

Company	O'Brien Energy Resources Corporation		
Well	Preedy East 1A-10		
Field	Borchers Northwest		
County	Meade	State	Kansas
Location:	1650' FNL & 968' FWL W2 NE SW NW		
SEC	10	TWP	33S
RGE		RGE	29W
Permanent Datum	G.L.	Elevation	2635 ft.
Log Measured From	K.B.	12 ft. above perm. datum	
Drilling Measured From	K.B.	Elevation	2647 ft.
		D.F.	2646 ft.
		G.L.	2635 ft.
Other Services	CNL/LDT IAT		

Date	12-Apr-2021	
Run Number	One	
Depth Driller	6320'	
Depth Logger	6320'	
Bottom Logged Interval	6283'	
Top Log Interval	4000'	
Casing Driller	8 5/8" @ 1572'	
Casing Logger	1572'	
Bit Size	7 7/8" @	
Type Fluid in Hole	WBM @	
Density / Viscosity	9.1 / 70	
PH / Fluid Loss	11.0 / 6.4	
Source of Sample	Flowline	
Rm @ Meas. Temp	1.076 @ 75°F @	
Rmt @ Meas. Temp	0.807 @ 75°F @	
Rmc @ Meas. Temp	1.344 @ 75°F @	
Source of Rmf / Rmc	Calculated	
Rm @ BHT	0.699 @ 119°F @	
Time Circulation Stopped	16:30	
Time Logger on Bottom	21:00	
Maximum Recorded Temperature	119°F	
Equipment Number	11007	
Location	OKC, OK.	
Recorded By	H. Garcia	
Witnessed By	Mr. D. Greathouse	Mr. P. Debenham

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Equipment and Log Data

Service Order: T7-210412

Gamma		Density		Neutron		Sonic		IAT	
Run No.	One	Run No.	One	Run No.	One	Run No.	One	Run No.	One
Serial No.	049	Serial No.	110	Serial No.	071	Serial No.	NA	Serial No.	110
O.D.	3.375 in.	Source No.	70997B	Source No.	1414NC	Centralizers	NA	Standoffs	2 @ 0.5"
		O.D.	4.5 in.	O.D.	3.375 in.	O.D.	3.375 in.	O.D.	3.875 in.

Logging Pass Data

General			Gamma		Density			Neutron			Sonic			IAT	
			Scales		Scales			Scales			Scales			Scales	
Run	Depths		Left	Right	Left	Right	Matrix	Left	Right	Matrix	Left	Right	Matrix	Left	Right
One	SCG	TD	0	150	0.3	-0.1	2.71 g/cc	0.3	-0.1	Lime	NA	NA	NA	0.2	2000

All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Toolstring ran as per diagram.
 Density is presented on a 2.71 g/cc Matrix, Neutron is presented on a Limestone Matrix.
 Chlorides: 3000 mg/L
 LCM: 6 lb/bbl
 Annular Volume computed using 5.5" Casing.

YOUR CREW TODAY: J. Bennett / M. Thomas

THANK YOU FOR CHOOSING WIRELINE LOGGING SOLUTIONS. OKLAHOMA CITY, OK. (405) 445-7135.

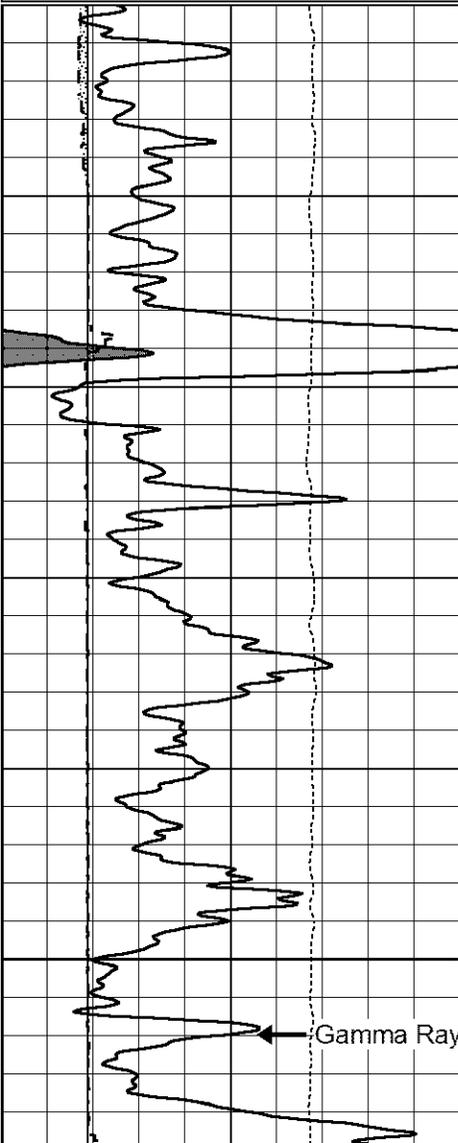


High Resolution LS Pass

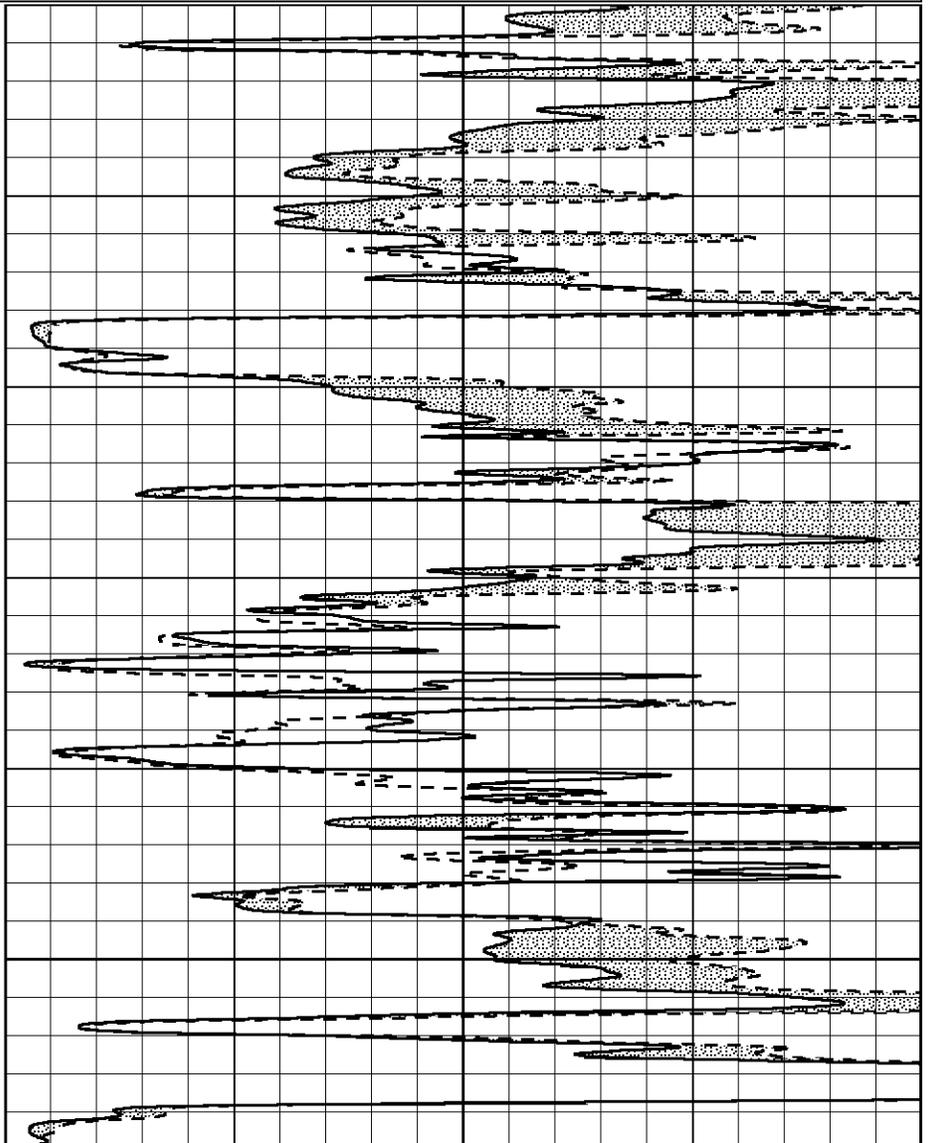
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Charted by Depth in Feet scaled 1:120

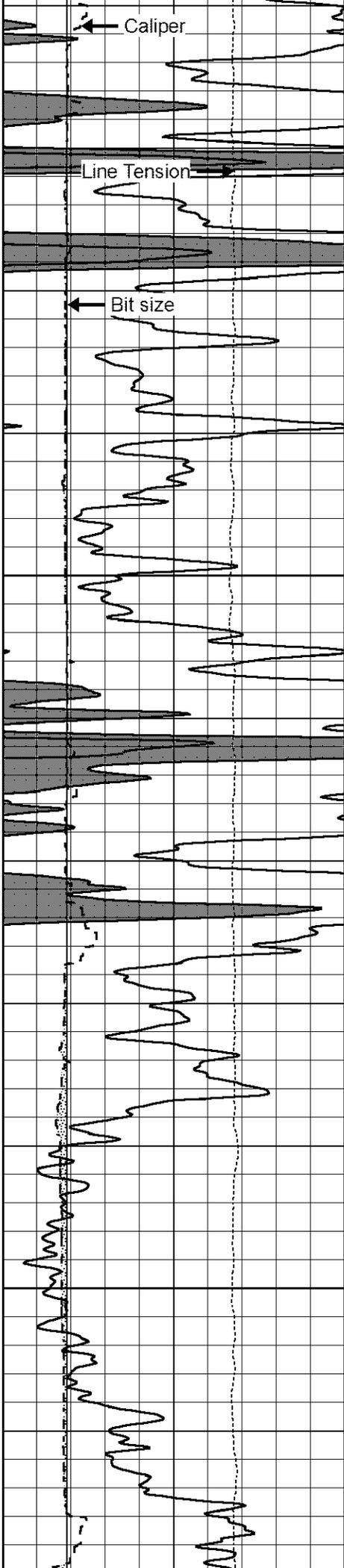
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10000	Line Tension (lb)	0
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

0	Micro Inverse (Ohm-m)	40
0	Micro Normal (Ohm-m)	40

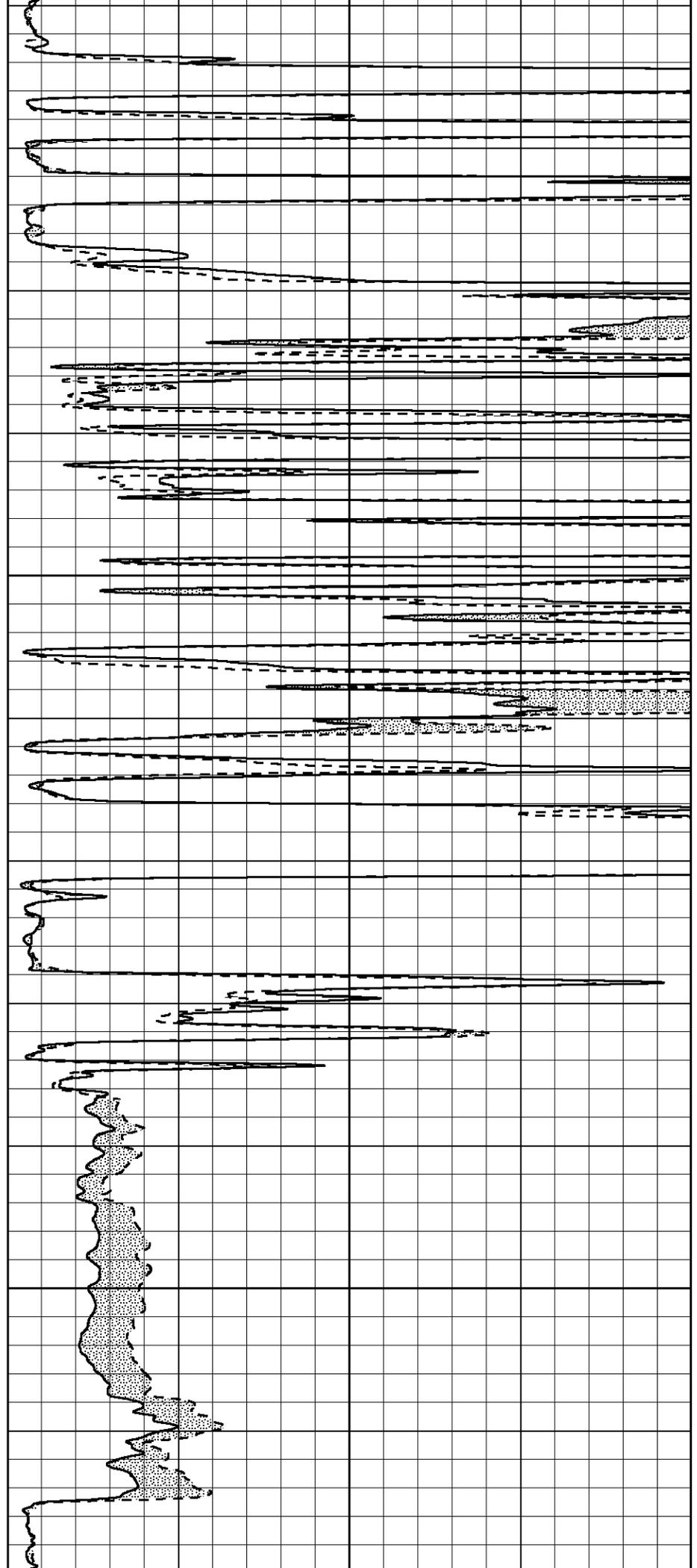


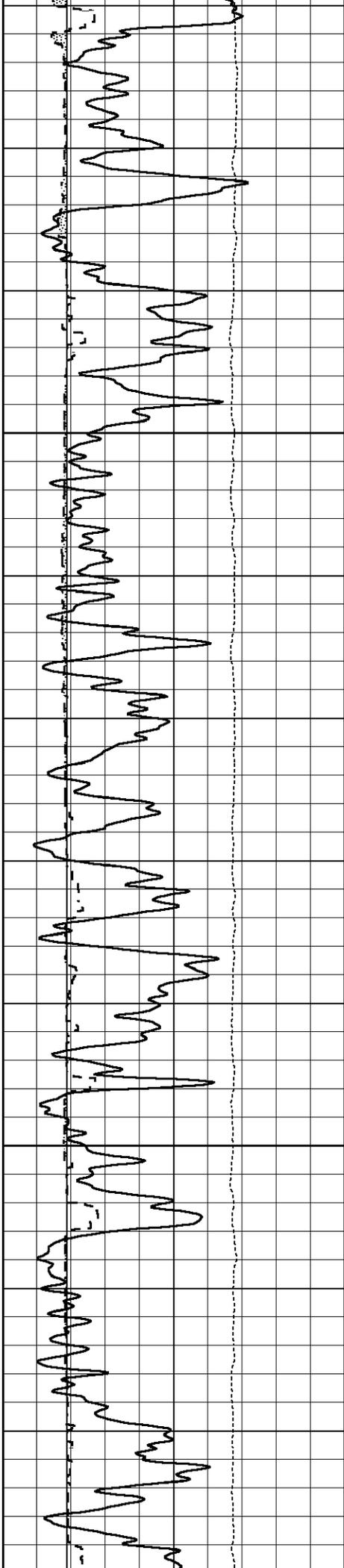
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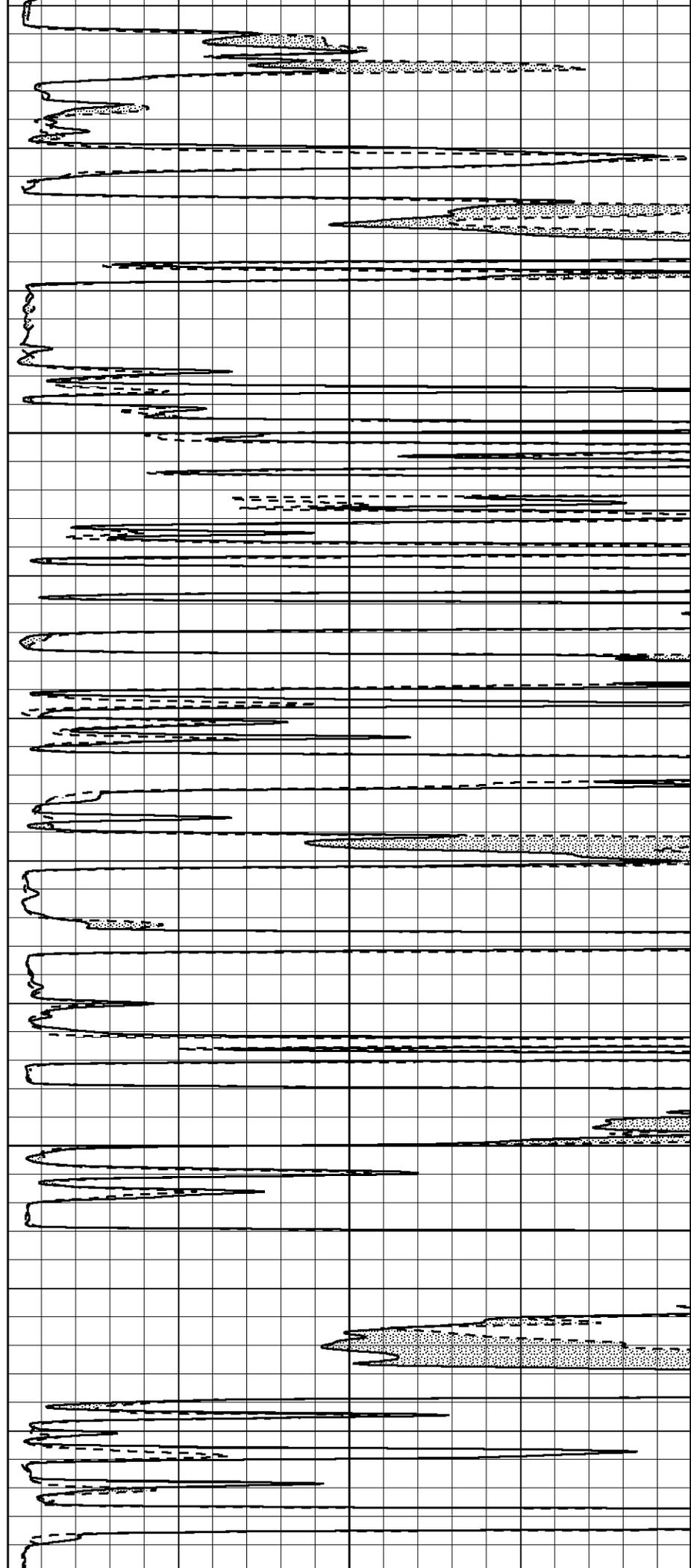


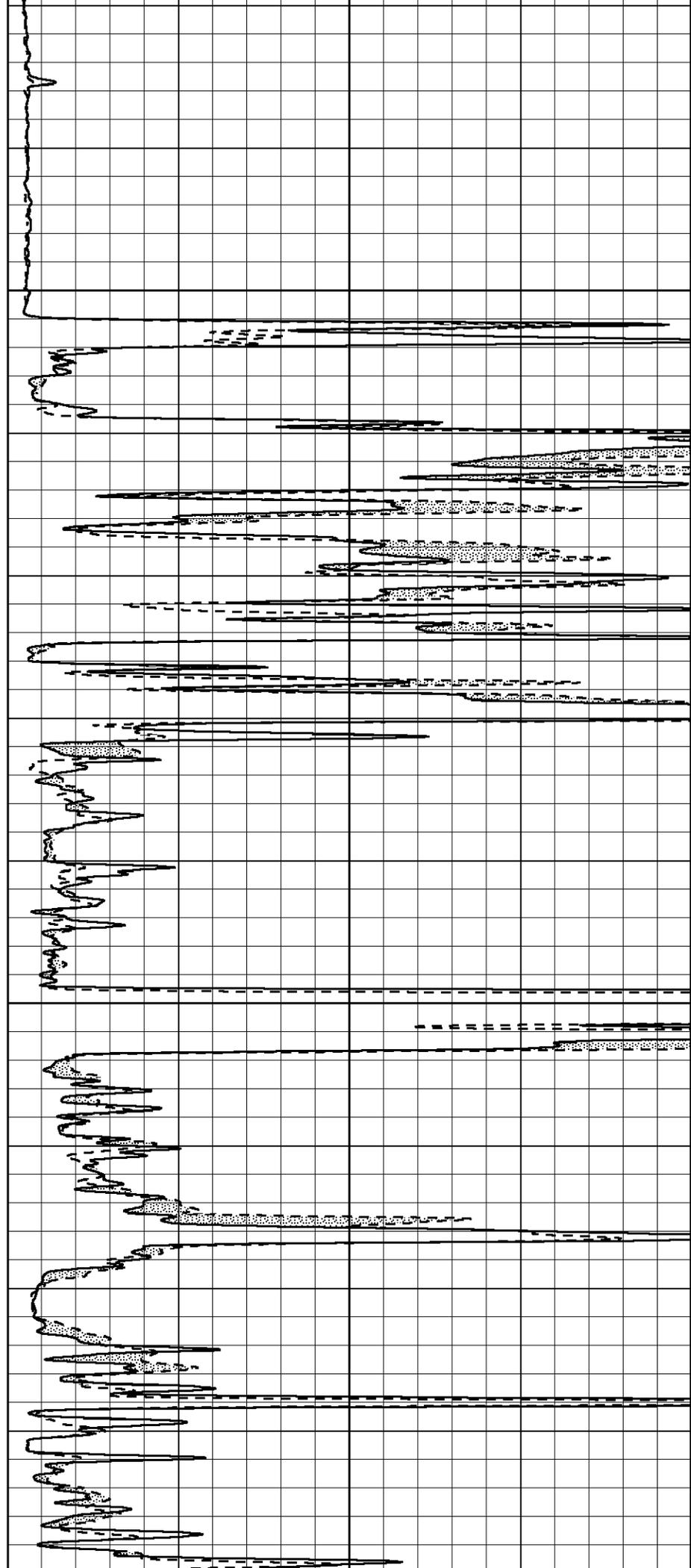
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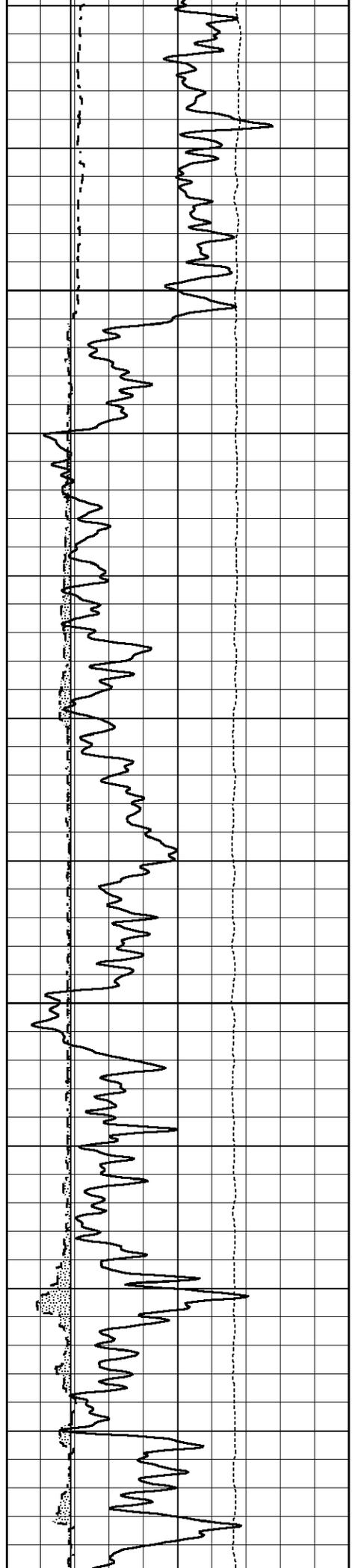


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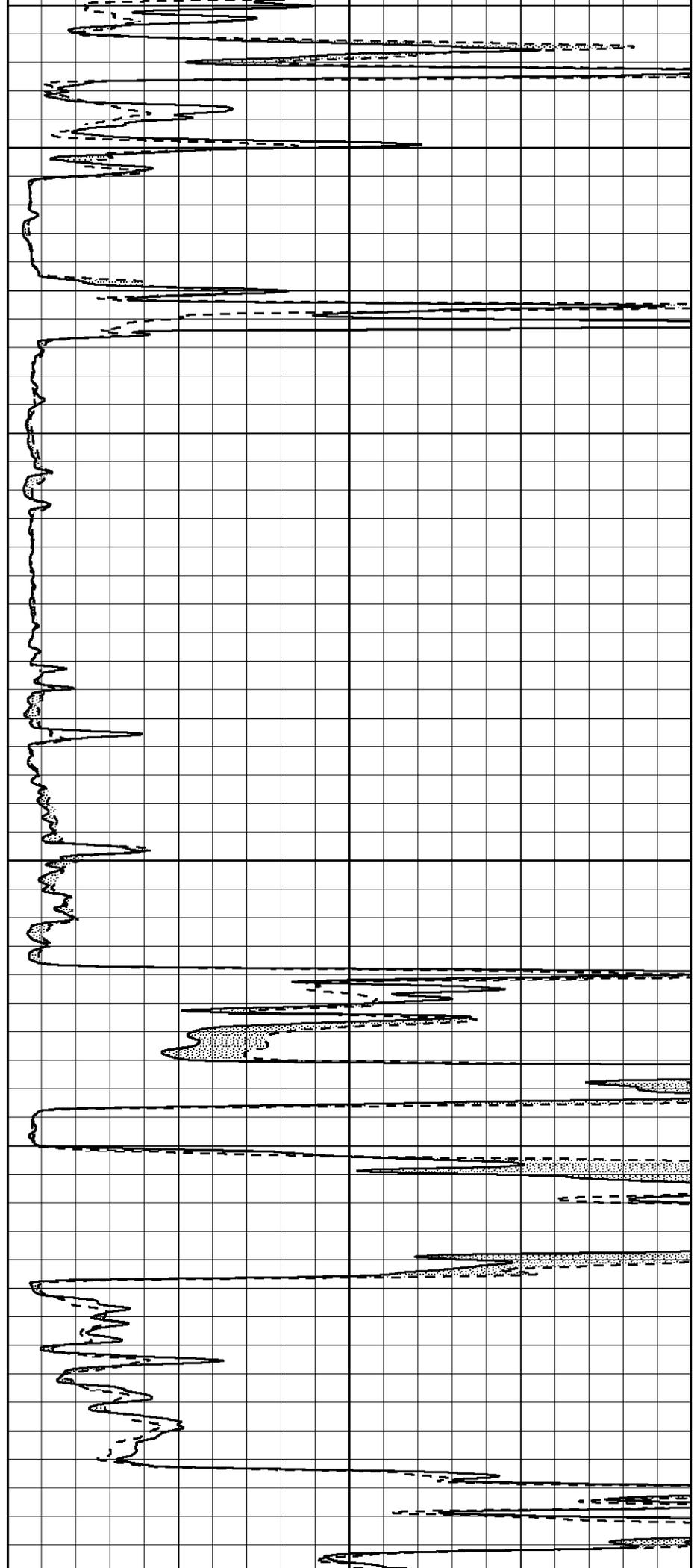
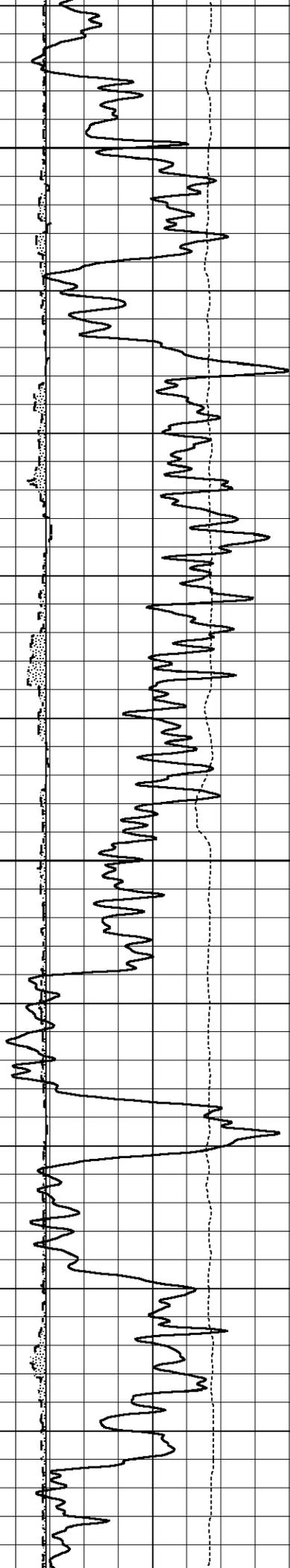




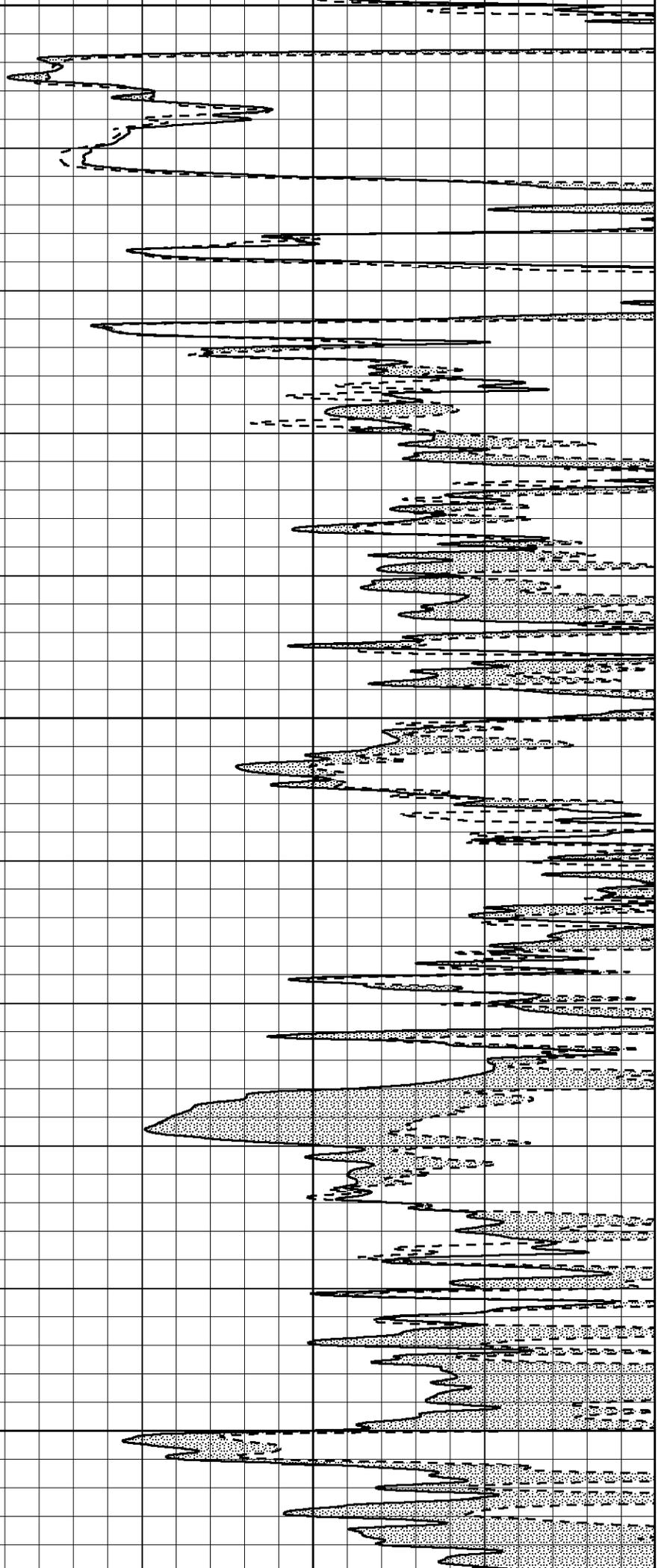
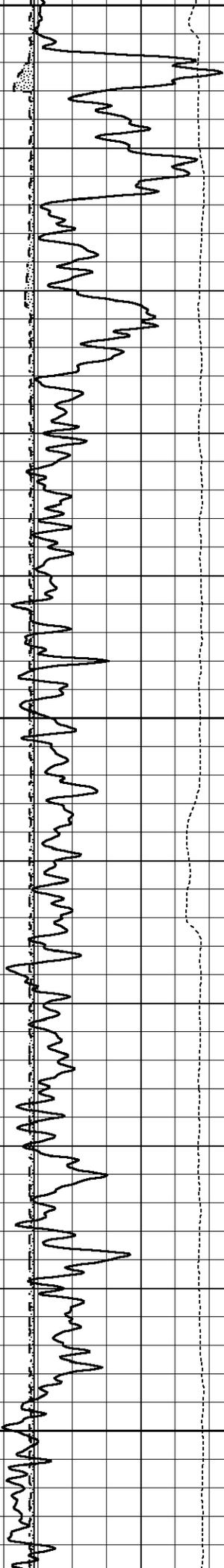
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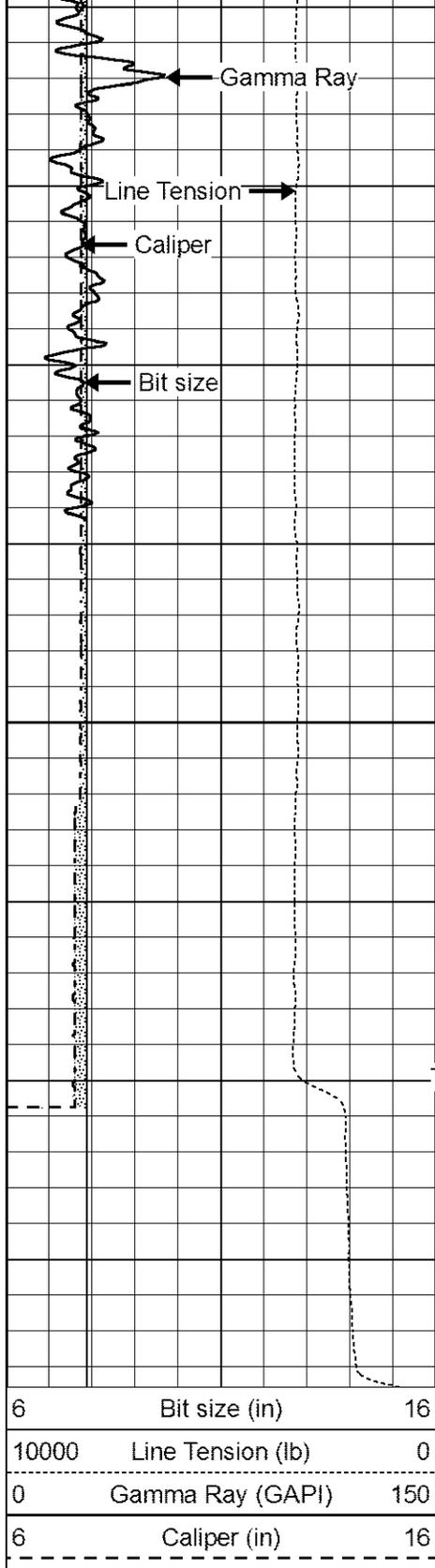


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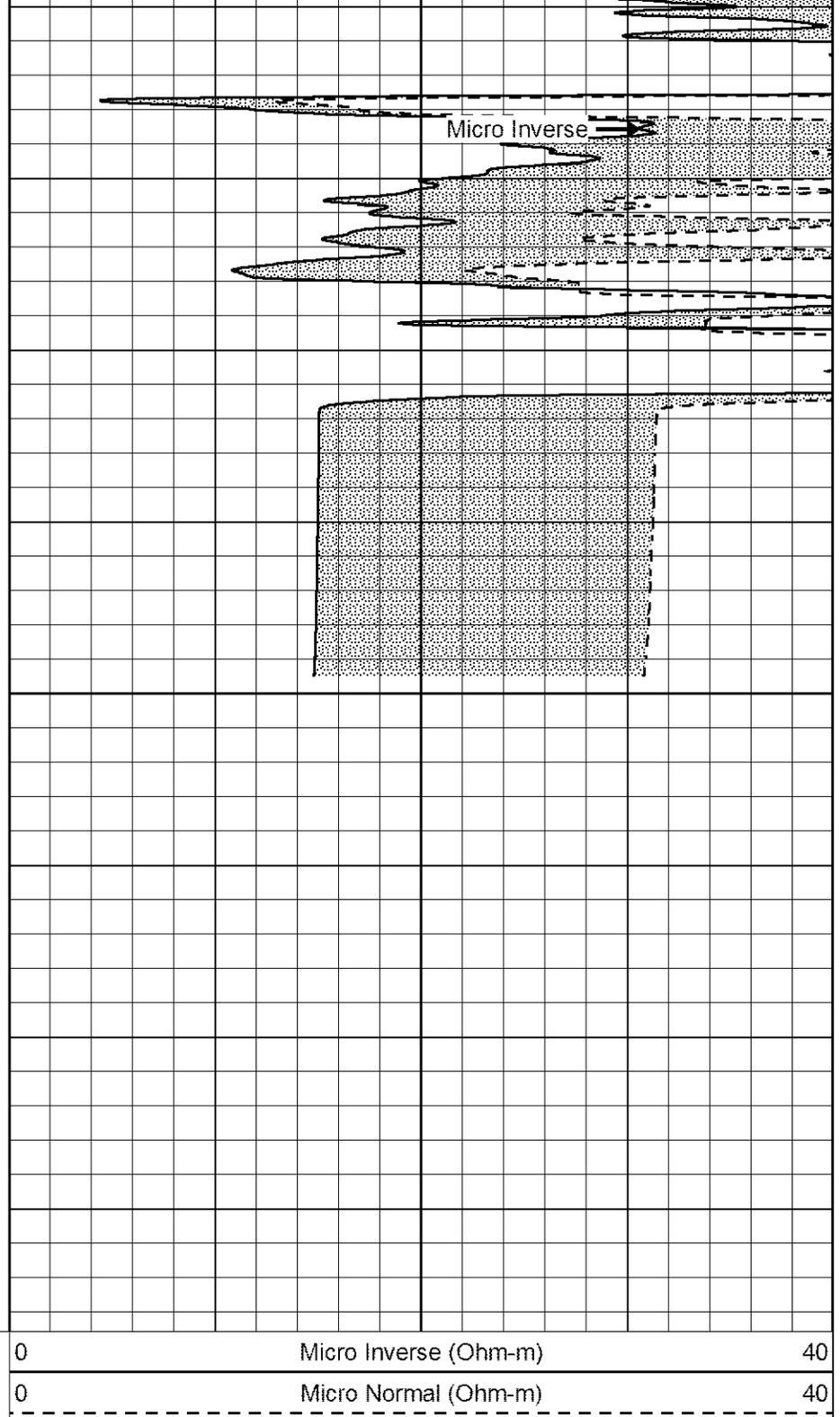
6200





6300

Total Depth



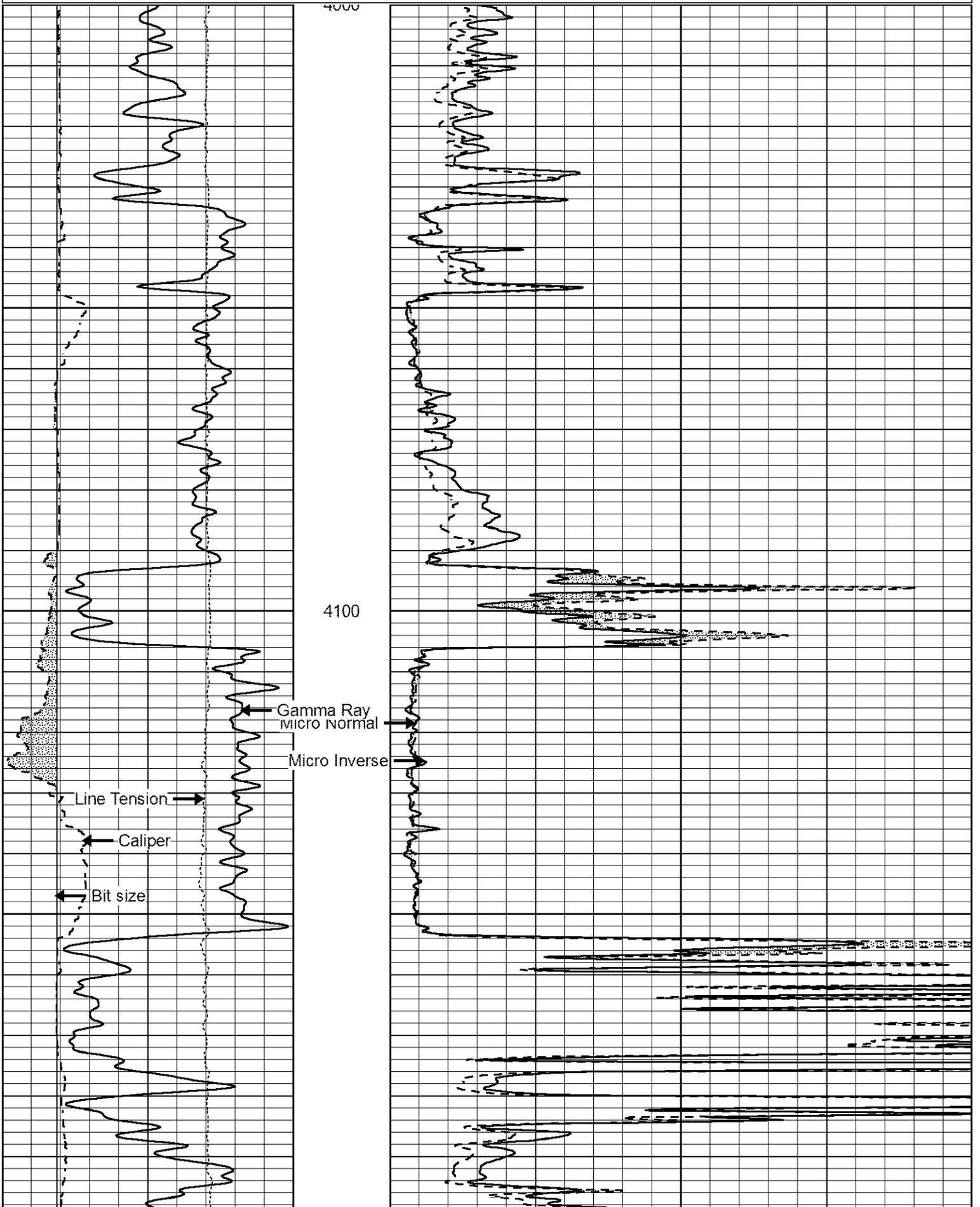
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Main LS Pass

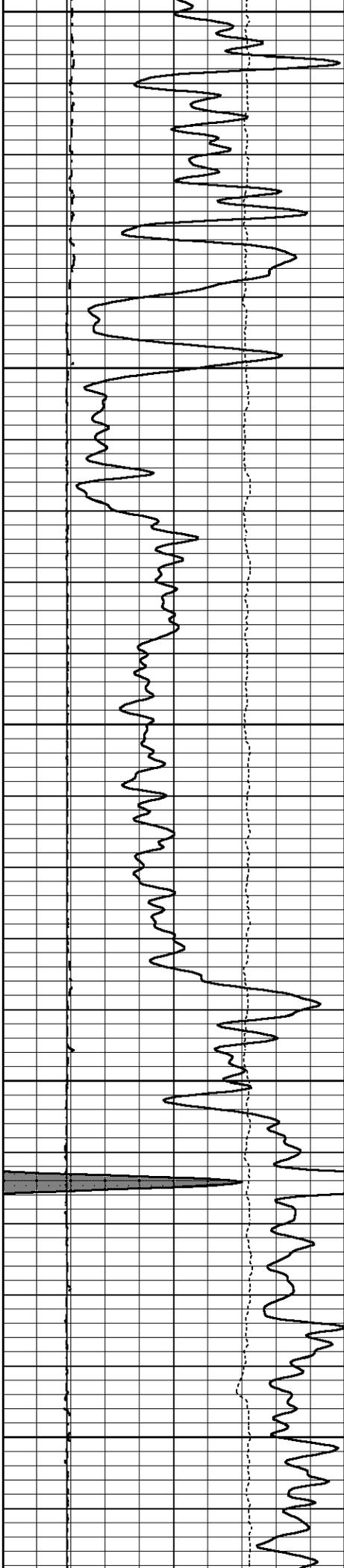
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0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

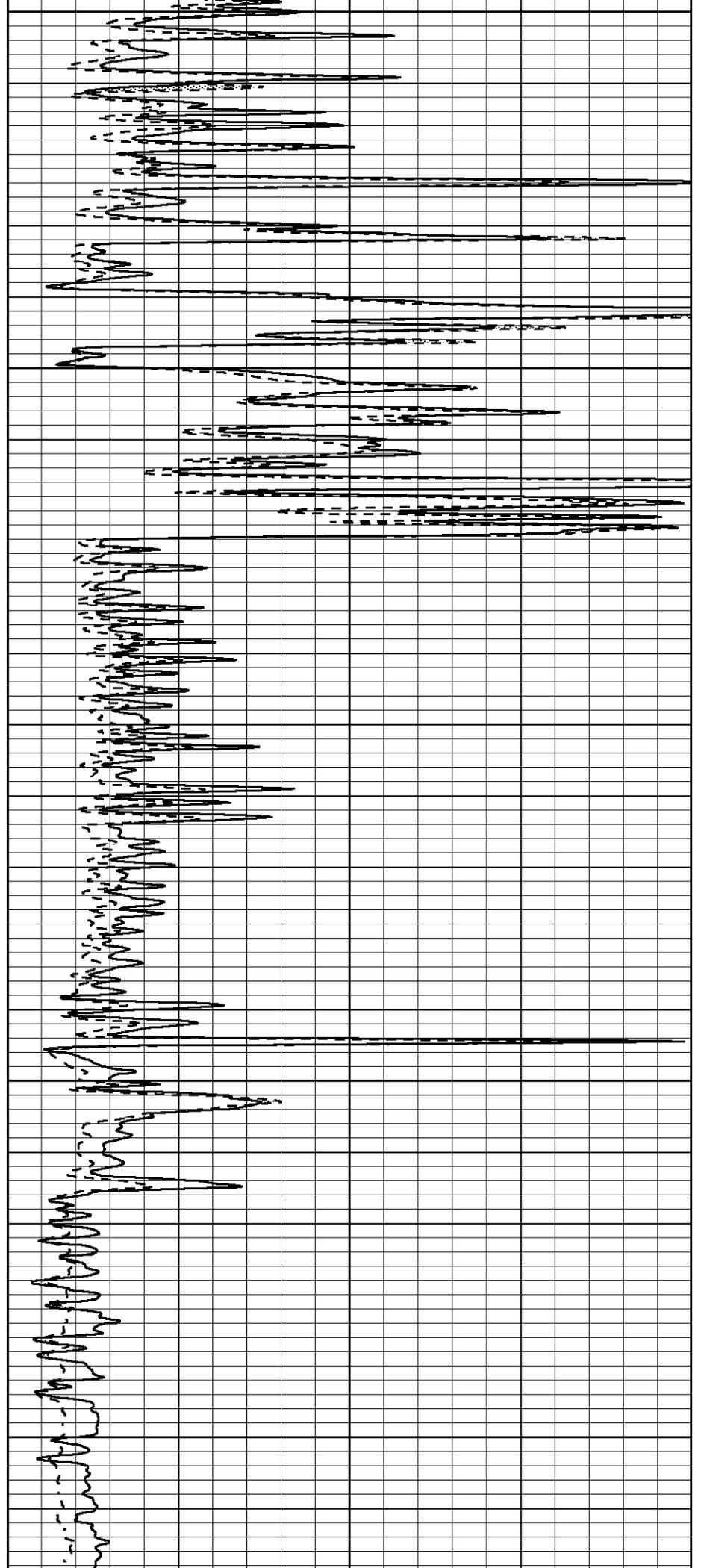
0	Micro Inverse (Ohm-m)	40
0	Micro Normal (Ohm-m)	40



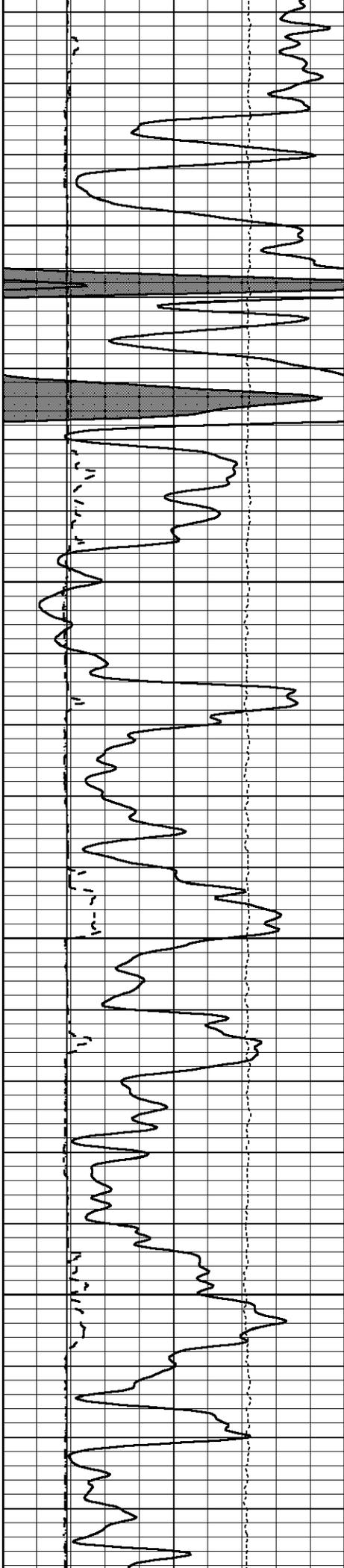
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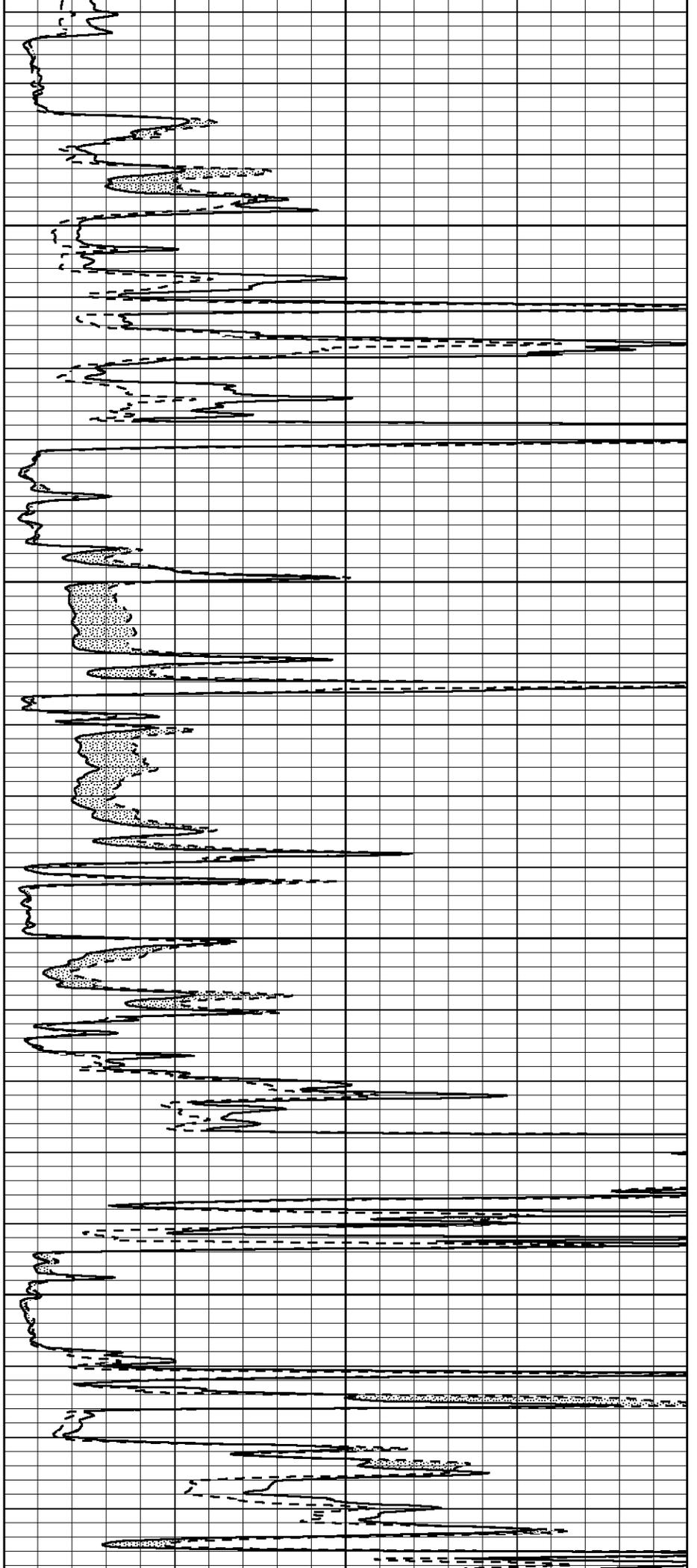


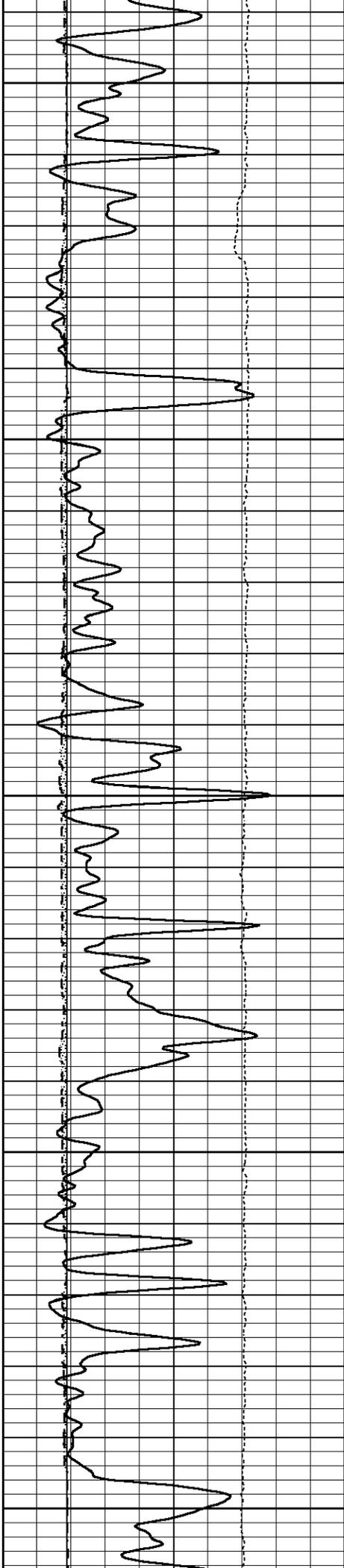
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4500

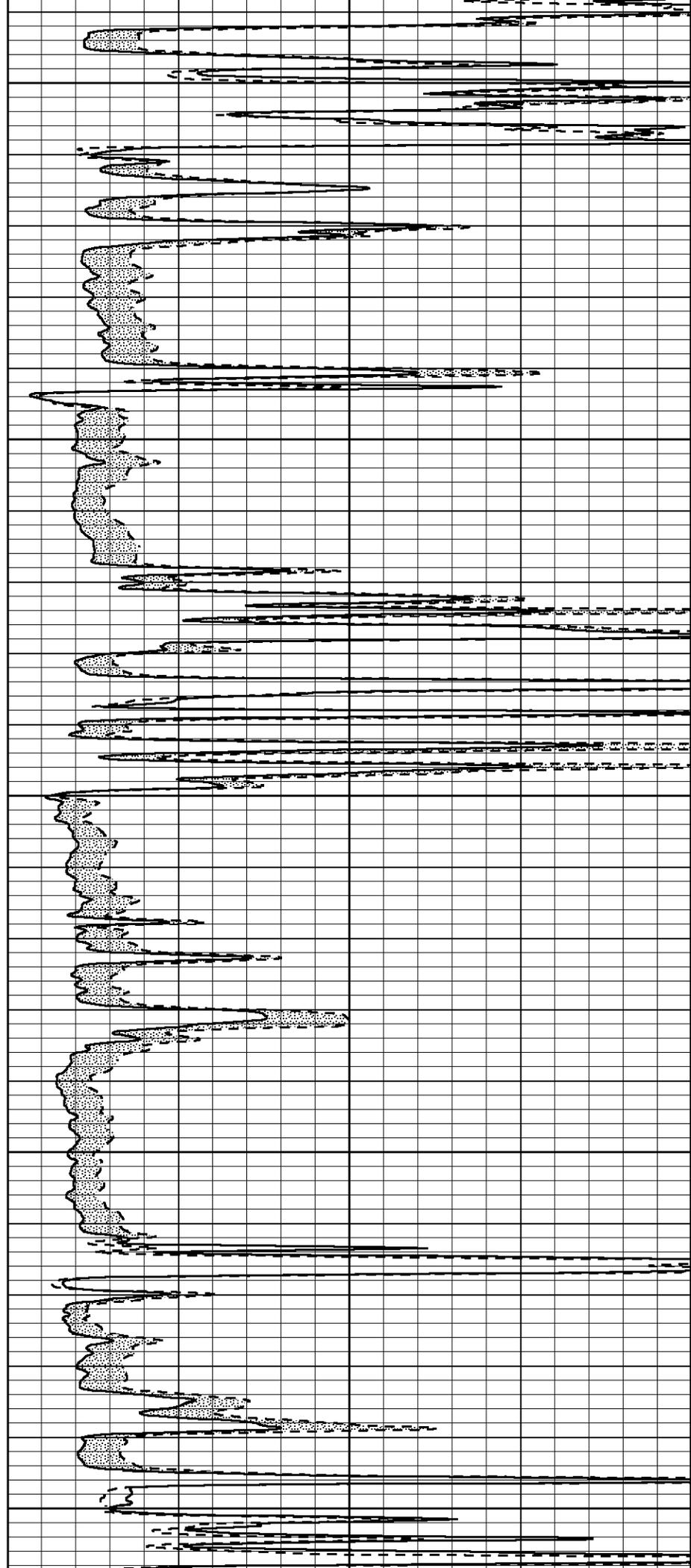
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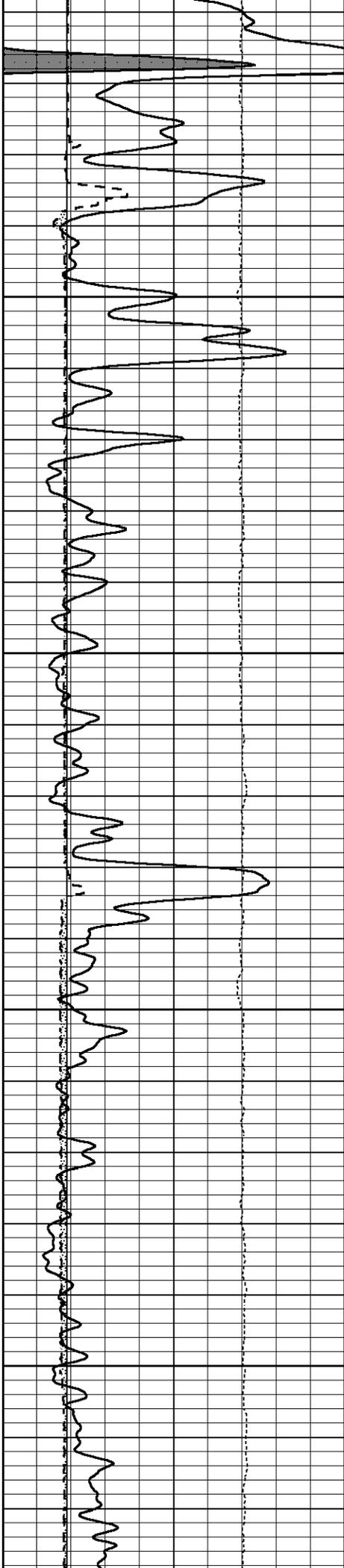




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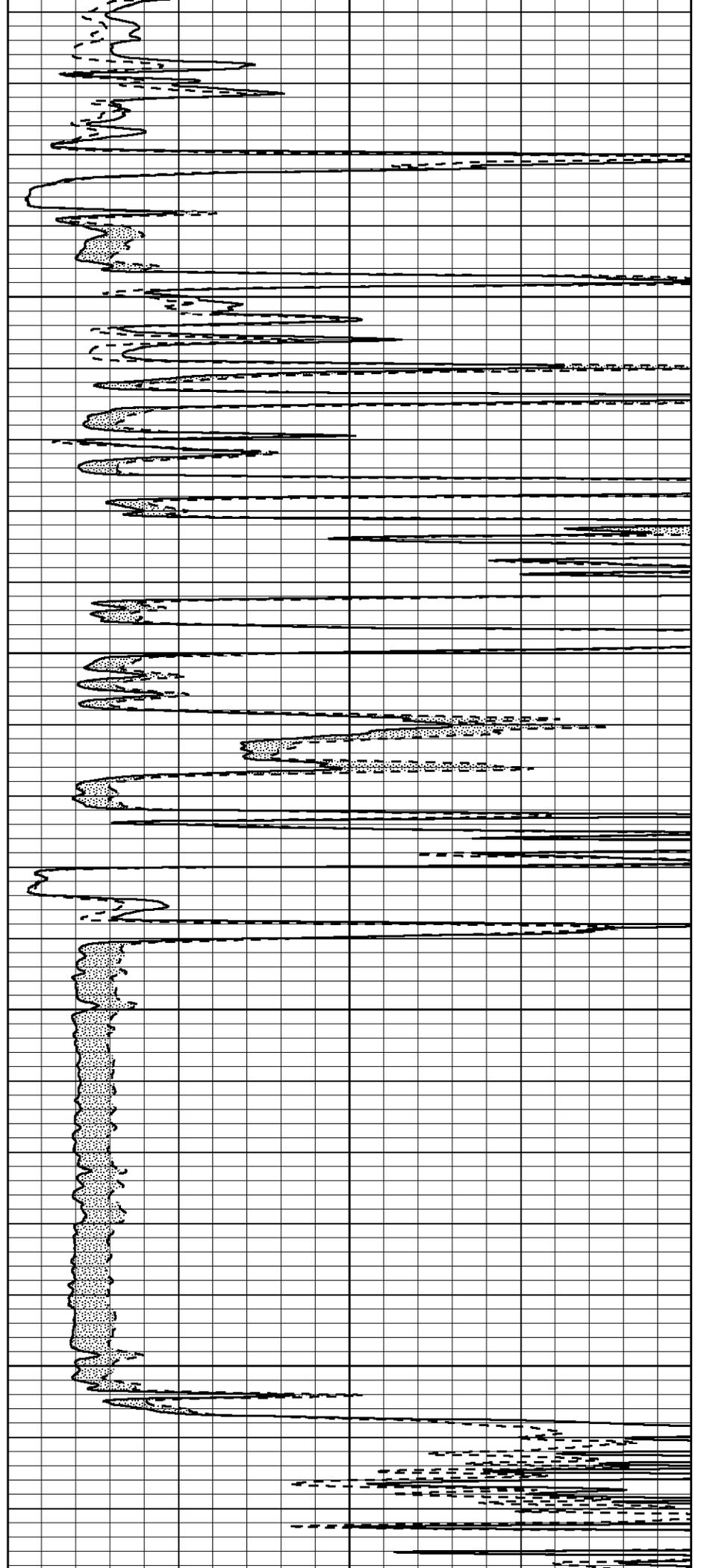
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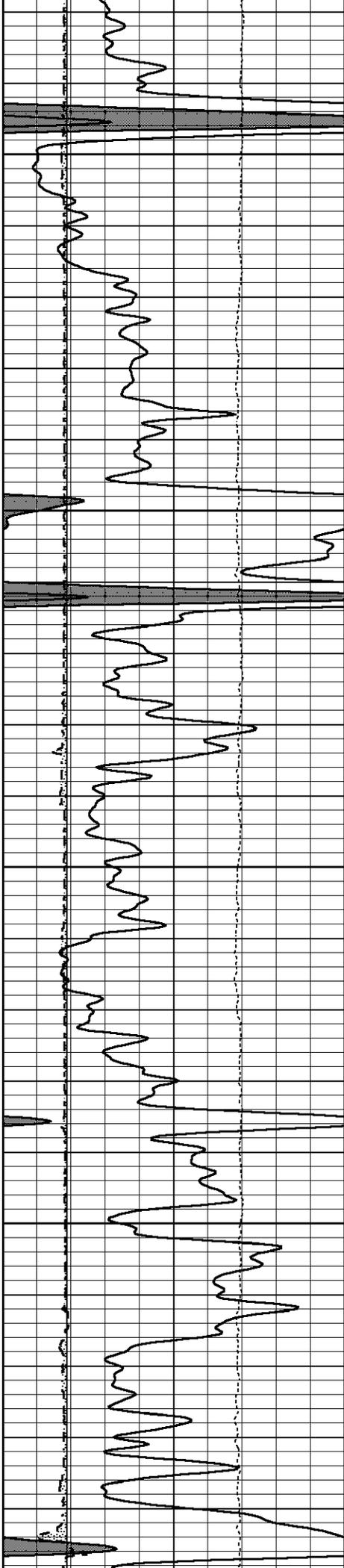




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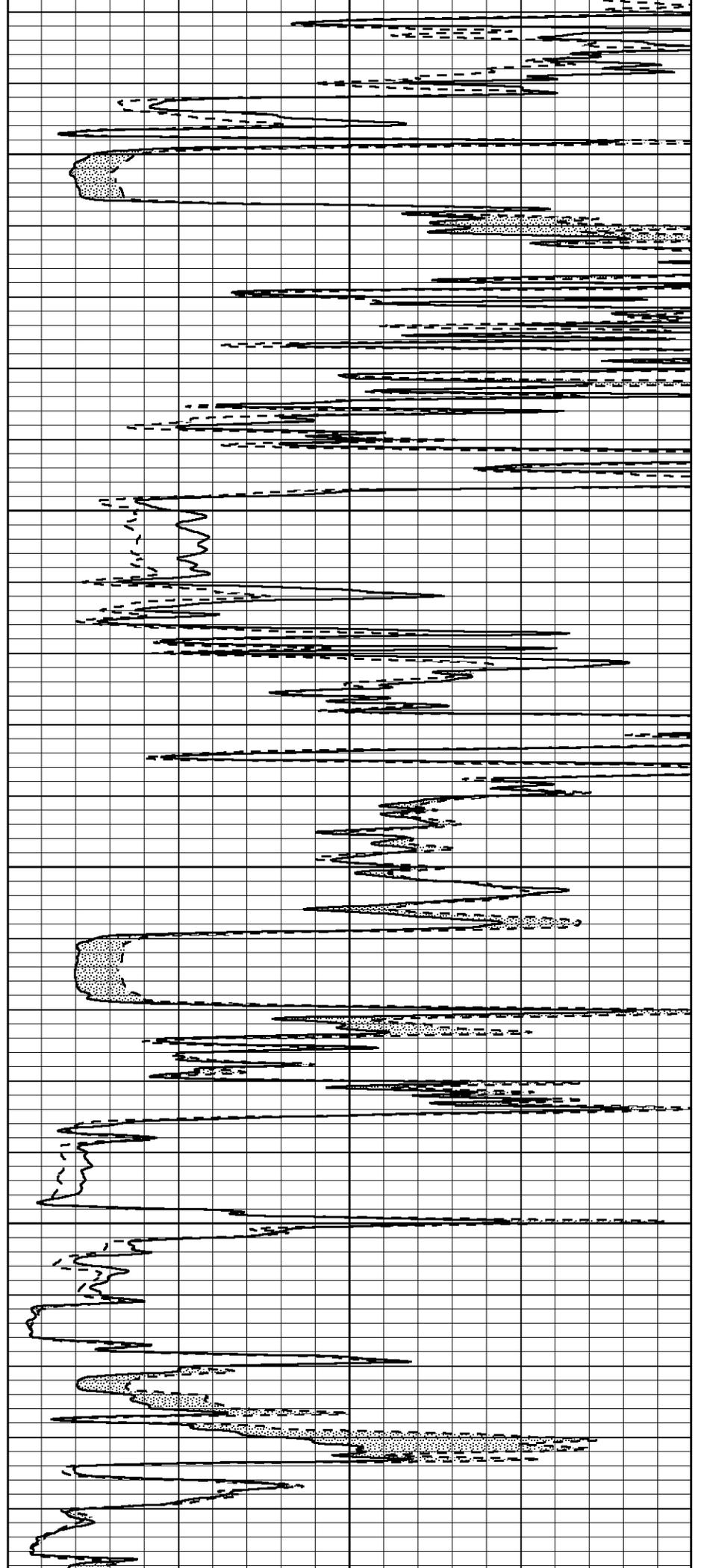
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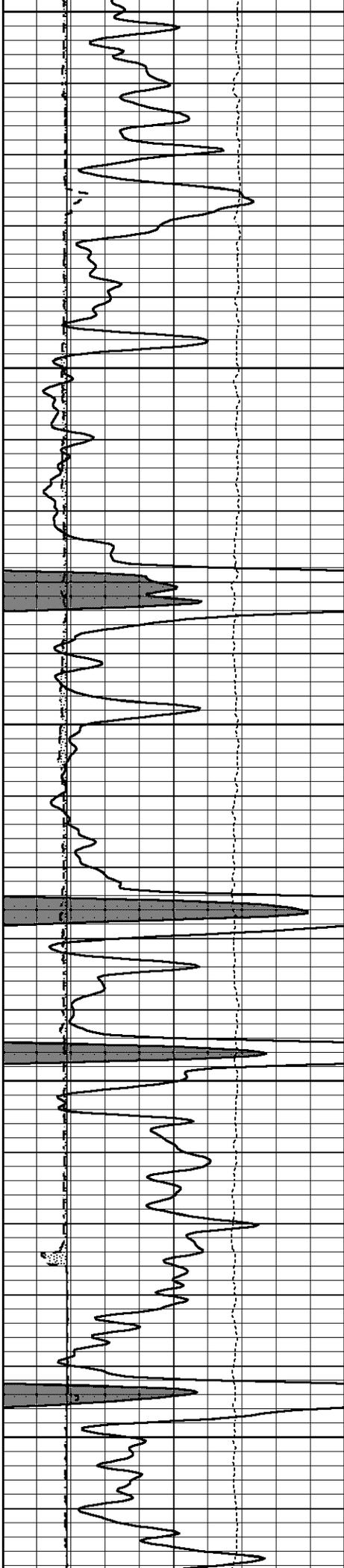


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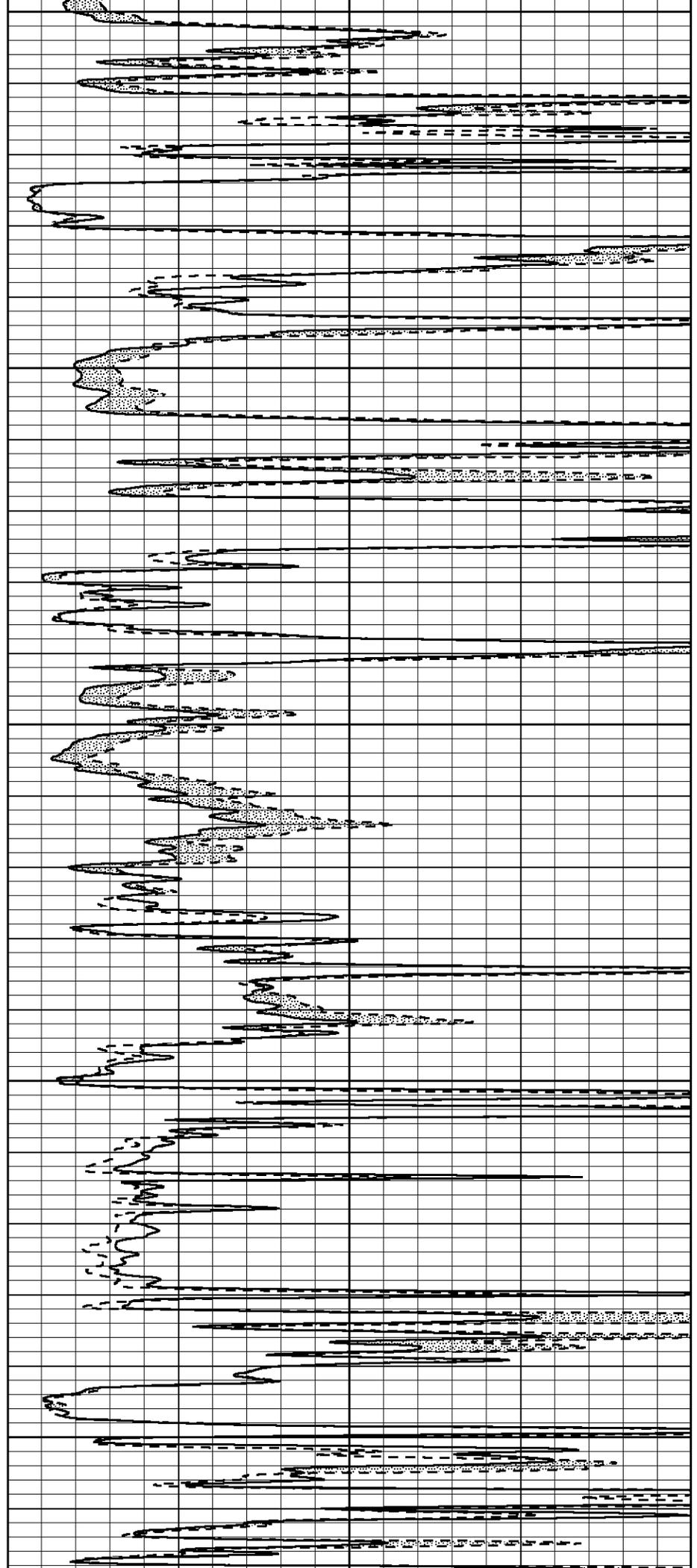
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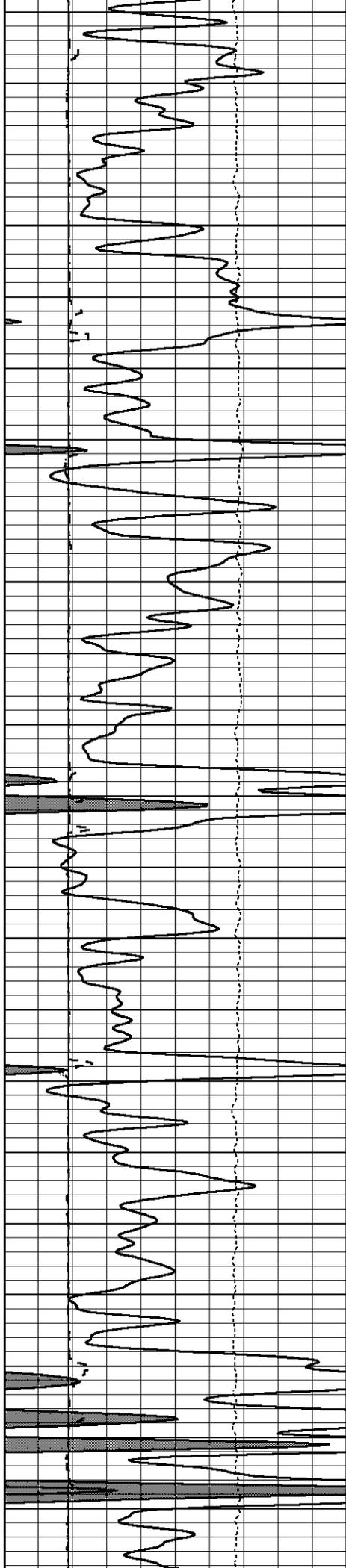
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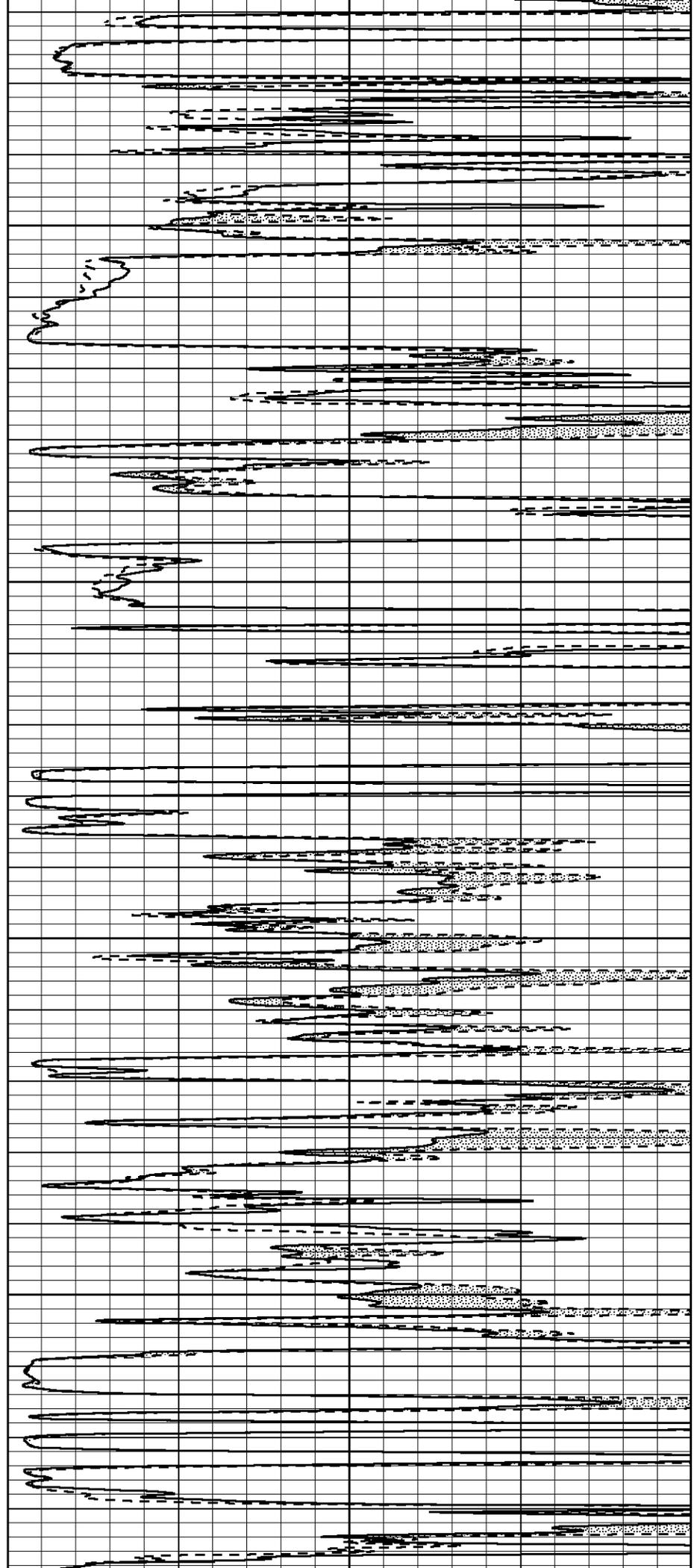


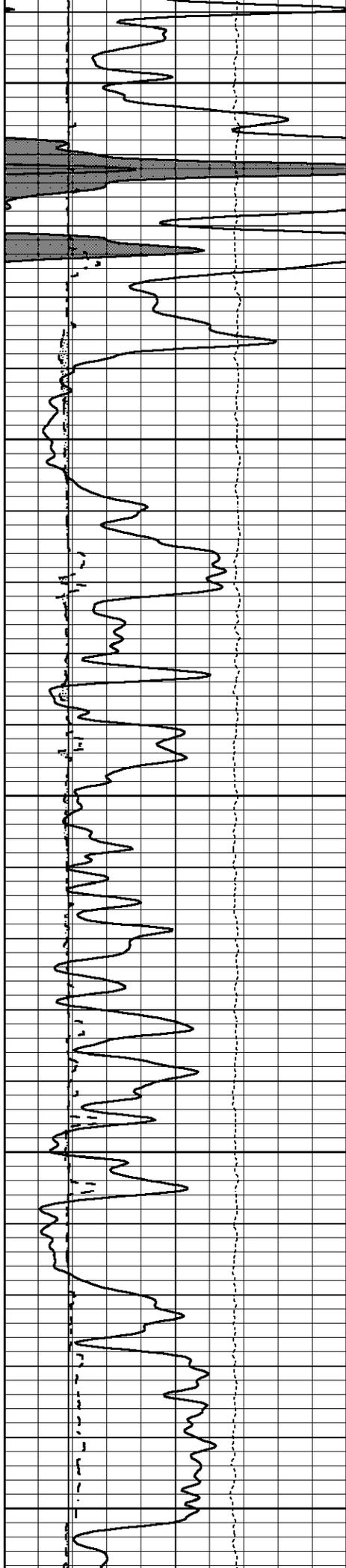
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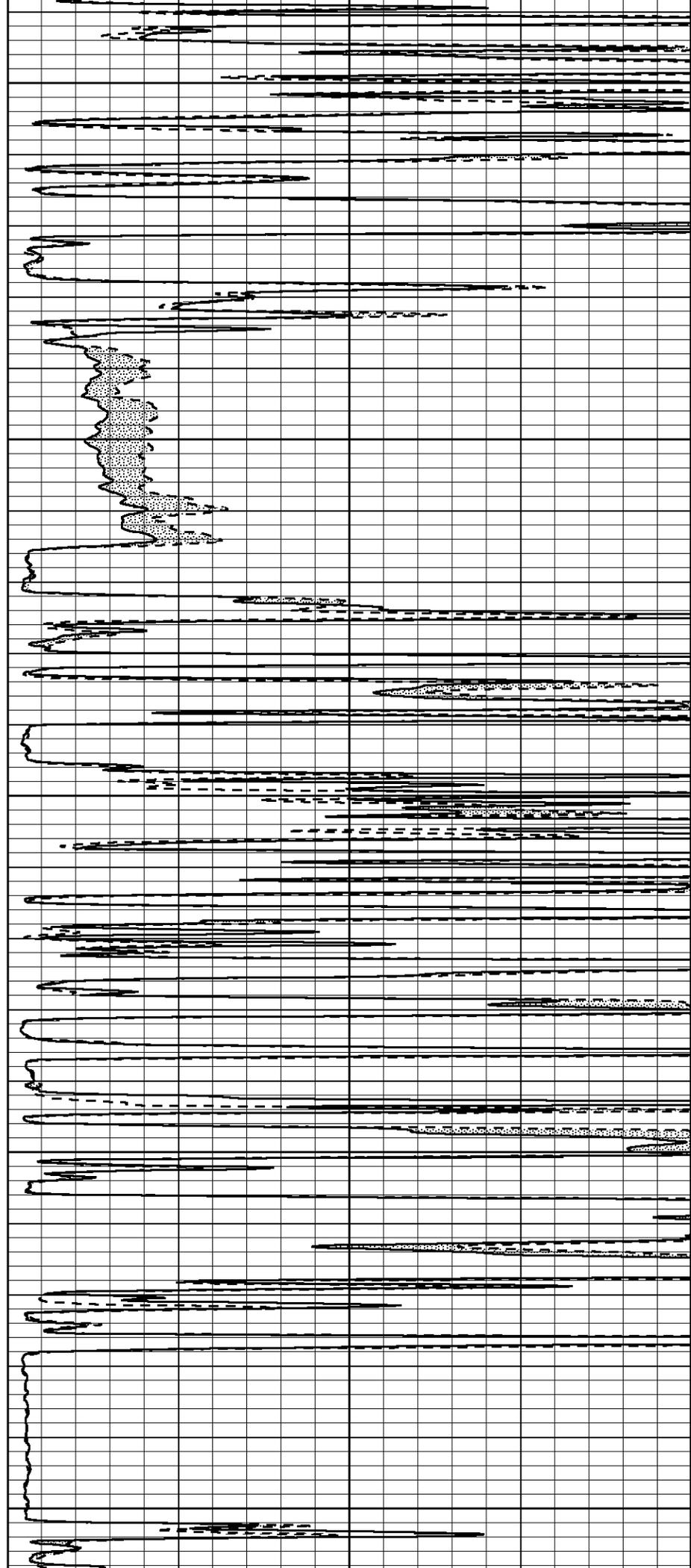
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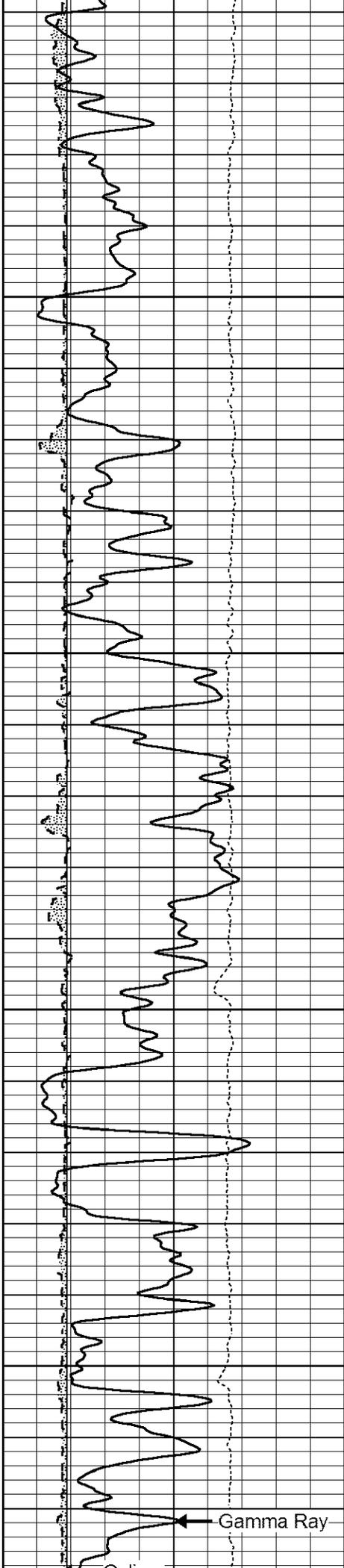




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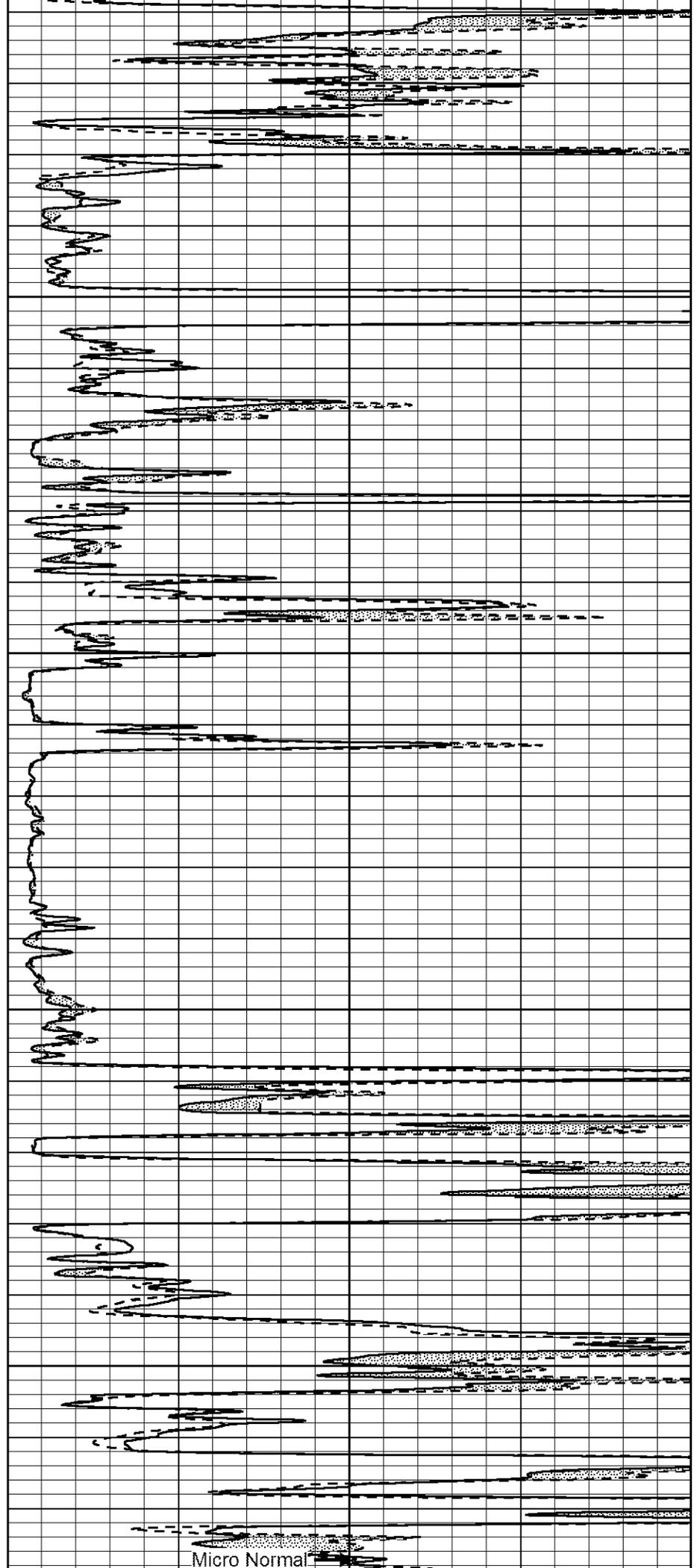
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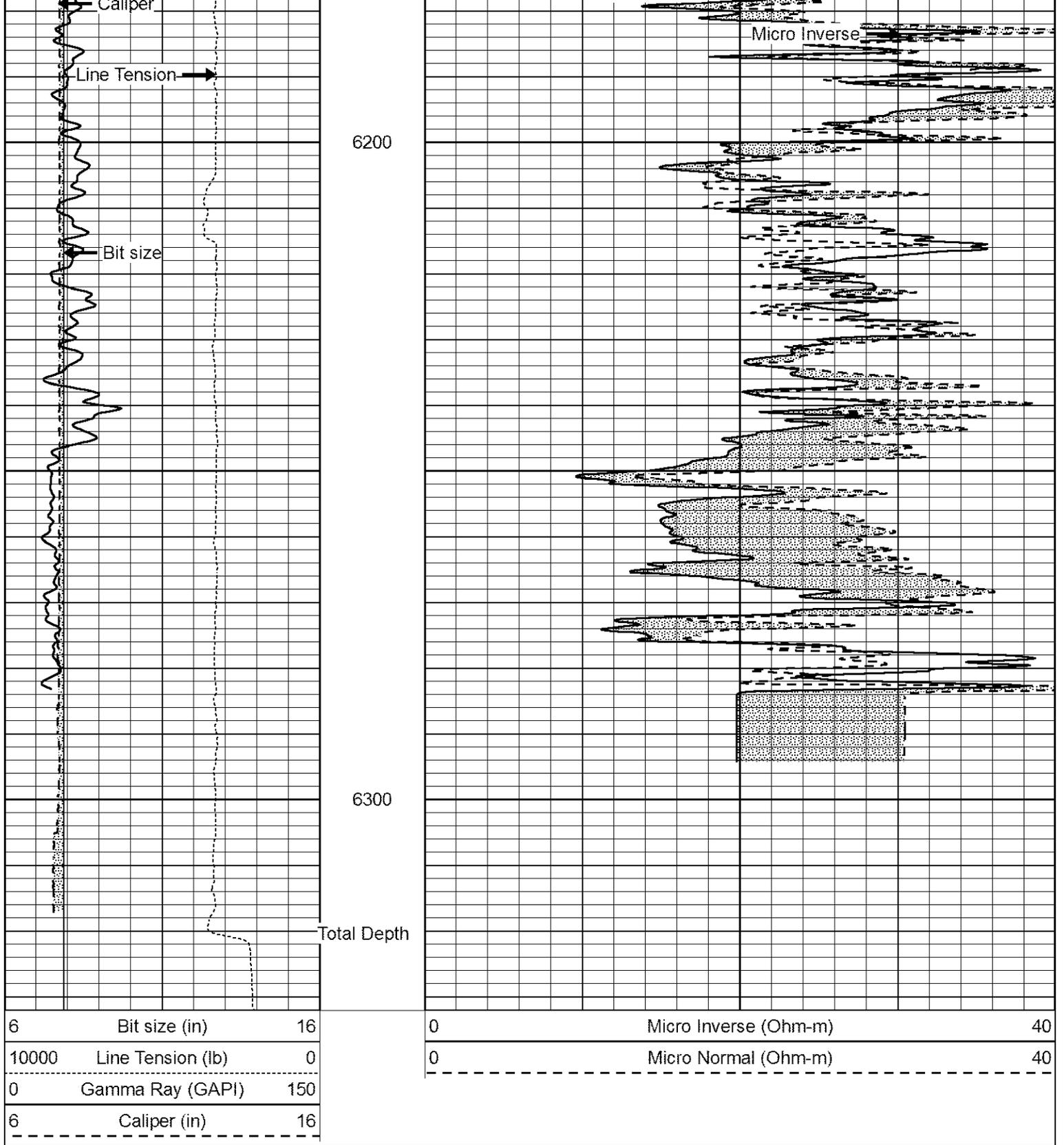


6000

6100



Micro Normal



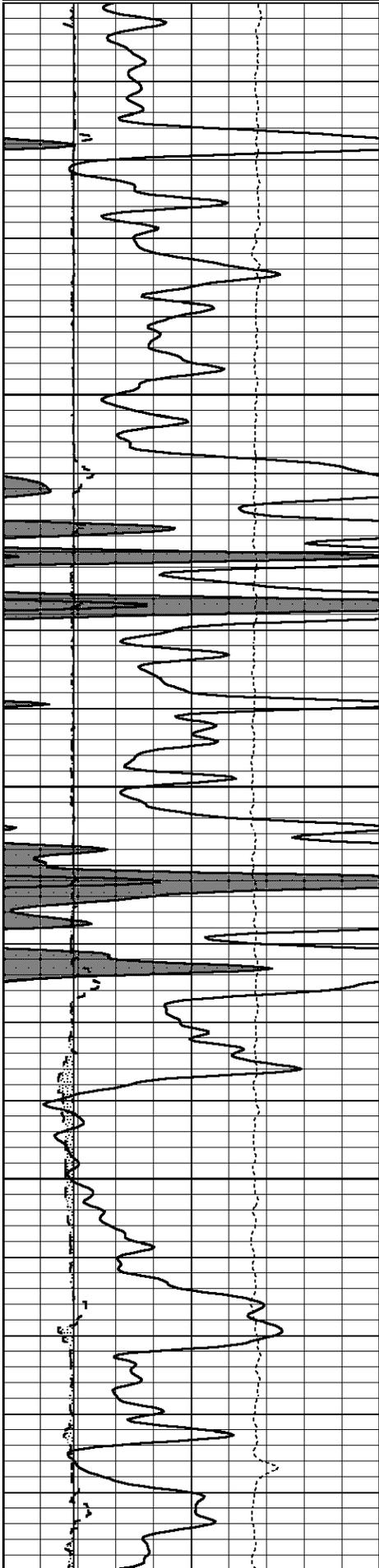
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Repeat LS Pass

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 Presentation Format okc-mel-base
 Dataset Creation Mon Apr 12 21:00:31 2021 by Log Sondex
 Charted by Depth in Feet scaled 1:240

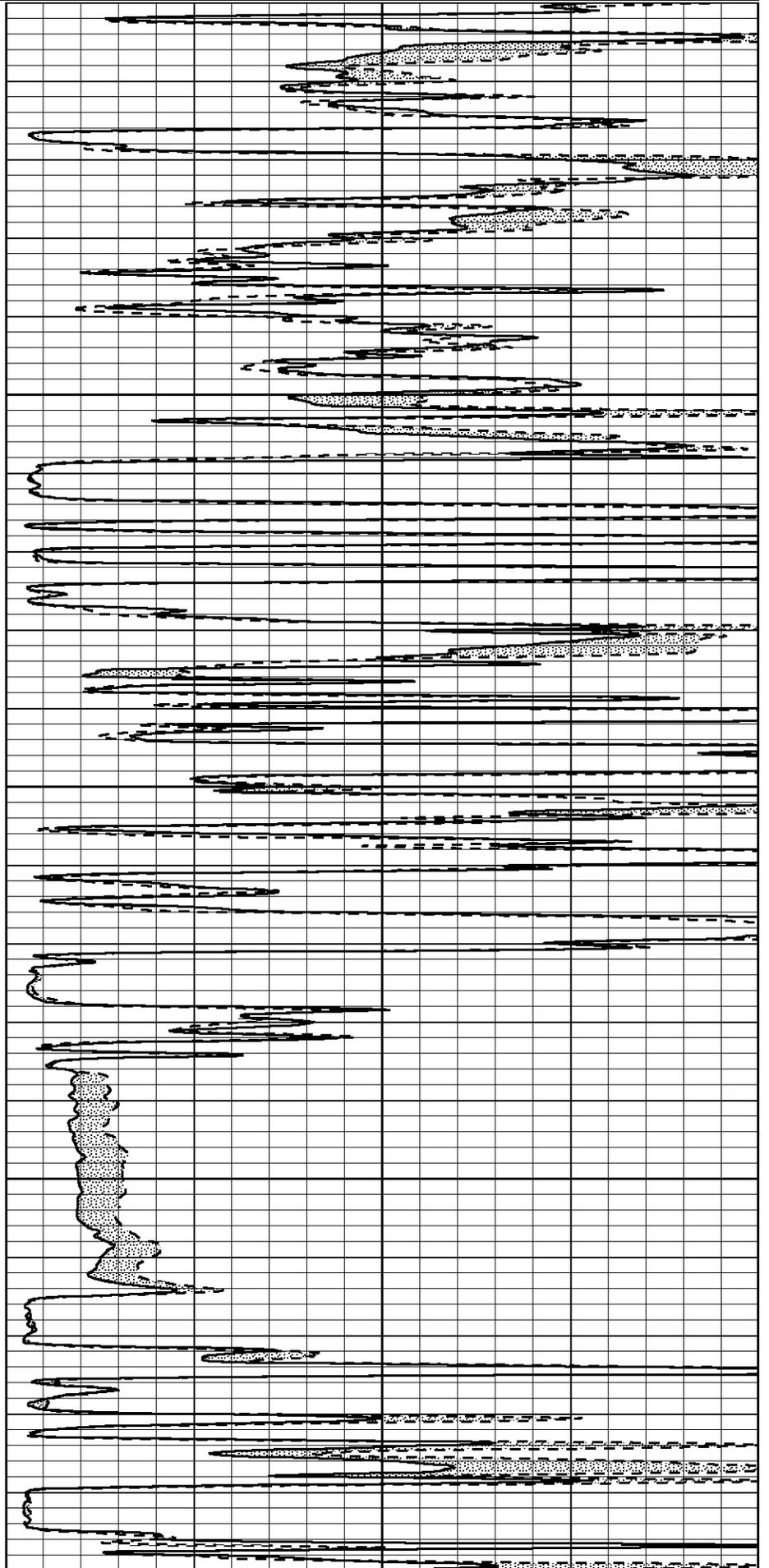
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10000	Line Tension (lb)	0
0	Gamma Ray (GAPI)	150
6	Caliper (in)	16

0	Micro Inverse (Ohm-m)	40
0	Micro Normal (Ohm-m)	40



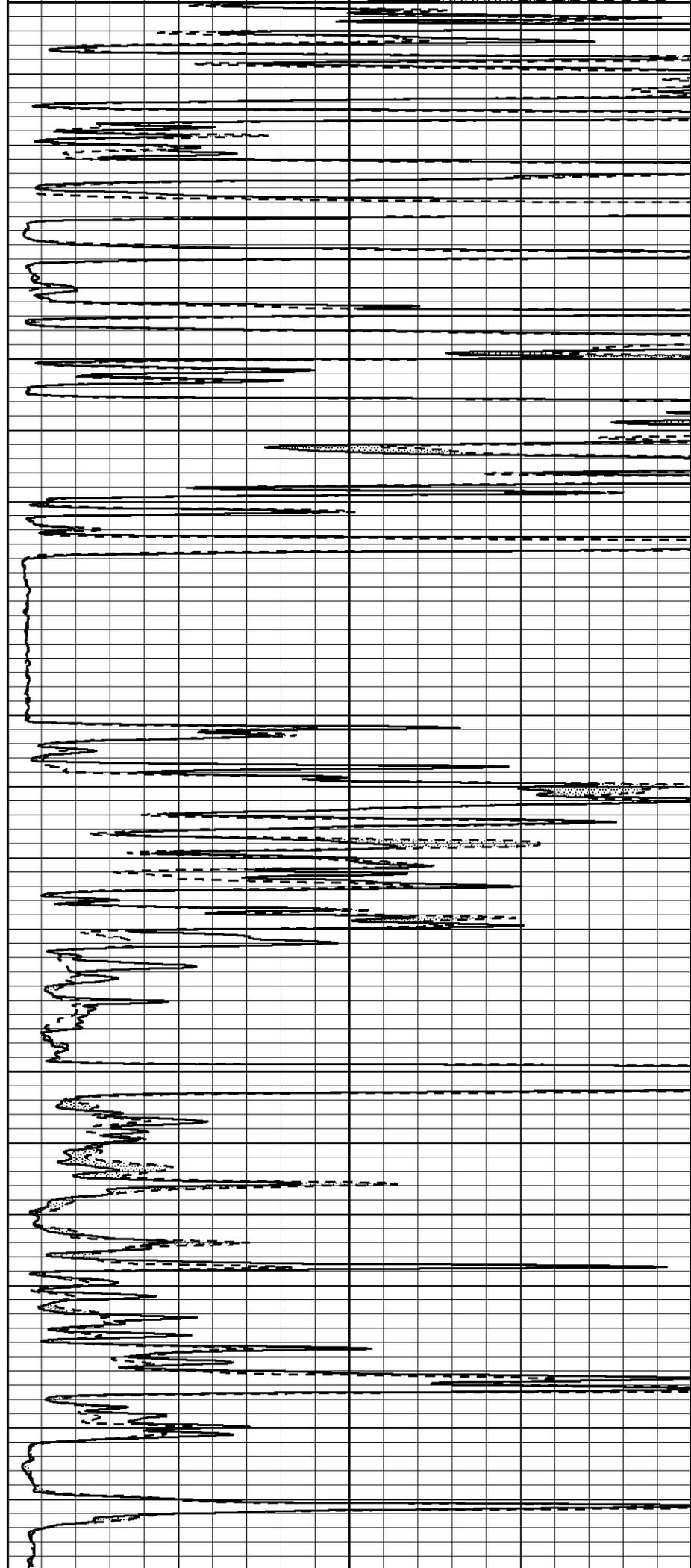
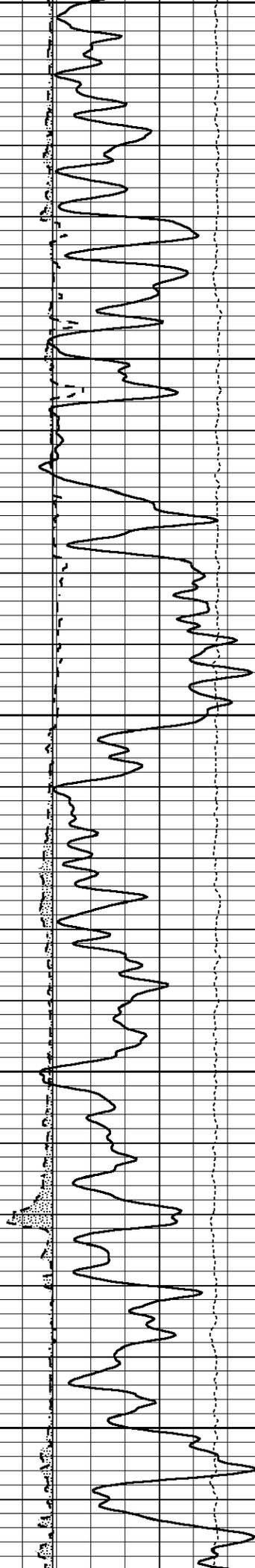
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5800



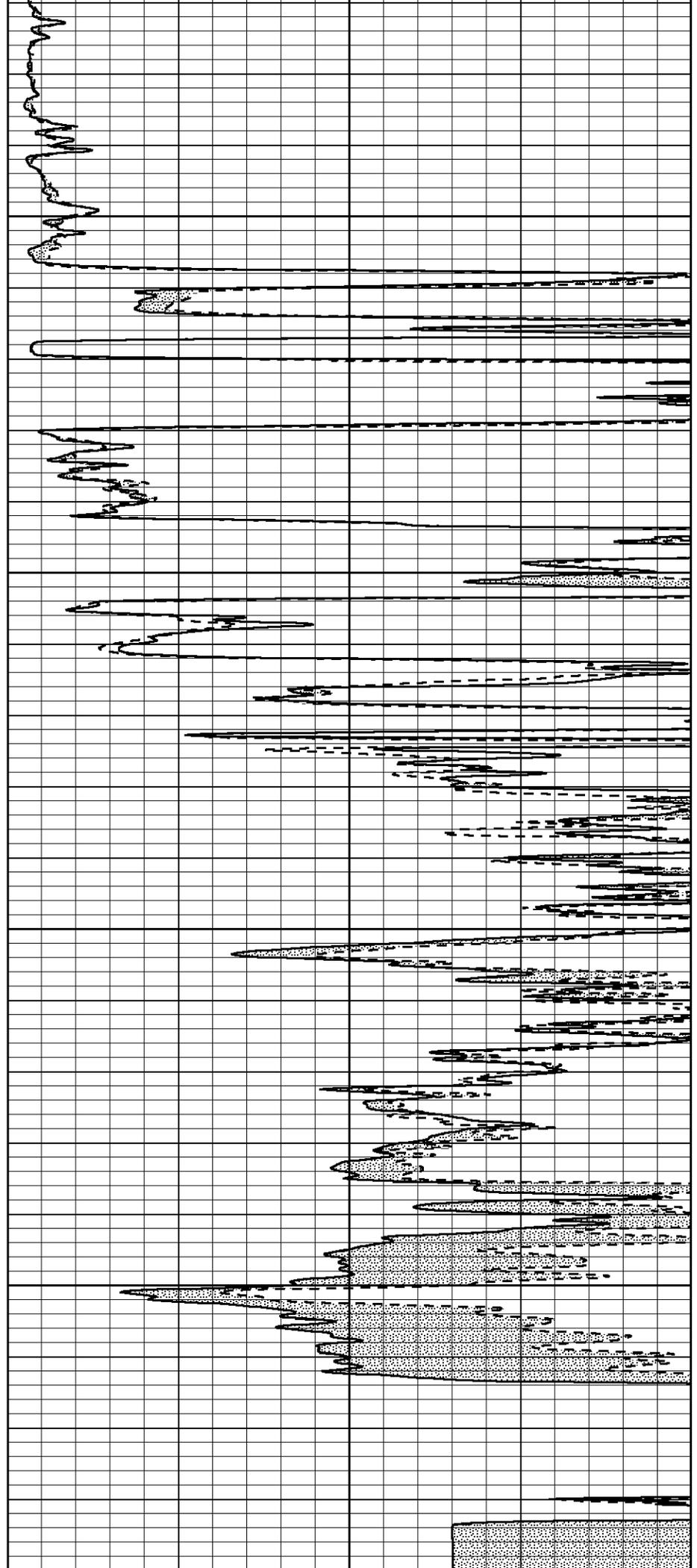
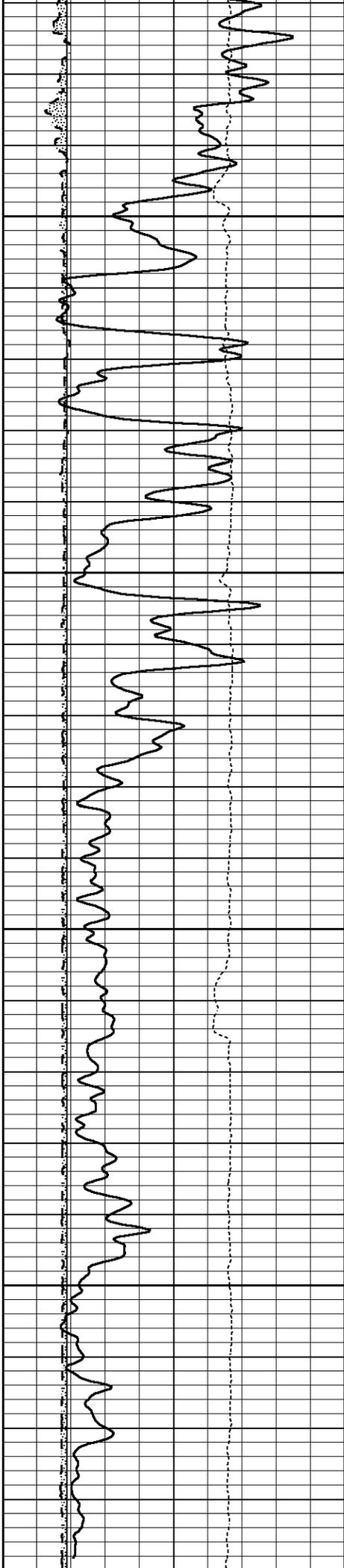
5900

6000



6100

6200



6300															
6	Bit size (in)	16	0	Micro Inverse (Ohm-m)											40
10000	Line Tension (lb)	0	0	Micro Normal (Ohm-m)											40
0	Gamma Ray (GAPI)	150													
6	Caliper (in)	16													

Log Variables

Database: C:\Sondex\Sondex Warrior\Data\obrien-preedy east 1a-10.db
 Dataset: field/well/run1/pass5/_vars_

Top - 1572.00 ft

MAGDEC deg 0	FRMSALIN kppm 75	MUDSALIN kppm 0	DEVI deg 0	SRFTEMP degF 55	SO in 0.25	DE-CENT Yes	CASED? Yes
CASEWGHT lb/ft 24	NPORSEL Limestone	AIR_HOLE? No	MudWgt lb/gal 9.1	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	SPSHIFT mV 0	CASETHCK in 0.264
CASEOD in 8.625	PERFS 0	TDEPTH ft 1572	BOTTEMP degF 125	BOREID in 12.25			

1572.00 ft - Bottom

MAGDEC deg 0	FRMSALIN kppm 75	MUDSALIN kppm 0	DEVI deg 0	SRFTEMP degF 55	SO in 0.25	DE-CENT Yes	CASED? No
CASEWGHT lb/ft 17	NPORSEL Limestone	AIR_HOLE? No	MudWgt lb/gal 9.1	FLUIDDEN g/cc 1	MATRXDEN g/cc 2.71	SPSHIFT mV 0	CASETHCK in 0.304
CASEOD in 5.5	PERFS 0	TDEPTH ft 6320	BOTTEMP degF 125	BOREID in 7.875			

Calibration Report

Database File: obrien-preedy east 1a-10.db
 Dataset Pathname: pass5
 Dataset Creation: Mon Apr 12 22:21:50 2021 by Log Sondex

Induction Array Tool Calibration Report

Serial Number: B10110
 Tool Model: 002

Master Calibration Performed:
Temperature:

Fri Jun 19 15:42:19 2020
106.4 degF

Sonde Error:

Array	1	2	3	4	5	6	7	
Real	192.3	-12.8	-40.5	-15.8	-2.7	3.4	1.1	mmho/m
Imaginary	37.3	-19.3	-5.4	-21.0	-27.8	3.2	-1.2	mmho/m

Loop Gain:

Array	1	2	3	4	5	6	7	
Loop (real)	537.7	678.5	1295.3	1394.1	1144.8	712.8	404.8	mmho/m
Loop (imaginary)	73.3	92.5	389.8	419.5	344.5	214.5	121.8	mmho/m
Real	754.7	724.6	1228.1	1358.7	1147.9	734.9	415.9	mmho/m
Imaginary	105.1	80.9	380.2	394.1	318.0	223.9	123.9	mmho/m
Gain (real)	0.956	0.920	1.021	1.014	0.995	0.974	0.976	
Gain (imaginary)	1.081	0.923	1.011	1.011	0.996	0.972	0.974	

Before Survey Verification Performed:

Fri Jun 19 15:59:35 2020

Sonde 1 Temperature:

109.7 degF

Sonde 2 Temperature:

106.7 degF

Array 1 Temperature:

111.1 degF

Array	1	2	3	4	5	6	7	
TxIR	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1	
TxIX	0.0	0.0	0.2	0.2	0.2	0.2	0.2	
Tx Magnitude	0.0	0.0	0.2	0.2	0.2	0.2	0.2	
Gain	122.5	170.7	190.0	190.0	183.8	185.8	190.0	
RxCR	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	
RxCX	0.2	0.1	0.2	0.2	0.2	0.2	0.2	
RxC Magnitude	0.2	0.1	0.2	0.2	0.2	0.2	0.2	

Tool Module Parameters

Software Version: 8.0.0.4
Borehole Size Source: CALI
Mud Resistivity Source: MUDRES
Mud Resistivity At Surface: N/A
Mud Resistivity Surface Temperature: N/A
Borehole Corrections: Automatic
Minimum Standoff: 0.4 in

Litho Density Tool Calibration Report

Serial Number: B10110S70997B
Tool Model: B10110

Caliper Calibration Performed:

Mon Apr 12 10:43:16 2021

	Diameter		Reading	
Small Ring:	9.000	in	1745.500	cps
Large Ring:	13.000	in	2090.600	cps
Gain:	0.0116			
Offset:	-11.2318			

Master Calibration Performed:

Mon Apr 12 10:03:46 2021

Source Number: S70997B
Medium: Water
Al Block Density: 2.6018 g/cc

	Background	Al Block	Al Block + Fe	
SS1	704.6	4177.6	3606.5	cps
SS2	1986.7	28467.4	24577.7	cps
SSTOTAL	4651.7	45568.2	30008.7	cps

SSTOTAL	4654.7	45566.2	39008.7	cps
LITH	88.3	486.4	298.1	cps
LL	175.8	806.8	724.2	cps
LU	496.0	1036.1	973.2	cps
LS	671.8	1842.9	1697.4	cps
LSTOTAL	1263.5	4518.5	3736.7	cps
SSHV	1464.1	1466.3	1468.1	V
LSHV	1311.8	1313.9	1314.8	V
SSFF	-0.001	0.009	0.003	
LSFF	0.004	-0.002	0.005	

Before Survey Verification Performed: Mon Apr 12 10:20:57 2021
After Survey Verification Performed: Mon Apr 12 10:27:19 2021

	Master Background	Before Survey Background	After Survey Background	
SS1	704.6	706.3	700.5	cps
SS2	1986.7	1986.9	1985.8	cps
SSTOTAL	4654.7	4662.7	4651.8	cps
LITH	88.3	87.7	86.1	cps
LL	175.8	173.3	174.9	cps
LU	496.0	497.0	491.0	cps
LS	671.8	670.3	665.9	cps
LSTOTAL	1263.5	1259.3	1254.1	cps
SSHV	1464.1	1470.0	1469.7	V
LSHV	1311.8	1315.8	1315.8	V
SSFF	-0.001	-0.006	-0.007	
LSFF	0.004	0.003	-0.006	

Tool Module Parameters

Software Version: 8.0.0.6
Borehole Size Source: CALI
Pad Type: 2

Compensated Neutron Tool Calibration Report

Serial Number: C10071S1414NC
Tool Model: 009

Master Calibration Performed: Mon Apr 12 11:06:22 2021

Source Number: 1414NC

Short Spacing Counts: 5574.20 cps
Long Spacing Counts: 200.36 cps
High Voltage: 1363.95 V
Target Ratio: 27.2000
Ratio: 27.8204
K-Factor: 0.9777

Before Survey Verification Performed: Mon Apr 12 11:24:08 2021
After Survey Verification Performed: Mon Apr 12 11:25:20 2021

Verifier Number: 6489

Verifier Values	Master Cal	Before Survey	After Survey	
Short Spacing Counts:	251.96	249.10	251.53	cps
Long Spacing Counts:	238.16	236.70	236.61	cps
High Voltage:	1363.94	1363.94	1363.94	V
Ratio:	1.0579	1.0524	1.0631	

Tool Module Parameters

Software Version: 8.0.0.5
 Borehole Size Source: CALI
 Clip Crossplot Porosity: YES
 Lithology Identification Parameters:
 Calcite Quartz Dolomite
 Uma: 13.77 4.79 9.03 barns/cc
 RHOma: 2.71 2.65 2.88 g/cc

Micro Electric Log Calibration Report

Serial Number: 10020666
 Tool Model: 001

Caliper Calibration Performed: Wed Mar 27 13:54:25 2019

	Pad Arm			Backup Arm		
	Radius		Reading	Radius		Reading
Small Jig:	4.000	in	1079.500	4.000	in	1216.600
Large Jig:	6.000	in	1483.400	6.000	in	1590.500
Gain:			0.0050			0.0053
Offset:			-1.3454			-2.5076

Pad Calibration

	Inverse	Normal
Gain:	1.0000	1.0000
Offset:	0.0000	0.0000

Tool Module Parameters

Software Version: 8.0.0.4

Gamma Ray Calibration Report

Serial Number: C10049
 Tool Model: 001

Performed: Mon Apr 12 11:47:33 2021

Calibrator Value:	156.0	GAPI
Background Reading:	70.5	cps
Calibrator Reading:	494.1	cps
Sensitivity:	0.3683	GAPI/cps

Borehole Fluid Resistivity Calibration Report

Serial Number: P004
 Tool Model: 002

Master Calibration Performed: Wed May 25 15:17:37 2016

Resistivity Polynomial Equation:

$$0.1429x^3 - 0.4495x^2 + 1.2097x - 0.2854$$

Temperature Calibration:

Reference		Reading	
71.60	degF	559.80	bits
167.00	degF	659.50	bits

Head Tension Unit Calibration Report

Serial Number: 00001

Performed: Mon Mar 04 10:52:43 2013

Point #	Reference		Reading	
1	-19894.000	lb	8957.860	cps
2	-15010.000	lb	13965.100	cps
3	-9998.000	lb	19079.100	cps
4	-5007.000	lb	24133.000	cps
5	-1009.000	lb	28232.100	cps
6	1017.000	lb	30185.400	cps
7	5040.000	lb	34439.700	cps
8	9970.000	lb	39346.900	cps
9	14955.000	lb	44466.000	cps
10	19770.000	lb	49397.800	cps

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)			
HTEN	53.95		CHD-WFT (WFT01) Weatherford Cable Head	2.67	2.25	15.00			
			X-Over-WFT (0001) Weatherford X-Over	1.13	3.38	5.00			
			XTU-008 (C10068) Crossover Ultrawire Toolbus to Ultralink	2.08	3.38	47.00			
			HTU-011 (00001) Head Tension Unit	2.18	3.38	55.00			
BFR	50.31			BFR-002 (P004) Borehole Fluid Resistivity Tool	4.39	3.38	94.00		
GR	47.54			GRT-001 (C10049) Gamma Ray Tool	3.22	3.38	69.00		
				Overbody-Over-cen Overbody Centralizer	3.00	3.38	10.00		
MEL	37.55				MEL-001 (10020666) Micro Electric Log	9.17	3.38	190.00	
					CEN-001 (000029) Inline OH Springbow Centraliser	4.27	3.38	66.00	
CNLSC CNSSC	25.59					KJT-001 (10010515) Knuckle Joint	2.86	3.38	72.00
	25.09	CNL-009 (C10071S1414NC) Compensated Neutron Logging Tool				5.28	3.38	100.00	
LDT	15.44					LDT-B10110 (B10110S70997B) Litho Density Tool	9.75	4.50	310.00
						Overbody-Standoff	1.00	4.50	4.00

IAT	8.44		Standoff (Rubber)			
			IAT-002 (B10110) Induction Array Tool	13.22	3.88	196.00
SP	0.43		Shorty-Short Short Hole Finder	0.38	3.88	6.00
		Dataset: obrien-preedy east 1a-10.db: field/well/run1/pass5 Total length: 60.59 ft Total weight: 1239.00 lb O.D.: 4.50 in				

	Company	O'Brien Energy Resources Corporation
	Well	Preedy East 1A-10
	Field	Borchers Northwest
	County	Meade
	State	Kansas