HALLIBURTON

BOREHOLE SONIC ARRAY LOG

COMPANY BAYHORSE PETROLEUM, LLC
WELL PROWERS COUNTY GRAZING #1
FIELD WILDCAT
COUNTY PROWERS
STATE COLORADO

COMPANY **BAYHORSE PETROLEUM, LLC**
WELL **PROWERS COUNTY GRAZING #1**
FIELD **WILDCAT**
COUNTY **PROWERS** STATE **COLORADO**

API No. 05-099-06905
Location 1625' FNL & 700' FEL
Sect. 5 Twp. 21S Rge. 45W

Other Services:
SDL / DSN / ML
ACRT

Permanent Datum	GROUND LEVEL	Elev. 3697.0 ft	Elev.: K.B. 3708.0 ft
Log measured from	KELLY BUSHING	, 11.0 ft above perm. Datum	D.F. 3707.0 ft
Drilling measured from	KELLY BUSHING		G.L. 3697.0 ft

Date		04-Apr-09					
Run No.		ONE					
Depth - Driller		5185.00 ft					
Depth - Logger		5281.0 ft					
Bottom - Logged Interval		5254.0 ft					
Top - Logged Interval		430.0 ft					
Casing - Driller		8.625 in @ 434.0 ft		@		@	
Casing - Logger		430.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WBM					
Density	Viscosity	9.2 ppg	58.00 s/qt				
PH	Fluid Loss	10.00 pH	8.0 cptm				
Source of Sample		MUD PIT					
Rm @ Meas. Temperature		0.68 ohmm @ 69.00 degF		@		@	
Rmf @ Meas. Temperature		0.61 ohmm @ 69.00 degF		@		@	
Rmc @ Meas. Temperature		0.82 ohmm @ 69.00 degF		@		@	
Source Rmf	Rmc	MEAS.	MEAS.				
Rm @ BHT		0.32 ohmm @ 132.0 degF		@		@	
Time Since Circulation		4.0 hr					
Time on Bottom		04-Apr-09 03:44					
Max. Rec. Temperature		132.0 degF @ 5281.0 ft		@		@	
Equipment	Location	10782954	LIBERAL				
Recorded By		T. BRIDGEMAN					
Witnessed By		R. VAUGHN					

Fold here

PGM Version: WL INSITE R2.4 (Build 1)
Service Ticket No.: 6599195 API Serial No.: 05-099-06905

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
Rm @ Meas. Temp	@				
Rmf @ Meas. Temp.	@				
Rmc @ Meas. Temp.	@				
Source Rmf					
Rm @ BHT	@				
Rmf @ BHT	@				
Rmc @ BHT	@				

EQUIPMENT DATA

GAMMA		ACOUSTIC			DENSITY			NEUTRON			
			Scale	Matrix		Scale	Matrix		Scale	Matrix	
	Run No.	ONE	L R		Run No.	L R		Run No.	L R		
Serial No.	Serial No.	10747683			Serial No.			Serial No.			
Model No.	Model No.	BSAT			Model No.			Model No.			
Diameter	No. of Cent.	2			Diameter			Diameter			
Detector Model No.	Spacing	.5'			Log Type			Log Type			
Type					Source Type			Source Type			
Length	LSA [Y/N]	YES			Serial No.			Serial No.			
Distance to Source	FWDA [Y/N]	NO			Strength			Strength			

LOGGING DATA

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	5281'	430'	REC	0	150	0.30	-0.10	47.6							

DIRECTIONAL INFORMATION

Maximum Deviation @	KOP @

Remarks: AHV CALCULATED FOR 4.5 - INCH CASING

CHLORIDES: 3400 PPM

GPS COORDINATES: LAT: 38.15 N & LONG: 102.29 W

RUBBER STANDOFFS USED INSTEAD OF CENTRALIZERS

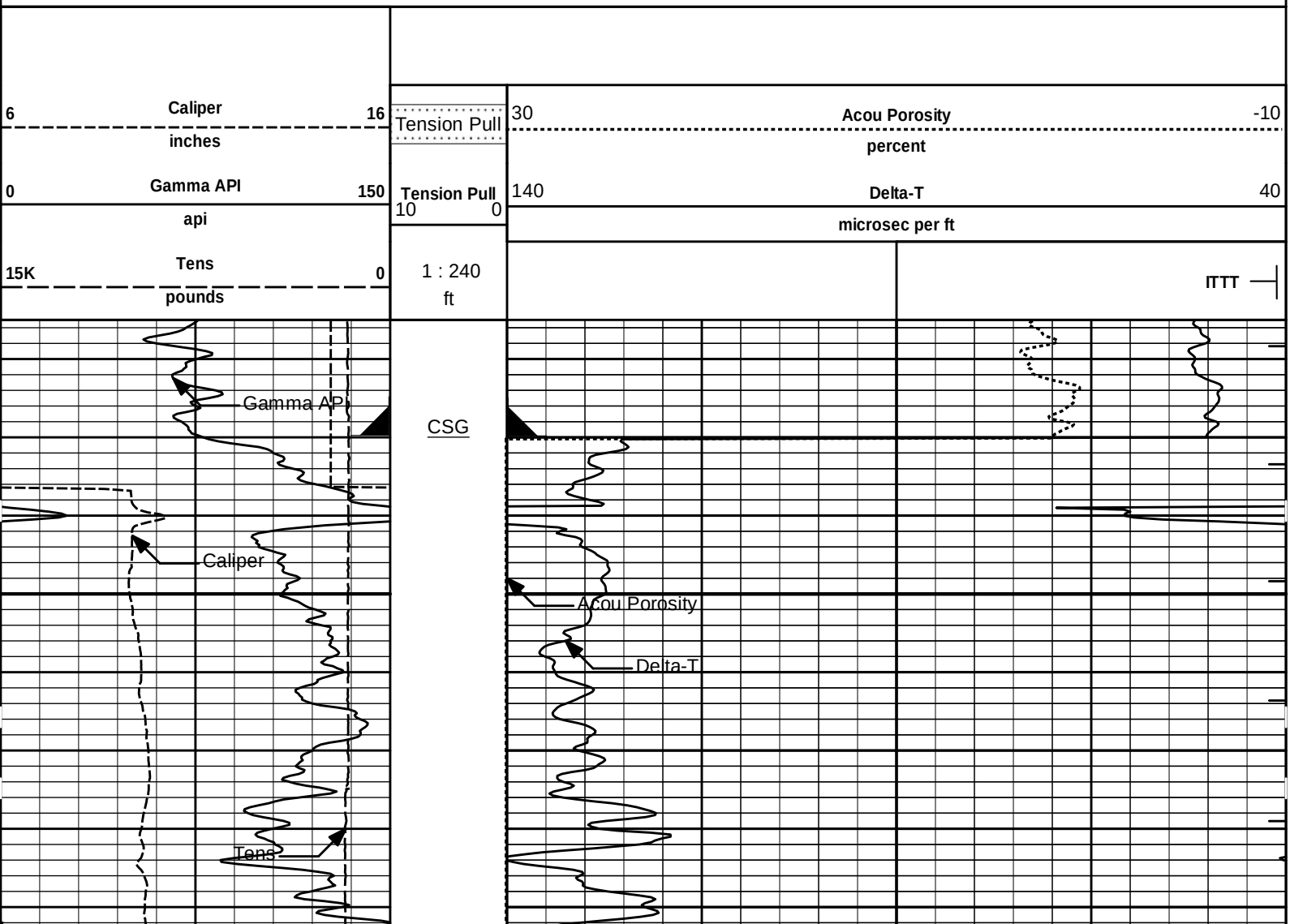
TODAY'S CREW: KIRBY KING & ALBERTO VAQUERA

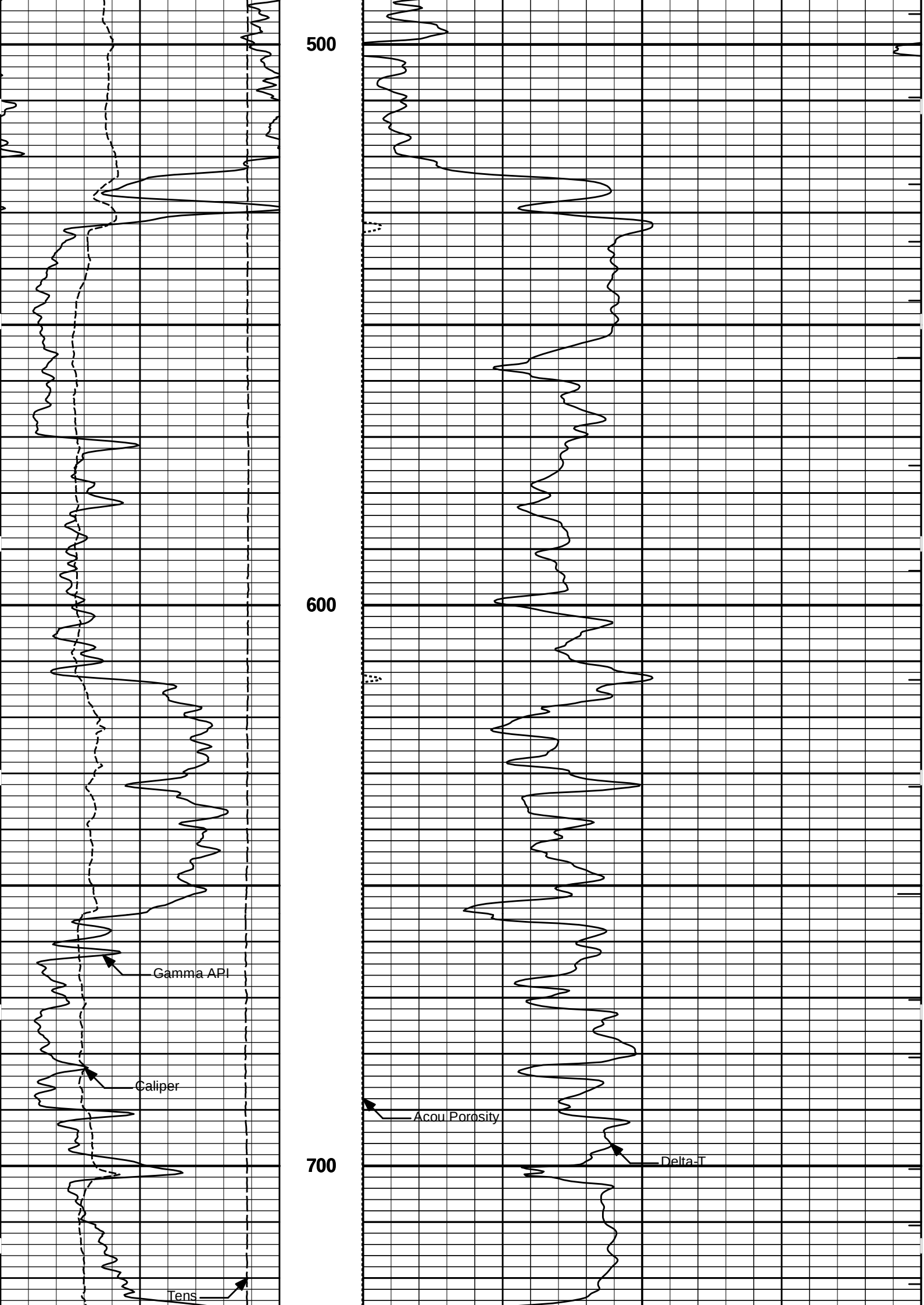
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES - LIBERAL, KS (620-624-8123)

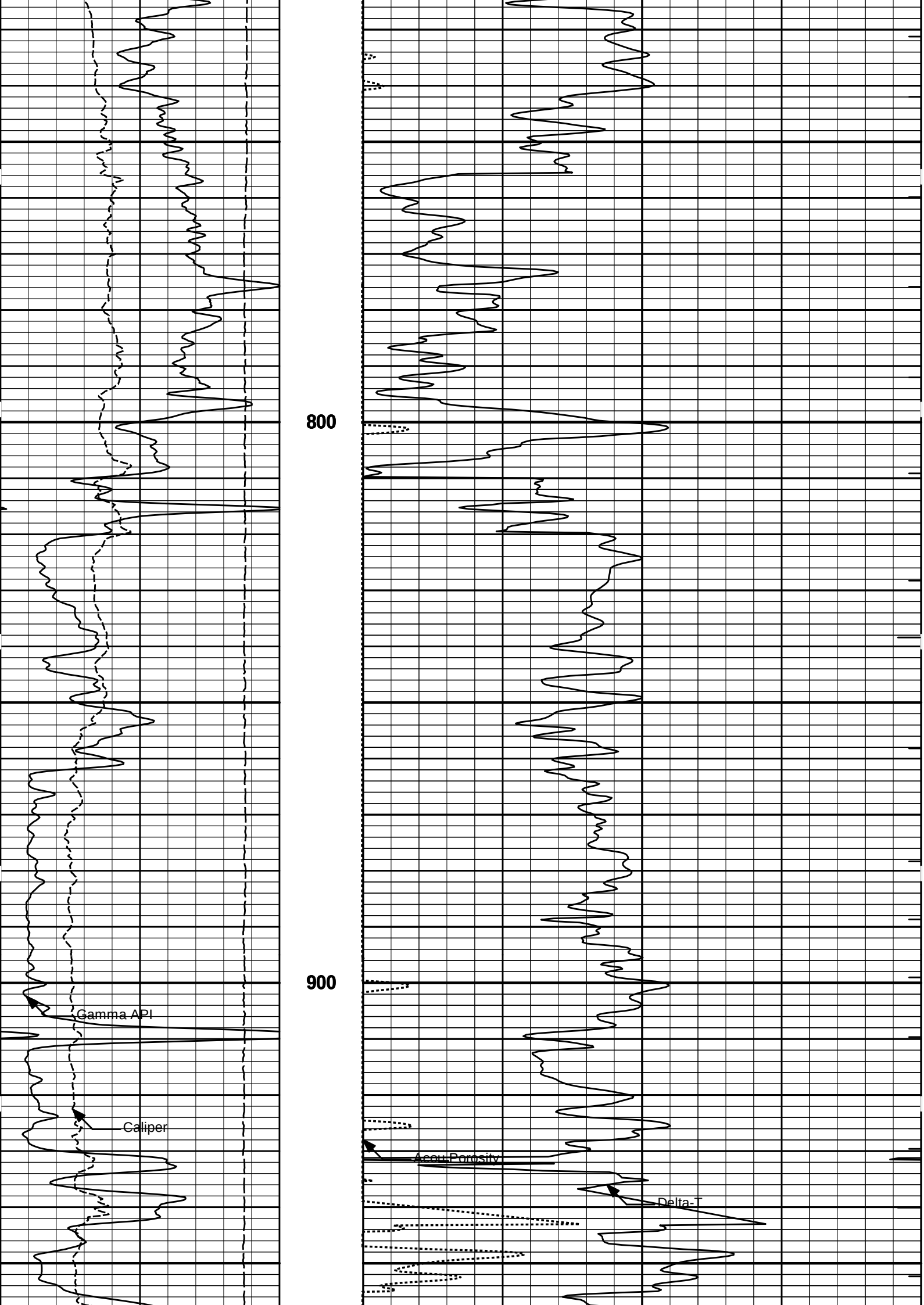
HALLIBURTON

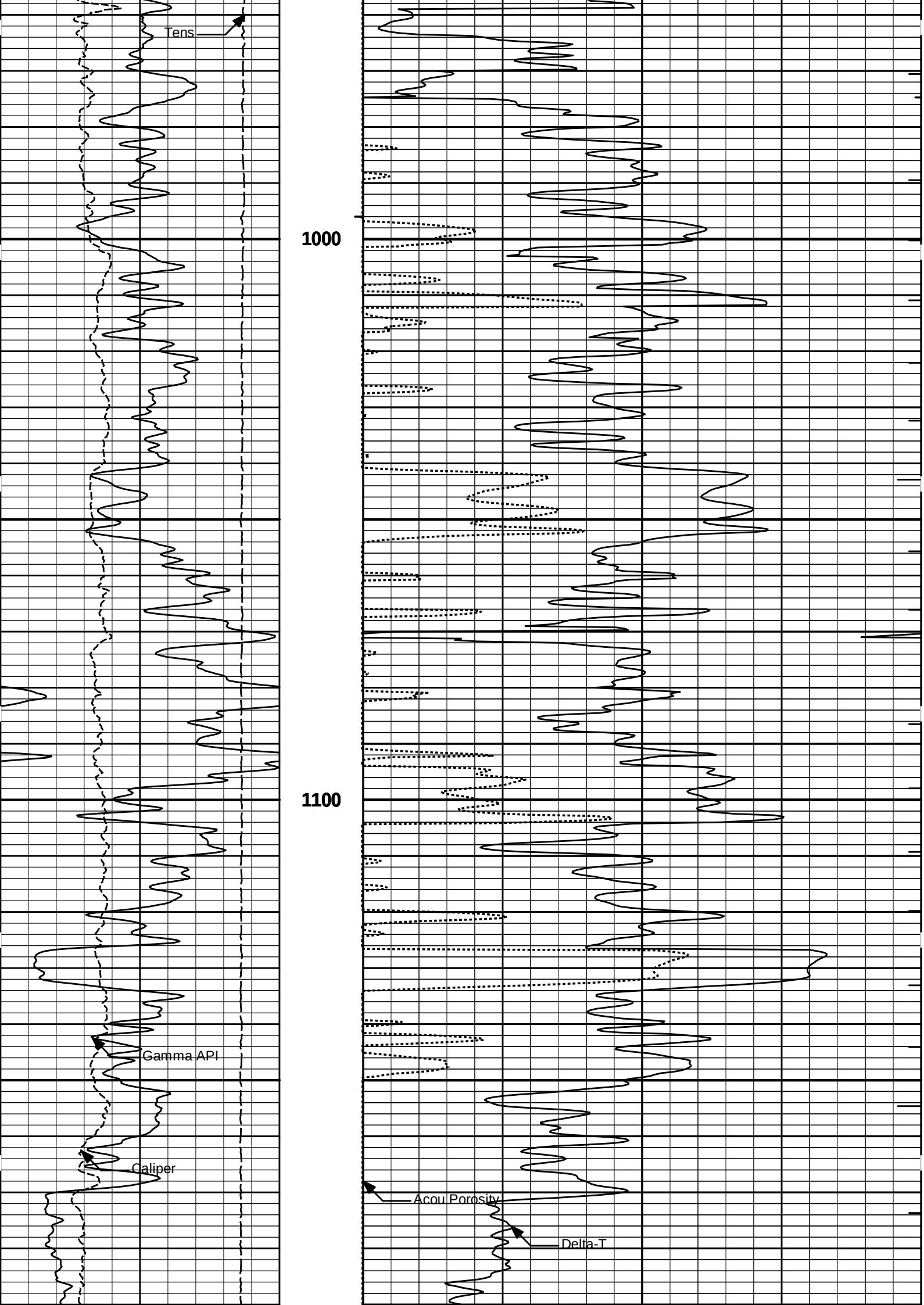
Plot Time: 04-Apr-09 06:18:35
Plot Range: 415 ft to 5284.92 ft
Data: PROWERS_GRAZING\Well Based\DAQ-0001-003
Plot File: \\BSAT\BSAT_5_MAIN_LIB

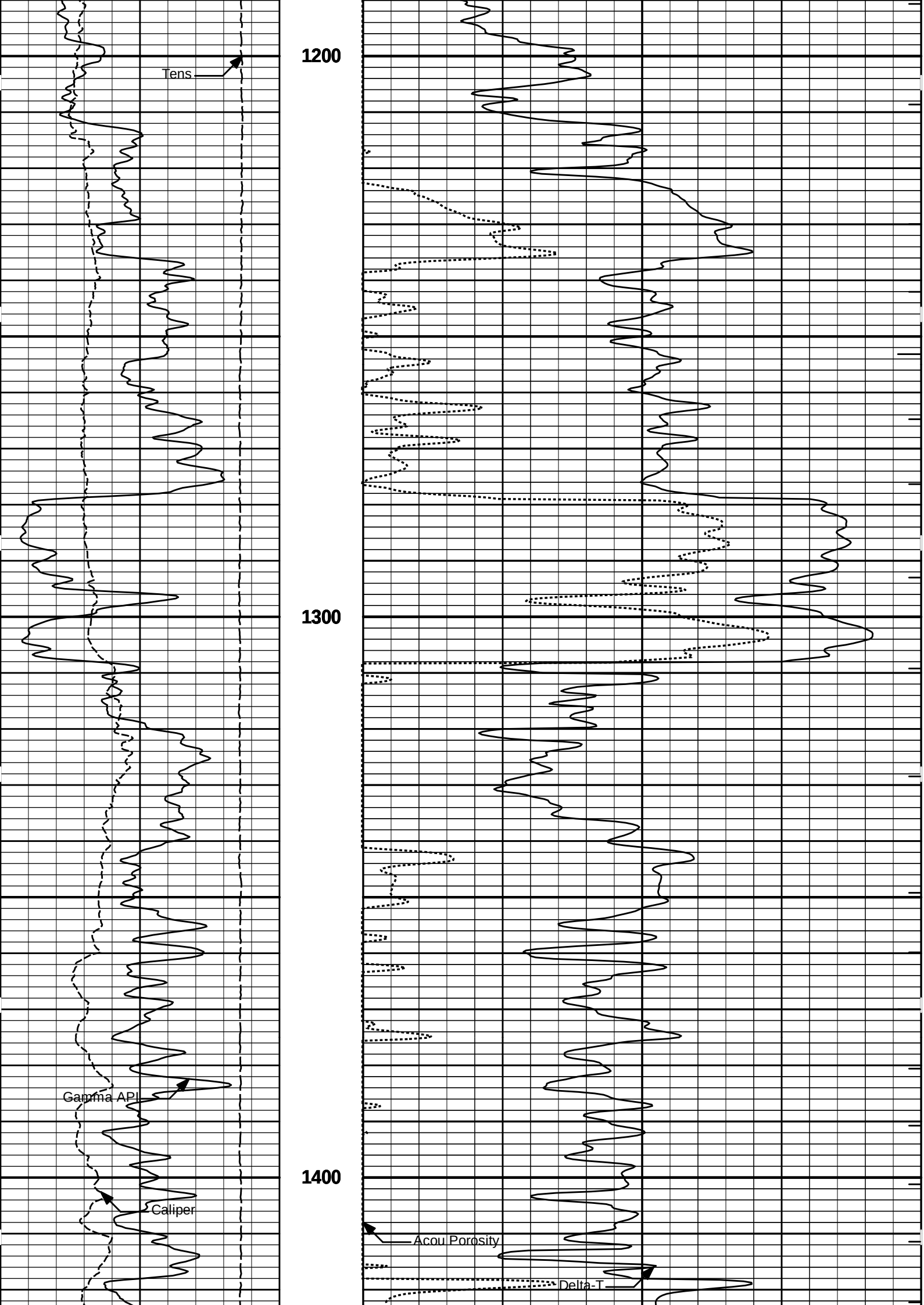
5 INCH MAIN LOG

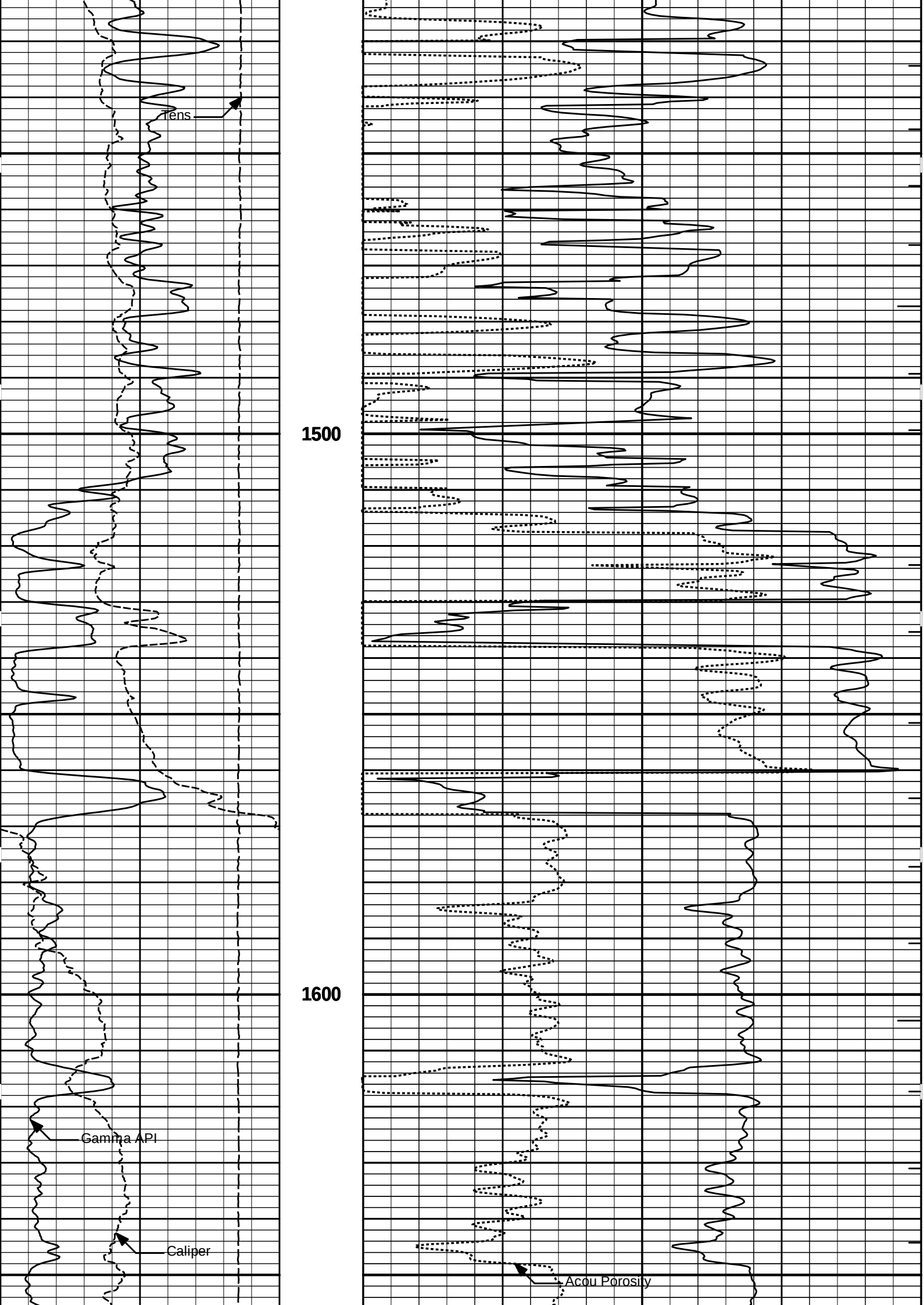


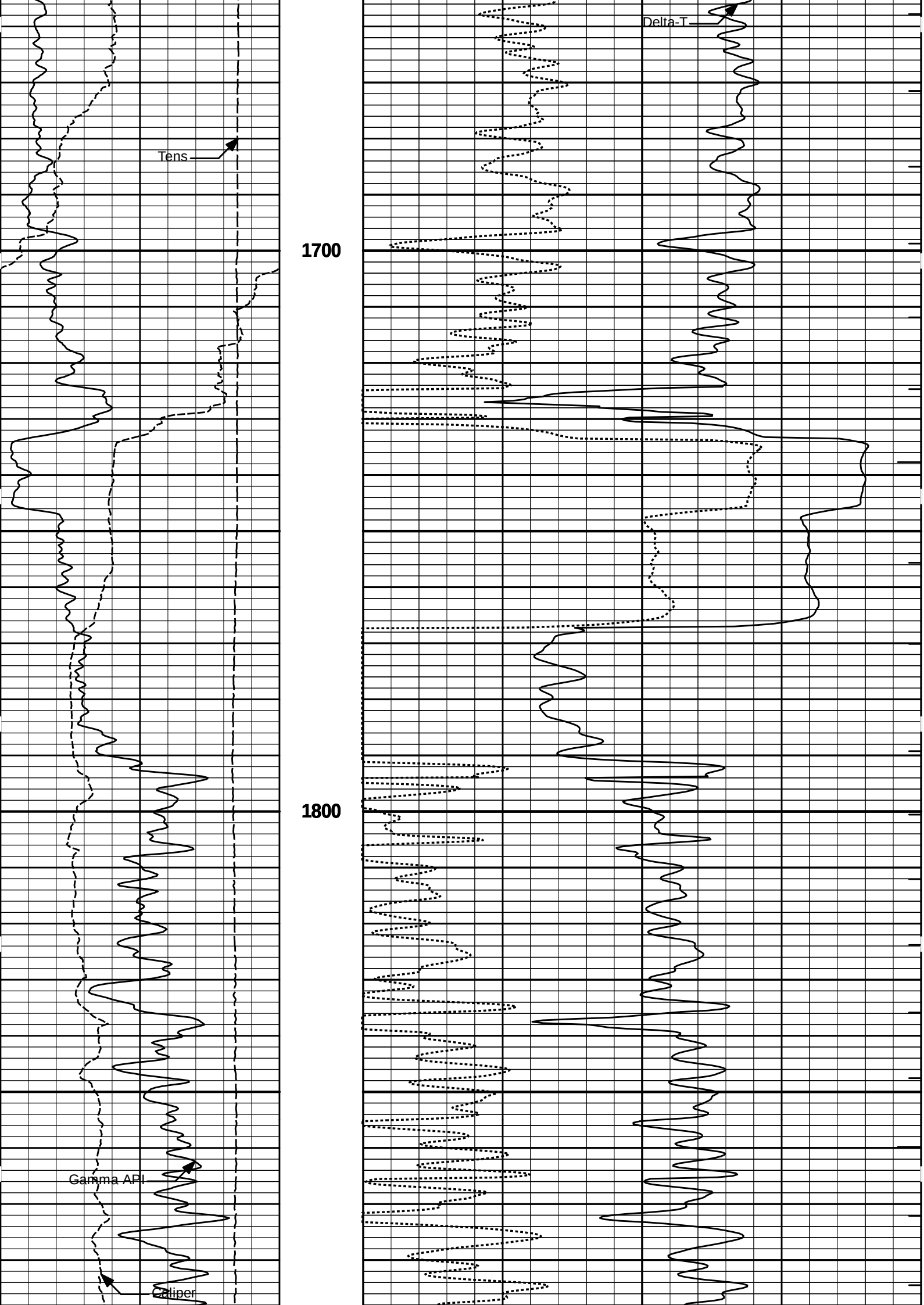

500
600
700
Gamma API
Caliper
Tens
Acou Porosity
Delta-T

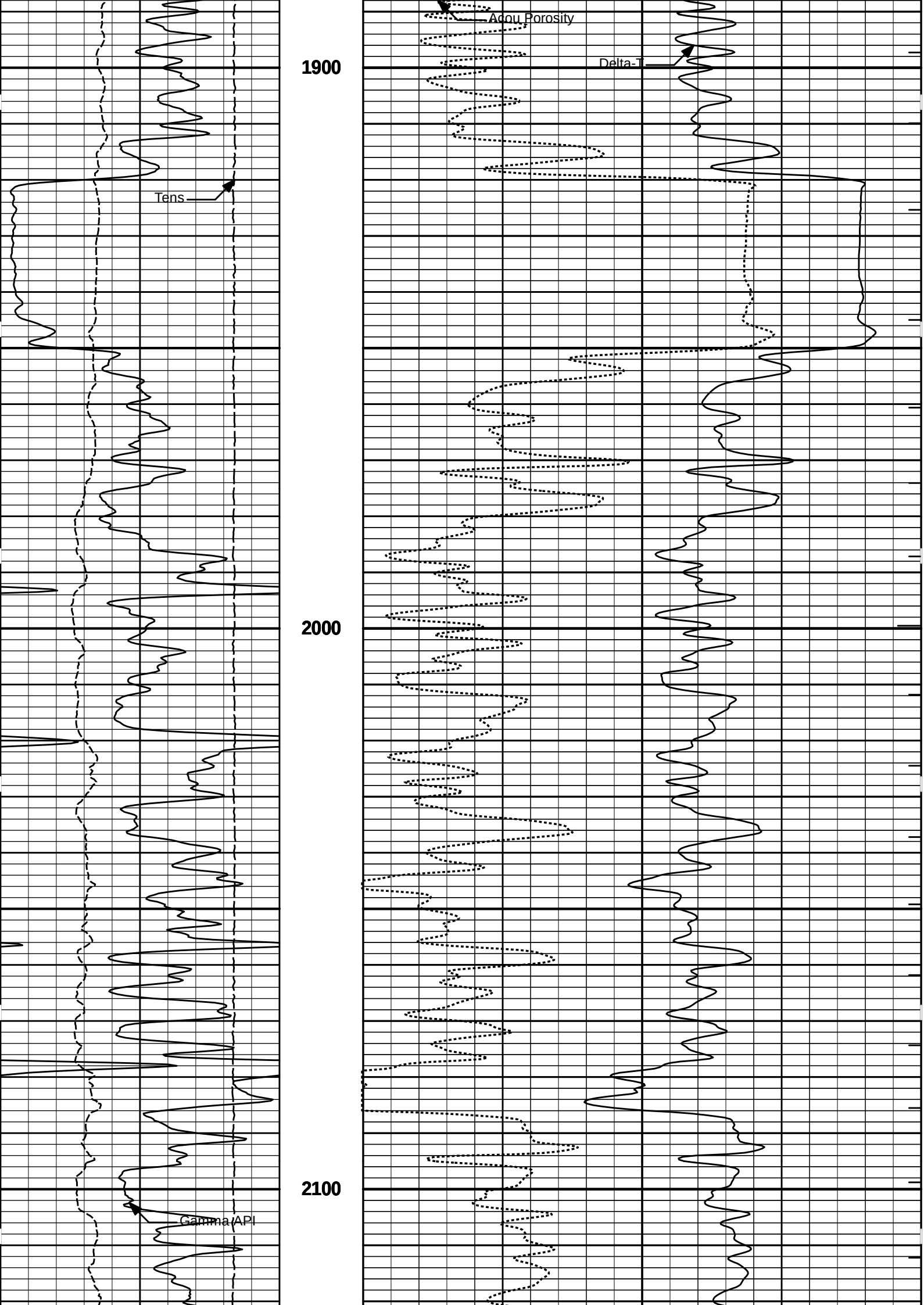

800
900
Gamma API
Caliper
Accu-Porosity
Delta-T

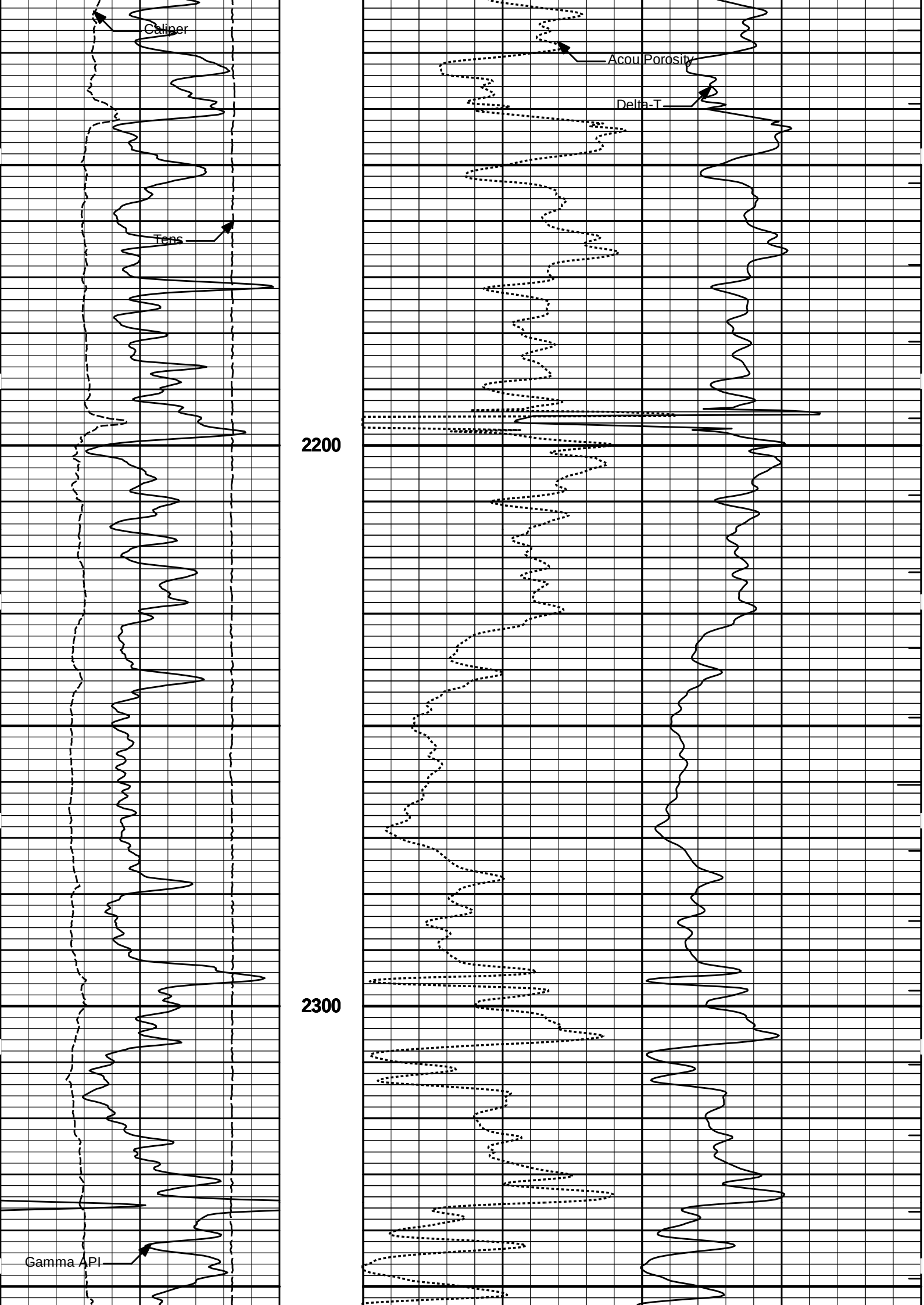

Tens
1000
1100
Gamma API
Caliper
Acou Porosity
Delta-T

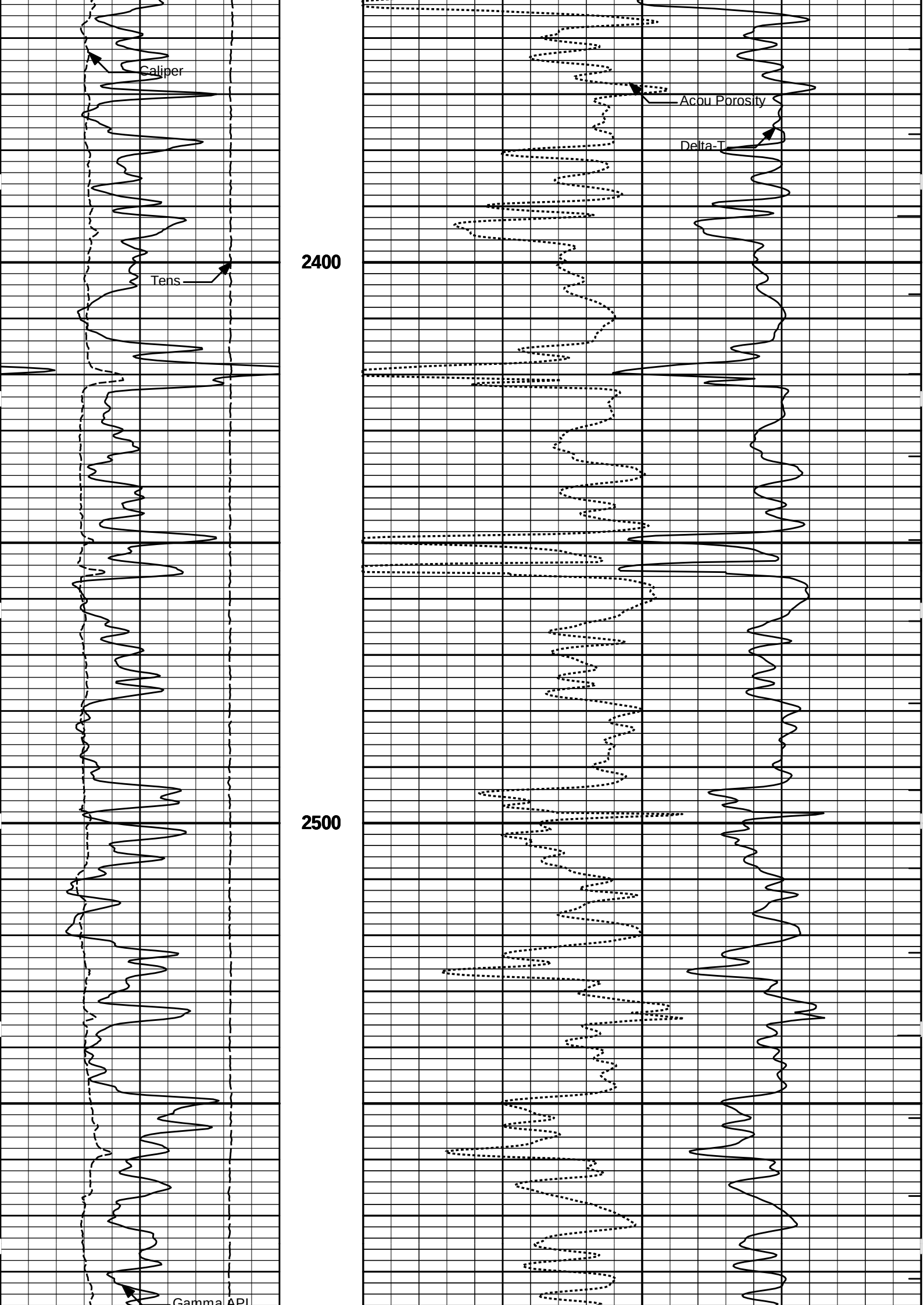

Tens
1200
1300
Gamma API
1400
Caliper
Acou Porosity
Delta-T

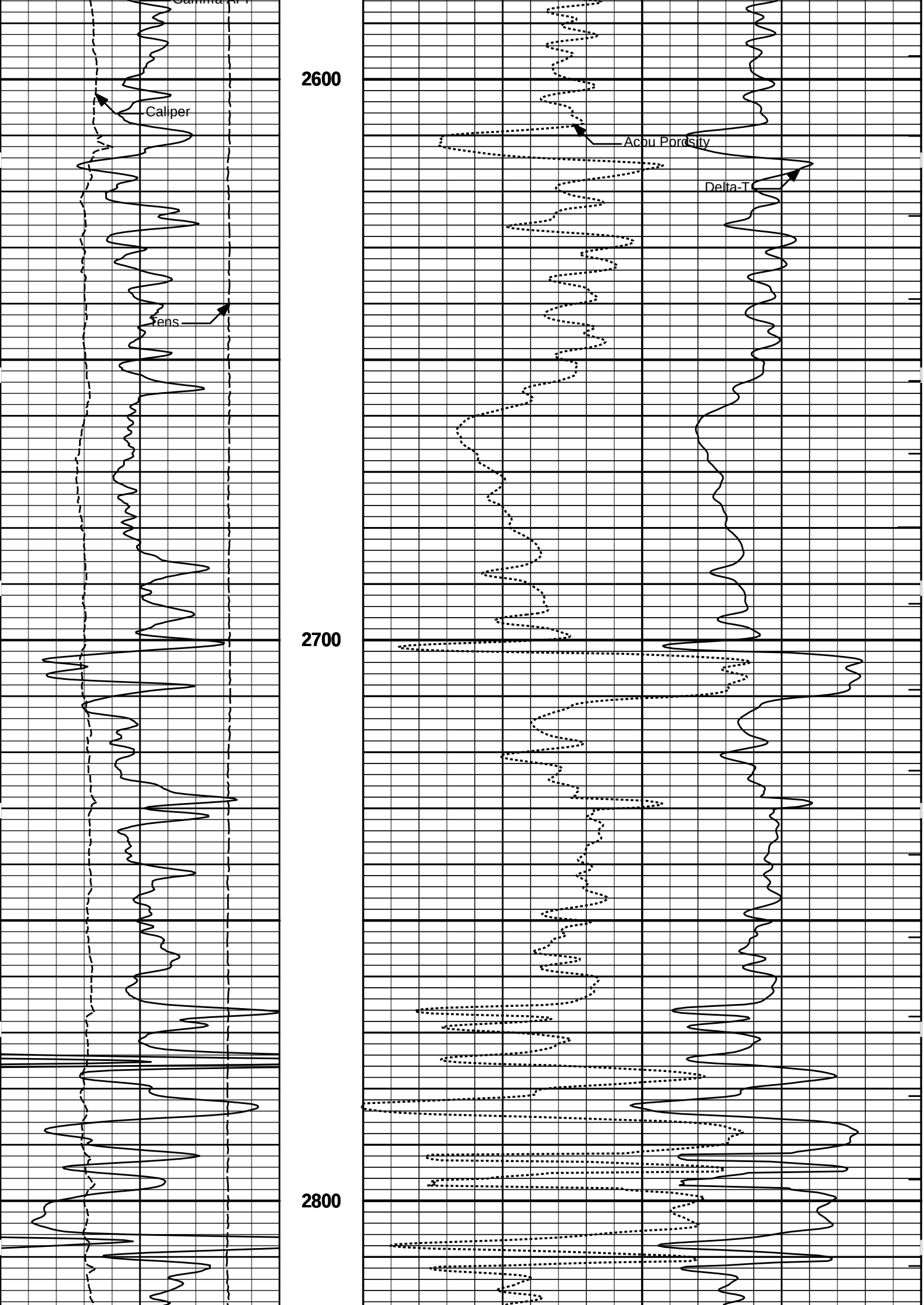

Tens
1500
1600
Gamma API
Caliper
Acou Porosity

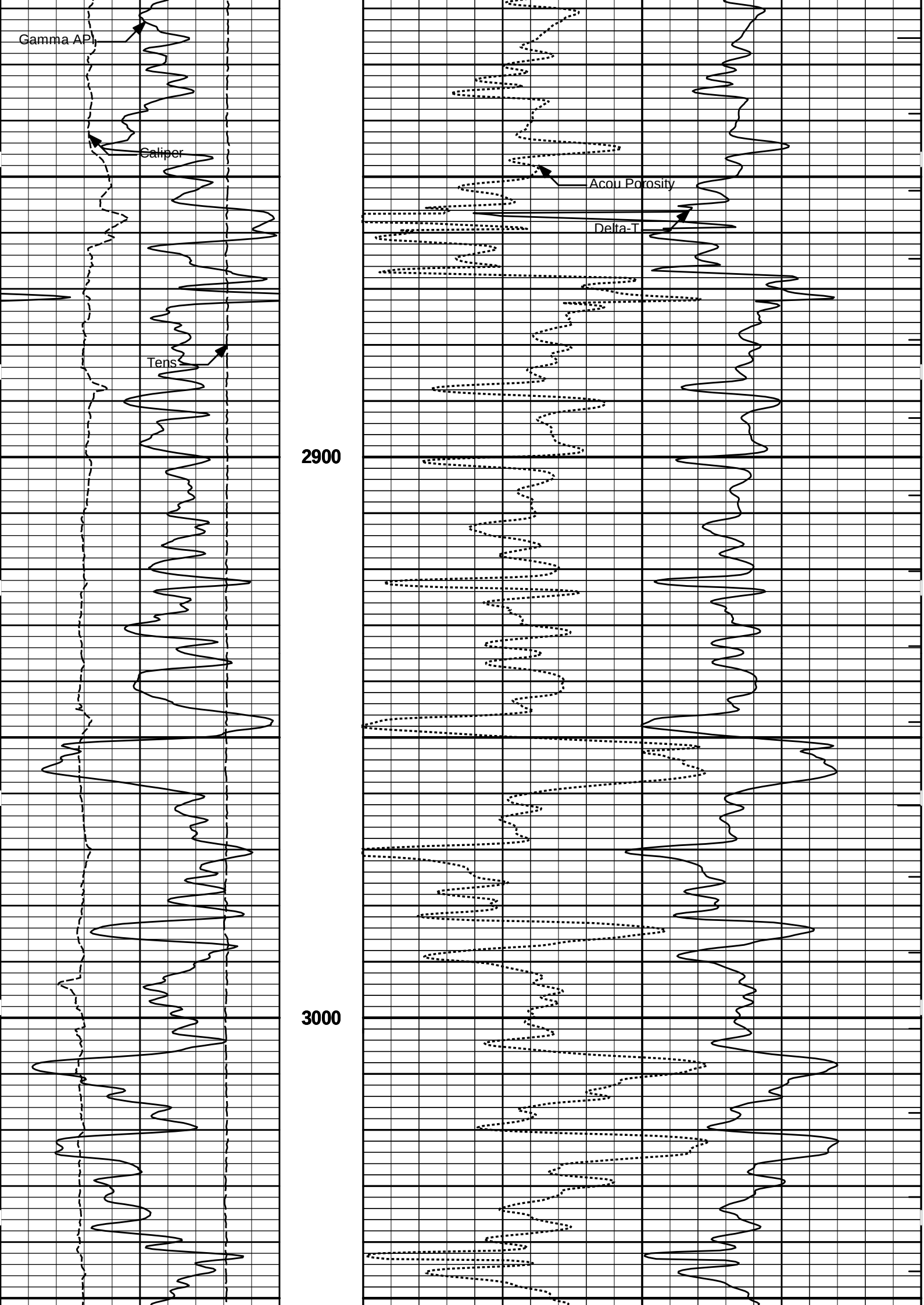

Delta-T
Tens
1700
1800
Gamma API
Caliper

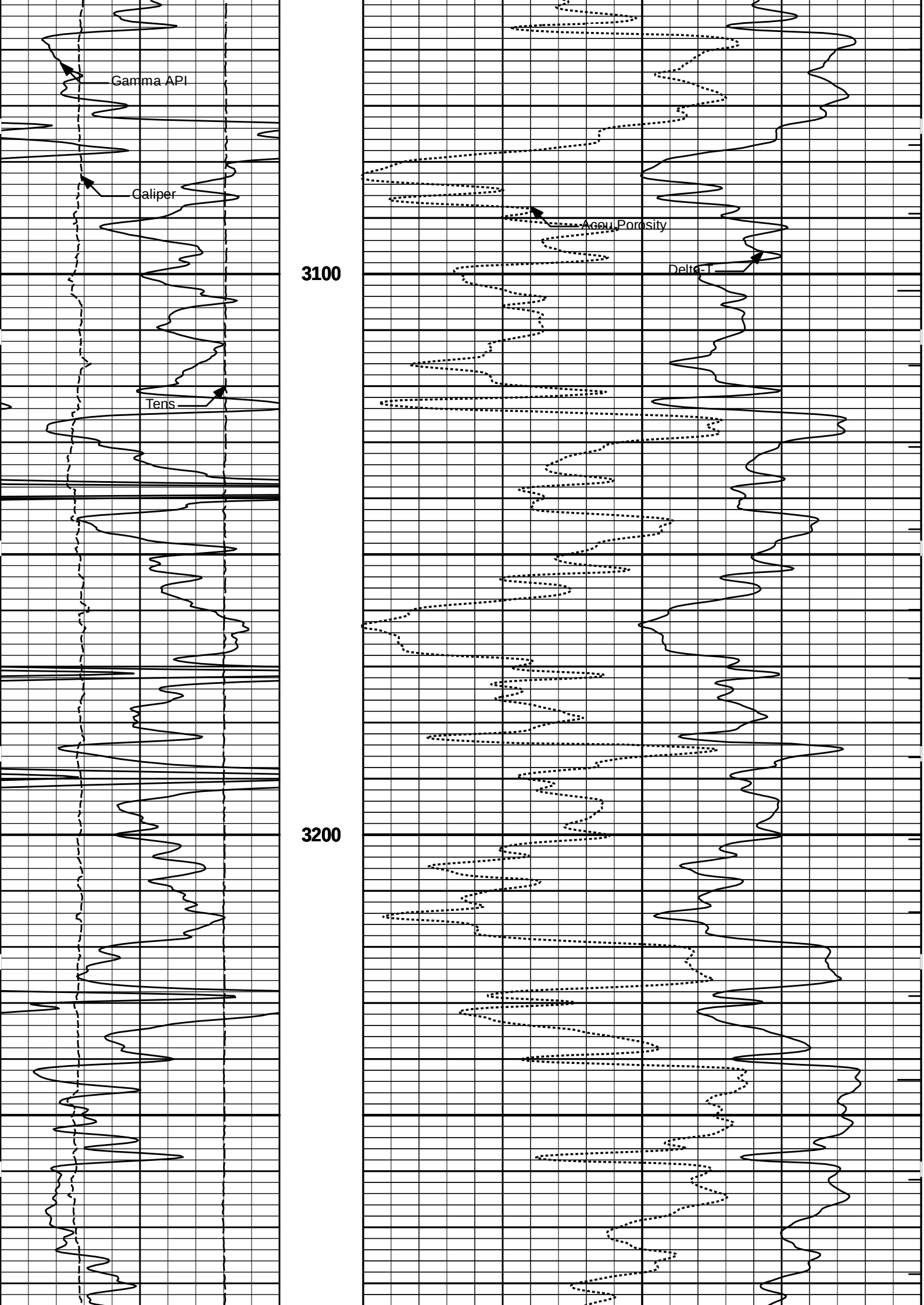

Acou Porosity
Delta-T
1900
Tens
2000
2100
Gamma API

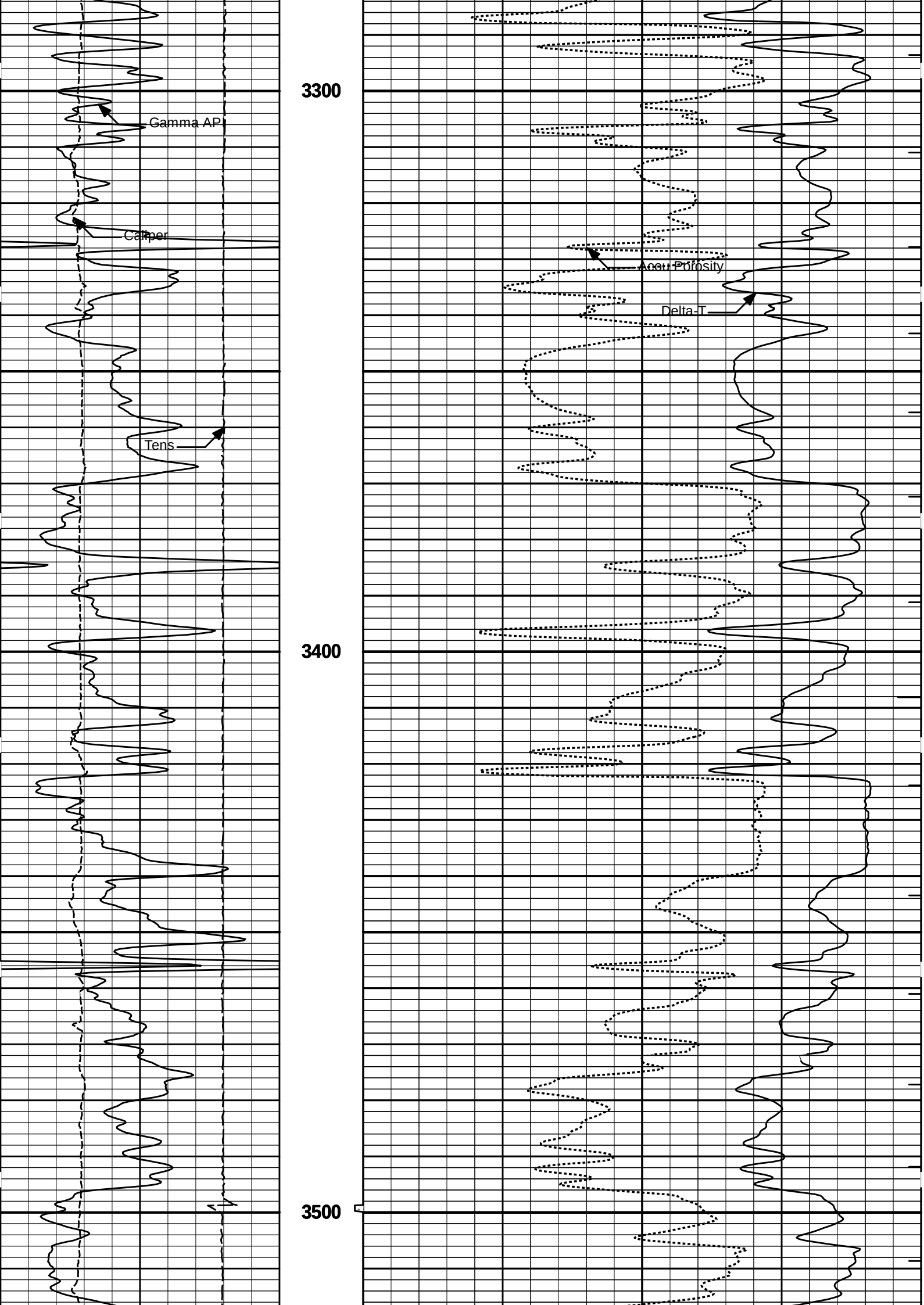

Caliper
Acou Porosity
Delta-T
Tens
2200
2300
Gamma API

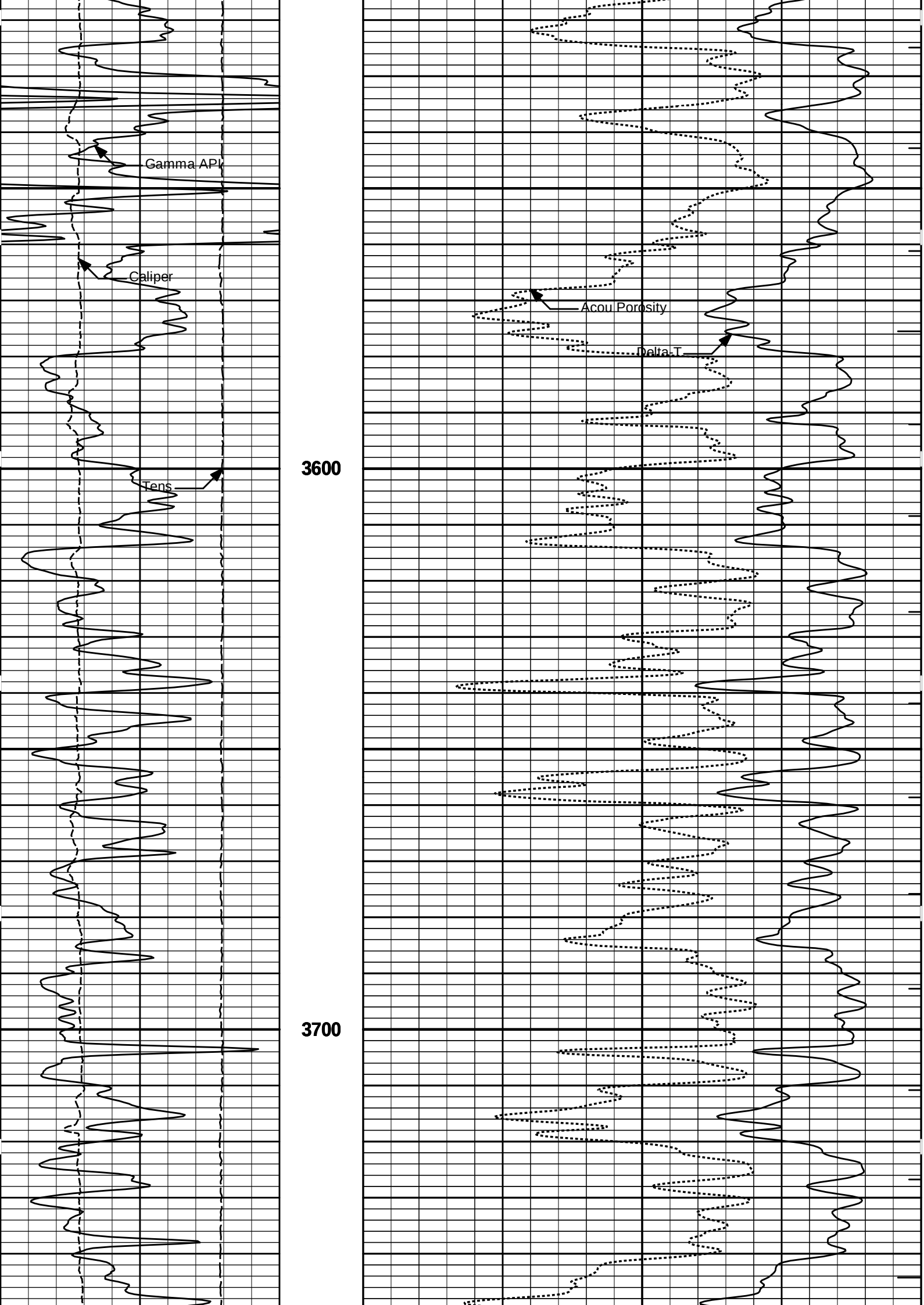

Caliper
Tens
Gamma API
Acou Porosity
Delta-T
2400
2500

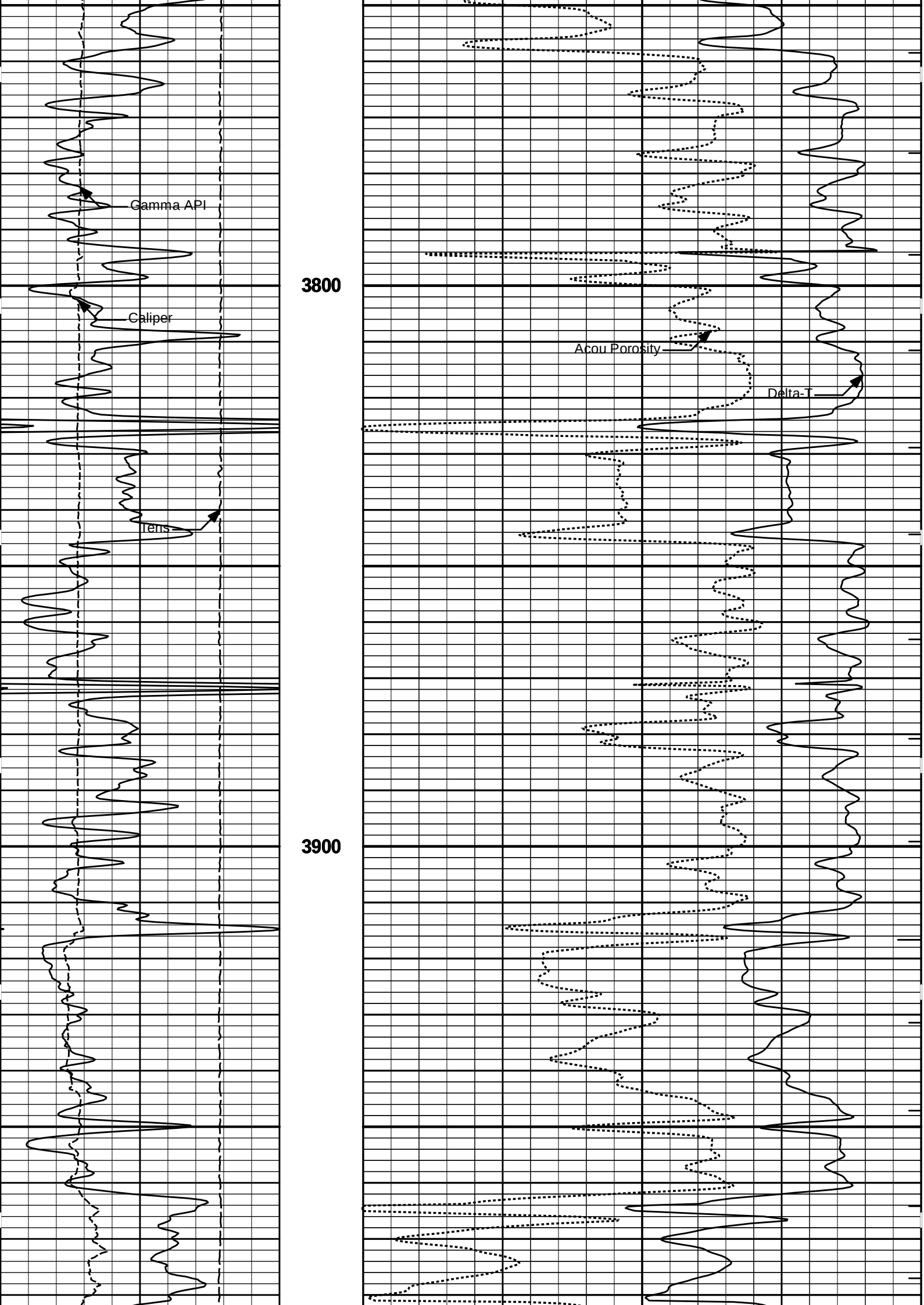

2600
2700
2800
Caliper
Acou Porosity
Delta-T
Tens

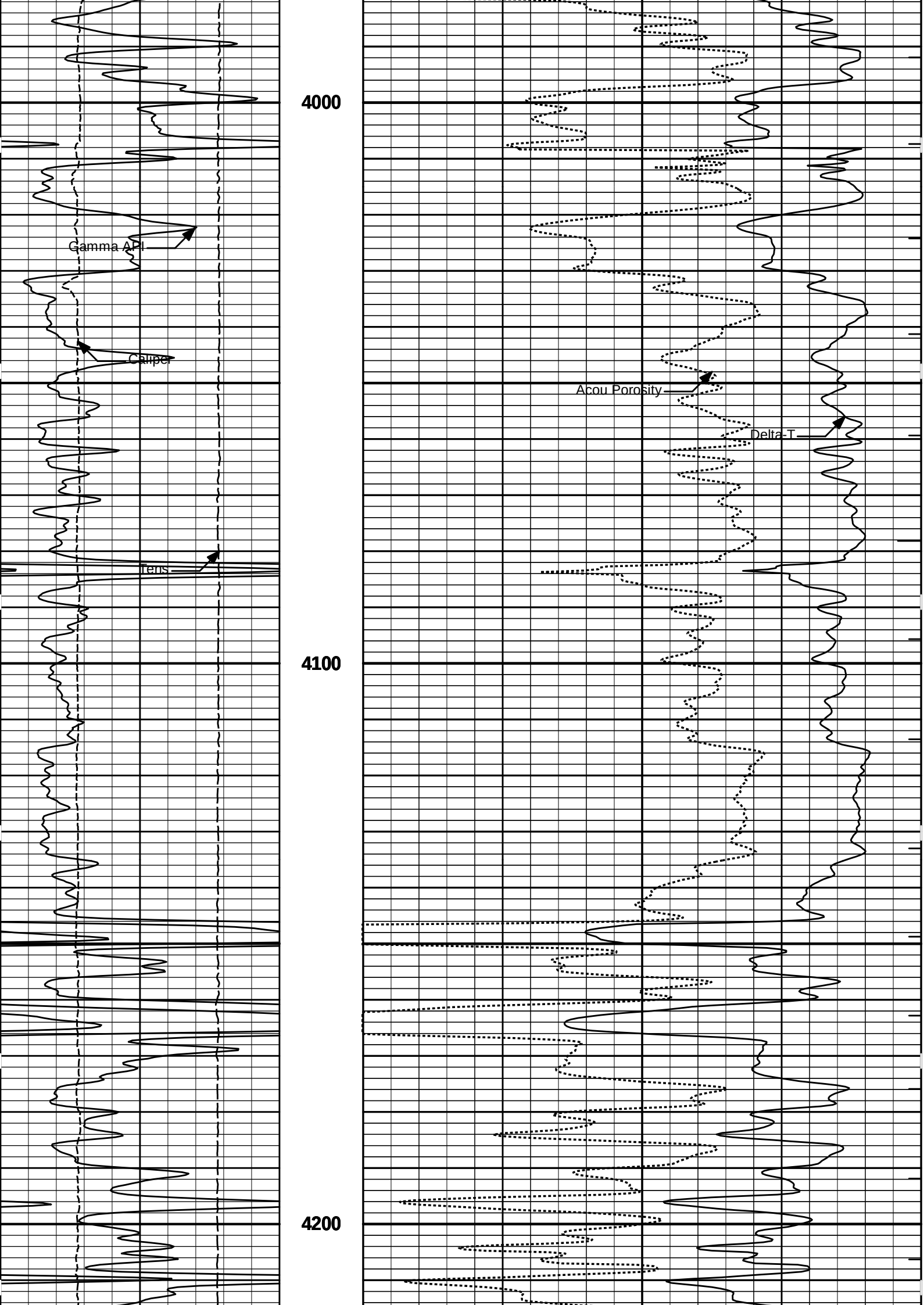

Gamma API
Caliper
Tens
Acou Porosity
Delta-T
2900
3000


Gamma API
Caliper
Tens
Acou Porosity
Delta-T
3100
3200


3300
Gamma API
Caliper
Accu-Porosity
Delta-T
Tens
3400
3500


Gamma API
Caliper
Tens
Acou Porosity
Delta-T
3600
3700


Gamma API
3800
Caliper
Acou Porosity
Delta-T
Tens
3900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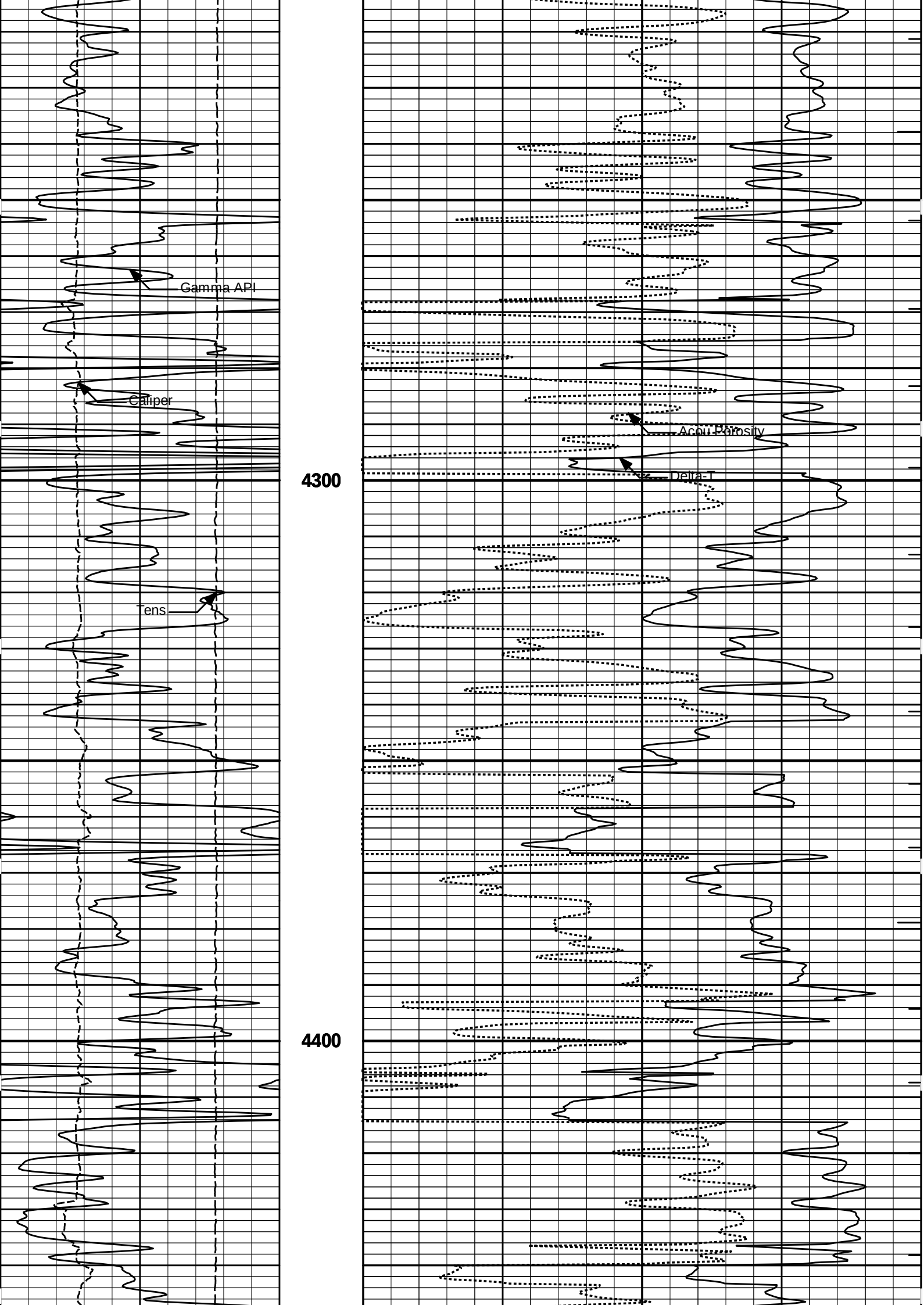
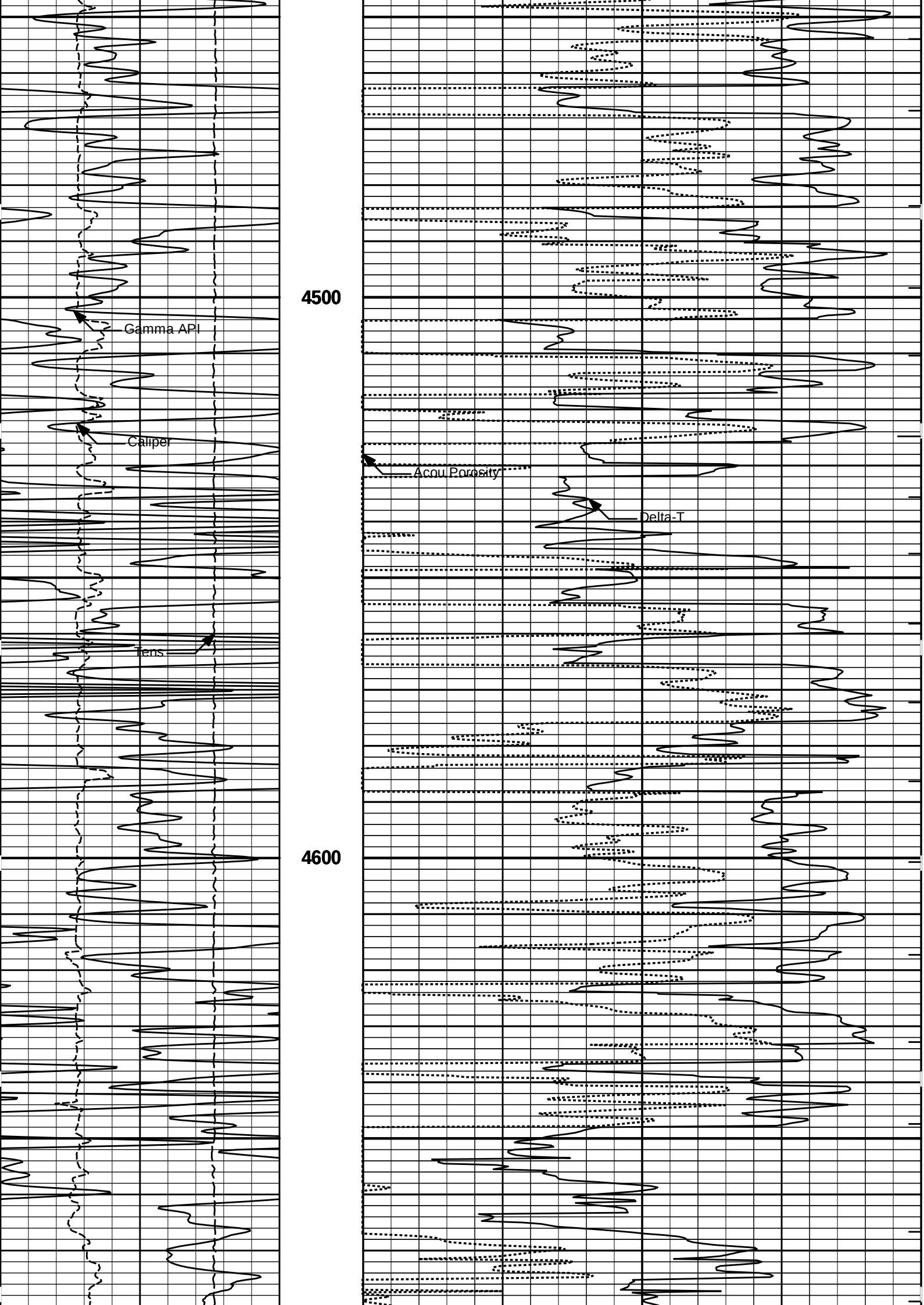
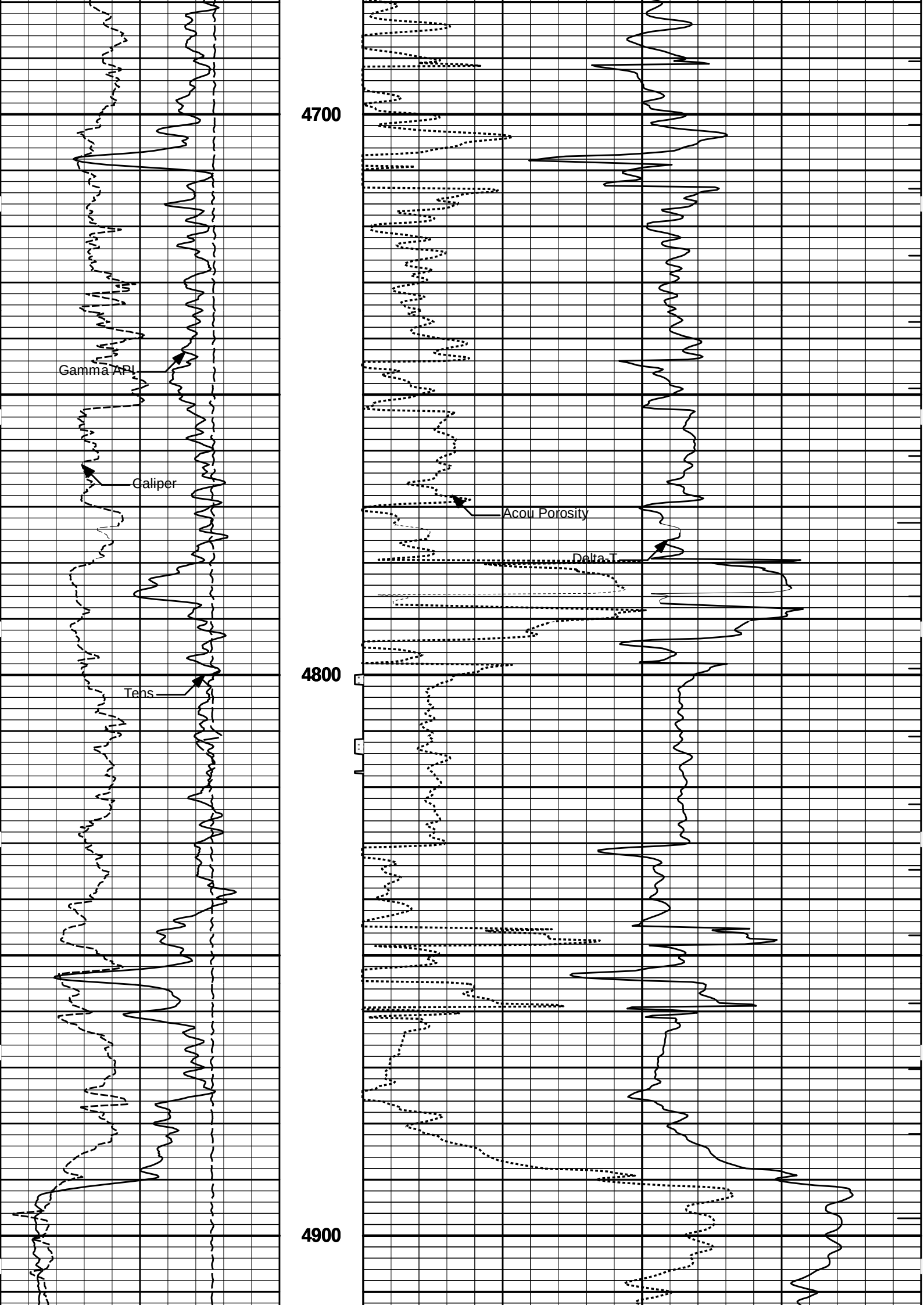
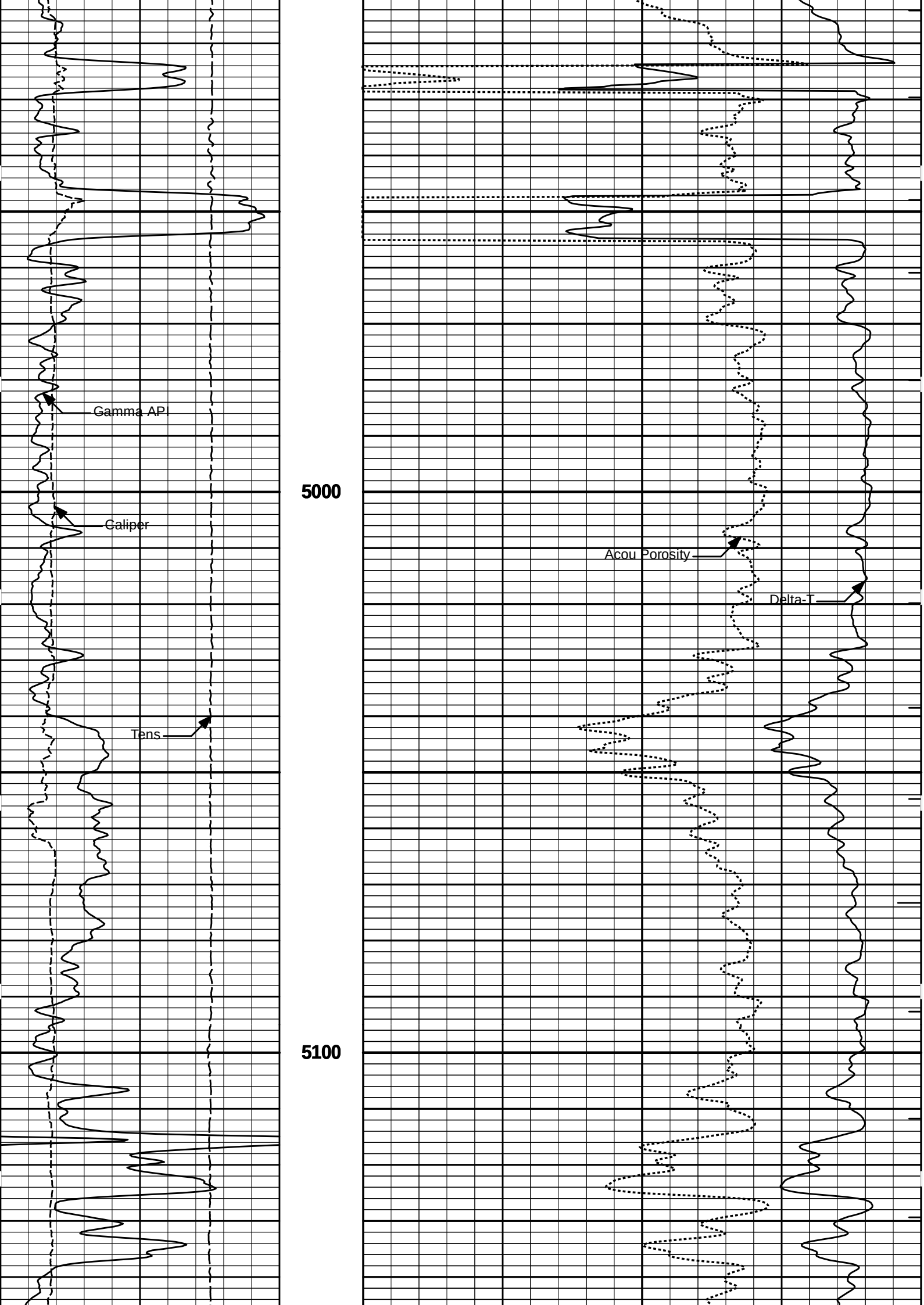
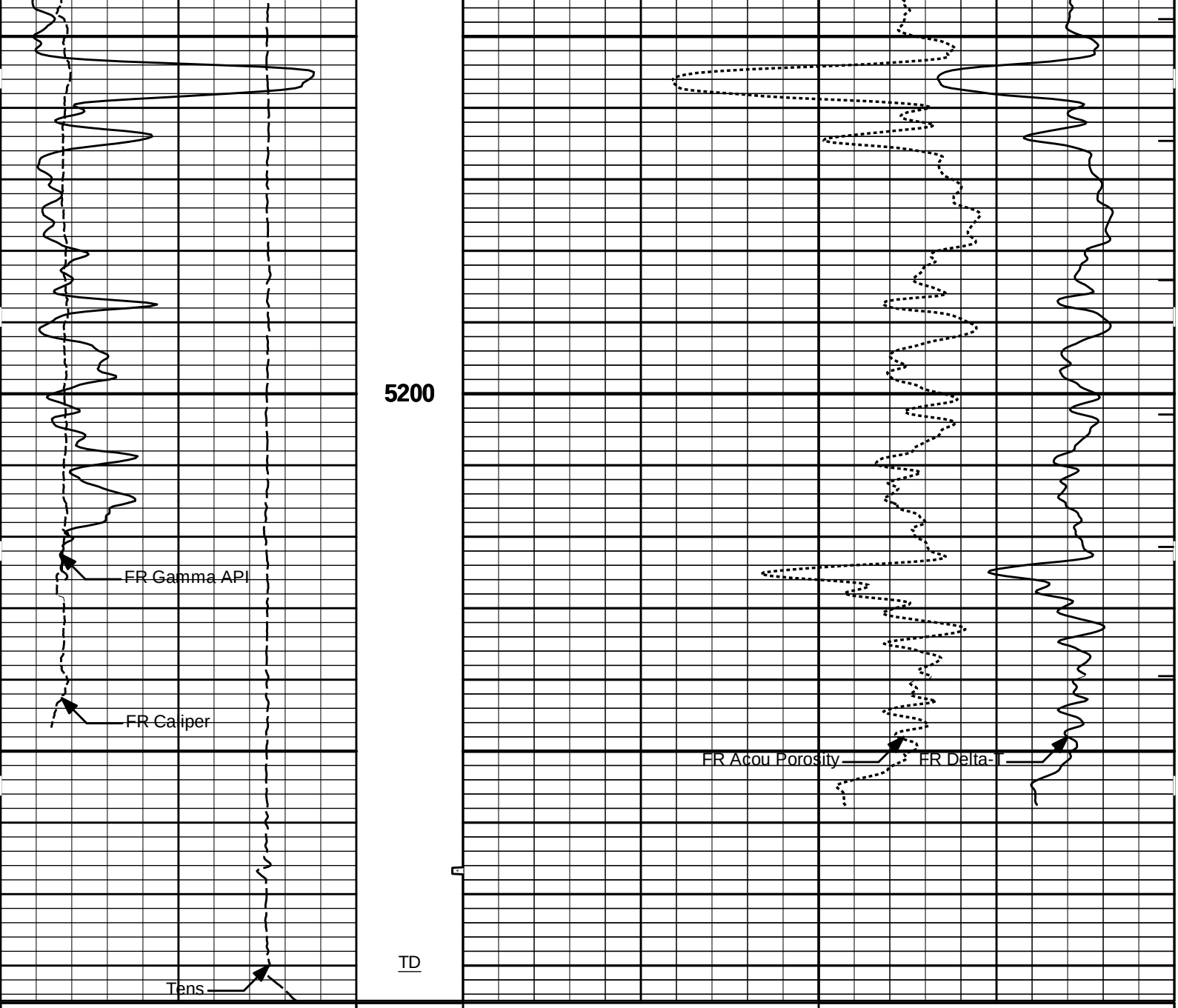
Gamma API
Caliper
Acou Porosity
Delta-T
Tens
4100
4200


Gamma API
Caliper
Tens
Accu Porosity
Delta-T
4300
4400


4500
Gamma API
Caliper
Tens
Acou Porosity
Delta-T
4600


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


Gamma API
Caliper
Tens
5000
Acou Porosity
Delta-T
5100



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

HALLIBURTON

Plot Time: 04-Apr-09 06:18:40
Plot Range: 415 ft to 5284.92 ft
Data: PROWERS_GRAZING\Well Based\DAQ-0001-003\
Plot File: \\BSAT\BSAT_5_MAIN_LIB

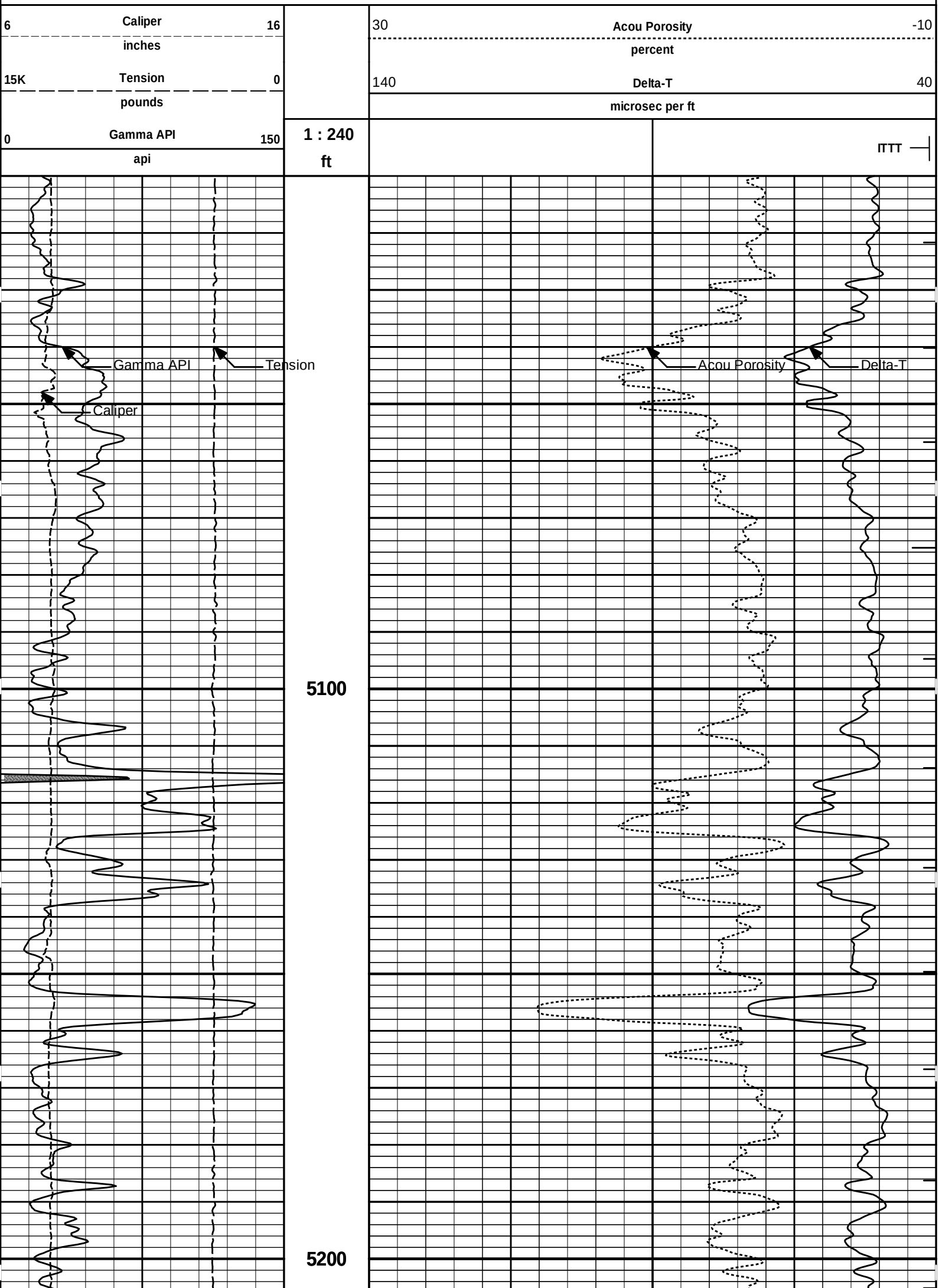
5 INCH MAIN LOG

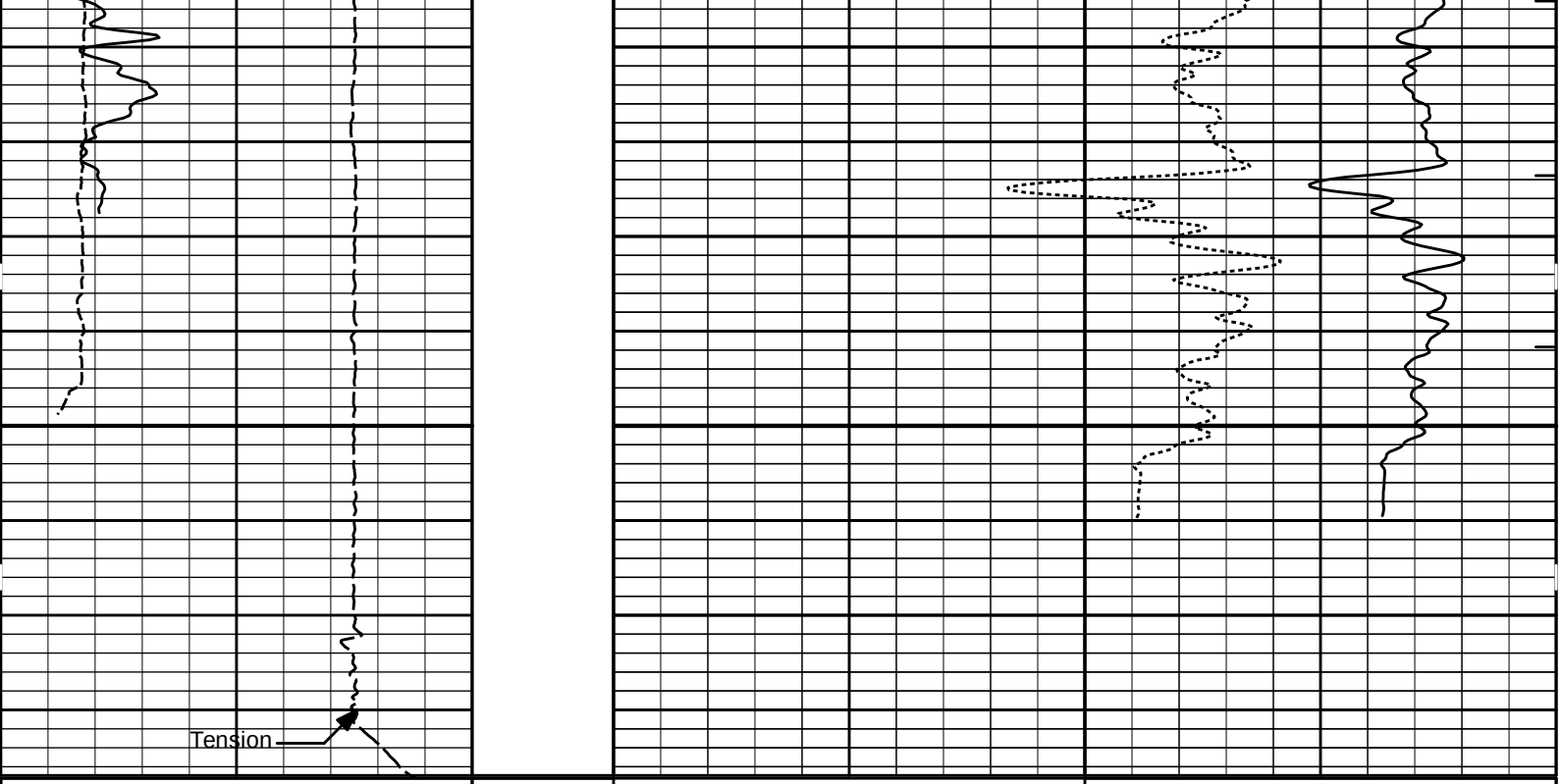
HALLIBURTON

Plot Time: 04-Apr-09 06:18:40
Plot Range: 5010 ft to 5286.92 ft
Data: PROWERS_GRAZING\Well Based\DAQ-0001-002\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

REPEAT SECTION





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

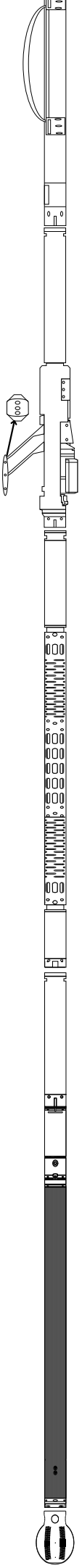
Plot Time: 04-Apr-09 06:18:41
Plot Range: 5010 ft to 5286.92 ft
Data: PROWERS_GRAZING\Well Based\DAQ-0001-002\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
Cable Head-PROT01 30.00 lbs	Ø 3.625 in			1.92 ft	70.21 ft 68.29 ft
SP Digital-6745 60.00 lbs	Ø 3.625 in		SP @ 66.59 ft	3.67 ft	64.63 ft
GTET-10811258 165.00 lbs	Ø 3.625 in		GammaRay @ 58.56 ft	8.52 ft	56.10 ft



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length	Max.Log. Speed

		Number	(lbs)	(ft)		(ft)	(fpm)
CH	Cable Head	PROT01	30.00	1.92		68.29	300.00
SP	Digital Downhole Measured SP	6745	60.00	3.67		64.63	300.00
GTET	Natural Gamma Ray Tool	10811258	165.00	8.52		56.10	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69		46.42	60.00
DCNT	DSN Decentralizer	10755066	50.00	5.13	*	49.75	300.00
SDLT	Spectral Density Tool	I55066_M85803_P14945	360.00	10.81		35.60	60.00
BCAS	Borehole Sonic Array Tool	10747683	300.00	15.77		19.83	60.00
ACRt	Array Compensated True Resistivity	I776_S775	250.00	19.25		0.58	300.00
CBHD	Cabbage Head	954	10.00	0.58		0.00	300.00
Total			**1,399.00**	**70.21**			

* Not included in Total Length and Length Accumulation.

Data: PROWERS_GRAZING\0001 GTET-DSN-SDL-BSAT-ACRT-CABBAGE\IDLE **Date: 04-Apr-09 01:53:33**

HALLIBURTON

PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	DSNT	DNOK	Process DSN?	No	
	SDLT	DNOK	Process Density?	No	
	SDLT	MLOK	Process MicroLog Outputs?	No	
1840.00					
	SHARED	BS	Bit Size	7.875	in
	SHARED		Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDWT	Borehole Fluid Weight	9.200	ppg
	SHARED	RMUD	Mud Resistivity	0.680	ohmm
	SHARED	TRM	Temperature of Mud	69.0	degF
	SHARED	OBM	Oil Based Mud System?	No	
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	4.500	in
	SHARED	STEM	Surface Temperature	45.0	degF
	SHARED	TD	Total Well Depth	5285.00	ft
	SHARED	BHT	Bottom Hole Temperature	132.0	degF
	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	0.61	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	69.00	degF
	Rwa / CrossPlot	RW	Resistivity of Formation Water	0.05	ohmm
	GTET	GROK	Process Gamma Ray?	Yes	
	GTET	GRSO	Gamma Tool Standoff	0.000	in
	GTET	GEOK	Process Gamma Ray EVR?	No	
	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	TMPC	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		Logging Horizontal Water Tank?	No	

	SDLT	DNOK	Process Density?	Yes	
	SDLT	DNOK	Process Density EVR?	No	
	SDLT	AD	Is Hole Air Drilled?	No	
	SDLT	CB	Use Calibration Blocks?	No	
	SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
	SDLT	DTWN	Disable temperature warning	No	
	SDLT	MDTP	Weighted Mud Correction Type?	None	
	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	BCOK	Compute BCAS Results?	Yes	
	BSAT	FLLO	Semblance Filter Low Pass Value?	5000	Hz
	BSAT	FLHI	Semblance 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	CIND	Casing Indicator Enabled?	Yes	
	ACRt	RECL	Relative Caliper Error	0	%
	ACRt	MNSO	Minimum Tool Standoff	1.50	in
	ACRt	RMC	Use RM Calculated for BHC?	No	
	ACRt	TSEL	Calculate Temperature for Rmud Correction?	No	
	ACRt	LTNM	Acrt Lateral Normalization	None	
	ACRt	UTC	Use Temperature Correction	Yes	
	ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
	ACRt	TPOS	Tool Position	Standoff	
	ACRt	BHCM	Borehole Compensation Type	Automatic	
	ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
	ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
	ACRt	REC6	Record 6 in curves in ADI?	No	
BOTTOM					

HALLIBURTON

INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
	Depth Panel			
TENS	Tension	0.00	NO	
	SP Digital			
PLTC	Plot Control Mask	66.58	NO	
SP	Spontaneous Potential	66.58	BLK	1.250
SPR	Raw Spontaneous Potential	66.58	NO	
SPO	Spontaneous Potential Offset	66.58	NO	
	GTET			
TPUL	Tension Pull	58.56	NO	
GR	Natural Gamma Ray API	58.56	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	58.56	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	58.56	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
INCL	Inclination	0.00	NO	

INCL	Inclination	0.00	NO	

DSNT

TPUL	Tension Pull	48.32	NO	
RNDS	Near Detector Telemetry Counts	48.42	BLK	1.417
RFDS	Far Detector Telemetry Counts	49.17	TRI	0.583
DNTT	DSN Tool Temperature	48.42	NO	
DSNS	DSN Tool Status	48.32	NO	
ERND	Near Detector Telemetry Counts EVR	48.42	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	49.17	BLK	0.000
ENTM	DSN Tool Temperature EVR	48.42	NO	

SDLT

TPUL	Tension Pull	38.41	NO	
NAB	Near Above	38.24	BLK	0.920
NHI	Near Cesium High	38.24	BLK	0.920
NLO	Near Cesium Low	38.24	BLK	0.920
NVA	Near Valley	38.24	BLK	0.920
NBA	Near Barite	38.24	BLK	0.920
NDE	Near Density	38.24	BLK	0.920
NPK	Near Peak	38.24	BLK	0.920
NLI	Near Lithology	38.24	BLK	0.920
NBAU	Near Barite Unfiltered	38.24	BLK	0.250
NLIU	Near Lithology Unfiltered	38.24	BLK	0.250
FAB	Far Above	38.58	BLK	0.250
FHI	Far Cesium High	38.58	BLK	0.250
FLO	Far Cesium Low	38.58	BLK	0.250
FVA	Far Valley	38.58	BLK	0.250
FBA	Far Barite	38.58	BLK	0.250
FDE	Far Density	38.58	BLK	0.250
FPK	Far Peak	38.58	BLK	0.250
FLI	Far Lithology	38.58	BLK	0.250
PTMP	Pad Temperature	38.42	BLK	0.920
NHV	Near Detector High Voltage	35.60	NO	
FHV	Far Detector High Voltage	35.60	NO	
ITMP	Instrument Temperature	35.60	NO	
TPUL	Tension Pull	38.42	NO	
PCAL	Pad Caliper	38.42	TRI	0.250
ACAL	Arm Caliper	38.42	TRI	0.250
TPUL	Tension Pull	38.60	NO	
MINV	Microlog Lateral	38.60	BLK	0.750
MNOR	Microlog Normal	38.60	BLK	0.750

BSAT

TPUL	Tension Pull	27.09	NO	
STAT	Status	27.09	NO	
DLYT	Delay Time	27.09	NO	
SI	Sample Interval	27.09	NO	
TXRX	Raw Telemetry 10 Receivers	27.09	NO	
FRMC	Tool Frame Count	27.09	NO	

ACRt

TPUL	Tension Pull	2.97	NO	
F1R1	ACRT 12KHz - 80in R value	9.22	BLK	0.000
F1X1	ACRT 12KHz - 80in X value	9.22	BLK	0.000
F1R2	ACRT 12KHz - 50in R value	6.72	BLK	0.000
F1X2	ACRT 12KHz - 50in X value	6.72	BLK	0.000
F1R3	ACRT 12KHz - 29in R value	5.22	BLK	0.000
F1X3	ACRT 12KHz - 29in X value	5.22	BLK	0.000
F1R4	ACRT 12KHz - 17in R value	4.22	BLK	0.000

F1X4	ACRT 12KHz - 17in X value	4.22	BLK	0.000
F1R5	ACRT 12KHz - 10in R value	3.72	BLK	0.000
F1X5	ACRT 12KHz - 10in X value	3.72	BLK	0.000
F1R6	ACRT 12KHz - 6in R value	3.47	BLK	0.000
F1X6	ACRT 12KHz - 6in X value	3.47	BLK	0.000
F2R1	ACRT 36KHz - 80in R value	9.22	BLK	0.000
F2X1	ACRT 36KHz - 80in X value	9.22	BLK	0.000
F2R2	ACRT 36KHz - 50in R value	6.72	BLK	0.000
F2X2	ACRT 36KHz - 50in X value	6.72	BLK	0.000
F2R3	ACRT 36KHz - 29in R value	5.22	BLK	0.000
F2X3	ACRT 36KHz - 29in X value	5.22	BLK	0.000
F2R4	ACRT 36KHz - 17in R value	4.22	BLK	0.000
F2X4	ACRT 36KHz - 17in X value	4.22	BLK	0.000
F2R5	ACRT 36KHz - 10in R value	3.72	BLK	0.000
F2X5	ACRT 36KHz - 10in X value	3.72	BLK	0.000
F2R6	ACRT 36KHz - 6in R value	3.47	BLK	0.000
F2X6	ACRT 36KHz - 6in X value	3.47	BLK	0.000
F3R1	ACRT 72KHz - 80in R value	9.22	BLK	0.000
F3X1	ACRT 72KHz - 80in X value	9.22	BLK	0.000
F3R2	ACRT 72KHz - 50in R value	6.72	BLK	0.000
F3X2	ACRT 72KHz - 50in X value	6.72	BLK	0.000
F3R3	ACRT 72KHz - 29in R value	5.22	BLK	0.000
F3X3	ACRT 72KHz - 29in X value	5.22	BLK	0.000
F3R4	ACRT 72KHz - 17in R value	4.22	BLK	0.000
F3X4	ACRT 72KHz - 17in X value	4.22	BLK	0.000
F3R5	ACRT 72KHz - 10in R value	3.72	BLK	0.000
F3X5	ACRT 72KHz - 10in X value	3.72	BLK	0.000
F3R6	ACRT 72KHz - 6in R value	3.47	BLK	0.000
F3X6	ACRT 72KHz - 6in X value	3.47	BLK	0.000
RMUD	Mud Resistivity	12.76	BLK	0.000
F1RT	Transmitter Reference 12 KHz Real Signal	2.97	BLK	0.000
F1XT	Transmitter Reference 12 KHz Imaginary Signal	2.97	BLK	0.000
F2RT	Transmitter Reference 36 KHz Real Signal	2.97	BLK	0.000
F2XT	Transmitter Reference 36 KHz Imaginary Signal	2.97	BLK	0.000
F3RT	Transmitter Reference 72 KHz Real Signal	2.97	BLK	0.000
F3XT	Transmitter Reference 72 KHz Imaginary Signal	2.97	BLK	0.000
TFPU	Feedpipe Temperature Calculated - Upper	2.97	BLK	0.000
TFPL	Feedpipe Temperature Calculated - Lower	2.97	BLK	0.000
ITMP	Instrument Temperature	2.97	BLK	0.000
TCVA	Temperature Correction Values Loop Off	2.97	NO	
TIDV	Instrument Temperature Derivative	2.97	NO	
TUDV	Upper Temperature Derivative	2.97	NO	
TLDV	Lower Temperature Derivative	2.97	NO	
TRBD	Receiver Board Temperature	2.97	NO	

Data: PROWERS_GRAZING\0001 GTET-DSN-SDL-BSAT-ACRT-CABBAGE\IDLE **Date: 04-Apr-09 01:53:13**

COMPANY	**BAYHORSE PETROLEUM, LLC**		
WELL	**PROWERS COUNTY GRAZING #1**		
FIELD	**WILDCAT**		
COUNTY	**PROWERS**	STATE	**COLORADO**

HALLIBURTON

BOREHOLE SONIC ARRAY LOG