

HALLIBURTON

MICROLOG

COMPANY					HARTMAN OIL CO., INC.				
WELL					ROSE # 1-1				
FIELD					WILDCAT				
COUNTY					WICHITA				
STATE					KANSAS				
Permanent Datum					GL				
Log measured from					KB				
Drilling measured from					KB				
Date	06-Oct-12				Elev. 3143.0 ft				
Run No.	ONE				Elev.: K.B.				
Depth - Driller	4850.00 ft				D.F.				
Depth - Logger	4847.0 ft				G.L.				
Bottom - Logged Interval	4803.0 ft								
Top - Logged Interval	2450.0 ft								
Casing - Driller	8.625 in				@				
Casing - Logger	332.0 ft				@				
Bit Size	7.875 in				@				
Type Fluid in Hole	CHEMICAL				@				
Density	9.1 ppg								
PH	10.80 pH								
Source of Sample	MUD TANK								
Rm @ Meas. Temperature	0.570 ohmm				@				
Rmf @ Meas. Temperature	0.43 ohmm				@				
Rmc @ Meas. Temperature	0.920 ohmm				@				
Source Rmf	MEASURED								
Rm @ BHT	0.33 ohmm				@				
Time Since Circulation	8.6 hr								
Time on Bottom	06-Oct-12 21:53								
Max. Rec. Temperature	129.0 degF				@				
Equipment	11170614								
Recorded By	V. CREWS								
Witnessed By	K. NOAH								

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Service Ticket No.:					API Serial No.: 15203201840000					PGM Version: WL INSITE R3.6.0 (Build 3)				
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.		@		@		ONE	ACRT -	N/A	1.5" S.O.	N/A				
Rmc @ Meas. Temp.		@		@			E6988-S8481							
Source Rmf	Rmc					ONE	MEL -	MICROLOG	ECCENTERED	N/A				
Rm @ BHT		@		@			10947725							
Rmf @ BHT		@		@										
Rmc @ BHT		@		@										
EQUIPMENT DATA														
GAMMA		ACOUSTIC				DENSITY			NEUTRON					
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE					
Serial No.	11602914	Serial No.	10747633	Serial No.	11014275	Serial No.	10860047							
Model No.	GTET	Model No.	BSAT	Model No.	SDLT-I	Model No.	DSNT-I							
Diameter	3.625"	No. of Cent.	2	Diameter	4.5"	Diameter	3.625"							
Detector Model No.	102-A	Spacing	0.5'	Log Type	GAM-GAM	Log Type	THERM-THERM							
Type	SCINT			Source Type	Cs137	Source Type	Am241Be							
Length	8"	LSA [Y/N]	N/A	Serial No.	5235GW	Serial No.	08-018							
Distance to Source	10'	FWDA [Y/N]	N/A	Strength	1.78 Ci	Strength	15.0 Ci							

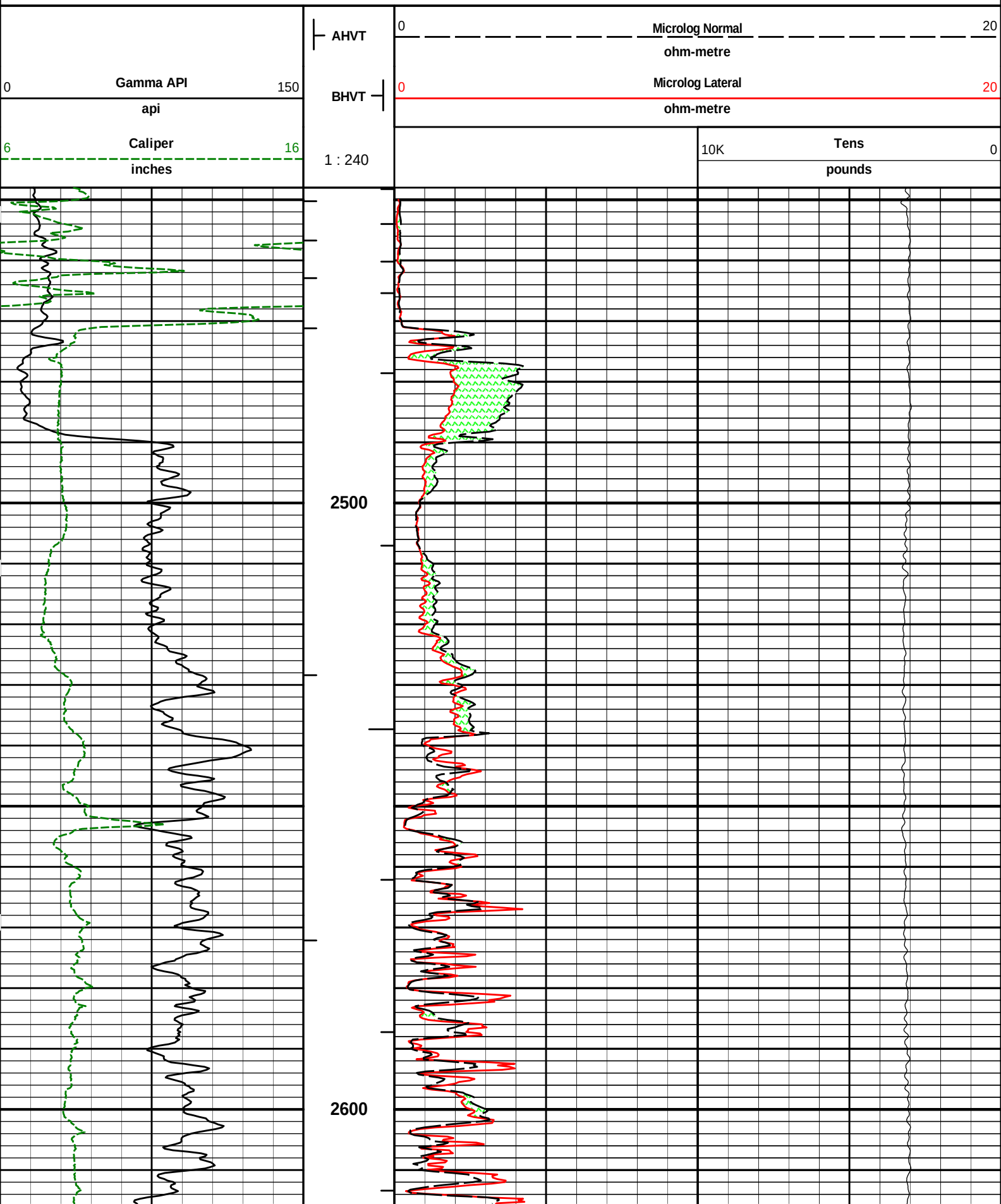
GENERAL			GAMMA		ACOUSTIC		DENSITY		NEUTRON					
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	4847'	2540'	REC	0	150	40%	0%	LIME	30%	-10%	2.71 g/cc	30%	-10%	LIME
ONE	2540'	332'	REC	0	150									
DIRECTIONAL INFORMATION														
Maximum Deviation @									KOP @					
Remarks: RWCH-GTET-DSNT-SDLT-FLEX-BSAT-ACRT RAN IN COMBINATION														
BOREHOLE RUGOSITY, TENSION PULLS AND WASHOUTS MAY EFFECT LOG QUALITY														
ANNULAR HOLE VOLUME CALCULATED FOR 5.5-INCH CASING														
BOWSPRING AND STANDOFF RUN														
TODAY'S CREW: G. HOOD, C. DAVIS & D. TREFILETTI														
RIG: H2 DRILLING														
*** THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES, ROCK SPRINGS, WY (307) 352-8600 ***														
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														

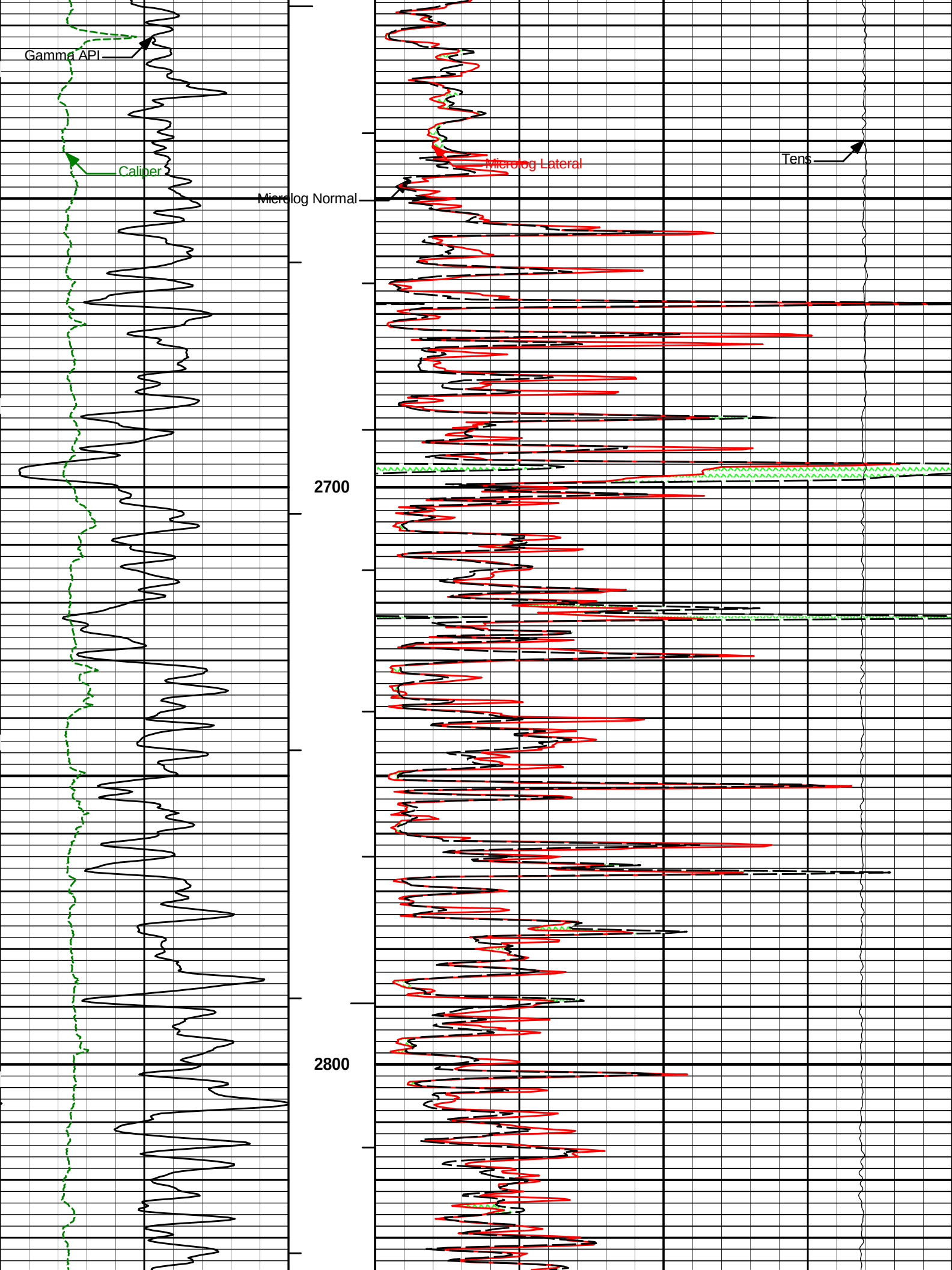


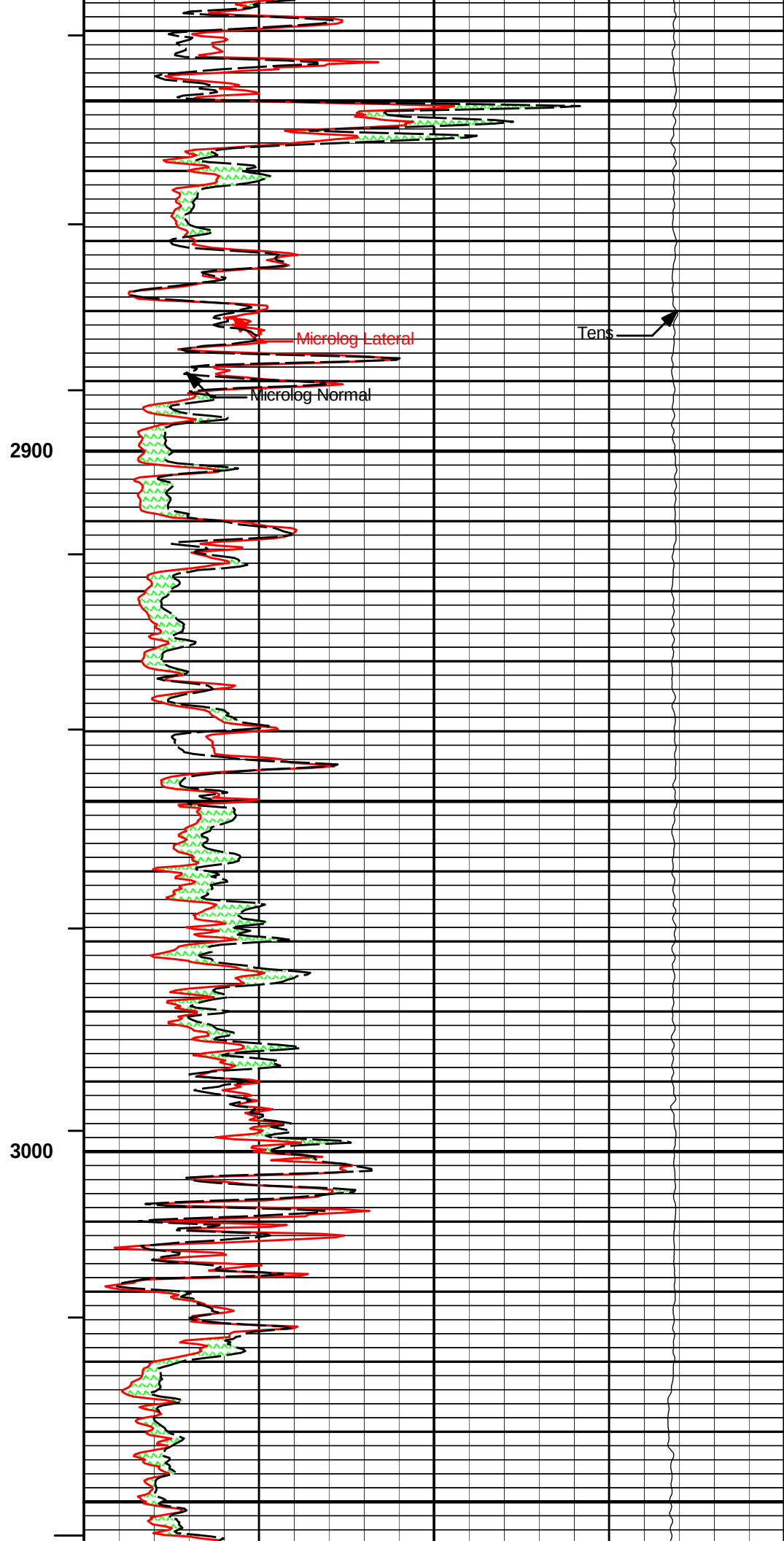
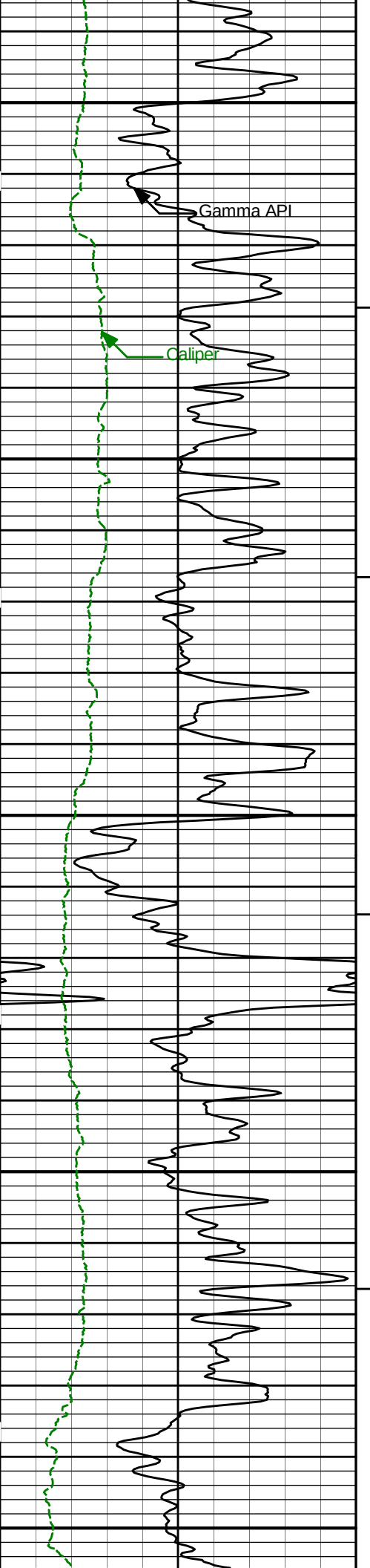
PARAMETERS REPORT

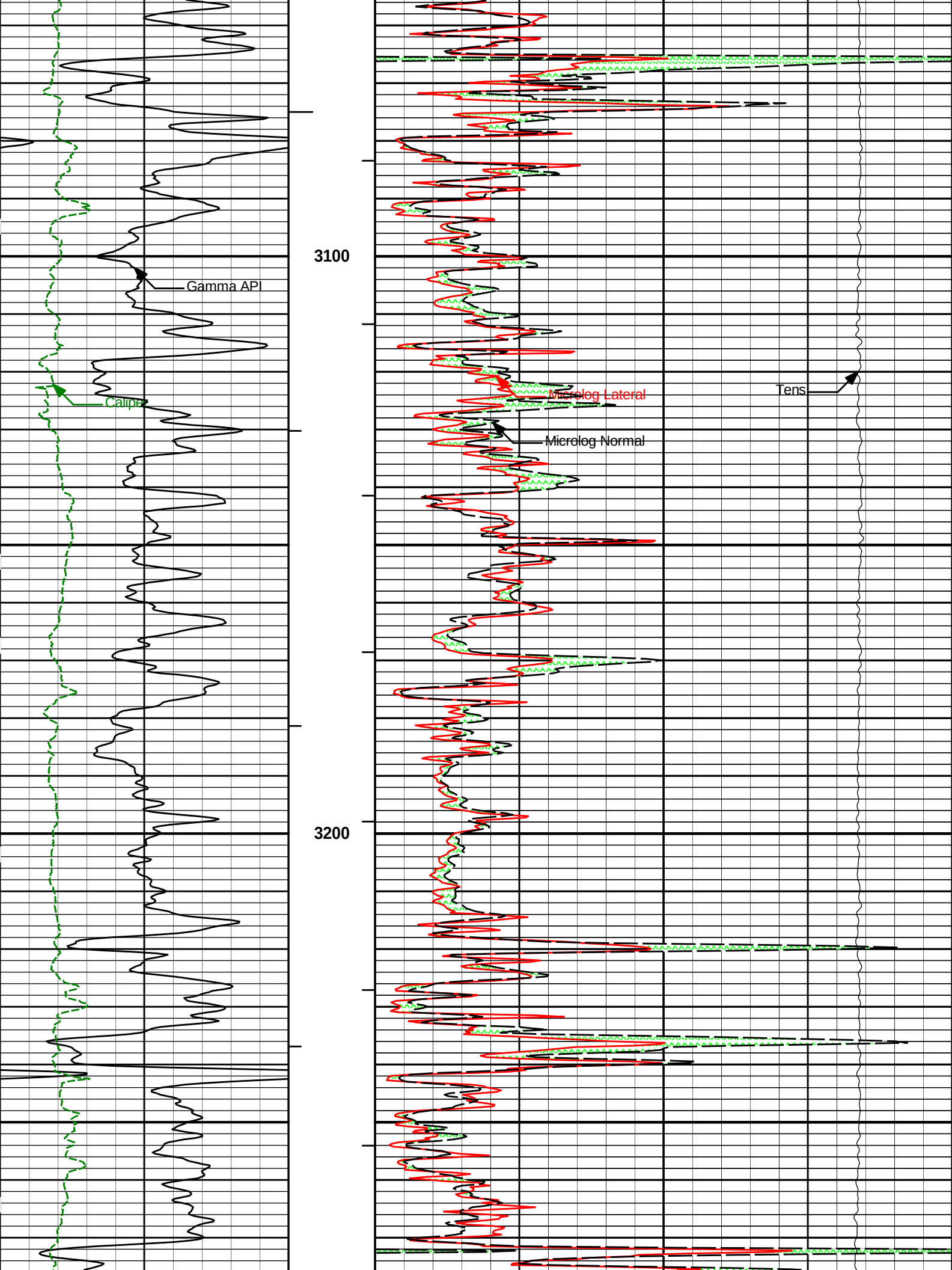
Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	7.875	in
	SHARED	UBS	Use Bit Size instead of Caliper for all applications.	No	
	SHARED	MDBS	Mud Base	Water	
	SHARED	MDWT	Borehole Fluid Weight	9.100	ppg
	SHARED	WAGT	Weighting Agent	Barite	
	SHARED	BSAL	Borehole salinity	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	0.570	ohmm
	SHARED	TRM	Temperature of Mud	71.2	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	5.500	in
	SHARED	ST	Surface Temperature	53.0	degF
	SHARED	TD	Total Well Depth	4847.00	ft
	SHARED	BHT	Bottom Hole Temperature	129.0	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	

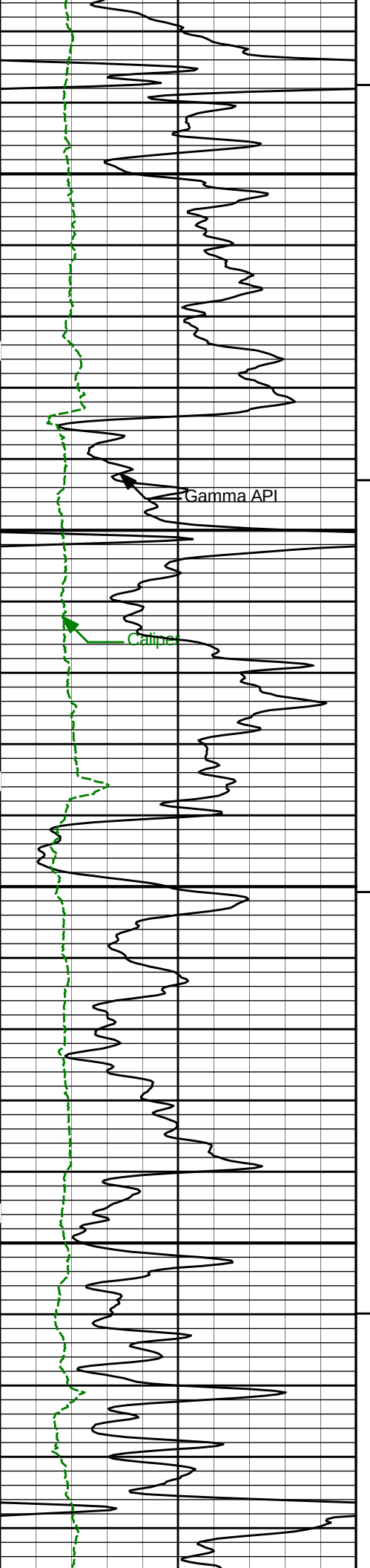
CrossPlot	Rwa / CrossPlot	MFAC	Archie M factor	2.1500	
	Rwa / CrossPlot	RMFR	Rmf Reference	0.10	ohmm
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohmm
	Rwa / CrossPlot	ADP	Use Air Porosity to calculate CrossplotPhi	No	
	GTET	GROK	Process Gamma 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	Limestone 47.5	
	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 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: HARTMN_ROSE_1_1\0003 QUAD_MEL_BSAT\004.01 06-Oct-12 23:23 Up				Date: 07-Oct-12 00:07:57	





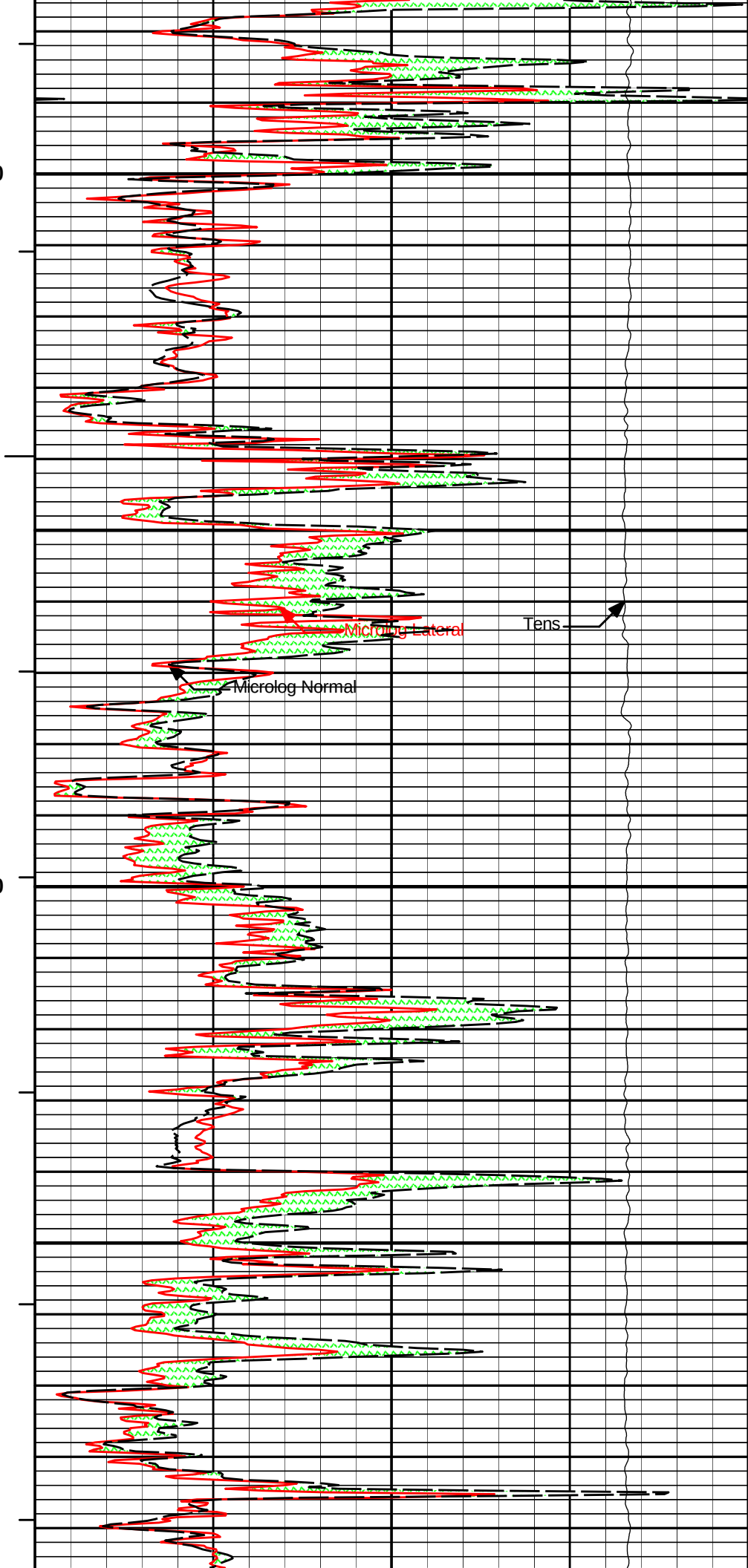


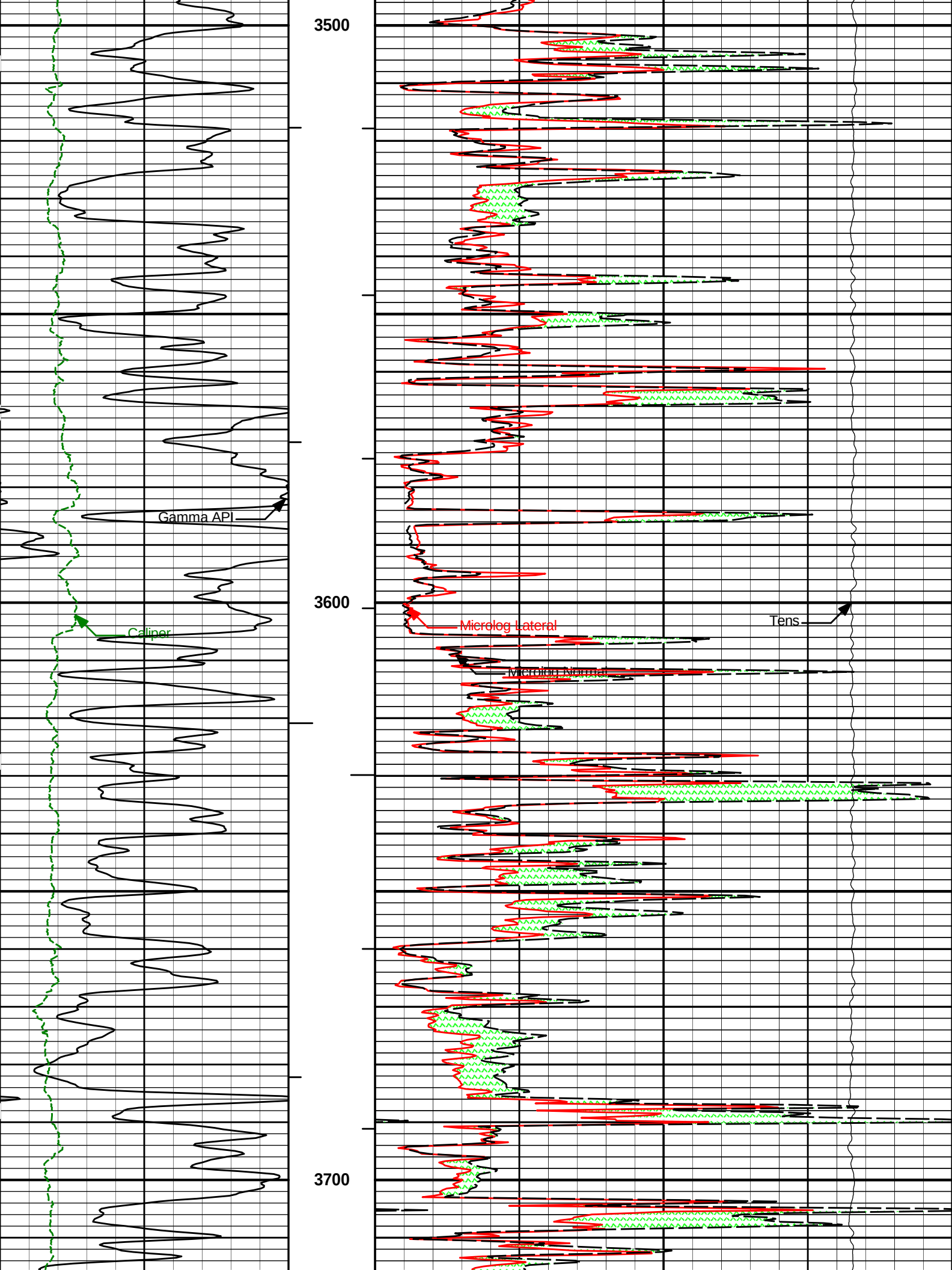


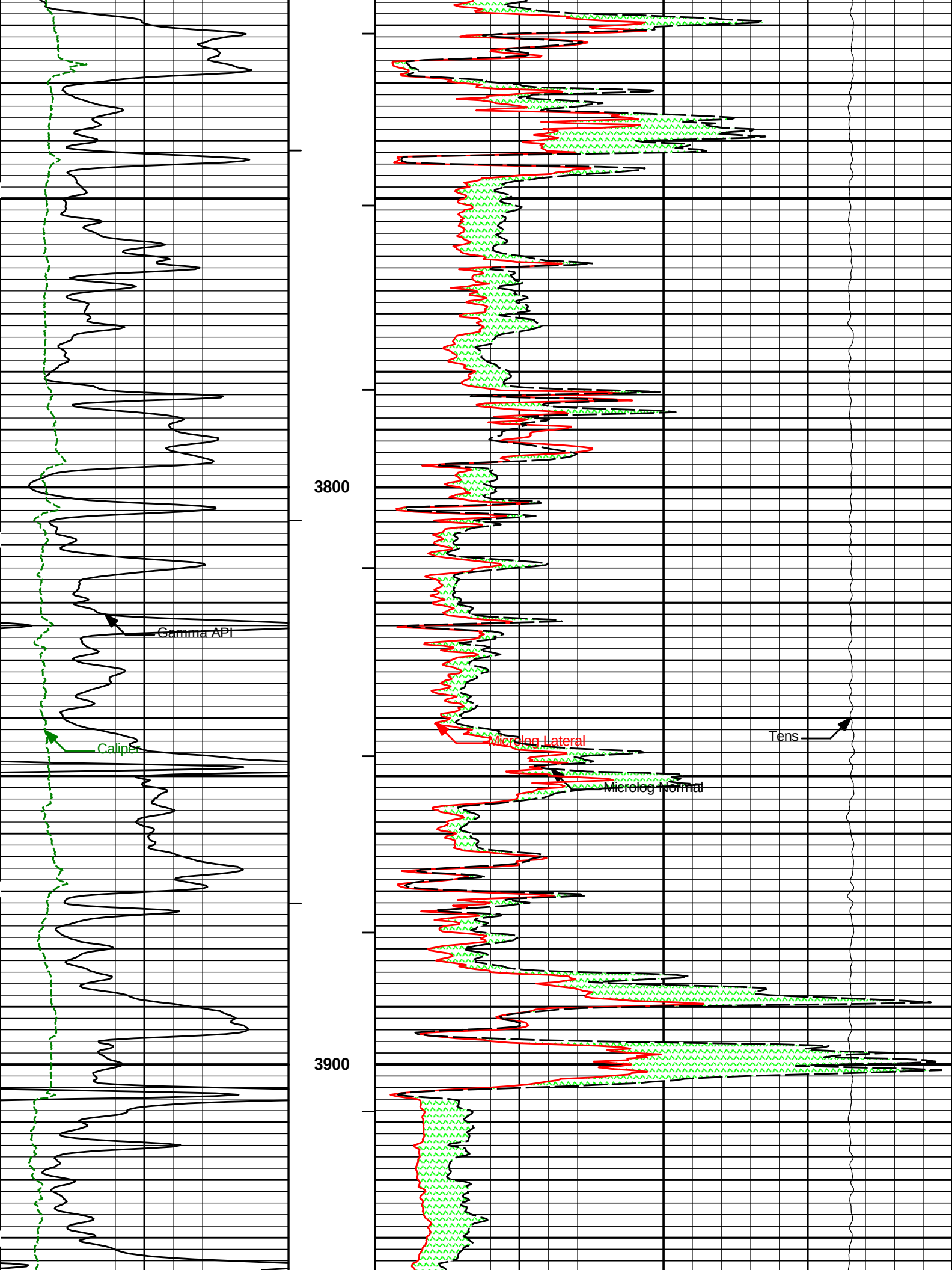


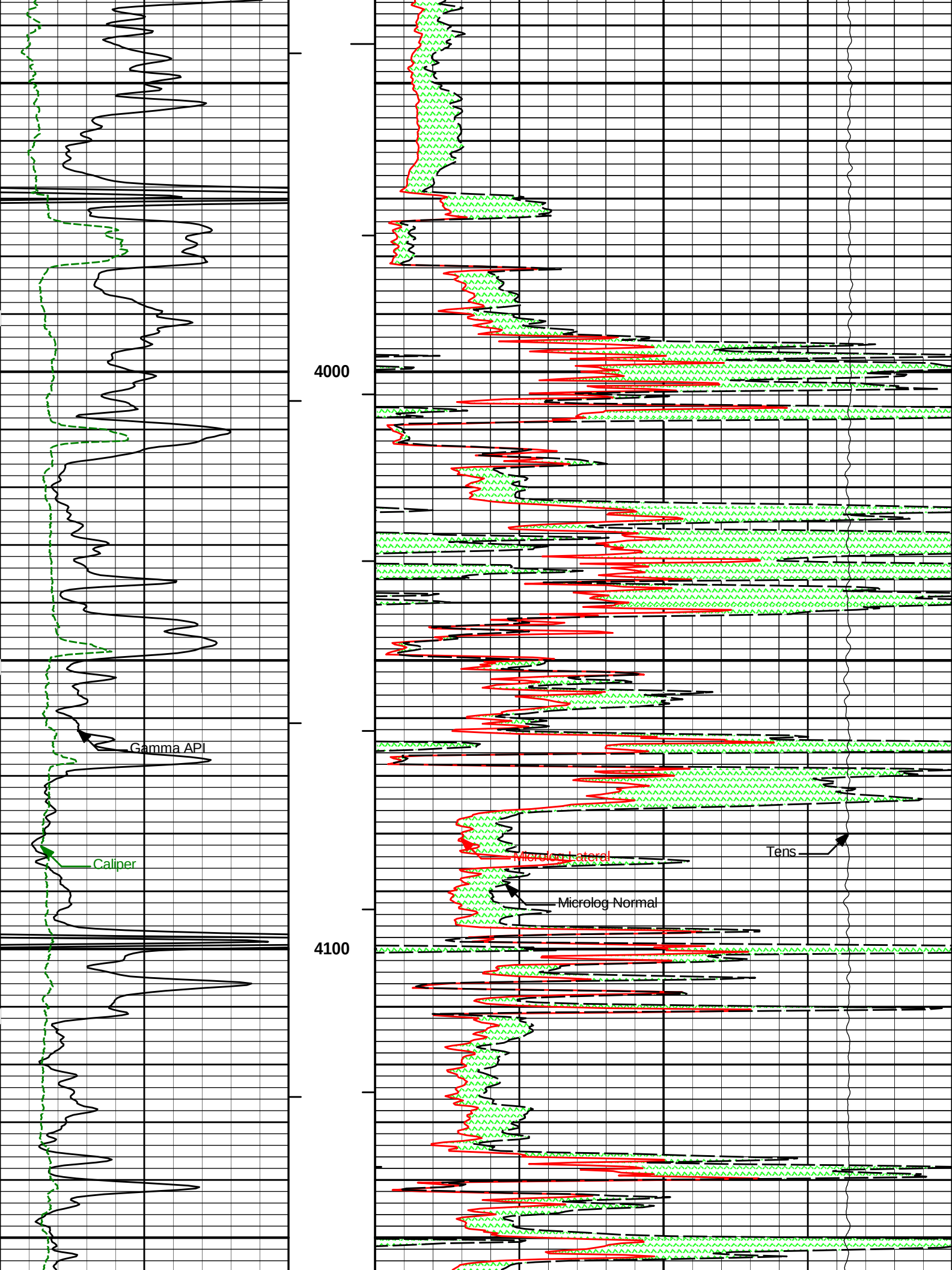
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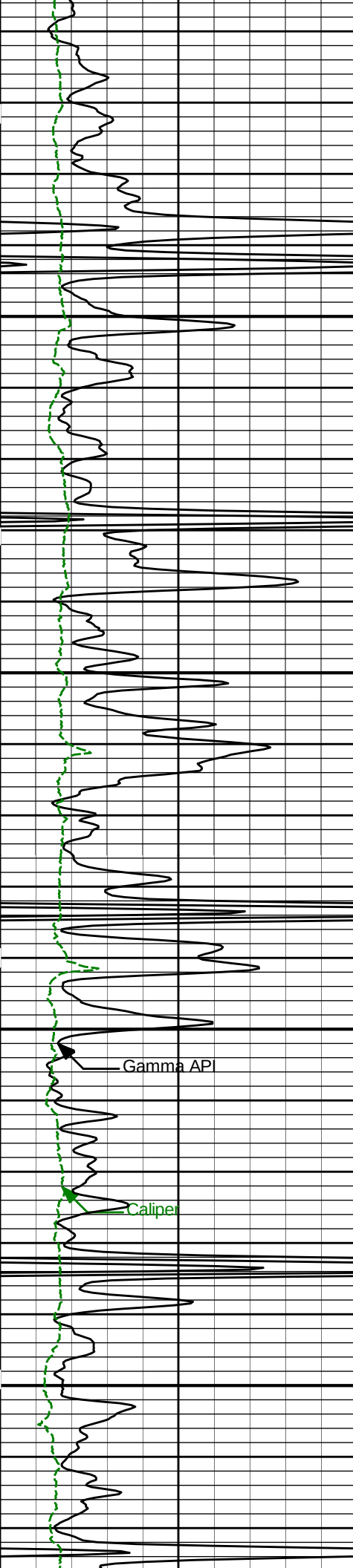
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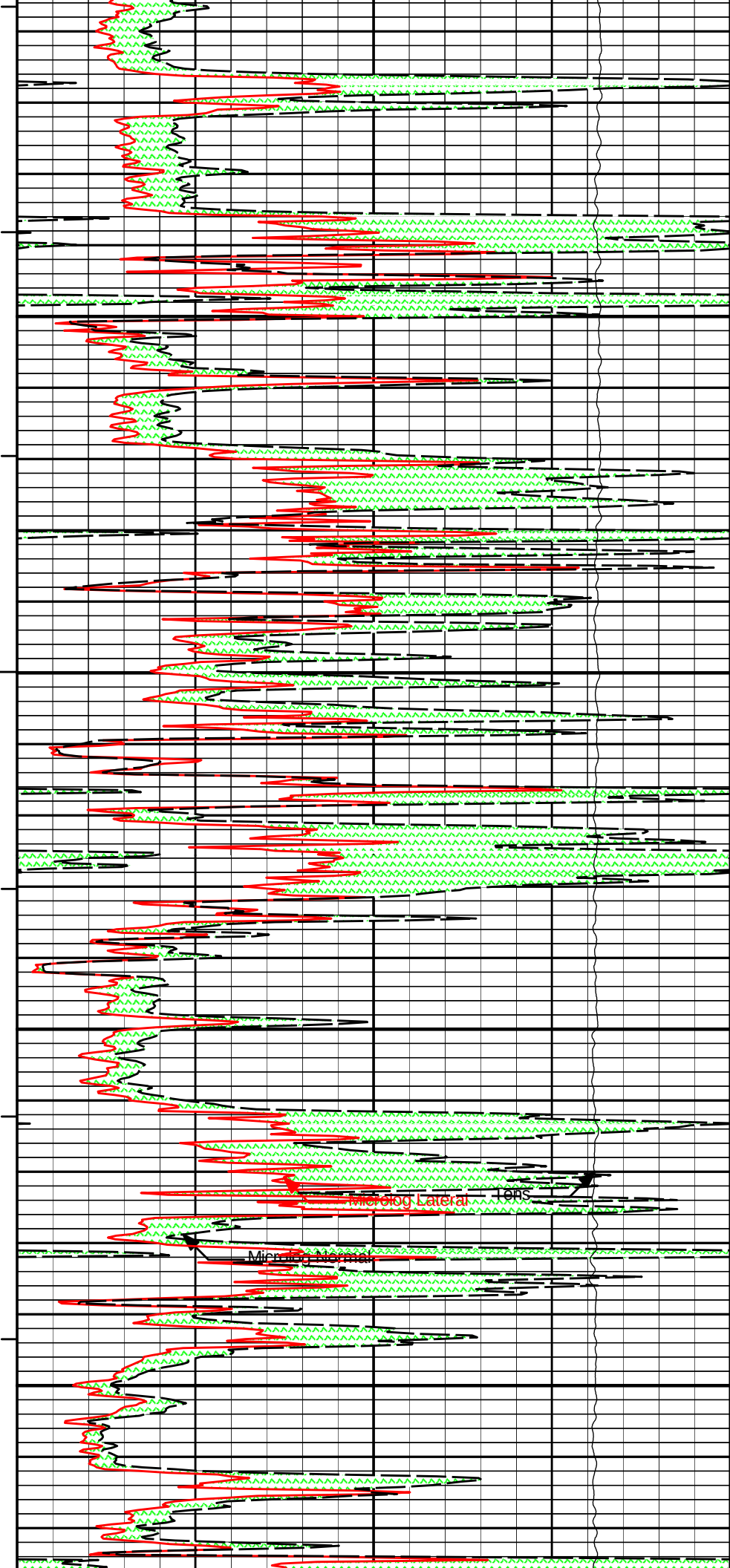


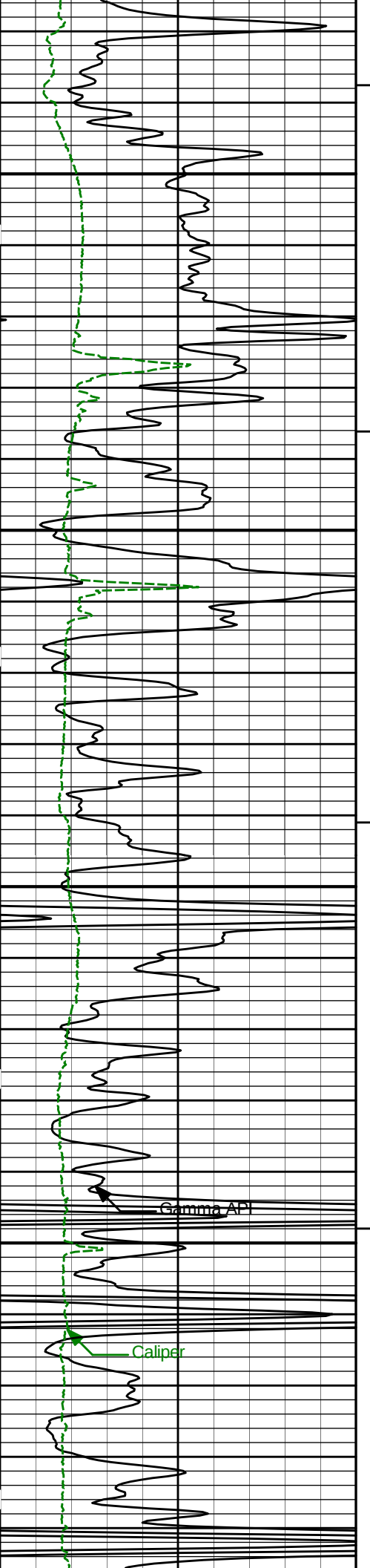




4200

4300



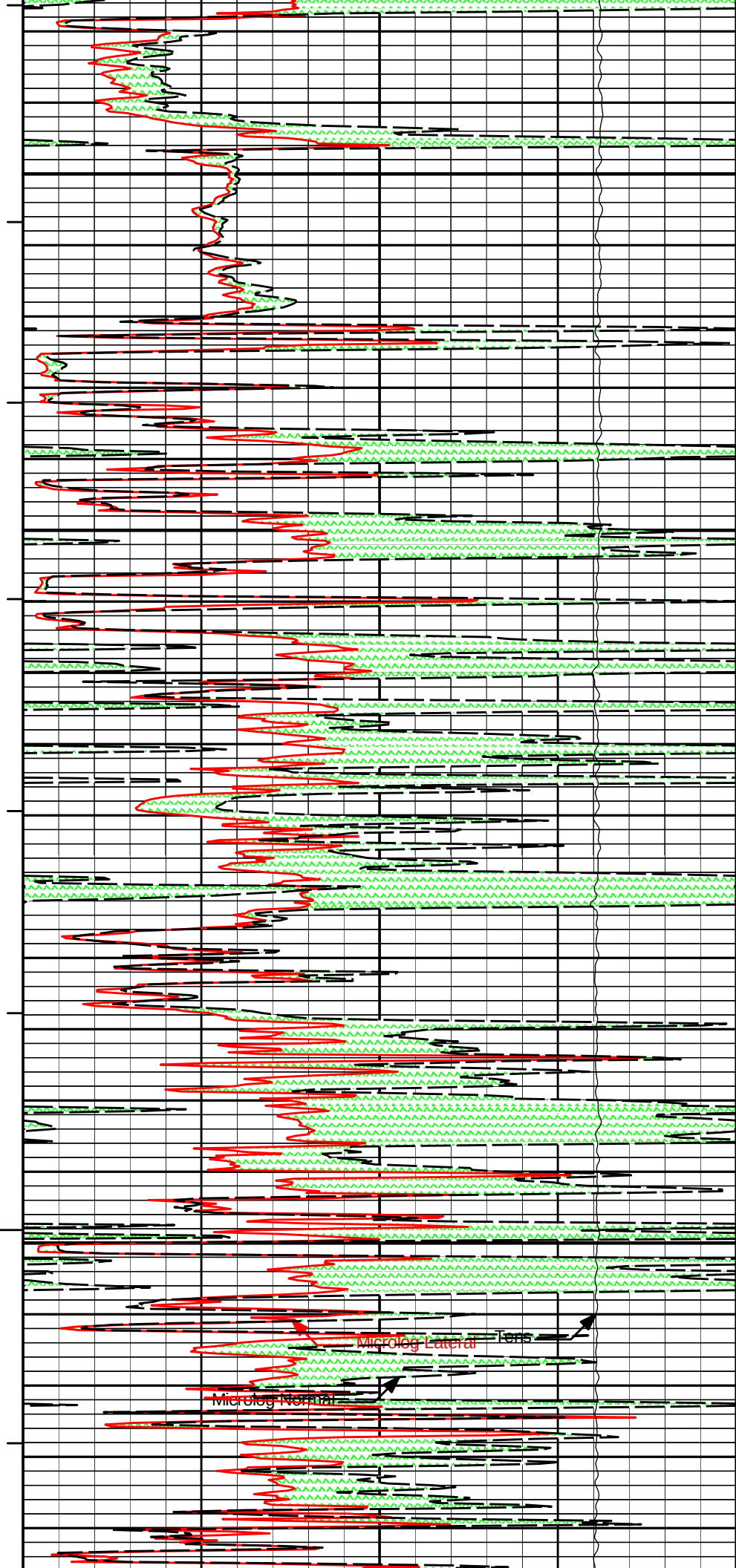


4400

4500

Gamma API

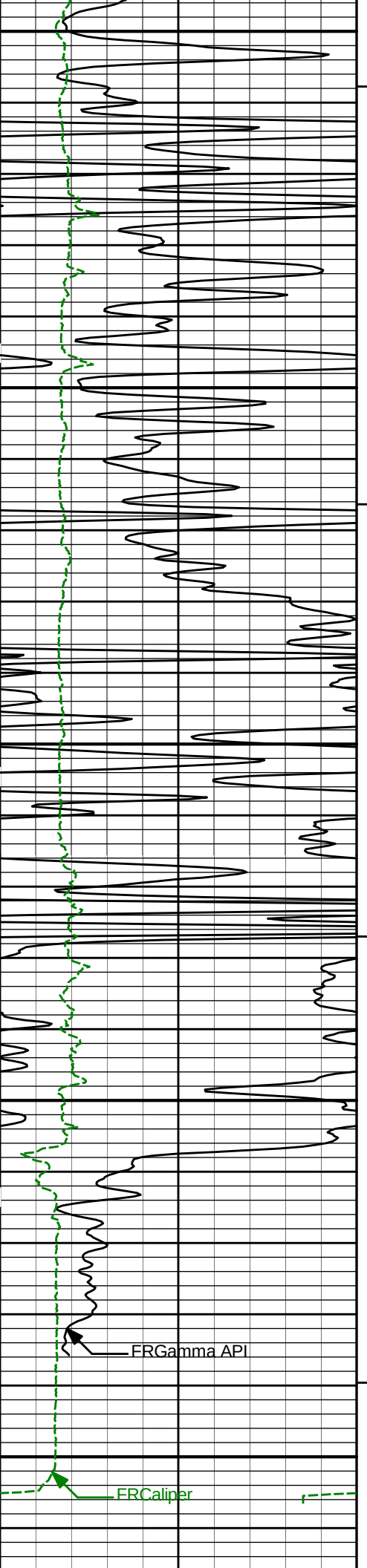
Caliper



Microlog Lateral

Microlog Normal

Lens



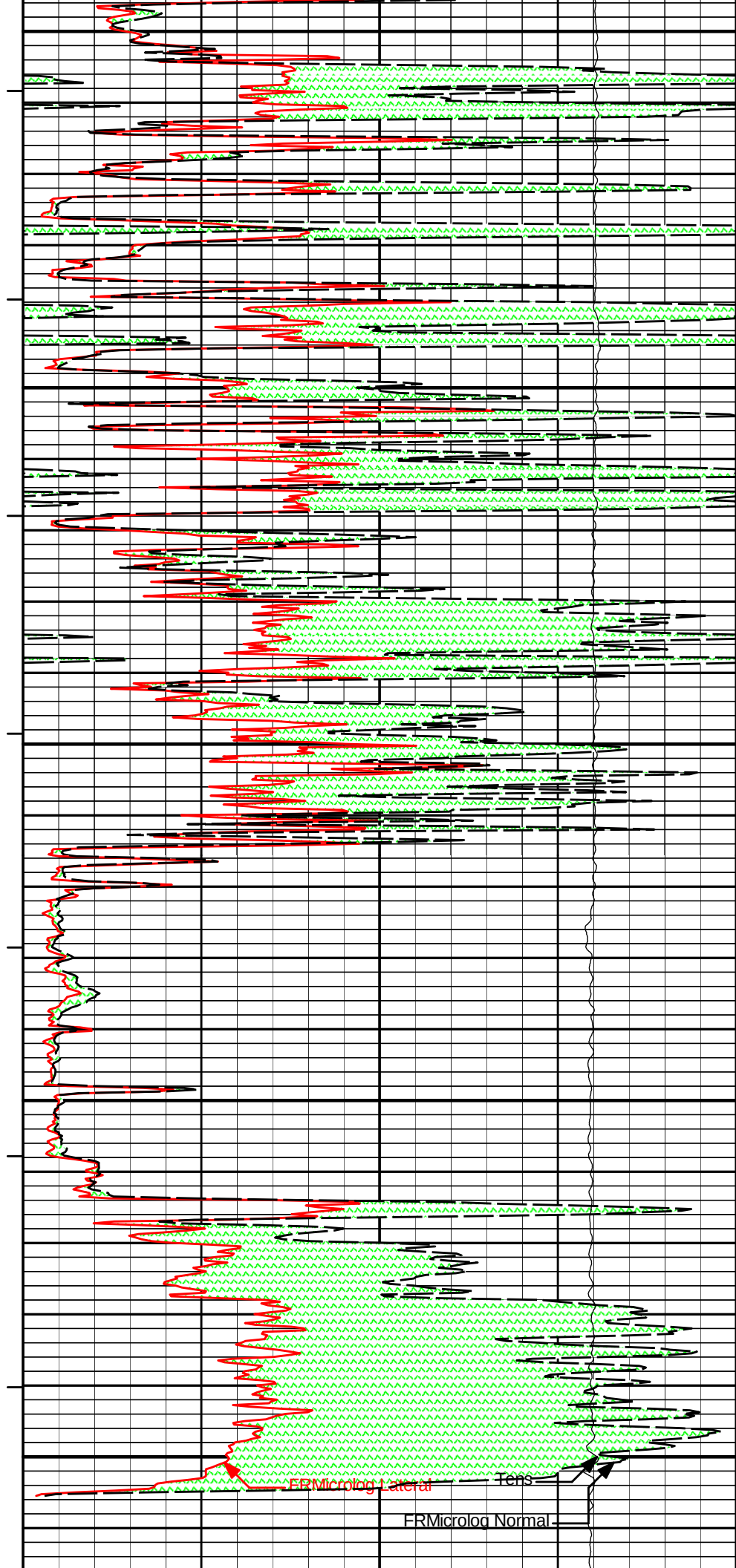
4600

4700

4800

FRGamma API

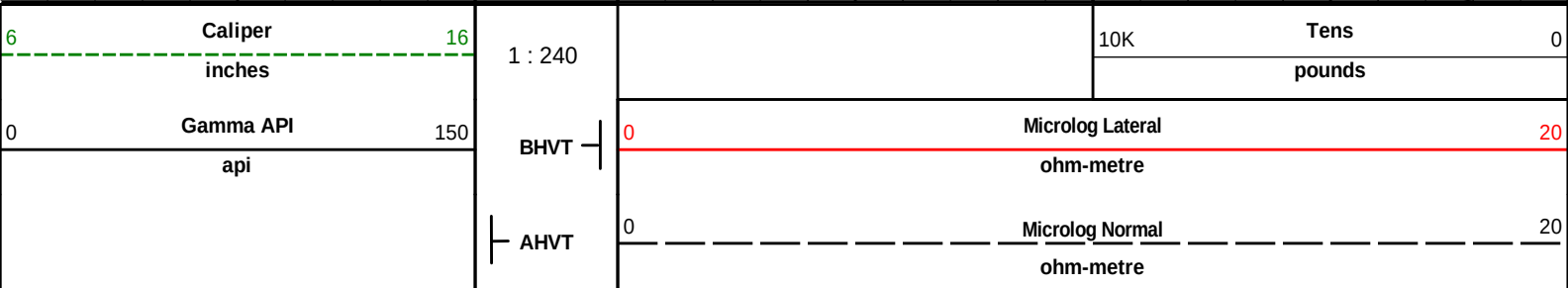
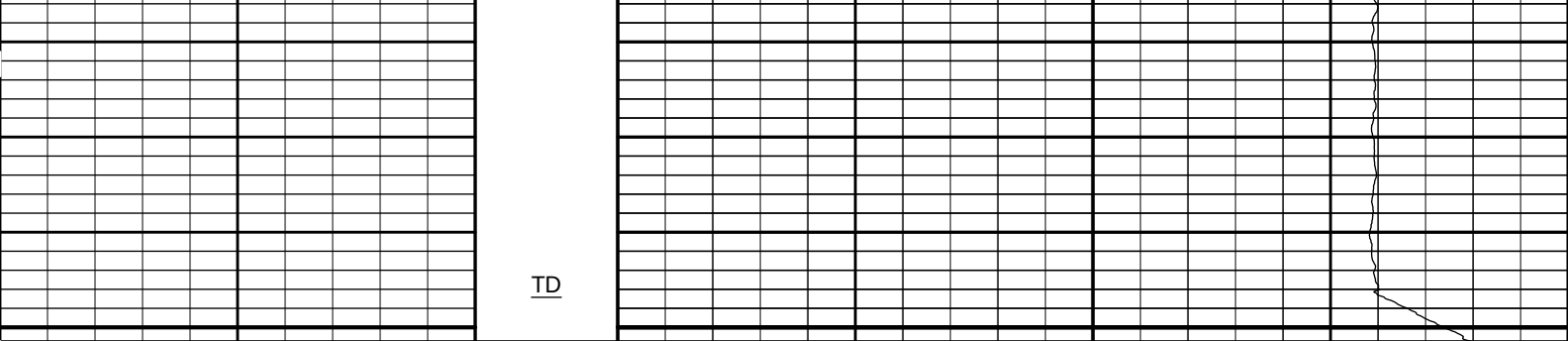
FRCaliper



FRMicrolog Lateral

Tens

FRMicrolog Normal

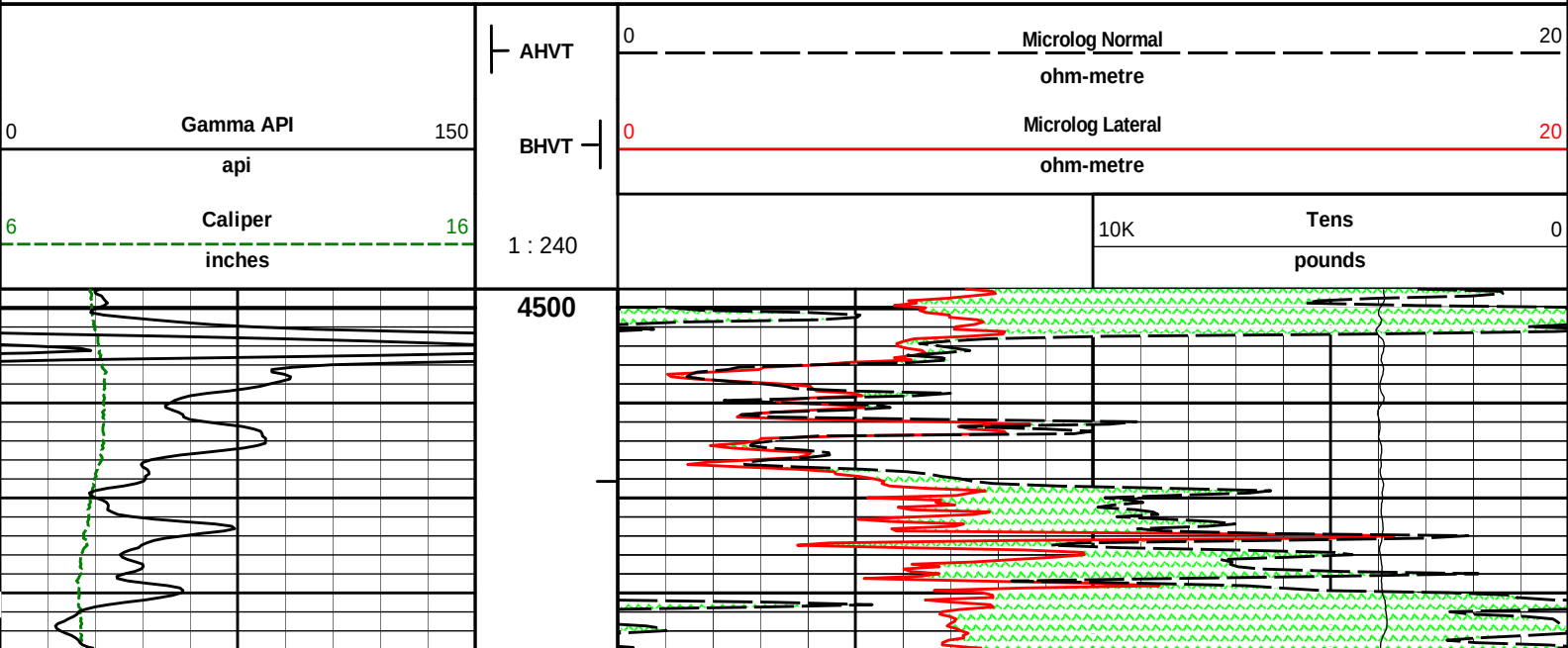


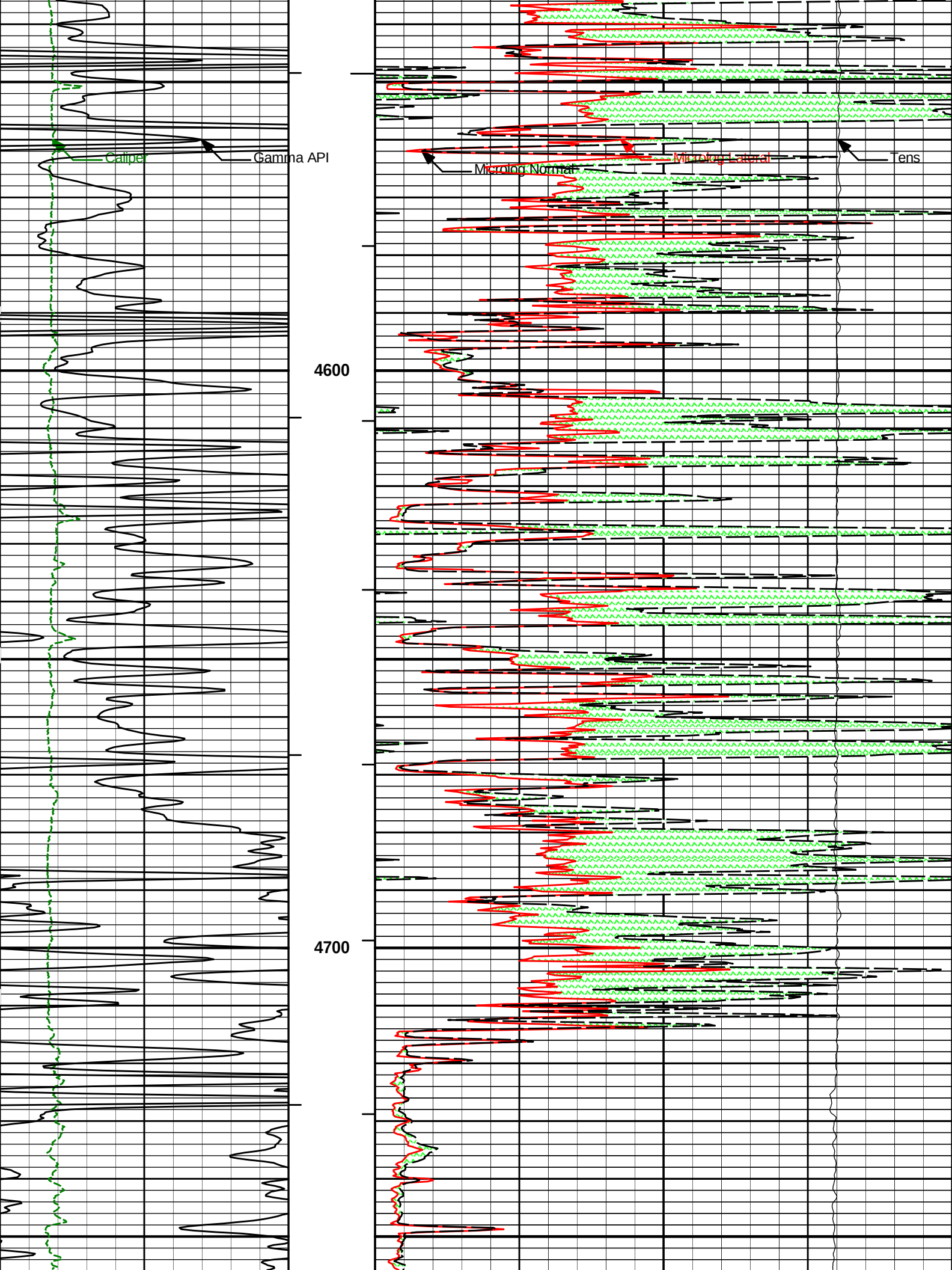
HALLIBURTON Plot Time: 07-Oct-12 00:43:24
Plot Range: 2448 ft to 4851.5 ft
Data: HARTMN_ROSE_1_1\Well Based\MAIN\
Plot File: \\MEL\IQ_MEL_5IN_RM

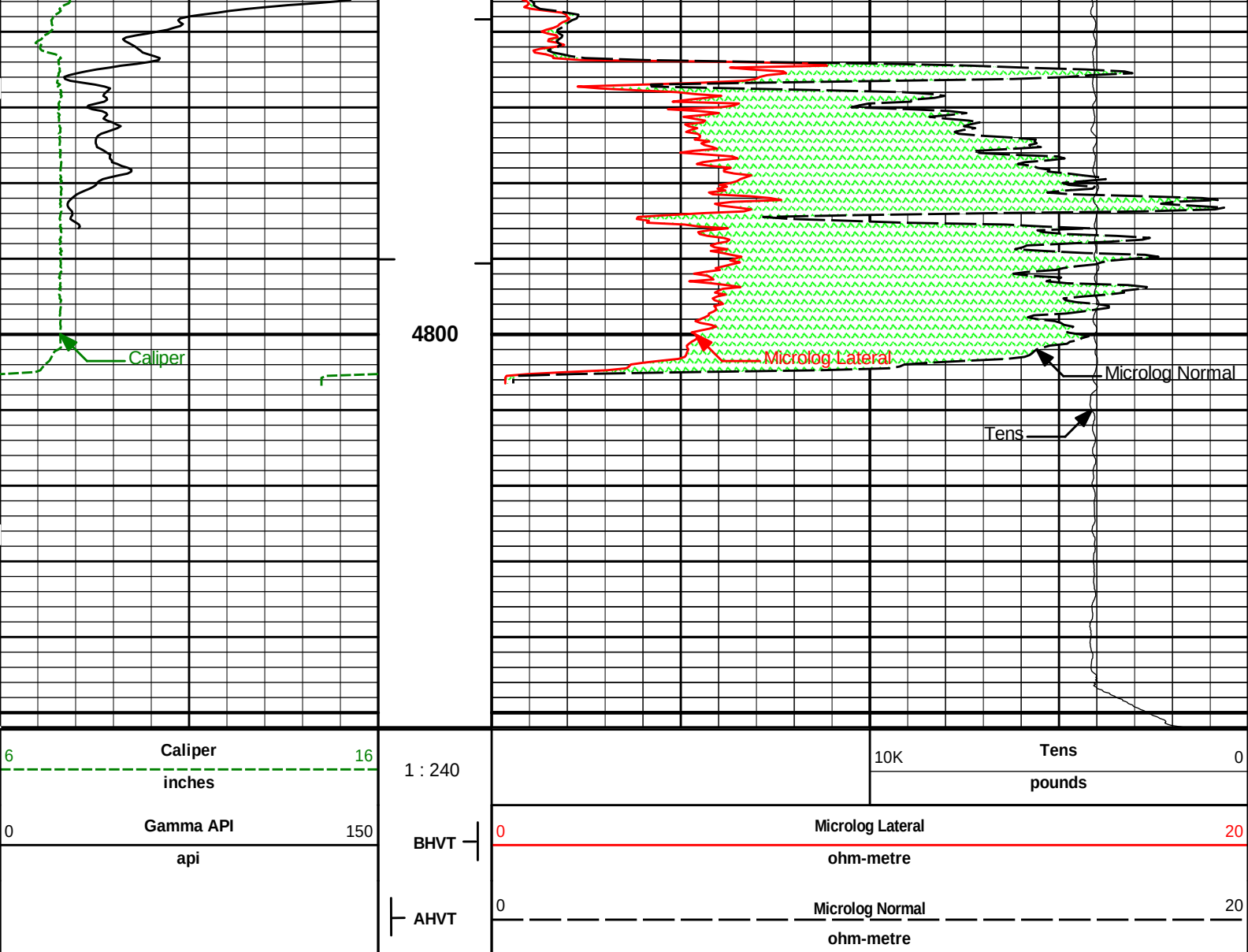
MAIN PASS 5" = 100'

HALLIBURTON Plot Time: 07-Oct-12 00:43:25
Plot Range: 4498 ft to 4851.92 ft
Data: HARTMN_ROSE_1_1\Well Based\RPT\
Plot File: \\MEL\IQ_MEL_5IN_RM

REPEAT SECTION 5" = 100'







HALLIBURTON

Plot Time: 07-Oct-12 00:43:26
Plot Range: 4498 ft to 4851.92 ft
Data: HARTMN_ROSE_1_1\Well Based\RPT\
Plot File: \\MEL\IQ_MEL_5IN_RM

REPEAT SECTION 5" = 100'

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11602914

Reference Calibration Date: 03-Sep-12 14:11:39

Engineer: D. CULVER

Calibration Date: 19-Sep-12 17:02:22

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

Calibration Version: 1

Calibrator Source S/N: TB-270
Calibrator API Reference:259.00 api
Equivalent Calibrator API Reference:263.5 api

Measurement	Measured	Calibrated	Units
Background	43.0	43.2	api
Background + Calibrator	305.9	306.7	api
Calibrator	262.8	263.5	api

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name:	GTET - 11602914	Reference Calibration Date:	19-Sep-12 17:02:22
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 20:50:47
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Calibrator Source S/N: TB-270

Calibrator API Reference:259.00 api

Equivalent Calibrator API Reference:263.5 api

Field Verification	Shop	Field	Units
Background	43.2	116.6	api
Background + Calibrator	306.7	383.1	api
Calibrator	263.5	266.4	api
Shop	Field	Difference	Tolerance
263.5	266.4	-2.9	+/- 9.00

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name:	DSNT - 10860047	Reference Calibration Date:	21-Aug-12 11:15:06
Engineer:	D. CULVER	Calibration Date:	19-Sep-12 14:13:35
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Logging Source S/N: 08-018

Tank Serial Number: 105039

Reference value assigned to Tank: 49.230

Snow Block S/N: 11170614

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:	0.941	0.938	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):	0.1982	0.1974	0.0008	+/- 0.0020
Calibrated Ratio:	9.29	9.27	0.026	+/- 0.050

VERIFIER		
Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0735	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 - 10860047	Reference Calibration Date:	19-Sep-12 14:13:35
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Engineer: V. CREWS		Calibration Date: 06-Oct-12 12:38:23	
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1	
Logging Source S/N: 08-018			
Snow Block S/N: 11170614			
NEUTRON FIELD-CHECK SUMMARY			
	Shop	Field	Control Limit On Change
Snow-Block Porosity (decp):	0.0735	0.0606	+/- 0.0150
PASS/FAIL SUMMARY			
Block Change Check:		Passed	
Snow Block Stat Check:		Passed	
Temperature Check:		Passed	

DENSITY CALIPER SHOP CALIBRATION			
Tool Name: SDLT - 10947725		Reference Calibration Date: 06-Oct-12 12:06:34	
Engineer: V. CREWS		Calibration Date: 06-Oct-12 12:10:52	
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1	
Host Tool Name: DSNT - 10860047			

CALIBRATION COEFFICIENTS				
Measurement	Previous Value	New Value	Control Limit On New Value	
Pad Offset	-1342.92	-1398.94	-7000.00 - -1000.00	
Pad Gain	0.0003750	0.0003752	0.000200 - 0.000600	
Arm Offset	-1039.27	-1052.18	-5000.00 - 3000.00	
Arm Gain	0.0004958	0.0005057	0.000300 - 0.000700	
Arm Power	-0.000002083	-0.000002847	-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)	2.02	2.00	-0.02	+/- 0.20
Medium Ring (in)	3.77	3.75	-0.02	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.49	6.50	0.01	+/- 0.20
Medium Ring (in)	8.23	8.25	0.02	+/- 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	

SPECTRAL DENSITY SHOP CALIBRATION			
Tool Name: SDLT Pad - 11014275		Reference Calibration Date: 19-Sep-12 10:23:41	
Engineer: V. CREWS		Calibration Date: 05-Oct-12 09:24:27	
Software Version: WL INSITE R3.6.0 (Build 3)		Calibration Version: 1	
Logging Source S/N: 5235GW			
Aluminum Block S/N: ROCK SPRINGS		Density: 2.602g/cc	
		Pe: 3.110	

DENSITY CALIBRATION SUMMARY			
Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0476	1.0337	0.90 - 1.10
Near Dens Gain	1.0107	1.0071	0.90 - 1.10
Near Peak Gain	1.0119	1.0184	0.90 - 1.10
Near Lith Gain	1.0110	1.0231	0.90 - 1.10
Far Bar Gain	1.0113	1.0121	0.90 - 1.10
Far Dens Gain	1.0022	1.0016	0.90 - 1.10
Far Peak Gain	0.9983	0.9989	0.90 - 1.10
Far Lith Gain	0.9748	0.9806	0.90 - 1.10
Near Bar Offset	-0.4135	-0.2834	NONE
Near Dens Offset	-0.0803	-0.0470	NONE
Near Peak Offset	-0.0904	-0.1464	NONE
Near Lith Offset	-0.0834	-0.1771	NONE
Far Bar Offset	-0.1673	-0.1720	NONE
Far Dens Offset	-0.0711	-0.0593	NONE
Far Peak Offset	-0.0874	-0.0840	NONE
Far Lith Offset	0.0241	-0.0069	NONE
Near Bar Background	905.33	902.03	700 - 1450
Near Dens Background	301.28	302.87	230 - 480
Near Peak Background	130.47	129.77	100 - 210
Near Lith Background	158.05	157.75	125 - 260
Far Bar Background	478.41	477.90	450 - 900
Far Dens Background	190.19	190.67	175 - 345
Far Peak Background	75.21	74.54	70 - 140
Far Lith Background	77.72	77.56	75 - 145

CALIBRATION BLOCK SUMMARY				
Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
MAGNESIUM				
Density (g/cc)	1.694	1.690	-0.004	+/- 0.015
Pe	2.618	2.556	-0.062	+/- 0.150
ALUMINUM				
Density (g/cc)	2.604	2.602	-0.002	+/- 0.01500
Pe	3.090	3.061	-0.029	+/- 0.150

TOOL SUMMARY				
Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
QUALITY				
Background	-0.0008	+/- 0.0110	-0.0022	+/- 0.0140
Magnesium Block	-0.0011	+/- 0.0110	-0.0009	+/- 0.0140
Aluminum Block	0.0006	+/- 0.0110	0.0010	+/- 0.0140
Resolution	9.15	6.00 - 11.50	10.14	6.00 - 11.50
Internal Verifier(B+D+P+L)	1492	1200 - 2700	821	800 - 1700

PASS/FAIL SUMMARY	
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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 - 11014275	Reference Calibration Date:	05-Oct-12 09:24:27
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:24:34
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Pad Temperature: 56.9 degF

DENSITY FIELD CALIBRATION SUMMARY				
Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1492.432	1496.326	3.894	15.569
Far (B+D+P+L) cps	820.674	824.912	4.238	15.804
Near Resolution	9.15	9.11	-0.040	0.50
Far Resolution	10.14	10.41	0.270	1.00

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

MICRO LOG SHOP CALIBRATION

Tool Name:	Microlog Pad - 10947725	Reference Calibration Date:	06-Oct-12 12:20:37
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:22:08
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	DSNT - 10860047		

CALIBRATION COEFFICIENT SUMMARY					
Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.04	-0.05	0.01	0.00	ohmm
Calibration Point #1	0.01	0.00	0.00	0.00	ohmm
Calibration Point #2	20.00	20.00	19.93	20.00	ohmm
Internal Reference	20.09	20.09	20.16	20.24	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	4.44	2.91	V
Calibration Point #1	16.49	2.05	V
Calibration Point #2	5239.40	6752.30	V
Internal Reference	5263.45	6831.70	V

MICRO LOG FIELD CHECK

Tool Name:	Microlog Pad - 10947725	Reference Calibration Date:	06-Oct-12 12:22:08
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:23:11
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

Measurement	Micro Log Normal	Micro Log Lateral
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	Shop		Field	Shop	Field	Units	
	Tool Zero		-0.05	-0.05	0.00	ohmm	
	Internal Reference		20.09	20.09	20.24	ohmm	
	Summary						
	Signal	Shop	Field	Difference		Tolerance	
	Microlog Normal	20.09	20.09	0.00		+/- 0.80	
	Microlog Lateral	20.24	20.24	0.00		+/- 0.80	

SDLT CALIPER FIELD CALIBRATION			
Tool Name:	SDLT - 10947725	Reference Calibration Date:	06-Oct-12 12:10:52
Engineer:	V. CREWS	Calibration Date:	06-Oct-12 12:12:42
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	3.77	0.02	+/- 0.10	
	Ring Diameter	8.25	8.32	0.07	+/- 0.15	
	PASS/FAIL SUMMARY					
	Pad Extension Check:			Passed		
	Diameter Check:			Passed		

BSAT FIELD CASING CHECK			
Tool Name:	BSAT - 10747633	Calibration Date:	06-Oct-12 21:15:41
Engineer:	V. CREWS		
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1

	Pre-Log Check	Check Depth	Shop	Field	Difference	Tolerance	Units
	Delta-T Compensated	131.69	57.00	56.03	0.9700	1.00	uspf

ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION			
Tool Name:	ACRt Sonde - E6988-S8481	Reference Calibration Date:	11-Feb-12 12:56:56
Engineer:	J.MAYNE	Calibration Date:	25-Sep-12 12:13:40
Software Version:	WL INSITE R3.6.0 (Build 3)	Calibration Version:	1
Host Tool Name:	ACRt Instrument - E6988-S8481		

TYPICAL GAIN RANGE									
Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.05	1.05	0.95	1.02	1.05	0.95	1.01	1.05
A2 (50")	0.95	1.06	1.05	0.95	1.03	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.03	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A4 (17")	0.95	1.02	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.99	1.05
A6 (6")	N/A	N/A	N/A	0.95	0.99	1.05	0.95	0.99	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	1.55	2	-6	-4.36	-2	-8	-6.36	-2
A2 (50")	-7	-1.34	0	-7	-4.84	0	-7	-5.76	0
A3 (29")	-27	-13.41	-9	-9	-5.12	-3	-7	-3.79	-1

A4 (17")	-180	-98.44	-60	-45	-30.17	-15	-39	-24.25	-13
A5 (10")	N/A	N/A	N/A	-150	-101.38	-50	-80	-48.71	-10
A6 (6")	N/A	N/A	N/A	175	304.71	525	90	152.90	270

TRANSMITTER CURRENT GAIN				R-MUD VERIFICATION			
Signal	Lower	R	Upper	Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
12K	0.6	0.81	1.3	Mud Cell	0.95	1.00	1.05
36K	1.0	1.24	2.0				
72K	1.0	1.43	2.0				
PASS/FAIL SUMMARY							
GAIN RANGE CHK				FAIL			
SONDE OFFSET RANGE CHK				PASS			
Tx CURRENT GAIN				PASS			
Rmud VERIFICATION				PASS			
TOOL OUT OF TOLERANCE							

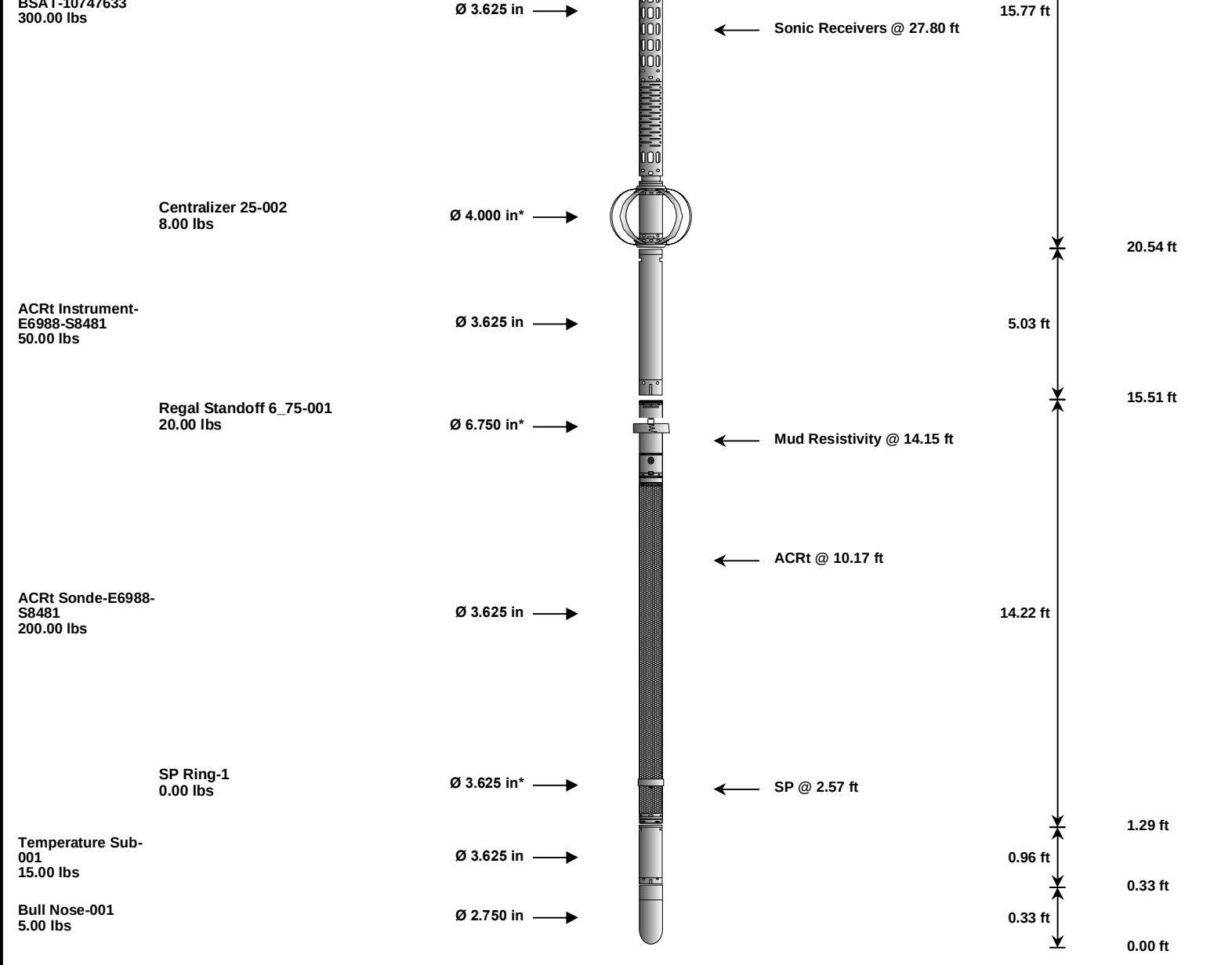
CALIBRATION SUMMARY						
Sensor	Shop	Field	Post	Difference	Tolerance	Units
GTET-11602914						
Gamma Ray Calibrator	263.5	266.4	-----	-2.9	+/- 9.00	api
DSNT-10860047						
Snow-Block Porosity	0.0735	0.0606	-----	0.0129	+/- 0.0150	decg
SDLT-10947725						
Pad Extension	3.75	3.77	-----	-0.02	+/-0.10	in
Ring Diameter	8.25	8.32	-----	-0.07	+/-0.15	in
SDLT Pad-11014275						
Near(B+D+P+L)	1492.432	1496.326	-----	-3.894	+/-15.569	cps
Far(B+D+P+L)	820.674	824.912	-----	-4.238	+/-15.804	cps
Microlog Pad-10947725						
MicroLog Normal	20.09	20.09	-----	0.00	+/-0.80	ohmm
MicroLog Lateral	20.24	20.24	-----	0.00	+/-0.80	ohmm
ACRt Sonde-E6988-S8481						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m

Data: HARTMN ROSE 1 110003 QUAD MEL BSATIDLE										Date: 06-Oct-12 23:22:45	
HALLIBURTON											
CUSTOMER EVENT LOG											

Event Type	Time & Date	Depth (ft)	Event Description
	06-Oct-12 21:23:20	655.75	Logging 001 06-Oct-12 21:23 Dn @655.8f
	06-Oct-12 21:36:29	3831.58	Halting 001 06-Oct-12 21:23 Dn @655.8f
	06-Oct-12 21:37:19	3771.75	Logging 002 06-Oct-12 21:37 Dn @3771.8f
	06-Oct-12 21:43:27	4832.07	Halting 002 06-Oct-12 21:37 Dn @3771.8f
	06-Oct-12 21:44:39	4852.25	Logging 003 06-Oct-12 21:44 Up @4852.3f
	06-Oct-12 21:51:25	4485.66	Halting 003 06-Oct-12 21:44 Up @4852.3f
	06-Oct-12 21:53:59	4852.00	Logging 004 06-Oct-12 21:53 Up @4852.0f
	06-Oct-12 23:18:43	78.10	Halting 004 06-Oct-12 21:53 Up @4852.0f
Data: HARTMN_ROSE 1 110003 QUAD MEL BSATHW11433			
Date: 06-Oct-12 23:20:42			

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						77.26 ft
RWCH-11103904 135.00 lbs		Ø 3.625 in →		← Load Cell @ 73.57 ft ← BH Temperature @ 73.01 ft	6.25 ft	
						71.01 ft
GTET-11602914 165.00 lbs		Ø 3.625 in →		← GammaRay @ 64.95 ft	8.52 ft	
						62.49 ft
DSNT-10860047 174.00 lbs	DSN Decentralizer- 10860047 6.60 lbs	Ø 5.000 in* → Ø 3.625 in →		← DSN Far @ 55.55 ft ← DSN Near @ 54.80 ft	9.69 ft	
						52.80 ft
SDLT-10947725 360.00 lbs	SDLT Pad-11014275 65.00 lbs Microlog Pad-10947725 8.00 lbs	Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* →		Microlog @ 44.99 ft SDL Caliper @ 44.80 ft SDL @ 44.79 ft	10.81 ft	
						41.99 ft
Flex Joint-11021615 140.00 lbs		Ø 3.625 in →				5.67 ft
						36.32 ft
	Centralizer 25-001 8.00 lbs	Ø 4.000 in* →				



Mnemonic	Tool Name	Serial Number	Weight (lbs)	Length (ft)	Accumulated Length (ft)	Max.Log. Speed (fpm)
RWCH	Releasable Wireline Cable Head	11103904	135.00	6.25	71.01	300.00
GTET	Gamma Telemetry Tool	11602914	165.00	8.52	62.49	60.00
DSNT	Dual Spaced Neutron	10860047	174.00	9.69	52.80	60.00
DCNT	DSN Decentralizer	10860047	6.60	5.13	* 56.13	300.00
SDLT	Spectral Density Tool	10947725	360.00	10.81	41.99	60.00
SDLP	Density Insite Pad	11014275	65.00	2.55	* 44.20	60.00
MICP	Microlog Pad	10947725	8.00	1.00	* 44.49	60.00
FLEX	Flex Joint	11021615	140.00	5.67	36.32	300.00
BSAT	Borehole Sonic Array Tool	10747633	300.00	15.77	20.54	60.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08	* 20.55	300.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08	* 33.42	300.00
ACRt	Array Compensated True Resistivity Instrument Section	E6988-S8481	50.00	5.03	15.51	300.00
ACRt	Array Compensated True Resistivity Sonde Section	E6988-S8481	200.00	14.22	1.29	300.00
SP	SP Ring	1	0.00	0.25	* 2.57	300.00
RSOF	Regal Standoff 6.75in	001	20.00	0.52	* 14.36	300.00
TMAX	Temperature Sub - 3_625 OD	001	15.00	0.96	0.33	300.00
BLNS	Bull Nose	001	5.00	0.33	0.00	300.00
Total			1,659.60	77.26		
* Not included in Total Length and Length Accumulation.						
Data: HARTMN_ROSE_1_1\0003 QUAD_MEL_BSAT\IDLE						
Date: 07-Oct-12 00:07:25						

COMPANY	HARTMAN OIL CO., INC.		
WELL	ROSE # 1-1		
FIELD	WILDCAT		
COUNTY	WICHITA	STATE	KANSAS
HALLIBURTON		MICROLOG	