HALLIBURTON

BOREHOLE COMPENSATED SONIC ARRAY LOG

COMPANY	OXY USA INC
WELL	BRINKMAN D-1
FIELD	PLEASNT PRAIRRE
COUNTY	HASKELL
STATE	KANSAS

COMPANY **OXY USA INC**

WELL **BRINKMAN D-1**

FIELD **PLEASNT PRAIRRE**

COUNTY **HASKELL** STATE **KANSAS**

API No. 15-081-21932

Location 556 FNL & 1976 FWL

Other Services:
DSNT/SDLT
ACRT
BSAT

Sect. 23 Twp. 27S Rge. 34W

Permanent Datum	GL	Elev. 3011.0 ft	Elev.: K.B. 3022.0 ft
Log measured from	KB	11.0 ft above perm. Datum	D.F. 3021.0 ft
Drilling measured from	KB		G.L. 3011.0 ft

Date	26-Apr-11		
Run No.	ONE		
Depth - Driller	5400.00 ft		
Depth - Logger	5395.0 ft		
Bottom - Logged Interval	5357.0 ft		
Top - Logged Interval	1942.0 ft		
Casing - Driller	8.625 in @ 1941.0 ft	@	@
Casing - Logger	1942.0 ft		
Bit Size	7.875 in	@	@
Type Fluid in Hole	WATER BASED MUD		
Density / Viscosity	9.0 ppg / 56.00 s/qt		
PH / Fluid Loss	9.30 pH / 4.6 cptm		
Source of Sample	MUD PIT		
Rm @ Meas. Temperature	1.386 ohmm @ 80.00 degF	@	@
Rmf @ Meas. Temperature	1.13 ohmm @ 77.00 degF	@	@
Rmc @ Meas. Temperature	1.580 ohmm @ 78.00 degF	@	@
Source Rmf / Rmc	MEASURED / MEASURED		
Rm @ BHT	1.03 ohmm @ 110.0 degF	@	@
Time Since Circulation	7.0 hr		
Time on Bottom	26-Apr-11 19:10		
Max. Rec. Temperature	110.0 degF @ 5400.0 ft	@	@
Equipment / Location	10549592 / LIBERAL		
Recorded By	JACOB BOSH	C. PARKER	
Witnessed By	A. GARNER	N. HALLEY	

Fold here

Service Ticket No.: 8116343 API Serial No.: 15-081-21932 PGM Version: WL INSITE R3.2.5 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE

Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@		@	
Rmf @ Meas. Temp.		@		@	
Rmc @ Meas. Temp.		@		@	
Source Rmf	Rmc				
Rm @ BHT		@		@	
Rmf @ BHT		@		@	
Rmc @ BHT		@		@	

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

EQUIPMENT DATA

GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.	ONE	Run No.		Run No.	
Serial No.	10748374	Serial No.	10747683	Serial No.		Serial No.	
Model No.	GTET	Model No.	BSAT	Model No.		Model No.	
Diameter	3.625"	No. of Cent.	2	Diameter		Diameter	
Detector Model No.	T-102	Spacing	0.5	Log Type		Log Type	
Type	SCINT			Source Type		Source Type	
Length	8"	LSA [Y/N]	YES	Serial No.		Serial No.	
Distance to Source	10'	FWDA [Y/N]	YES	Strength		Strength	

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	TD	CSG	REC	0	150	30	-10	47.6						

DIRECTIONAL INFORMATION

Maximum Deviation	@	KOP	@

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5" CASING

CHLORIDES 800 MG/L: LCM 6 #/BBL

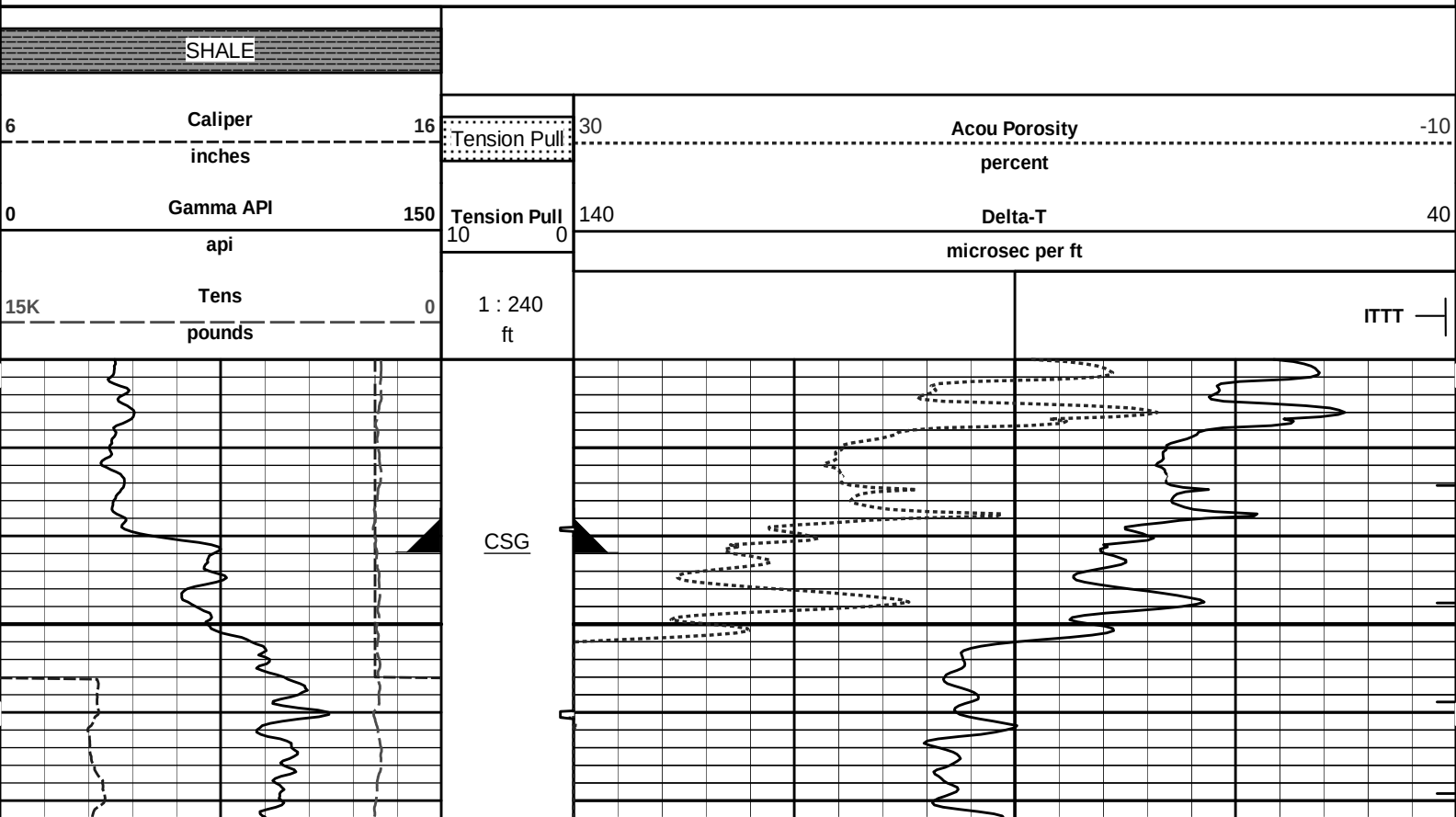
TODAY'S CREW: K.KELLY, M. MAY

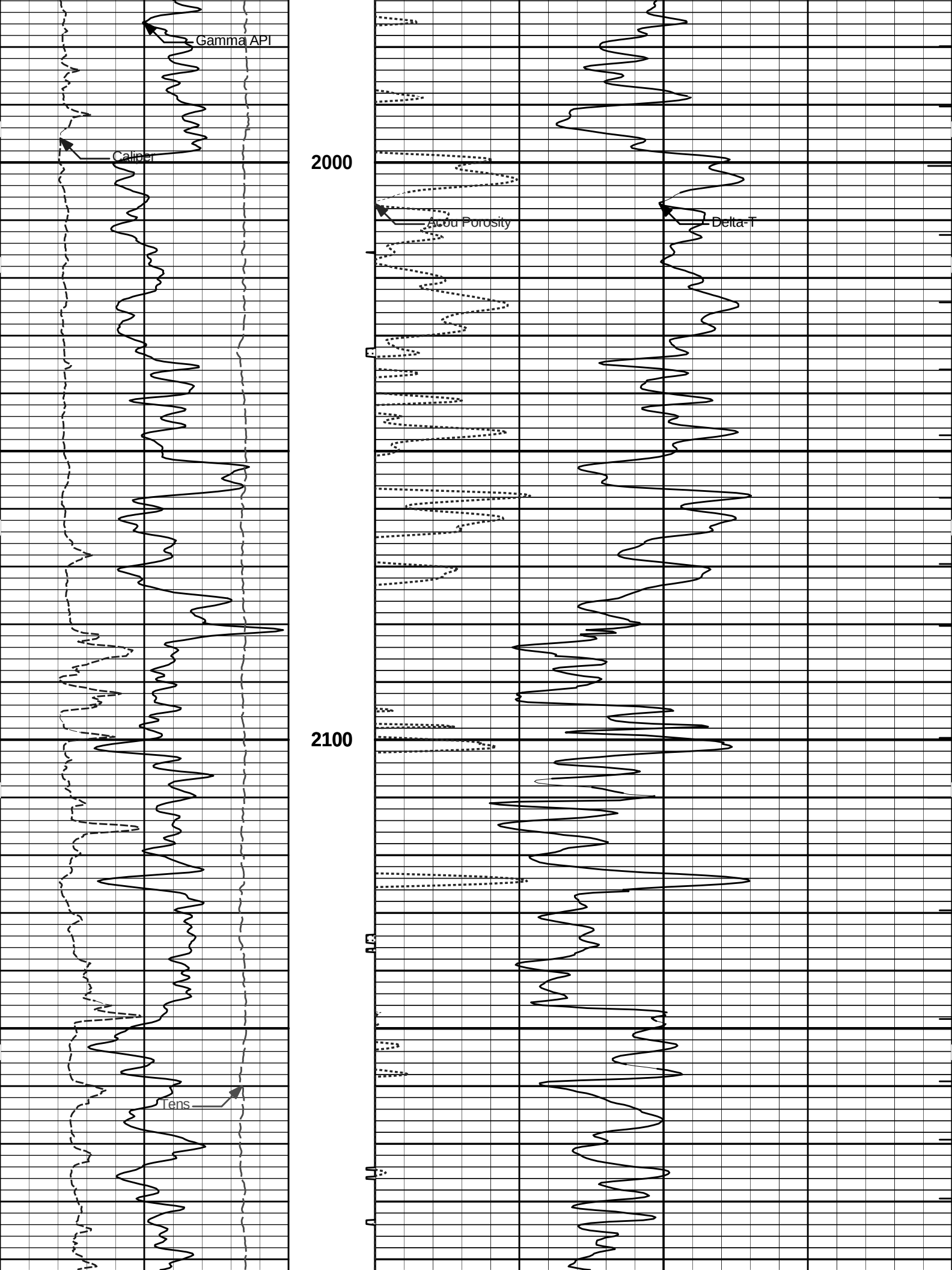
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS: 620 624 8123

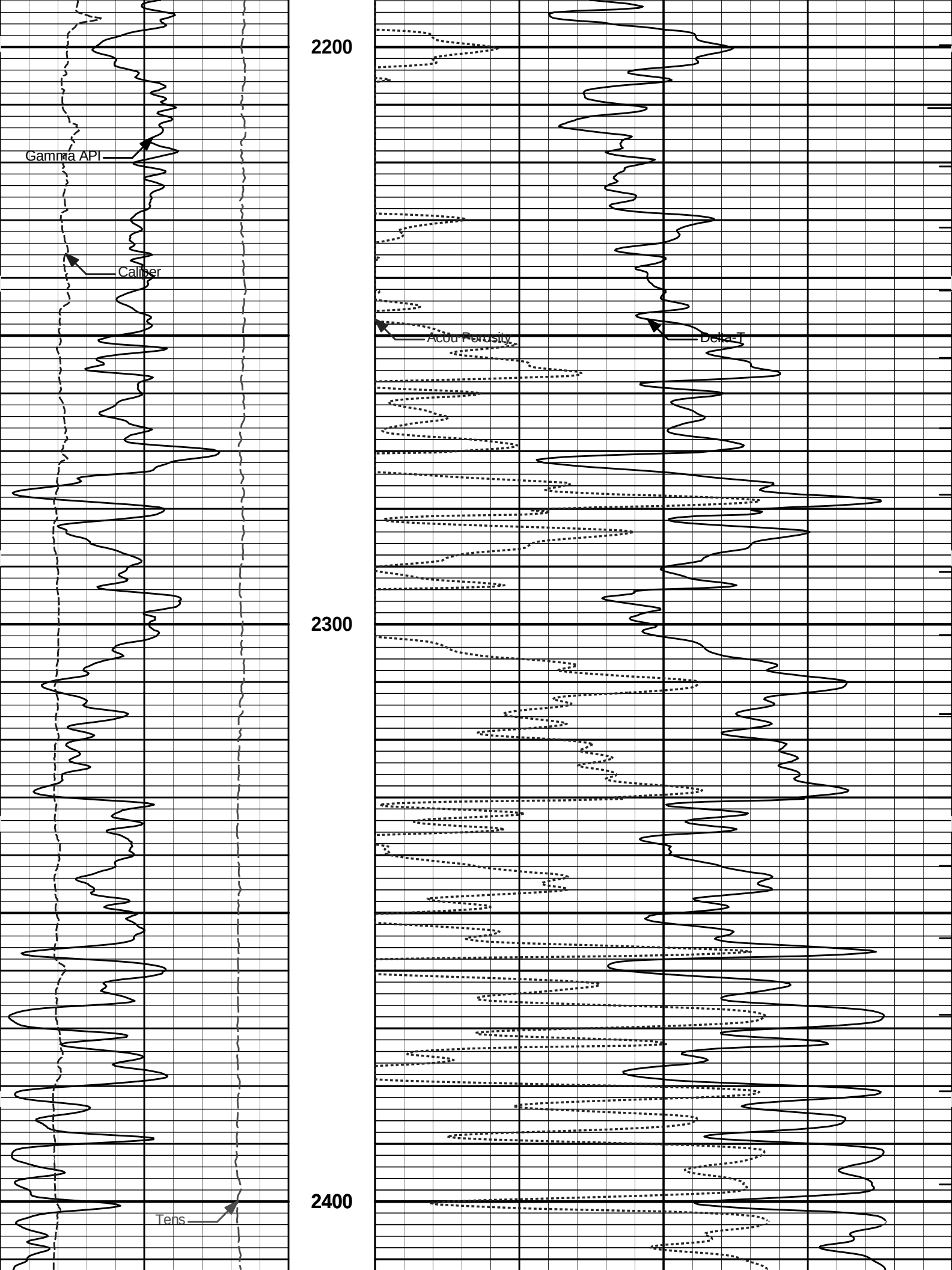
HALLIBURTON

Plot Time: 26-Apr-11 21:54:45
Plot Range: 1920 ft to 5400.58 ft
Data: BRINKMAN_D_1\Well Based\DAQ-0001-003
Plot File: \\BSAT\BSAT_5_MAIN_LIB

5 INCH MAIN LOG




Gamma API
Caliper
2000
Acou Porosity
Delta-T
2100
Tens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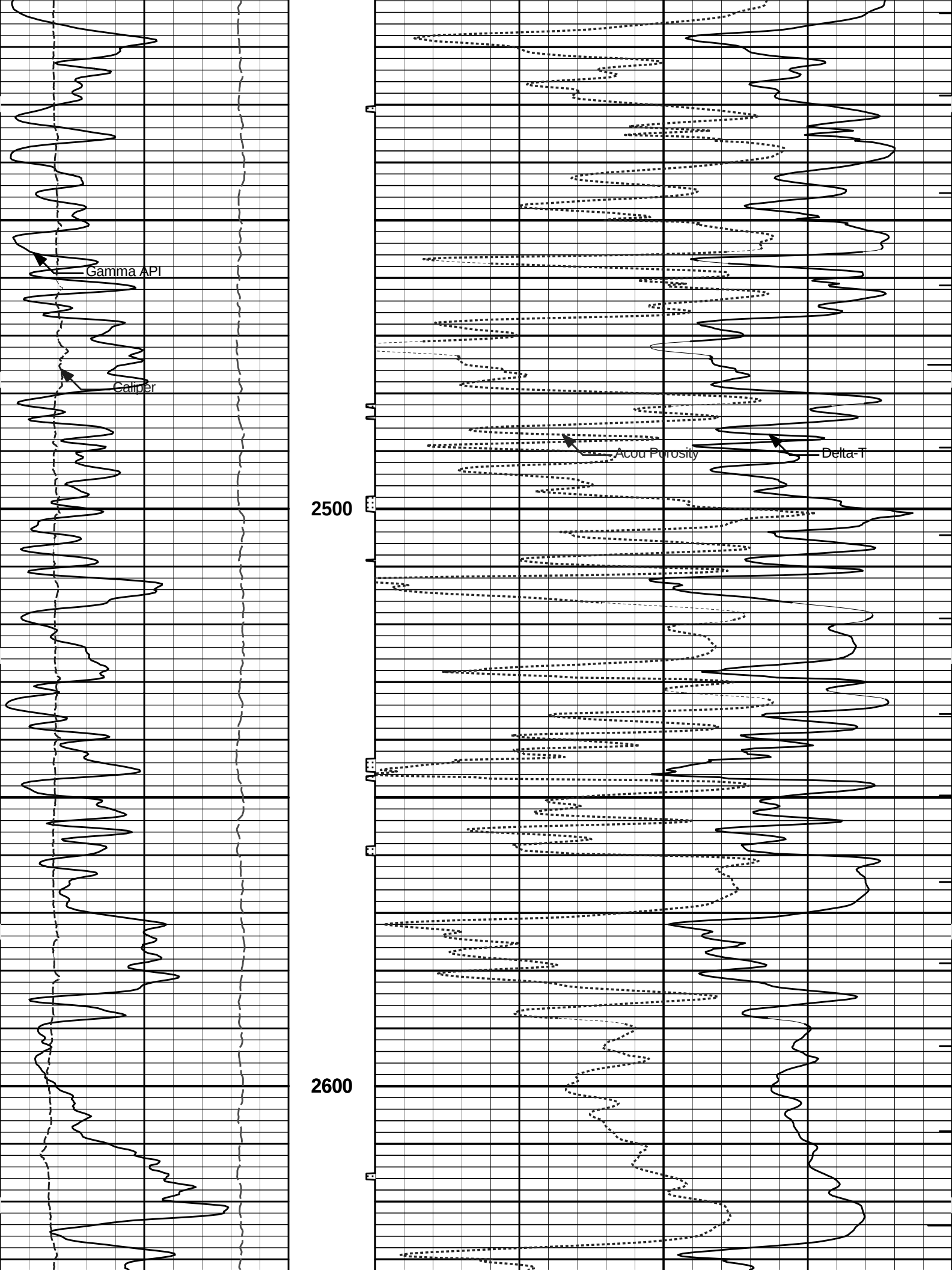
Caliper
Acou Porosity
Delta-T
2300
2400
Tens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Delta-T
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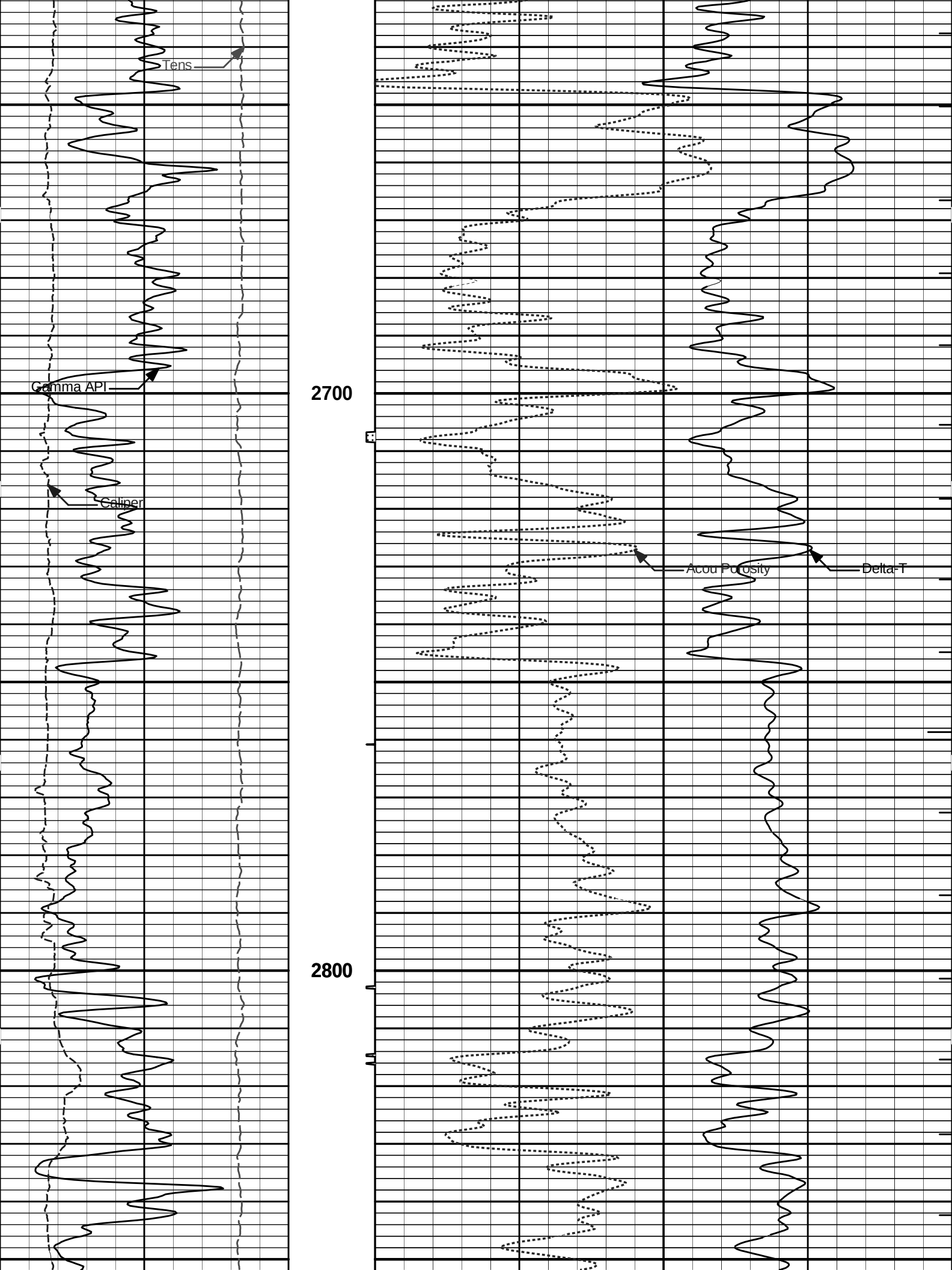
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Caliper
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Acou Porosity
Delta-T
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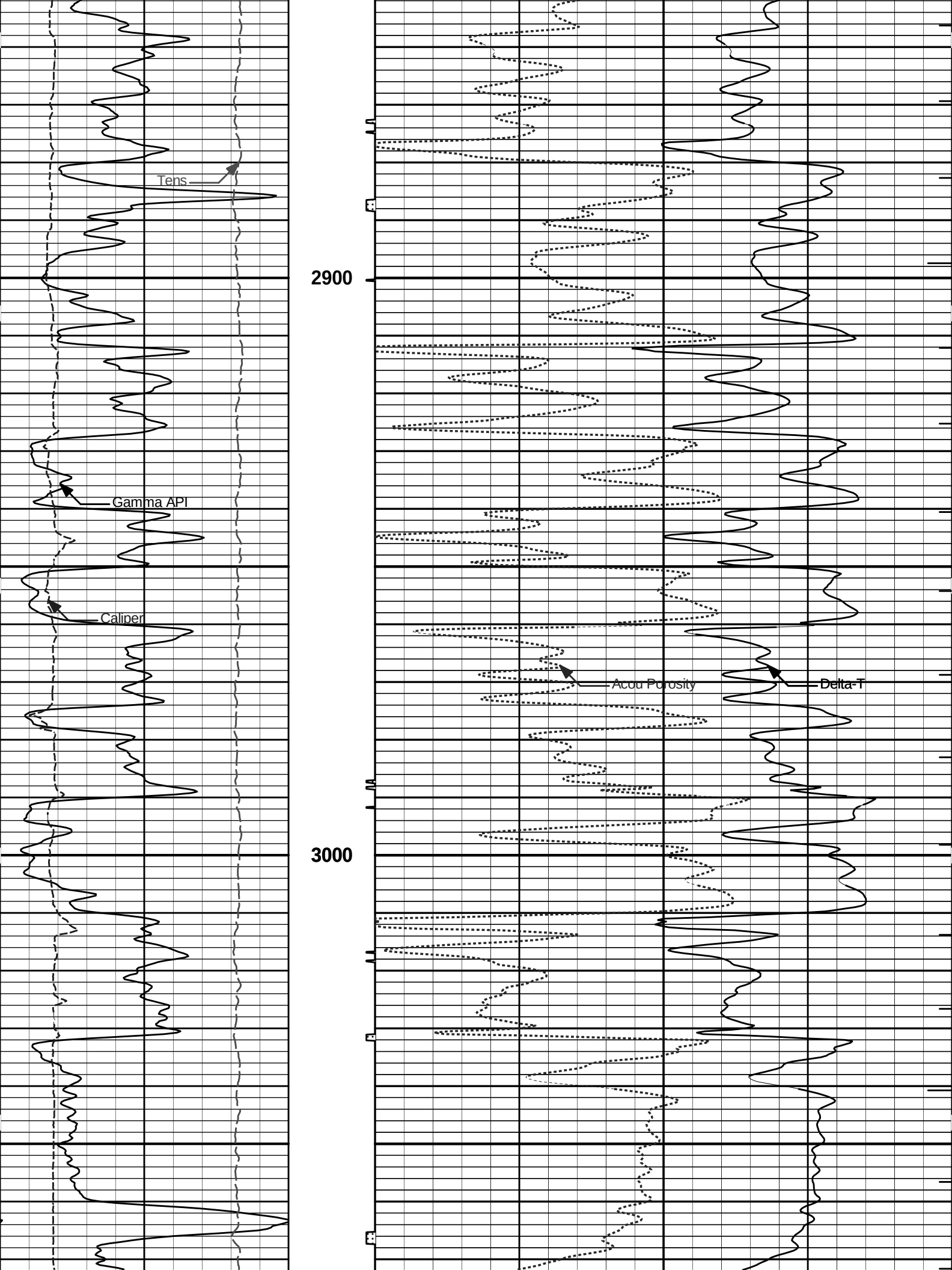
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Gamma API
Caliper
Acou Porosity
Delta-T
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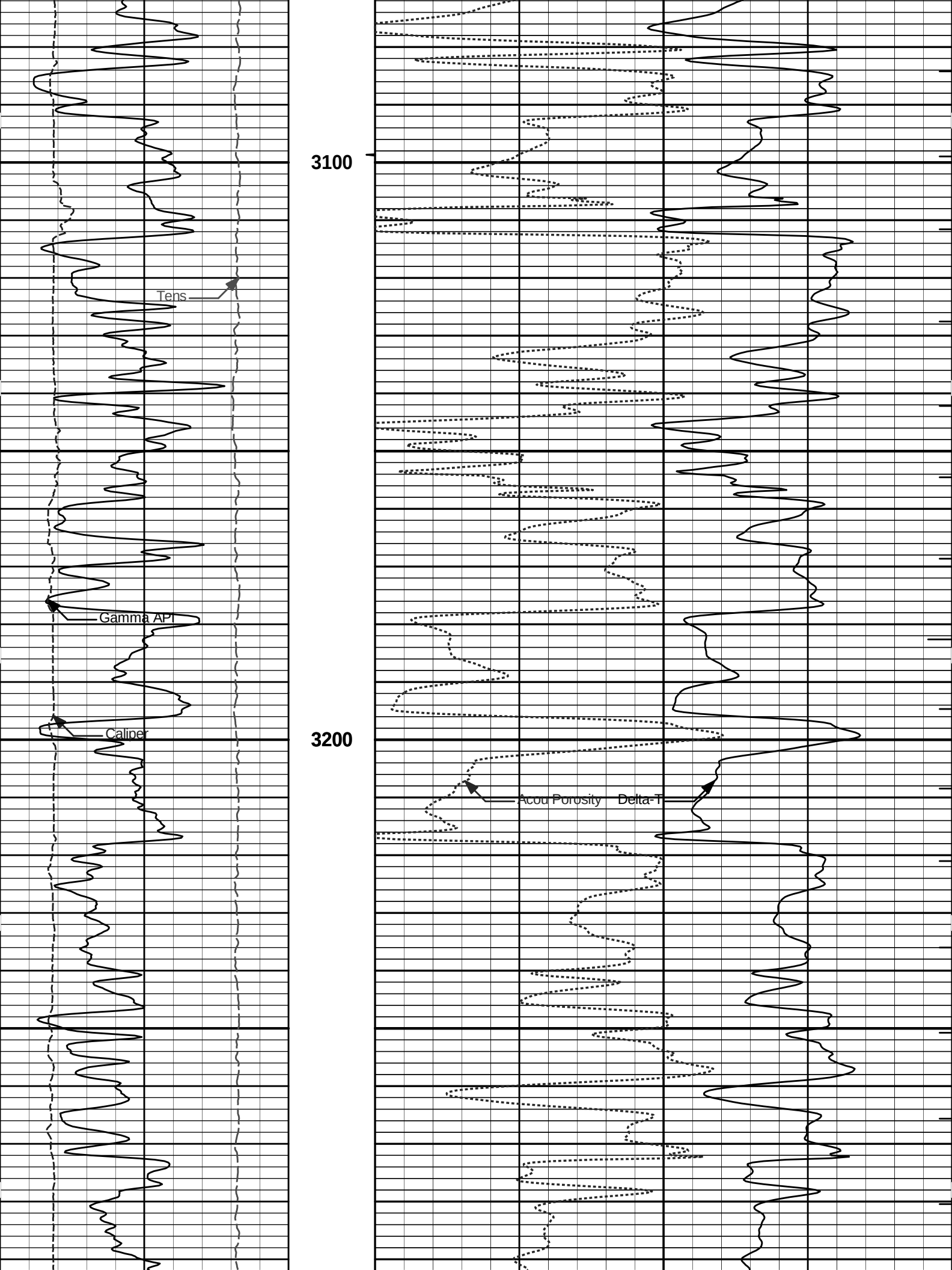
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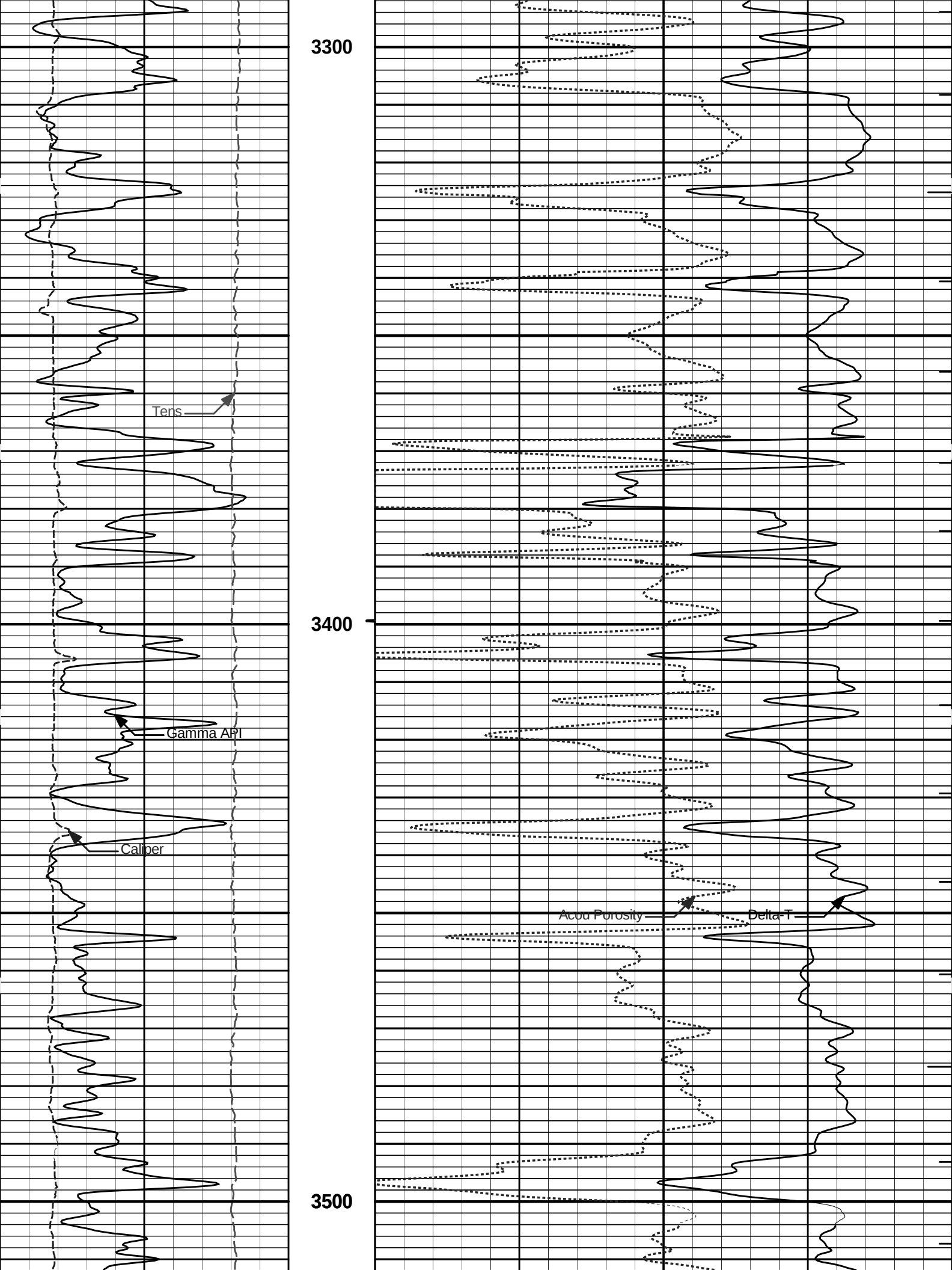
Tens
Gamma API
Caliper
3200
Acou Porosity
Delta-T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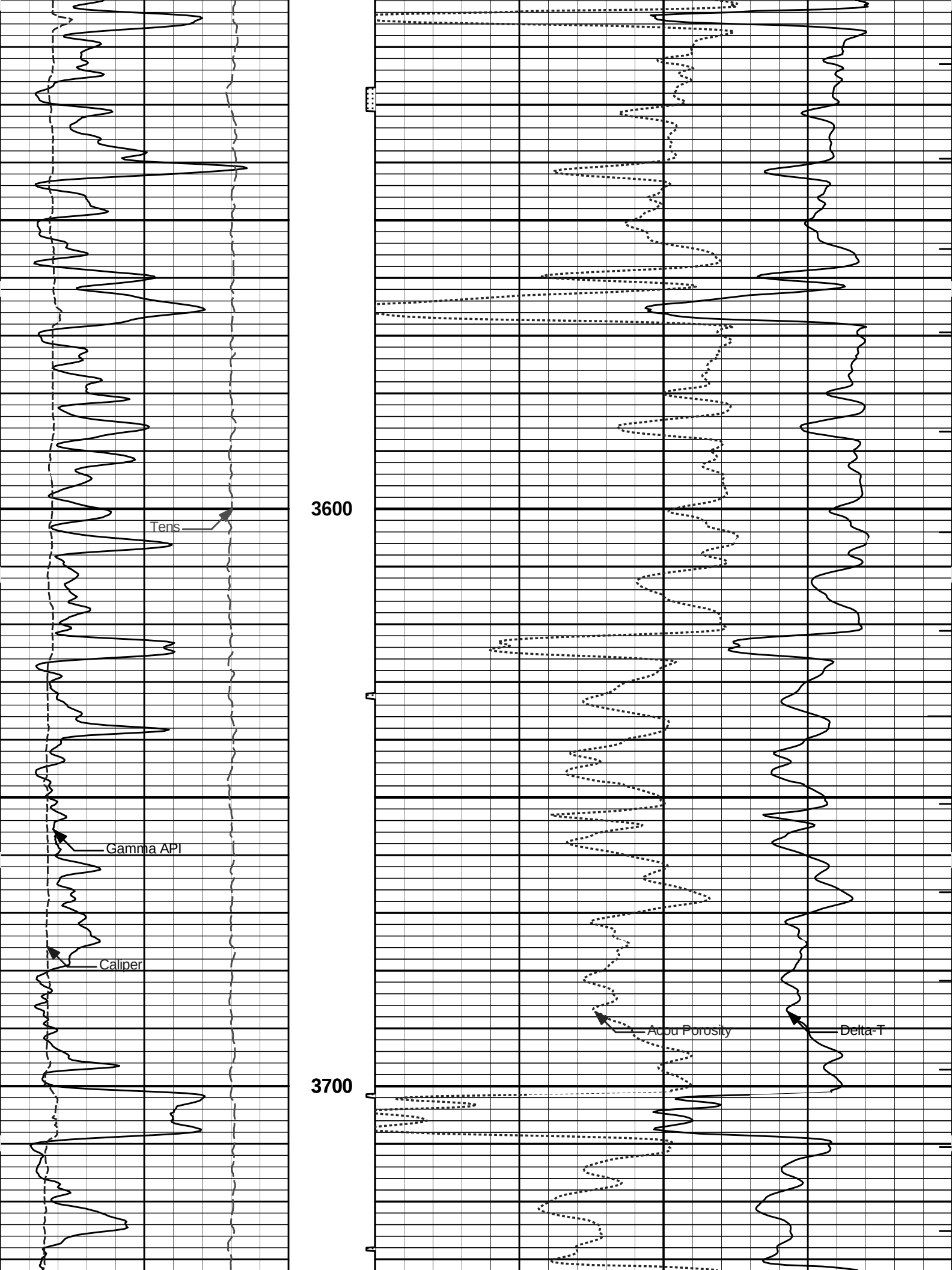
3400
3500
Tens
Gamma API
Caliper
Accu Porosity
Delta-T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Gamma API
Caliper
Accu Porosity
Delta-T
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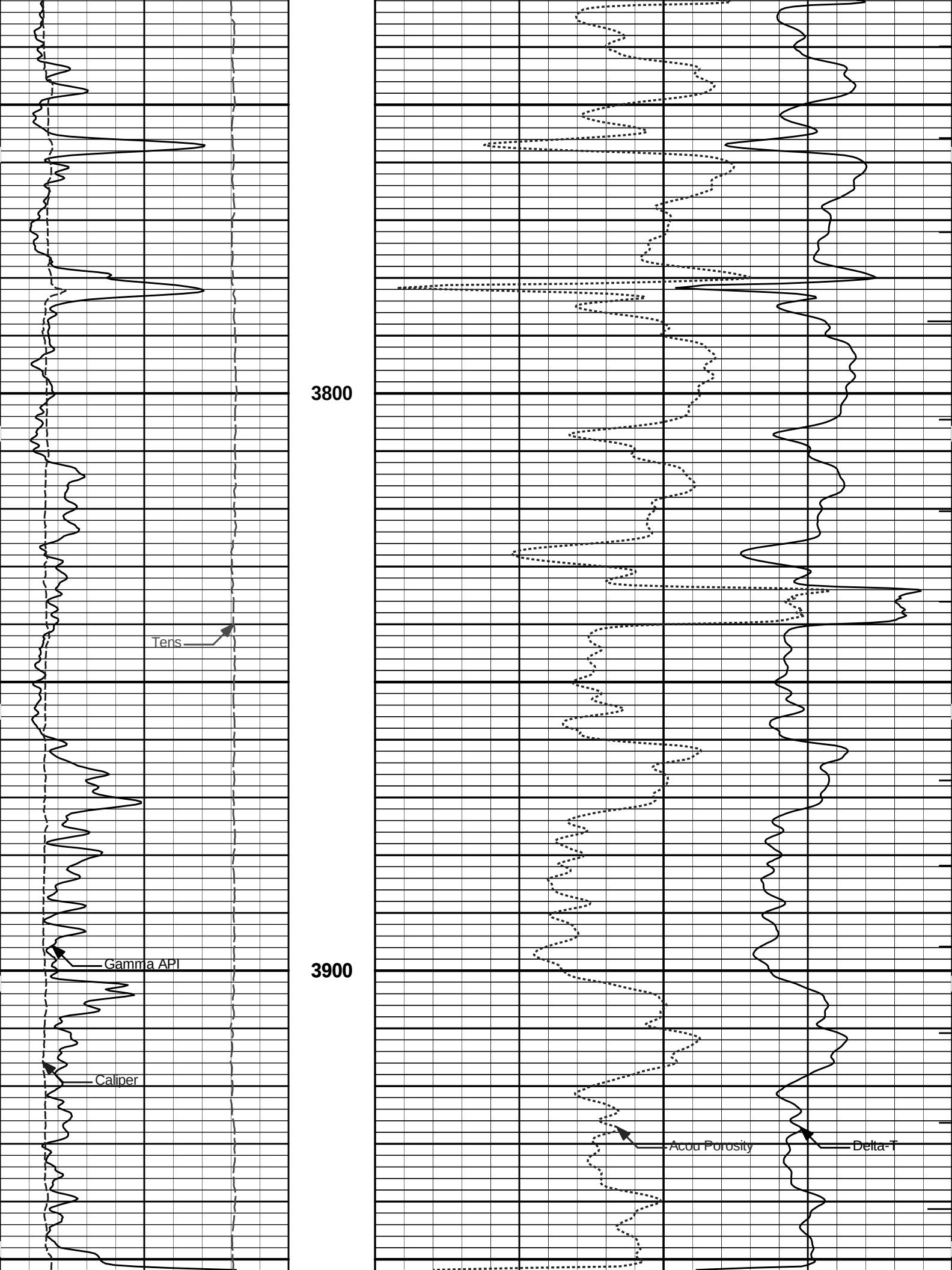
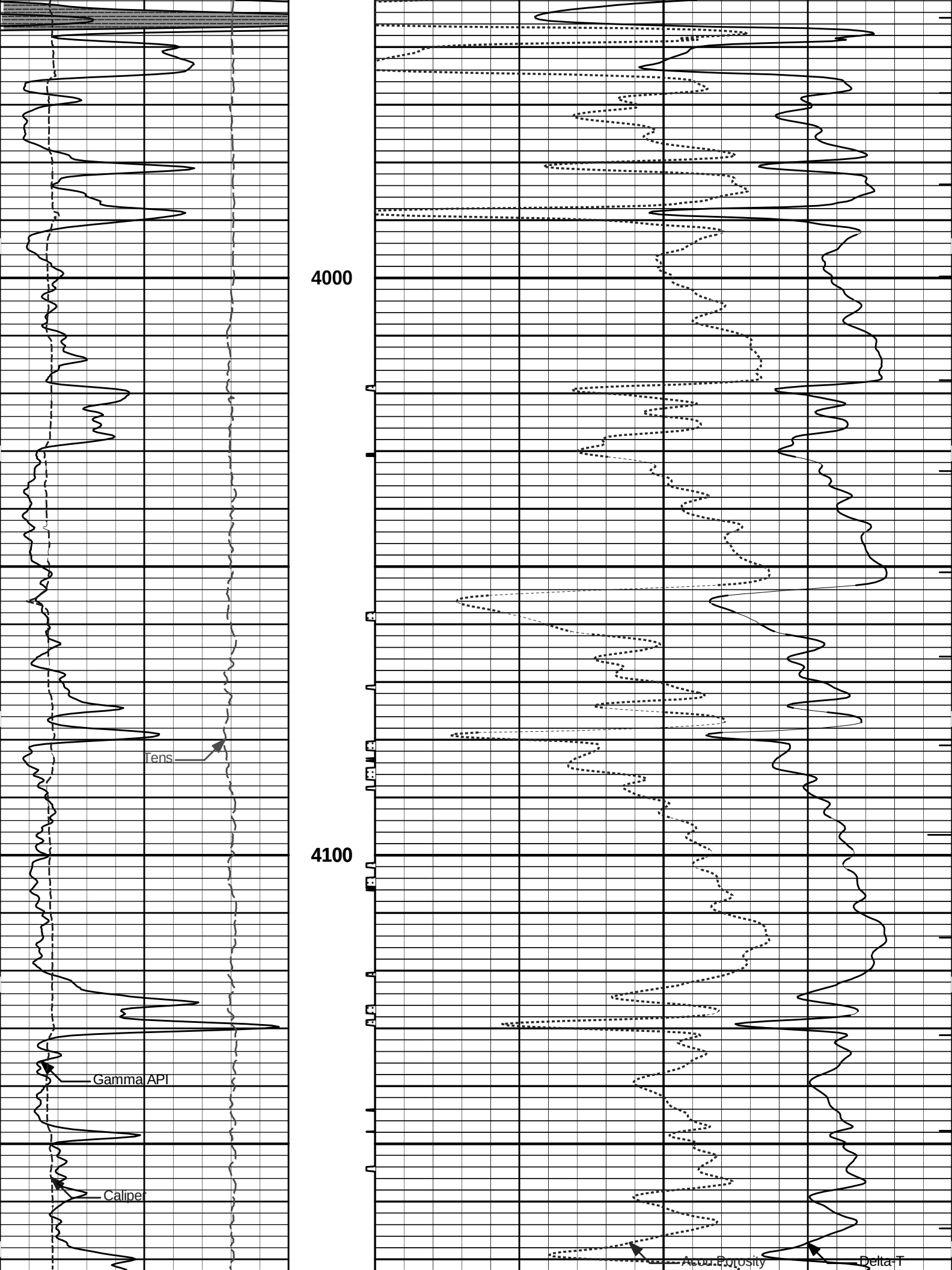

3800
Tens
3900
Gamma API
Caliper
Acou Porosity
Delta-T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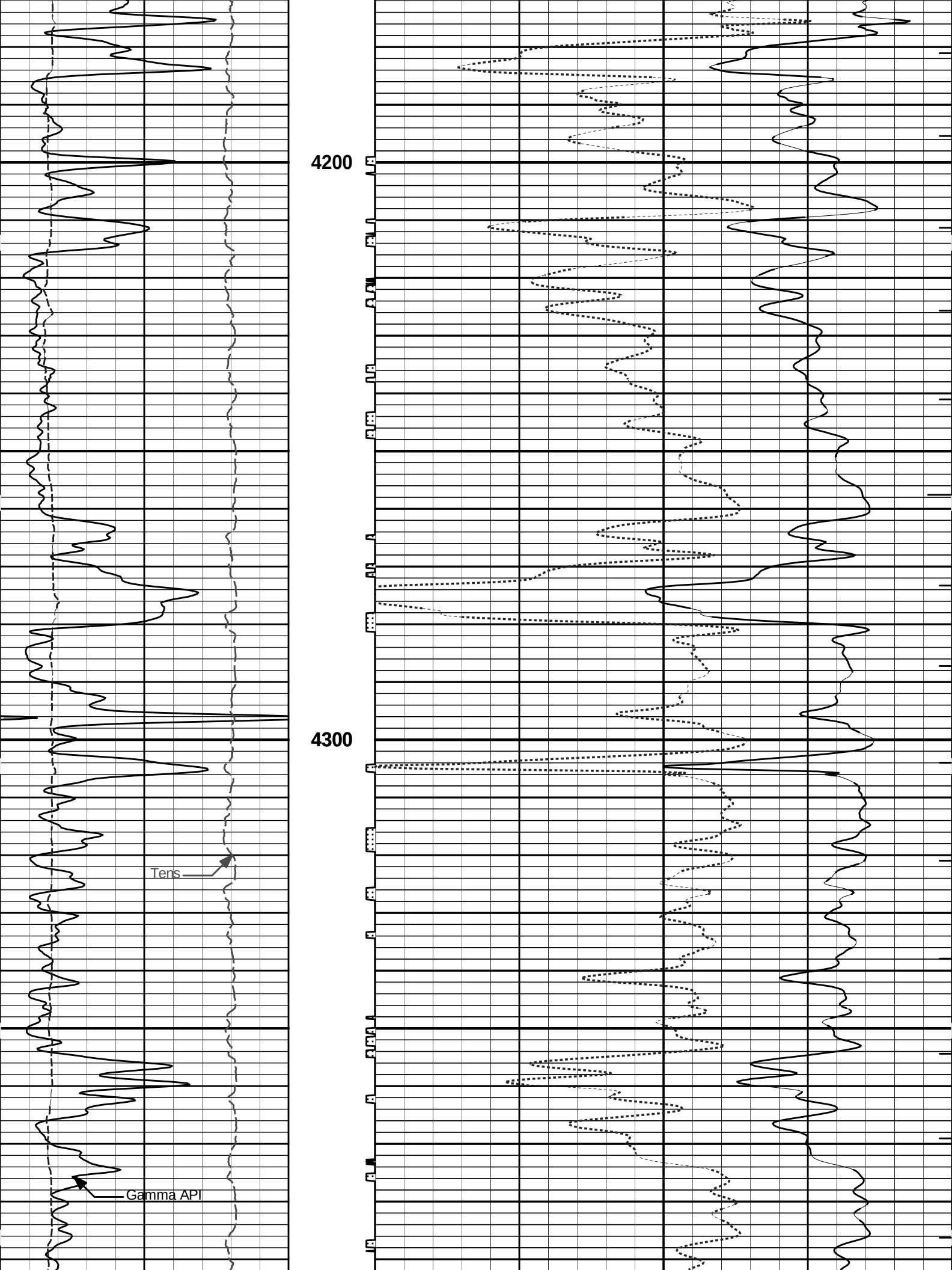
4100
Tens
Gamma API
Caliper
Acou.Porosity
Delta-T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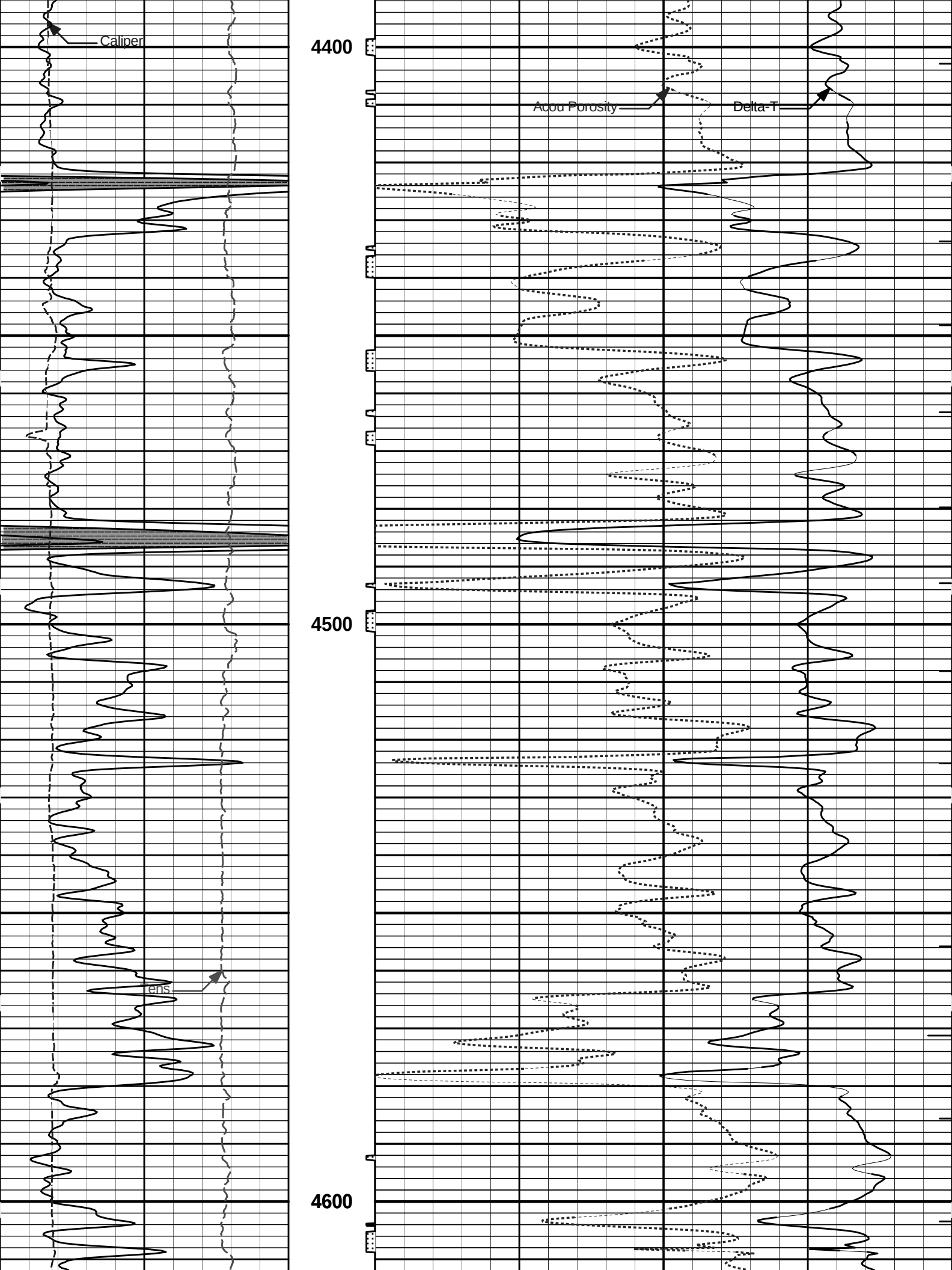
4300
Tens
Gamma API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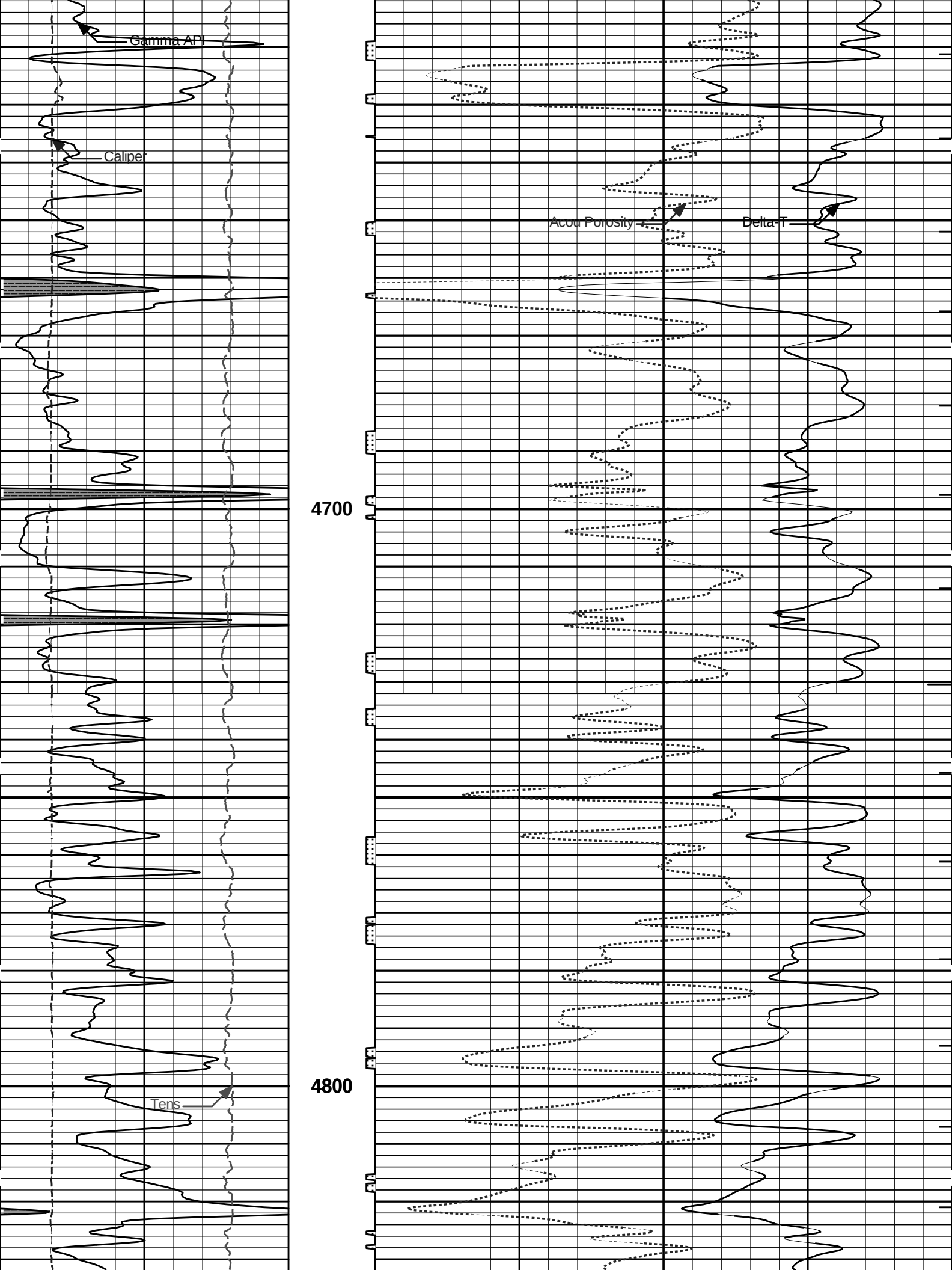
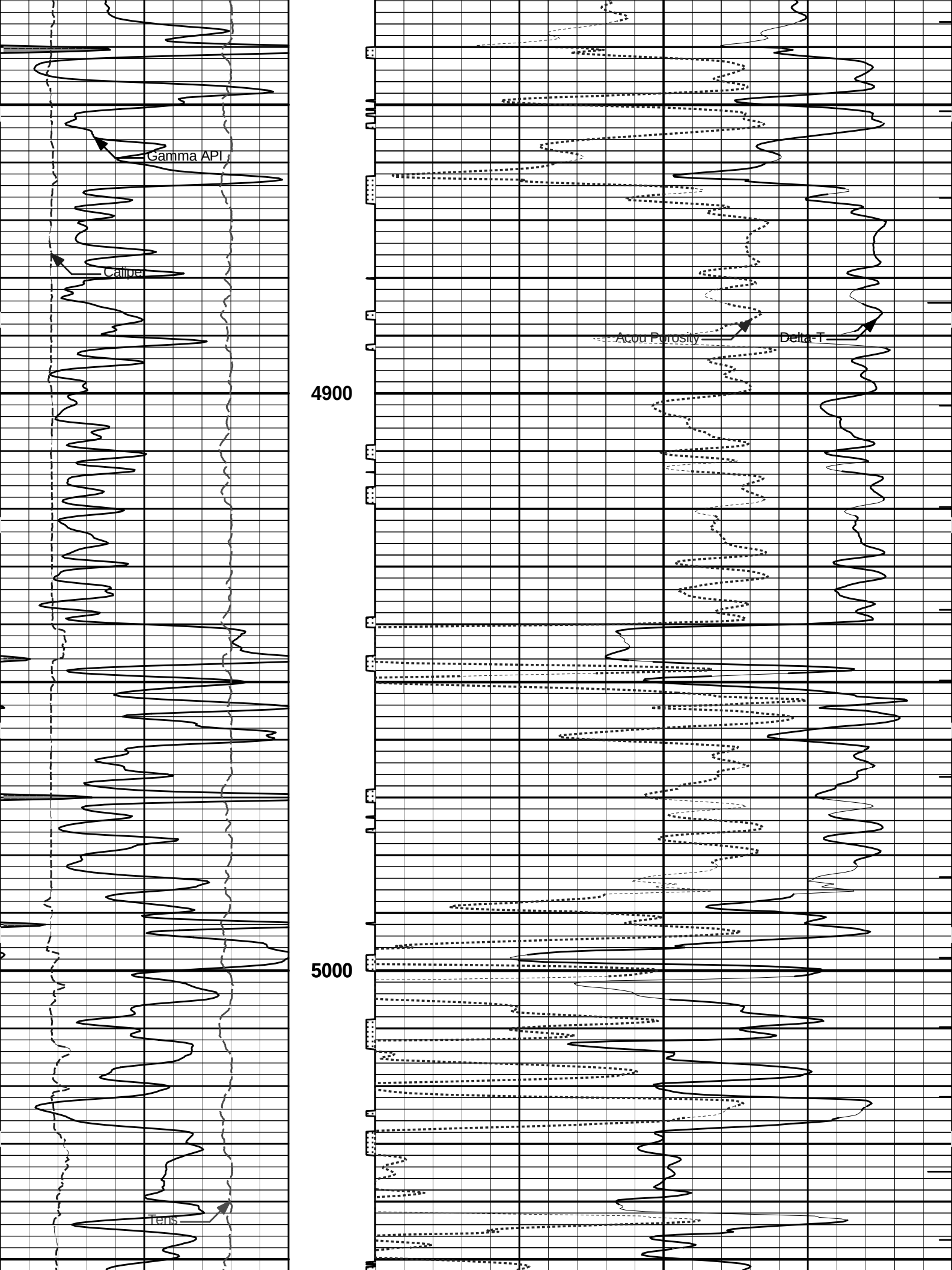
Accu Porosity
Delta-T
4500
Tens
4600


Gamma API
Caliper
Acou Porosity
Delta-T
4700
4800
Tens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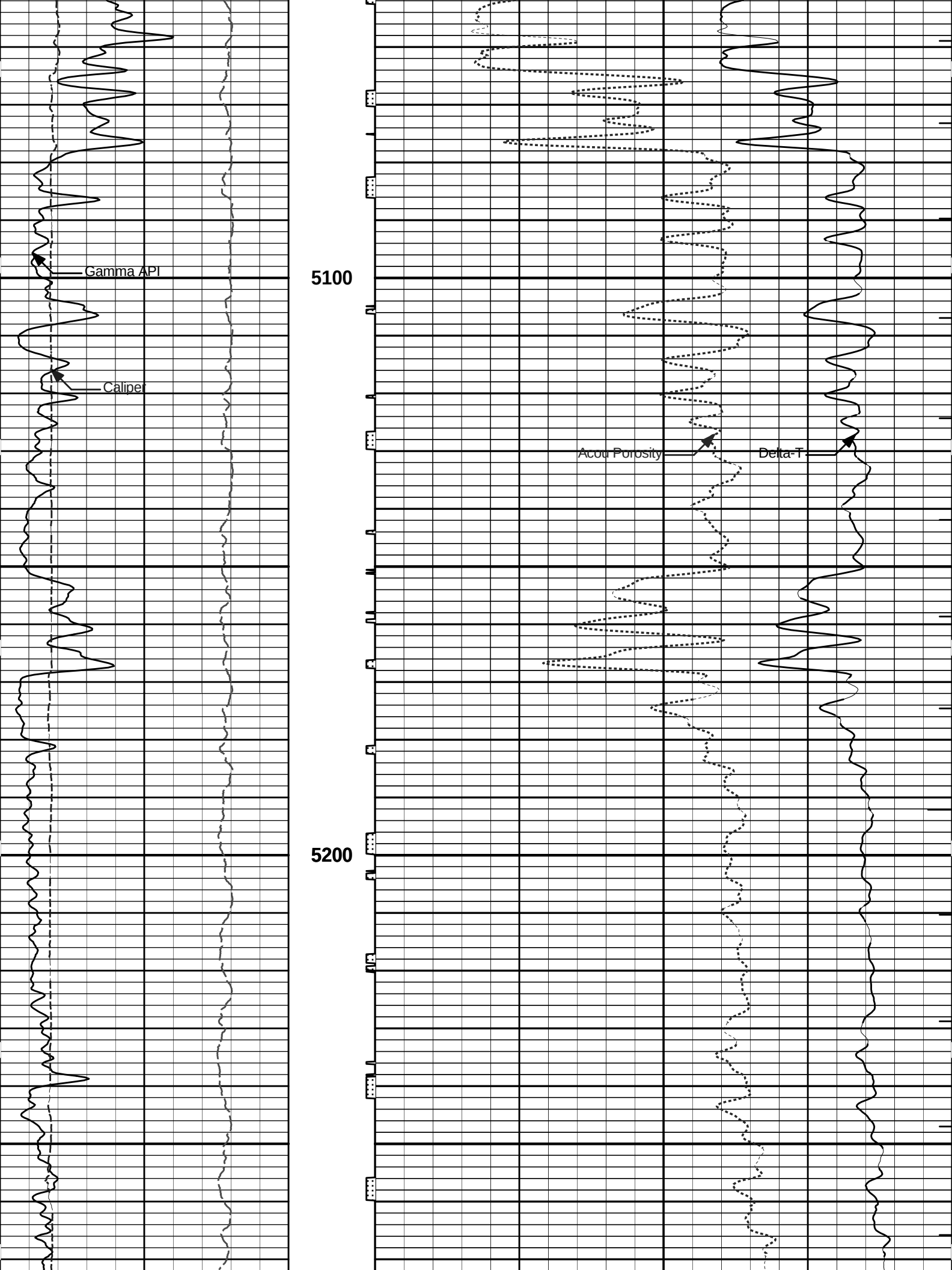
Caliper
Tens
Accu Porosity
Delta-T
4900
5000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Caliper
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Acou Porosity
Delta-T
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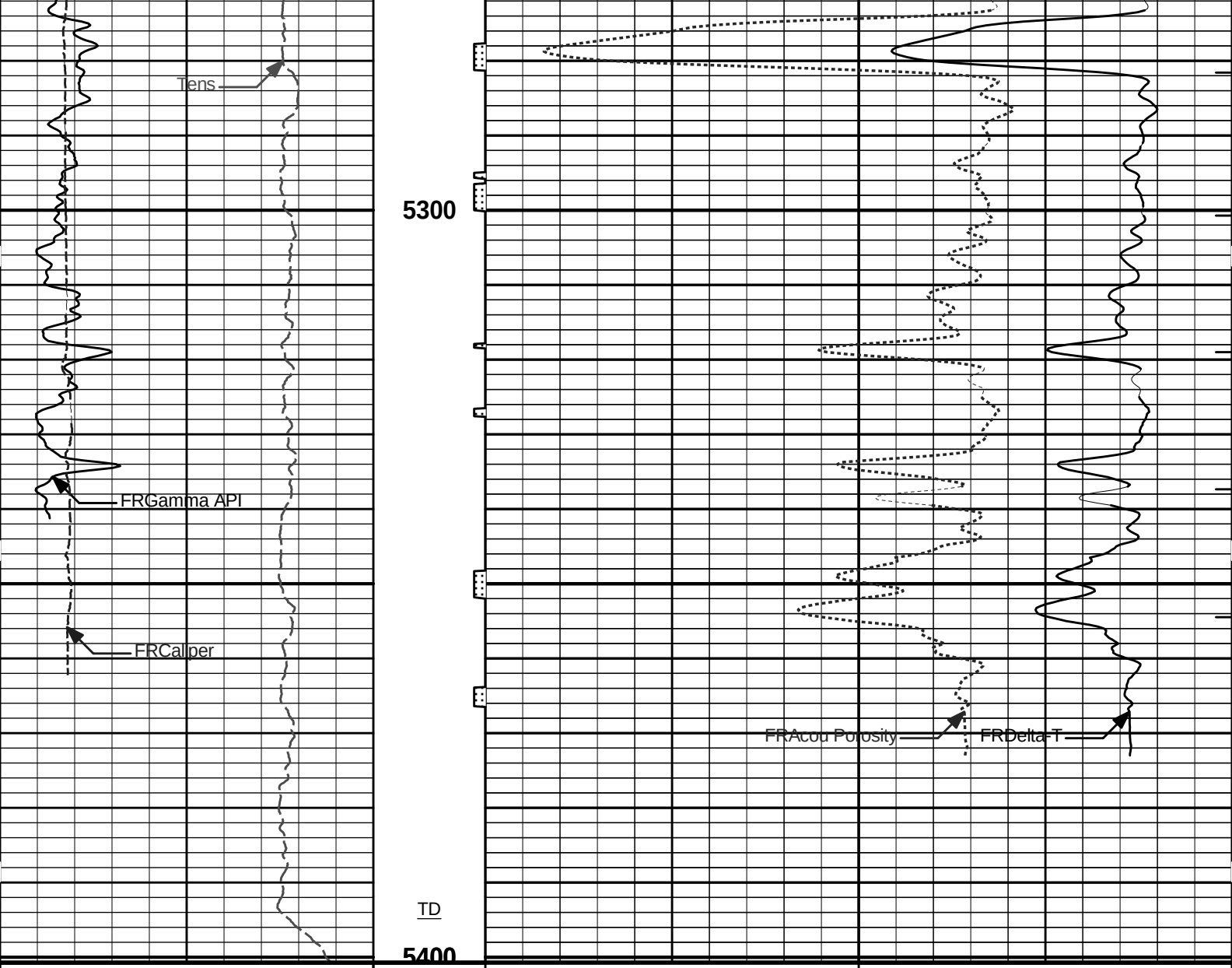


HALLIBURTON

Plot Time: 26-Apr-11 21:55:00
Plot Range: 1920 ft to 5400.58 ft
Data: BRINKMAN_D_1\Well Based\DAQ-0001-003\
Plot File: \\BSAT\BSAT_5_MAIN_LIB

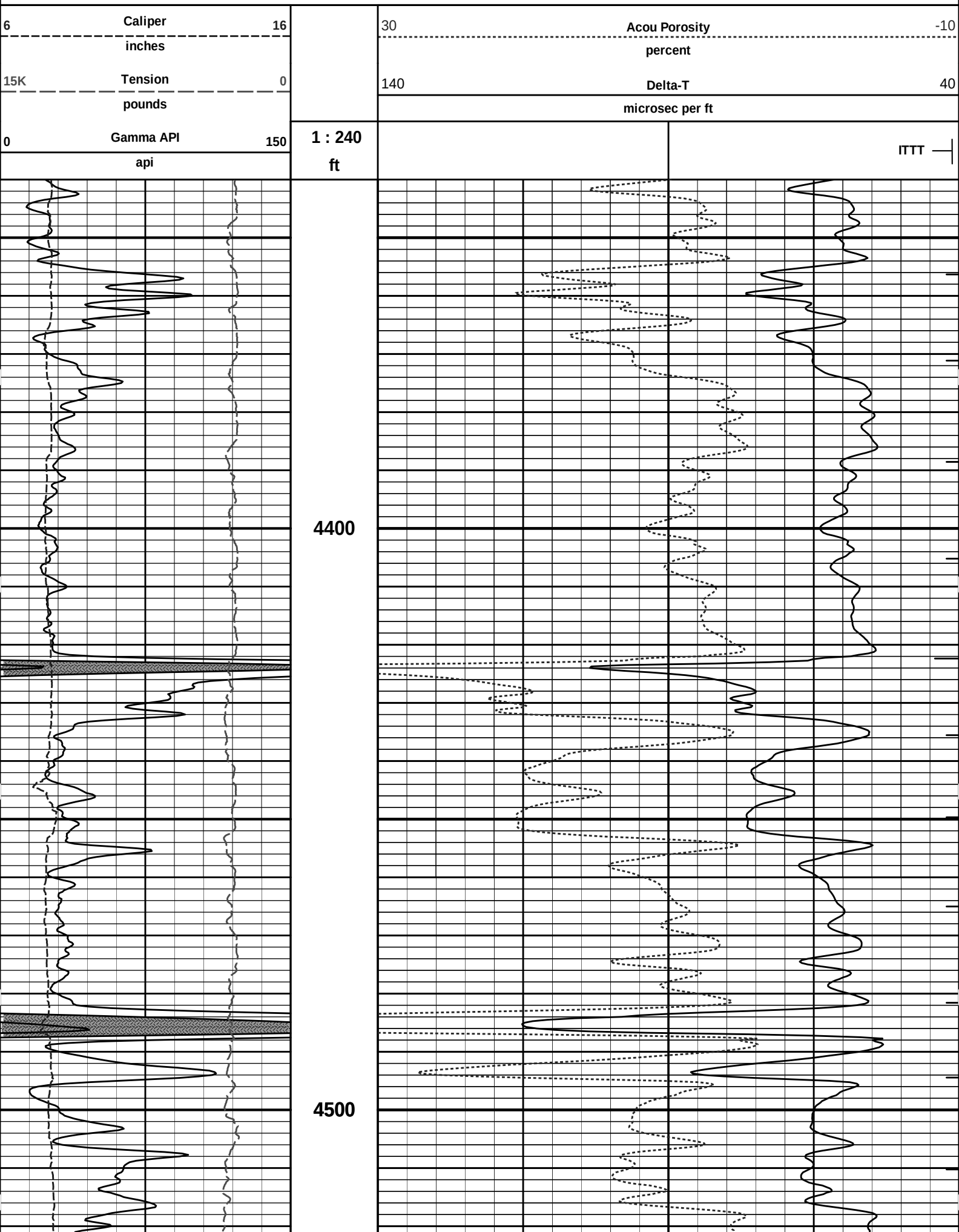
5 INCH MAIN LOG

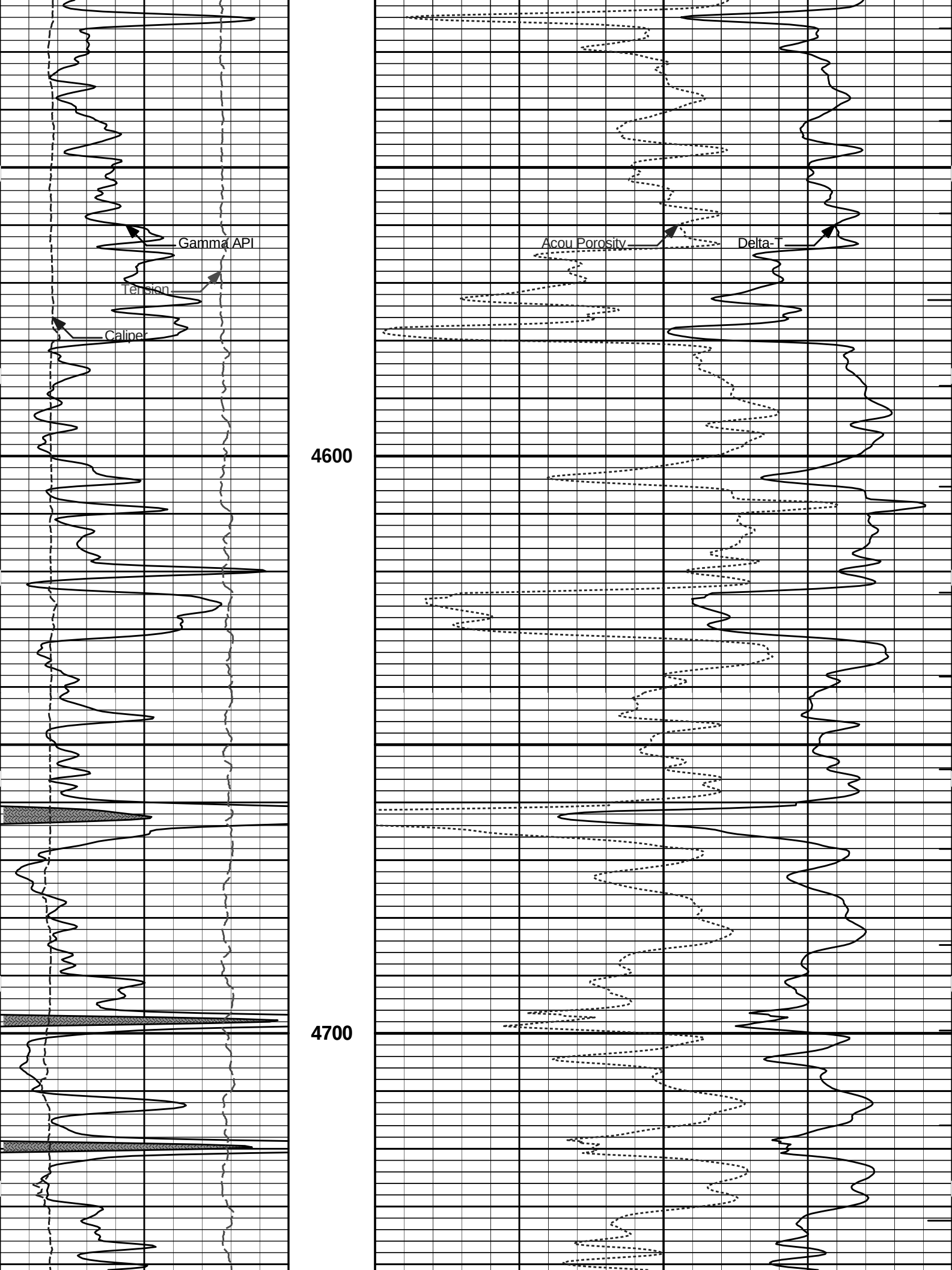
HALLIBURTON

Plot Time: 26-Apr-11 21:55:00
Plot Range: 4340 ft to 5401.25 ft
Data: BRINKMAN_D_1\Well Based\DAQ-0001-002\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

REPEAT SECTION

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Tension
Caliper
Acou Porosity
Delta-T
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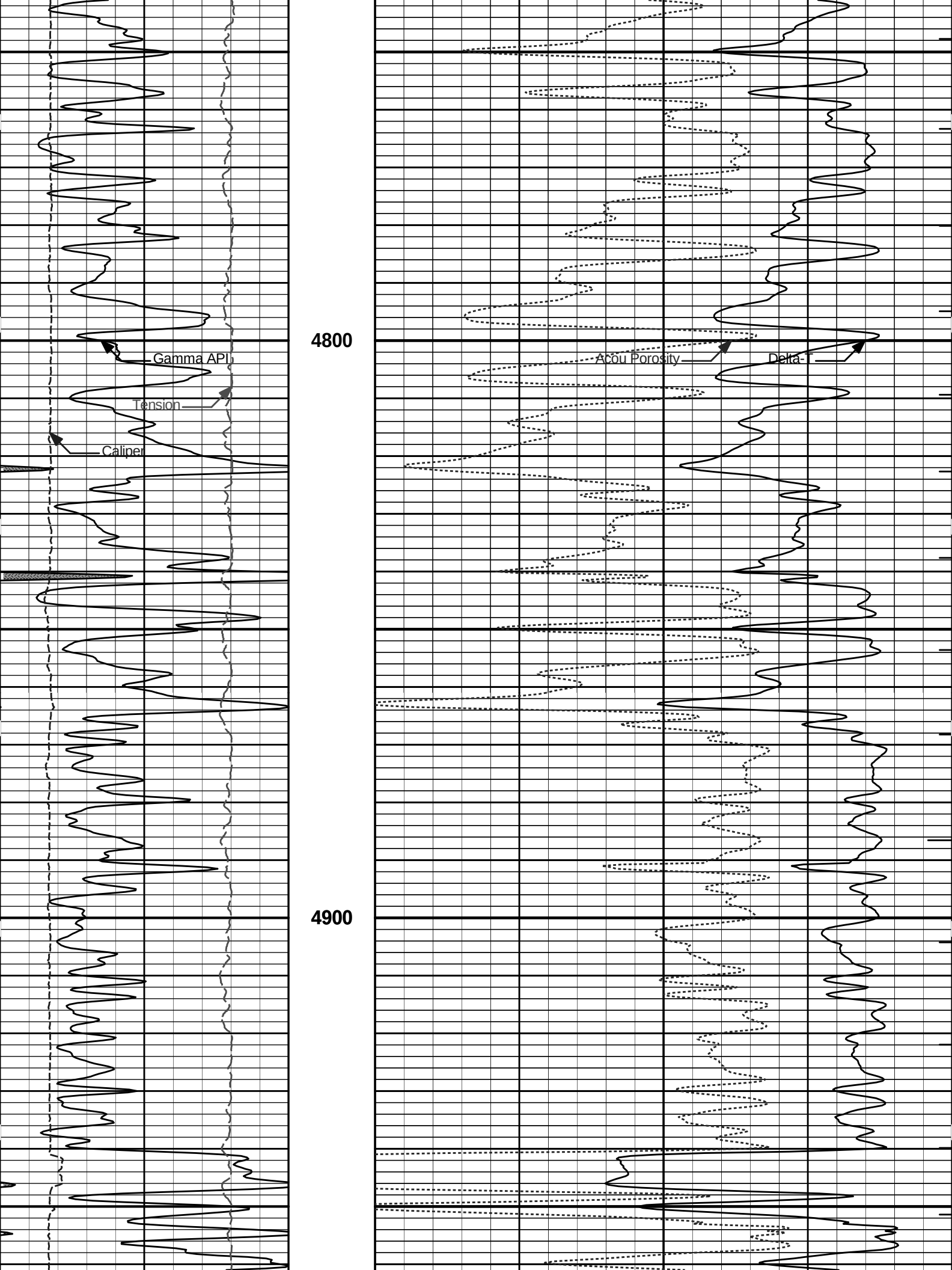
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Tension
Caliper
Acou Porosity
Delta-T
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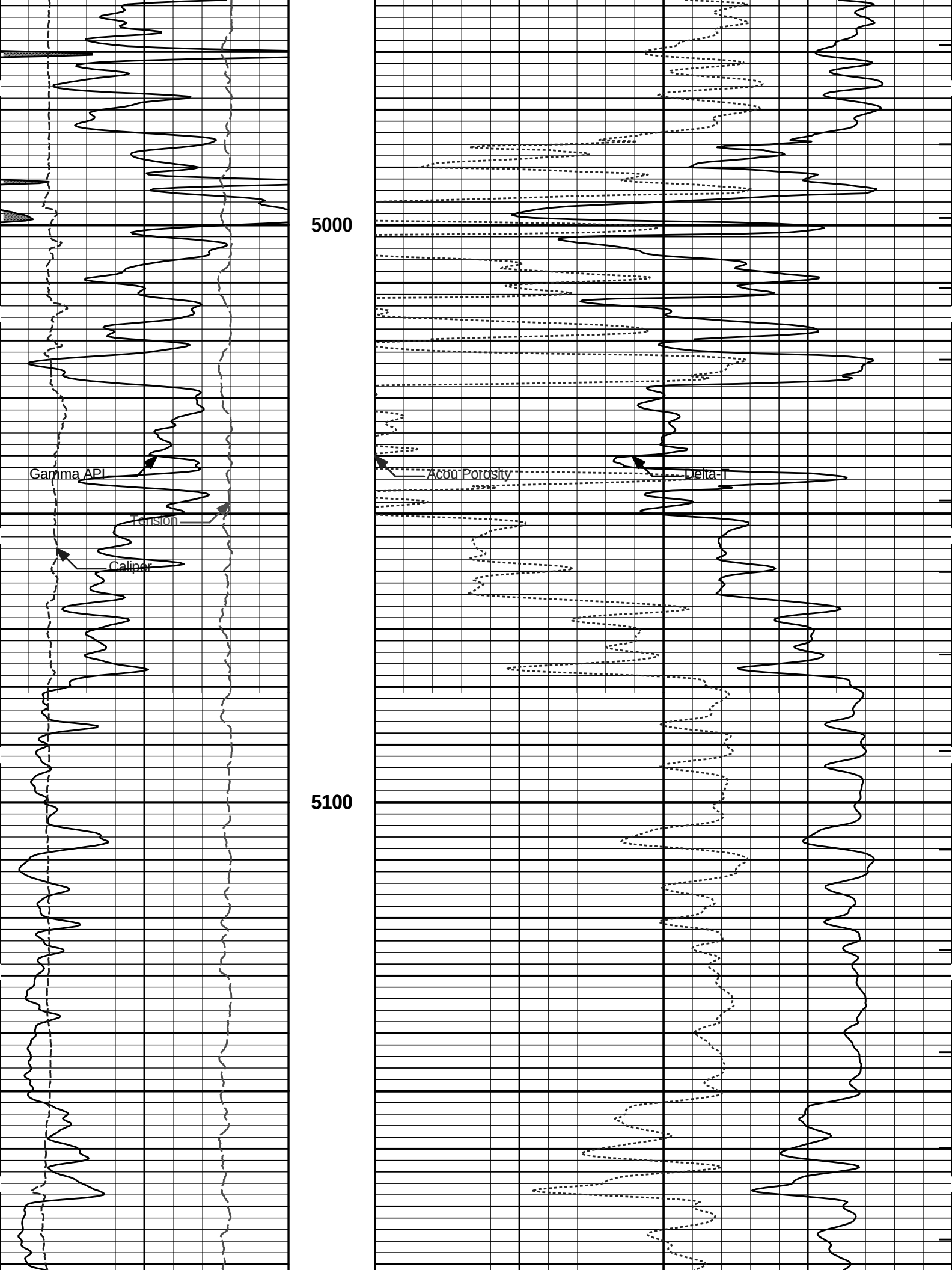
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5100
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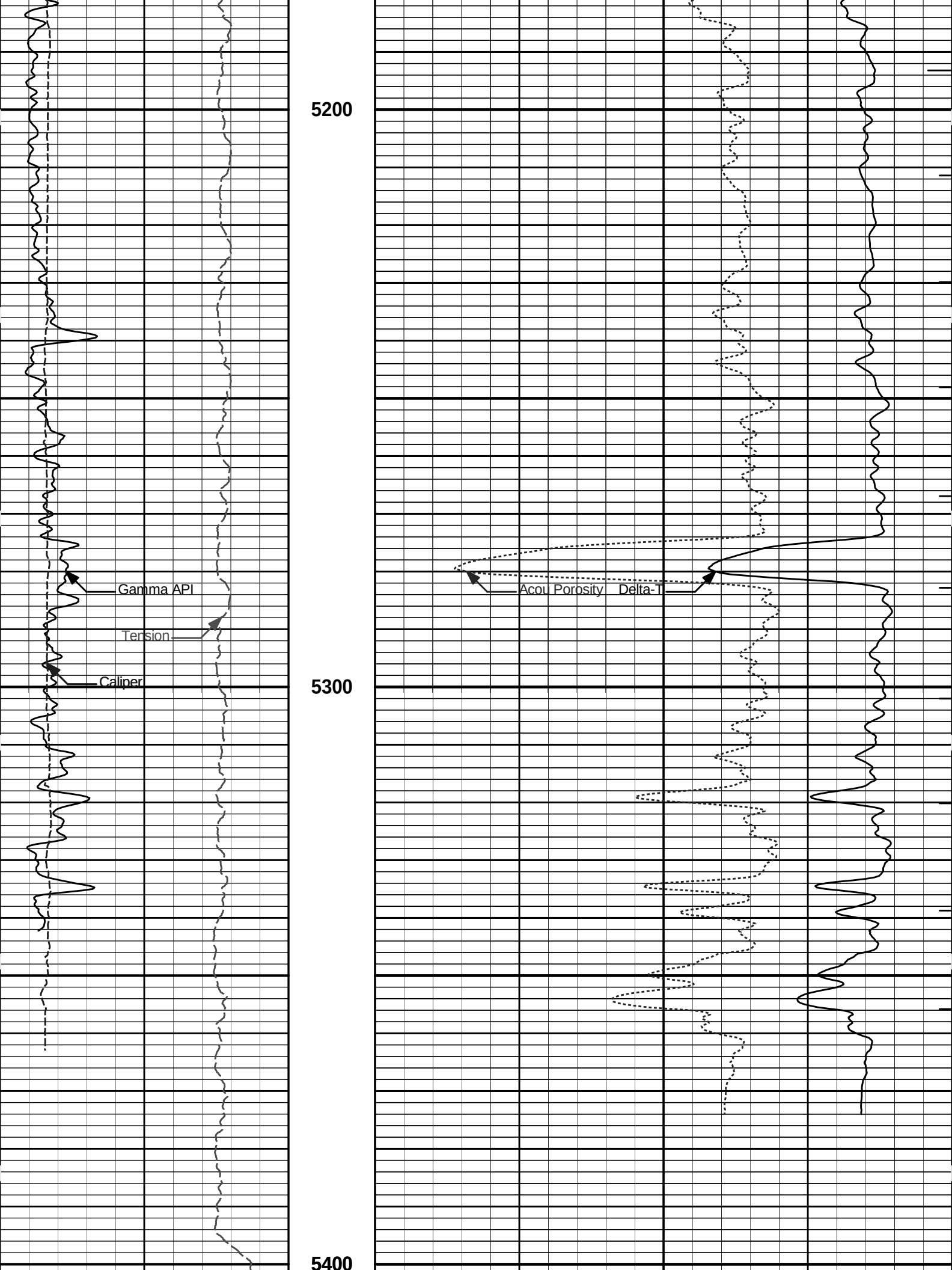
Tension
Caliper
Accu Porosity
Delta-T


5200
Gamma API
Tension
Caliper
5300
Acou Porosity
Delta-T
5400

0 Gamma API 150 api	1 : 240 ft		ITTT	
15K Tension 0 pounds		140 Delta-T 40 microsec per ft		
6 Caliper 16 inches		30 Acou Porosity -10 percent		

HALLIBURTON

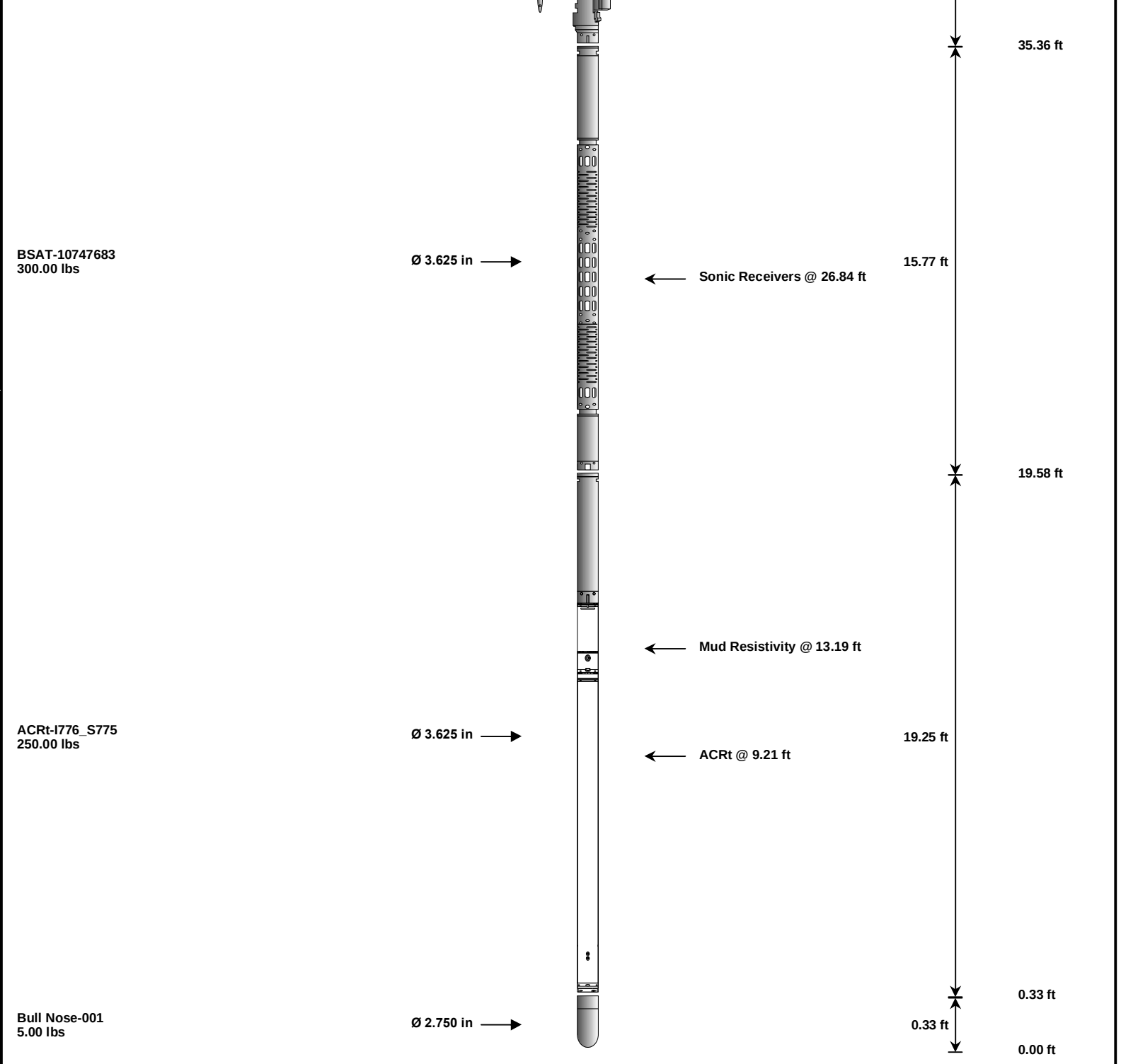
Plot Time: 26-Apr-11 21:55:05
Plot Range: 4340 ft to 5401.25 ft
Data: BRINKMAN_D_1\Well Based\DAQ-0001-002\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						70.04 ft
Cable Head-PROT01 30.00 lbs		Ø 3.625 in			1.92 ft	
						68.12 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in		SP @ 66.34 ft	3.74 ft	
						64.38 ft
GTET-10748374 165.00 lbs		Ø 3.625 in			8.52 ft	
				GammaRay @ 58.32 ft		
						55.86 ft
	DSN Decentralizer-11005605 6.60 lbs	Ø 3.625 in*				
DSNT-10755066 174.00 lbs		Ø 3.625 in			9.69 ft	
				DSN Far @ 48.92 ft DSN Near @ 48.17 ft		
						46.17 ft
SDLT-I066_M926_P90 360.00 lbs		Ø 4.500 in			10.81 ft	
		Ø 4.750 in		SDL Microlog @ 38.36 ft SDL Caliper @ 38.17 ft SDL @ 38.16 ft		



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)		Accumulated Length (ft)	Max.Log. Speed (fpm)
CH	Standard OH Cable Head	PROT01	30.00	1.92		68.12	300.00
SP	SP Sub	TRK954	60.00	3.74		64.38	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52		55.86	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69		46.17	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13	*	49.50	300.00
SDLT	Spectral Density Tool	I066_M926_P90	360.00	10.81		35.36	60.00
BSAT	Borehole Sonic Array Tool	10747683	300.00	15.77		19.58	60.00
ACRt	Array Compensated True Resistivity	I776_S775	250.00	19.25		0.33	300.00
BLNS	Bull Nose	001	5.00	0.33		0.00	300.00
Total			**1,350.60**	**70.04**			

* Not included in Total Length and Length Accumulation.

Data: BRINKMAN_D_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BN\IDLE **Date: 26-Apr-11 18:27:44**

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.865	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.000	ppg
	SHARED	WAGT	Weighting Agent	Natural	
	SHARED	BSAL	Borehole salinity	0.00	ppm
	SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
	SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
	SHARED	RMUD	Mud Resistivity	1.388	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	5395.00	ft
	SHARED	BHT	Bottom Hole Temperature	110.0	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	
	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	Eccentered	
	DSNT	DNOK	Process DSN?	Yes	
	DSNT	DEOK	Process DSN EVR?	No	
	DSNT	NLIT	Neutron Lithology	Limestone	
	DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	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	DNOK	Process Density?	Yes	
	SDLT	DNOK	Process Density EVR?	No	
	SDLT	CB	Logging Calibration Blocks?	No	
	SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT	DTWN	Disable temperature warning	No	
	SDLT	DMA	Formation Density Matrix	2.710	g/cc
	SDLT	DFL	Formation Density Fluid	1.000	g/cc
	SDLT	CLOK	Process Caliper Outputs?	Yes	
	SDLT	MLOK	Process MicroLog Outputs?	Yes	
	BSAT	MBOK	Compute BCAS Results?	Yes	
	BSAT	FLLO	Frequency Filter Low Pass Value?	7000	Hz
	BSAT	FLHI	Frequency Filter High Pass Value?	27000	Hz
	BSAT	DTFL	Delta -T Fluid	189.00	uspf
	BSAT	DTMT	Delta -T Matrix Type	User define	
	BSAT	DTMA	Delta -T Matrix	47.60	uspf
	BSAT	DTSH	Delta -T Shale	100.00	uspf
	BSAT	SPEQ	Acoustic Porosity Equation	Wylie	

	ACRt	RTOK	Process ACRt?	Yes	
	ACRt	MNSO	Minimum Tool Standoff	1.50	in
	ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
	ACRt	TPOS	Tool Position	Eccentered	
	ACRt	RMOP	Rmud Source	Mud Cell	
	ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt	THQY	Threshold Quality	0.50	
BOTTOM					

Data: BRINKMAN_D_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BN\IDLE **Date: 26-Apr-11 21:49:06**

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	SP Sub			
PLTC	Plot Control Mask	66.34	NO	
SP	Spontaneous Potential	66.34	BLK	1.250
SPR	Raw Spontaneous Potential	66.34	NO	
SPO	Spontaneous Potential Offset	66.34	NO	
	GTET			
TPUL	Tension Pull	58.32	NO	
GR	Natural Gamma Ray API	58.32	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.32	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.32	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			
TPUL	Tension Pull	48.07	NO	
RNDS	Near Detector Telemetry Counts	48.17	BLK	1.417
RFDS	Far Detector Telemetry Counts	48.92	TRI	0.583
DNTT	DSN Tool Temperature	48.17	NO	
DSNS	DSN Tool Status	48.07	NO	
ERND	Near Detector Telemetry Counts EVR	48.17	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	48.92	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.17	NO	
	SDLT			
TPUL	Tension Pull	38.16	NO	
NAB	Near Above	37.99	BLK	0.920
NHI	Near Cesium High	37.99	BLK	0.920
NLO	Near Cesium Low	37.99	BLK	0.920
NVA	Near Valley	37.99	BLK	0.920
NBA	Near Barite	37.99	BLK	0.920
NDE	Near Density	37.99	BLK	0.920
NPK	Near Peak	37.99	BLK	0.920
NLI	Near Lithology	37.99	BLK	0.920
NBAU	Near Barite Unfiltered	37.99	BLK	0.250
NLIU	Near Lithology Unfiltered	37.99	BLK	0.250

FAB	Far Above	38.34	BLK	0.250
FHI	Far Cesium High	38.34	BLK	0.250
FLO	Far Cesium Low	38.34	BLK	0.250
FVA	Far Valley	38.34	BLK	0.250
FBA	Far Barite	38.34	BLK	0.250
FDE	Far Density	38.34	BLK	0.250
FPK	Far Peak	38.34	BLK	0.250
FLI	Far Lithology	38.34	BLK	0.250
PTMP	Pad Temperature	38.17	BLK	0.920
NHV	Near Detector High Voltage	35.36	NO	
FHV	Far Detector High Voltage	35.36	NO	
ITMP	Instrument Temperature	35.36	NO	
DDHV	Detector High Voltage	35.36	NO	
TPUL	Tension Pull	38.17	NO	
PCAL	Pad Caliper	38.17	TRI	0.250
ACAL	Arm Caliper	38.17	TRI	0.250
TPUL	Tension Pull	38.36	NO	
MINV	Microlog Lateral	38.36	BLK	0.750
MNOR	Microlog Normal	38.36	BLK	0.750
	BSAT			
TPUL	Tension Pull	26.84	NO	
STAT	Status	26.84	NO	
DLYT	Delay Time	26.84	NO	
SI	Sample Interval	26.84	NO	
TXRX	Raw Telemetry 10 Receivers	26.84	NO	
FRMC	Tool Frame Count	26.84	NO	
	ACRt			
TPUL	Tension Pull	2.73	NO	
F1R1	ACRT 12KHz - 80in R value	8.98	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	8.98	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.48	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.48	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	4.98	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	4.98	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	3.98	BLK	0.000
F1X4	ACRT 12KHz - 17in X value	3.98	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.48	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.48	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.23	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.23	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	8.98	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	8.98	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.48	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.48	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	4.98	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	4.98	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	3.98	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	3.98	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.48	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.48	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.23	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.23	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	8.98	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	8.98	BLK	0.000

F3R2	ACRT 72KHz - 50in R value	6.48	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.48	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	4.98	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	4.98	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	3.98	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	3.98	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.48	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.48	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.23	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.23	BLK	0.000
RMUD	Mud Resistivity	12.52	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.73	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.73	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.73	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.73	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.73	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.73	BLK	0.000
TFPU	Upper Feedpipe Temperature Calculated	2.73	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	2.73	BLK	0.000
ITMP	Instrument Temperature	2.73	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.73	NO	
TIDV	Instrument Temperature Derivative	2.73	NO	
TUDV	Upper Temperature Derivative	2.73	NO	
TLDV	Lower Temperature Derivative	2.73	NO	
TRBD	Receiver Board Temperature	2.73	NO	

Data: BRINKMAN_D_1\0001 SP-GTET-DSN-SDL-BSAT-ACRT-BN\IDLE **Date: 26-Apr-11 18:28:26**

COMPANY	**OXY USA INC**		
WELL	**BRINKMAN D-1**		
FIELD	**PLEASNT PRAIRRE**		
COUNTY	**HASKELL**	STATE	**KANSAS**

HALLIBURTON

BOREHOLE COMPENSATED SONIC ARRAY LOG