HALLIBURTON

MICROLOG

COMPANY	HARTMAN OIL COMPANY, INC.
WELL	DAMME #41-A
FIELD	DAMME
COUNTY	FINNEY
STATE	KANSAS

COMPANY **HARTMAN OIL COMPANY, INC.**
WELL **DAMME #41-A**
FIELD **DAMME**
COUNTY **FINNEY** STATE **KANSAS**

API No. 15-055-22102
Location 1065' FSL & 2310' FEL

Other Services:
DSN/SDL
ACRT

Sect. 21 Twp. 22S Rge. 33W

Permanent Datum	GL	Elev. 2892.0 ft	Elev.: K.B.	2902.0 ft
Log measured from	KB	, 10.0 ft above perm. Datum	D.F.	2901.0 ft
Drilling measured from	KB		G.L.	2892.0 ft

Date		10-Aug-11					
Run No.		1					
Depth - Driller		4875.00 ft					
Depth - Logger		7871.0 ft					
Bottom - Logged Interval		7848.0 ft					
Top - Logged Interval		3550.0 ft					
Casing - Driller		8.625 in @ 752.0 ft		@		@	
Casing - Logger		756.0 ft					
Bit Size		7.875 in		@		@	
Type Fluid in Hole		WATER BASED MUD					
Density	Viscosity	8.7 ppg	50.00 s/qt				
PH	Fluid Loss	9.50 pH	8.0 cptm				
Source of Sample		FLOW LINE					
Rm @ Meas. Temperature		1.030 ohmm @ 85.00 degF		@		@	
Rmf @ Meas. Temperature		0.85 ohmm @ 80.00 degF		@		@	
Rmc @ Meas. Temperature		1.230 ohmm @ 80.00 degF		@		@	
Source Rmf	Rmc	MEASURED	MEASURED				
Rm @ BHT		0.83 ohmm @ 120.0 degF		@		@	
Time Since Circulation		5.0 hr					
Time on Bottom		10-Aug-11 09:39					
Max. Rec. Temperature		120.0 degF @ 7871.0 ft		@		@	
Equipment	Location	10782954	LIBERAL				
Recorded By		J. BOSH					
Witnessed By		B. ARDE		C. PETERS			

Fold here

Service Ticket No.: 83728564 API Serial No.: 15-055-22102 PGM Version: WL INSITE R3.2.5 (Build 2)

CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE					
Date	Sample No.				
Depth-Driller					
Type Fluid in Hole					
Density	Viscosity				
Ph	Fluid Loss				
Source of Sample					
Rm @ Meas. Temp		@		@	
Rmf @ Meas. Temp.		@		@	
Rmc @ Meas. Temp.		@		@	
Source Rmf	Rmc				
Rm @ BHT		@		@	
Rmf @ BHT		@		@	
Rmc @ BHT		@		@	

RESISTIVITY SCALE CHANGES

Type Log	Depth	Scale Up Hole	Scale Down Hole

RESISTIVITY EQUIPMENT DATA

Run No.	Tool Type & No.	Pad Type	Tool Pos.	Other
ONE	MICRO P90	RUBBER	ADJ.	N/A

EQUIPMENT DATA

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

LOGGING DATA

GENERAL	GAMMA	ACOUSTIC	DENSITY	NEUTRON

GENERAL			GAMMA		ACOUSTIC			DENSITY			NEUTRON		
Run	Depth		Speed	Scale		Scale		Matrix	Scale		Matrix	Scale		Matrix
No.	From	To	ft/min	L	R	L	R		L	R		L	R	
ONE	TD	3550	REC	0	150									

DIRECTIONAL INFORMATION

Maximum Deviation @	KOP @

Remarks: ANNULAR HOLE VOLUME CALCULATED FOR 5.5 INCH CASING

CHLORIDES: 1000 PPM LCM: 24 #/BBL

GPS COORDINATES: LAT: 38.72 N LONG: 100.95 W

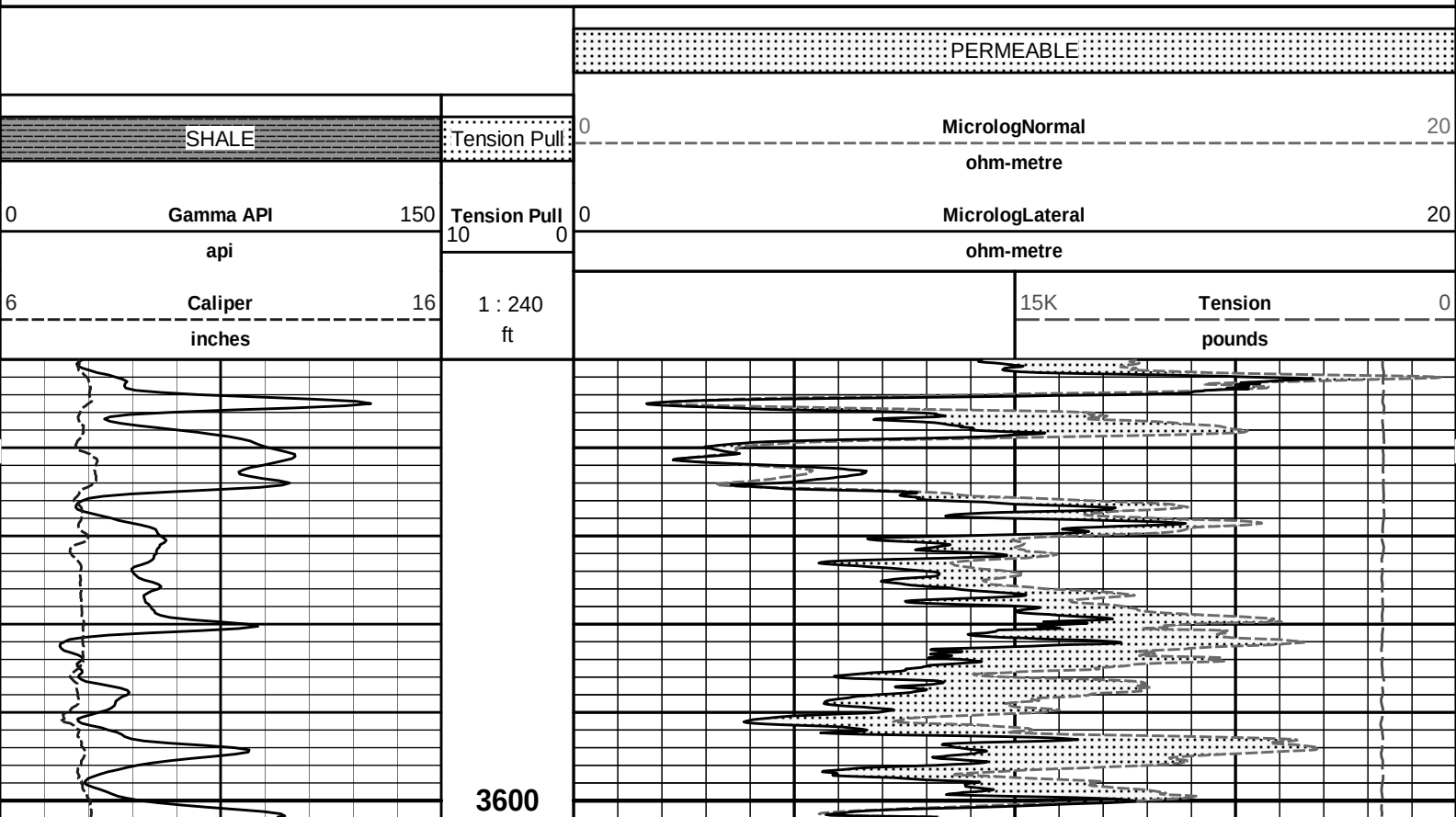
TODAY'S CREW: A. VAQUERA, P. COBLE

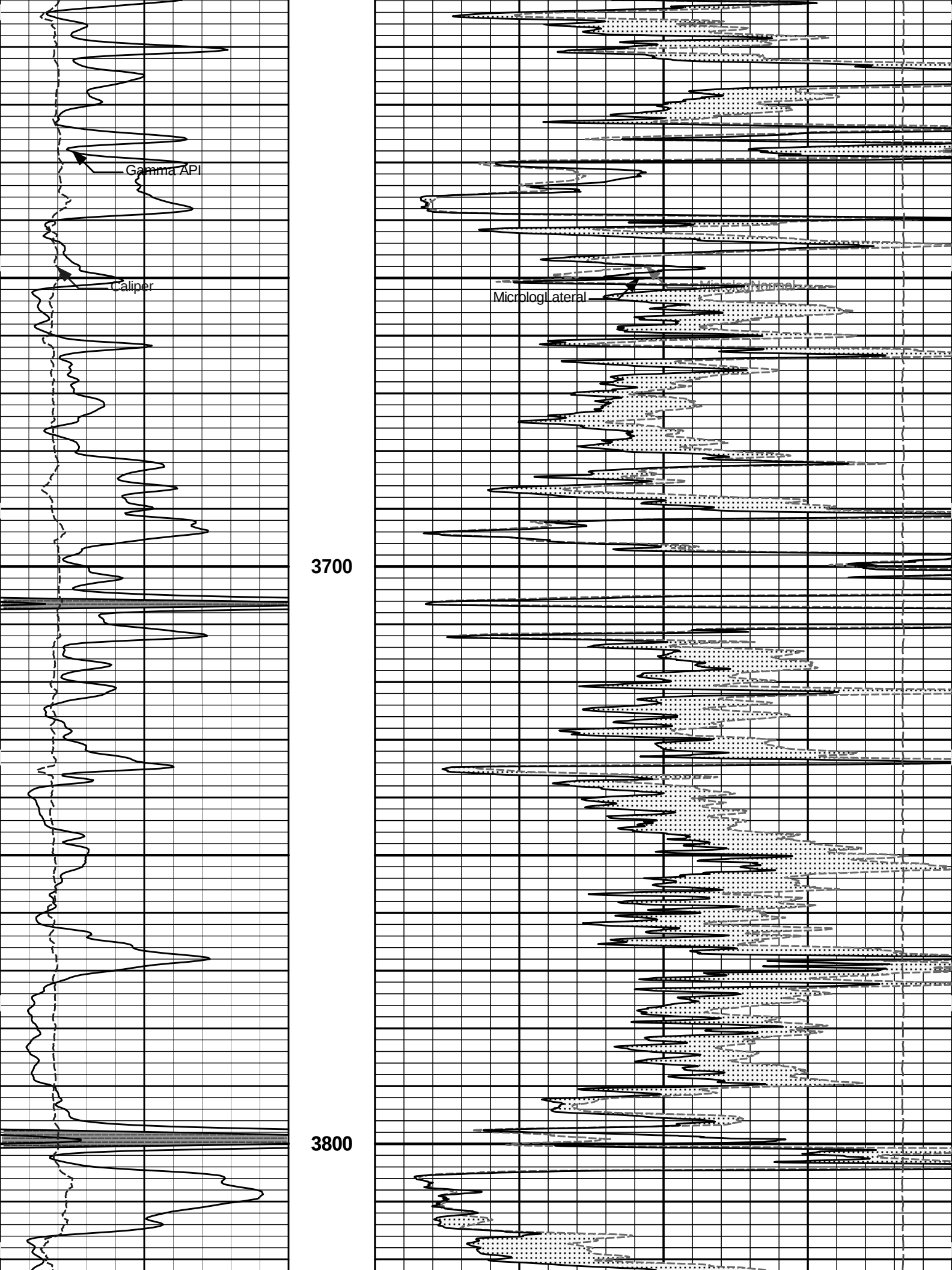
THANK YOU FOR CHOOSING HALLIBURTON ENERGY SERVICES. LIBERAL, KS 620-624-8123

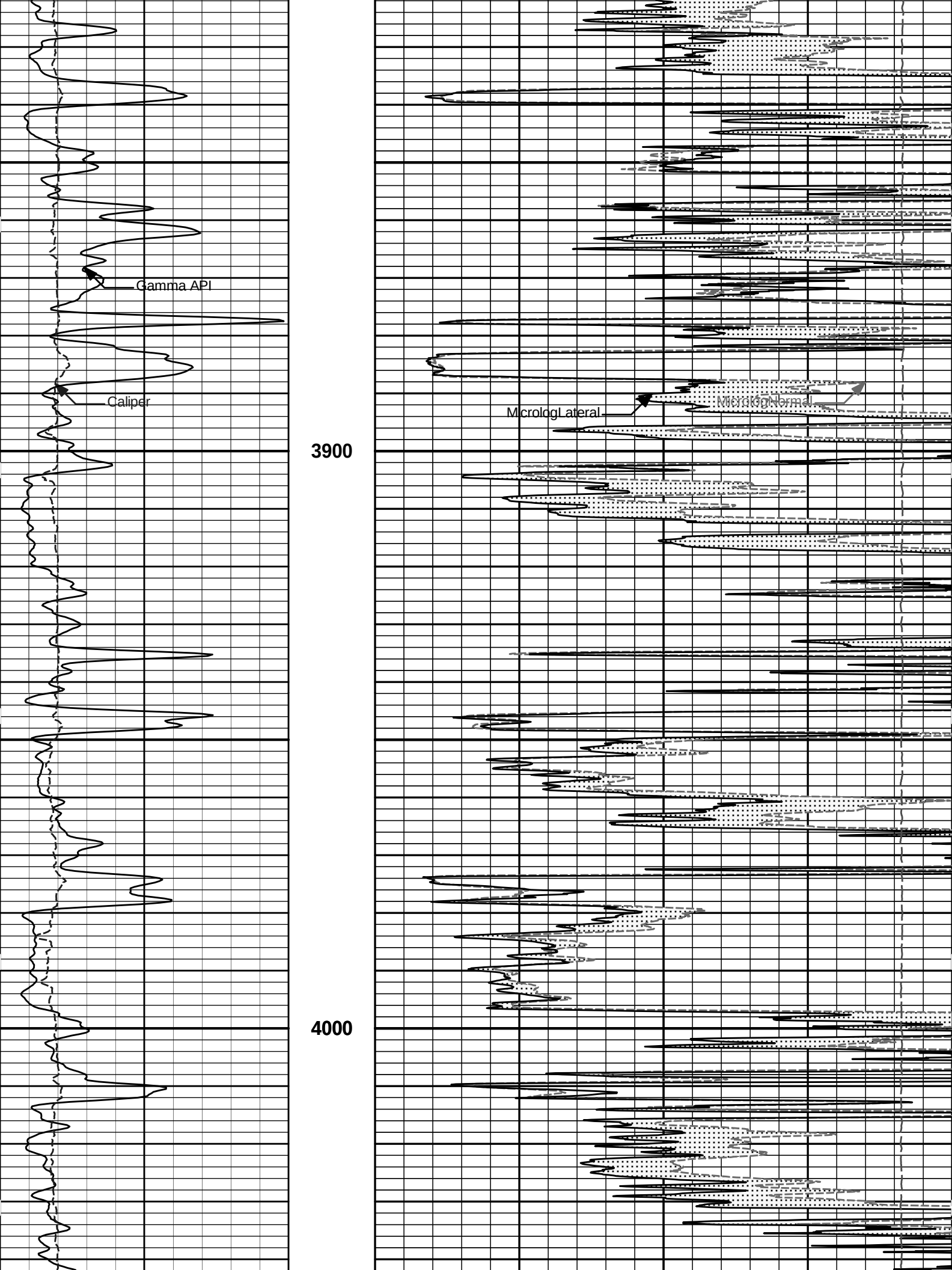
HALLIBURTON

Plot Time: 10-Aug-11 12:27:57
Plot Range: 3550 ft to 4879.17 ft
Data: DAMME_41_A\Well Based\DAQ-0001-003
Plot File: \\-LOCAL-\DAMME_41_A\Well Based\MICRO\Microlog_IQ_5_main_lib

5 INCH MAIN LOG




Gamma API
Caliper
Micrologl ateral
Micrologl Normal
3700
3800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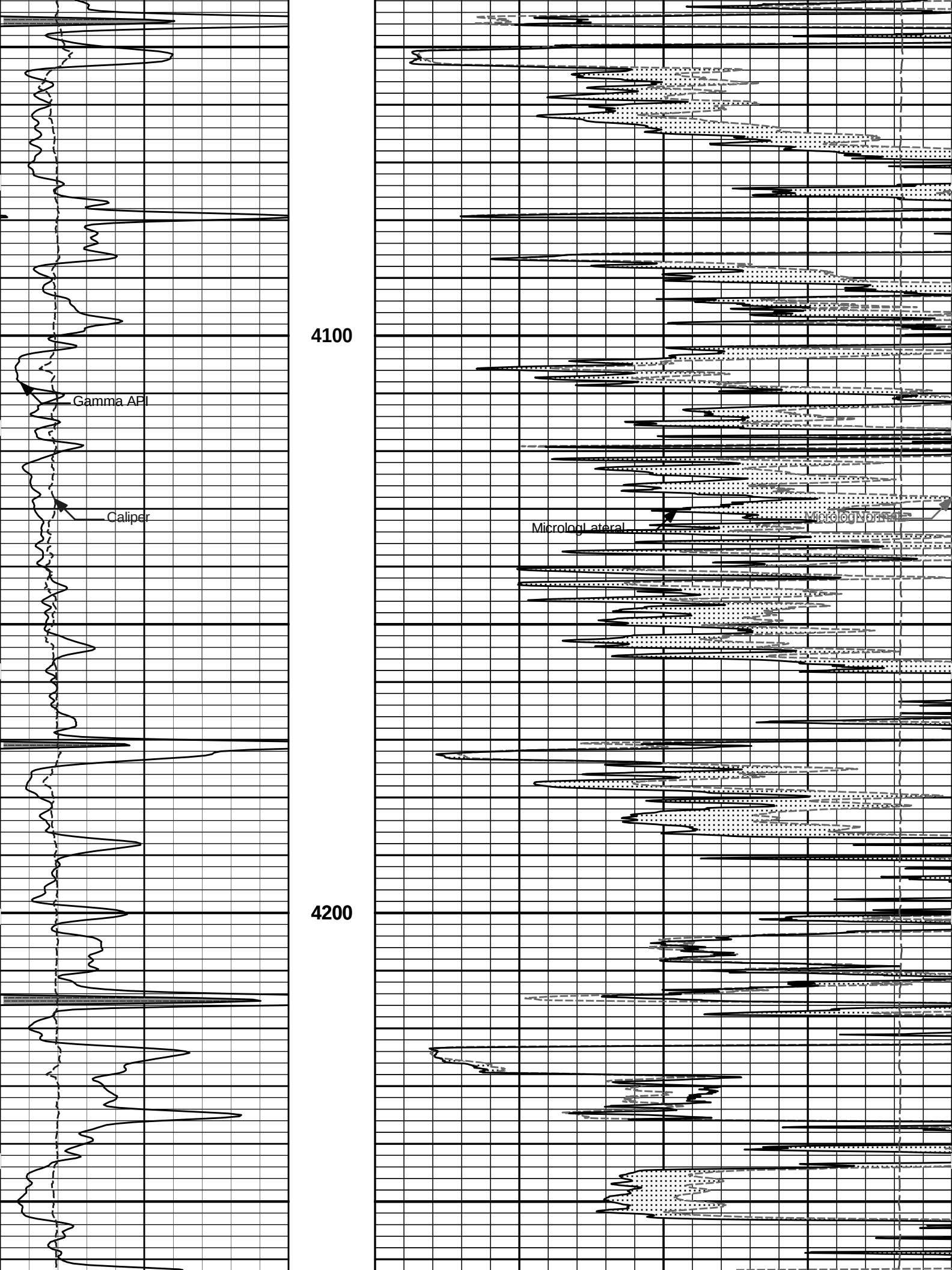
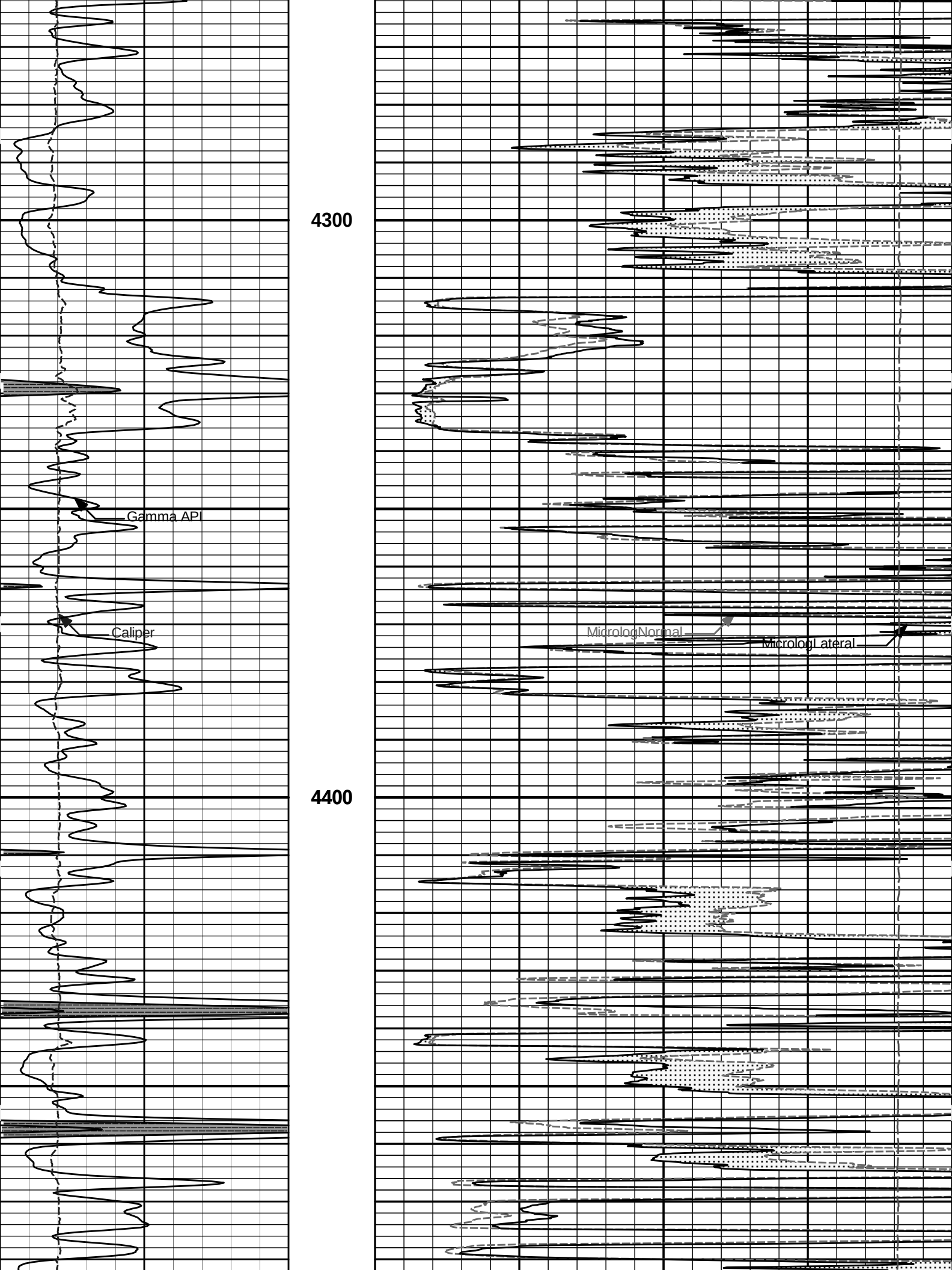
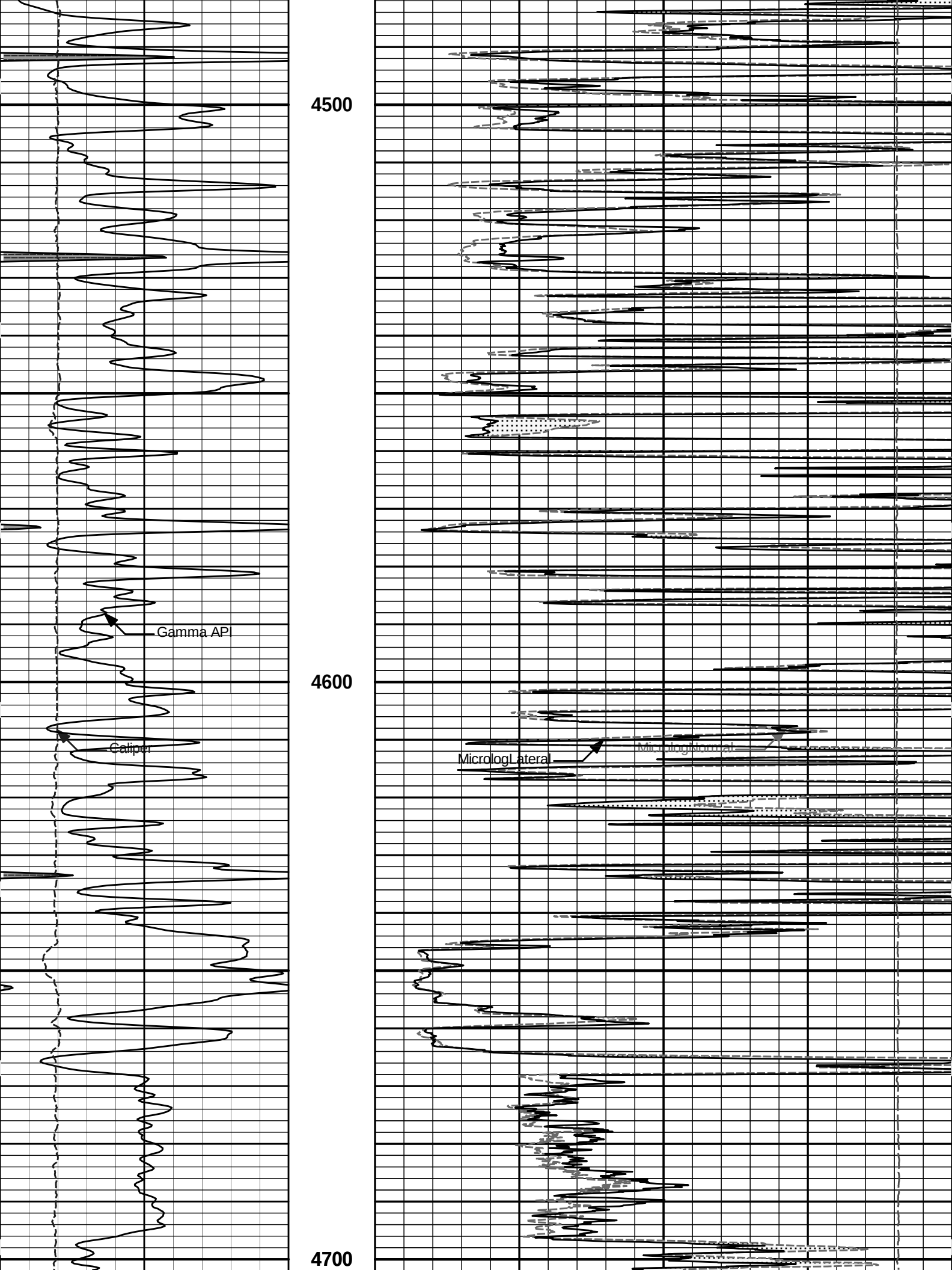
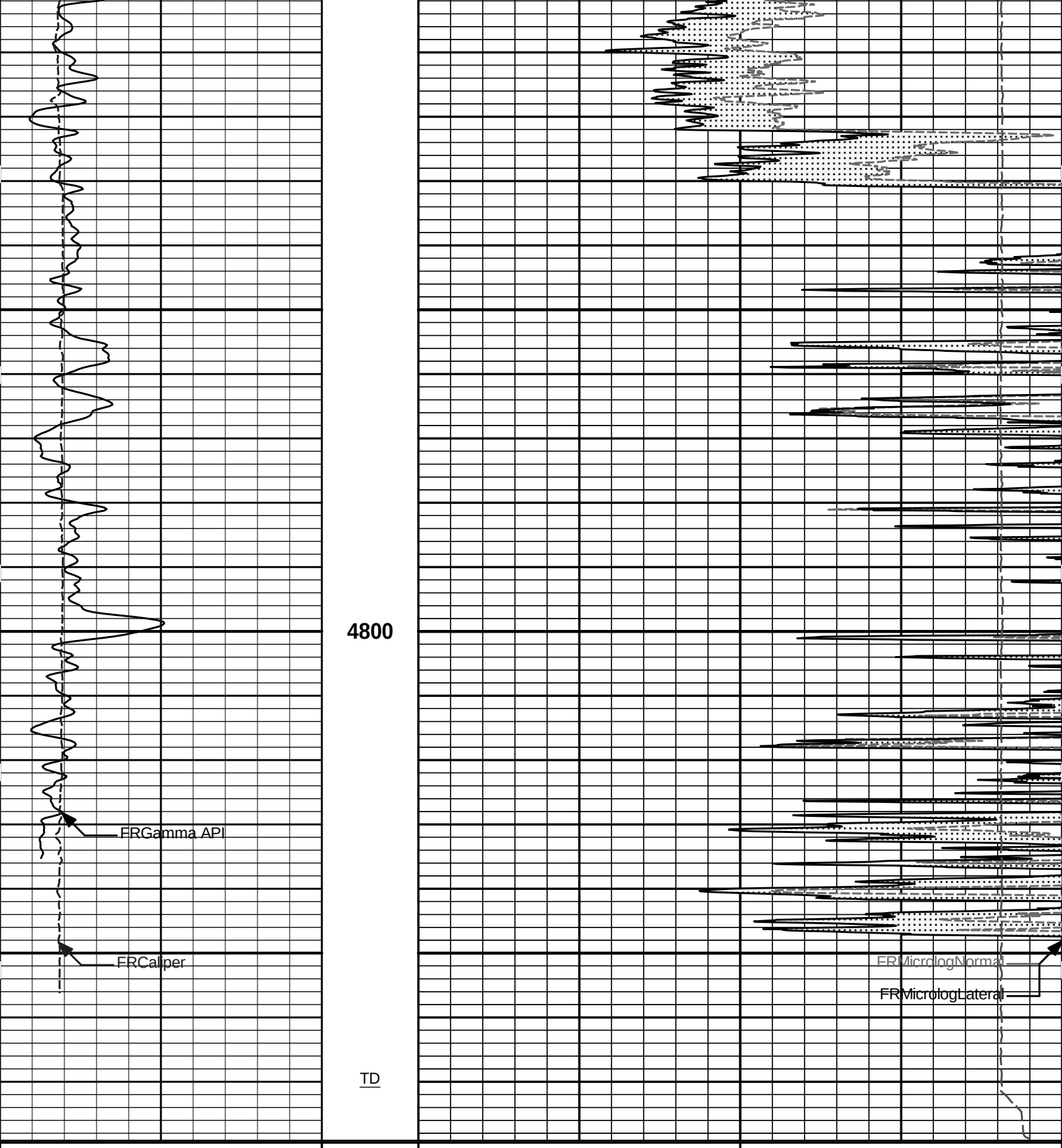
Caliper
MicrologLateral
MicrologNormal
3900
4000


4100
Gamma API
Caliper
MicrologLateral
MicrologNormal
4200


4300
Gamma API
Caliper
MicrologNormal
MicrologLateral
4400


4500
4600
4700
Gamma API
Caliper
MicrologLateral
MicrologNormal



6 **Caliper** 16
inches

0 **Gamma API** 150
api

SHALE

1 : 240
ft

Tension Pull
10 0

Tension Pull

15K **Tension** 0
pounds

0 **MicrologLateral** 20
ohm-metre

0 **MicrologNormal** 20
ohm-metre

PERMEABLE

HALLIBURTON

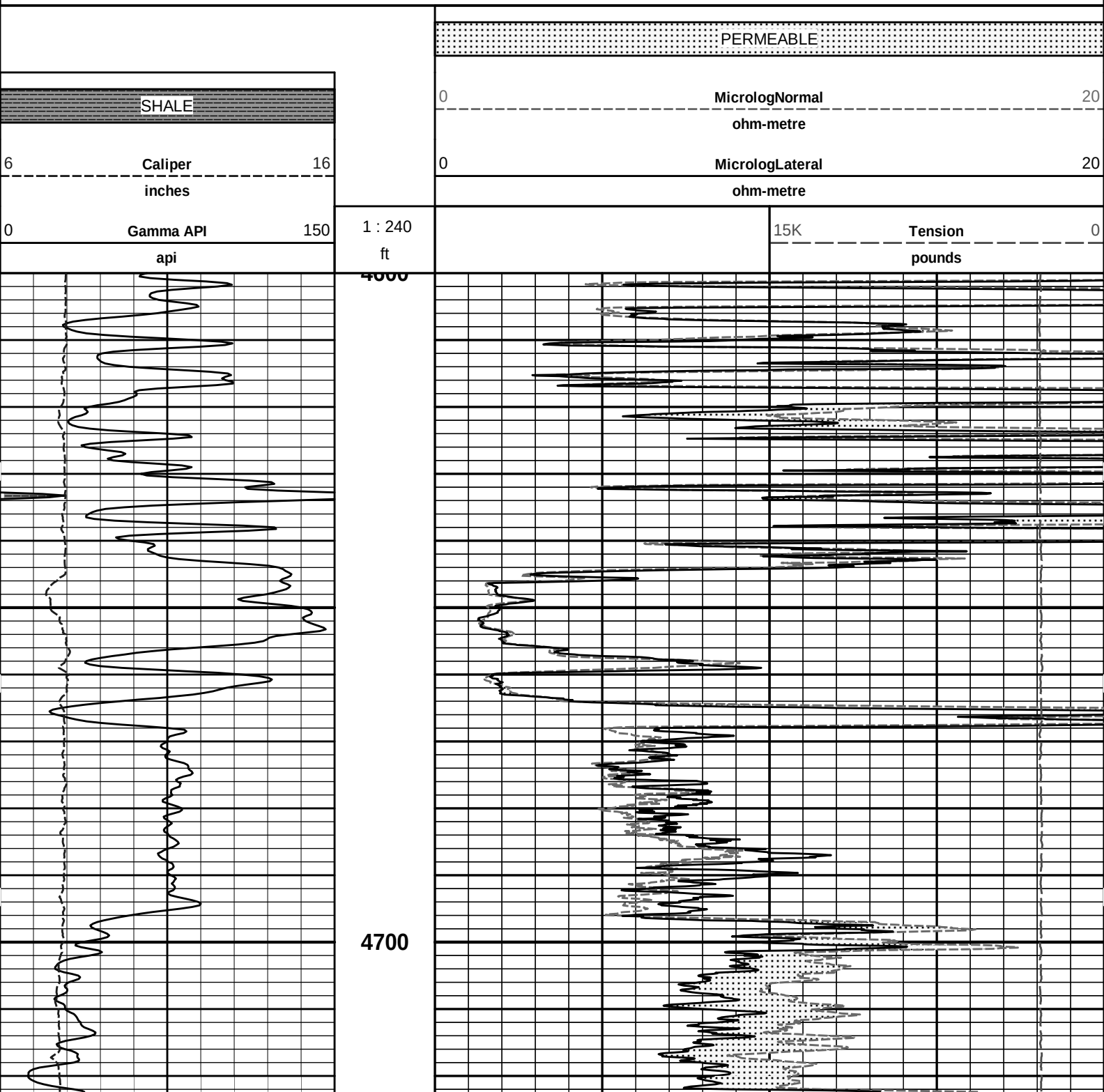
Plot Time: 10-Aug-11 12:28:12
Plot Range: 3550 ft to 4879.17 ft
Data: DAMME_41_A\Well Based\DAQ-0001-003\
Plot File: \\-LOCAL-\DAMME_41_A\Well Based\MICRO\Micrologl_IQ_5_main_lib

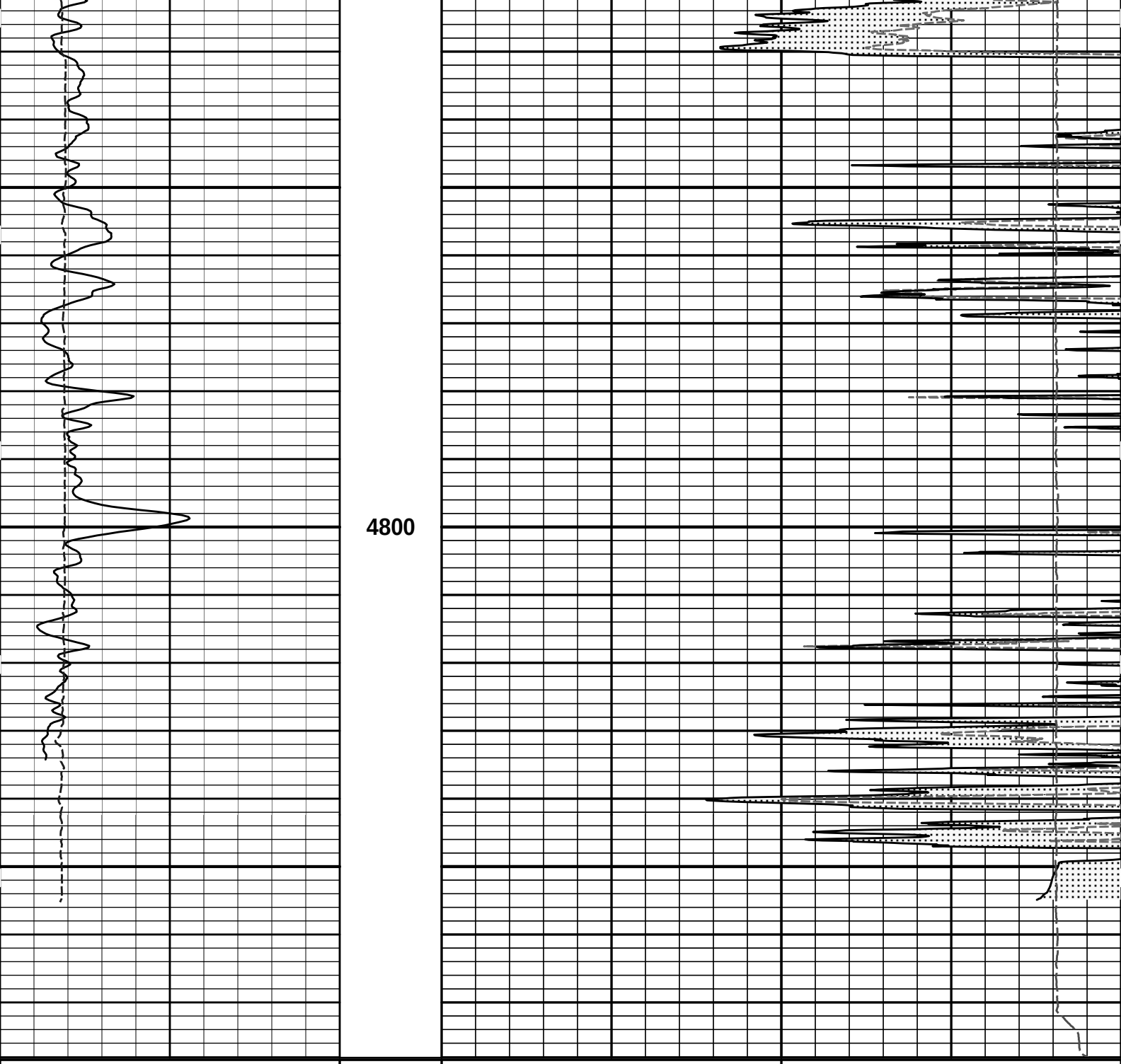
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 10-Aug-11 12:28:12
Plot Range: 4600 ft to 4878.17 ft
Data: DAMME_41_A\Well Based\DAQ-0001-002\
Plot File: \\-LOCAL-\DAMME_41_A\Well Based\MICRO\Micrologl_IQ_5_rep_lib

REPEAT SECTION





0 Gamma API 150	1 : 240	15K Tension 0
api	ft	pounds
6 Caliper 16		0 MicrologLateral 20
inches		ohm-metre
SHALE		0 MicrologNormal 20
		ohm-metre
		PERMEABLE

HALLIBURTON

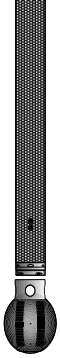
Plot Time: 10-Aug-11 12:28:16
Plot Range: 4600 ft to 4878.17 ft
Data: DAMME_41_A\Well Based\DAQ-0001-002
Plot File: \\-LOCAL-\DAMME_41_A\Well Based\MICRO\Microlog_IQ_5_rep_lib

REPEAT SECTION

HALLIBURTON

TOOL STRING DIAGRAM REPORT

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
						54.51 ft
Cable Head-PROT01 30.00 lbs		Ø 3.625 in			1.92 ft	
						52.59 ft
SP Sub-TRK954 60.00 lbs		Ø 3.625 in		SP @ 50.81 ft	3.74 ft	
						48.85 ft
GTET-10748374 165.00 lbs		Ø 3.625 in		GammaRay @ 42.79 ft	8.52 ft	
						40.33 ft
	DSN Decentralizer-11005605 6.60 lbs	Ø 3.625 in*				
DSNT-10735145 174.00 lbs		Ø 3.625 in		DSN Far @ 33.39 ft DSN Near @ 32.64 ft	9.69 ft	
						30.64 ft
SDLT-I145_M73803_P90 360.00 lbs		Ø 4.500 in		SDL Microlog @ 22.83 ft	10.81 ft	
		Ø 4.750 in		SDL Caliper @ 22.65 ft SDL @ 22.64 ft		
						19.83 ft
				Mud Resistivity @ 13.44 ft		
ACRt-I776_S775 250.00 lbs		Ø 3.625 in		ACRt @ 9.46 ft	19.25 ft	



Cabbage Head-
TRK954
10.00 lbs

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		52.59	300.00
SP	SP Sub	TRK954	60.00	3.74		48.85	300.00
GTET	Gamma Telemetry Tool	10748374	165.00	8.52		40.33	60.00
DSNT	Dual Spaced Neutron	10735145	174.00	9.69		30.64	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13	*	33.97	300.00
SDLT	Spectral Density Tool	I145_M73803_P90	360.00	10.81		19.83	60.00
ACRt	Array Compensated True Resistivity	I776_S775	250.00	19.25		0.58	300.00
CBHD	Cabbage Head	TRK954	10.00	0.58		0.00	300.00
Total			**1,055.60**	**54.51**			

* Not included in Total Length and Length Accumulation.

Data: DAMME_41_A\0001 TRIPLE COMBO\IDLE **Date: 10-Aug-11 09:37:17**

HALLIBURTON

CALIBRATION REPORT

MICRO LOG SHOP CALIBRATION

Tool Name: SDLT - I145_M73803_P90 **Reference Calibration Date:** 23-Jun-11 19:50:35

Engineer: S. JUNG **Calibration Date:** 28-Jul-11 16:10:19

Software Version: WL INSITE R3.2.5 (Build 2) **Calibration Version:** 1

CALIBRATION COEFFICIENT SUMMARY

Measurement	Micro Log Normal		Micro Log Lateral		Units
	Measured	Calibrated	Measured	Calibrated	
Tool Zero	-0.07	-0.07	-0.01	-0.00	ohmm
Calibration Point #1	-0.00	0.00	-0.00	0.00	ohmm
Calibration Point #2	20.01	20.00	20.01	20.00	ohmm
Internal Reference	19.94	19.93	20.01	19.99	ohmm

Measurement	Micro Log Normal Tool Value	Micro Log Lateral Tool Value	Units
Tool Zero	0.00	0.08	V
Calibration Point #1	18.77	1.43	V
Calibration Point #2	5425.18	7051.13	V
Internal Reference	5405.24	7048.63	V

MICRO LOG FIELD CHECK

Tool Name: SDLT - I145_M73803_P90 **Reference Calibration Date:** 28-Jul-11 16:10:19

Engineer: C. MARLOWE **Calibration Date:** 09-Aug-11 05:41:42

Software Version: WL INSITE R3.2.5 (Build 2) **Calibration Version:** 1

Measurement	Micro Log Normal		Micro Log Lateral		
	Shop	Field	Shop	Field	Units

	Shop	Field	Shop	Field	Units
Tool Zero	-0.07	-0.07	-0.00	-0.00	ohmm
Internal Reference	19.93	19.85	19.99	19.92	ohmm

Summary

Signal	Shop	Field	Difference	Tolerence
Microlog Normal	19.93	19.85	0.08	+/- 0.80
Microlog Lateral	19.99	19.92	0.07	+/- 0.80

MICRO LOG POST CHECK

Tool Name: SDLT - I145_M73803_P90
Reference Calibration Date: 09-Aug-11 05:41:42
Engineer: J. BOSH
Calibration Date: 10-Aug-11 12:20:40
Software Version: WL INSITE R3.2.5 (Build 2)
Calibration Version: 1

Measurement	Micro Log Normal		Micro Log Lateral		
	Field	Post	Field	Post	Units
Tool Zero	-0.07	-0.07	-0.00	-0.00	ohmm
Internal Reference	19.85	19.97	19.92	20.03	ohmm

Summary

Signal	Field	Post	Difference	Tolerence
Microlog Normal	19.85	19.97	0.12	+/- 0.80
Microlog Lateral	19.92	20.03	0.11	+/- 0.80

CALIBRATION SUMMARY

Sensor	Shop	Field	Post	Difference	Tolerance	Units
SDLT-I145_M73803_P90						
MicroLog Normal	19.93	19.85	19.97	-0.12	+/-0.80	ohmm
MicroLog Lateral	19.99	19.92	20.03	-0.11	+/-0.80	ohmm

Data: DAMME_41_A\0001 TRIPLE COMBO\IDLE **Date: 10-Aug-11 12:25:00**

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	
3550.00					
	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	8.700	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	0.830	ohmm
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	

SHARED	ICOD	AHV Casing OD	5.500	in
SHARED	ST	Surface Temperature	75.0	degF
SHARED	TD	Total Well Depth	4871.00	ft
SHARED	BHT	Bottom Hole Temperature	120.0	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	Centered	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNSO	DSN Standoff - 0.25 in (6.35 mm) Recommended	0.250	in
DSNT	DNTP	Temperature Correction Type	None	
DSNT	DPRS	DSN Pressure Correction Type	None	
DSNT	SHCO	View More Correction Options	No	
DSNT	UTVD	Use TVD for Gradient Corrections?	No	
DSNT	LHWT	Logging Horizontal Water Tank?	No	
SDLT	DNOK	Process Density?	Yes	
SDLT	DNOK	Process Density EVR?	No	
SDLT	CB	Logging Calibration Blocks?	No	
SDLT	SPVT	SDLT Pad Temperature Valid?	Yes	
SDLT	DTWN	Disable temperature warning	No	
SDLT	DMA	Formation Density Matrix	2.710	g/cc
SDLT	DFL	Formation Density Fluid	1.000	g/cc
SDLT	CLOK	Process Caliper Outputs?	Yes	
SDLT	MLOK	Process MicroLog Outputs?	Yes	
ACRt	RTOK	Process ACRt?	Yes	
ACRt	MNSO	Minimum Tool Standoff	1.50	in
ACRt	TCS1	Temperature Correction Source	FP Lwr & FP Upr	
ACRt	TPOS	Tool Position	Free Hanging	
ACRt	RMOP	Rmud Source	Mud Cell	
ACRt	RMIN	Minimum Resistivity for MAP	0.20	ohmm
ACRt	RMIN	Maximum Resistivity for MAP	200.00	ohmm
ACRt	THQY	Threshold Quality	0.50	

BOTTOM

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	50.81	NO	
SP	Spontaneous Potential	50.81	BLK	1.250
SPR	Raw Spontaneous Potential	50.81	NO	
SPO	Spontaneous Potential Offset	50.81	NO	
	GTET			
TPUL	Tension Pull	42.79	NO	
GR	Natural Gamma Ray API	42.79	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	42.79	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	42.79	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
	DSNT			
TPUL	Tension Pull	32.54	NO	
RNDS	Near Detector Telemetry Counts	32.64	BLK	1.417
RFDS	Far Detector Telemetry Counts	33.39	TRI	0.583
DNTT	DSN Tool Temperature	32.64	NO	
DSNS	DSN Tool Status	32.54	NO	
ERND	Near Detector Telemetry Counts EVR	32.64	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	33.39	BLK	0.000
ENTM	DSN Tool Temperature EVR	32.64	NO	
	SDLT			
TPUL	Tension Pull	22.64	NO	
NAB	Near Above	22.46	BLK	0.920
NHI	Near Cesium High	22.46	BLK	0.920
NLO	Near Cesium Low	22.46	BLK	0.920
NVA	Near Valley	22.46	BLK	0.920
NBA	Near Barite	22.46	BLK	0.920
NDE	Near Density	22.46	BLK	0.920
NPK	Near Peak	22.46	BLK	0.920
NLI	Near Lithology	22.46	BLK	0.920
NBAU	Near Barite Unfiltered	22.46	BLK	0.250
NLIU	Near Lithology Unfiltered	22.46	BLK	0.250
FAB	Far Above	22.81	BLK	0.250
FHI	Far Cesium High	22.81	BLK	0.250
FLO	Far Cesium Low	22.81	BLK	0.250
FVA	Far Valley	22.81	BLK	0.250
FBA	Far Barite	22.81	BLK	0.250
FDE	Far Density	22.81	BLK	0.250
FPK	Far Peak	22.81	BLK	0.250
FLI	Far Lithology	22.81	BLK	0.250
PTMP	Pad Temperature	22.65	BLK	0.920
NHV	Near Detector High Voltage	19.83	NO	
FHV	Far Detector High Voltage	19.83	NO	
ITMP	Instrument Temperature	19.83	NO	

DDHV	Detector High Voltage	19.83	NO	
TPUL	Tension Pull	22.65	NO	
PCAL	Pad Caliper	22.65	TRI	0.250
ACAL	Arm Caliper	22.65	TRI	0.250
TPUL	Tension Pull	22.83	NO	
MINV	Microlog Lateral	22.83	BLK	0.750
MNOR	Microlog Normal	22.83	BLK	0.750

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	Upper Feedpipe Temperature Calculated	2.97	BLK	0.000
TFPL	Lower Feedpipe Temperature Calculated	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: DAMME_41_A\0001 TRIPLE COMBO\IDLE **Date: 10-Aug-11 10:20:20**

COMPANY	**HARTMAN OIL COMPANY, INC.**		
WELL	**DAMME #41-A**		
FIELD	**DAMME**		
COUNTY	**FINNEY**	STATE	**KANSAS**

HALLIBURTON

MICROLOG