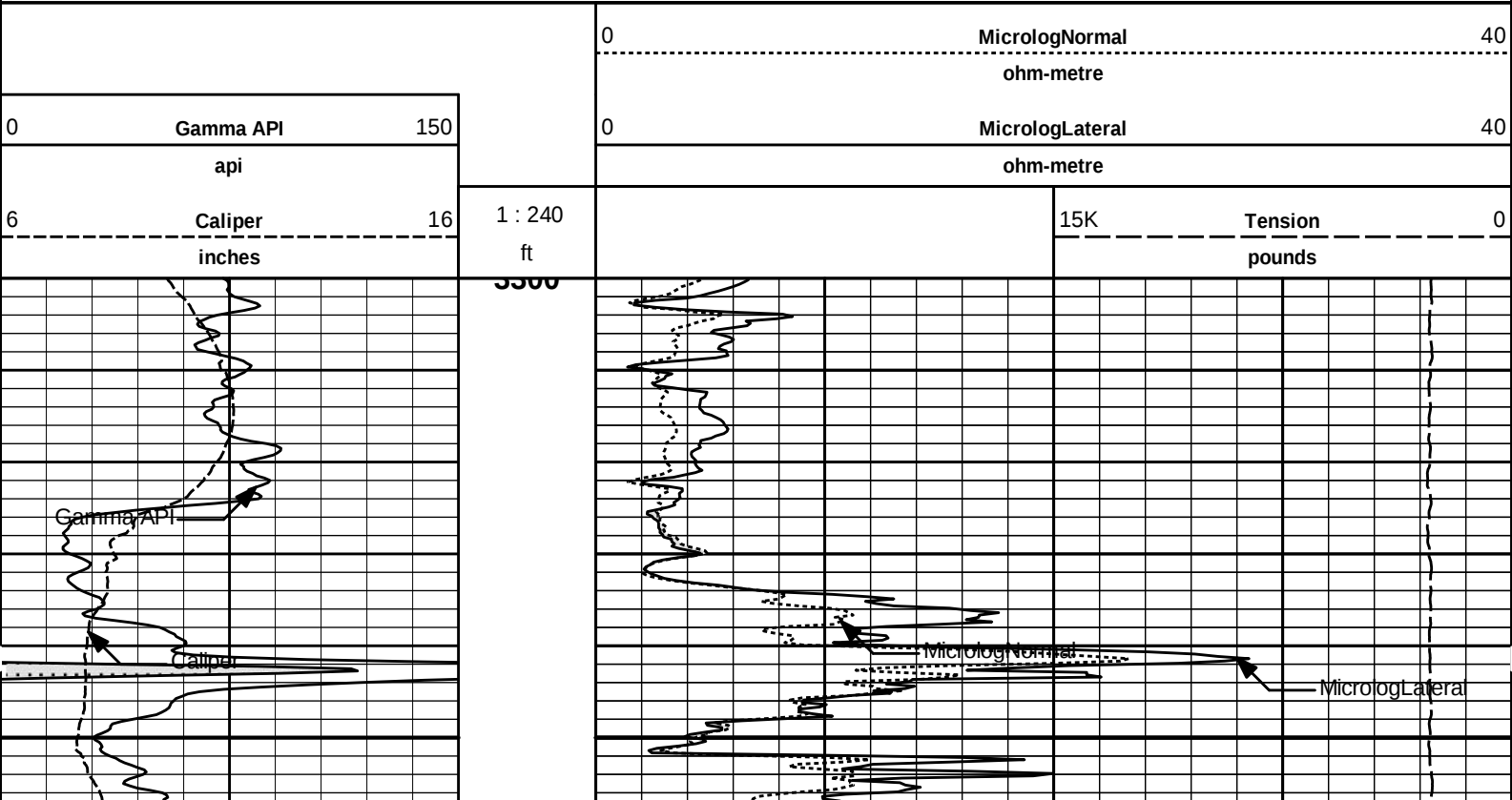


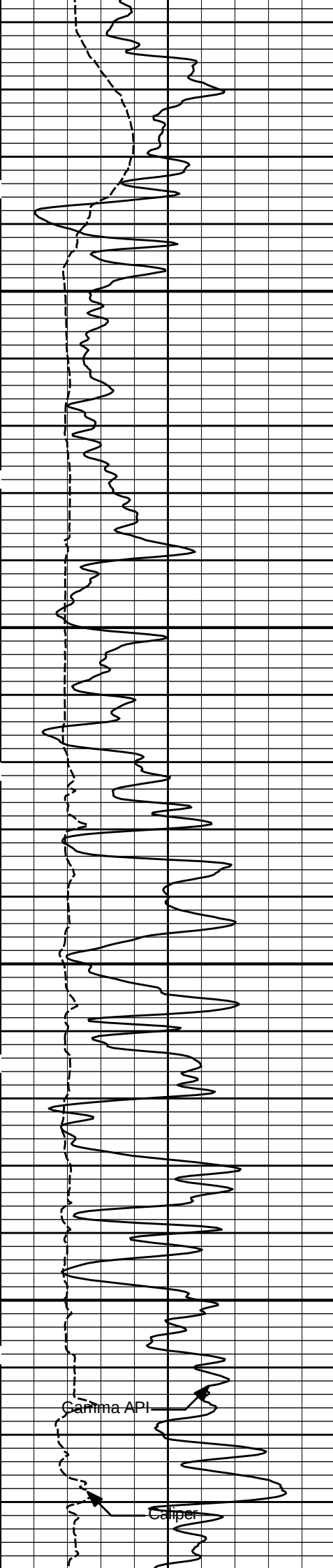
HALLIBURTON

MICROLOG

COMPANY				HARTMAN OIL COMPANY, INC.			
WELL				WILKINSON TRUST UNIT #1-21			
FIELD/BLOCK				ISBEL NORTH			
COUNTY				SCOTT			
STATE				KANSAS			
Permanent Datum				GL			
Log measured from				KB			
Drilling measured from				KB			
Date				01-Jun-17			
Run No.				1			
Depth - Driller				4800.0 ft			
Depth - Logger				4801.0 ft			
Bottom - Logged Interval				4791			
Top - Logged Interval				3300			
Casing - Driller				8.625 in @ 347.0 ft			
Casing - Logger				345.0 ft			
Bit Size				7.875 in @			
Type Fluid in Hole				Water Based Mud			
Density				9.0 ppg 56.00 s/qt			
PH				9.00 pH 10.4 cphm			
Source of Sample				MUD PIT			
Rm @ Meas. Temperature				0.48 ohmm @ 82.00 degF @			
Rmf @ Meas. Temperature				0.39 ohmm @ 80.00 degF @			
Rmc @ Meas. Temperature				0.61 ohmm @ 80.00 degF @			
Source Rmf				MEAS MEAS			
Rm @ BHT				0.33 ohmm @ 122.0 degF @			
Time Since Circulation				04:00 hr			
Time on Bottom				01-Jun-17 06:29			
Max. Rec. Temperature				122.00 degF @ 4801.0 ft @			
Equipment				12156883 EL RENO			
Recorded By				WHITLOCK			
Witnessed By				CHRIS PETERS			

Service Ticket No.: 904068966				API No.: 15-171-21204-00-00				PGM Version: WL INSITE R5.0.5 (Build 8)											
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE								RESISTIVITY SCALE CHANGES											
Date		Sample No.						Type Log		Depth		Scale Up Hole		Scale Down Hole					
Depth-Driller																			
Type Fluid in Hole																			
Density		Viscosity																	
Ph		Fluid Loss																	
Source of Sample								RESISTIVITY EQUIPMENT DATA											
Rm @ Meas. Temp		@		@		Run No.		Tool Type & No.		Pad Type		Tool Pos.		Other					
Rmf @ Meas. Temp.		@		@															
Rmc @ Meas. Temp.		@		@															
Source Rmf		Rmc																	
Rm @ BHT		@		@															
Rmf @ BHT		@		@															
Rmc @ BHT		@		@															
EQUIPMENT DATA																			
GAMMA				ACOUSTIC				DENSITY				NEUTRON							
Run No.				Run No.				Run No.				Run No.							
Serial No.				Serial No.				Serial No.				Serial No.							
Model No.				Model No.				Model No.				Model No.							
Diameter				No. of Cent.				Diameter				Diameter							
Detector Model No.				Spacing				Log Type				Log Type							
Type								Source Type				Source Type							
Length				LSA [Y/N]				Serial No.				Serial No.							
Distance to Source				FWDA [Y/N]				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			



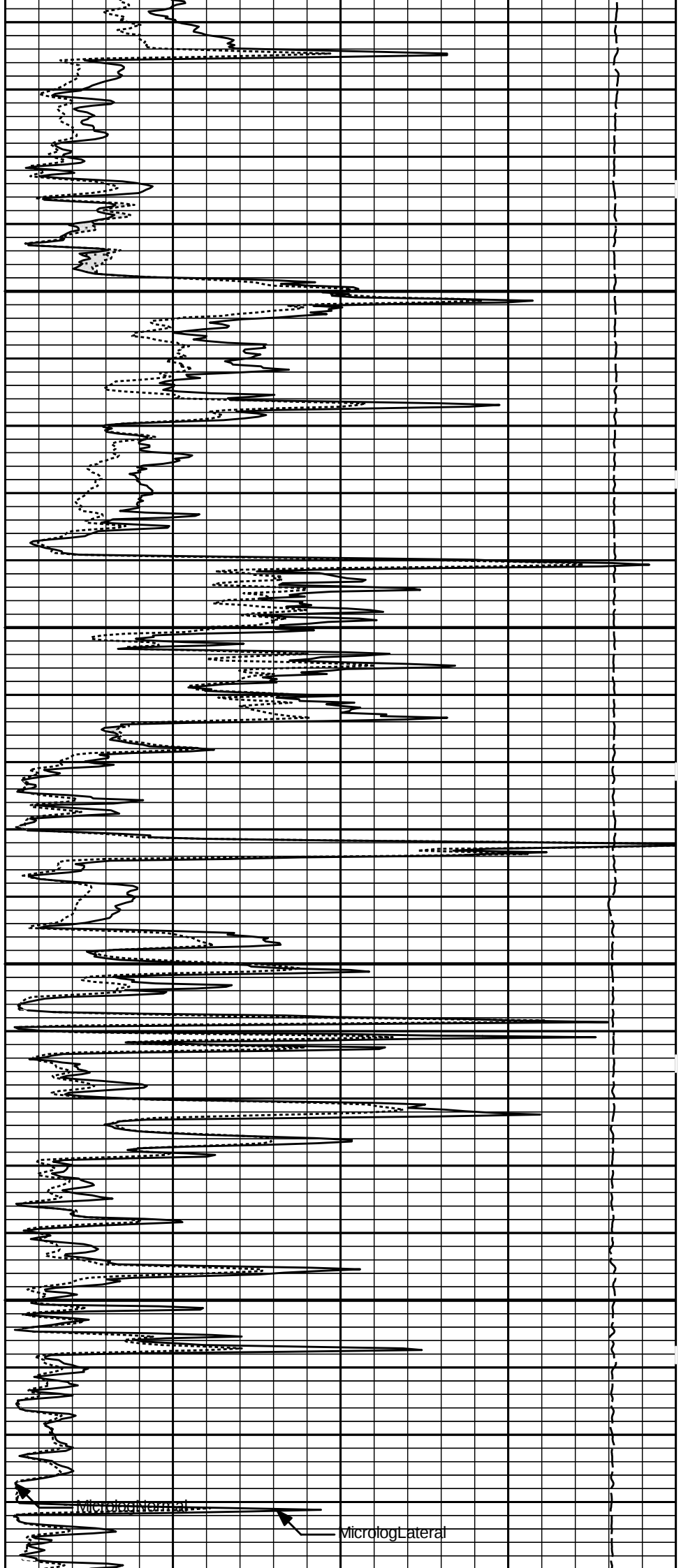


3400

3500

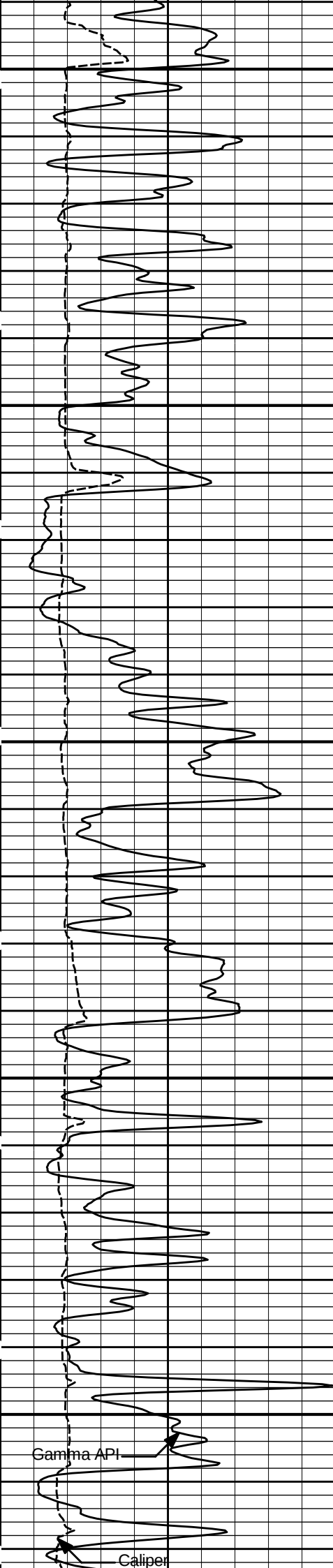
Gamma API

Caliper



MicrologNormal

MicrologLateral



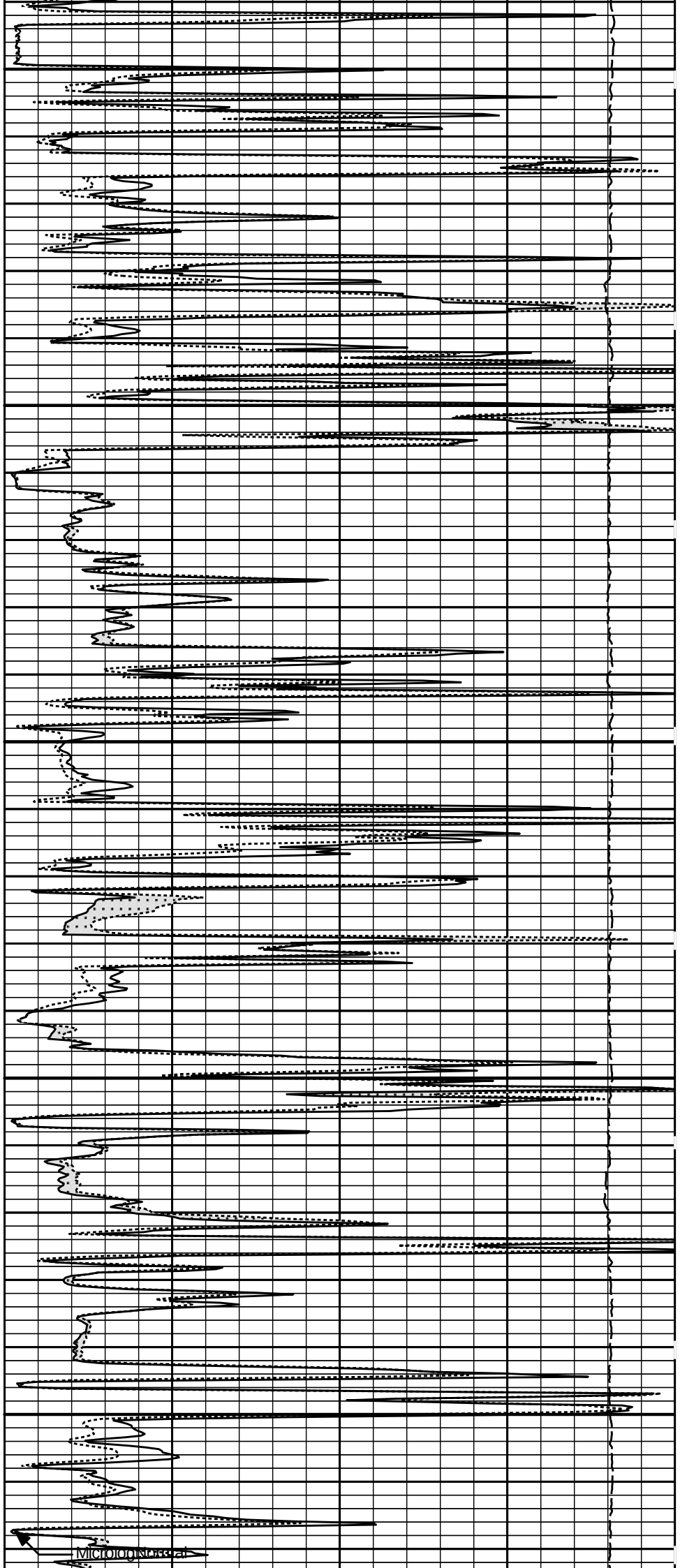
3600

3700

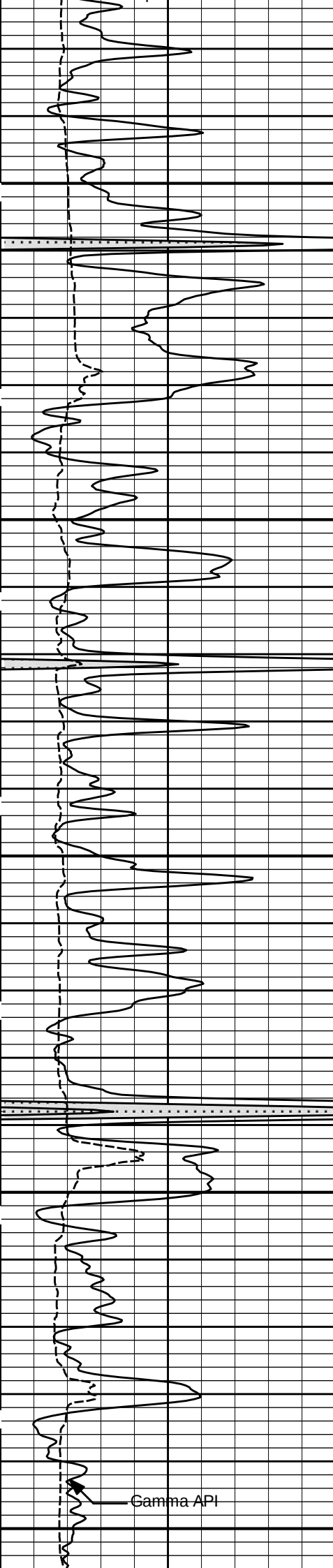
3800

Gamma API

Caliper

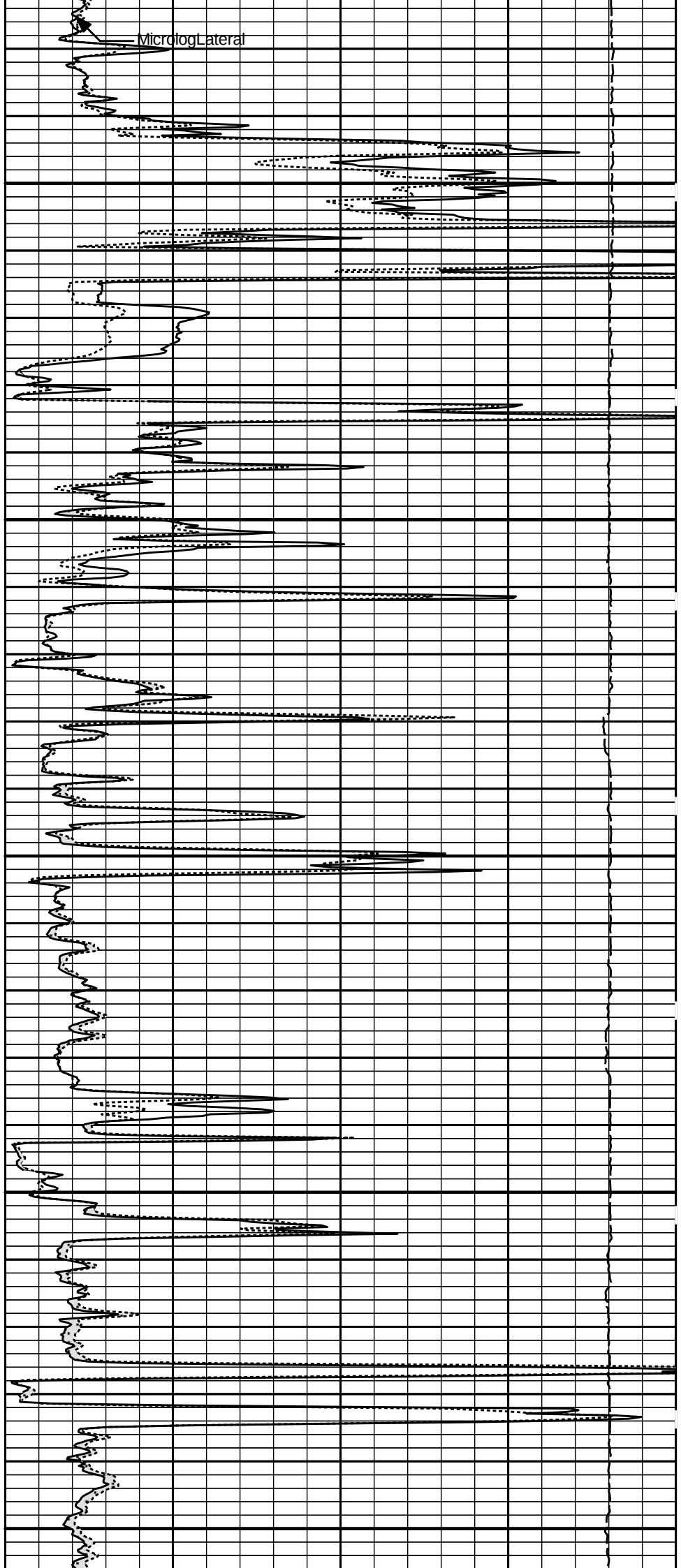


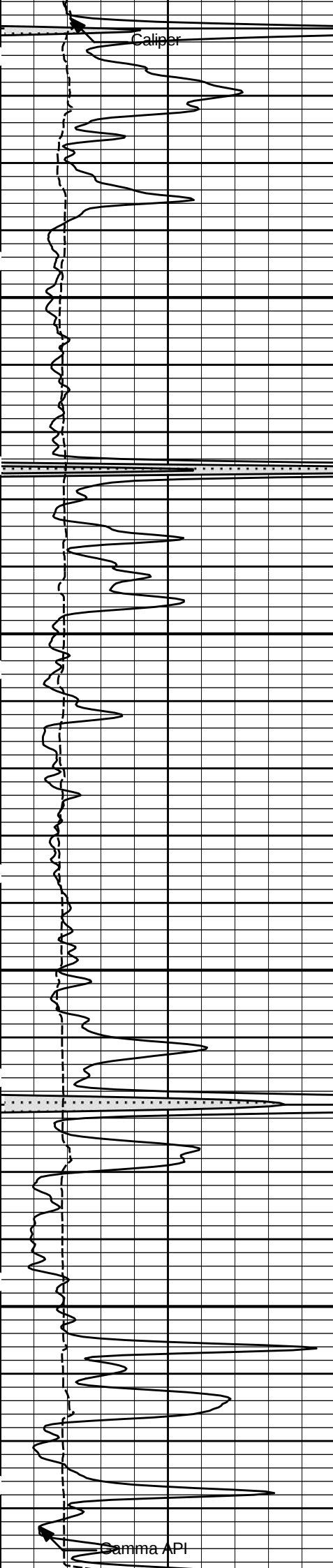
Microlog



3900

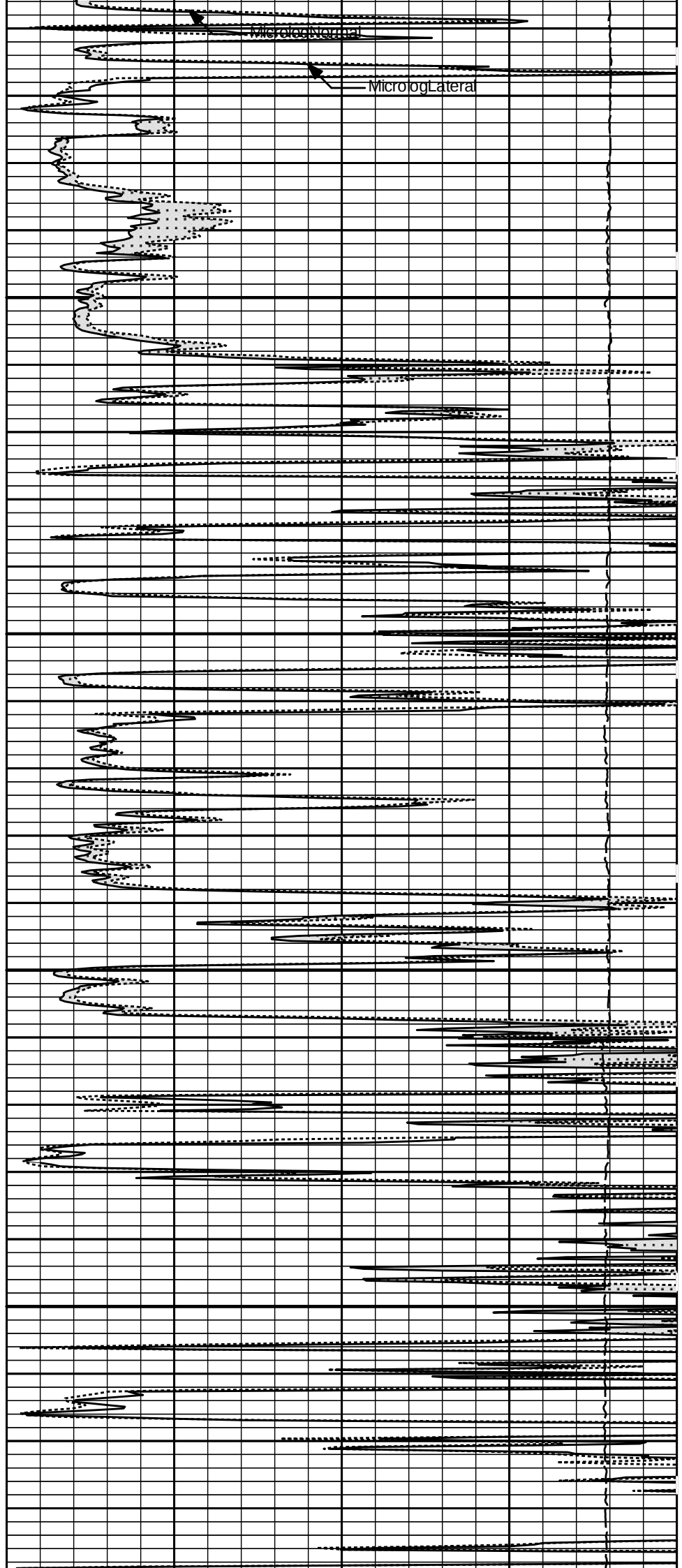
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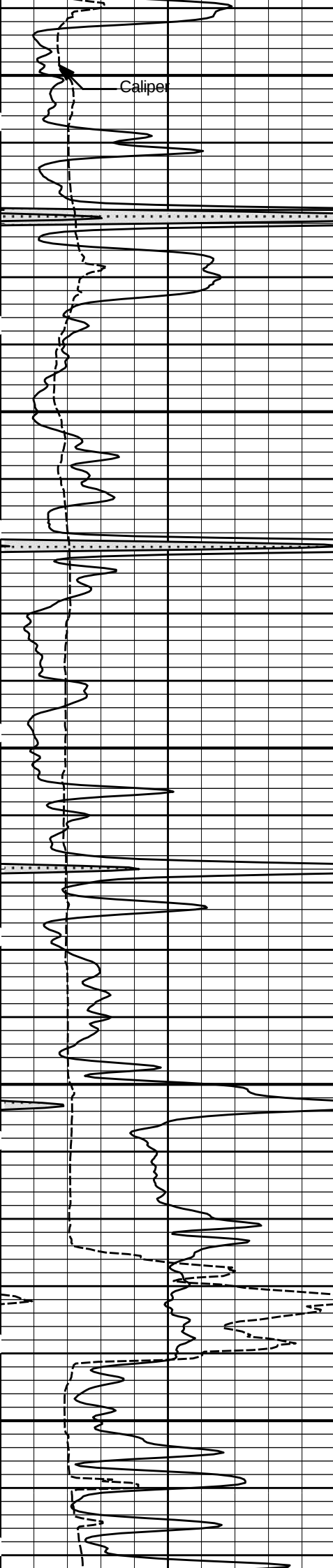




4100

4200

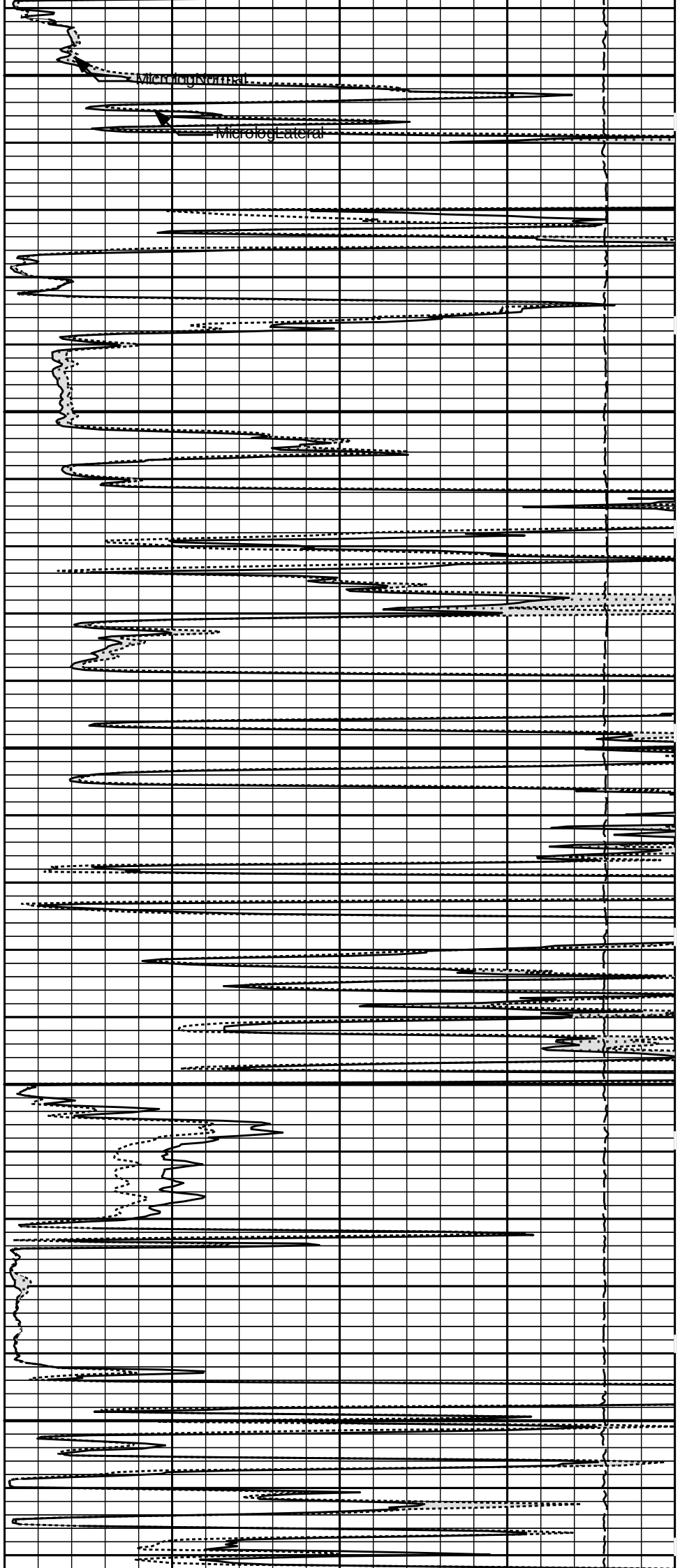


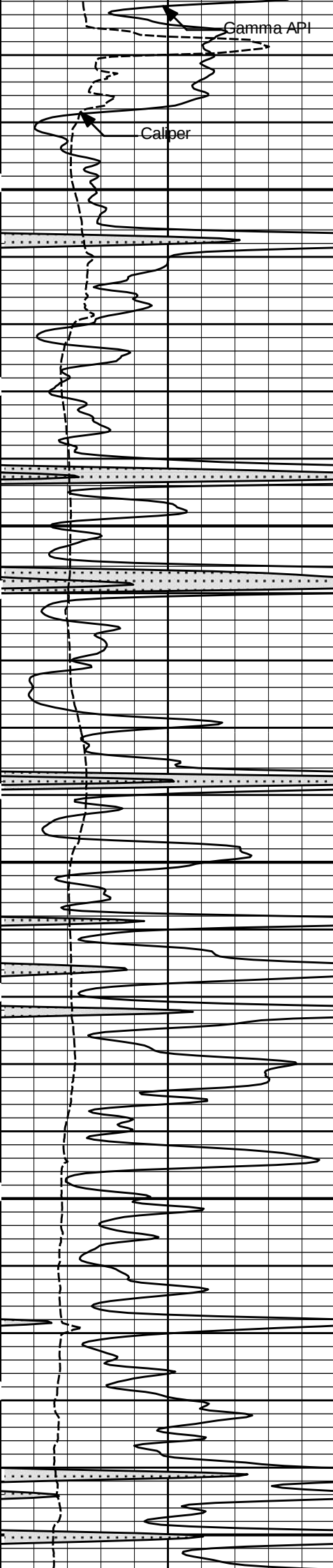


4300

4400

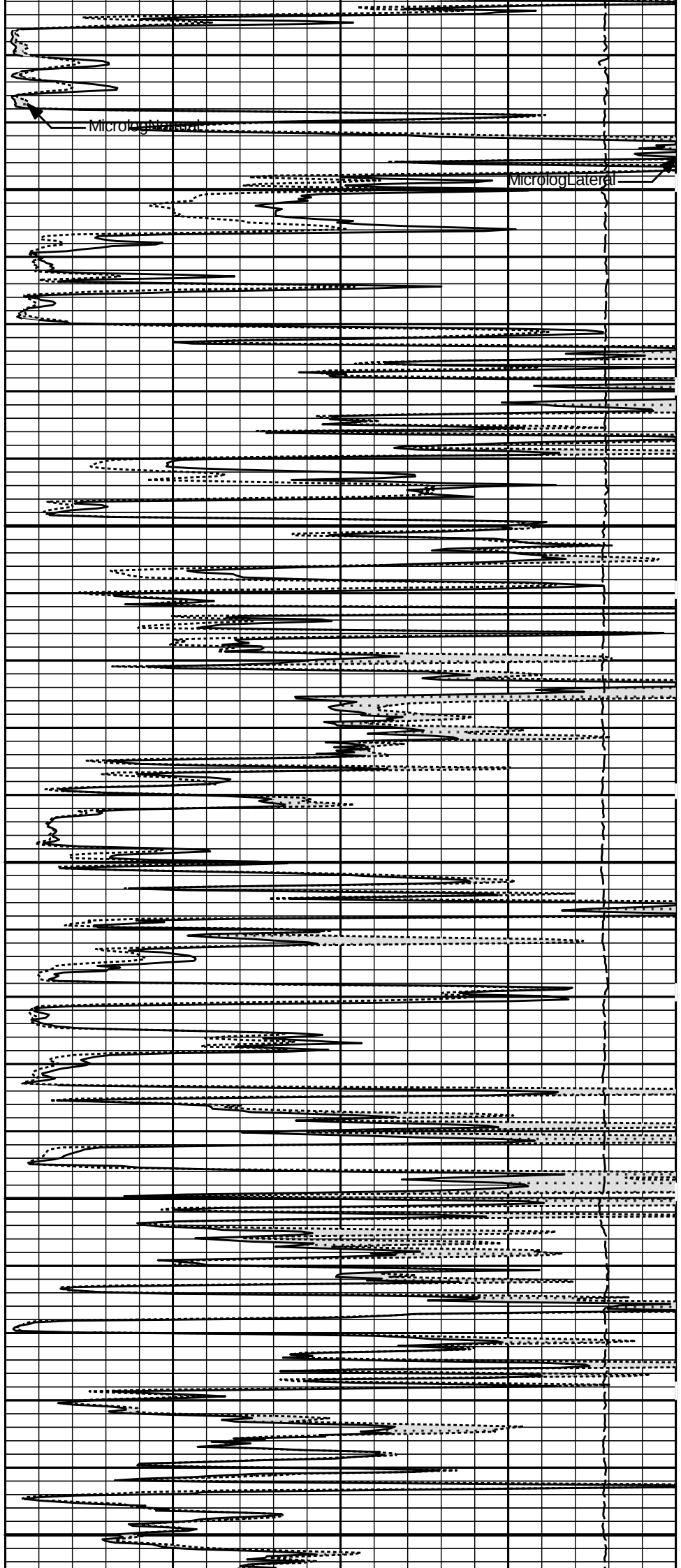
4500

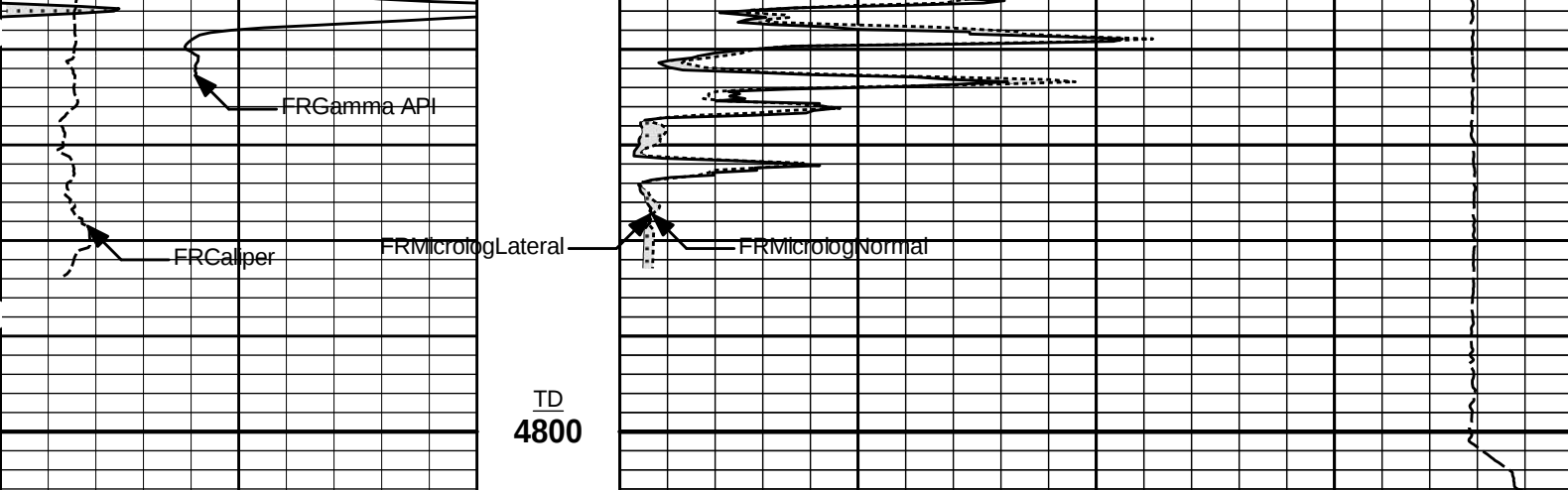




4600

4700





6	Caliper	16	1 : 240		15K	Tension	0
	inches		ft			pounds	
0	Gamma API	150		0	MicrologLateral		40
	api				ohm-metre		
				0	MicrologNormal		40
					ohm-metre		

HALLIBURTON

Plot Time: 01-Jun-17 08:29:55
Plot Range: 3300 ft to 4806.42 ft
Data: HART_WILKINSON\Well Based\DAQ-0001-004\
Plot File: \\LOCAL-HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\ML\Microlog_IQ_5_main

5 INCH MAIN LOG

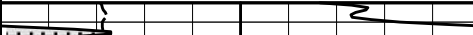
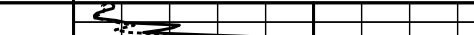
MAIN LOG 5" PER 100'

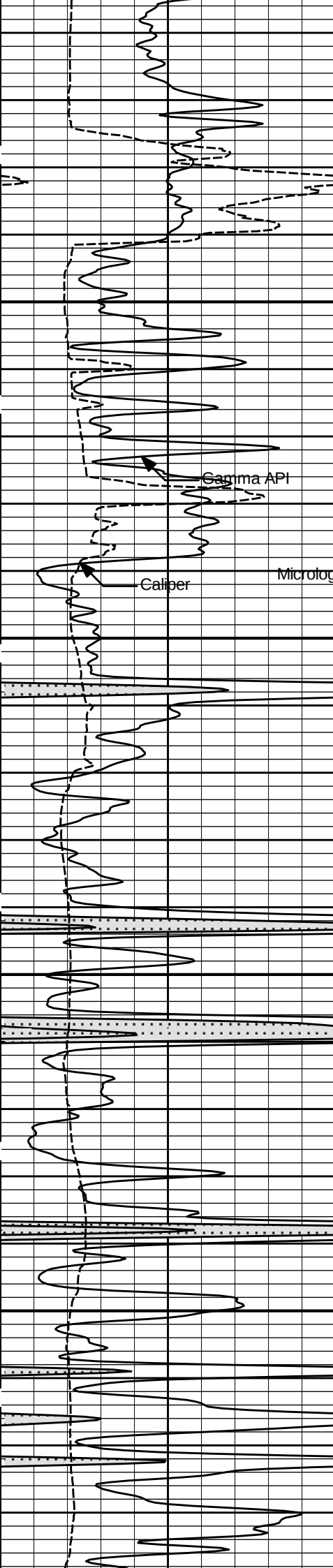
HALLIBURTON

Plot Time: 01-Jun-17 08:29:55
Plot Range: 4450 ft to 4806.75 ft
Data: HART_WILKINSON\Well Based\4\
Plot File: \\LOCAL-HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\ML\Microlog_IQ_5_main

REPEAT SECTION

REPEAT SECTION

			1 : 240 ft	0												MicrologNormal												40											
				ohm-metre																																			
0				0												MicrologLateral												40											
api				ohm-metre																																			
6			Caliper			16															15K			Tension			0												
inches																								pounds															
																																							



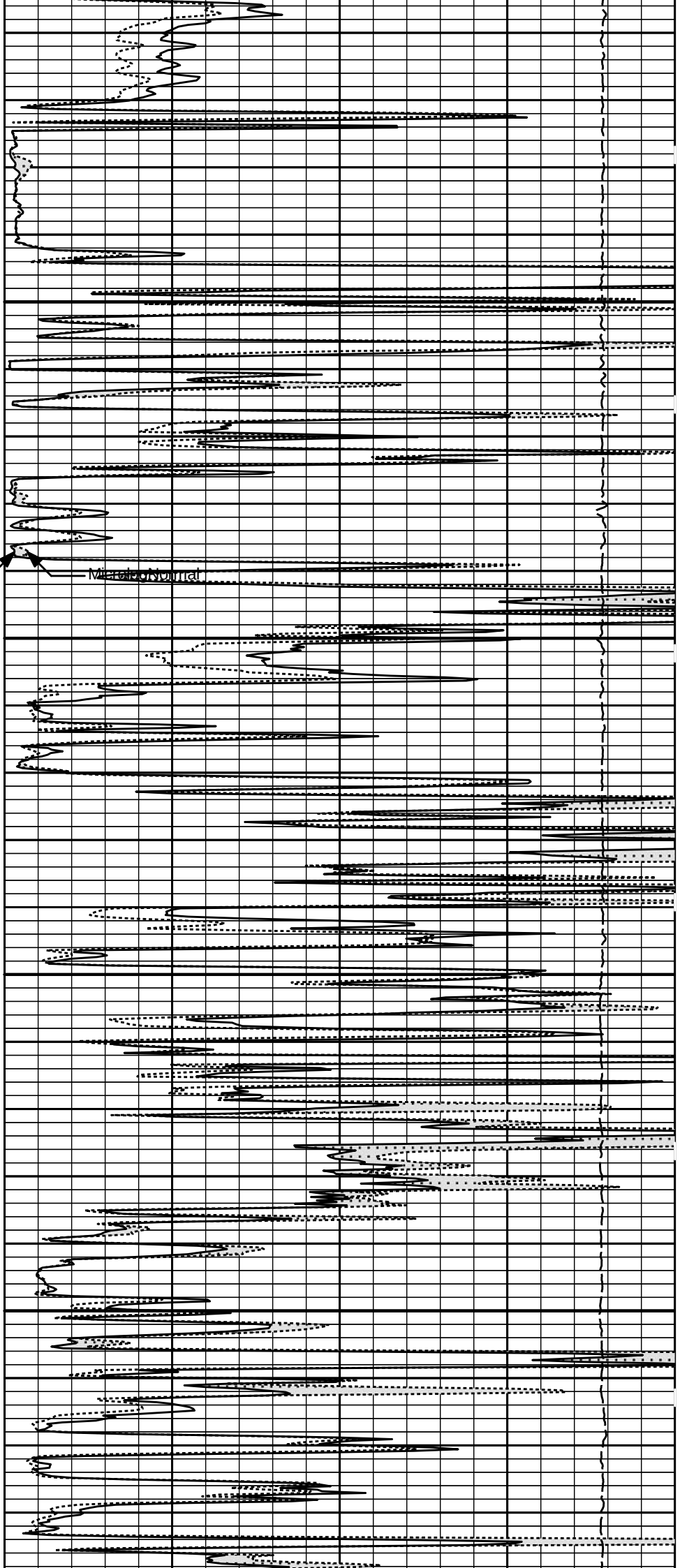
4500

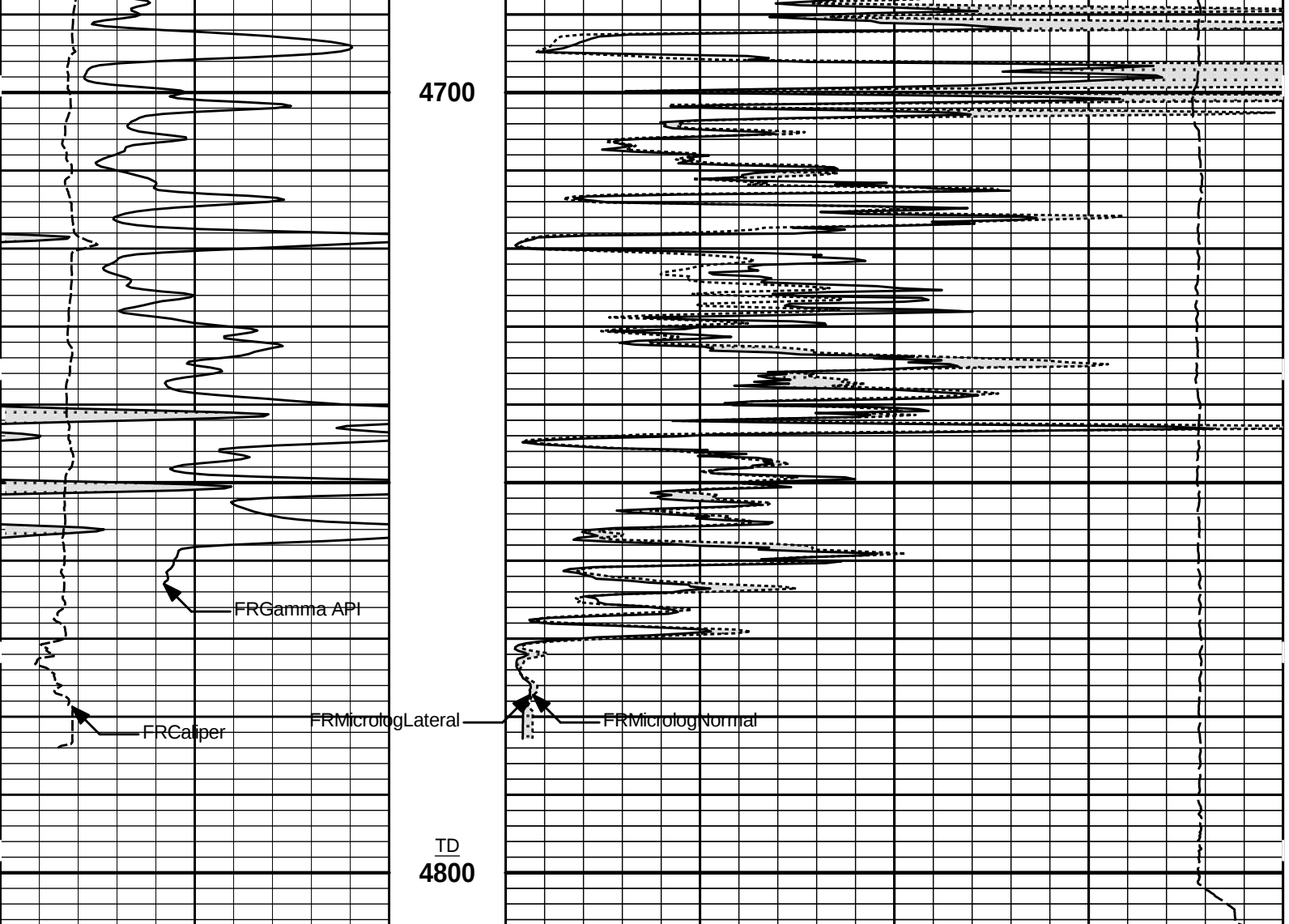
Gamma API

Caliper

Microlog Lateral

4600





6	Caliper	16	1 : 240		15K	Tension	0
	inches					pounds	
0	Gamma API	150		0	MicrologLateral		40
	api				ohm-metre		
				0	MicrologNormal		40
					ohm-metre		

HALLIBURTON

Plot Time: 01-Jun-17 08:29:57
Plot Range: 4450 ft to 4806.75 ft
Data: HART_WILKINSON\Well Based*
Plot File: \\LOCAL\HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\ML\Microlog_IQ_5_main

REPEAT SECTION

REPEAT SECTION

HALLIBURTON

CALIBRATION REPORT

SURFACE TENSION SHOP CALIBRATION

Tool Name: Depth Panel - PROT01

Reference Calibration Date: 21-May-17 15:23:11

Engineer: WHITLOCK		Calibration Date: 23-May-17 22:58:00			
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1			
SURFACE TENSION LOAD CELL					
	Measurement	Load Cell Value	Measurement	Calibrated	Units
	Low	10664.92	-64.08	0.00	lbs
	High	17305.42	7820.03	7830.00	lbs
DOWNHOLE TENSION SHOP CALIBRATION					
Tool Name: CH_HOS - CH_HOS_I		Reference Calibration Date: 21-May-17 15:26:44			
Engineer: MICHAEL RICHTER		Calibration Date: 23-May-17 23:02:10			
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1			
DOWNHOLE LOAD CELL					
	Measurement	Tool Value	Measurement	Calibrated	Units
	Low	-585.15	10.04	0.00	lbs
	High	3602.14	1286.88	1230.00	lbs
NATURAL GAMMA RAY TOOL SHOP CALIBRATION					
Tool Name: GTET - 11021139		Reference Calibration Date: 25-May-17 10:51:04			
Engineer: WHITLOCK		Calibration Date: 30-May-17 09:48:08			
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1			
Calibrator Source S/N: TB79					
Calibrator API Reference:222.00 api					
Equivalent Calibrator API Reference:225.9 api					
	Measurement	Measured	Calibrated	Units	
	Background	23.7	23.5	api	
	Background + Calibrator	251.3	249.4	api	
	Calibrator	227.6	225.9	api	
NATURAL GAMMA RAY TOOL FIELD CALIBRATION					
Tool Name: GTET - 11021139		Reference Calibration Date: 30-May-17 09:48:08			
Engineer: WHITLOCK		Calibration Date: 31-May-17 11:14:24			
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1			
Calibrator Source S/N: TB79					
Calibrator API Reference:222.00 api					
Equivalent Calibrator API Reference:225.9 api					
	Field Verification	Shop	Field	Units	
	Background	23.5	23.1	api	
	Background + Calibrator	249.4	241.8	api	
	Calibrator	225.9	218.8	api	
	Shop	Field	Difference	Tolerance	
	225.9	218.8	7.1	+/- 9.00	
DUAL SPACED NEUTRON SHOP CALIBRATION					
Tool Name: DSNT - 11019641		Reference Calibration Date: 09-Feb-17 10:58:20			
Engineer: WHITLOCK		Calibration Date: 09-Mar-17 12:55:14			
Software Version: WL INSITE R5.0.5 (Build 8)		Calibration Version: 1			
Logging Source S/N: DSN-436					
Tank Serial Number: EL RENO					
Reference value assigned to Tank: 56.100					
Snow Block S/N: 12156883					
Calibration Tank Water Temperature: 72 degF					
Min. Tool Housing Outside Diameter: 3.625 in					

CALIBRATION CONSTANTS				
Measurement	Prev. Value	New Value	Control Limit On New Value	
Gain:	0.98465	0.98292	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):	0.2363	0.2358	0.0006	+/- 0.0020
Calibrated Ratio:	10.5782	10.5596	0.019	+/- 0.050
VERIFIER				
Measurement	Value	Control Limit		
Snow-Block Porosity (decp):	0.0781	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 - 11019641	Reference Calibration Date:	09-Mar-17 12:55:14	
Engineer:	WHITLOCK	Calibration Date:	31-May-17 11:23:52	
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1	
Logging Source S/N: DSN-436				
Snow Block S/N: 12156883				
NEUTRON FIELD-CHECK SUMMARY				
	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0781	0.0657	-0.0125	+/- 0.0150
PASS/FAIL SUMMARY				
Block Change Check:		Passed		
Snow Block Stat Check:		Passed		
Temperature Check:		Passed		

DENSITY CALIPER SHOP CALIBRATION				
Tool Name:	SDLT - 10950477	Reference Calibration Date:	01-Jan-70 00:00:00	
Engineer:	WHITLOCK	Calibration Date:	04-Oct-16 17:51:54	
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1	
Host Tool Name:	DSNT - 11019641			
CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-4023.44	-4023.44	-7000.00 - -1000.00	
Pad Gain	0.0003896	0.0003896	0.0002000 - 0.0006000	
Arm Offset	-3983.20	-3983.20	-5000.00 - 3000.00	
Arm Gain	0.0005552	0.0005552	0.000300 - 0.000700	
Arm Power	-0.000008048	-0.000008048	-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)	6.50	6.50	0.00	+/- 0.20	
		Medium Ring (in)	8.25	8.25	0.00	+/- 0.20	
		Large Ring (in)	15.00	15.00	0.00	+/- 0.20	
PASS/FAIL SUMMARY							
		Calibration-Coefficients Range Check:			Passed		
		Ring-Measurement Check:			Passed		
PASS/FAIL SUMMARY							
		Calibration-Coefficients Range Check:			Passed		

SDLT CALIPER FIELD CALIBRATION								
Tool Name:		SDLT - 10950477			Reference Calibration Date:		04-Oct-16 17:51:54	
Engineer:		WHITLOCK			Calibration Date:		21-May-17 22:49:19	
Software Version:		WL INSITE R5.0.5 (Build 8)			Calibration Version:		1	

MEASURED CALIPER VALUES									
Measurement		Shop		Field		Change		Control Limit On New Value	
Pad Extension		3.75		3.71		-0.04		+/- 0.10	
Ring Diameter		8.25		8.25		-0.00		+/- 0.15	
PASS/FAIL SUMMARY									
		Pad Extension Check:			Passed				
		Diameter Check:			Passed				

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION								
Tool Name:		ACRt Sonde - 11000156			Reference Calibration Date:		18-Jan-17 10:42:26	
Engineer:		JORGE ORLANDO PEREZ			Calibration Date:		10-Mar-17 16:00:02	
Software Version:		WL INSITE R5.0.5 (Build 8)			Calibration Version:		1	
Host Tool Name:		ACRt Instrument - 10996989						

TYPICAL GAIN RANGE										
Subarray		R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	
A1 (80")	0.95	1.0330	1.05	0.95	1.0116	1.05	0.95	1.0043	1.05	
A2 (50")	0.95	1.0428	1.05	0.95	1.0225	1.05	0.95	1.0152	1.05	
A3 (29")	0.95	1.0325	1.05	0.95	1.0127	1.05	0.95	1.0046	1.05	
A4 (17")	0.95	1.0420	1.05	0.95	1.0182	1.05	0.95	1.0129	1.05	
A5 (10")	N/A	N/A	N/A	0.95	0.9973	1.05	0.95	0.9910	1.05	
A6 (6")	N/A	N/A	N/A	0.95	0.9898	1.05	0.95	0.9834	1.05	
SONDE OFFSET										
Subarray		R12KHz			R36KHz			R72KHz		
		(mmho/m)			(mmho/m)			(mmho/m)		
A1 (80")		2.726			-3.207			-6.040		
A2 (50")		0.675			-4.130			-4.785		
A3 (29")		-10.177			-2.998			-3.744		
A4 (17")		-105.235			-32.362			-24.692		
A5 (10")		N/A			-77.217			-35.884		
A6 (6")		N/A			322.459			173.582		
TRANSMITTER CURRENT GAIN										
Signal		Lower		R		Upper		Signal		
12K		0.6		0.93		1.3		Mud Cell		
								Lower (ohm-m)	Measured (ohm-m)	
									Upper (ohm-m)	
								0.95	1.00	
									1.05	

12K	0.9	0.99	1.9	Mod Off	0.99	1.99	1.99
36K	1.0	1.41	2.0				
72K	1.0	1.65	2.0				
PASS/FAIL SUMMARY							
GAIN RANGE CHK				PASS			
SONDE OFFSET CHK				PASS			
TOOL OK TO LOG							

QUALITY CHECK SHOP CALIBRATION			
Tool Name:	ACRt Sonde - 11000156	Reference Calibration Date:	18-Jan-17 10:44:21
Engineer:	JORGE ORLANDO PEREZ	Calibration Date:	10-Mar-17 16:02:10
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1
Host Tool Name:	ACRt Instrument - 10996989		

STANDARD DEVIATIONS									
	R12KHz			R36KHz			R72KHz		
	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A2 (50")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A3 (29")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A4 (17")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A5 (10")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass
A6 (6")	0.000	< 0.750	Pass	0.000	< 0.750	Pass	0.000	< 0.750	Pass

AVERAGES									
	R12KHz			R36KHz			R72KHz		
	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail	Measured (mmho/m)	Expected (mmho/m)	Pass/Fail
A1 (80")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.006	> -0.500	Pass
A2 (50")	0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.004	> -0.500	Pass
A3 (29")	-0.000	< 0.500	Pass	-0.001	> -0.500	Pass	-0.003	> -0.500	Pass
A4 (17")	-0.003	> -0.500	Pass	-0.007	> -0.500	Pass	-0.024	> -0.500	Pass
A5 (10")	-0.011	> -0.500	Pass	-0.018	> -0.500	Pass	-0.036	> -0.500	Pass
A6 (6")	0.014	< 0.500	Pass	0.073	< 0.500	Pass	0.161	< 0.500	Pass

GAIN TOLERANCE					
R12KHz					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-215480768.000	-214385984.000	1094784.000	10719299.200	Pass
A2 (50")	-211891248.000	-210782480.000	1108768.000	10539124.000	Pass
A3 (29")	-210958496.000	-209852992.000	1105504.000	10492649.600	Pass
A4 (17")	-213608736.000	-212411760.000	1196976.000	10620588.000	Pass
A5 (10")	-215382848.000	-214239584.000	1143264.000	10711979.200	Pass
A6 (6")	-207876976.000	-206615920.000	1261056.000	10330796.000	Pass
R36KHz					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	57760512.000	57004368.000	756144.000	2850218.400	Pass
A2 (50")	54089236.000	53319468.000	769768.000	2665973.400	Pass
A3 (29")	44064052.000	43277876.000	786176.000	2163893.800	Pass
A4 (17")	48227896.000	47388224.000	839672.000	2369411.200	Pass
A5 (10")	52355700.000	51523356.000	832344.000	2576167.800	Pass
A6 (6")	43954020.000	43020756.000	933264.000	2151037.800	Pass

R72KHz					
	Measured (mmho/m)	Last Month (mmho/m)	Difference (mmho/m)	Tolerance (mmho/m)	Pass/Fail
A1 (80")	-92226664.000	-92083472.000	143192.000	4604173.600	Pass
A2 (50")	-88065152.000	-87916144.000	149008.000	4395807.200	Pass
A3 (29")	-88130104.000	-87961488.000	168616.000	4398074.400	Pass
A4 (17")	-87542952.000	-87369368.000	173584.000	4368468.400	Pass
A5 (10")	-85906768.000	-85772992.000	133776.000	4288649.600	Pass
A6 (6")	-88399528.000	-88188008.000	211520.000	4409400.400	Pass
PASS/FAIL SUMMARY					
	Std Deviation Verification			Pass	
	Average Verification			Pass	
	Gain Tolerance Verification			Pass	

MICRO LOG SHOP CALIBRATION					
Tool Name:	Microlog Pad - 10950477			Reference Calibration Date:	02-Dec-16 11:36:55
Engineer:	WHITLOCK			Calibration Date:	31-May-17 11:11:14
Software Version:	WL INSITE R5.0.5 (Build 8)			Calibration Version:	1
Host Tool Name:	DSNT - 11019641				

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.16	-0.19	0.00	0.00	ohmm
Calibration Point #1	0.03	0.00	0.00	0.00	ohmm
Calibration Point #2	19.84	20.00	19.66	20.00	ohmm
Internal Reference	19.67	19.83	19.66	20.00	ohmm
Measurement	Micro Log Normal Tool Value		Micro Log Lateral Tool Value		Units
Tool Zero	-0.05		0.35		V
Calibration Point #1	49.41		0.10		V
Calibration Point #2	5369.11		6957.54		V
Internal Reference	5322.73		6957.27		V

MICRO LOG FIELD CHECK					
Tool Name:	Microlog Pad - 10950477			Reference Calibration Date:	31-May-17 11:11:14
Engineer:	WHITLOCK			Calibration Date:	31-May-17 11:11:59
Software Version:	WL INSITE R5.0.5 (Build 8)			Calibration Version:	1
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Shop	Field	Shop	Field	
Tool Zero	-0.19	-0.19	0.00	0.00	ohmm
Internal Reference	19.83	19.82	20.00	20.00	ohmm
Summary					
Signal	Shop	Field	Difference	Tolerance	
Microlog Normal	19.83	19.82	0.01	+/- 0.80	
Microlog Lateral	20.00	20.00	0.00	+/- 0.80	

SPECTRAL DENSITY SHOP CALIBRATION					
Tool Name:	SDLT Pad - 10865881			Reference Calibration Date:	09-Mar-17 11:19:48
Engineer:	WHITLOCK			Calibration Date:	25-May-17 13:00:56
Software Version:	WL INSITE R5.0.5 (Build 8)			Calibration Version:	1

Logging Source S/N: 5155GW

DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0526	1.0463	0.90 - 1.10
Near Dens Gain	1.0243	1.0284	0.90 - 1.10
Near Peak Gain	1.0479	1.0729	0.90 - 1.10
Near Lith Gain	1.0542	1.0746	0.90 - 1.10
Far Bar Gain	1.0103	1.0129	0.90 - 1.10
Far Dens Gain	1.0015	1.0003	0.90 - 1.10
Far Peak Gain	1.0000	0.9976	0.90 - 1.10
Far Lith Gain	0.9831	0.9826	0.90 - 1.10
Near Bar Offset	-0.1941	-0.1428	NONE
Near Dens Offset	0.0300	-0.0128	NONE
Near Peak Offset	-0.1771	-0.3966	NONE
Near Lith Offset	-0.2721	-0.4539	NONE
Far Bar Offset	0.1039	0.0785	NONE
Far Dens Offset	0.1725	0.1829	NONE
Far Peak Offset	0.1856	0.2071	NONE
Far Lith Offset	0.2797	0.2879	NONE
Near Bar Background	947.94	945.33	700 - 1450
Near Dens Background	316.55	314.07	230 - 480
Near Peak Background	137.62	136.63	100 - 210
Near Lith Background	166.92	167.65	125 - 260
Far Bar Background	612.66	612.64	450 - 900
Far Dens Background	240.31	239.40	175 - 345
Far Peak Background	93.33	93.82	70 - 140
Far Lith Background	98.65	98.35	75 - 145

CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.693	1.687	-0.006	+/- 0.015
Pe	2.517	2.554	0.037	+/- 0.150
ALUMINUM				
Density (g/cc)	2.584	2.581	-0.003	+/- 0.01500
Pe	3.061	3.127	0.066	+/- 0.150

TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0003	+/- 0.0110	-0.0015	+/- 0.0140
Magnesium Block	-0.0002	+/- 0.0110	0.0006	+/- 0.0140
Aluminum Block	-0.0014	+/- 0.0110	0.0010	+/- 0.0140
Resolution	9.73	6.00 - 11.50	8.99	6.00 - 11.50
Internal Verifier(B+D+P+L)	1564	1200 - 2700	1044	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 - 10865881	Reference Calibration Date:	25-May-17 13:00:56
Engineer:	WHITLOCK	Calibration Date:	31-May-17 11:16:22
Software Version:	WL INSITE R5.0.5 (Build 8)	Calibration Version:	1

Pad Temperature: 82.3 degF				
DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1563.693	1565.696	2.003	15.913
Far (B+D+P+L) cps	1044.216	1040.995	-3.221	17.186
Near Resolution	9.73	9.77	0.040	0.50
Far Resolution	8.99	8.92	-0.070	1.00
PASS/FAIL SUMMARY				
Bkg Quality Check:			Passed	
Bkg Resolution Check:			Passed	
Bkg Verification Check:			Passed	

CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
Depth Panel-PROT01						
Tension Zero	0.00	-----	-----	0.00	-----	lbs
Tension Cal	7830.00	-----	-----	0.00	-----	lbs
CH_HOS-CH_HOS_I						
DH Tension Zero	0.00	-----	-----	0.00	-----	lbs
DH Tension Cal	1230.00	-----	-----	0.00	-----	lbs
GTET-11021139						
Gamma Ray Calibrator	225.9	218.8	-----	7.1	+/- 9.00	api
DSNT-11019641						
Snow-Block Porosity	0.0781	0.0657	-----	0.0124	+/- 0.0150	decp
SDLT-10950477						
Pad Extension	3.75	3.71	-----	0.04	+/-0.10	in
Ring Diameter	8.25	8.25	-----	0.00	+/-0.15	in
ACRt Sonde-11000156						
Mud Cell	1.00	-----	-----	0	-----	ohm-m
Microlog Pad-10950477						
MicroLog Normal	19.83	19.82	-----	0.01	+/-0.80	ohmm
MicroLog Lateral	20.00	20.00	-----	0.00	+/-0.80	ohmm
SDLT Pad-10865881						
Near(B+D+P+L)	1563.693	1565.696	-----	-2.003	+/-15.913	cps
Far(B+D+P+L)	1044.216	1040.995	-----	3.221	+/-17.186	cps

Data: HART_WILKINSONI0001 GTET-DSNT-SDLT-ACRTIDLE	Date: 01-Jun-17 05:49:04
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HALLIBURTON					
PARAMETERS REPORT					

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP_____					

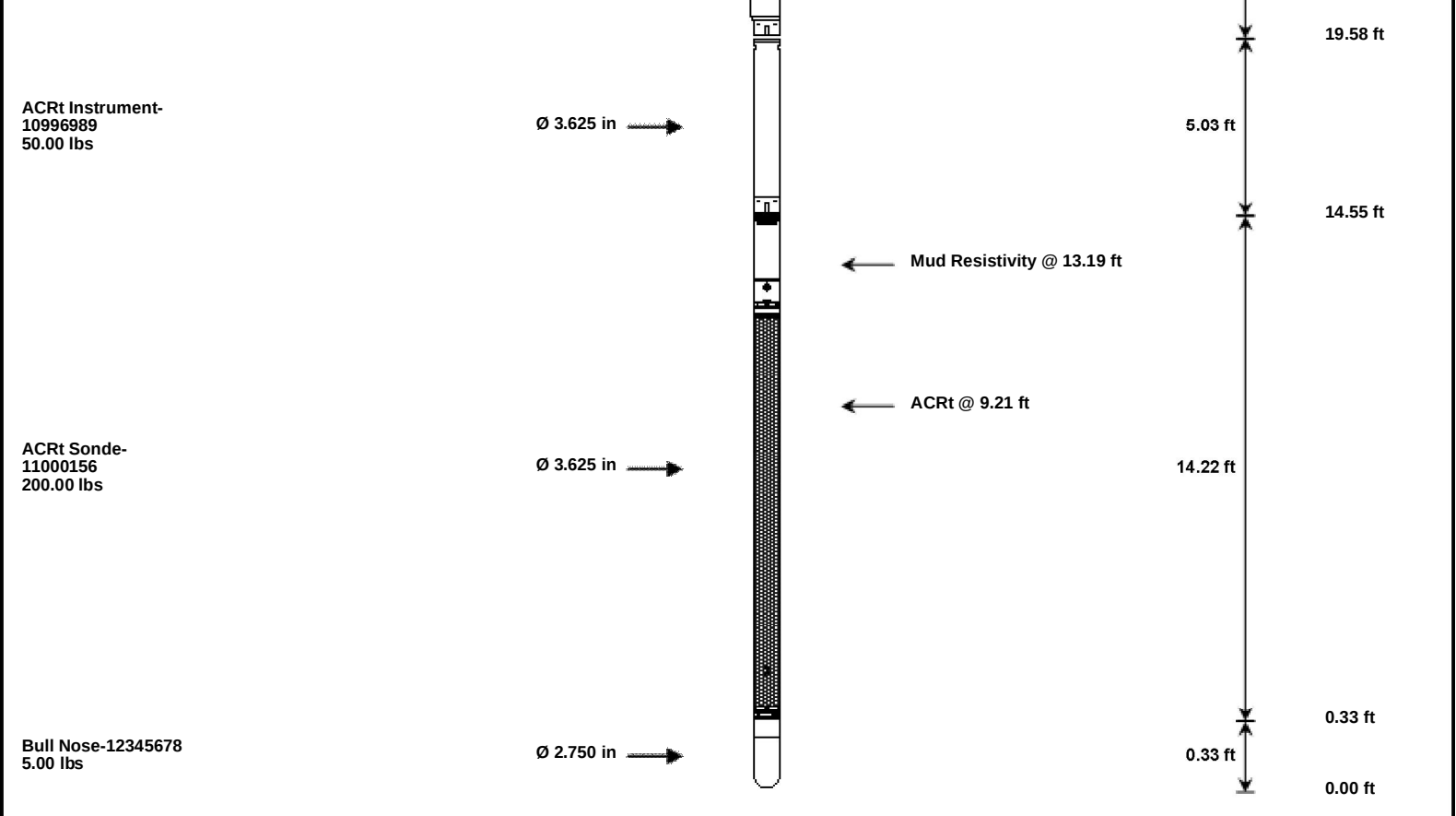
SHARED	BS	Bit Size	7.875	in
SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
SHARED	MDBS	Mud Base	Water	
SHARED	MDWT	Borehole Fluid Weight	9.000	ppg
SHARED	WAGT	Weighting Agent	Natural	
SHARED	BSAL	Borehole salinity	0.00	ppm
SHARED	FSAL	Formation Salinity NaCl	0.00	ppm
SHARED	KPCT	Percent K in Mud by Weight?	0.00	%
SHARED	RMUD	Mud Resistivity	2.000	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	CSTR	Compressive Strength	1000.00	psia
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	4800.00	ft
SHARED	BHT	Bottom Hole Temperature	125.0	degF
SHARED	SVTM	Navigation and Survey Master Tool	NONE	
SHARED	AZTM	High Res Z Accelerometer Master Tool	GTET	
SHARED	TEMM	CBM Temperature Master Tool	GTET	
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	
Rwa / CrossPlot	BHSM	Borehole Size Source Tool	SDLT	
Rwa / CrossPlot	ROIN	Input for RO Calculation	Rwa	
GTET	GROK	Process Gamma Ray?	Yes	
GTET	GEOK	Process Gamma Ray EVR?	No	
GTET	TPOS	Tool Position for Gamma Ray Tools.	Eccentered	
GTET	BHSM	Borehole Size Source Tool	SDLT	
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	DNTT	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	
DSNT	BHSM	Borehole Size Source Tool	SDLT	
SDLT	CLOK	Process Caliper Outputs?	Yes	
Microlog Pad	MLOK	Process MicroLog 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
SDLT Pad	BHSM	Borehole Size Source Tool	SDLT	

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	RMAX	Maximum Resistivity for MAP	200.00	ohmm
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohmm
ACRt Sonde	BHSM	Borehole Size Source Tool	SDLT	
ACRt Sonde	MBFL	Apply Corkscrew Effect?	No	
BOTTOM				
Data: HART_WILKINSONI0001 GTET-DSNT-SDLT-ACRTI			Date: 01-Jun-17 05:50:33	

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS_I 37.50 lbs		Ø 2.750 in →		← Temperature @ 55.29 ft	2.25 ft	55.54 ft
XOHD-12345678 20.00 lbs		Ø 2.750 in → Ø 3.625 in →			0.95 ft	53.29 ft
SP Sub-10904995 60.00 lbs		Ø 3.625 in →		← SP @ 50.56 ft	3.74 ft	52.34 ft
				← Z-Accelerometer @ 48.15 ft		48.60 ft
GTET-11021139 165.00 lbs		Ø 3.625 in →		← GammaRay @ 42.54 ft	8.52 ft	
						40.08 ft
DSNT-11019641 174.00 lbs	DSN Decentralizer-11023947 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 33.15 ft ← DSN Near @ 32.40 ft	9.69 ft	
						30.40 ft
SDLT-10950477 360.00 lbs	SDLT Pad-10865881 65.00 lbs Microlog Pad-10950477 8.00 lbs RAM-Cs137-10948154 1.00 lbs	Ø 4.500 in → Ø 4.500 in* → Ø 4.750 in* → Ø 0.800 in* →		Microlog @ 22.58 ft SDL Caliper @ 22.40 ft SDL @ 22.39 ft	10.81 ft	



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
CH_HOS	Hostile Cable Head with Load Cell	CH_HOS_I	37.50	2.25	53.29	300.00
XOHD	Hostile to Dits Cross Over	12345678	20.00	0.95	52.34	300.00
SP	SP Sub	10904995	60.00	3.74	48.60	300.00
GTET	Gamma Telemetry Tool	11021139	165.00	8.52	40.08	60.00
DSNT	Dual Spaced Neutron	11019641	174.00	9.69	30.40	60.00
DCNT	DSN Decentralizer	11023947	6.60	5.13 *	33.73	300.00
SDLT	Spectral Density Tool	10950477	360.00	10.81	19.58	60.00
SDLP	Density Insite Pad	10865881	65.00	2.55 *	21.79	60.00
Cs137	Logging Source, SDLT-I, 1.78 Ci - Cs137	10948154	1.00	0.80 *	22.02	300.00
MICP	Microlog Pad	10950477	8.00	1.00 *	22.08	60.00
ACRt	Array Compensated True Resistivity Instrument Section	10996989	50.00	5.03	14.55	120.00
ACRt	Array Compensated True Resistivity Sonde Section	11000156	200.00	14.22	0.33	120.00
BLNS	Bull Nose	12345678	5.00	0.33	0.00	300.00
Total			1,152.10	55.54		

* Not included in Total Length and Length Accumulation.

Data: HART_WILKINSON\0001 GTET-DSNT-SDLT-ACRT\IDLE

Date: 01-Jun-17 05:54:40