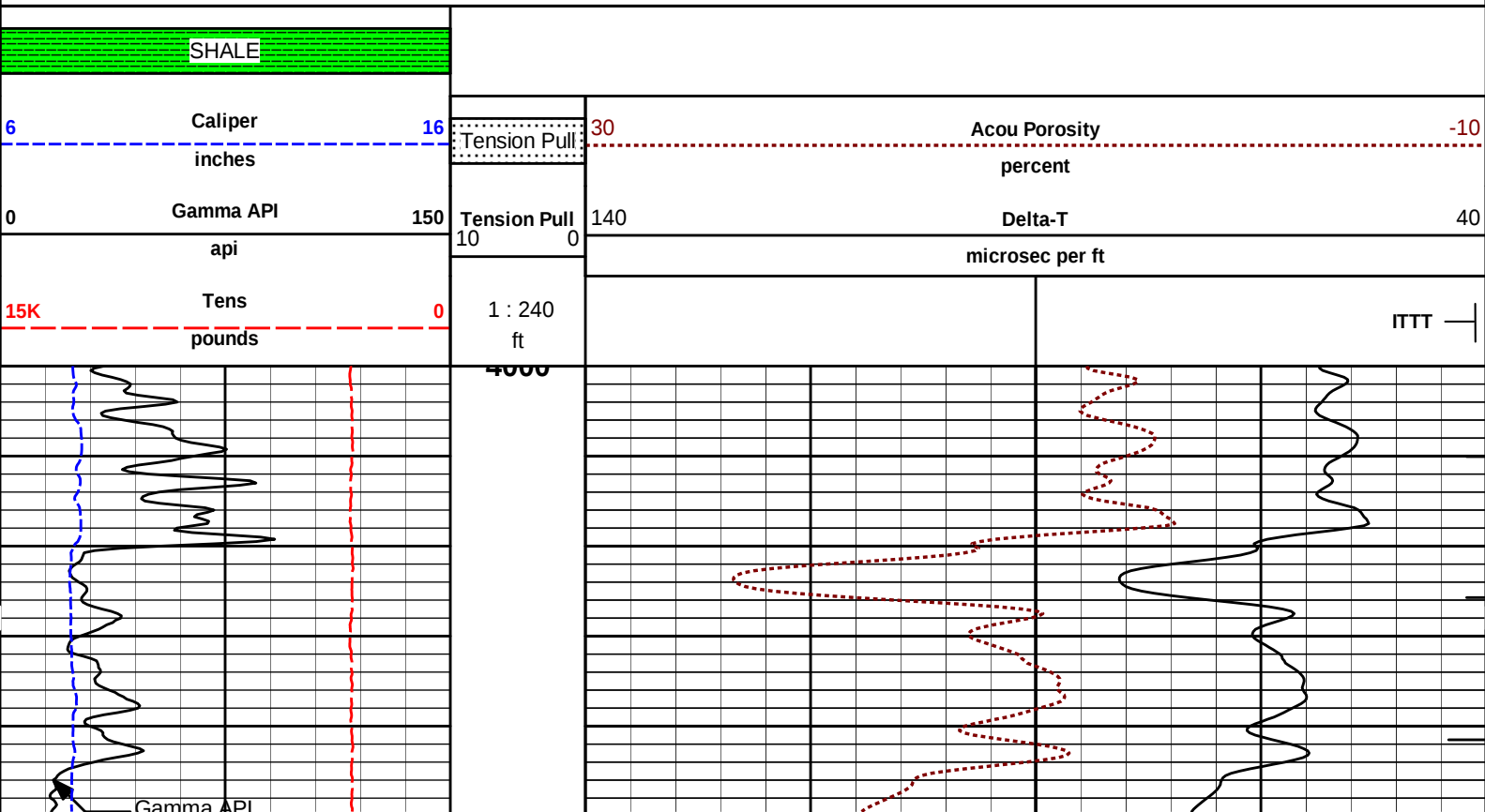


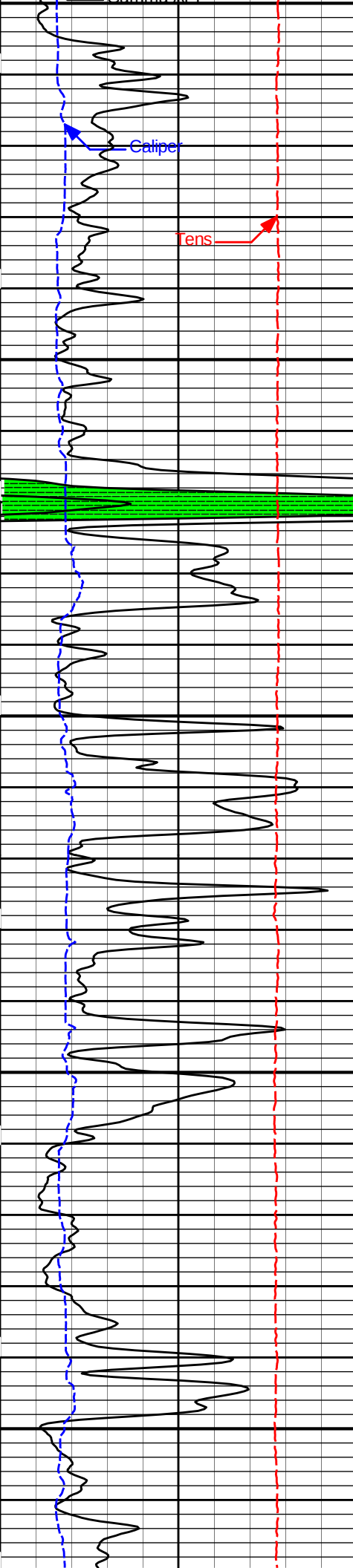
BORE HOLE COMPENSATED
SONIC ARRAY
LOG

Fold here

LOGGING DATA

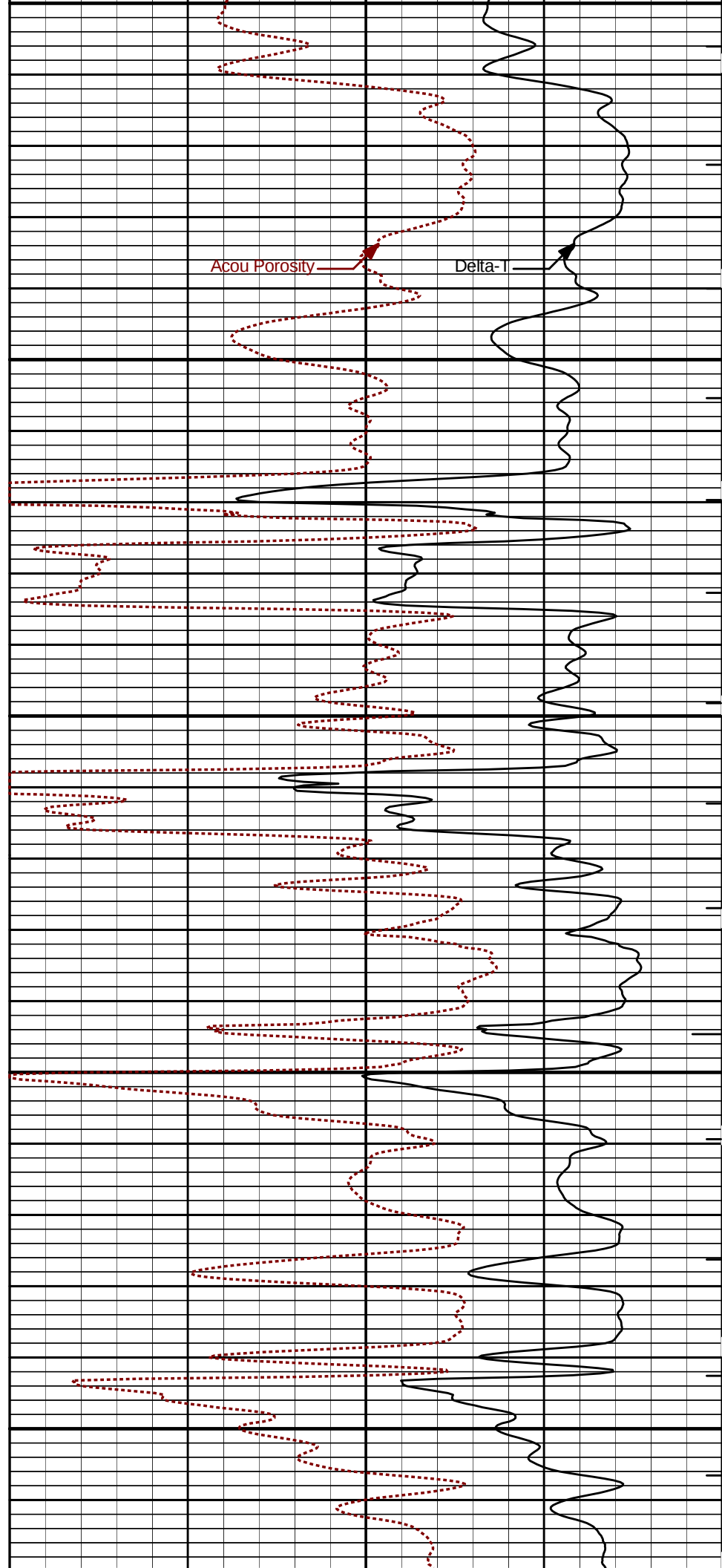
GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON			
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	5788	4000	REC	0	150	30	-10	47.6						
DIRECTIONAL INFORMATION														
Maximum Deviation @								KOP @						
Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING														
CHLORIDES REPORTED AT 4500 MG/L														
LCM REPORTED AT 8 PPB														
TODAY'S CREW V. JAIME J. ALBRIGHT														
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES LIBERAL, KANSAS 620-624-8123														
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.														
HALLIBURTON														

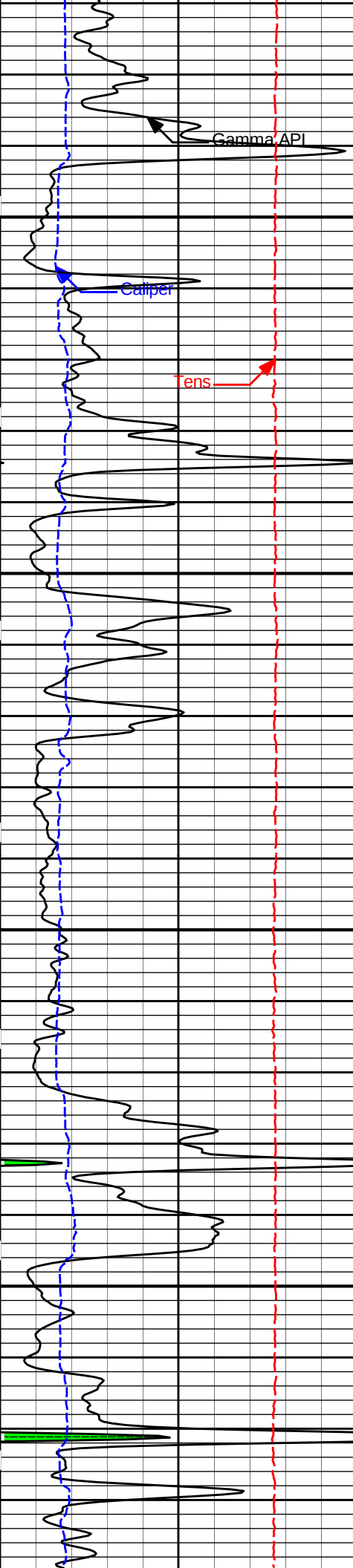




4100

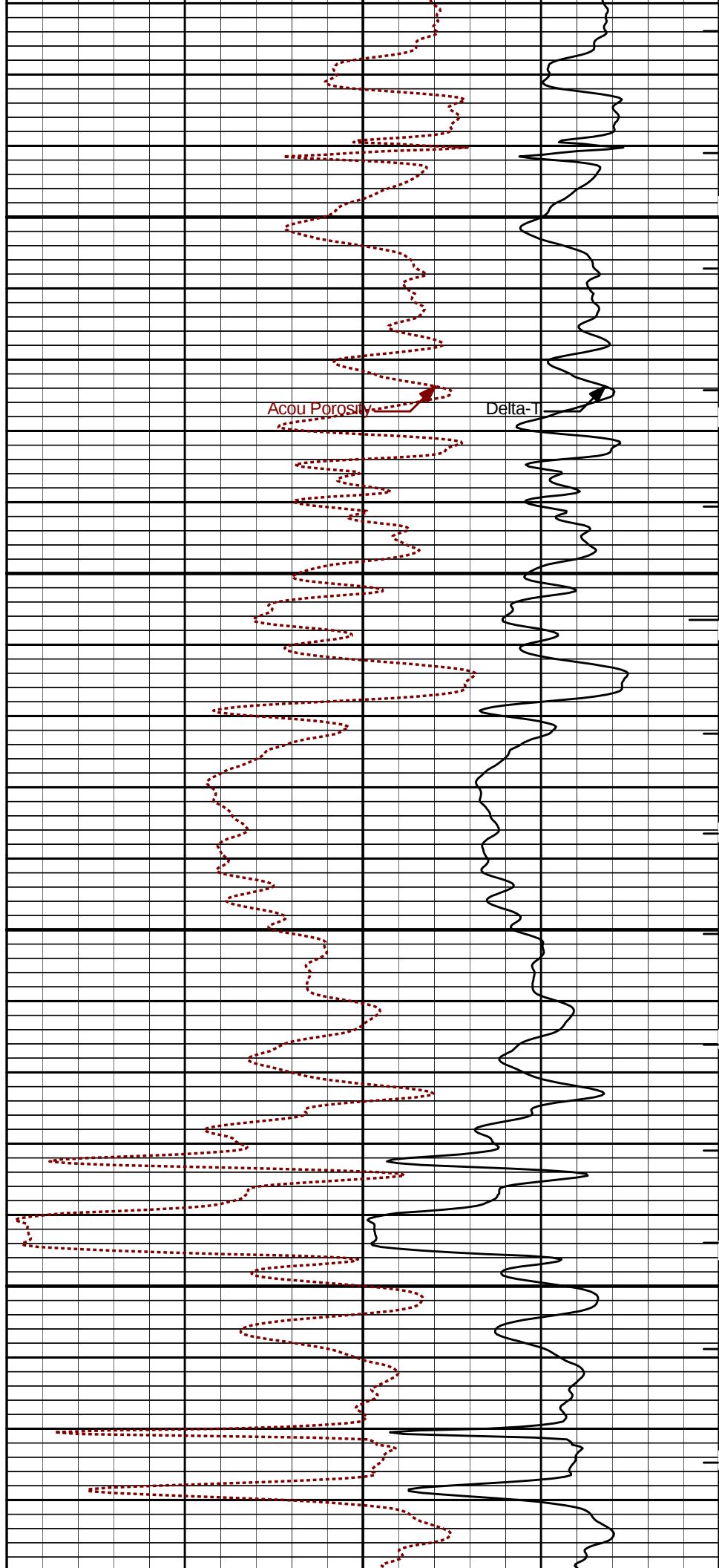
4200

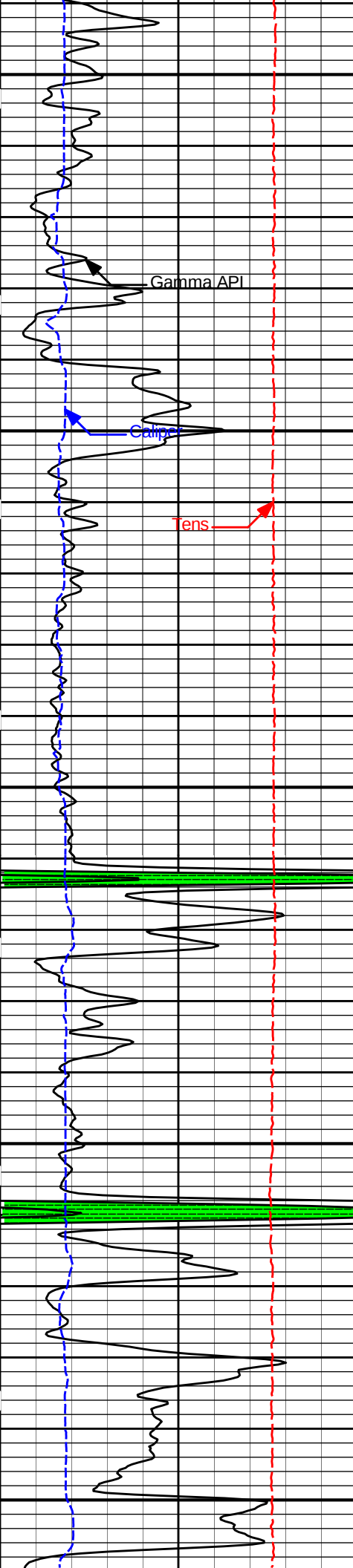




4300

4400

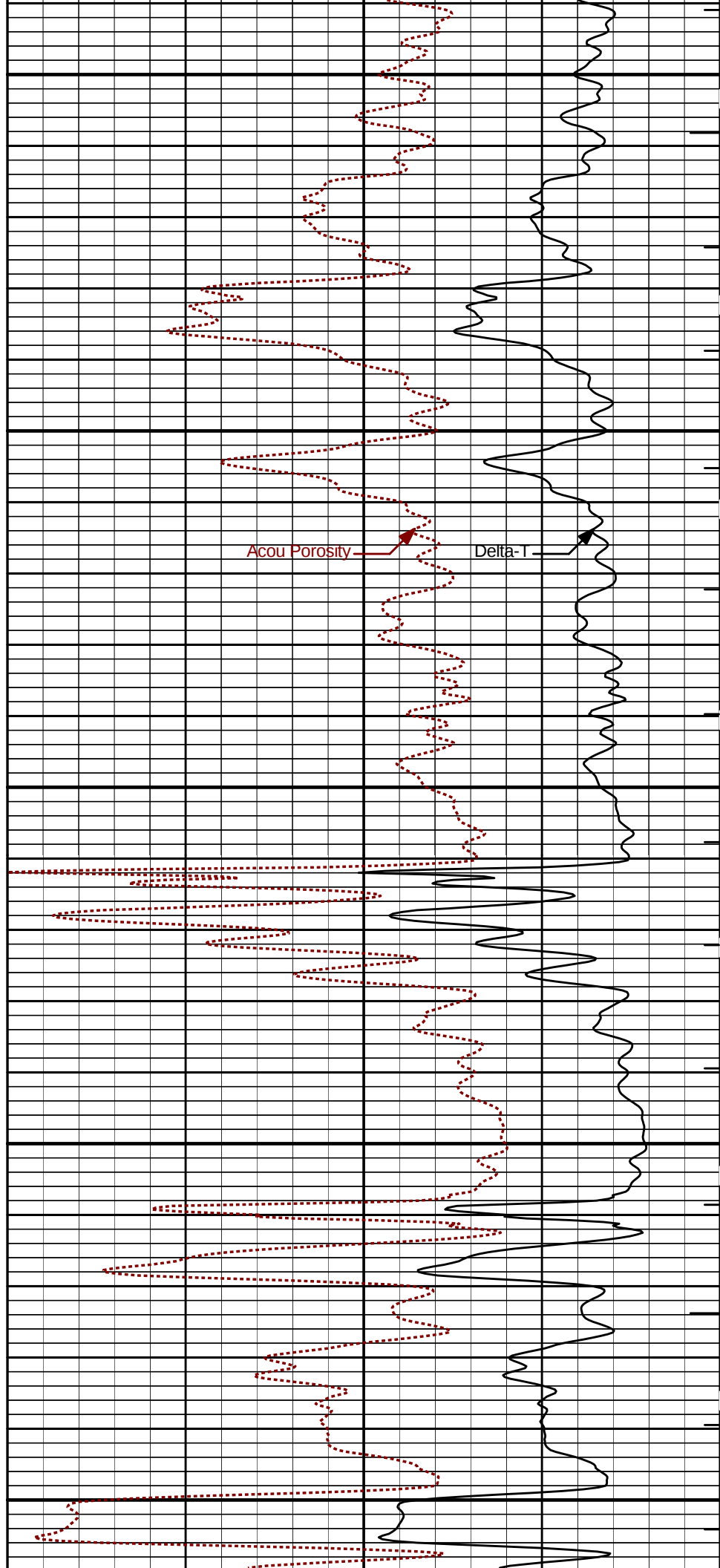


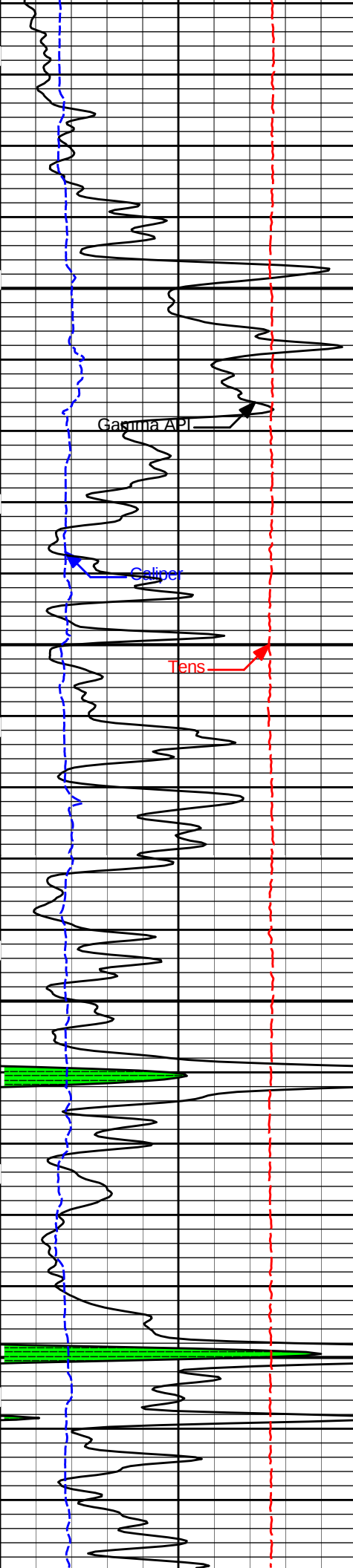


4500

4600

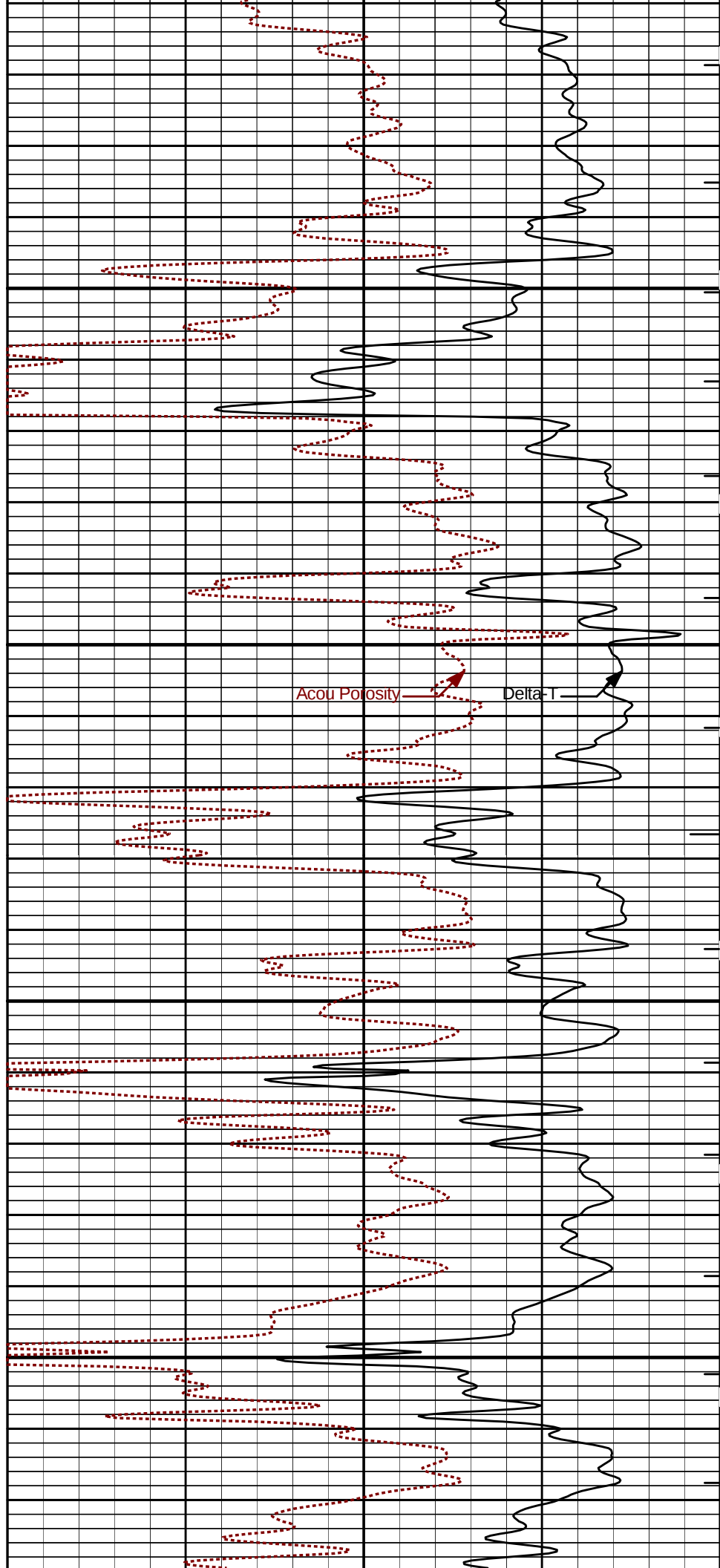
4700

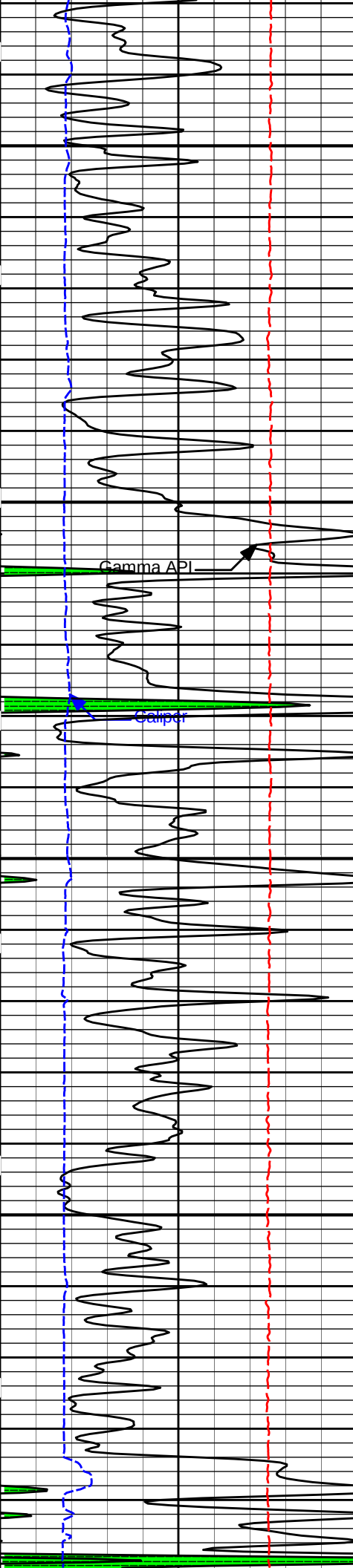




4800

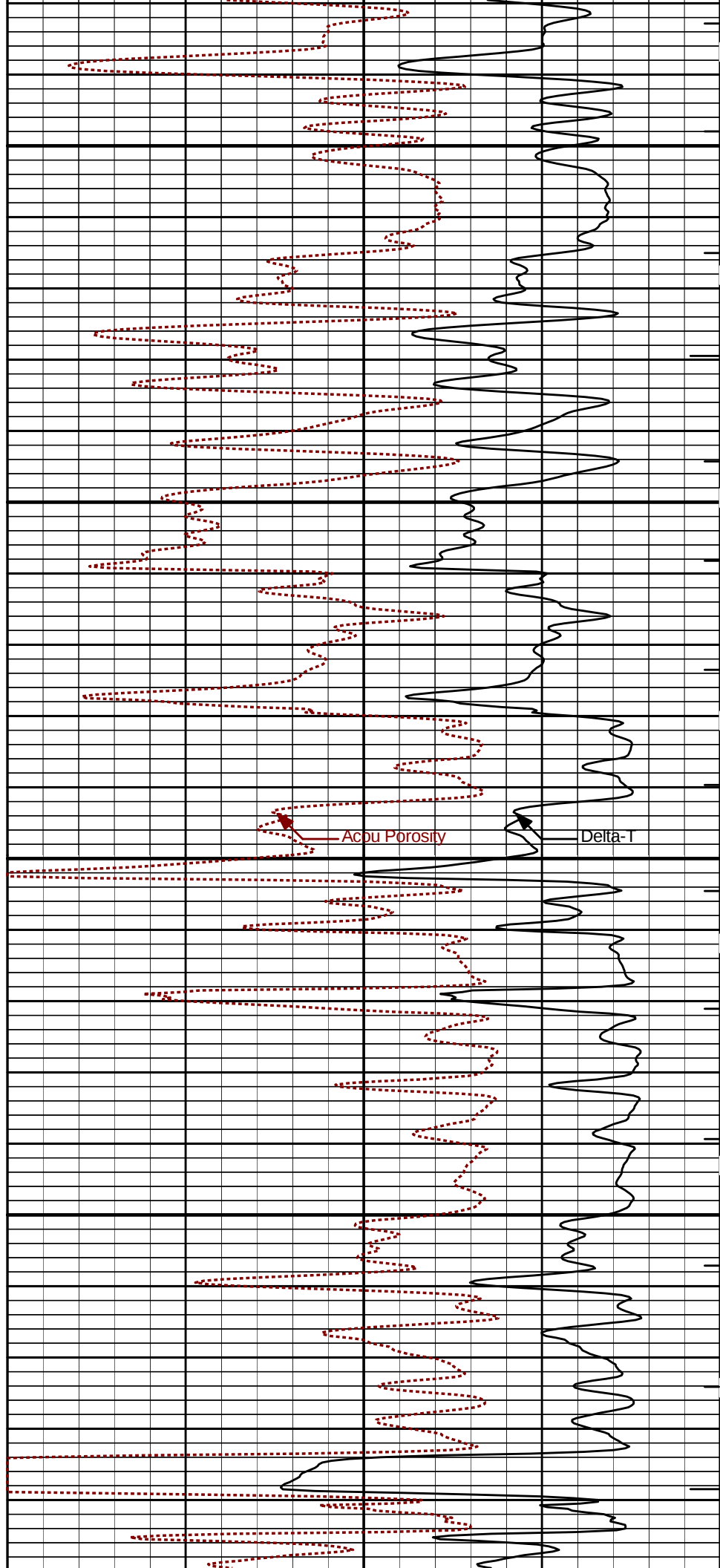
TD
4900

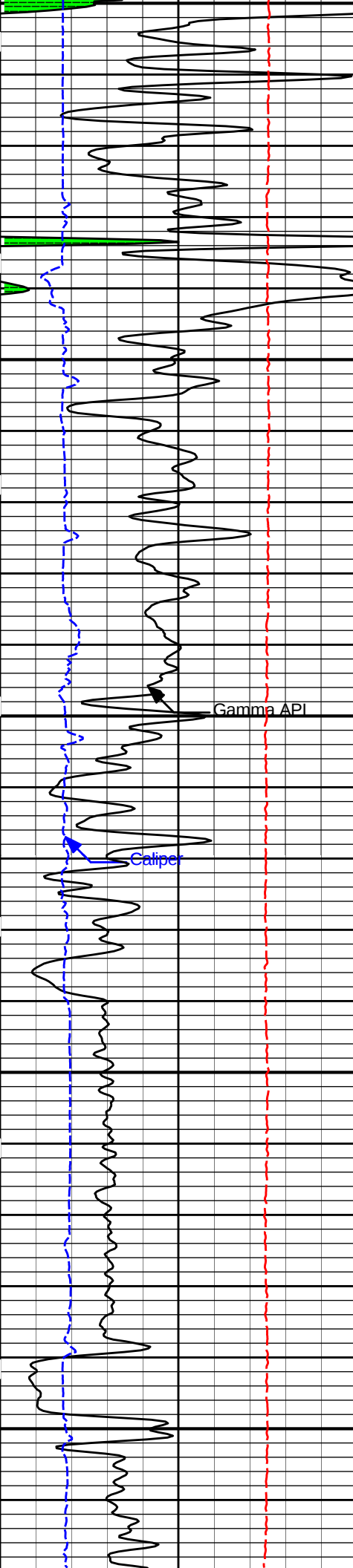




5000

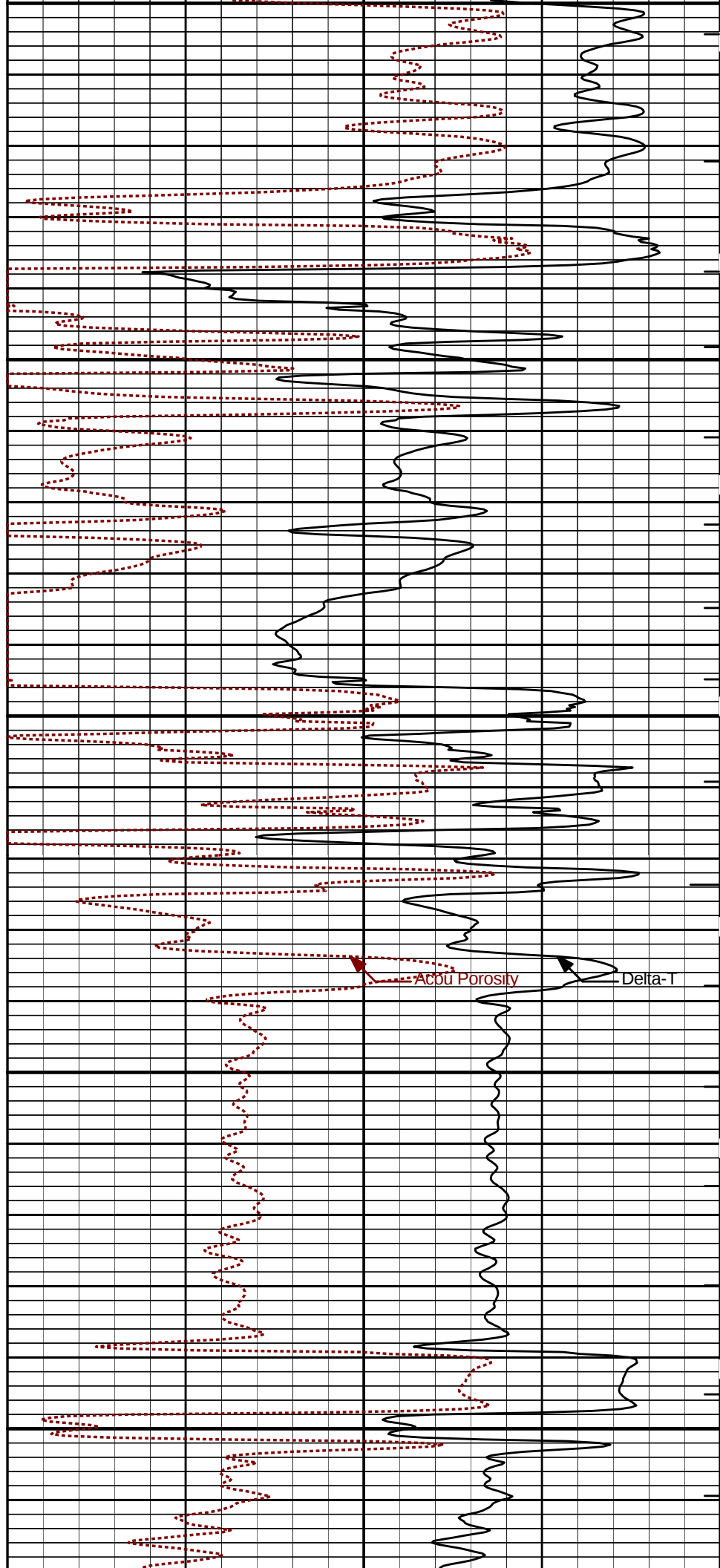
5100

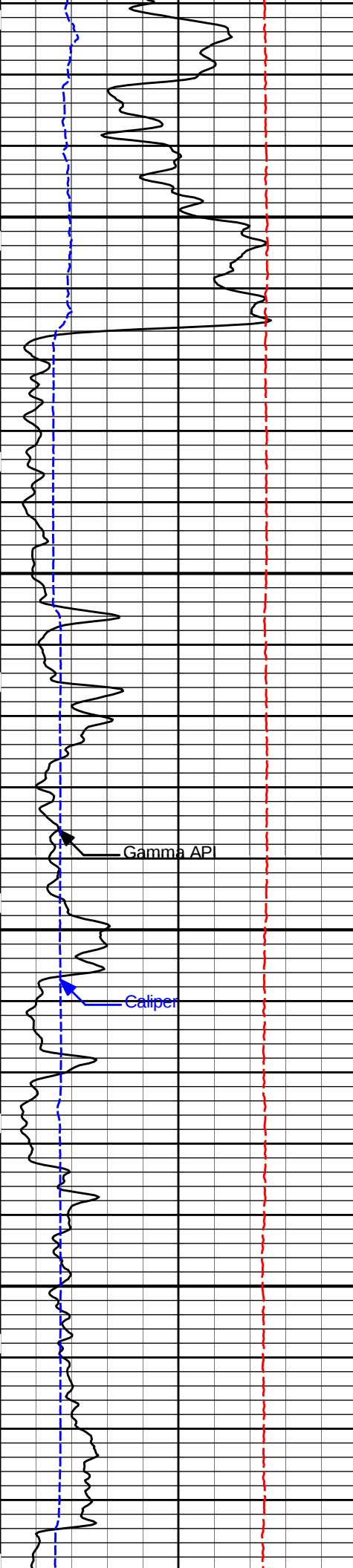




5200

5300



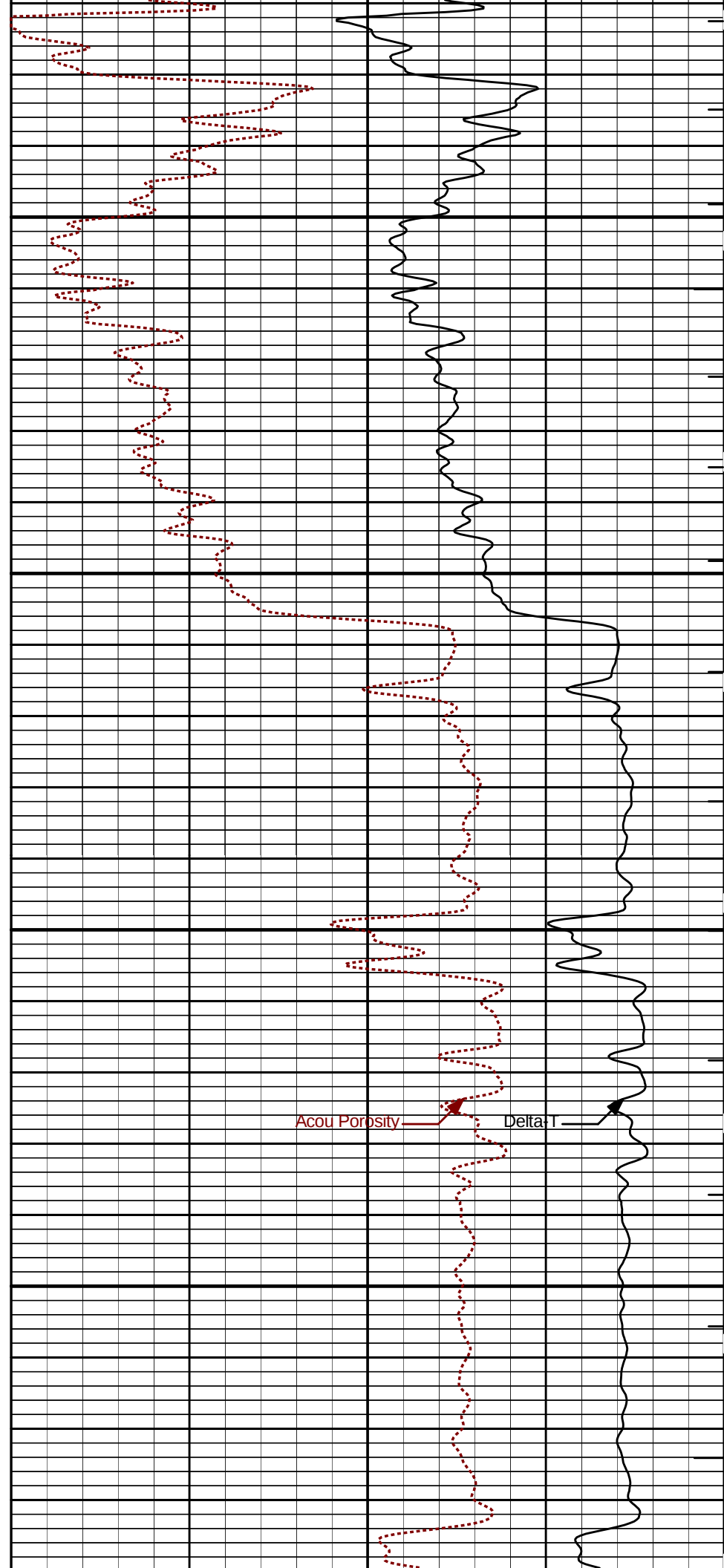


5400

5500

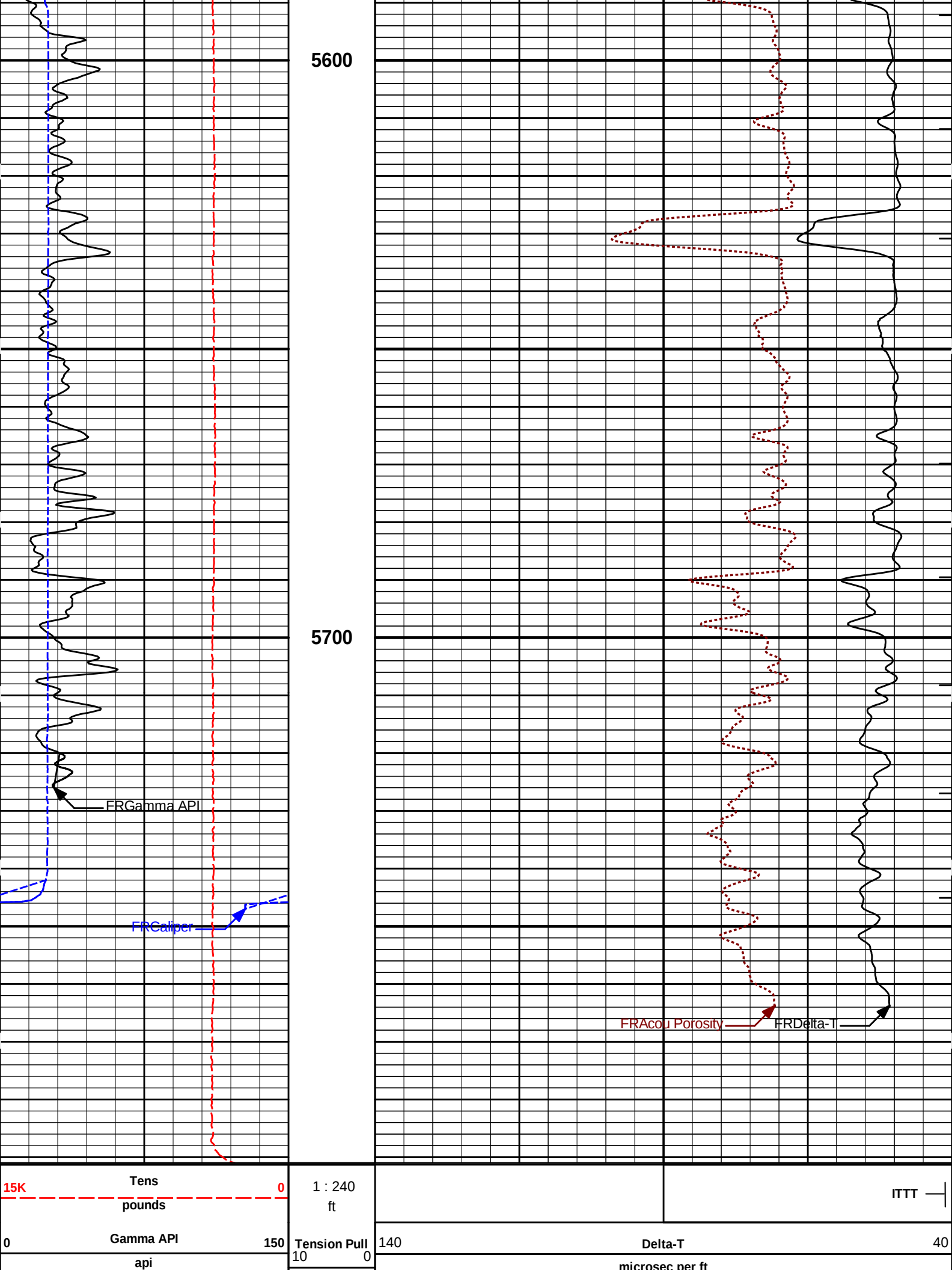
Gamma API

Caliper



Acou Porosity

Delta T



5600

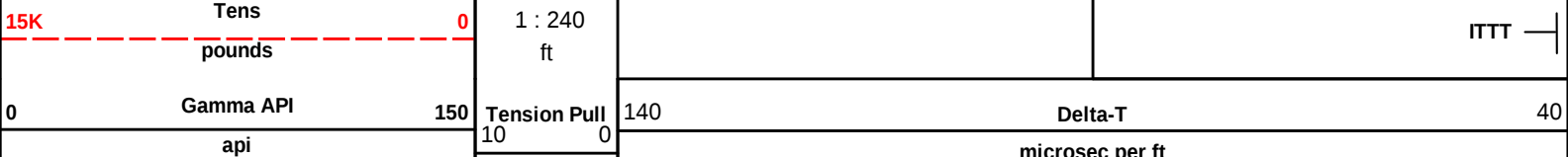
5700

FRGamma API

FRCaliper

FRAcou Porosity

FRDelta-T



6	Caliper inches	16	Tension Pull	30	Acou Porosity percent	-10
SHALE						

HALLIBURTON

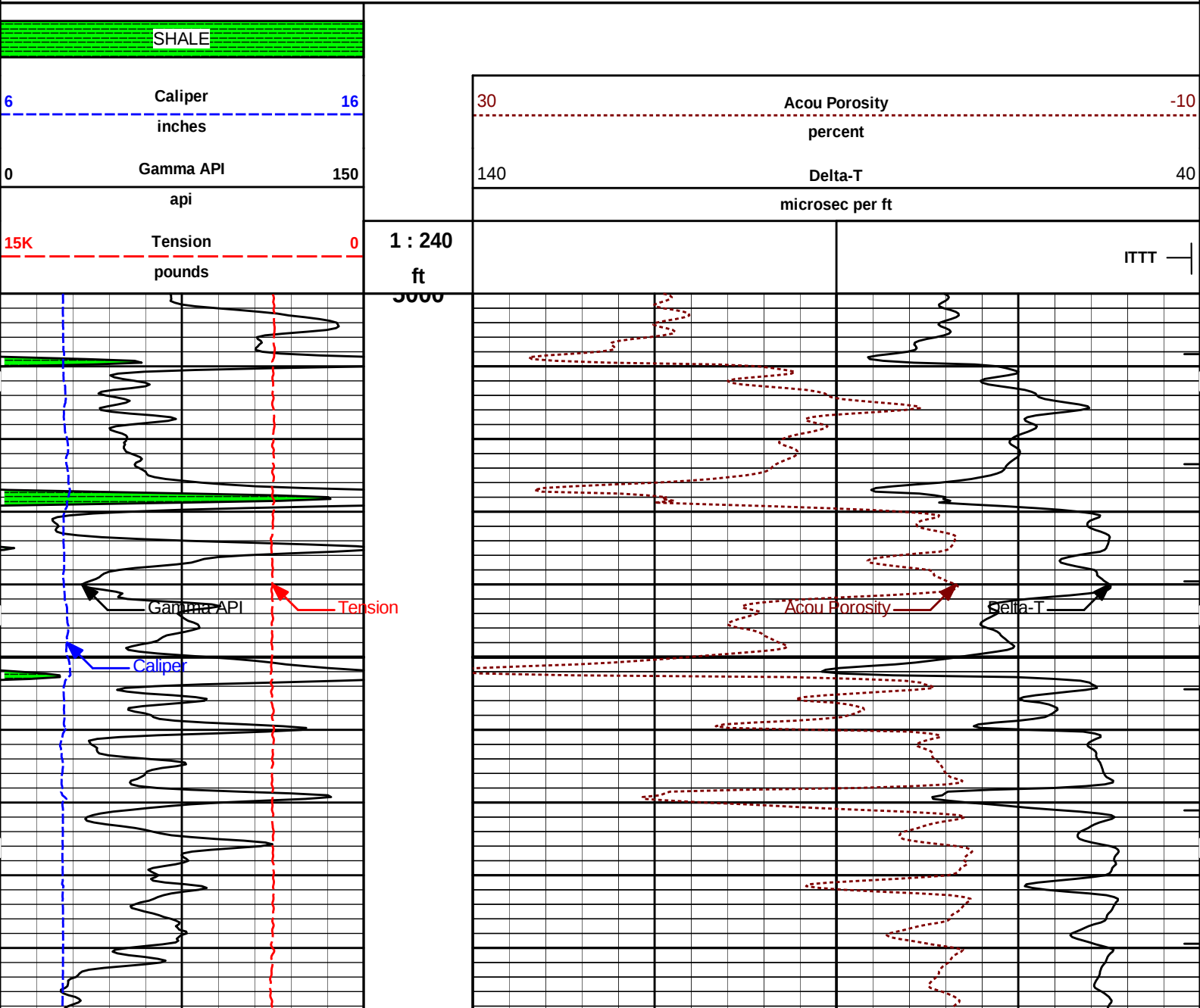
Plot Time: 11-Mar-13 02:41:44
Plot Range: 4000 ft to 5791 ft
Data: BATMAN_B_1\Well Based\DAQ-0001-003\
Plot File: \\BSAT\BSAT_5_MAIN_LIB

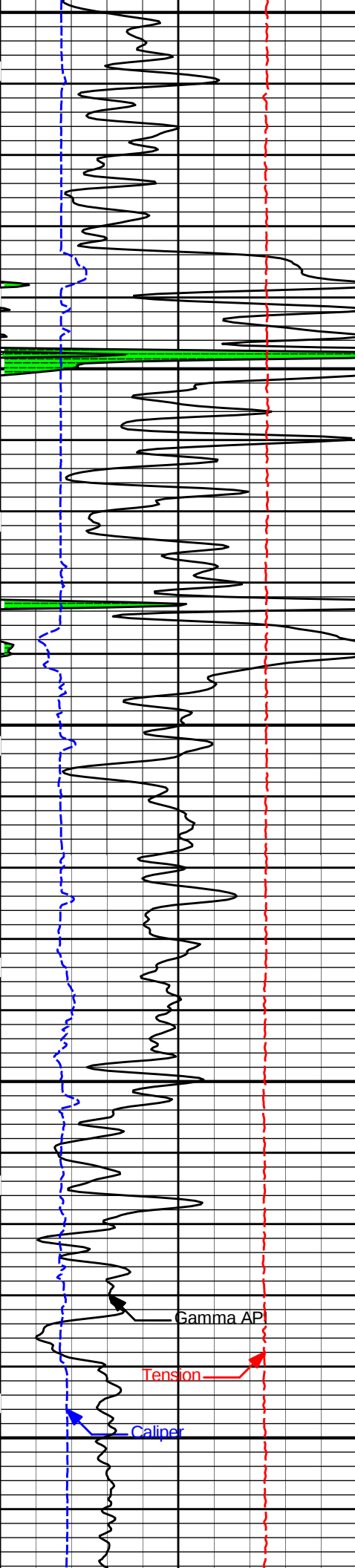
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 11-Mar-13 02:41:45
Plot Range: 5000 ft to 5789.75 ft
Data: BATMAN_B_1\Well Based\DAQ-0001-002\
Plot File: \\BSAT\BSAT_5_REP_LIB

REPEAT SECTION

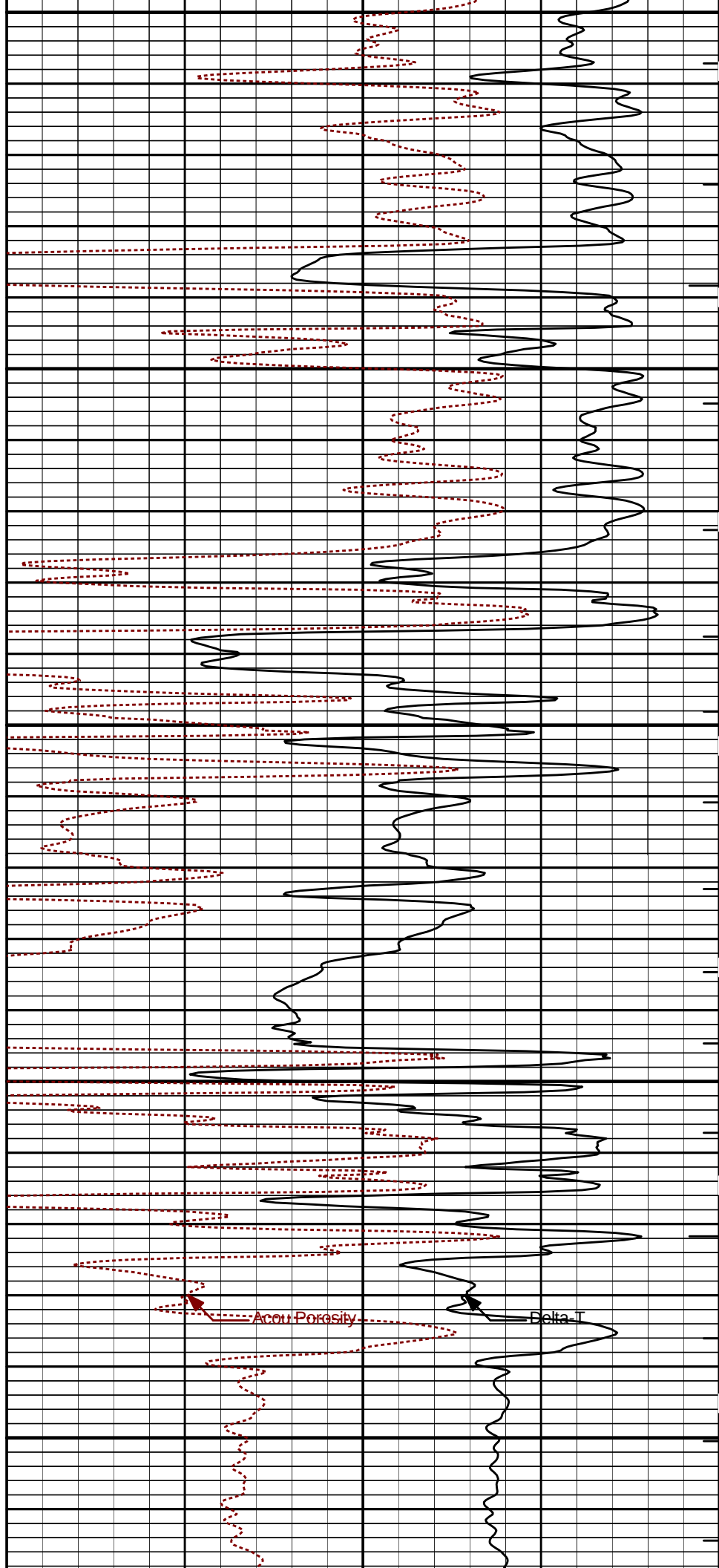


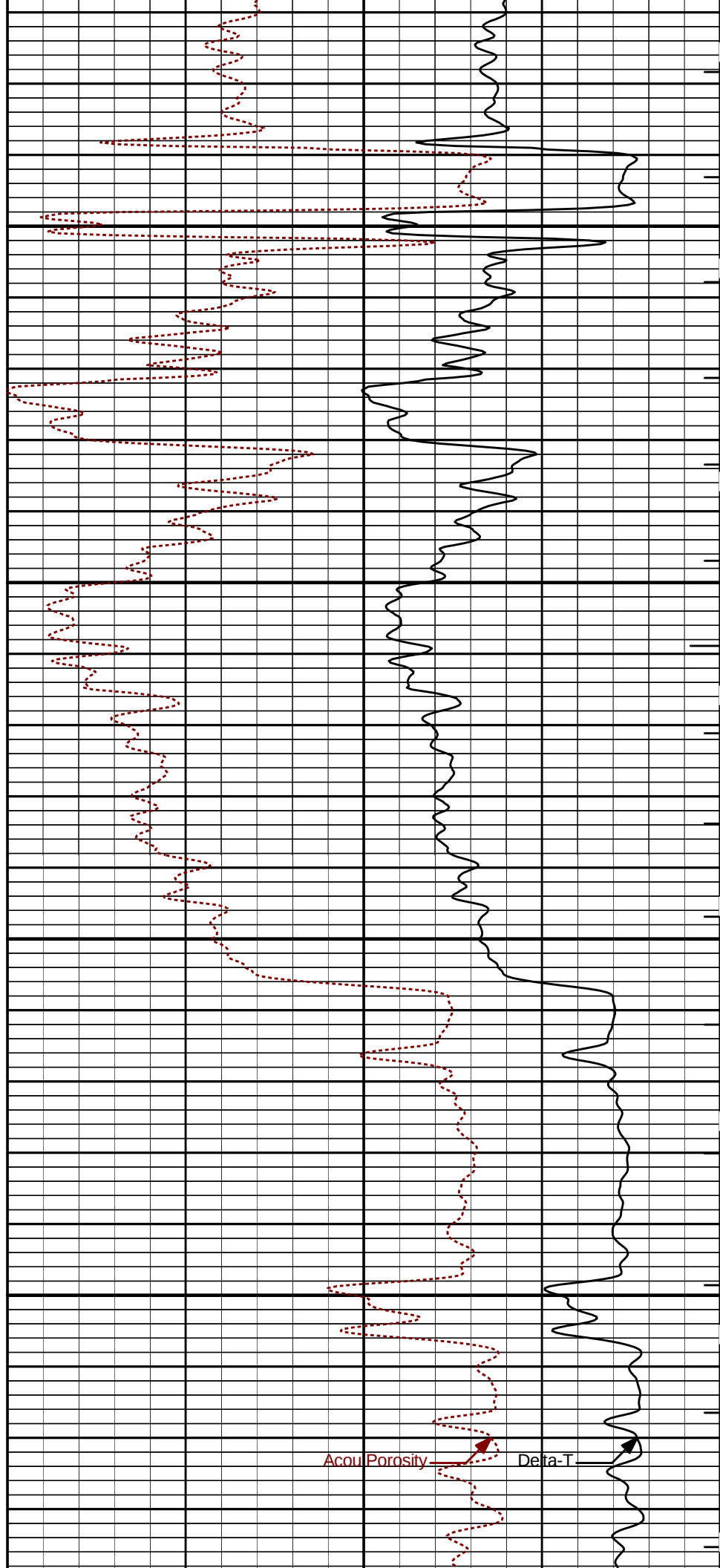
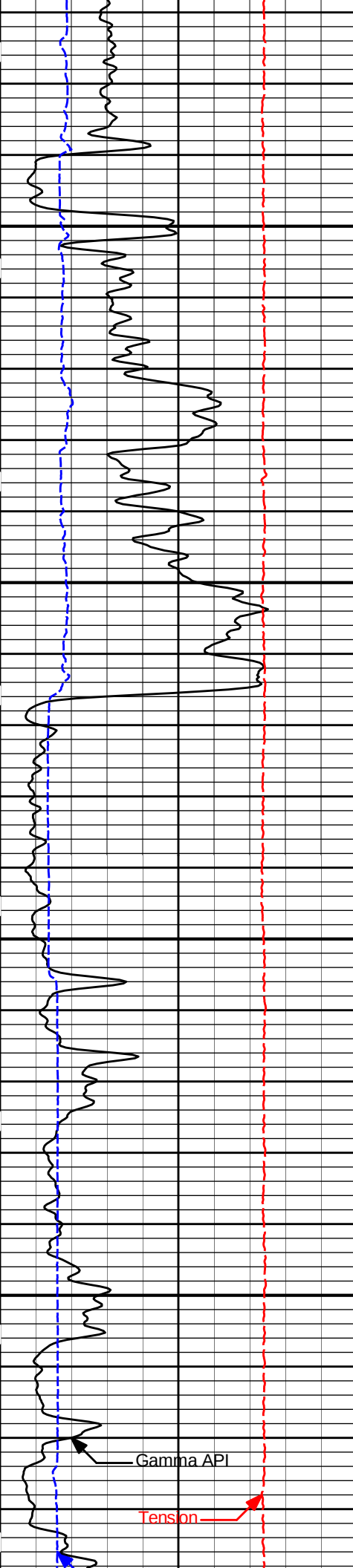


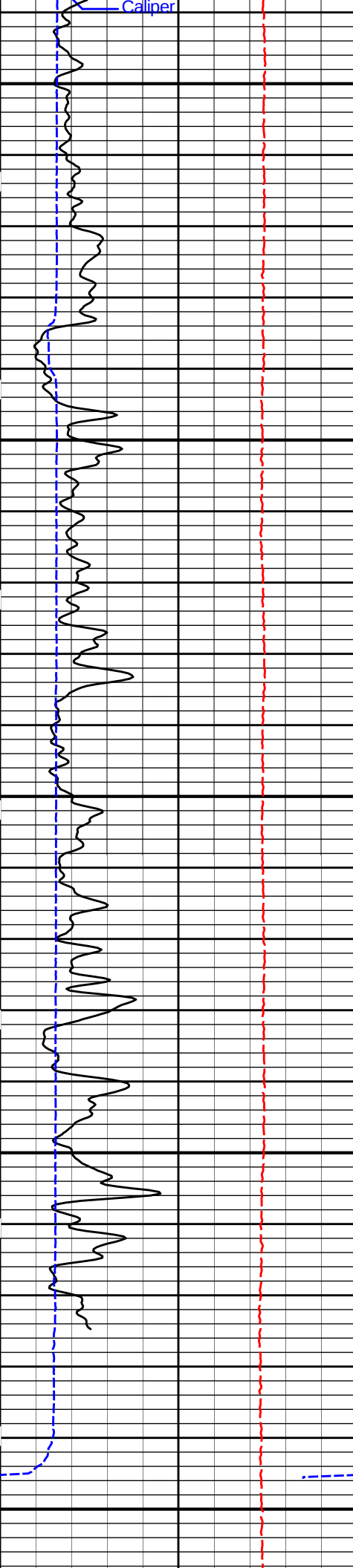
5100

5200

5300

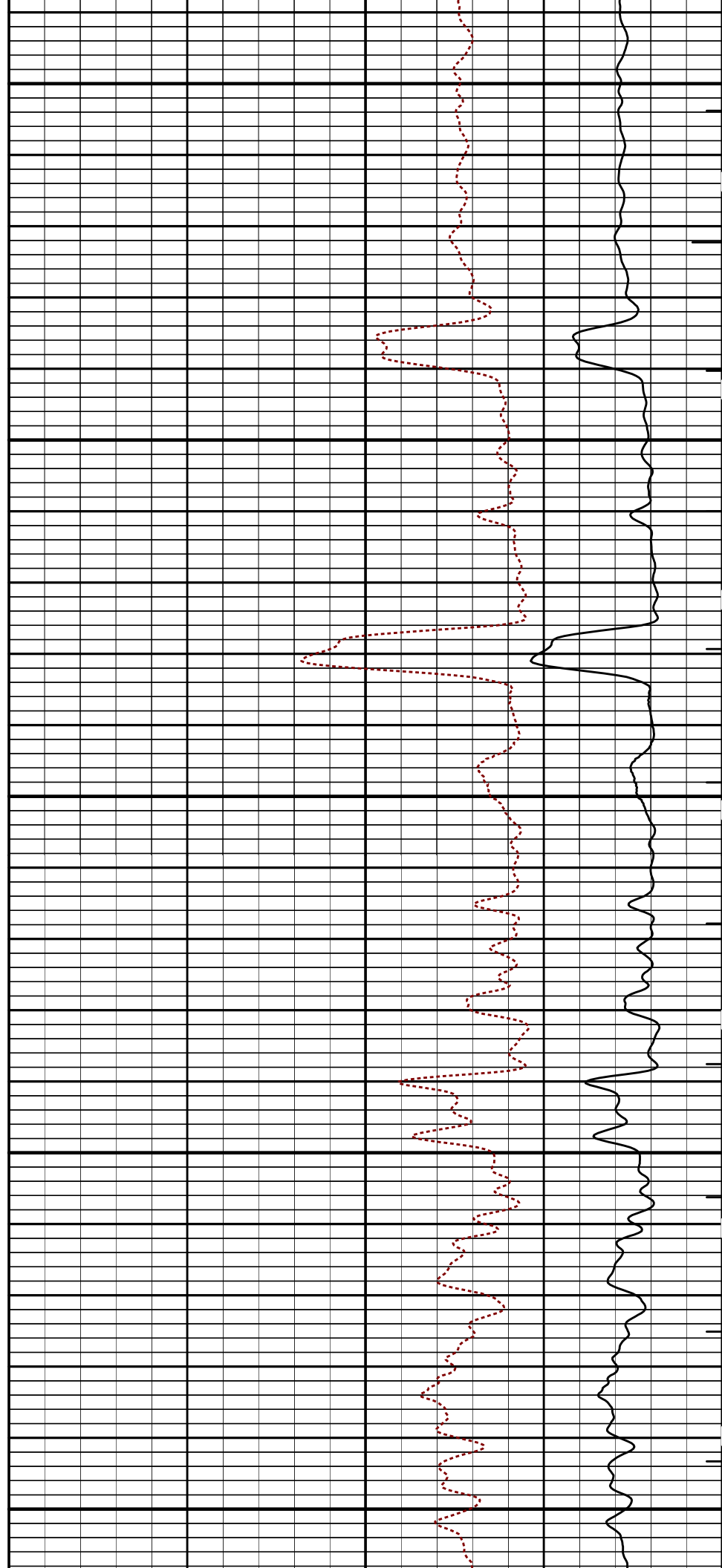


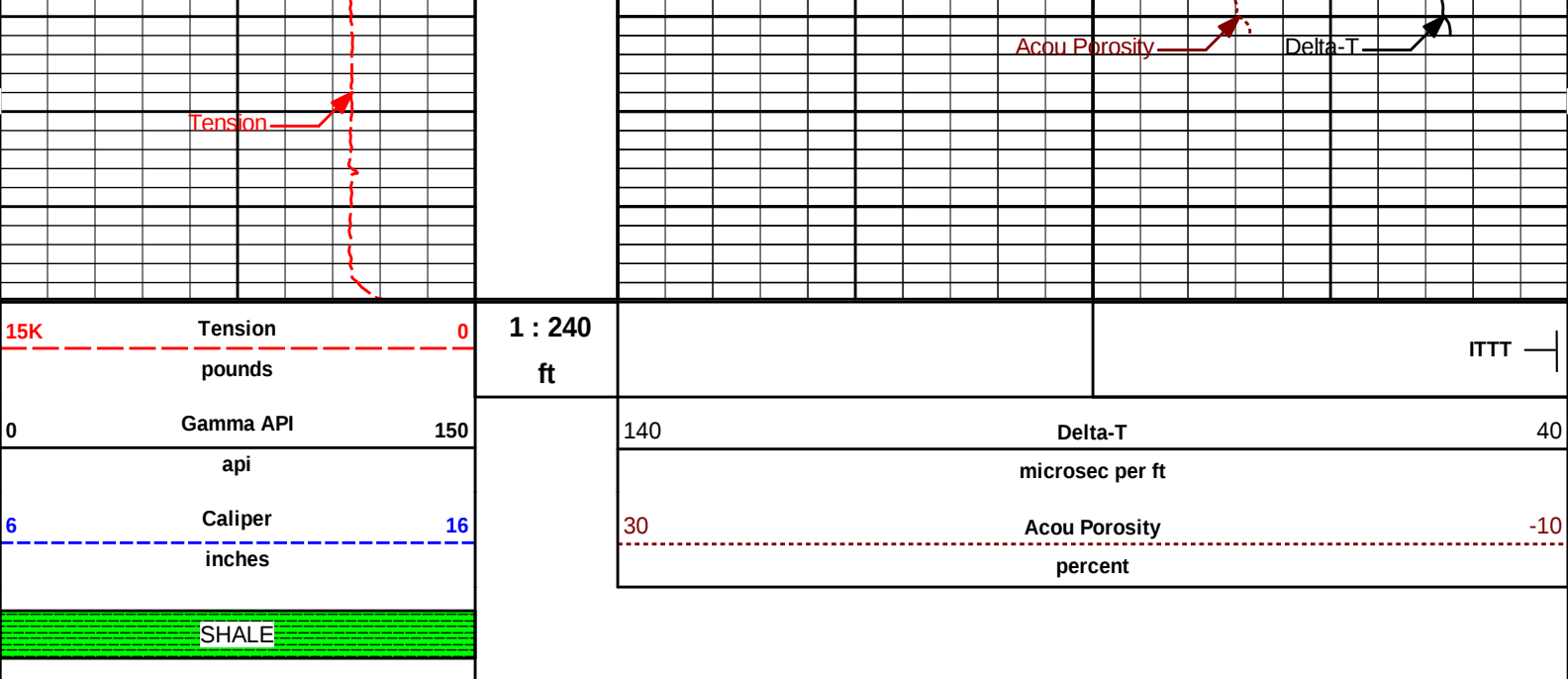




5600

5700





HALLIBURTON

Plot Time: 11-Mar-13 02:41:47

Plot Range: 5000 ft to 5789.75 ft

Data: BATMAN_B_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
Cable Head- PROT01 30.00 lbs		Ø 3.625 in →			1.92 ft	75.71 ft
SP Sub-11441709 60.00 lbs		Ø 3.625 in →		← SP @ 72.01 ft	3.74 ft	73.79 ft
GTET-10748374 165.00 lbs		Ø 3.625 in →		← GammaRay @ 63.99 ft	8.52 ft	70.05 ft
DSN Decentralizer- 10755066 6.60 lbs		Ø 5.000 in* →				61.53 ft
DSNT-10755066 174.00 lbs		Ø 3.625 in →		← DSN Far @ 54.59 ft ← DSN Near @ 53.84 ft	9.69 ft	

SDLT-10685803
360.00 lbs

SDLT Pad-10714945
65.00 lbs
Microlog Pad-10685803
8.00 lbs

Ø 4.500 in →

Ø 4.750 in* →

Ø 4.750 in* →

Microlog @ 44.03 ft
SDL Caliper @ 43.84 ft
SDL @ 43.83 ft

10.81 ft

51.84 ft

41.03 ft

5.67 ft

35.36 ft

Centralizer 25-001
8.00 lbs

Ø 4.000 in* →

IQ Flex-954
140.00 lbs

Ø 3.625 in →

BSAT-10747684
300.00 lbs

Ø 3.625 in →

← Sonic Receivers @ 26.84 ft

15.77 ft

19.58 ft

5.03 ft

14.55 ft

ACRt Instrument-
I256
50.00 lbs

Centralizer 25-002
8.00 lbs

Ø 4.000 in* →

Ø 3.625 in →

← Mud Resistivity @ 13.19 ft

Regal Standoff 6_75-01
20.00 lbs

Ø 6.750 in* →

← ACRt @ 9.21 ft

ACRt Sonde-
10800784
200.00 lbs

Ø 3.625 in →

14.22 ft

0.33 ft

0.00 ft

Bull Nose-001
5.00 lbs

Ø 2.750 in →

0.33 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	73.79	300.00
SP	SP Sub	11441709	60.00	3.74	70.05	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52	61.53	60.00
DSNT	Dual Spaced Neutron	10755066	174.00	9.69	51.84	60.00
DCNT	DSN Decentralizer	10755066	6.60	5.13	*	55.17
SDLT	Spectral Density Tool	10685803	360.00	10.81	41.03	60.00
SDLP	Density Insite Pad	10714945	65.00	2.55	*	43.24
MICP	Microlog Pad	10685803	8.00	1.00	*	43.53
IQF	IQ Flex tool	954	140.00	5.67	35.36	300.00
BSAT	Borehole Sonic Array Tool	10747684	300.00	15.77	19.58	60.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08	*	32.22
ACRt	Array Compensated True Resistivity Instrument Section	I256	50.00	5.03	14.55	300.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08	*	16.30
ACRt	Array Compensated True Resistivity Sonde Section	10800784	200.00	14.22	0.33	300.00
RSOF	Regal Standoff 6.75in	01	20.00	0.52	*	13.45
BLNS	Bull Nose	001	5.00	0.33	0.00	300.00
Total			1,599.60	75.71		
						* Not included in Total Length and Length Accumulation.
Data: BATMAN_B_1I0001 SP-GTET-DSNT-SDLT-FLEX-BSAT-ACRT-BNIDLE					Date: 10-Mar-13 16:39:17	

HALLIBURTON CALIBRATION REPORT			
NATURAL GAMMA RAY TOOL SHOP CALIBRATION			
Tool Name:	GTET - 10748374	Reference Calibration Date:	19-Dec-12 08:49:49
Engineer:	T. HYDE	Calibration Date:	17-Jan-13 13:03:23
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Calibrator Source S/N: TB-185 Calibrator API Reference:228.00 api Equivalent Calibrator API Reference:232.0 api			
	Measurement	Measured	Calibrated
	Background	47.0	47.4
	Background + Calibrator	277.4	279.4
	Calibrator	230.4	232.0
NATURAL GAMMA RAY TOOL FIELD CALIBRATION			
Tool Name:	GTET - 10748374	Reference Calibration Date:	17-Jan-13 13:03:23
Engineer:	THOMAS HYDE	Calibration Date:	10-Mar-13 16:28:51
Software Version:	WL INSITE R3.8.4 (Build 5)	Calibration Version:	1
Calibrator Source S/N: TB-185 Calibrator API Reference:228.00 api Equivalent Calibrator API Reference:232.0 api			
	Field Verification	Shop	Field
	Background	47.4	47.3
	Background + Calibrator	279.4	280.4
	Calibrator	232.0	233.1
	Shop	Field	Difference
	232.0	233.1	-1.1
			+/- 9.00
BSAT FIELD CASING CHECK			

Tool Name: BSAT - 10747684				Calibration Date: 08-Mar-13 21:48:04			
Engineer: S. INGERSOLL							
Software Version: WL INSITE R3.8.4 (Build 5)				Calibration Version: 1			
	Pre-Log Check	Check Depth	Shop	Field	Difference	Tolerance	Units
	Delta-T Compensated	2424.32	57.00	56.19	0.8100	1.00	uspf
CALIBRATION SUMMARY							
Sensor	Shop	Field	Post	Difference	Tolerance	Units	
GTET-10748374							
Gamma Ray Calibrator	232.0	233.1	-----	-1.1	+/- 9.00	api	
Data: BATMAN_B_1\0001 SP-GTET-DSNT-SDLT-FLEX-BSAT-ACRT-BNIDLE						Date: 10-Mar-13 17:18:51	
HALLIBURTON							
PARAMETERS REPORT							
Depth (ft)	Tool Name	Mnemonic	Description		Value	Units	
TOP							
	SHARED	BS	Bit Size		7.875	in	
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.		No		
	SHARED	MDBS	Mud Base		Water		
	SHARED	MDWT	Borehole Fluid Weight		9.500	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		2.000	ohmm	
	SHARED	TRM	Temperature of Mud		70.0	degF	
	SHARED	CSD	Logging Interval is Cased?		No		
	SHARED	ICOD	AHV Casing OD		5.500	in	
	SHARED	ST	Surface Temperature		70.0	degF	
	SHARED	TD	Total Well Depth		10000.00	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	
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	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	2.710	g/cc
SDLT Pad	DFL	Formation Density Fluid	1.000	g/cc
Microlog Pad	MLOK	Process MicroLog Outputs?	Yes	
BSAT	MBOK	Compute BCAS Results?	Yes	
BSAT	FLLO	Frequency Filter Low Pass Value?	5000	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 Sonde	RTOK	Process ACRt?	Yes	
ACRt Sonde	MNSO	Minimum Tool Standoff	1.50	in
ACRt Sonde	TCS1	Temperature Correction Source	FP Lwr & FP Up	
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: BATMAN_B_1\0001 SP-GTET-DSNT-SDLT-FLEX-BSAT-ACRT-BNIDLE			Date: 10-Mar-13 17:19:04	

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	72.01	NO	
SP	Spontaneous Potential	72.01	BLK	1.250
SPR	Raw Spontaneous Potential	72.01	NO	
SPO	Spontaneous Potential Offset	72.01	NO	

GTET				
TPUL	Tension Pull	63.99	NO	
GR	Natural Gamma Ray API	63.99	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	63.99	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	63.99	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
DSNT				
TPUL	Tension Pull	53.74	NO	
RNDS	Near Detector Telemetry Counts	53.84	BLK	1.417
RFDS	Far Detector Telemetry Counts	54.59	TRI	0.583
DNTT	DSN Tool Temperature	53.84	NO	
DSNS	DSN Tool Status	53.74	NO	
ERND	Near Detector Telemetry Counts EVR	53.84	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	54.59	BLK	0.000
ENTM	DSN Tool Temperature EVR	53.84	NO	
SDLT				
TPUL	Tension Pull	43.84	NO	
PCAL	Pad Caliper	43.84	TRI	0.250
ACAL	Arm Caliper	43.84	TRI	0.250
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	
GMOD	Gain processing mode	19.58	NO	
ACRt Sonde				
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 Current Raw 12K X Receiver	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	
SDLT Pad				
TPUL	Tension Pull	43.83	NO	
NAB	Near Above	43.66	BLK	0.920
NHI	Near Cesium High	43.66	BLK	0.920
NLO	Near Cesium Low	43.66	BLK	0.920
NVA	Near Valley	43.66	BLK	0.920
NBA	Near Barite	43.66	BLK	0.920
NDE	Near Density	43.66	BLK	0.920
NPK	Near Peak	43.66	BLK	0.920
NLI	Near Lithology	43.66	BLK	0.920
NBAU	Near Barite Unfiltered	43.66	BLK	0.250
NLIU	Near Lithology Unfiltered	43.66	BLK	0.250
FAB	Far Above	44.01	BLK	0.250
FHI	Far Cesium High	44.01	BLK	0.250
FLO	Far Cesium Low	44.01	BLK	0.250
FVA	Far Valley	44.01	BLK	0.250
FBA	Far Barite	44.01	BLK	0.250
FDE	Far Density	44.01	BLK	0.250
FPK	Far Peak	44.01	BLK	0.250
FLI	Far Lithology	44.01	BLK	0.250
PTMP	Pad Temperature	43.84	BLK	0.920
NHV	Near Detector High Voltage	43.24	NO	
FHV	Far Detector High Voltage	43.24	NO	
ITMP	Instrument Temperature	43.24	NO	
DDHV	Detector High Voltage	43.24	NO	

DDHV	Detector High Voltage	43.24	NO	
Microlog Pad				
TPUL	Tension Pull	44.03	NO	
MINV	Microlog Lateral	44.03	BLK	0.750
MNOR	Microlog Normal	44.03	BLK	0.750
Data: BATMAN_B_1\0001 SP-GTET-DSNT-SDLT-FLEX-BSAT-ACRT-BN\IDLE			Date: 10-Mar-13 17:19:12	

COMPANY	OXY USA		
WELL	BATMAN B-1		
FIELD	HUGOTON GAS AREA		
COUNTY	HASKELL	STATE	KANSAS
HALLIBURTON		BORE HOLE COMPENSATED SONIC ARRAY LOG	