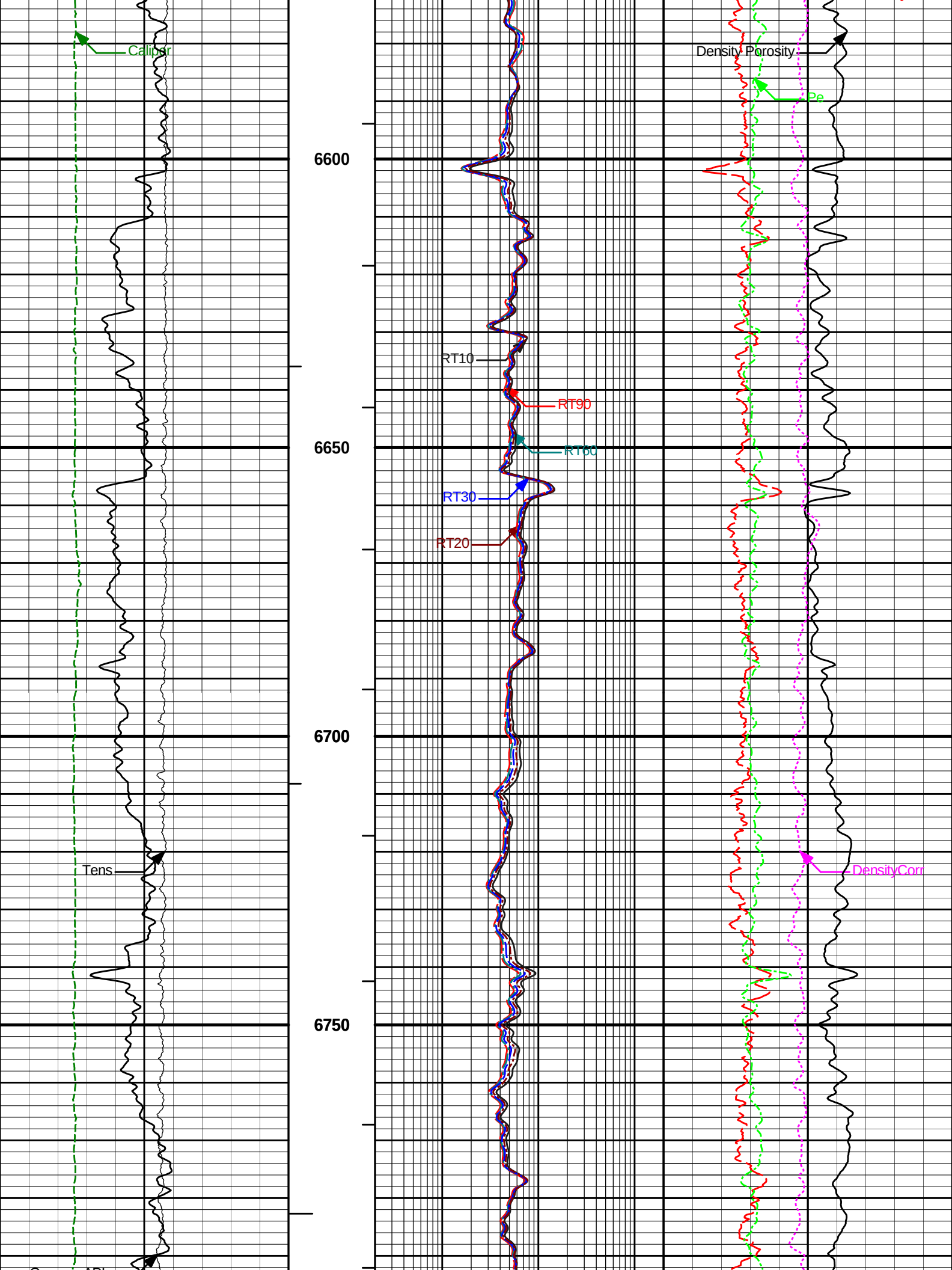
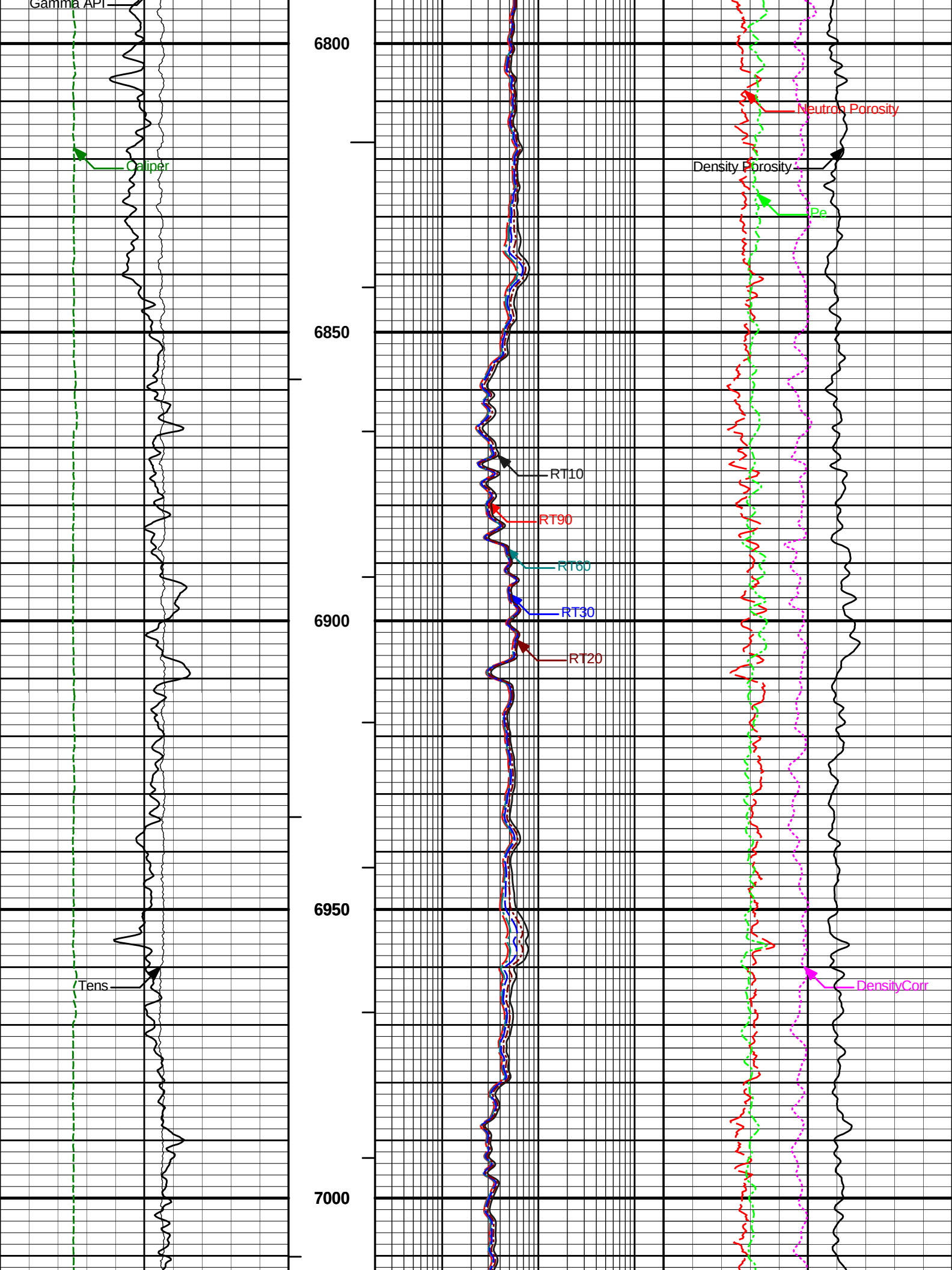
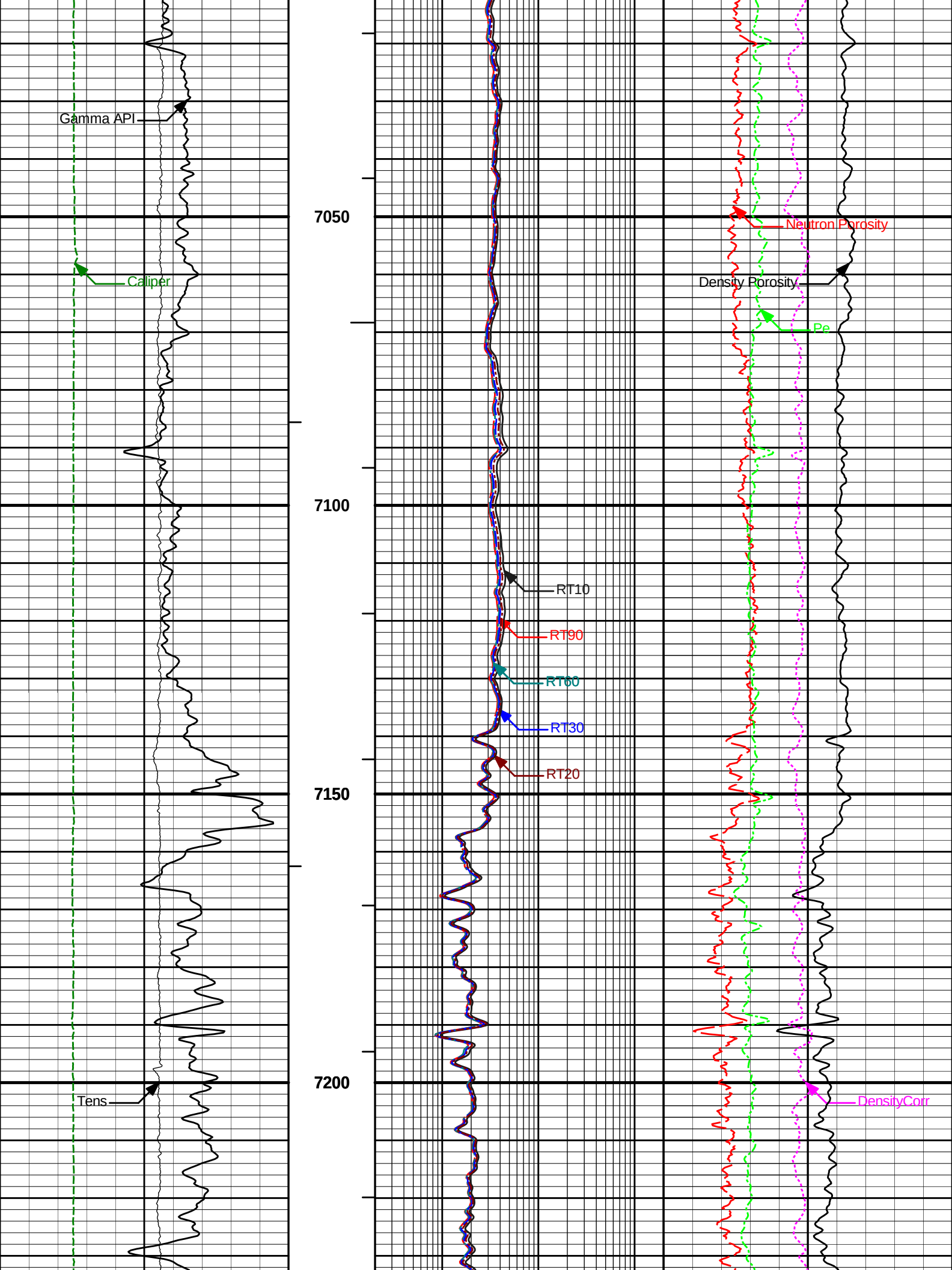
6550
Tens
Gamma API
DensityCorr
Neutron Porosity


Caliper
Density Porosity
Pe
6600
RT10
RT90
6650
RT60
RT30
RT20
6700
Tens
DensityCorr
6750


Gamma API
Caliper
Tens
6800
6850
6900
6950
7000
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe
DensityCorr


Gamma API
Caliper
Tens
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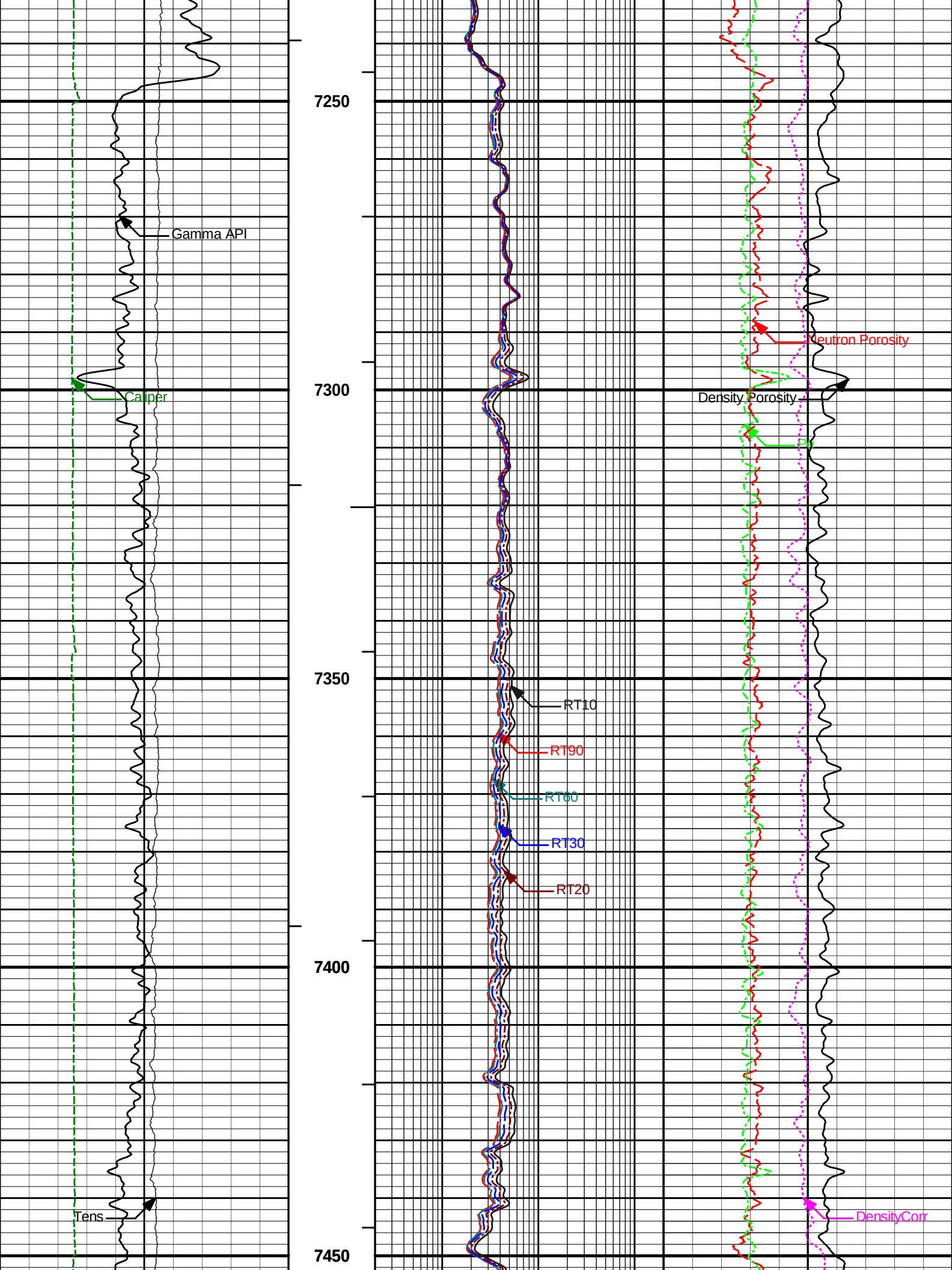
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
Pe
DensityCorr


7250
7300
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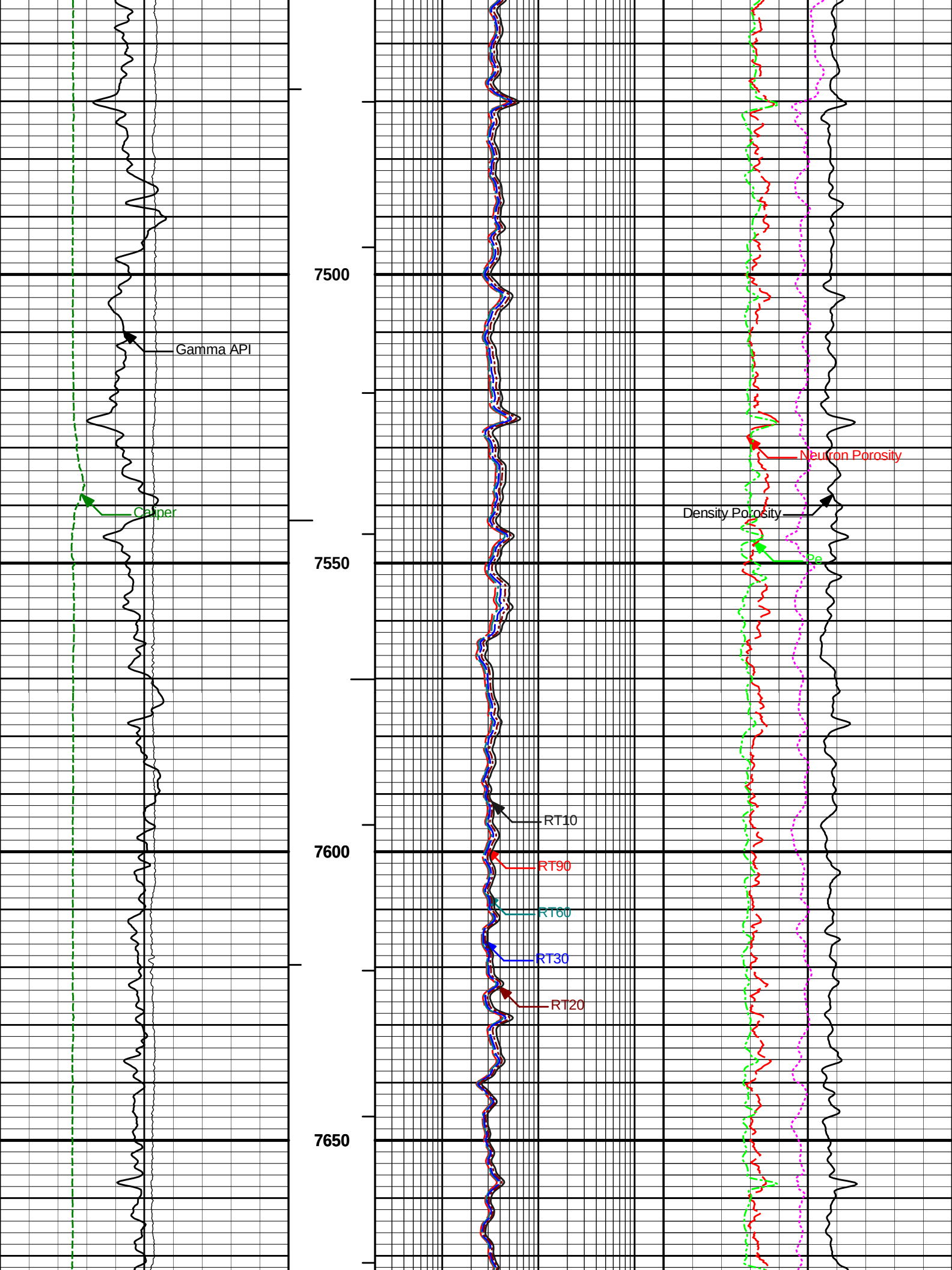
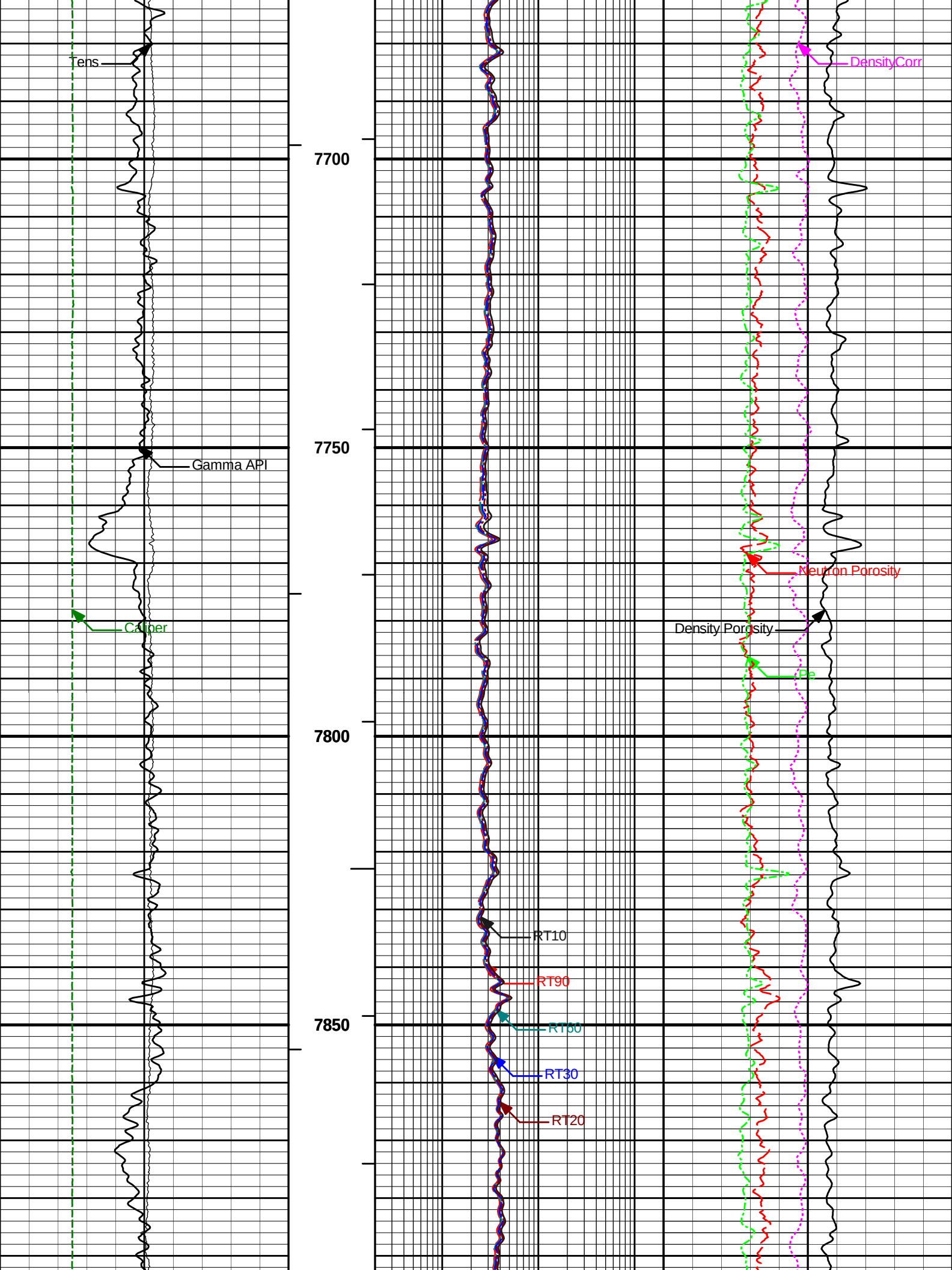
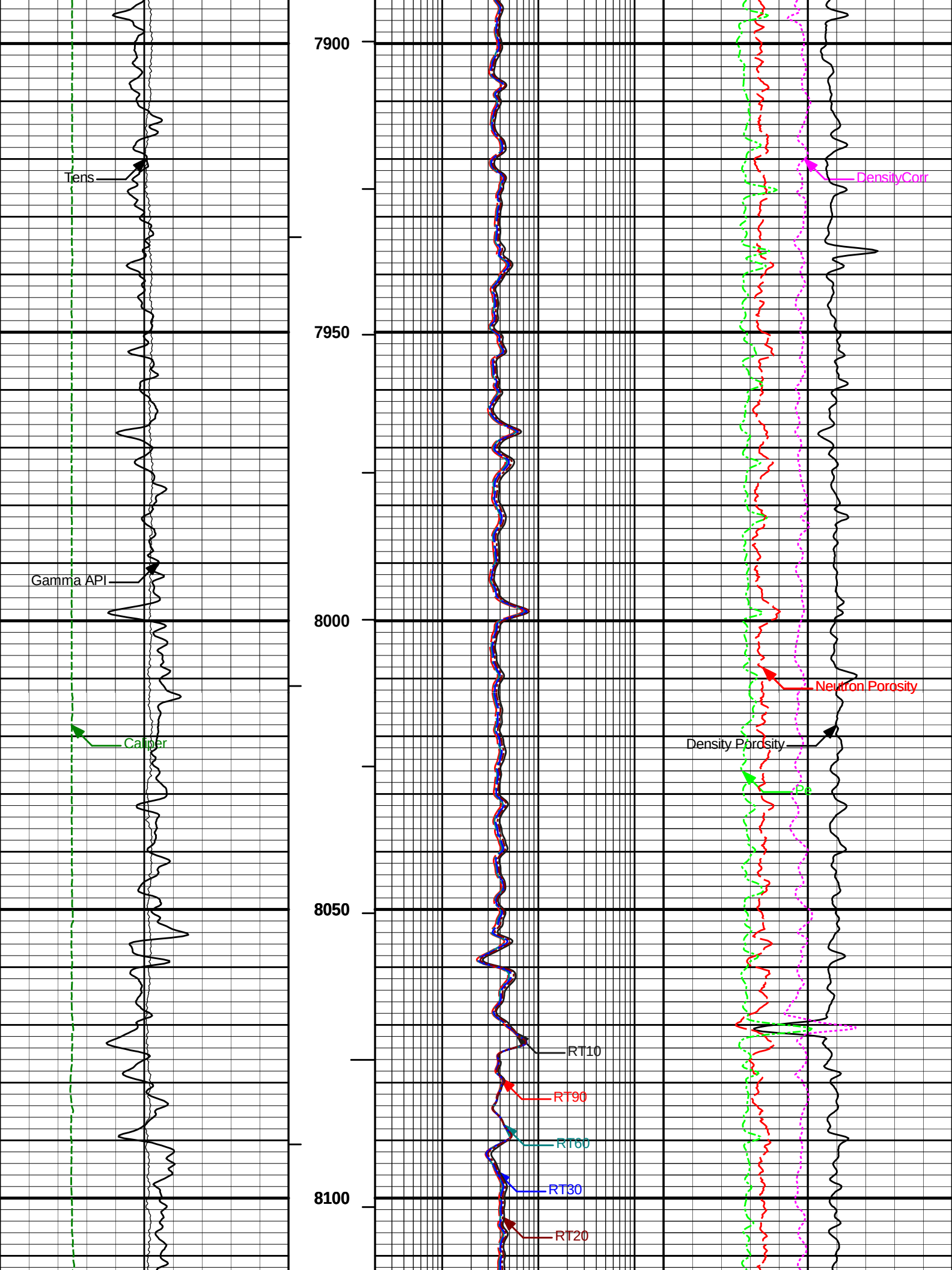
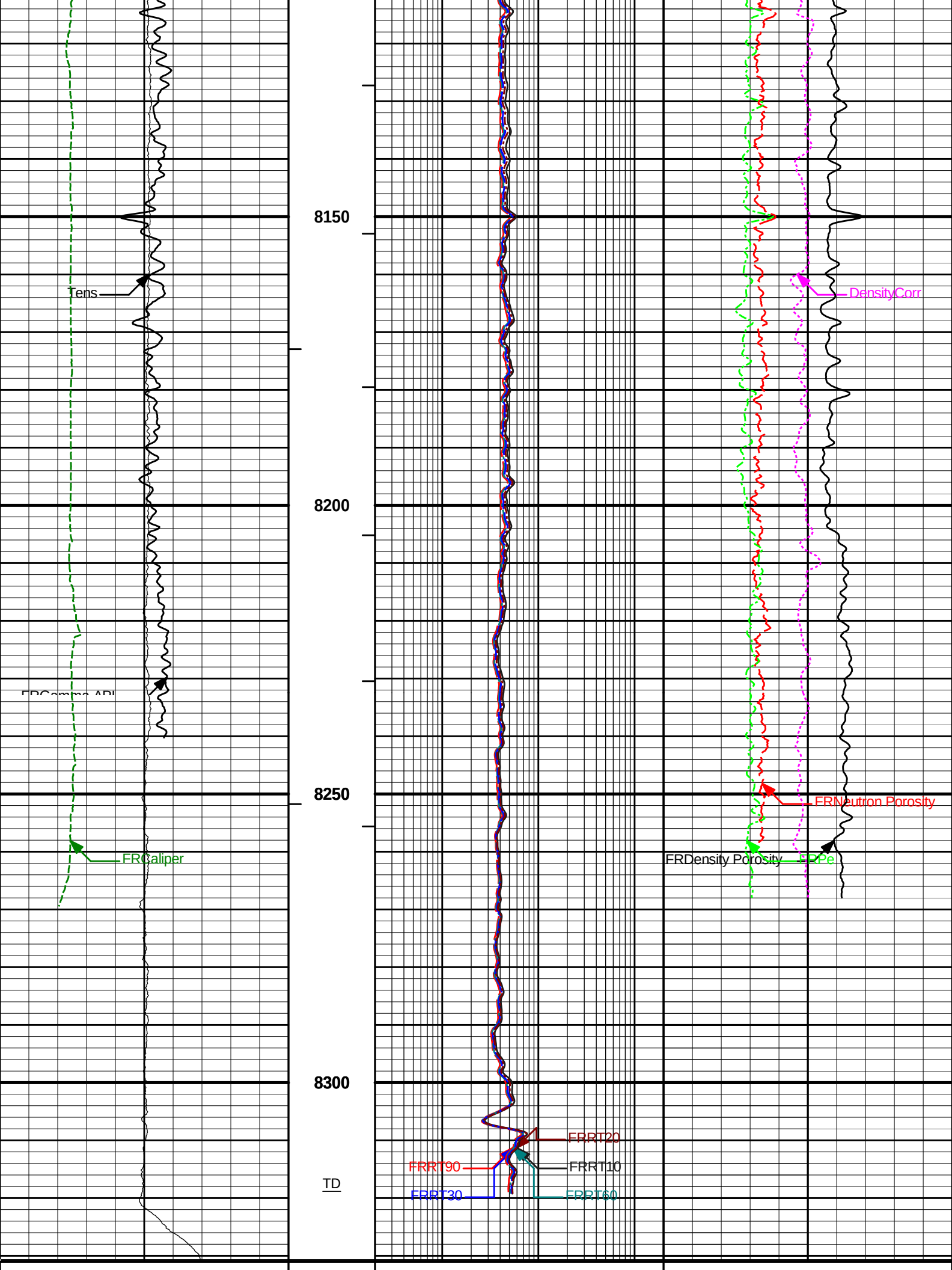
Gamma API
Caliper
Tens
RT10
RT90
RT60
RT30
RT20
Neutron Porosity
Density Porosity
DensityCorr


7500
7550
7600
7650
Gamma API
Caliper
Neutron Porosity
Density Porosity
Pe
RT10
RT90
RT60
RT30
RT20


Tens
DensityCorr
7700
7750
Gamma API
Neutron Porosity
Caliper
Density Porosity
Pe
7800
RT10
RT90
7850
RT60
RT30
RT20


7900
7950
8000
8050
8100
Tens
Gamma API
Caliper
DensityCorr
Neutron Porosity
Density Porosity
Pe
RT10
RT90
RT60
RT30
RT20


8150
8200
8250
8300
Tens
FRCaliper
DensityCorr
FRNeutron Porosity
FRDensity Porosity
FRPe
FRRT20
FRRT90
FRRT10
FRRT30
FRRT60
TD

0 **Gamma API** 200 api	1 : 240	0.2 **RT90** 200 Ohm-m	-0.25 **DensityCorr** 0.25 **gram per cc**
6 **Caliper** 16 inches	**BHVT**	0.2 **RT60** 200 Ohm-m	0 **Pe** 10
10K Tens 0 pounds	**AHVT**	0.2 **RT30** 200 Ohm-m	45 **Density Porosity** -15 percent
		0.2 **RT20** 200 Ohm-m	45 **Neutron Porosity** -15 percent
		0.2 **RT10** 200 Ohm-m	

HALLIBURTON

Plot Time: 26-Jul-12 13:07:13
Plot Range: 100 ft to 8330.75 ft
Data: {ActiveWell}\Well Based**
Plot File: \\COMP_5IN\IQ_COMP_5IN_RM

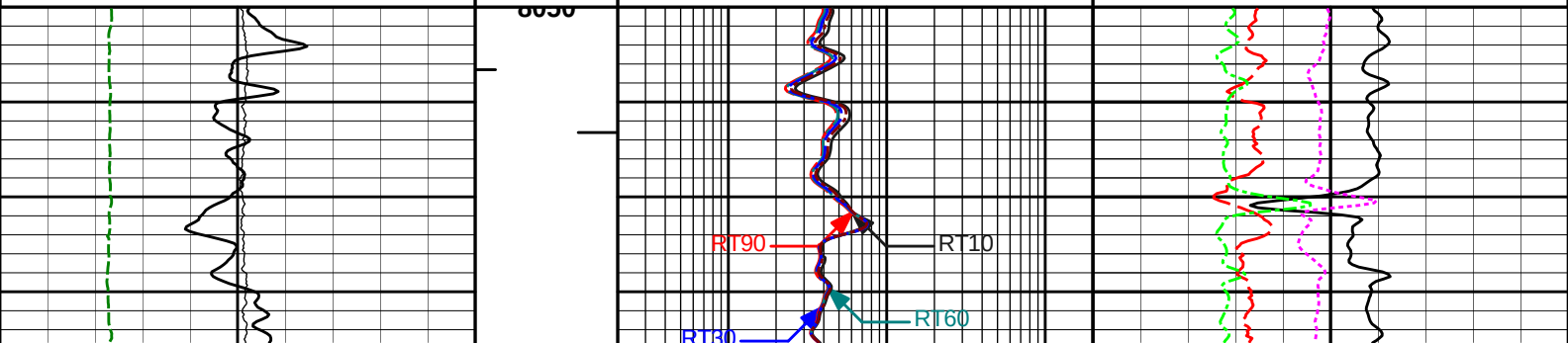
MAIN PASS 5" = 100'

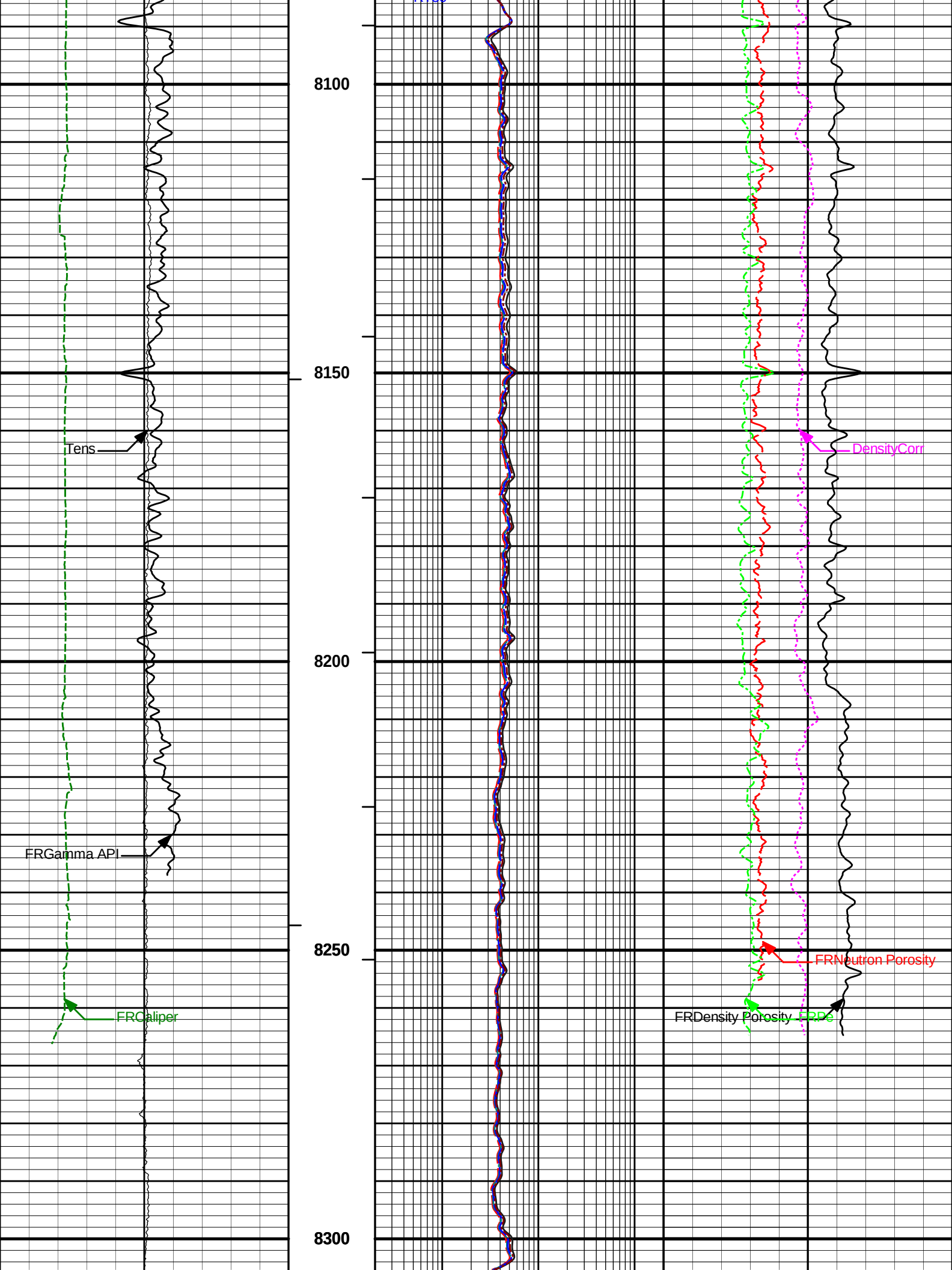
HALLIBURTON

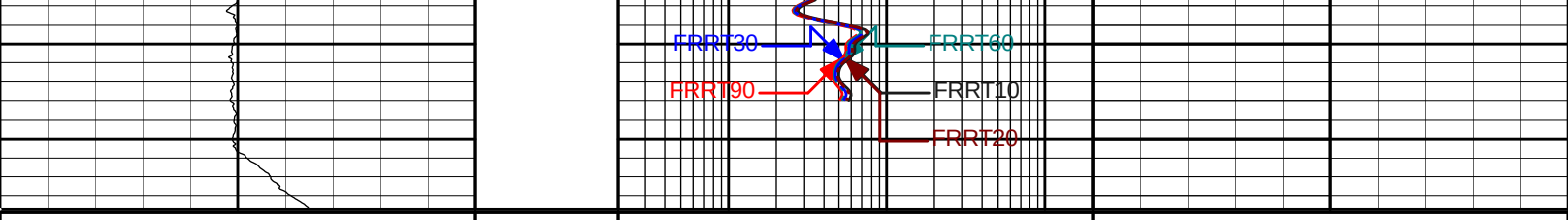
Plot Time: 26-Jul-12 13:07:13
Plot Range: 8050 ft to 8327.42 ft
Data: {ActiveWell}\Well Based\REPEAT*
Plot File: \\COMP_5IN\IQ_COMP_5IN_RM

REPEAT PASS 5" = 100'

		0.2 **RT10** 200 Ohm-m	
		0.2 **RT20** 200 Ohm-m	45 **Neutron Porosity** -15 percent
10K Tens 0 pounds	**AHVT**	0.2 **RT30** 200 Ohm-m	45 **Density Porosity** -15 percent
6 **Caliper** 16 inches	**BHVT**	0.2 **RT60** 200 Ohm-m	0 **Pe** 10
0 **Gamma API** 200 api	1 : 240	0.2 **RT90** 200 Ohm-m	-0.25 **DensityCorr** 0.25 **gram per cc**




8100
8150
8200
8250
8300
Tens
FRGamma API
FRCaliper
DensityCorr
FRNeutron Porosity
FRDensity Porosity
FRPe



0	Gamma API	200	1 : 240	0.2	RT90	200	-0.25 DensityCorr 0.25
	api				Ohm-m		gram per cc
6	Caliper	16	BHVT	0.2	RT60	200	0 Pe 10
	inches				Ohm-m		
10K	Tens	0	AHVT	0.2	RT30	200	45 Density Porosity -15
	pounds				Ohm-m		percent
				0.2	RT20	200	45 Neutron Porosity -15
					Ohm-m		percent
				0.2	RT10	200	
					Ohm-m		

HALLIBURTON

Plot Time: 26-Jul-12 13:07:15
Plot Range: 8050 ft to 8327.42 ft
Data: {ActiveWell}\Well Based\REPEAT*
Plot File: \\COMP_5IN\IQ_COMP_5IN_RM

REPEAT PASS 5" = 100'

HALLIBURTON

CALIBRATION REPORT

DOWNHOLE TENSION SHOP CALIBRATION

Tool Name:	**RWCH - 3377**	**Reference Calibration Date:**	**15-Jun-12 09:15:37**
Engineer:	**C. GULLETT**	**Calibration Date:**	**10-Jul-12 10:22:46**
Software Version:	**WL INSITE R3.6.0 (Build 3)**	**Calibration Version:**	**1**

DOWNHOLE LOAD CELL

Measurement	Tool Value	Measurement	Calibrated	Units
Low	-1787.15	-26.41	0.00	lbs
High	13542.70	2043.64	1728.10	lbs

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name:	**GTET - 10995697**	**Reference Calibration Date:**	**09-Oct-11 12:29:59**
Engineer:	**K. GALLOWAY**	**Calibration Date:**	**21-Apr-12 15:35:46**
Software Version:	**WL INSITE R3.4.4 (Build 2)**	**Calibration Version:**	**1**

Calibrator Source S/N: JL037208-08
Calibrator API Reference:222.00 api
Equivalent Calibrator API Reference:225.9 api

Measurement	Measured	Calibrated	Units
Background	14.6	13.7	api
Background + Calibrator	256.4	239.6	api
Calibrator	241.8	225.9	api

CSNG-FS SHOP CALIBRATION

Tool Name:	**CSNG - 10846349**	**Reference Calibration Date:**	**31-Dec-10 12:07:50**
Engineer:	**K. GALLOWAY**	**Calibration Date:**	**21-Apr-12 14:17:40**
Software Version:	**WL INSITE R3.4.4 (Build 2)**	**Calibration Version:**	**1**
Source SN:	**JL037208-08**		

TITANIUM CASE	Measured	Calibrated	Units
60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	23.3	23.6	Channel #
583 KEV Peak Channel #	52.2	53.2	Channel #
2614 KEV Peak Channel #	214.5	218.5	Channel #
Calibrate Temperature	72.4	34.0	degF

Pass/Fail Summary	Centroid
239 KEV Peak	Passed
583 KEV Peak	Passed
2614 KEV Peak	Passed

Blanket Reference Value: 222.00 API

Calibrator Value: 252.1 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1293.0	CPS	268.7	264.1	API
Background	58.5	CPS	31.3	12.0	API

Gamma Ray Gain: 1.03

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	**DSNT - 11059108**	**Reference Calibration Date:**	**22-Dec-11 10:53:15**
Engineer:	**S. MATHESON**	**Calibration Date:**	**20-Feb-12 12:30:58**
Software Version:	**WL INSITE R3.4.4 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: 21484B

Tank Serial Number: 11020262

Reference value assigned to Tank: 52.950

Snow Block S/N: 0435

Calibration Tank Water Temperature: 63 degF

Min. Tool Housing Outside Diameter: 3.625 in

CALIBRATION CONSTANTS			
Measurement	**Prev. Value**	**New Value**	**Control Limit On New Value**
Gain:	0.992	0.993	0.900 - 1.100

WATER TANK SUMMARY (Horizontal Water Tank)				
Measurement	**Current Reading (Previous Coef.)**	**Calibrated (New Coef.)**	**Change**	**Control Limit On Change**
Porosity (decp):	0.2178	0.2180	0.0003	+/- 0.0020
Calibrated Ratio:	9.96	9.97	0.009	+/- 0.050

VERIFIER		
Measurement	**Value**	**Control Limit**
Snow-Block Porosity (decp):	0.0437	0.02000 - 0.09000

PASS/FAIL SUMMARY	
Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

DUAL SPACED NEUTRON FIELD CALIBRATION

Tool Name: DSNT - 11059108 **Reference Calibration Date:** 20-Feb-12 12:30:58

Engineer: C. GULLETT **Calibration Date:** 05-Jul-12 13:47:55

Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

Logging Source S/N: 21484B

Snow Block S/N: 0435

NEUTRON FIELD-CHECK SUMMARY				
	Shop	**Field**	**Difference**	**Control Limit On Change**
Snow-Block Porosity (decp):	0.0437	0.0424	-0.0013	+/- 0.0150

PASS/FAIL SUMMARY	
Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

DENSITY CALIPER SHOP CALIBRATION

Tool Name: SDLT - 10951320 **Reference Calibration Date:** 05-Jul-12 11:57:32

Engineer: C. GULLETT **Calibration Date:** 05-Jul-12 13:11:38

Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

Host Tool Name: DSNT - 11059108

CALIBRATION COEFFICIENTS			
Measurement	**Previous Value**	**New Value**	**Control Limit On New Value**
Pad Offset	-2096.27	-2083.22	-7000.00 - -1000.00
Pad Gain	0.0003786	0.0003783	0.000200 - 0.000600
Arm Offset	-3798.27	-3905.40	-5000.00 - 3000.00
Arm Gain	0.0005469	0.0005660	0.000300 - 0.000700
Arm Power	-0.000004584	-0.000005424	-0.000010000 - 0.000010000

The ring diameter is computed from: DIAMETER = PAD EXTENSION + ARM EXTENSION + TOOL DIAMETER

Tool Diameter: 4.50 in

CALIBRATION RINGS				
Measurement	**Current Reading (Previous Coeff.)**	**Calibrated (New Coeff.)**	**Change**	**Control Limit On New Value**
PAD EXTENSION:				
Small Ring (in)	2.00	2.00	0.00	+/- 0.20
Medium Ring (in)	3.75	3.75	0.00	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20
Medium Ring (in)	8.19	8.25	0.06	+/- 0.20
Large Ring (in)	14.89	15.00	0.11	+/- 0.20

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed
Ring-Measurement Check:	Passed

PASS/FAIL SUMMARY

Calibration-Coefficients Range Check:	Passed

SPECTRAL DENSITY SHOP CALIBRATION

Tool Name:	**SDLT Pad - 5871P_1320M**	**Reference Calibration Date:**	**23-Feb-12 18:57:10**
Engineer:	**K. GALLOWAY**	**Calibration Date:**	**19-Mar-12 13:51:12**
Software Version:	**WL INSITE R3.4.4 (Build 2)**	**Calibration Version:**	**1**

Logging Source S/N: 5176-GW

Aluminum Block S/N: 11039029	Density: 2.605g/cc	Pe: 3.175
Magnesium Block S/N: 11072359	Density: 1.693g/cc	Pe: 2.610

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0471	1.0789	0.90 - 1.10
Near Dens Gain	1.0195	1.0545	0.90 - 1.10
Near Peak Gain	1.0309	1.0593	0.90 - 1.10
Near Lith Gain	1.0294	1.0810	0.90 - 1.10
Far Bar Gain	1.0144	1.0167	0.90 - 1.10
Far Dens Gain	1.0020	1.0050	0.90 - 1.10
Far Peak Gain	0.9967	1.0027	0.90 - 1.10
Far Lith Gain	0.9793	0.9825	0.90 - 1.10
Near Bar Offset	-0.2570	-0.5428	NONE
Near Dens Offset	-0.0266	-0.3302	NONE
Near Peak Offset	-0.1256	-0.3514	NONE
Near Lith Offset	-0.1361	-0.5562	NONE
Far Bar Offset	-0.0334	-0.0611	NONE
Far Dens Offset	0.0655	0.0335	NONE
Far Peak Offset	0.0942	0.0384	NONE
Far Lith Offset	0.1966	0.1682	NONE
Near Bar Background	898.69	897.46	700 - 1450
Near Dens Background	296.88	293.97	230 - 480
Near Peak Background	127.39	128.43	100 - 210
Near Lith Background	158.95	158.84	125 - 260
Far Bar Background	519.39	520.49	450 - 900
Far Dens Background	203.83	204.10	175 - 345
Far Peak Background	79.84	80.08	70 - 140
Far Lith Background	82.90	83.66	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.679	1.693	0.014	+/- 0.015
Pe	2.620	2.562	-0.058	+/- 0.150
ALUMINUM				
Density (g/cc)	2.592	2.605	0.013	+/- 0.01500
Pe	3.143	3.127	-0.016	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0009	+/- 0.0110	-0.0021	+/- 0.0140
Magnesium Block	-0.0019	+/- 0.0110	-0.0022	+/- 0.0140
Aluminum Block	-0.0007	+/- 0.0110	-0.0006	+/- 0.0140
Resolution	9.75	6.00 - 11.50	9.32	6.00 - 11.50
Internal Verifier(B+D+P+L)	1479	1200 - 2700	888	800 - 1700

PASS/FAIL SUMMARY	
Background Quality Check:	Passed
Background Range Check:	Passed
Background Resolution Check:	Passed
Background Verification Check:	Passed
Magnesium Quality Check:	Passed
Aluminum Quality Check:	Passed
Gains Check:	Passed
Changes in Calibration Blocks:	Passed

SPECTRAL DENSITY FIELD CHECK

Tool Name: SDLT Pad - 5871P_1320M
Reference Calibration Date: 19-Mar-12 13:51:12
Engineer: C. GULLETT
Calibration Date: 05-Jul-12 12:07:31
Software Version: WL INSITE R3.6.0 (Build 3)
Calibration Version: 1

Pad Temperature: 57.6 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1478.699	1468.530	-10.169	15.502
Far (B+D+P+L) cps	888.335	877.227	-11.108	16.240
Near Resolution	9.75	9.87	0.120	0.50
Far Resolution	9.32	9.55	0.230	1.00

PASS/FAIL SUMMARY	
Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10951320
Reference Calibration Date: 05-Jul-12 13:11:38
Engineer: C. GULLETT
Calibration Date: 05-Jul-12 13:14:57
Software Version: WL INSITE R3.6.0 (Build 3)
Calibration Version: 1

MEASURED CALIPER VALUES				
Measurement	Shop	Field	Change	Control Limit On New Value
Pad Extension	3.75	3.75	0.00	+/- 0.10
Ring Diameter	8.25	8.34	0.09	+/- 0.15

PASS/FAIL SUMMARY	
Pad Extension Check:	Passed
Diameter Check:	Passed

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION

Tool Name:	**ACRt Sonde - e7818-s1994**	**Reference Calibration Date:**	**13-Sep-10 13:20:58**
Engineer:	**M. SCHMELING**	**Calibration Date:**	**25-Jan-11 13:33:16**
Software Version:	**WL INSITE R3.2.1 (Build 7)**	**Calibration Version:**	**1**
Host Tool Name:	**-**		

TYPICAL GAIN RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A2 (50")	0.95	1.02	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A3 (29")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A4 (17")	0.95	1.01	1.05	0.95	1.00	1.05	0.95	1.00	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.00	1.05	0.95	1.00	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.98	1.05

TYPICAL SONDE OFFSET RANGE

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	-5	-1.66	2	-6	-4.33	-2	-8	-5.50	-2
A2 (50")	-7	-3.04	0	-7	-4.35	0	-7	-4.22	0
A3 (29")	-27	-11.93	-9	-9	-3.57	-3	-7	-3.13	-1
A4 (17")	-180	-103.72	-60	-45	-32.39	-15	-39	-25.05	-13
A5 (10")	N/A	N/A	N/A	-150	-107.63	-50	-80	-55.86	-10
A6 (6")	N/A	N/A	N/A	175	288.30	525	90	151.55	270

TRANSMITTER CURRENT GAIN

Signal	Lower	R	Upper
12K	0.6	0.92	1.3
36K	1.0	1.28	2.0
72K	1.0	1.51	2.0

R-MUD VERIFICATION

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	0.99	1.05

PASS/FAIL SUMMARY

GAIN RANGE CHK	PASS
SONDE OFFSET RANGE CHK	PASS
Tx CURRENT GAIN	PASS
Rmud VERIFICATION	PASS

TOOL OK TO LOG

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
RWCH-3377						
DH Tension Zero	0.00	----------	----------	0.00	----------	lbs
DH Tension Cal	1728.10	----------	----------	0.00	----------	lbs
GTET-10995697						
Gamma Ray Calibrator	225.9	----------	----------	0.0	+/- 9.00	api
CSNG-10846349						
60 KEV Peak Channel #	48.0	----------	----------	0.0	----------	Channel #
239 KEV Peak Channel #	23.6	----------	----------	0.0	----------	Channel #
583 KEV Peak Channel #	53.2	----------	----------	0.0	----------	Channel #
2614 KEV Peak Channel #	218.5	----------	----------	0.0	----------	Channel #

DSNT-11059108						
Snow-Block Porosity	0.0437	0.0424	----------	0.0013	+/- 0.0150	decp
SDLT-10951320						
Pad Extension	3.75	3.75	----------	0.00	+/-0.10	in
Ring Diameter	8.25	8.34	----------	-0.09	+/-0.15	in
SDLT Pad-5871P_1320M						
Near(B+D+P+L)	1478.699	1468.530	----------	10.169	+/-15.502	cps
Far(B+D+P+L)	888.335	877.227	----------	11.108	+/-16.240	cps
ACRt Sonde-e7818-s1994						
Mud Cell	0.99	----------	----------	0.00	----------	ohm-m

Data: GR_ALCOR_#1\0001 QUAD\IDLE Date: 10-Jul-13 14:18:39

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						103.06 ft
RWCH-3377 135.00 lbs		Ø 3.625 in		Load Cell @ 99.38 ft BH Temperature @ 98.81 ft	6.25 ft	
						96.81 ft
GTET-10995697 165.00 lbs		Ø 3.625 in		GammaRay @ 90.75 ft	8.52 ft	
						88.29 ft
CSNG-10846349 114.00 lbs	UnivWearRing3.6-10846349 5.00 lbs	Ø 4.200 in* Ø 3.625 in		CSNG @ 82.66 ft	8.17 ft	
						80.12 ft
DSNT-11059108 174.00 lbs	DSN Decentralizer-10735512 6.60 lbs	Ø 5.000 in* Ø 3.625 in		DSN Far @ 73.19 ft DSN Near @ 72.44 ft	9.69 ft	
						70.44 ft

SDLT-10951320
360.00 lbs

Ø 4.500 in

10.81 ft

SDLT Pad-5871P_1320M
65.00 lbs

Ø 4.750 in*

SDL Caliper @ 62.44 ft

SDL @ 62.43 ft

59.62 ft

Flex Joint -
Pressure Comp-01
140.00 lbs

Ø 3.625 in

5.97 ft

53.65 ft

Centralizer 29-1
12.00 lbs

Ø 4.000 in*

Wavesonic-I-126
520.00 lbs

Ø 3.625 in

34.07 ft

Wavesonic Delay @ 31.08 ft

Centralizer 29-2
12.00 lbs

Ø 4.000 in*

19.58 ft

Regal Standoff 6_75-1
20.00 lbs

Ø 6.750 in*

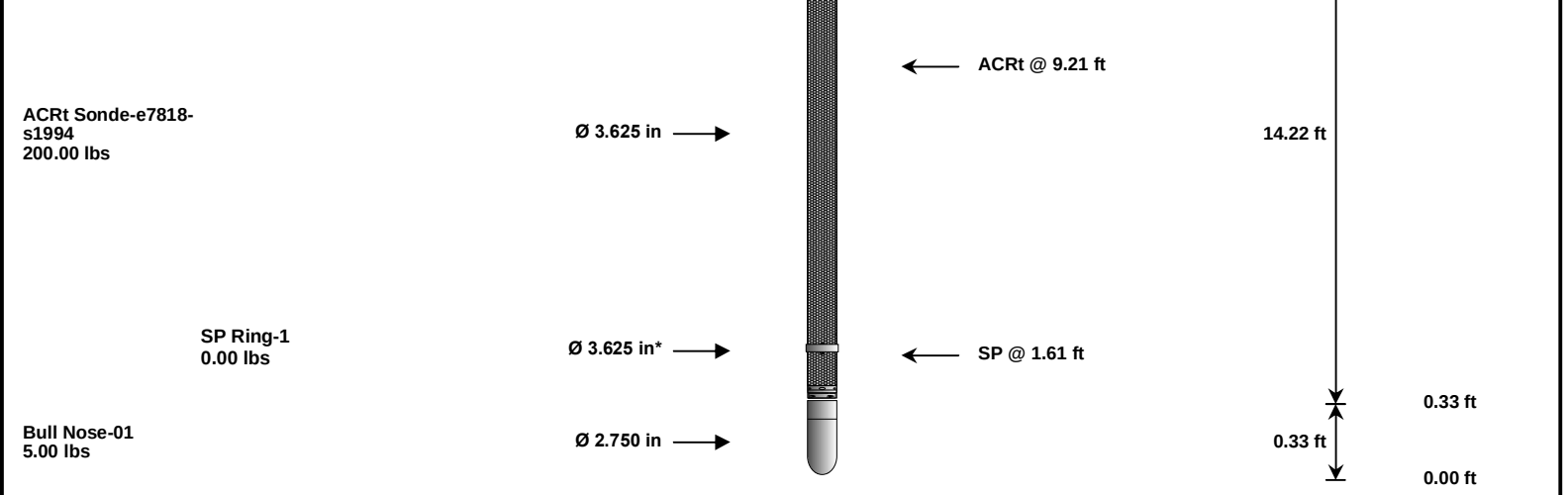
ACRt Instrument-
10967818
50.00 lbs

Ø 3.625 in

5.03 ft

14.55 ft

Mud Resistivity @ 13.19 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	3377	135.00	6.25		96.81	300.00
GTET	Gamma Telemetry Tool	10995697	165.00	8.52		88.29	60.00
CSNG	Compensated Spectral Natural Gamma	10846349	114.00	8.17		80.12	15.00
UWR3P6	Universal Wear Ring 3 5-8 inch	10846349	5.00	0.35	*	84.20	300.00
DSNT	Dual Spaced Neutron	11059108	174.00	9.69		70.44	60.00
DCNT	DSN Decentralizer	10735512	6.60	5.13	*	73.77	300.00
SDLT	Spectral Density Tool	10951320	360.00	10.81		59.62	60.00
SDLP	Density Insite Pad	5871P_1320M	65.00	2.55	*	61.83	60.00
FLEX	Flex Joint - Pressure Compensated	01	140.00	5.97		53.65	300.00
WSTT	WaveSonic Insite	126	520.00	34.07		19.58	30.00
OBCEN	Centralizer - 29 in.Overbody	1	12.00	2.42	*	49.94	300.00
OBCEN	Centralizer - 29 in.Overbody	2	12.00	2.42	*	21.93	300.00
ACRt	Array Compensated True Resistivity Instrument Section	10967818	50.00	5.03		14.55	300.00
RSOF	Regal Standoff 6.75in	1	20.00	0.52	*	17.32	300.00
ACRt	Array Compensated True Resistivity Sonde Section	e7818-s1994	200.00	14.22		0.33	300.00
SP	SP Ring	1	0.00	0.25	*	1.61	300.00
BLNS	Bull Nose	01	5.00	0.33		0.00	300.00
Total			**1,983.60**	**103.06**			

* Not included in Total Length and Length Accumulation.

Data: GB_ALCOR_#1\0001 QUAD\IDLE **Date: 10-Jul-12 09:33:14**

COMPANY	**GREAT BEAR PETROLEUM**		
WELL	**ALCOR #1**		
FIELD	**WILDCAT**		
COUNTY	**NORTH SLOPE**	STATE	**ALASKA**

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
ARRAY COMPENSATED
TRUE RESISTIVITY