

# HALLIBURTON

## TRIPLE COMBO LOG

COMPANY **SHELL**  
 WELL **SIEGRIST 2207 7-2**  
 FIELD/BLOCK **WILDCAT**  
 COUNTY **RENO**  
 STATE **KANSAS**

COMPANY **SHELL**  
 WELL **SIEGRIST 2207 7-2**  
 FIELD/BLOCK **WILDCAT**  
 COUNTY **RENO**  
 STATE **KANSAS**

API No. 15-155-21625-00-00  
 Location NW-NW-NE-SE (SHL) 2355' FSL & 1100' FEL  
 LATITUDE: 38.15'N LONGITUDE: 98.13'W

Sect. 7 Twp. 22S Rge. 7W

Other Services:  
 XRM1  
 CSNG  
 WSTT  
 IMRL

Permanent Datum **GL** Elev.: 1606.0 ft  
 Log measured from **KB** D.F. 1628.0 ft  
 Drilling measured from **KB** G.L. 1606.0 ft  
 23.0 ft above perm. Datum

Date **16-Mar-13**

Run No. **ONE**

Depth - Driller **4030.00 ft**

Depth - Logger **4020.0 ft**

Bottom - Logged Interval **4010.0 ft**

Top - Logged Interval **370.0 ft**

Casing - Driller **9.625 in @ 370.0 ft**

Casing - Logger **370.0 ft**

Bit Size **8.750 in @**

Type Fluid in Hole **WATER BASED MUD**

Density **9.1 ppg** Viscosity **22.00 s/qt**

PH **10.10** Fluid Loss **3.4 cph**

Source of Sample **MUD PIT**

Rm @ Meas. Temperature **0.250 ohmm @ 75.00 degF**

Rmf @ Meas. Temperature **0.20 ohmm @ 75.00 degF**

Rmc @ Meas. Temperature **0.330 ohmm @ 75.00 degF**

Source Rmf **MEASURED** Rmc **MEASURED**

Rm @ BHT **0.15 ohmm @ 127.0 degF**

Time Since Circulation **6.0 hr**

Time on Bottom **16-Mar-13 05:11**

Max. Rec. Temperature **127.0 degF @ 4020.0 ft**

Equipment **10546896** Location **LIBERAL**

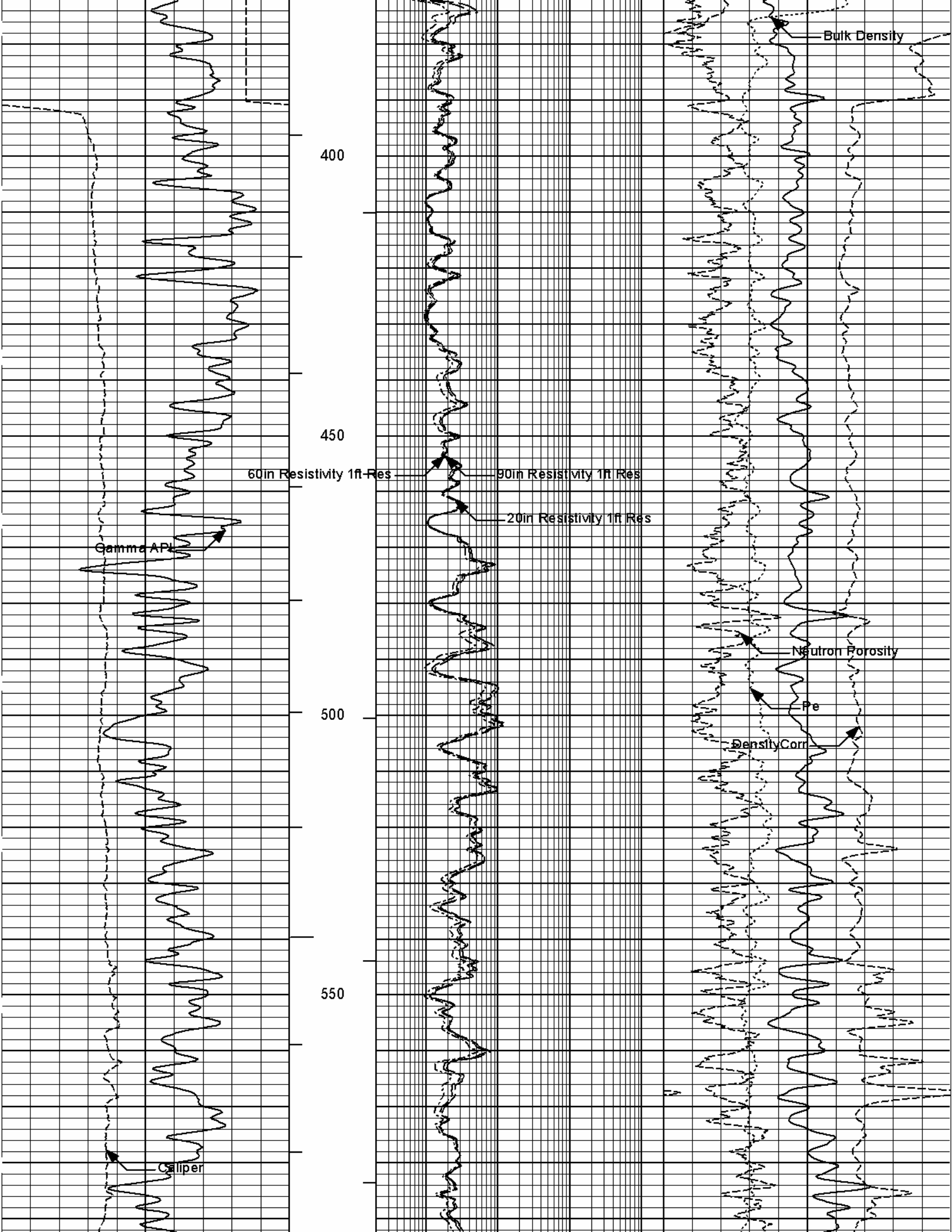
Recorded By **J. BOLLOM**

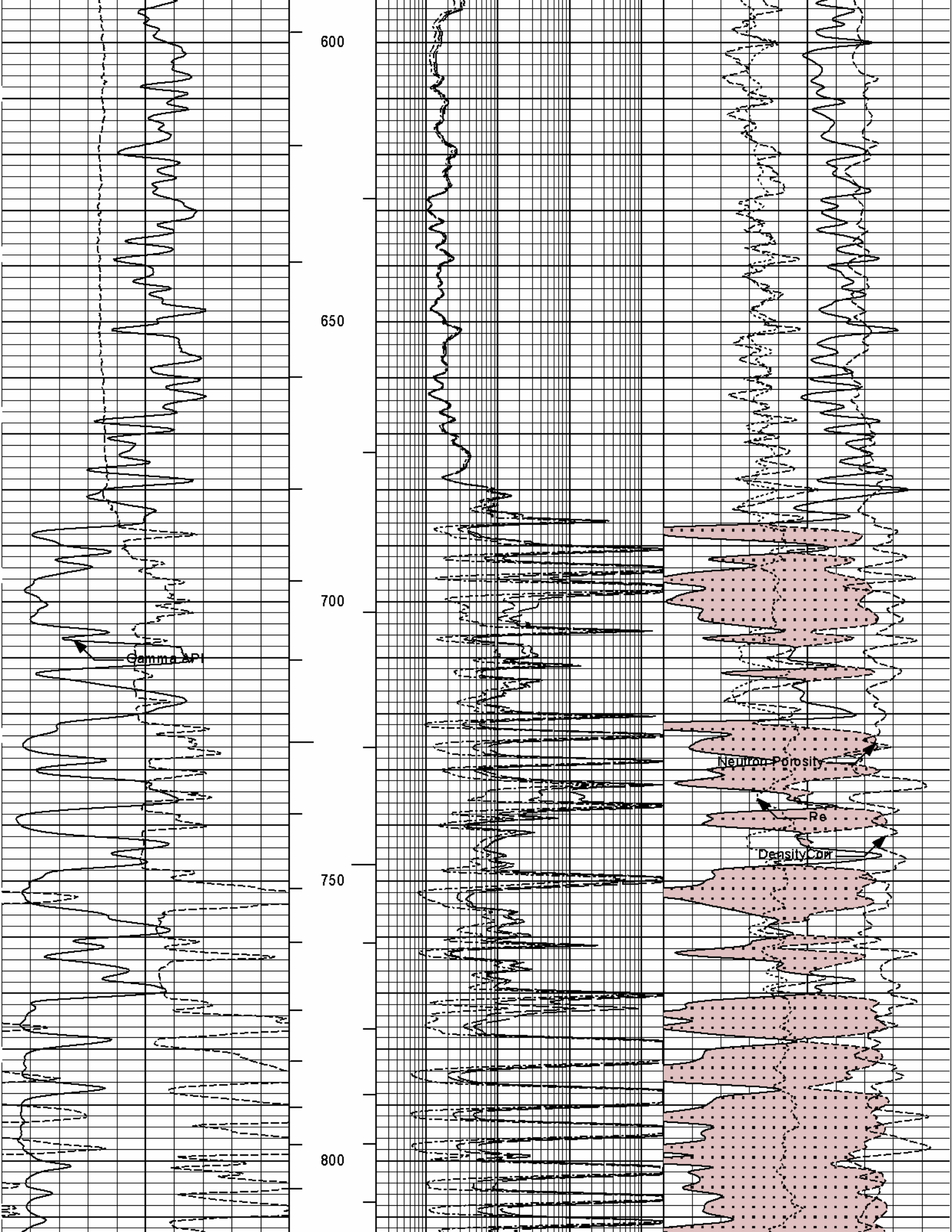
Witnessed By **L. SMITH**

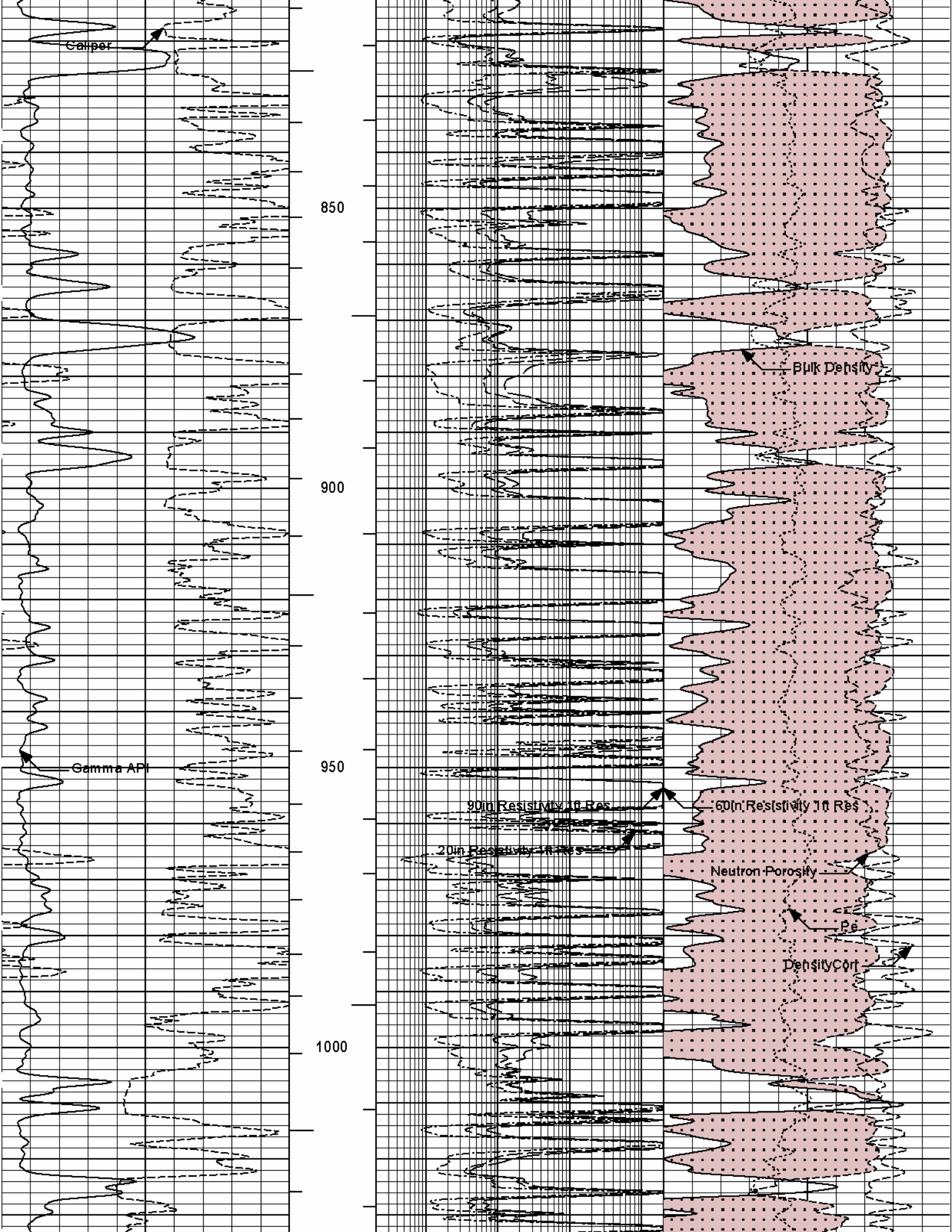
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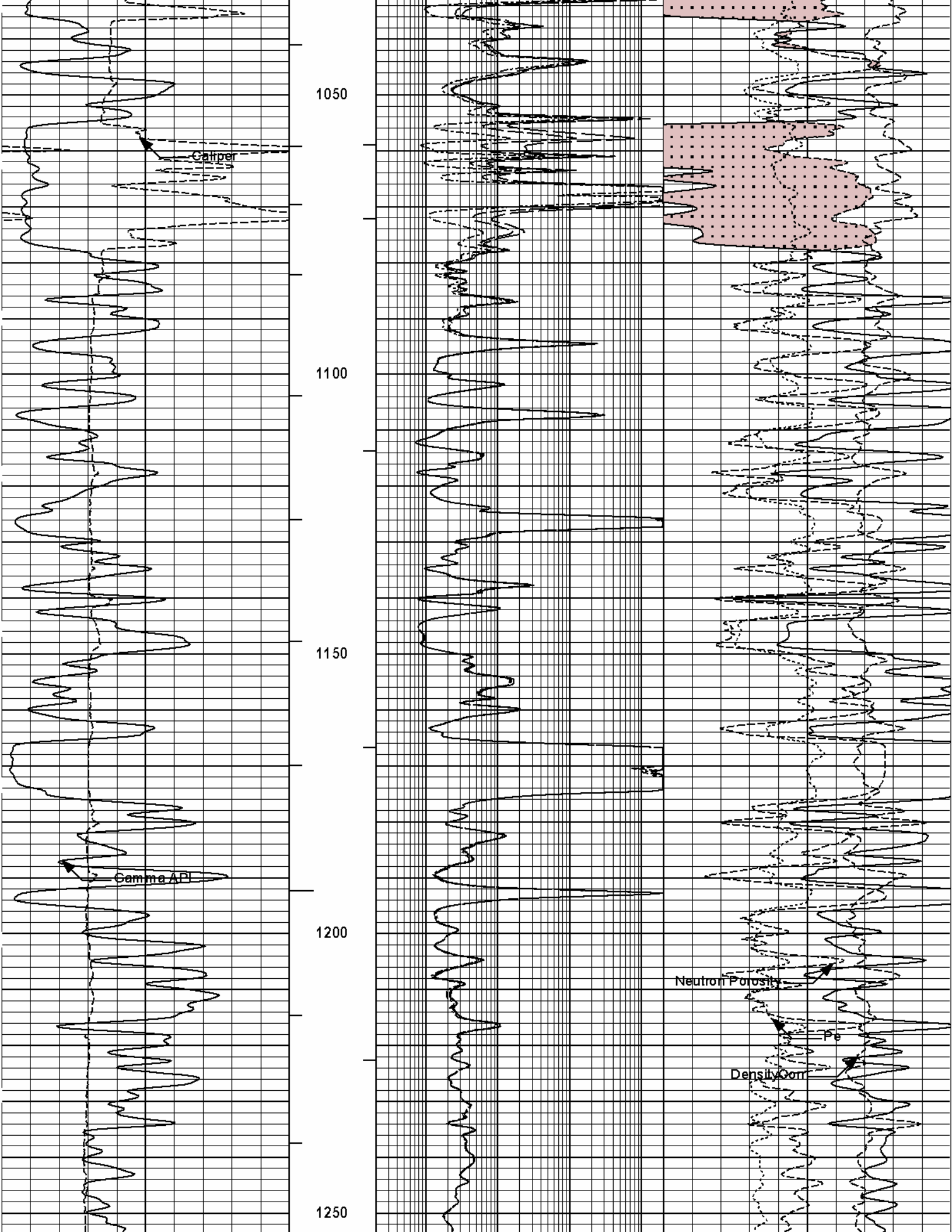
Service Ticket No.: 900168853		API Serial No.: 15-155-21625-00-00		PGM Version: WL INSITE R3.8.0 (Build 2)			
CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE				RESISTIVITY SCALE CHANGES			
Date	Sample No.			Type Log	Depth	Scale Up Hole	Scale Down Hole
Depth-Driller							
Type Fluid in Hole							
Density	Viscosity						
Ph	Fluid Loss						
Source of Sample				RESISTIVITY EQUIPMENT DATA			
Rm @ Meas. Temp		@	@	Run No.	Tool Type & No.	Pad Type	Tool Pos.
Rmf @ Meas. Temp.		@	@				
Rmc @ Meas. Temp.		@	@				
Source Rmf	Rmc						
Rm @ BHT		@	@				
Rmf @ BHT		@	@				
Rmc @ BHT		@	@				
EQUIPMENT DATA							
GAMMA		ACOUSTIC		DENSITY		NEUTRON	
Run No.	ONE	Run No.		Run No.	ONE	Run No.	ONE
Serial No.	11048627	Serial No.		Serial No.	10950489	Serial No.	11019643
Model No.	GTET	Model No.		Model No.	SDLT-I	Model No.	DSNT-I
Diameter	3.625"	No. of Cent.		Diameter	4.5"	Diameter	3.625"
Detector Model No.	GTET	Spacing		Log Type	GAM-GAM	Log Type	NEU-NEU
Type	SCINT			Source Type	CS137	Source Type	AM241
Length	8'	LSA [Y/N]		Serial No.	5168GW	Serial No.	DSN-424
Distance to Source	18'	FWDA [Y/N]		Strength	1.5 CI	Strength	15 CI
LOGGING DATA							

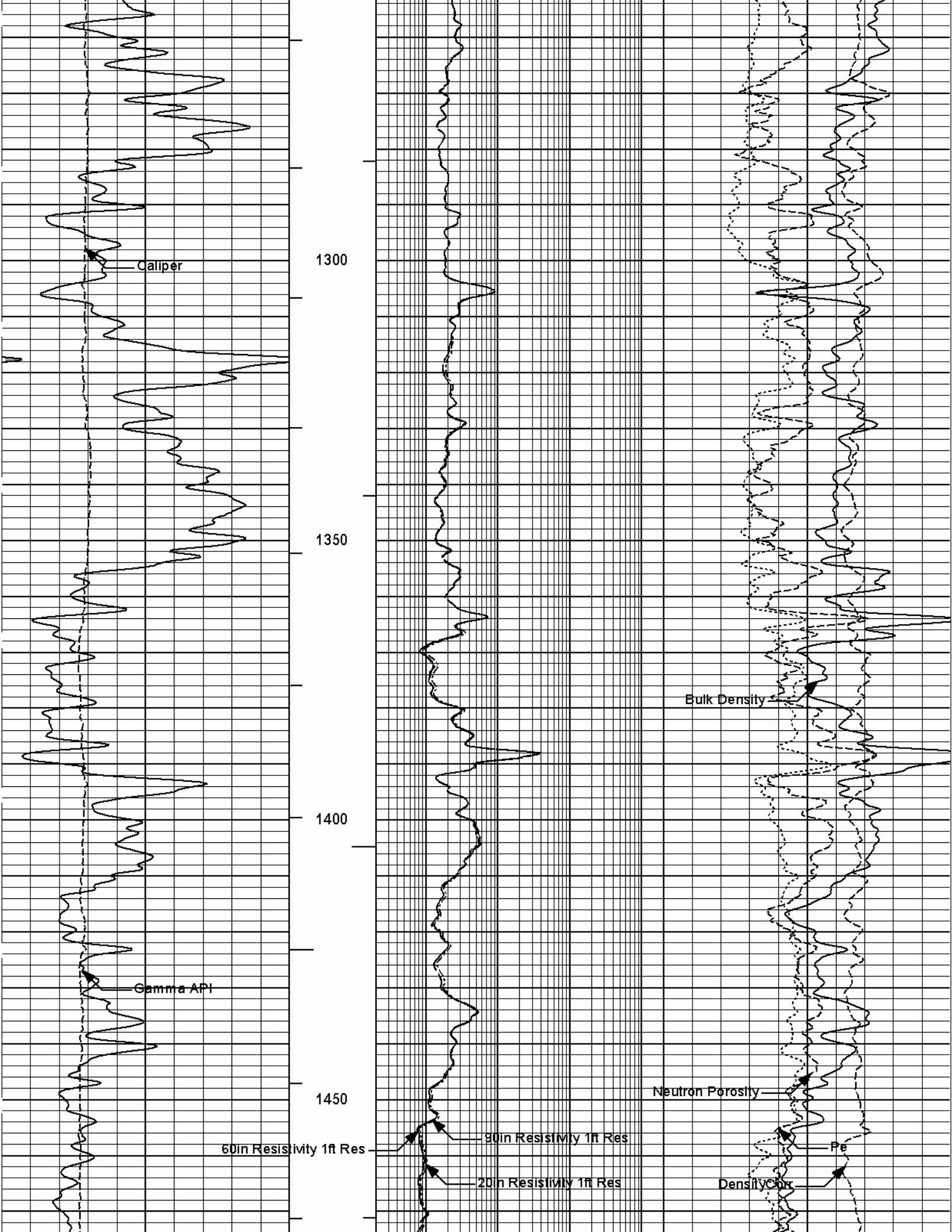


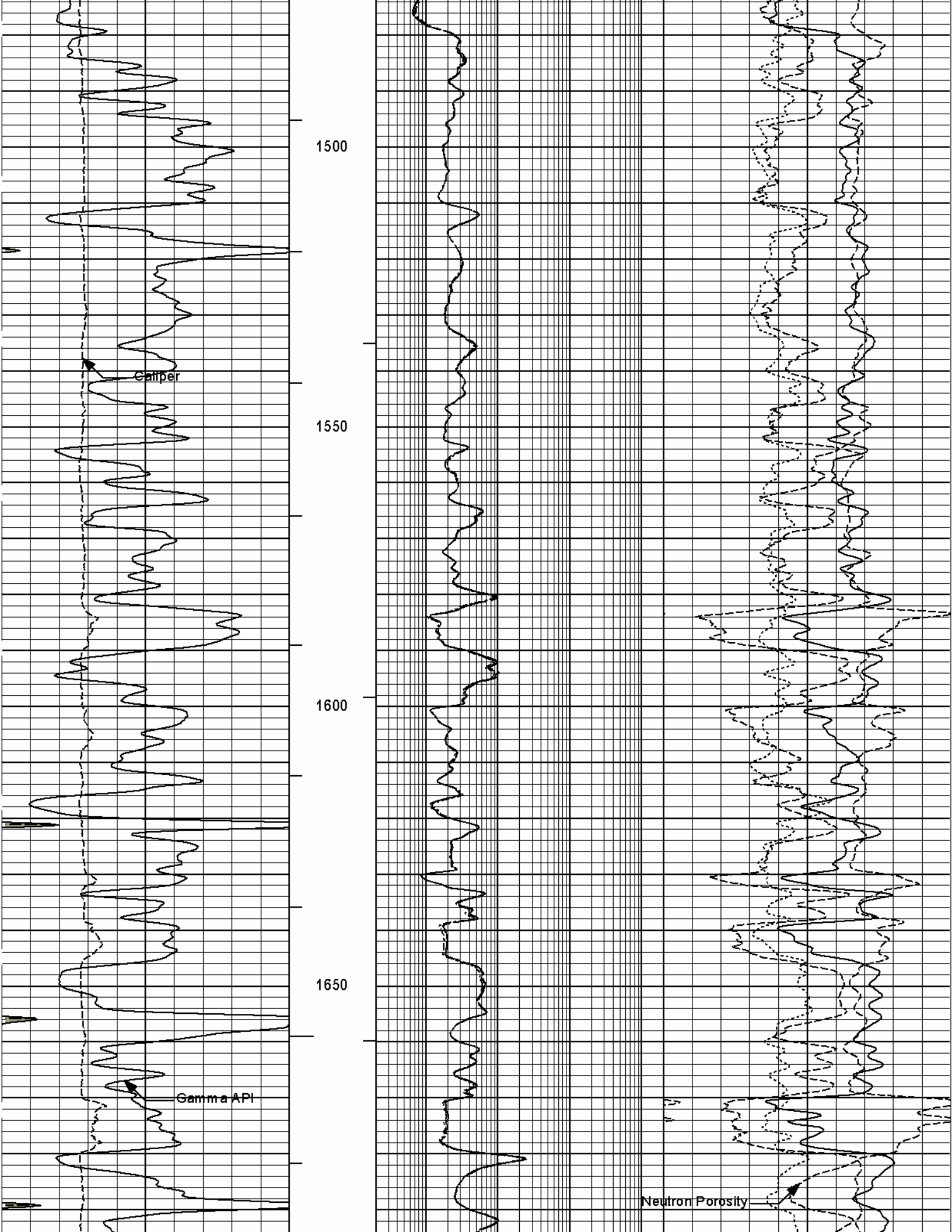


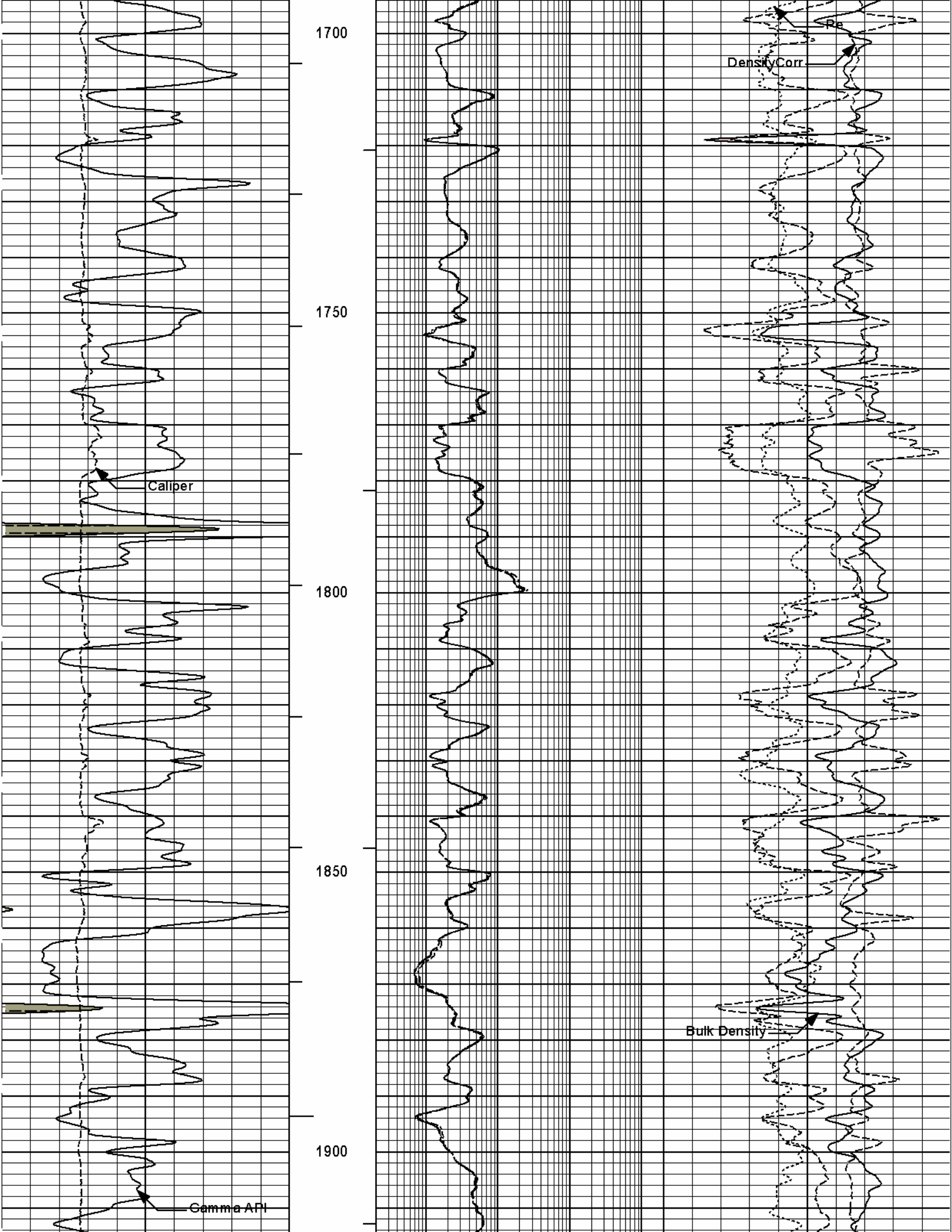


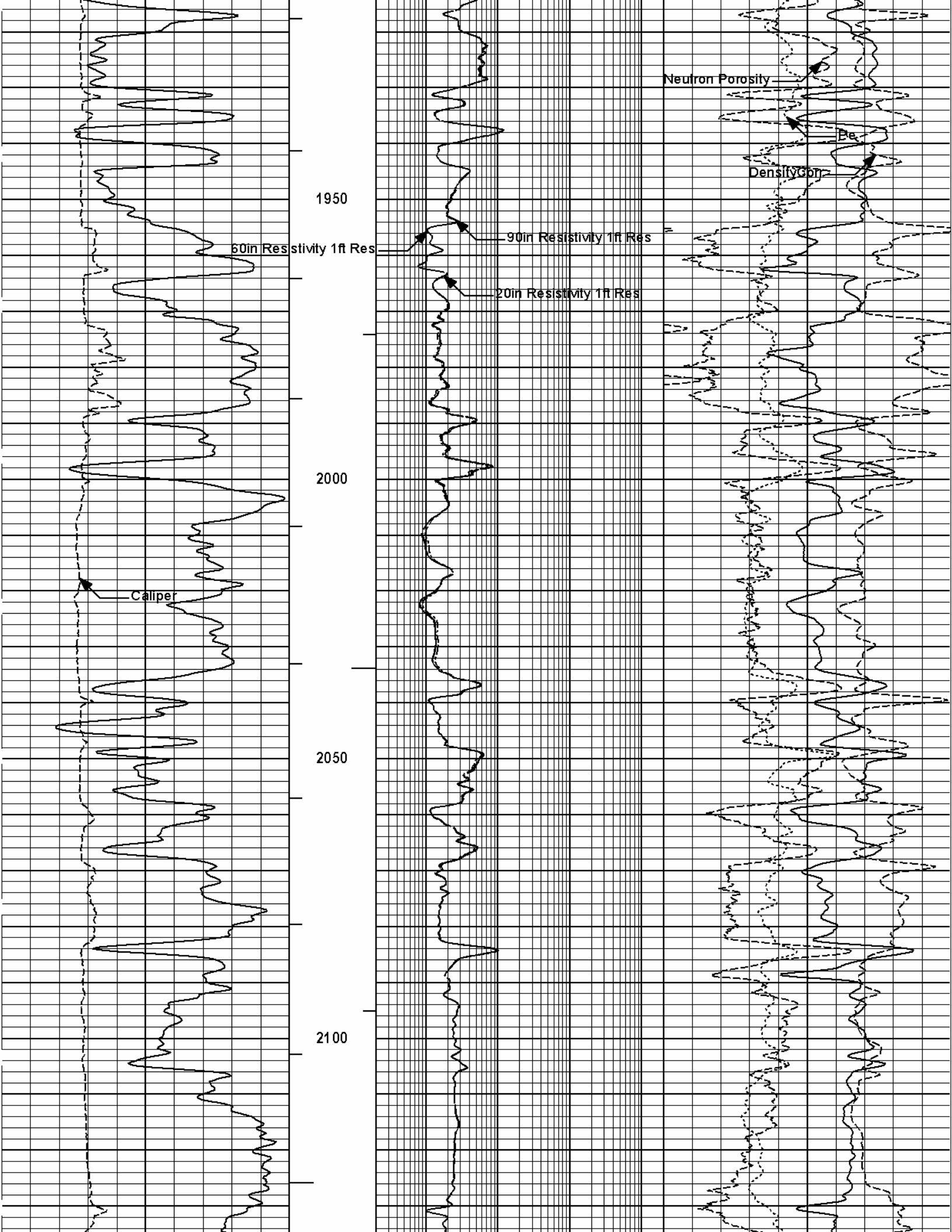


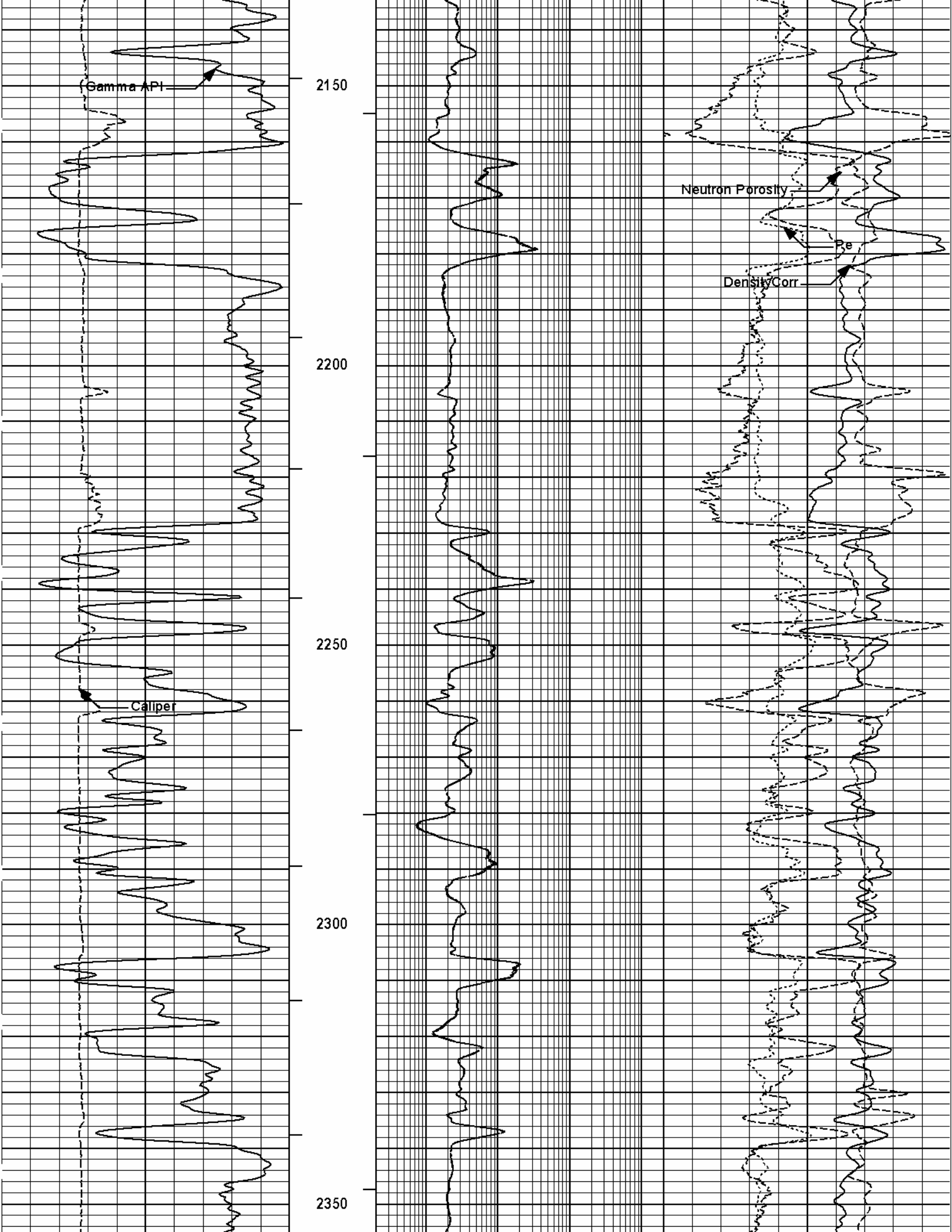


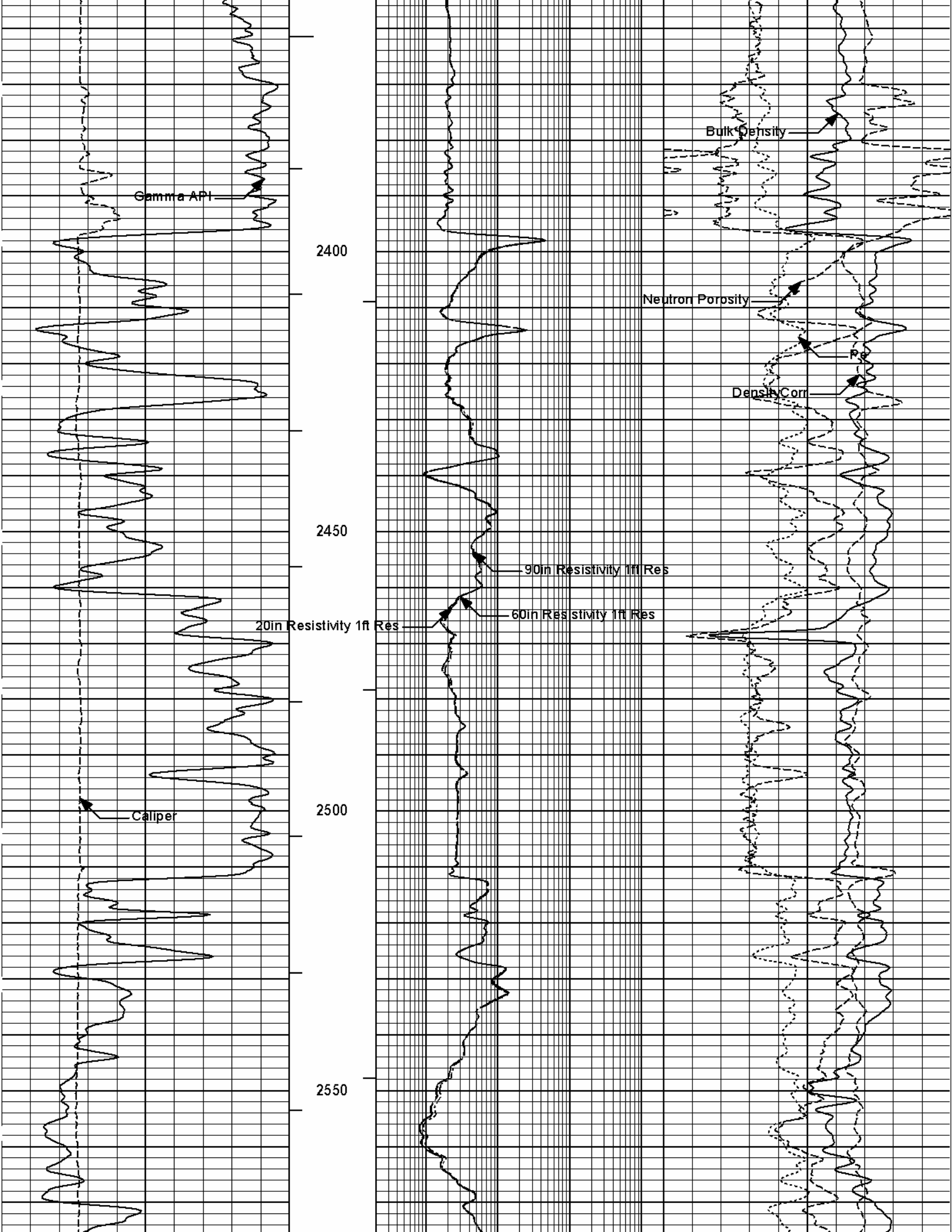


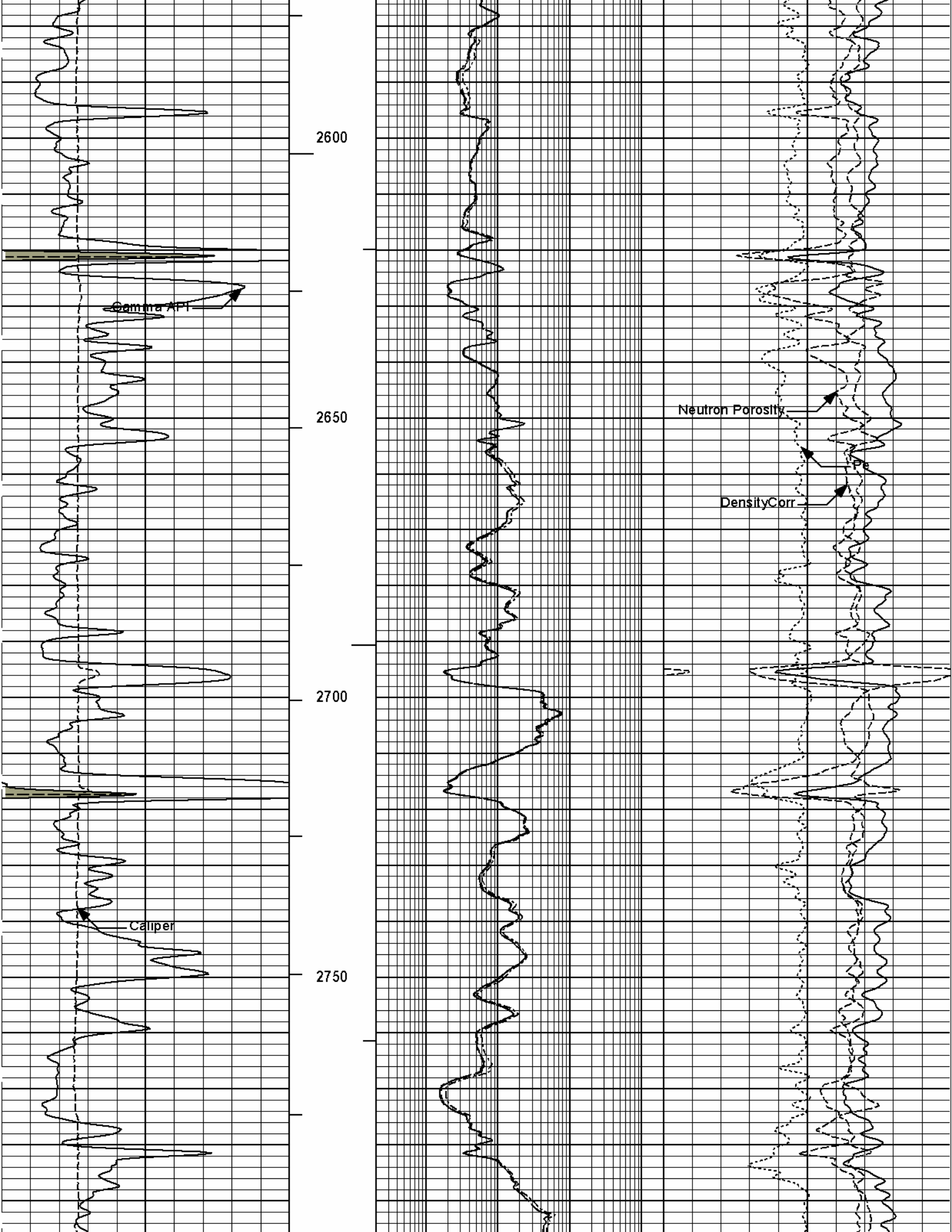


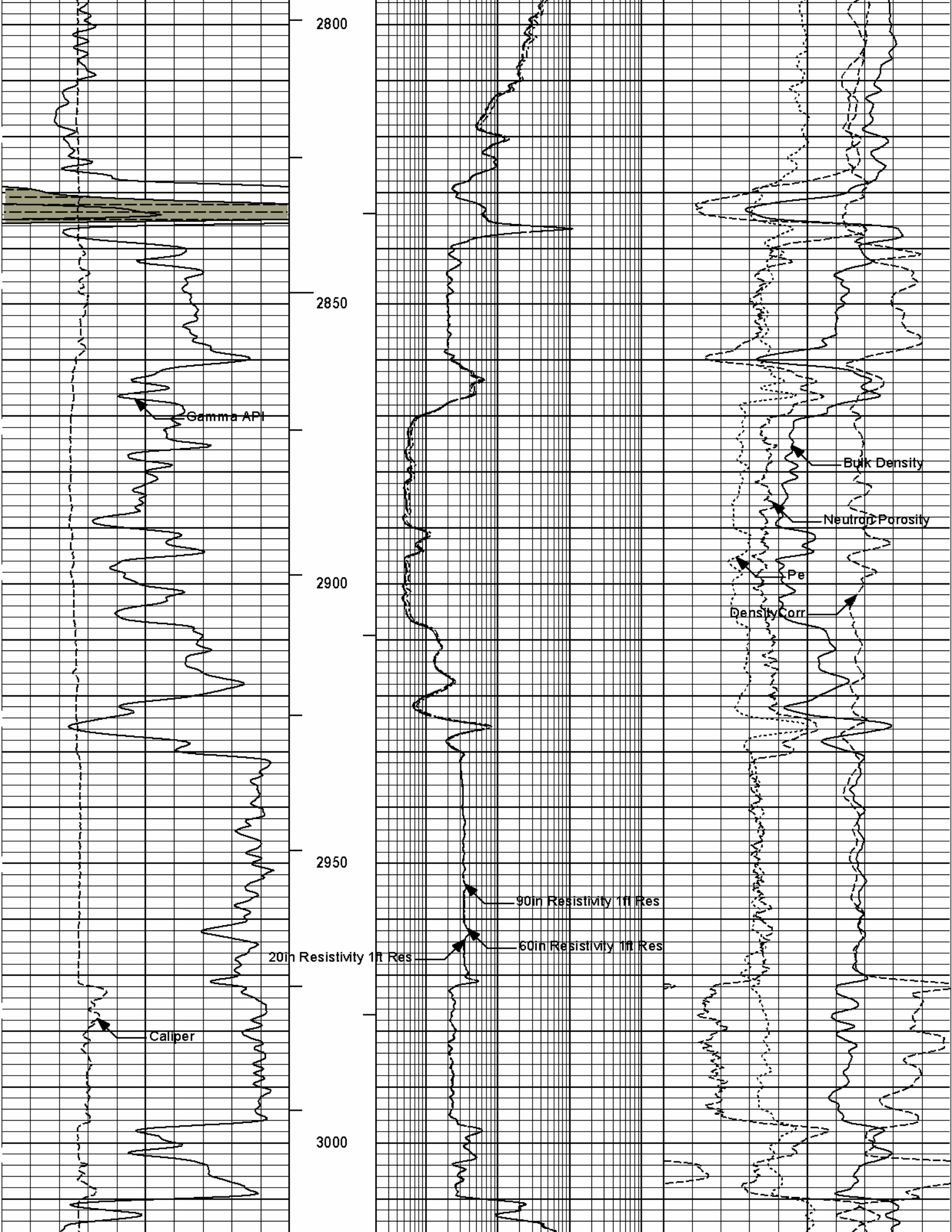


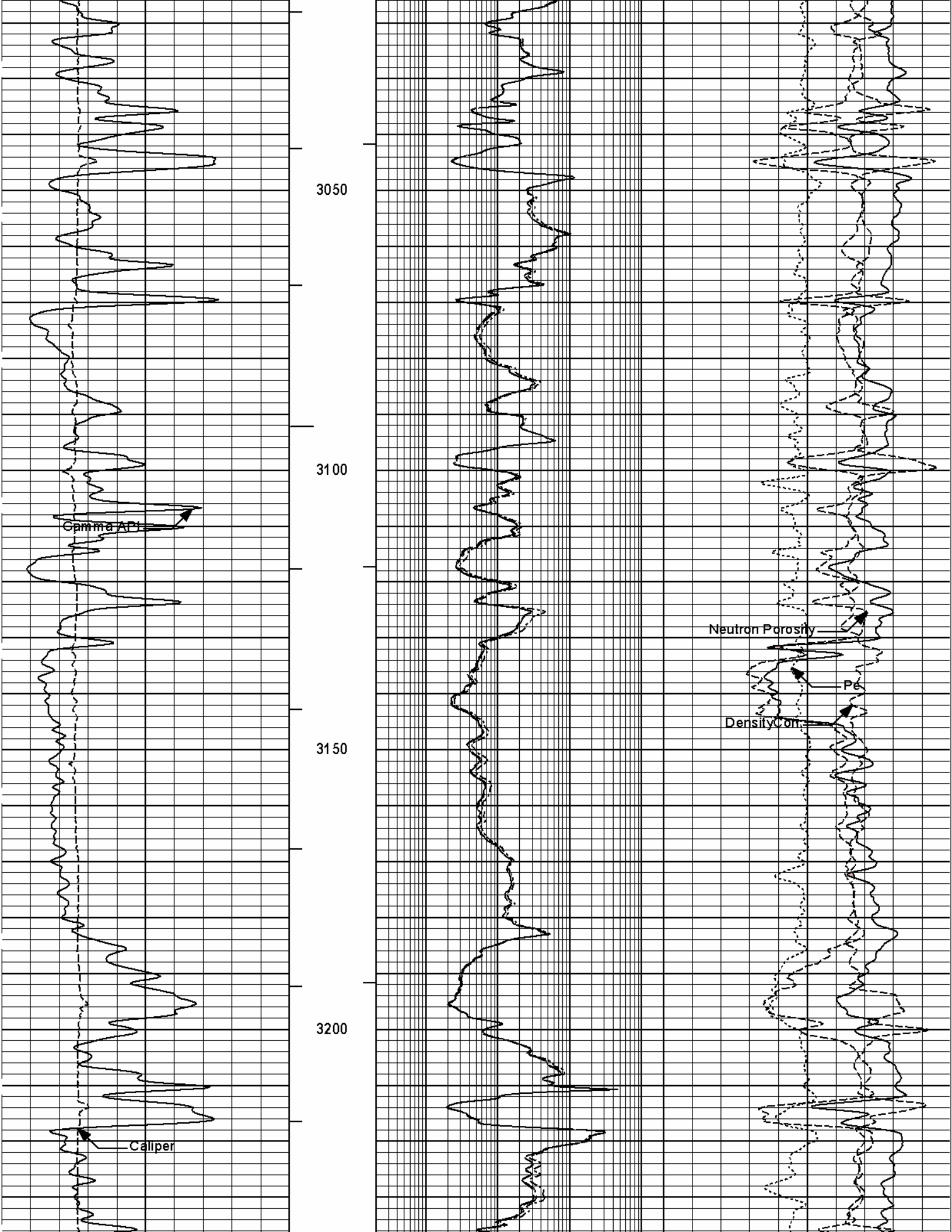




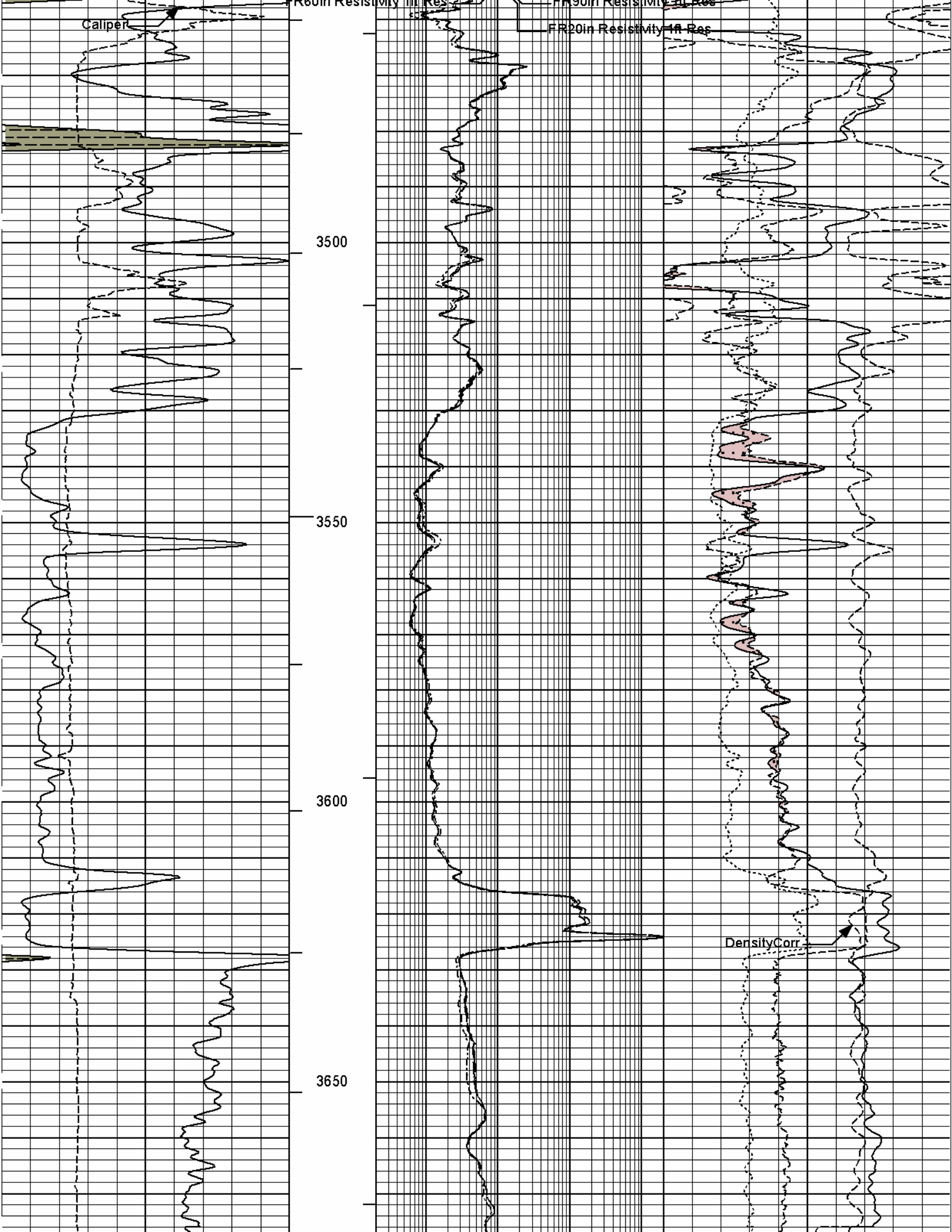


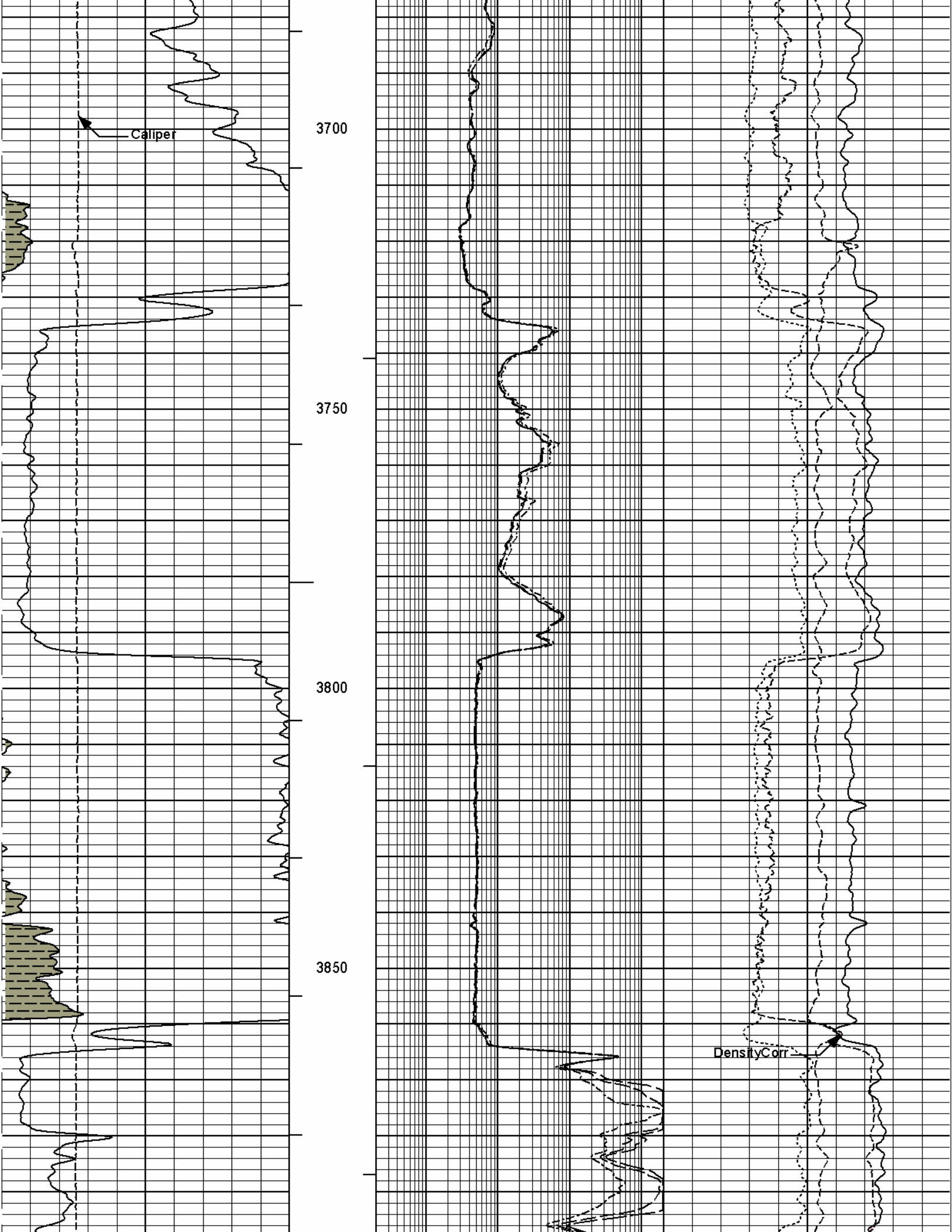


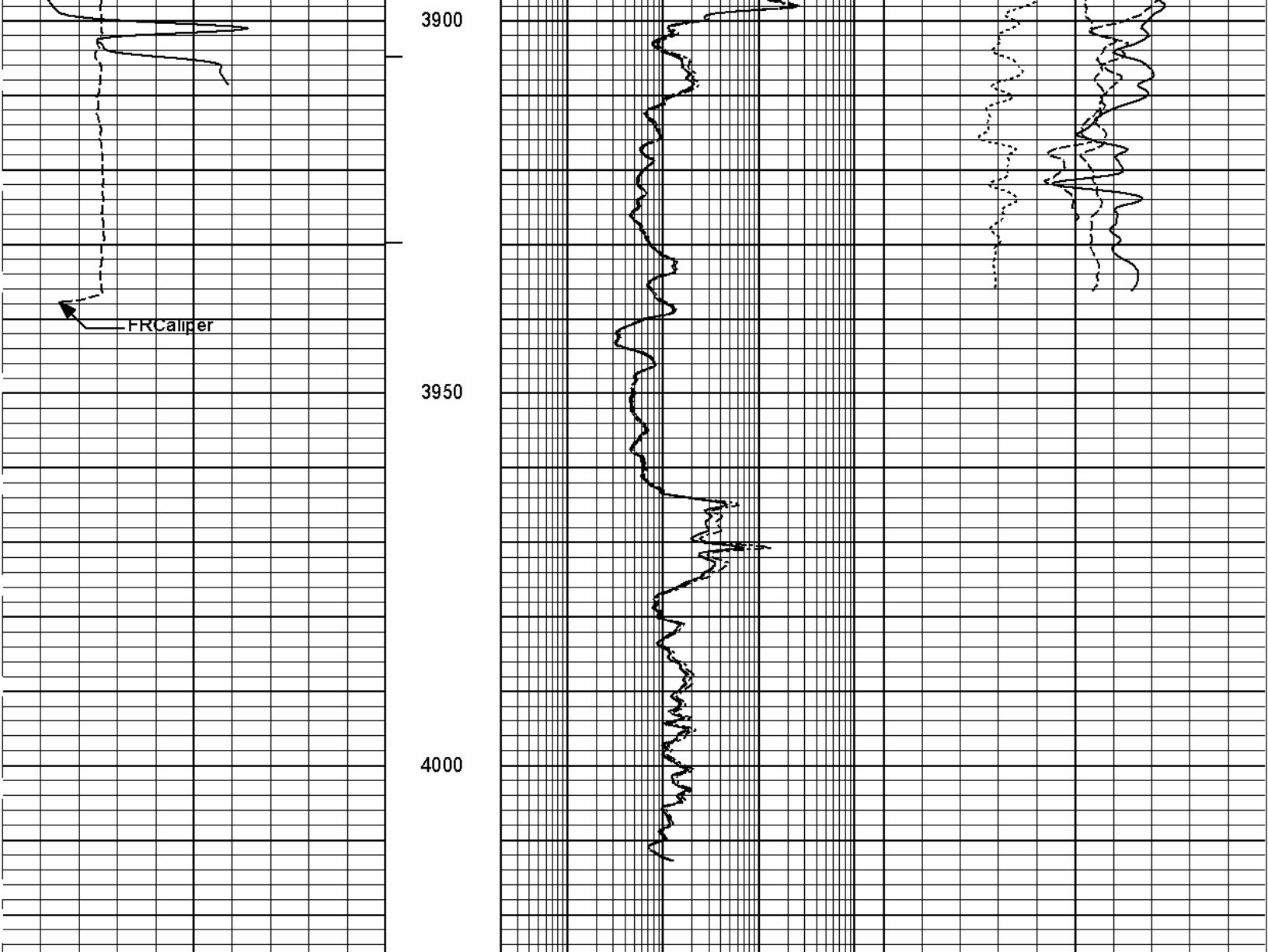












6	Caliper	16	MD 1 : 240 ft	0.2	20in Resistivity 1ft Res	2000	-0.25	DensityCorr	0.25
	inches				ohm-metre			g/cc	
0	Gamma API	150	AHVT	0.2	60in Resistivity 1ft Res	2000	1.95	Bulk Density	2.95
	api				ohm-metre			g/cc	
			BHVT	0.2	90in Resistivity 1ft Res	2000	0	Pe	10
					ohm-metre				
							45	Neutron Porosity	-15
								%	

**HALLIBURTON**

Plot Time: 16-Mar-13 15:12:16  
 Plot Range: 350 ft to 4025.58 ft  
 Data: SIEGRIST\_2207\Well Based\CASING\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_MAIN\_SHELL

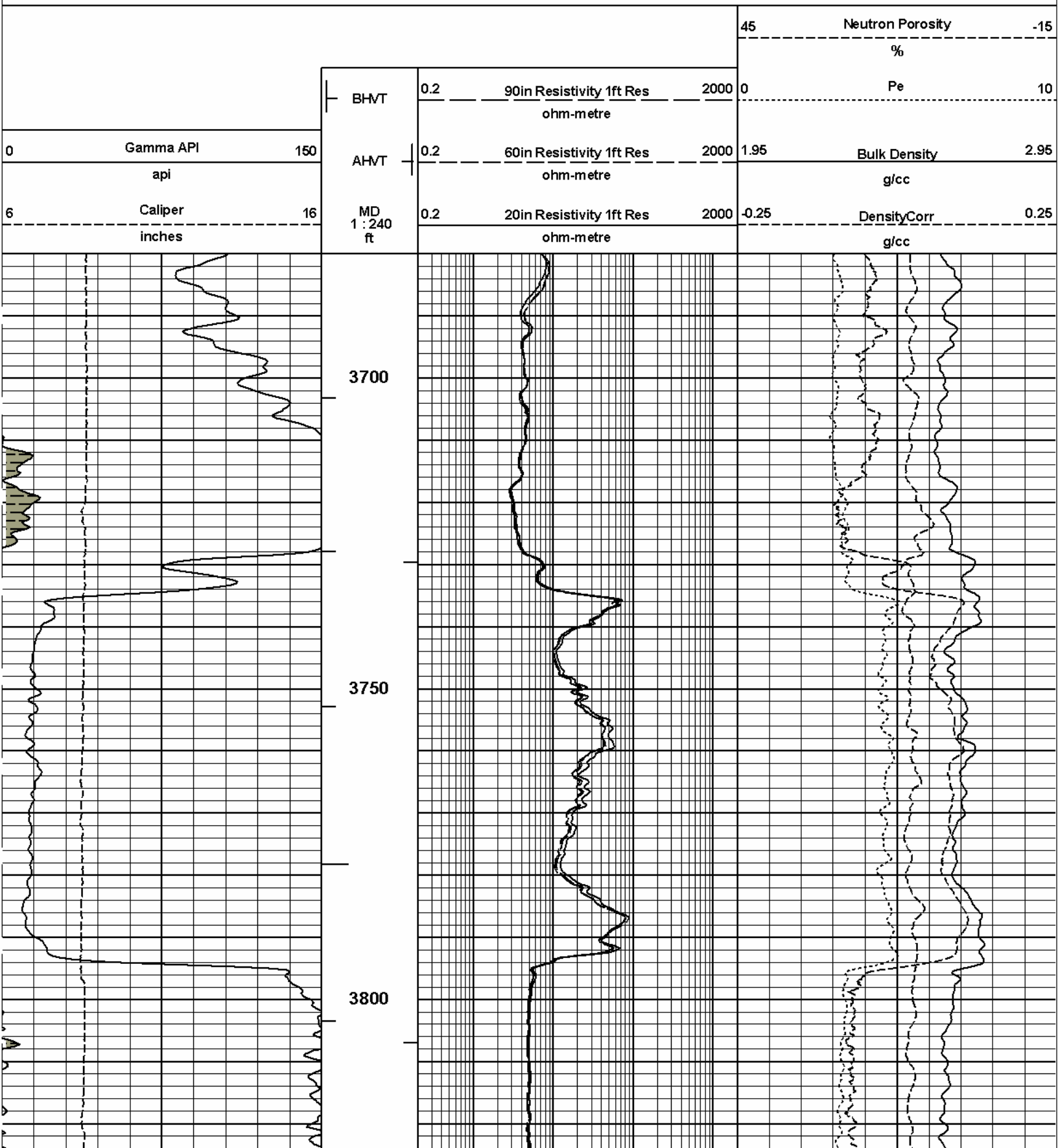
**5 INCH MAIN LOG MD**

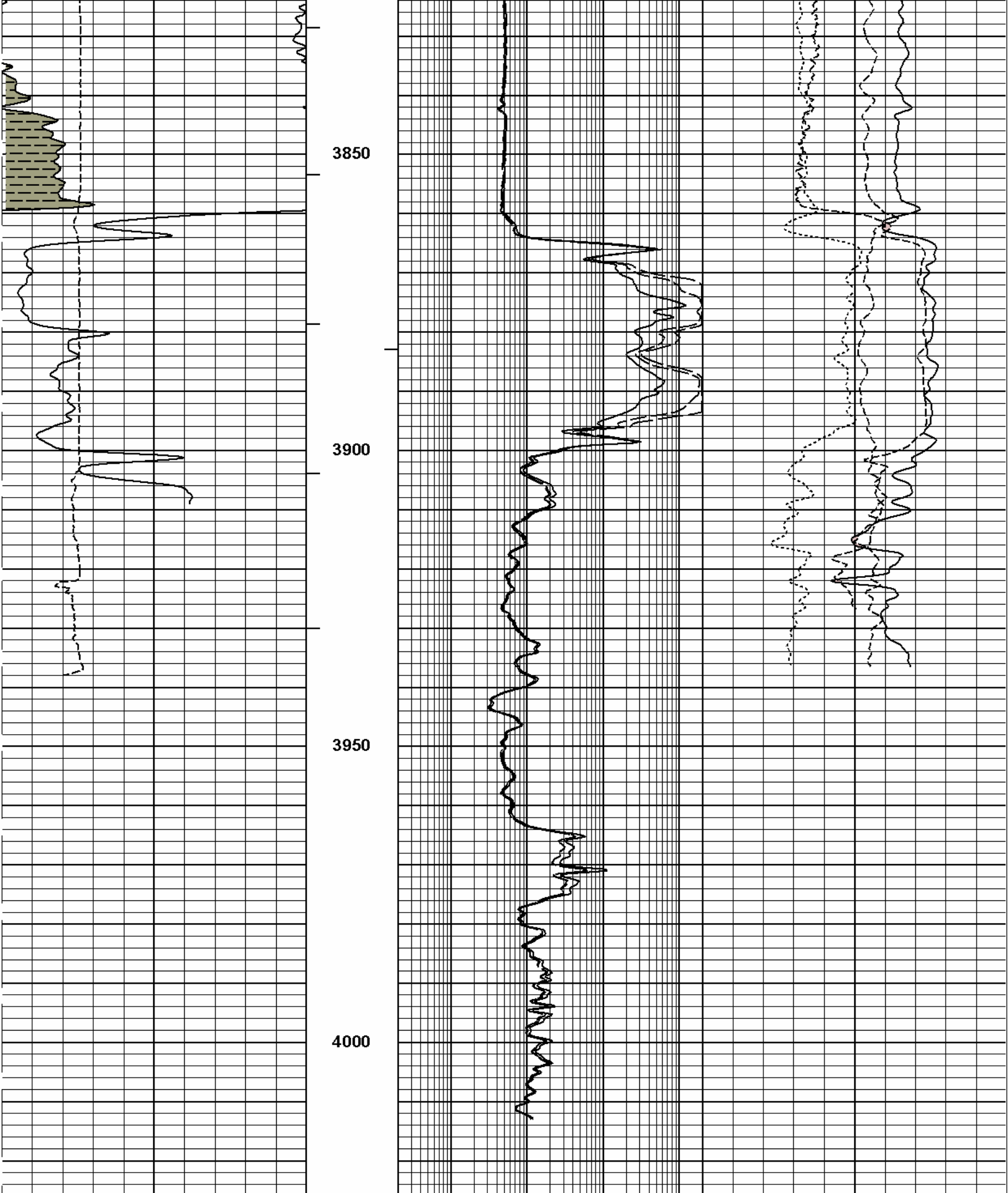
**HALLIBURTON**

Plot Time: 16-Mar-13 15:12:16  
 Plot Range: 3680 ft to 4025.92 ft  
 Data: SIEGRIST\_2207\Well Based\REPEAT\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_RPT\_SHELL

**5 INCH REPEAT LOG MD**

5 INCH REPEAT MD





6	Caliper	16	MD 1 : 240 ft	0.2	20in Resistivity 1ft Res	2000	0.25	DensityCorr	0.25
	inches				ohm-metre			g/cc	
0	Gamma API	150	AHVT	0.2	60in Resistivity 1ft Res	2000	1.95	Bulk Density	2.95
	api				ohm-metre			g/cc	

	BHVT	0.2	90in Resistivity 1ft Res	2000	0	Pe	10
			ohm-metre				
					45	Neutron Porosity	-15
						%	

**HALLIBURTON**

Plot Time: 16-Mar-13 15:12:20  
 Plot Range: 3680 ft to 4025.92 ft  
 Data: SIEGRIST\_2207\Well Based\REPEAT\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_RPT\_SHELL

### 5 INCH REPEAT LOG MD

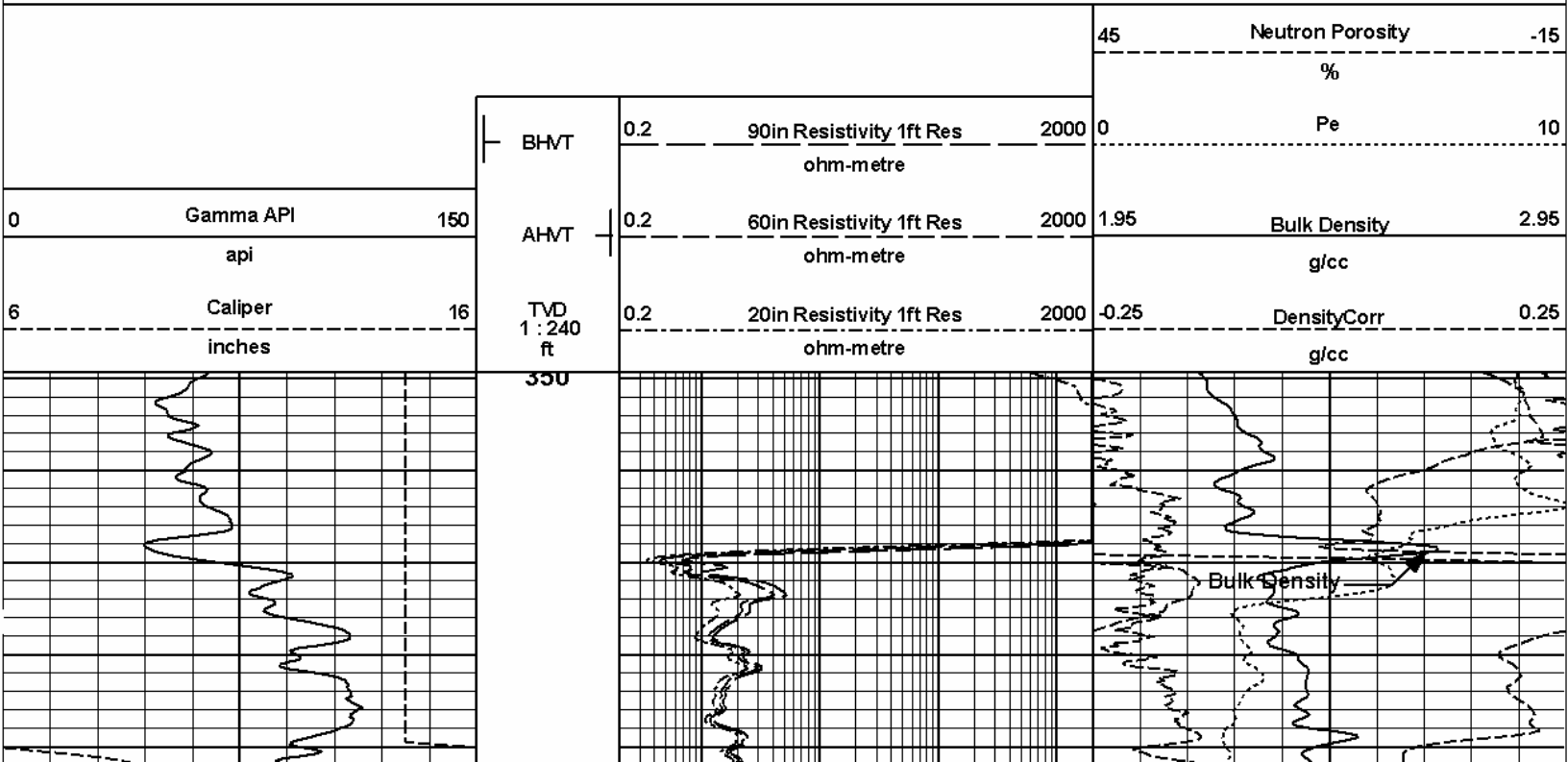
5 INCH REPEAT MD

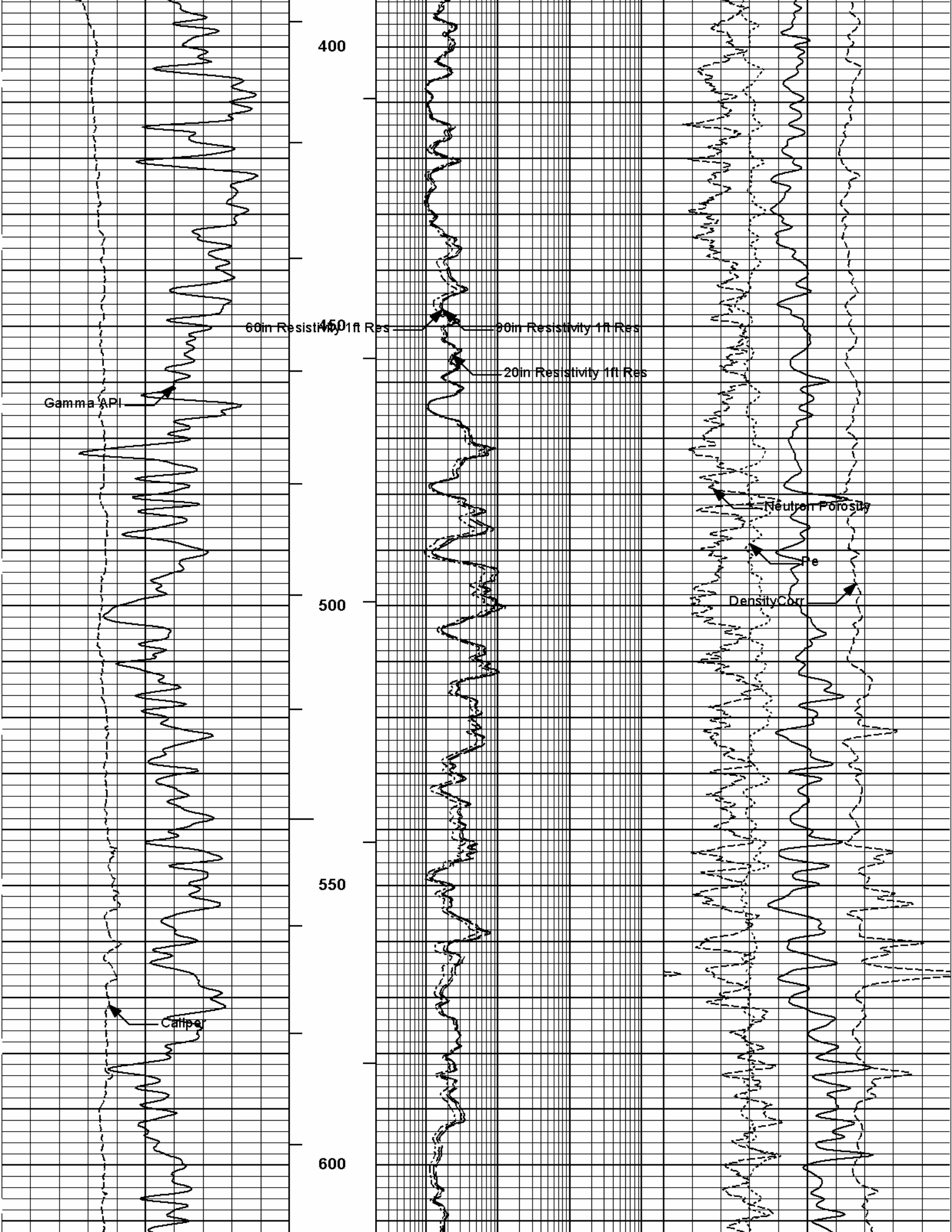
**HALLIBURTON**

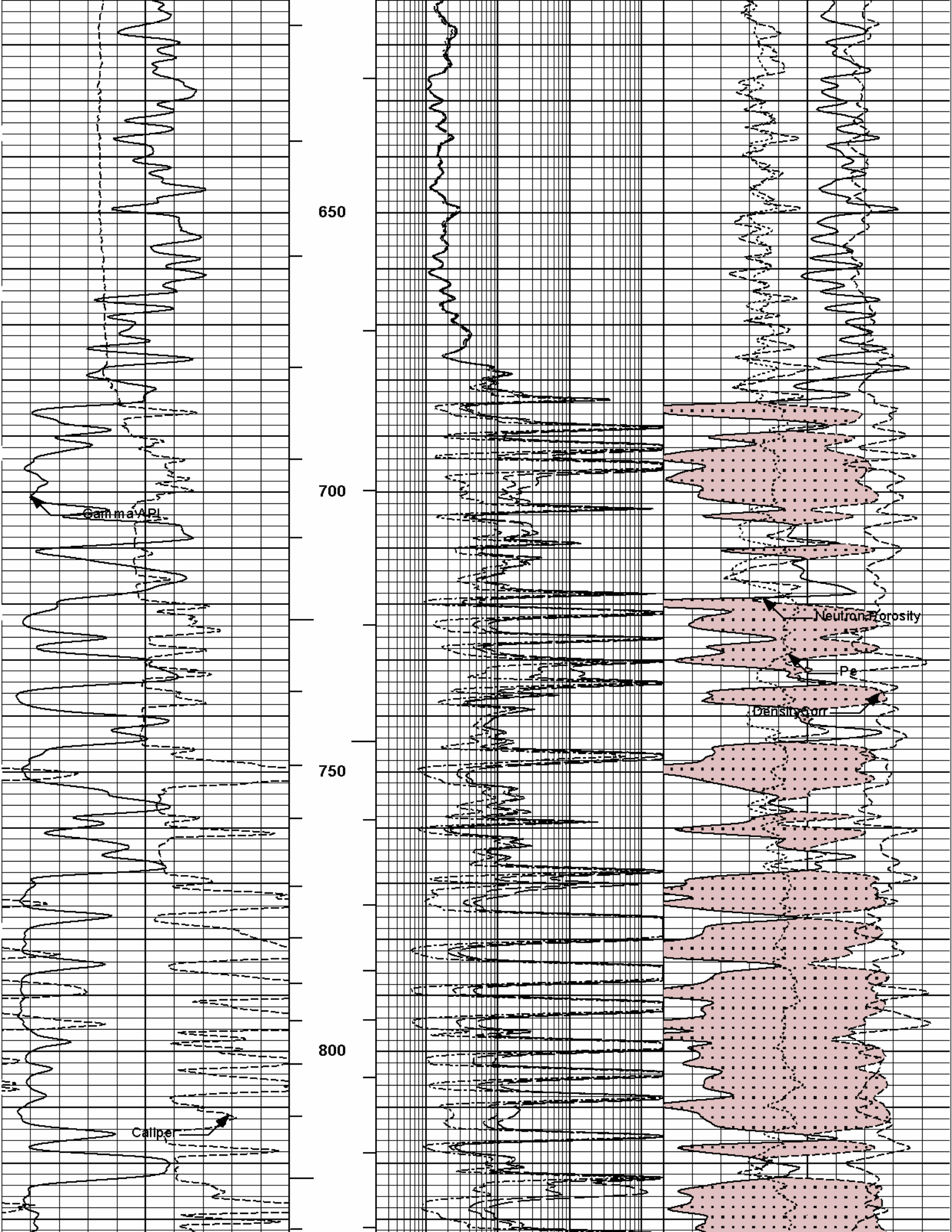
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 Plot Range: 349.37 ft to 4019 ft  
 Data: SIEGRIST\_2207\Well Based\CASING\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_MAIN\_SHELL

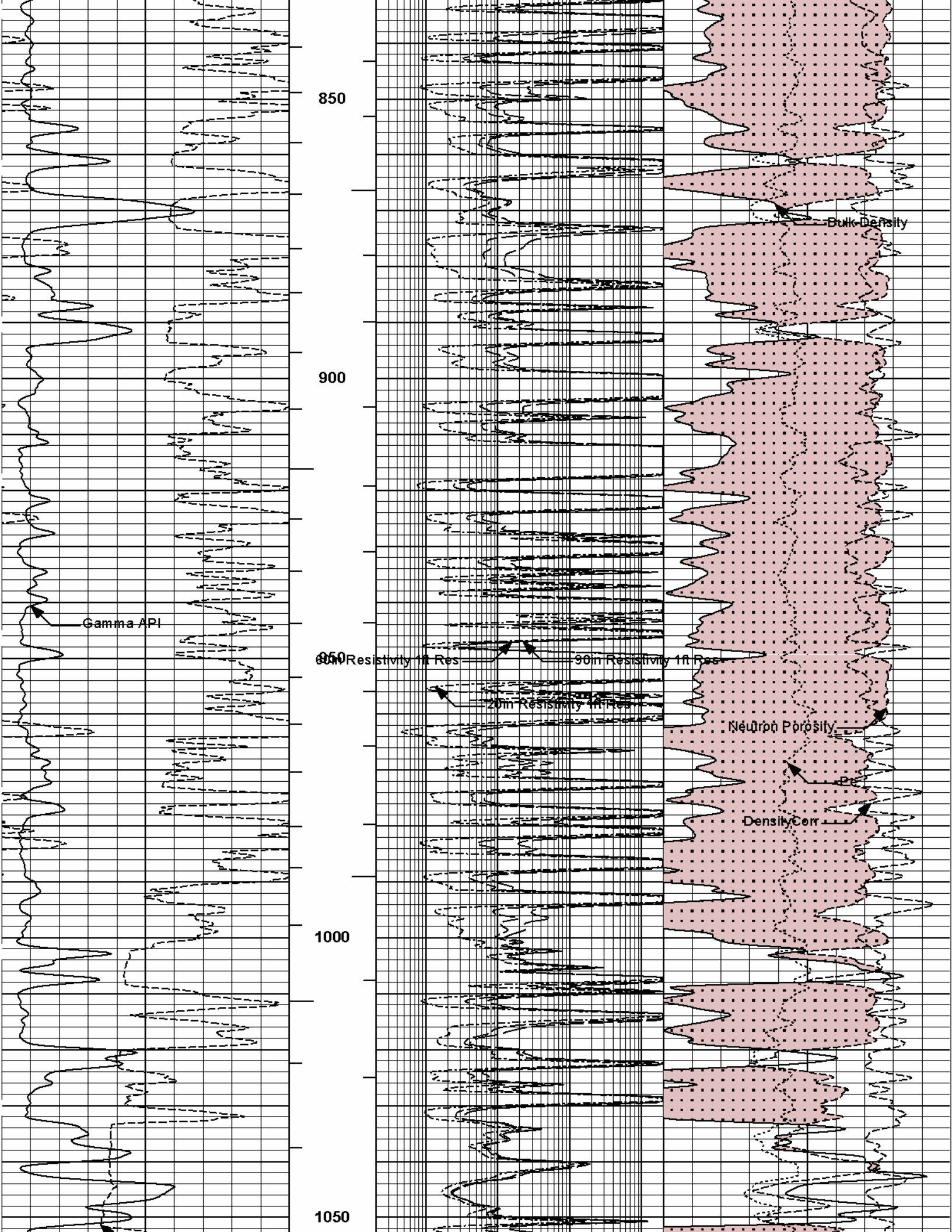
### 5 INCH MAIN LOG TVD

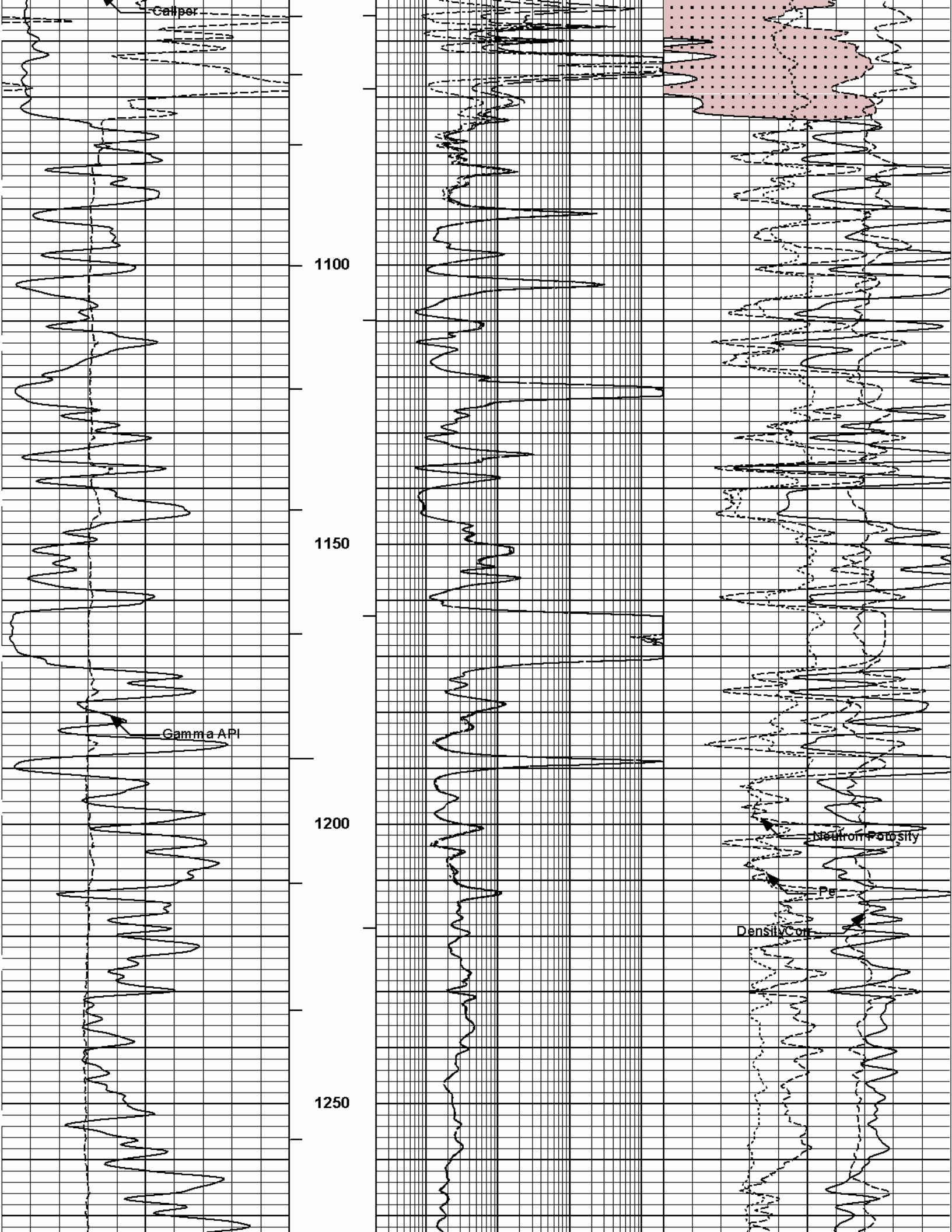
5 INCH MAIN MD

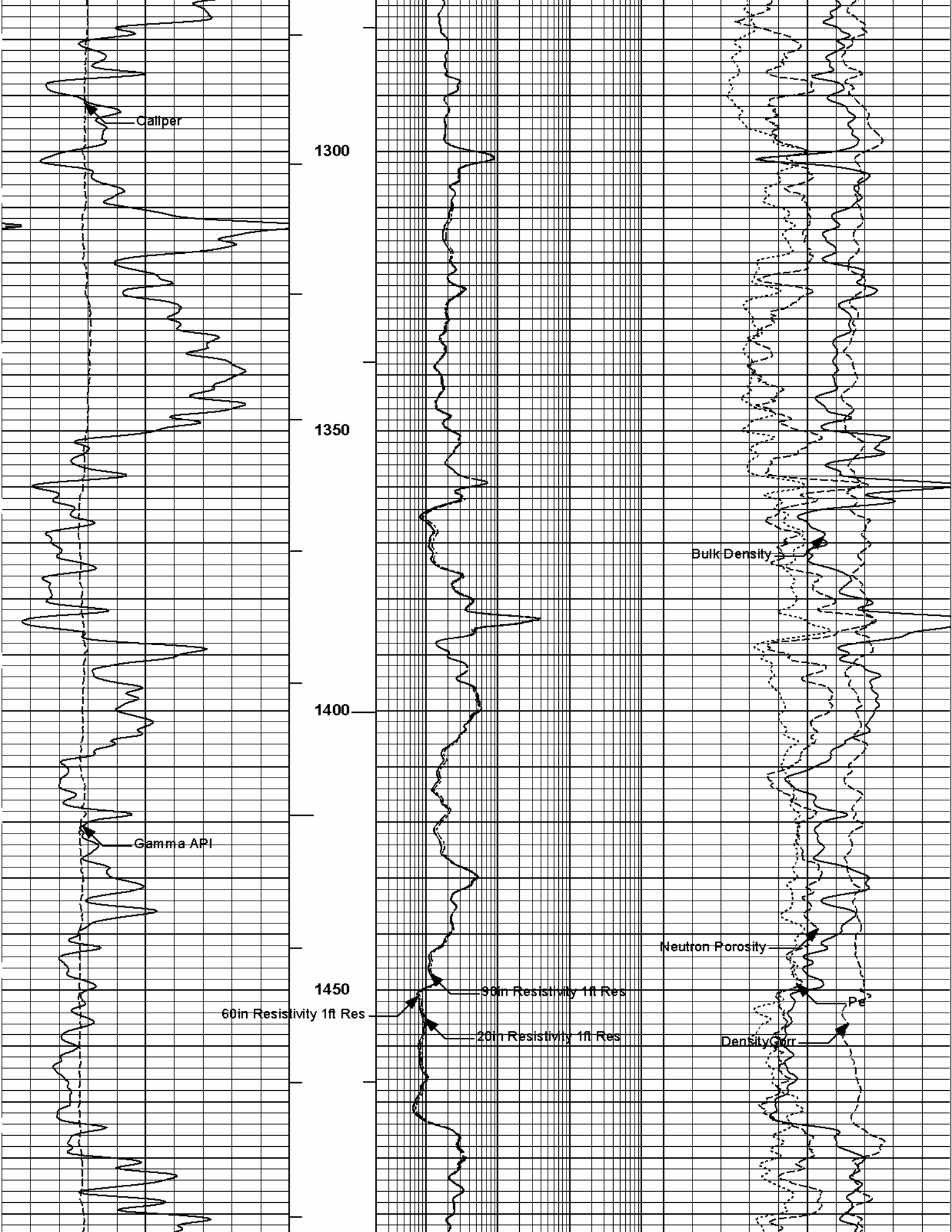


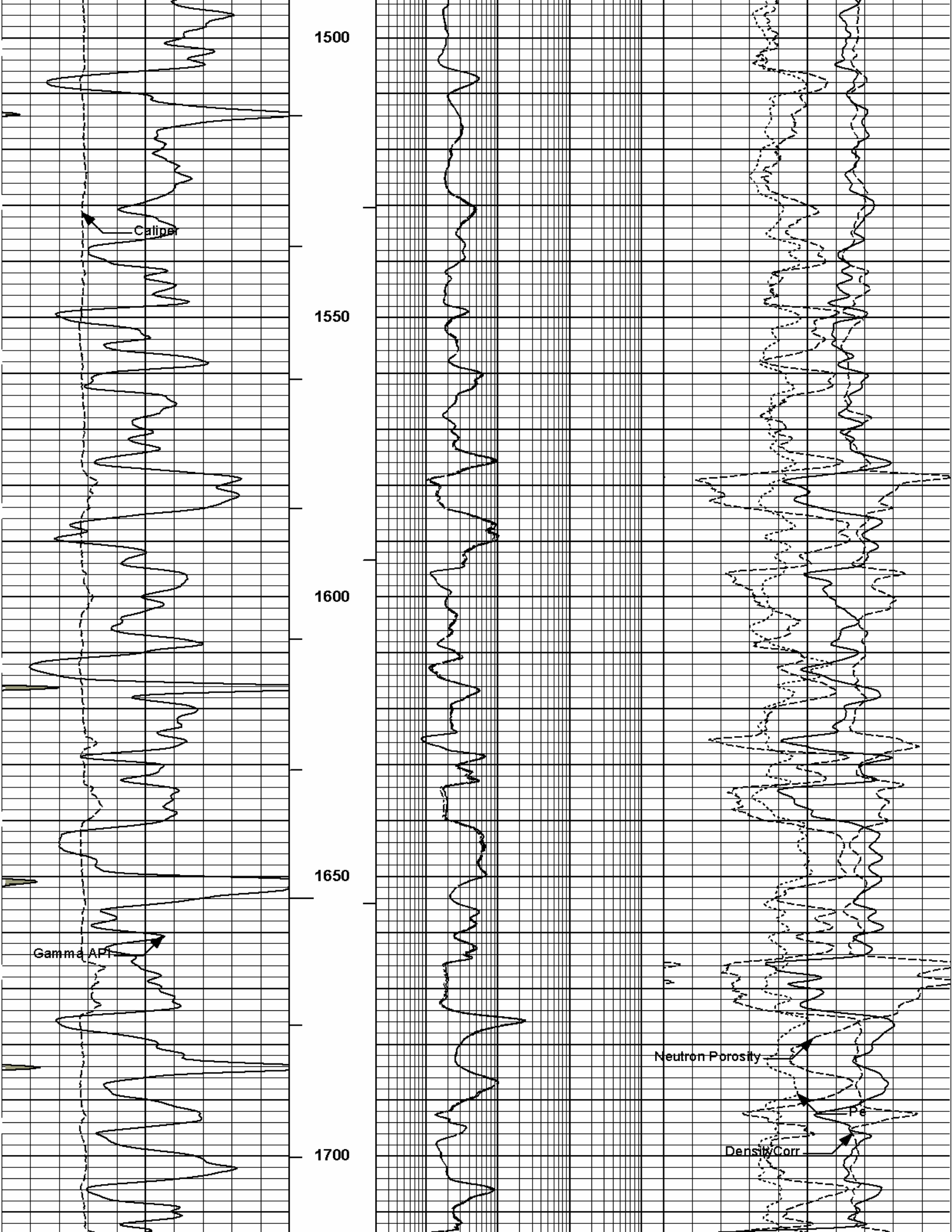


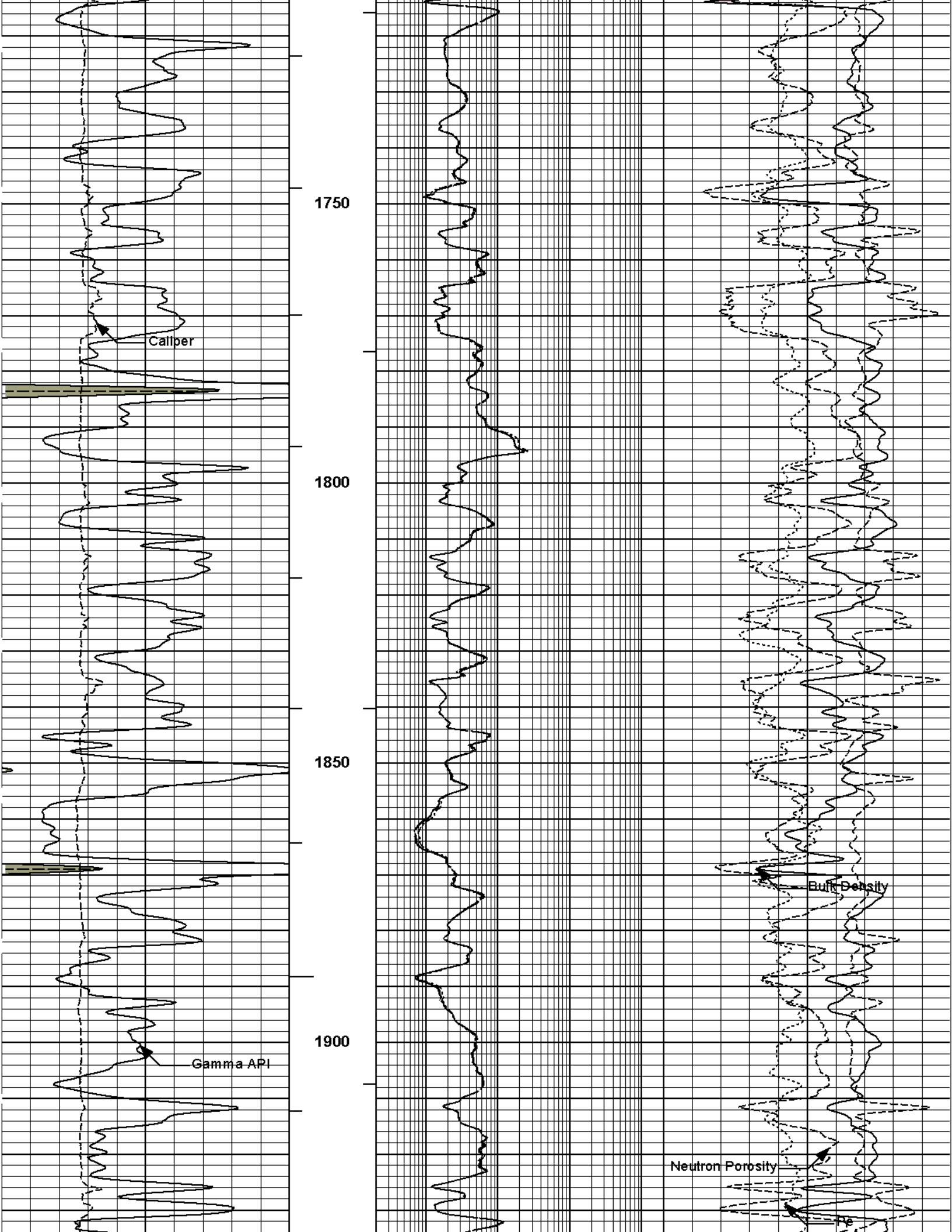


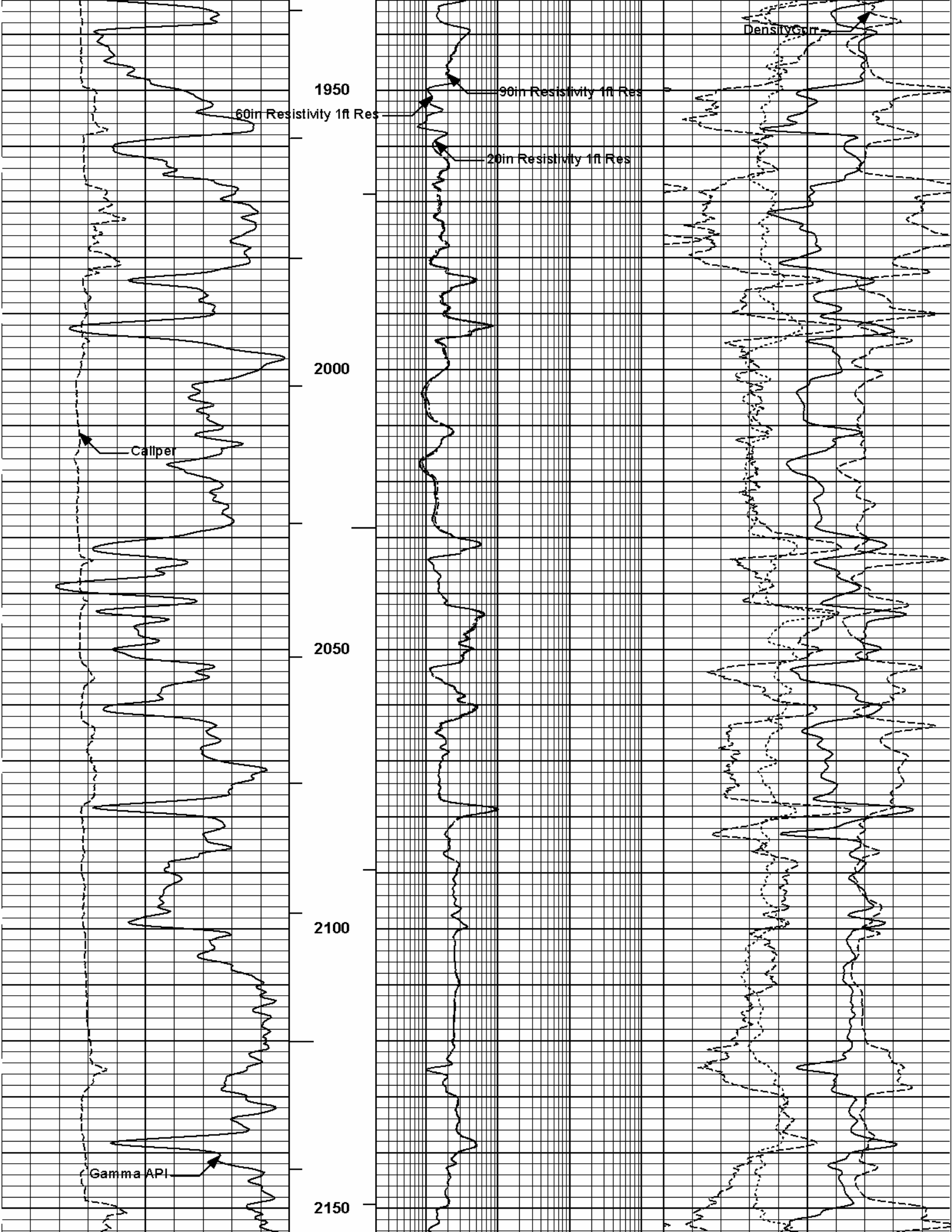


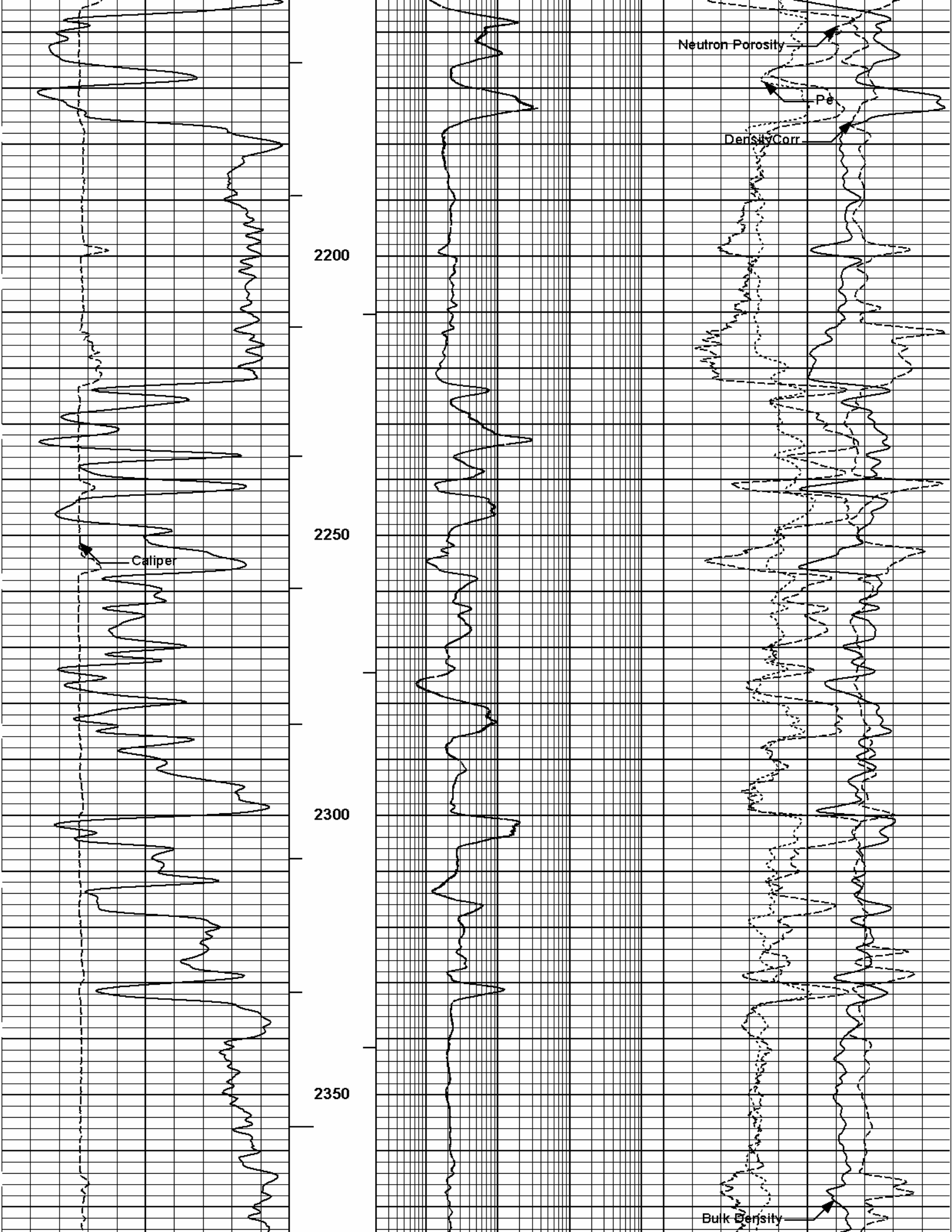


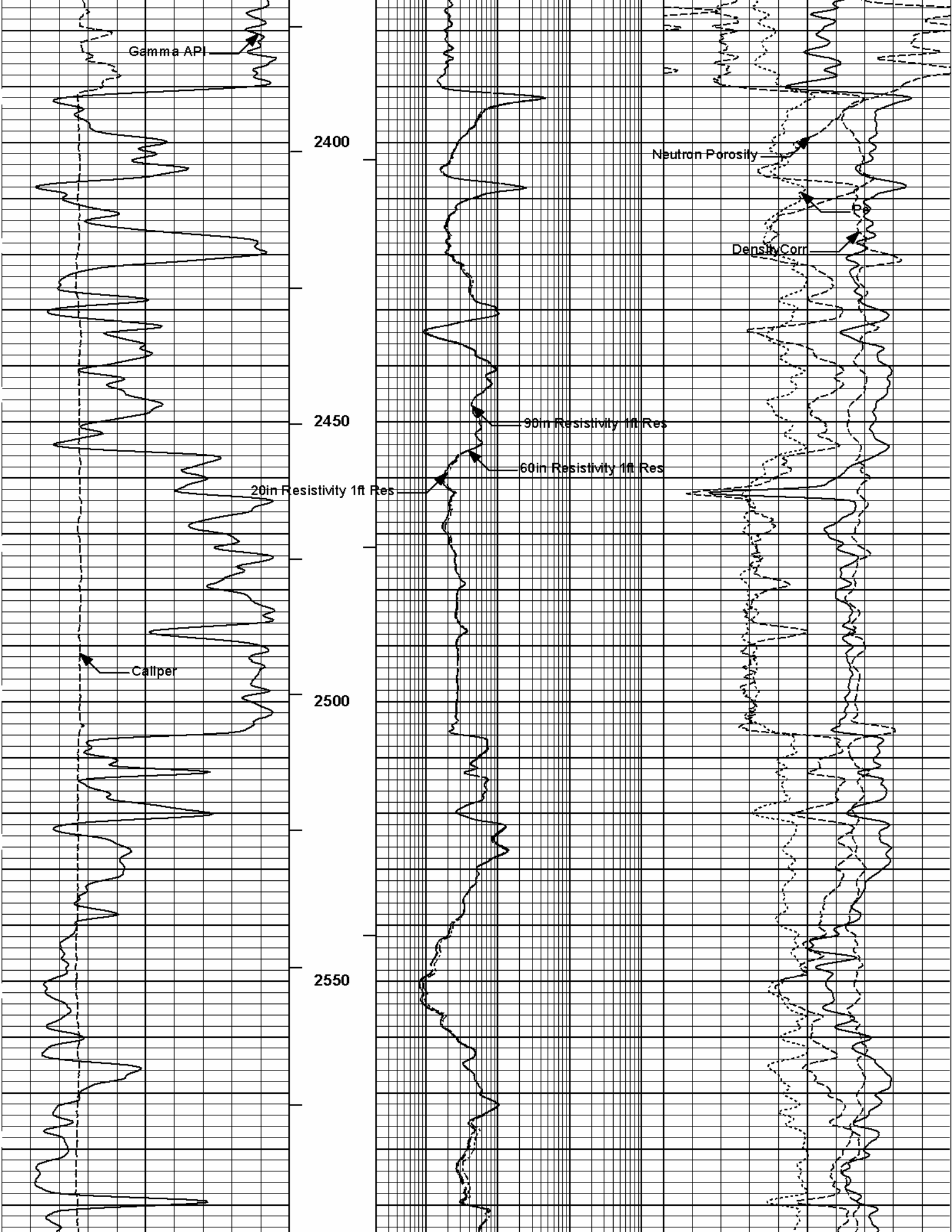


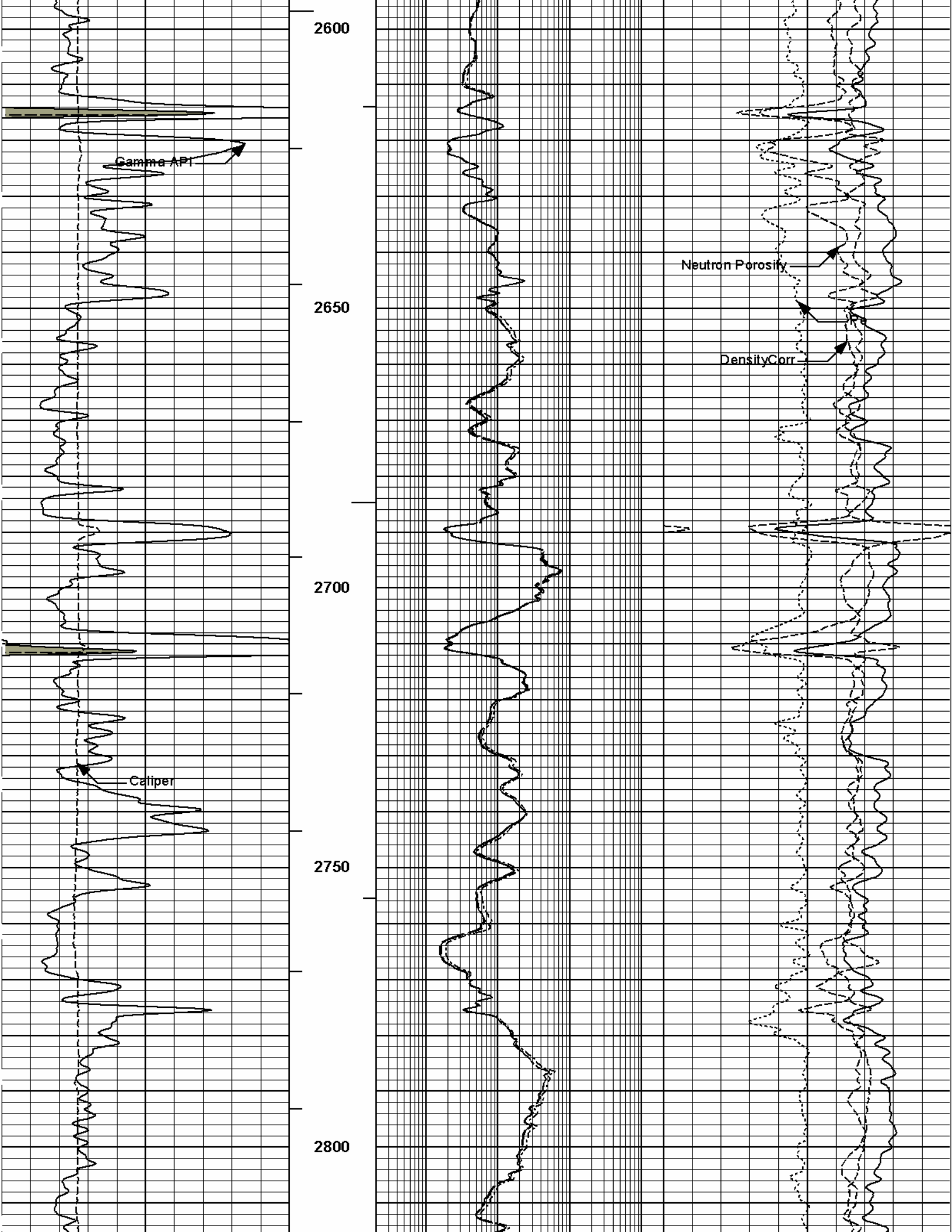


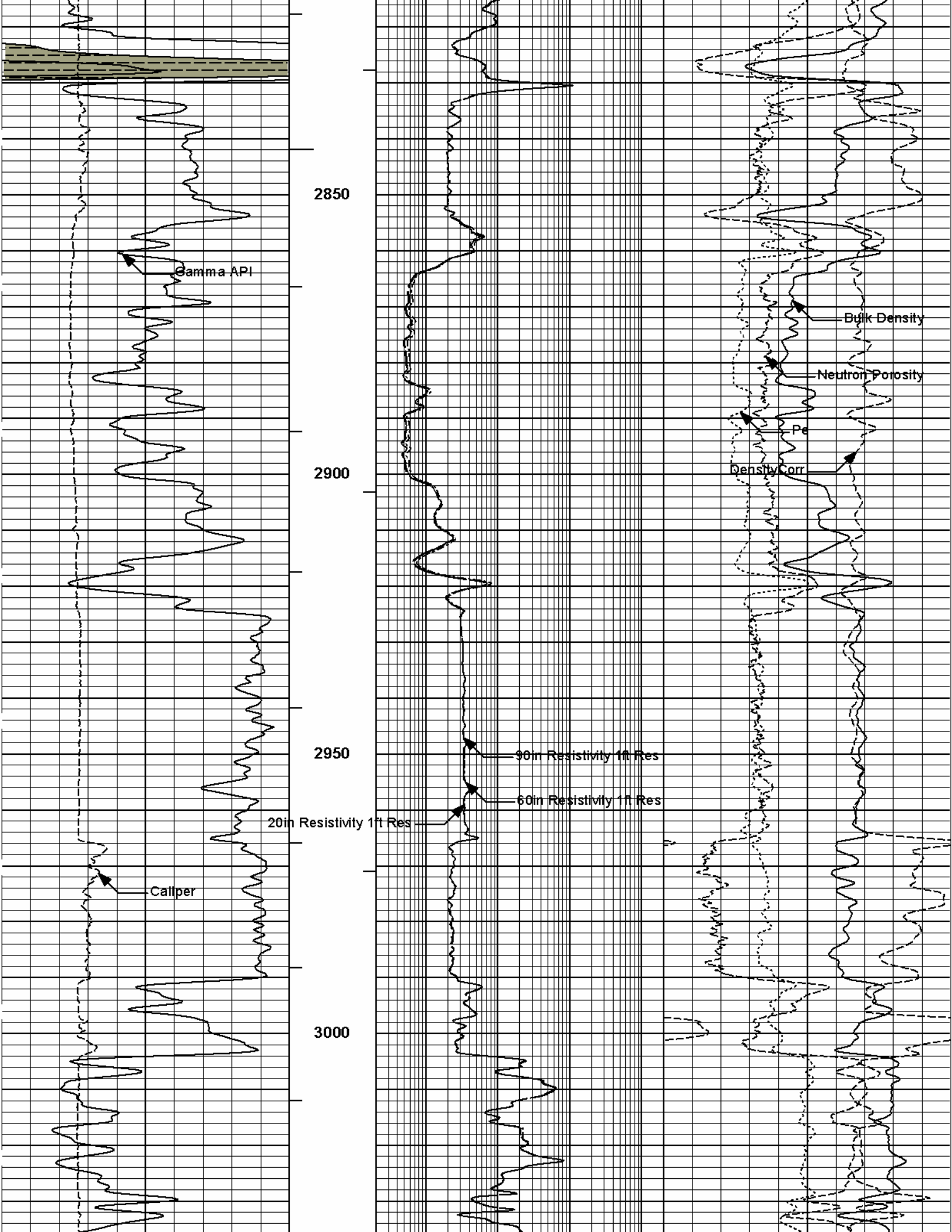


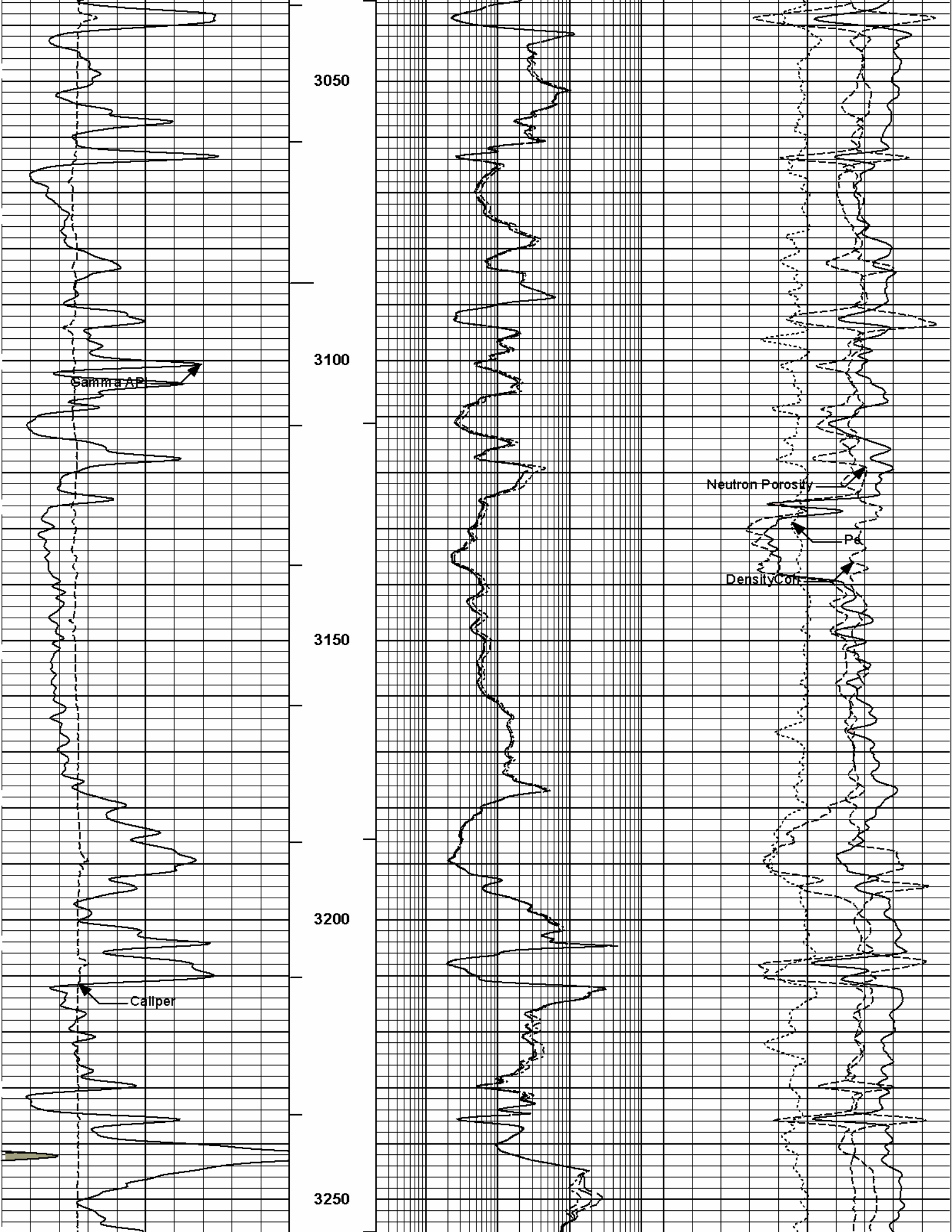


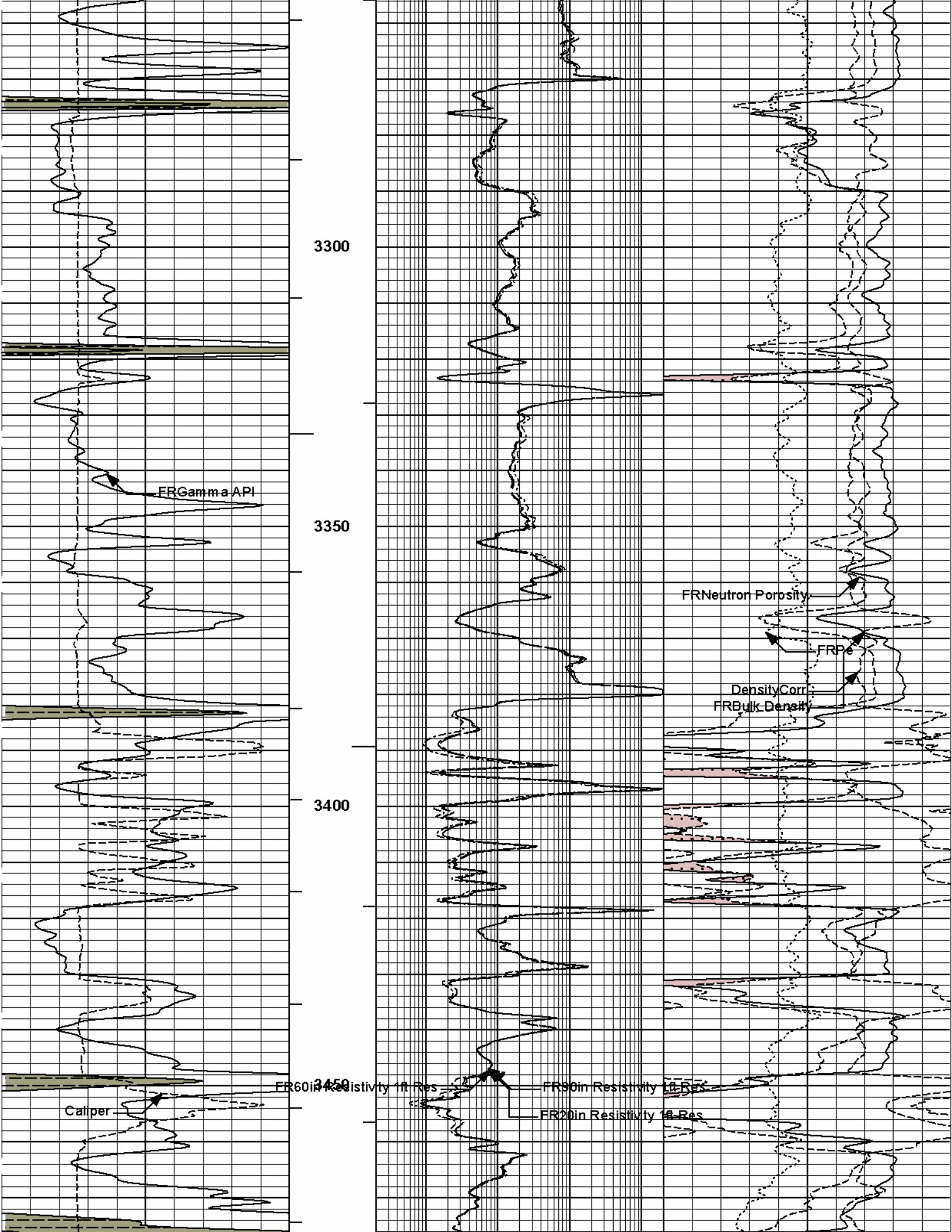


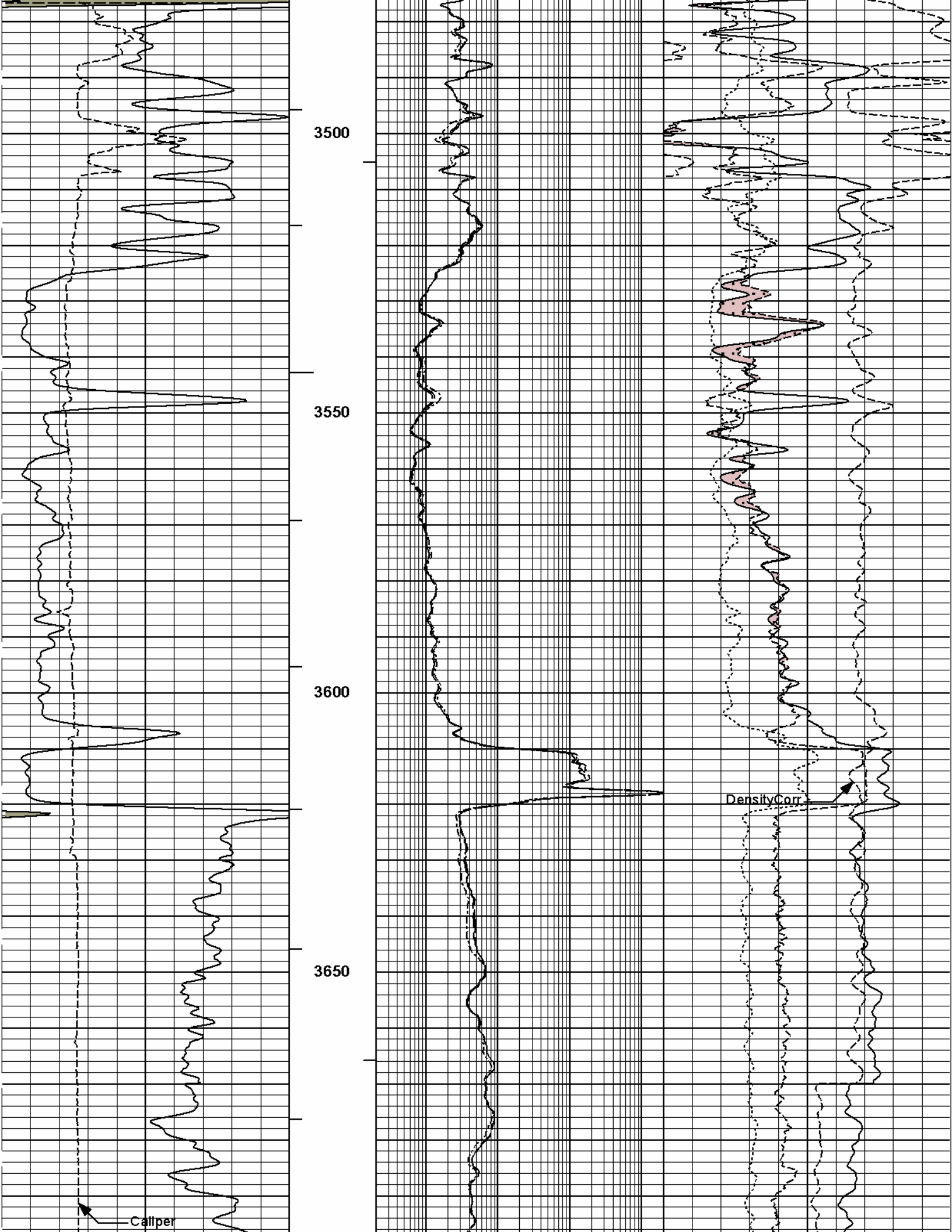


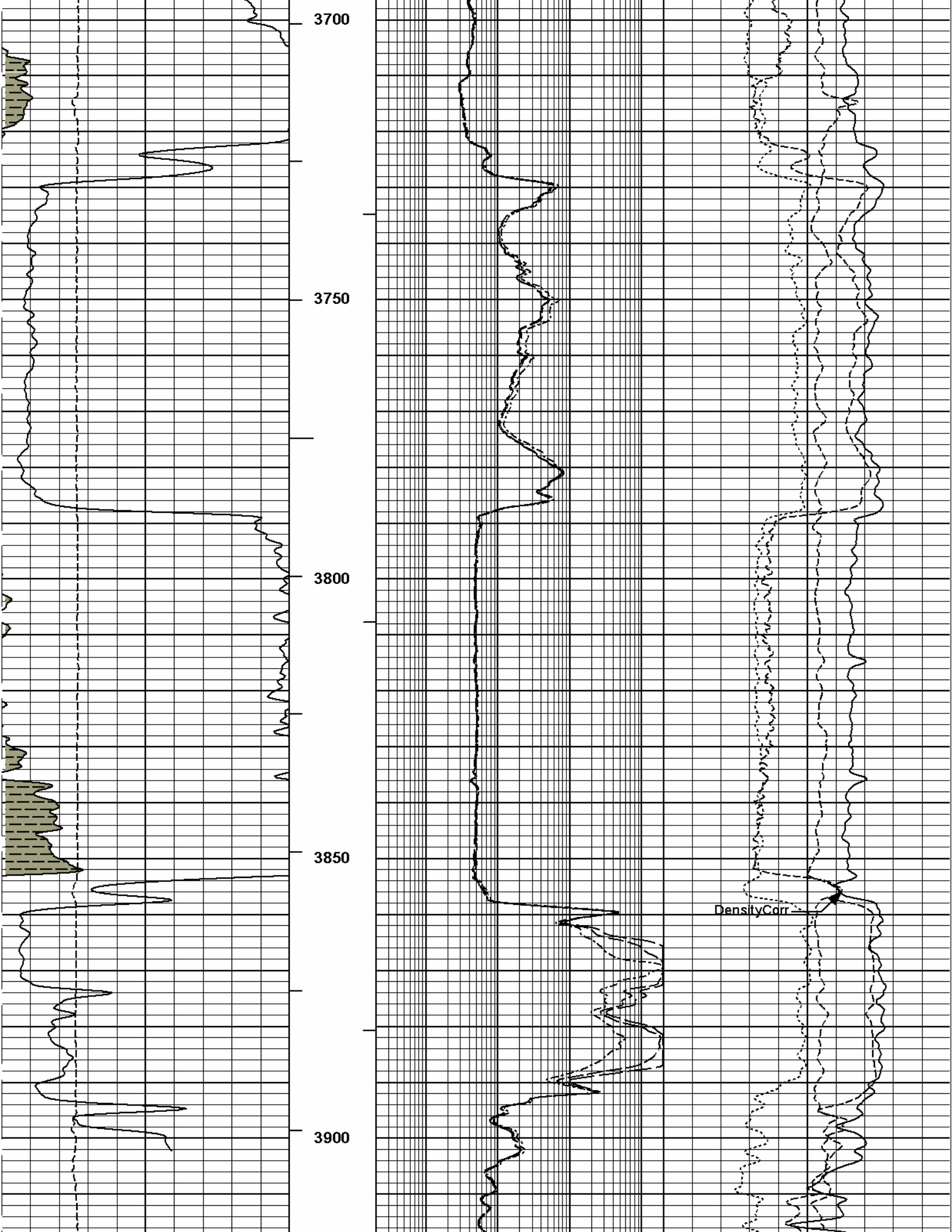


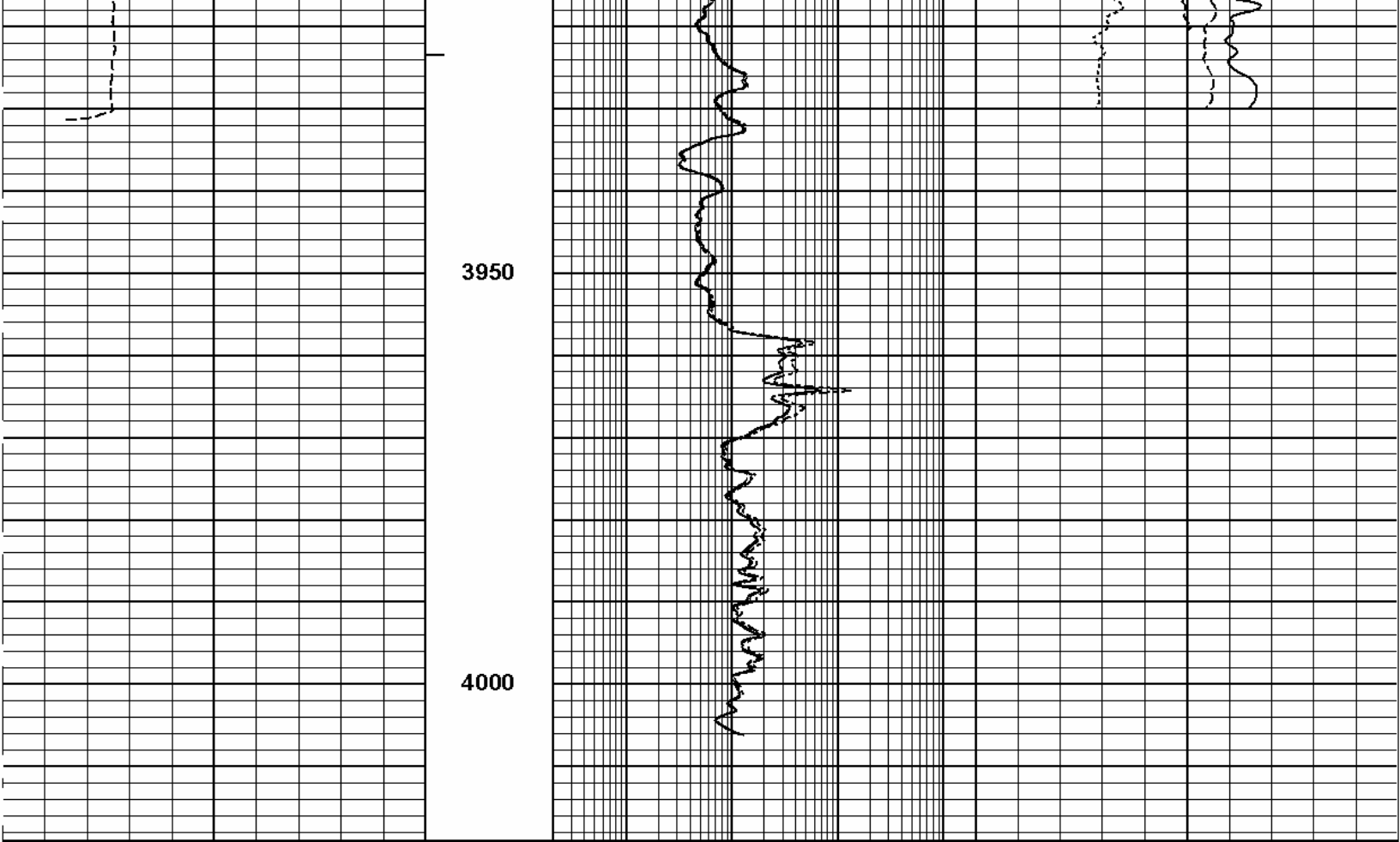












6	Caliper	16	TVD	0.2	20in Resistivity 1ft Res	2000	-0.25	DensityCorr	0.25
	inches		1 : 240 ft		ohm-metre			g/cc	
0	Gamma API	150	AHVT	0.2	60in Resistivity 1ft Res	2000	1.95	Bulk Density	2.95
	api				ohm-metre			g/cc	
			BHVT	0.2	90in Resistivity 1ft Res	2000	0	Pe	10
					ohm-metre				
							45	Neutron Porosity	-15
								%	

**HALLIBURTON**

Plot Time: 16-Mar-13 15:12:26  
 Plot Range: 349.37 ft to 4019 ft  
 Data: SIEGRIST\_2207\Well Based\CASING\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_MAIN\_SHELL

**5 INCH MAIN LOG TVD**

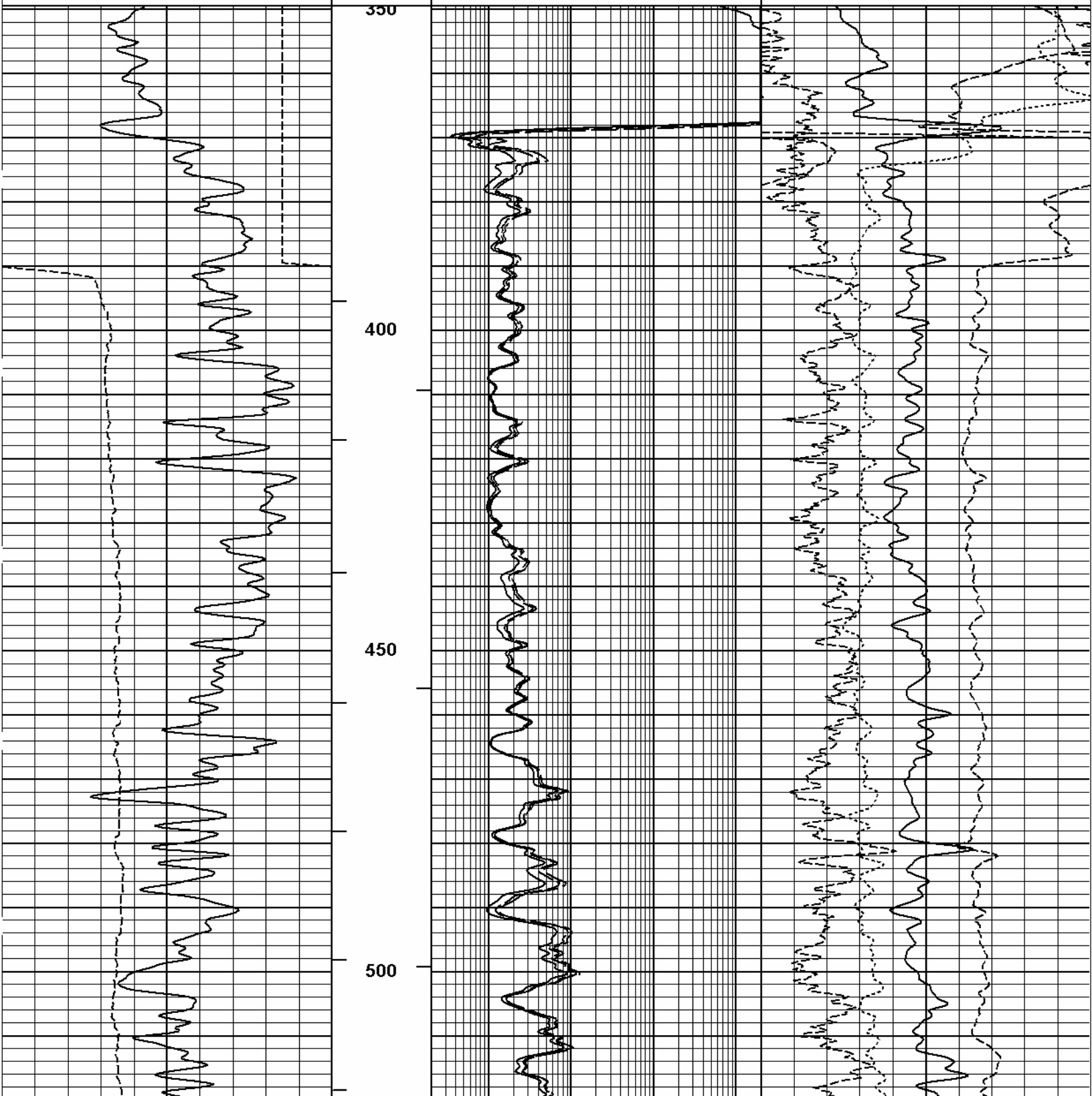
**HALLIBURTON**

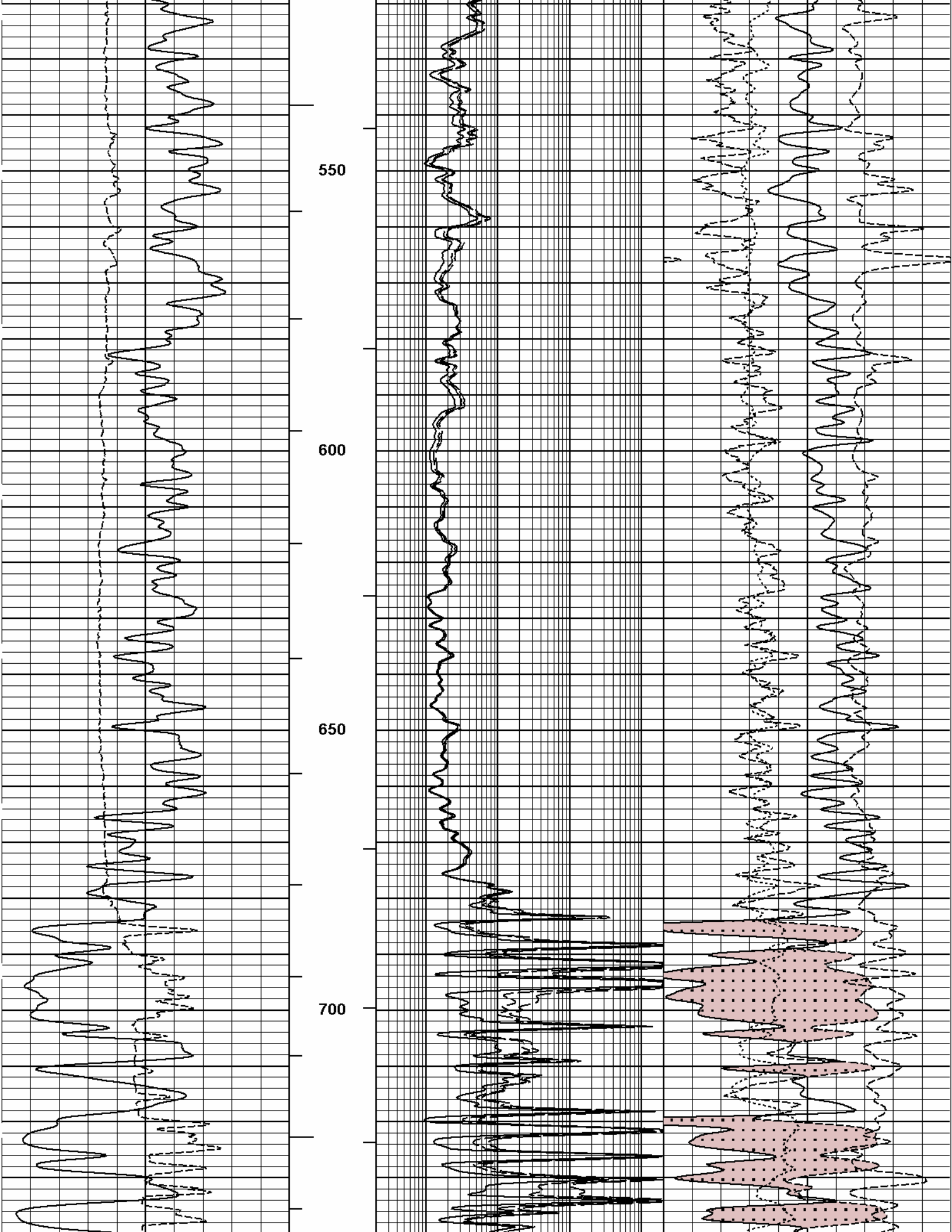
Plot Time: 16-Mar-13 15:12:26  
 Plot Range: 349.37 ft to 4019 ft  
 Data: SIEGRIST\_2207\Well Based\CASING\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_RPT\_SHELL

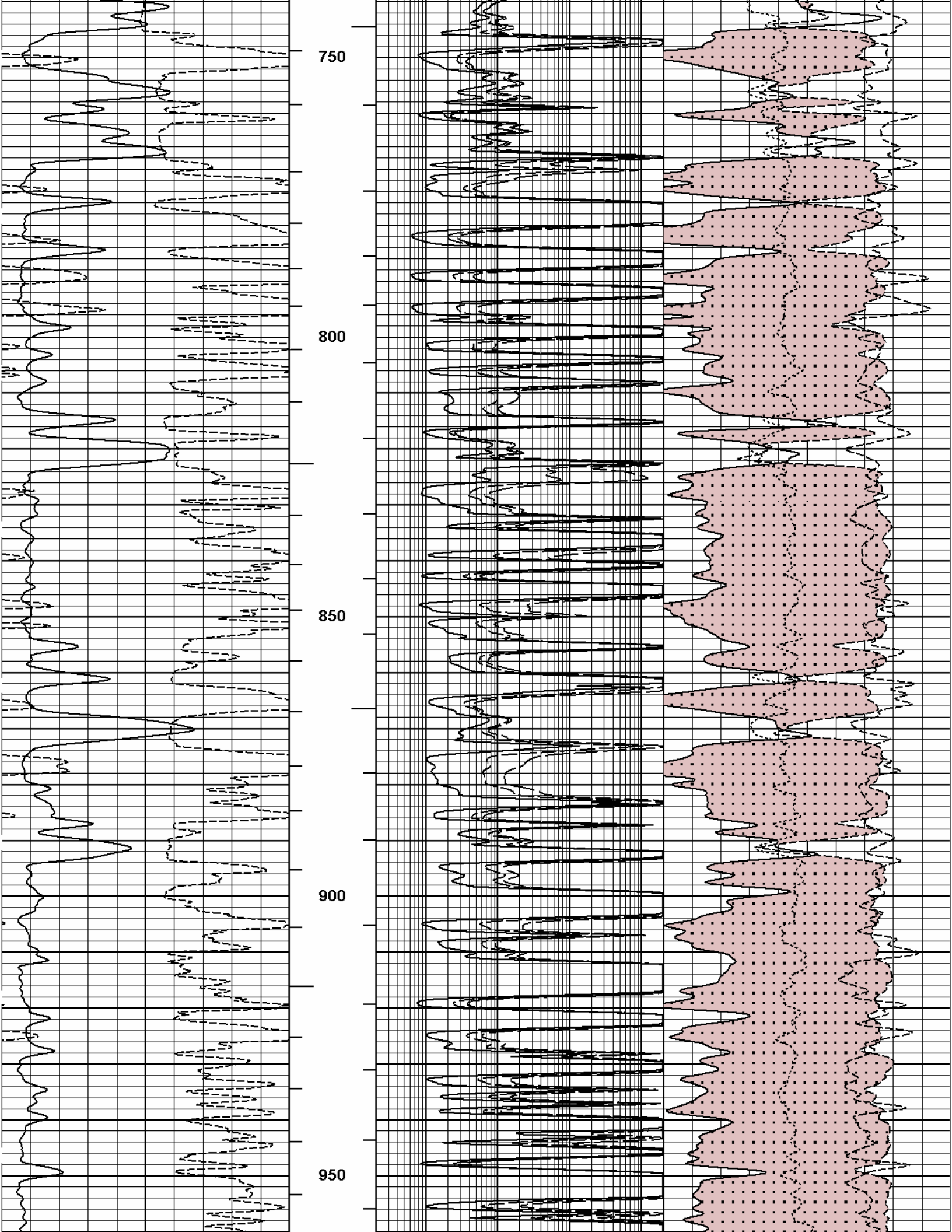
**5 INCH REPEAT LOG TVD**

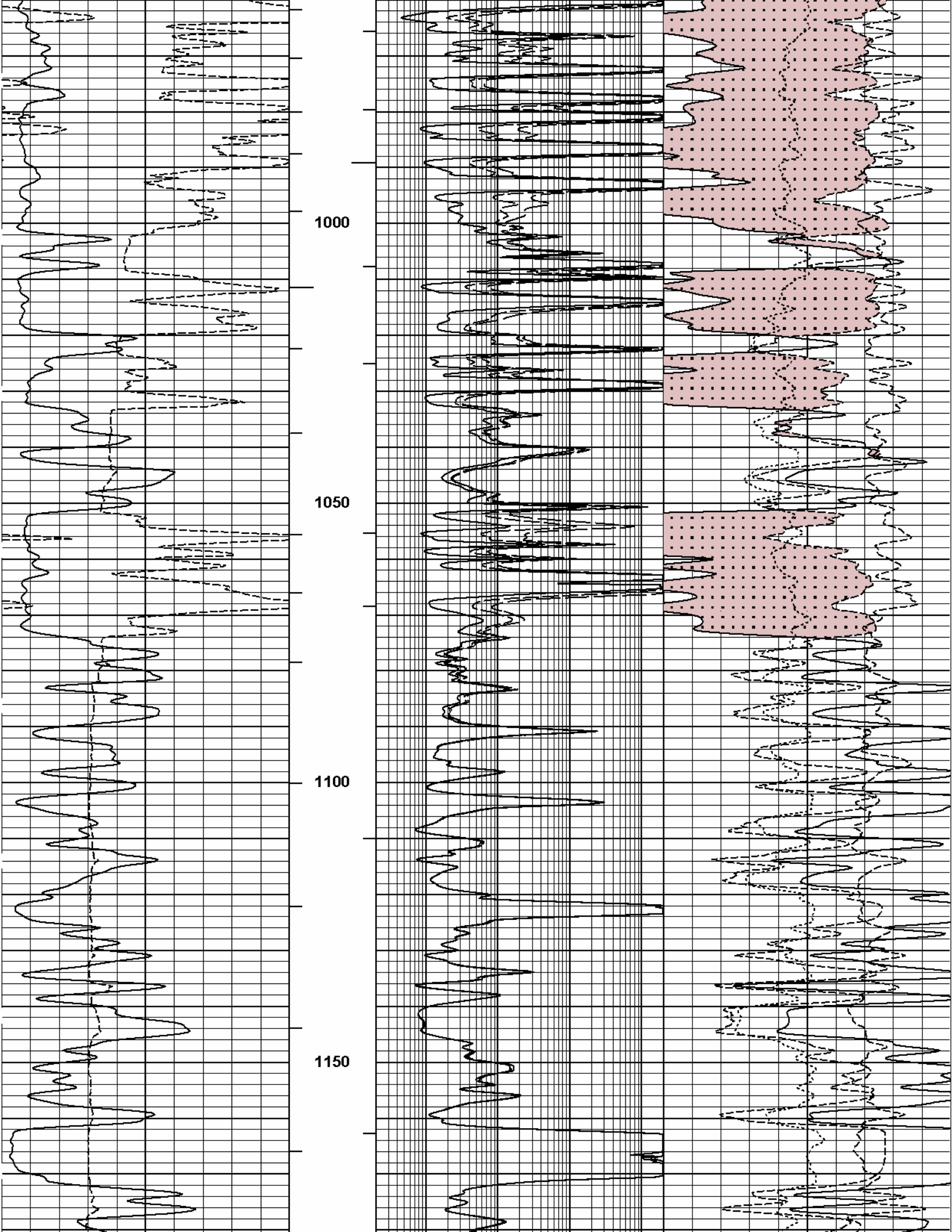
5 INCH REPEAT MD

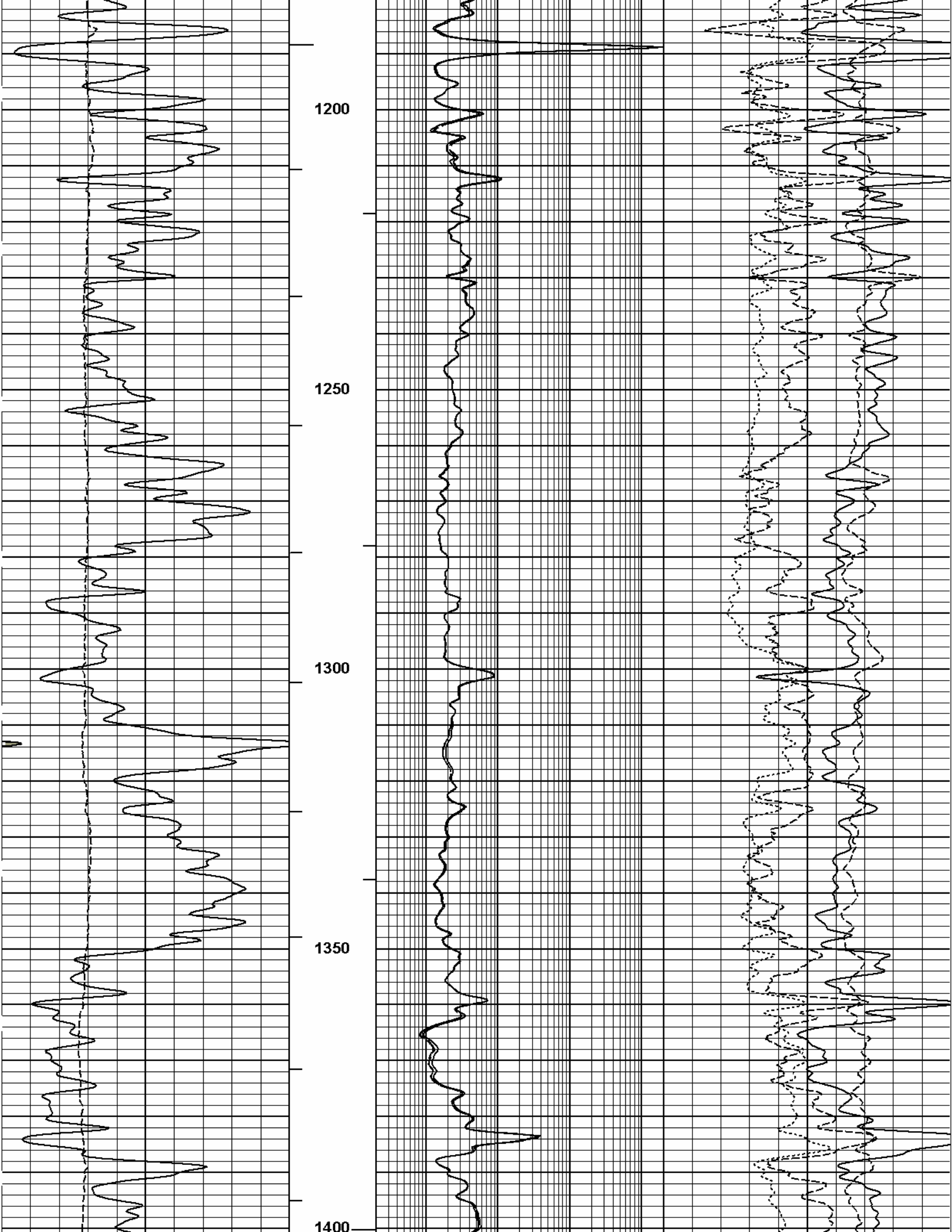
					45	Neutron Porosity		-15	
					%				
					0	Pe		10	
0	Gamma API	150	BHVT	0.2	90in Resistivity 1ft Res	2000			
					ohm-metre				
			AHVT	0.2	60in Resistivity 1ft Res	2000	1.95	Bulk Density	2.95
					ohm-metre				
6	Caliper	16	TVD	0.2	20in Resistivity 1ft Res	2000	-0.25	DensityCorr	0.25
					ohm-metre				
					g/cc				
					g/cc				

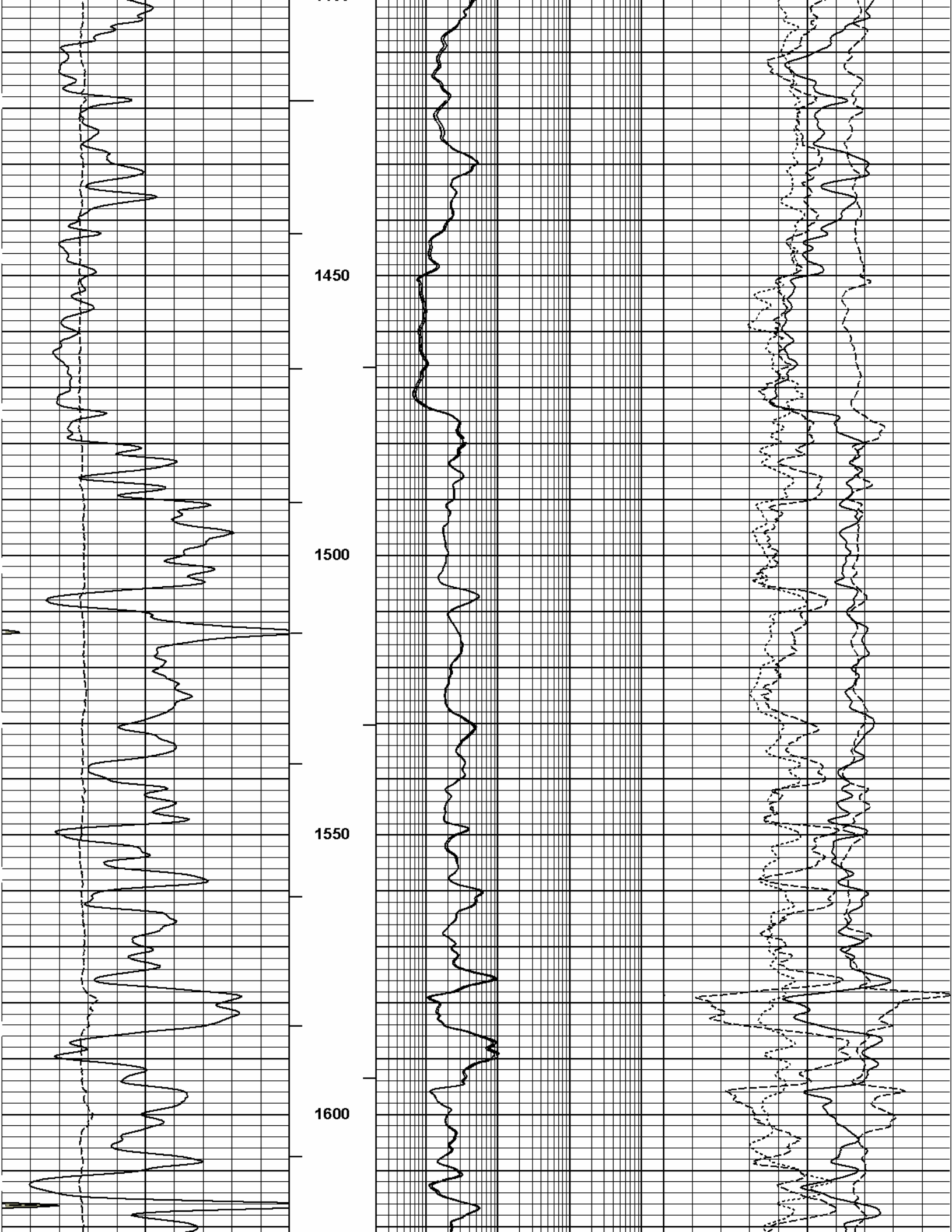


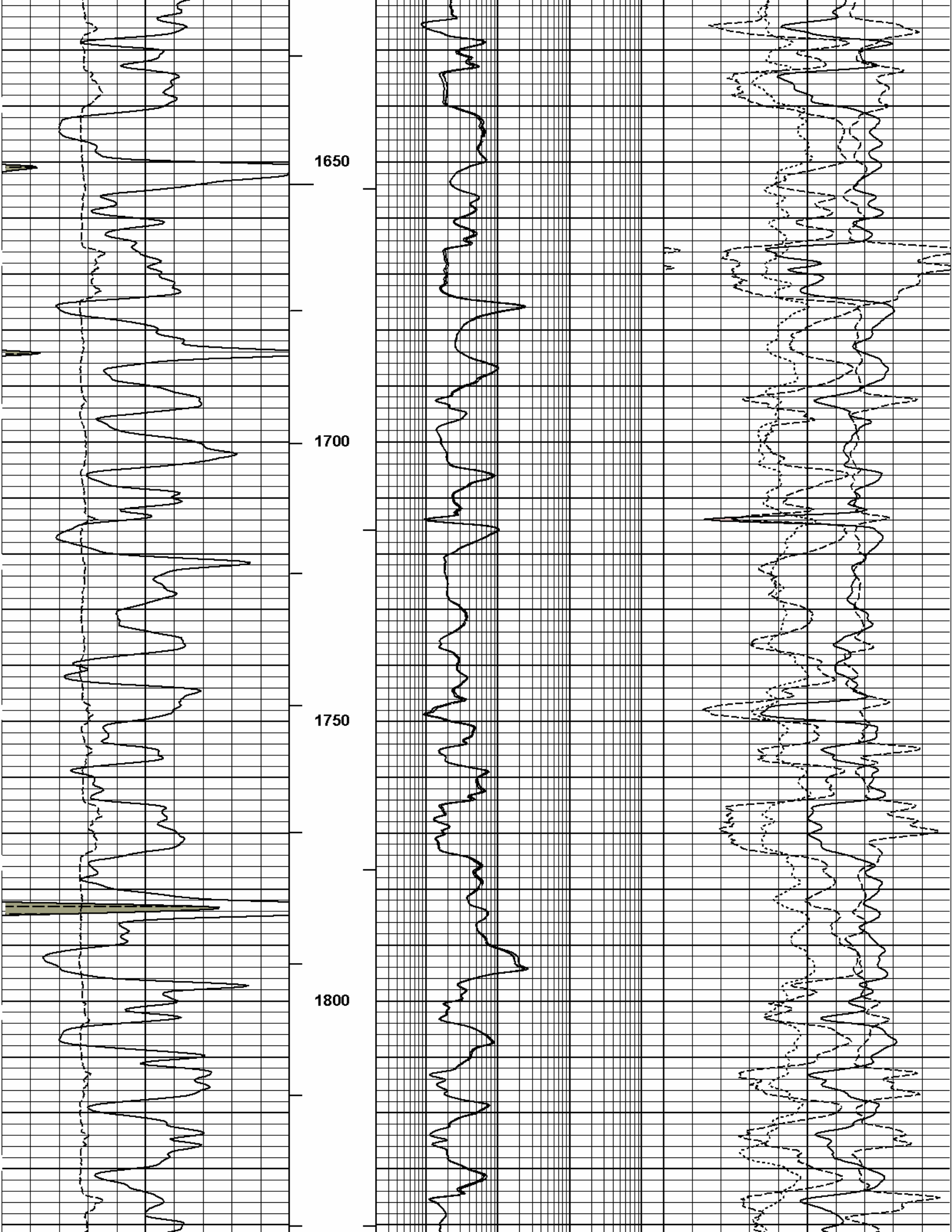


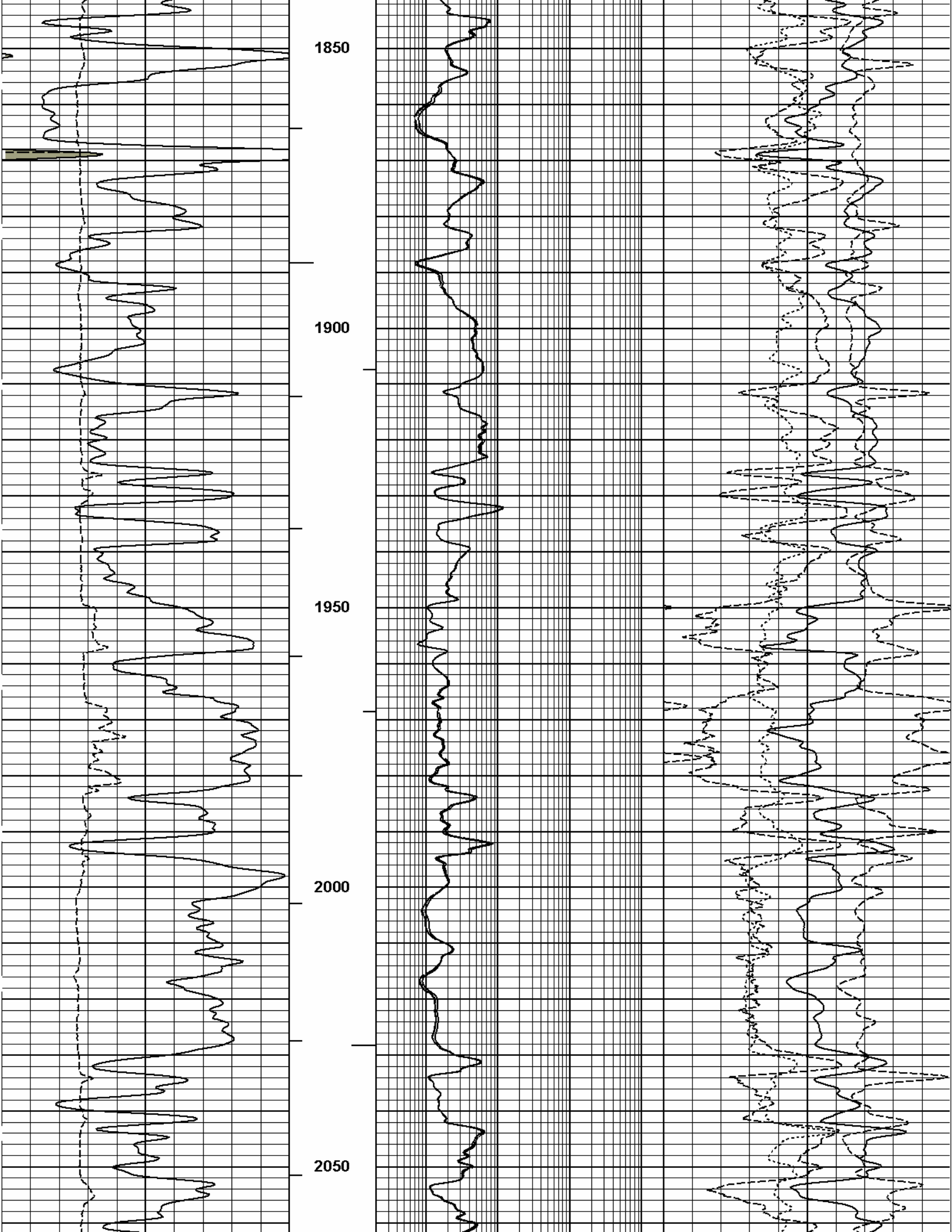


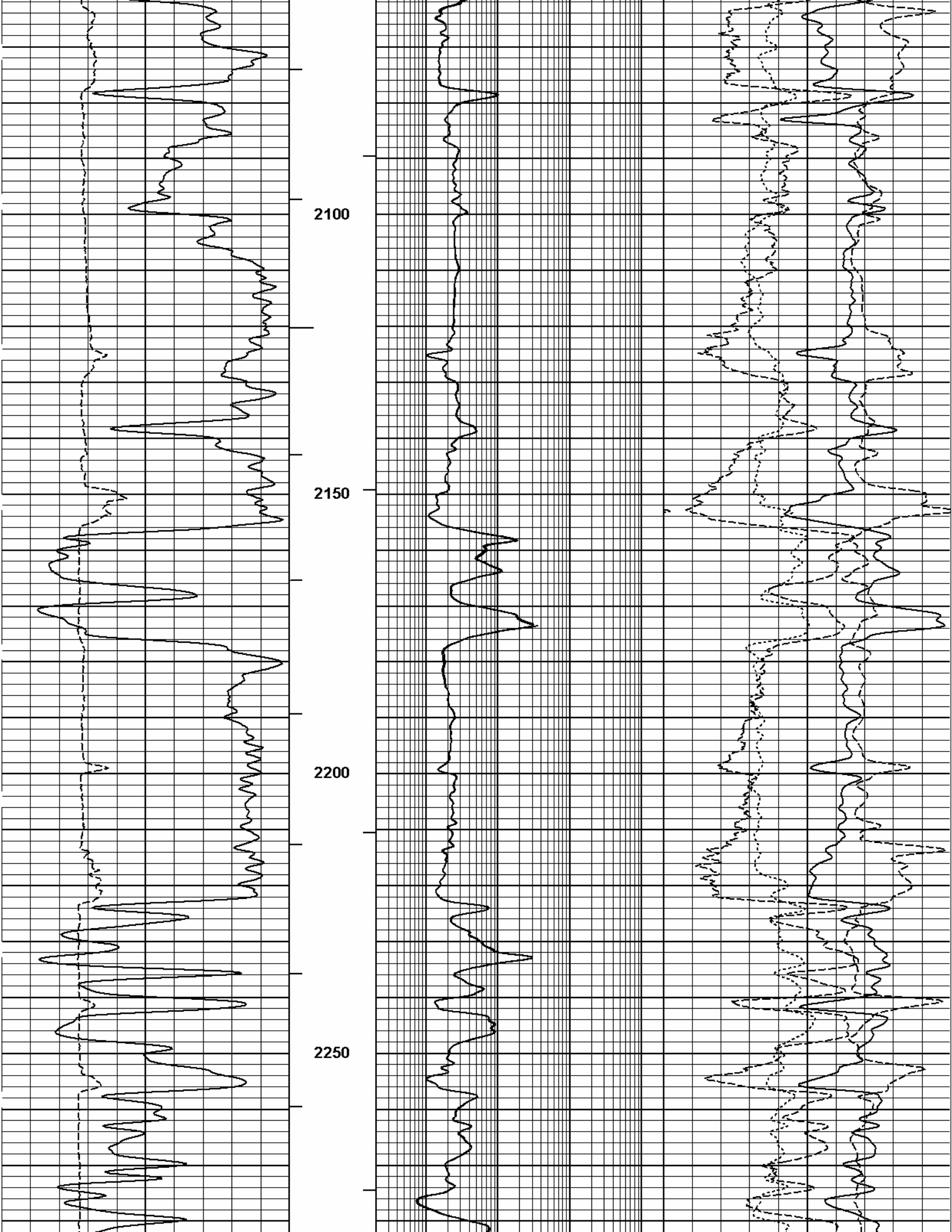


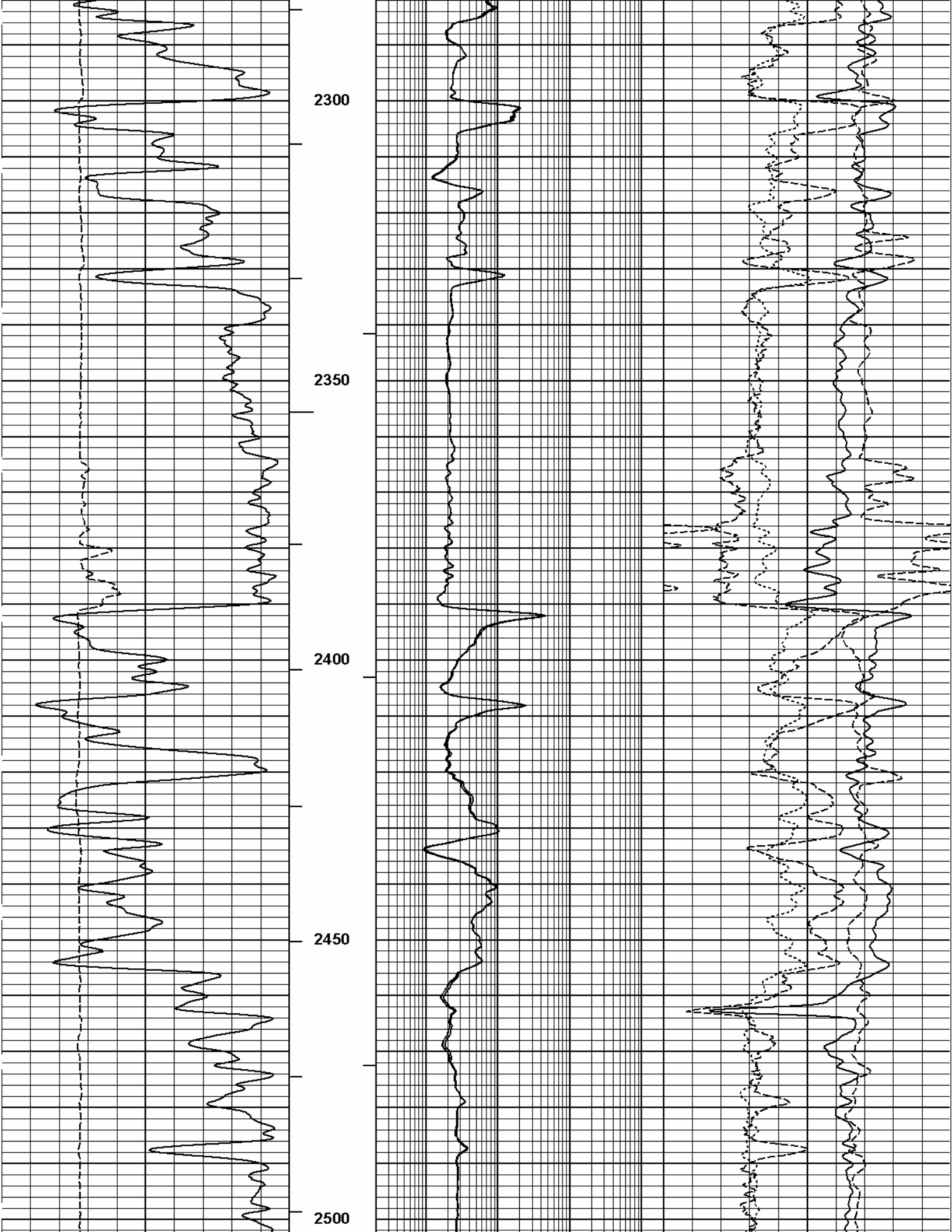


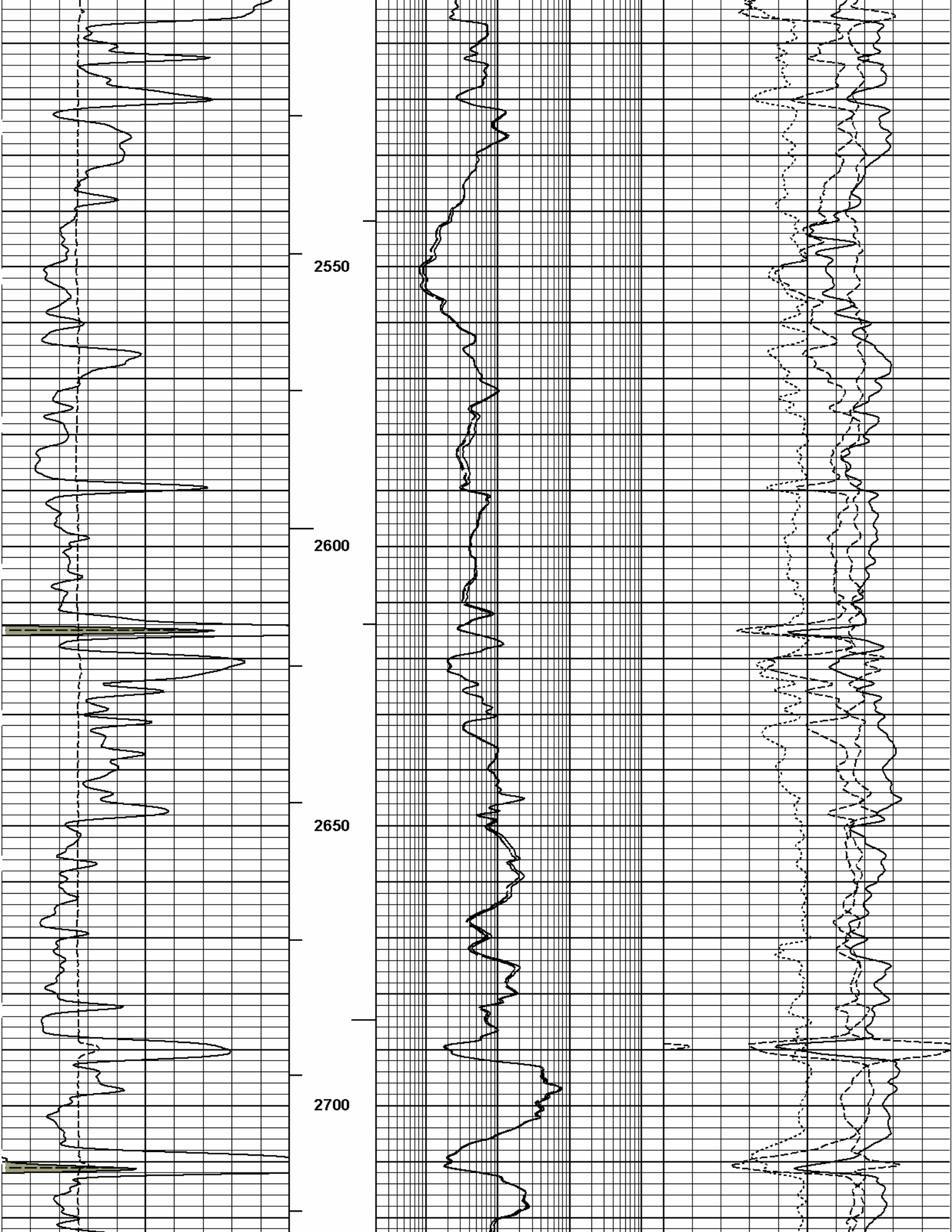


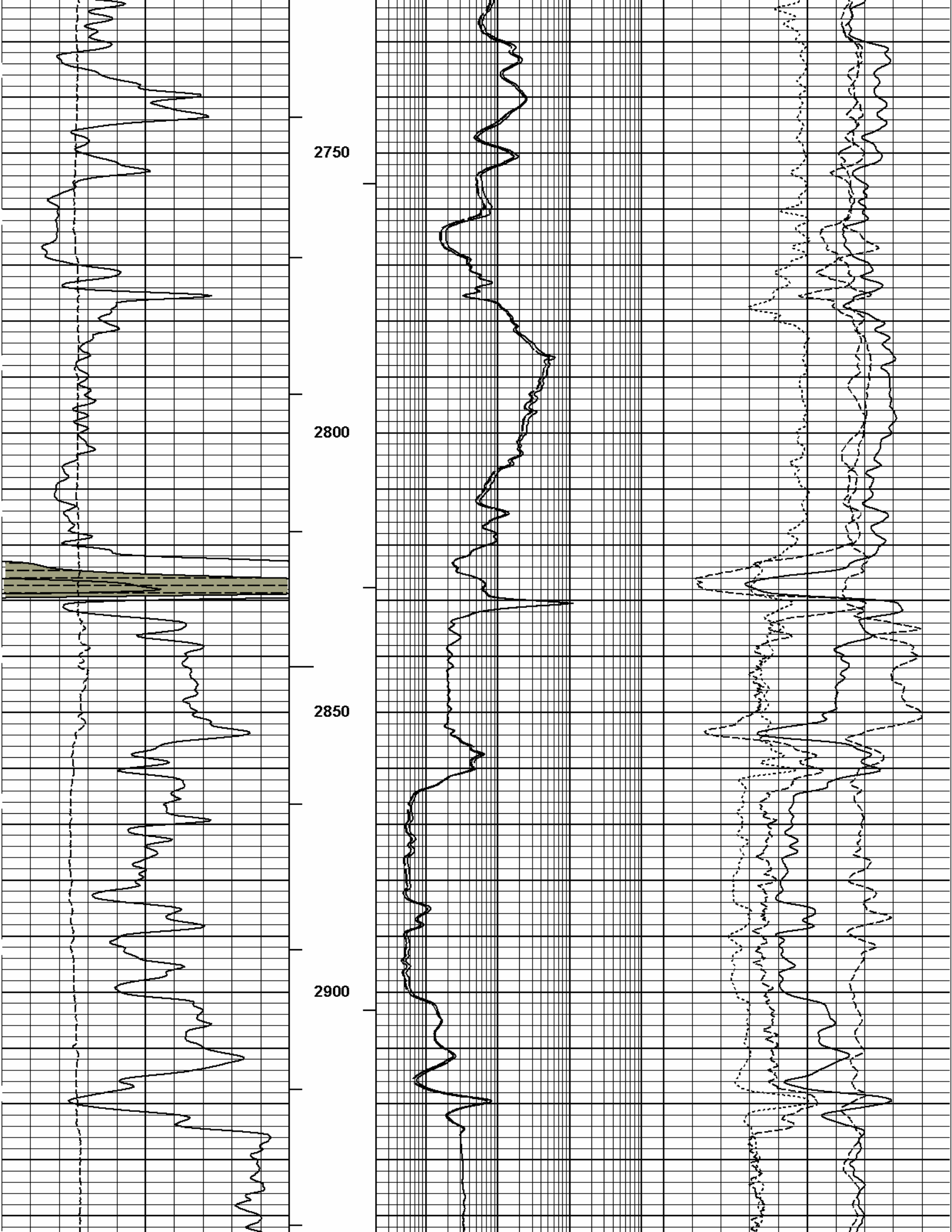


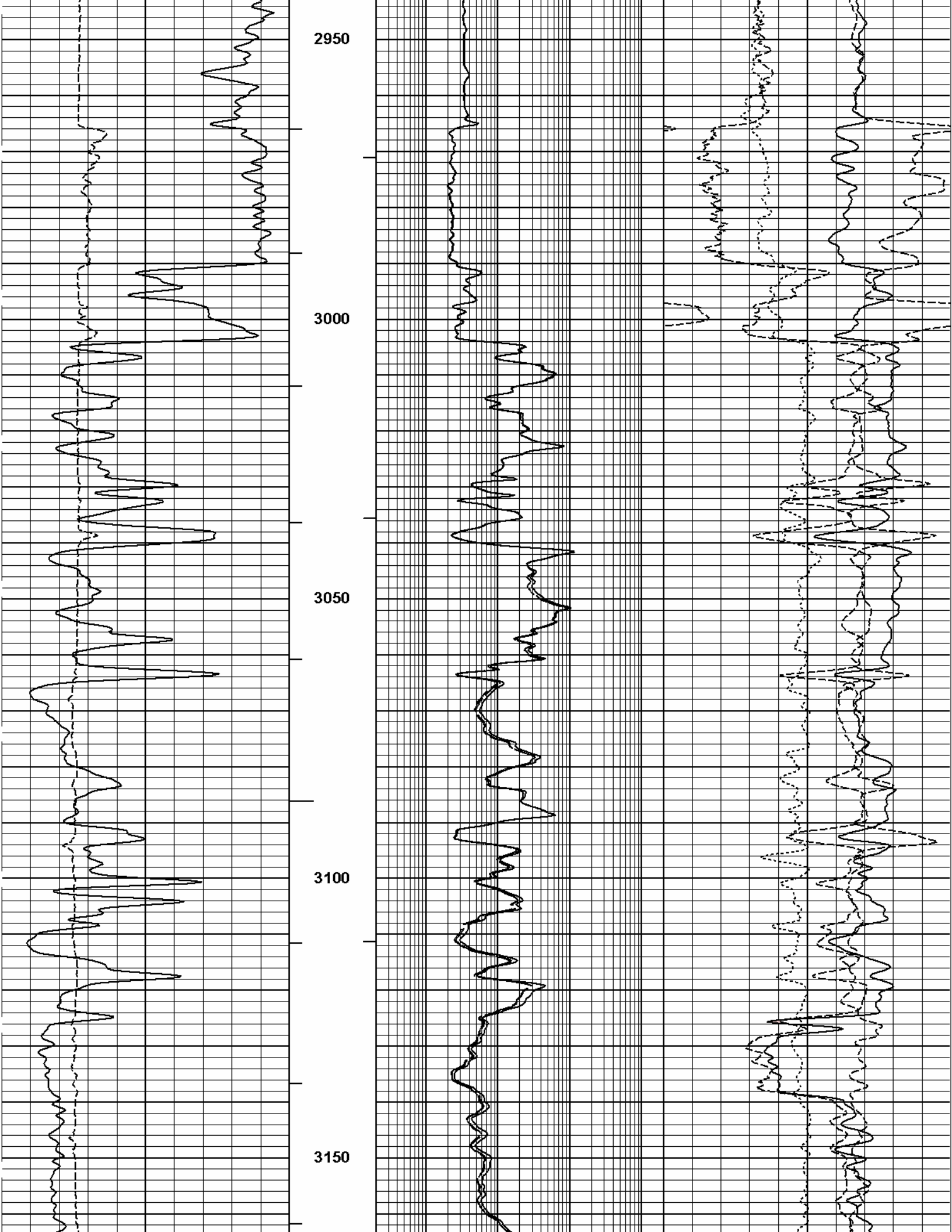


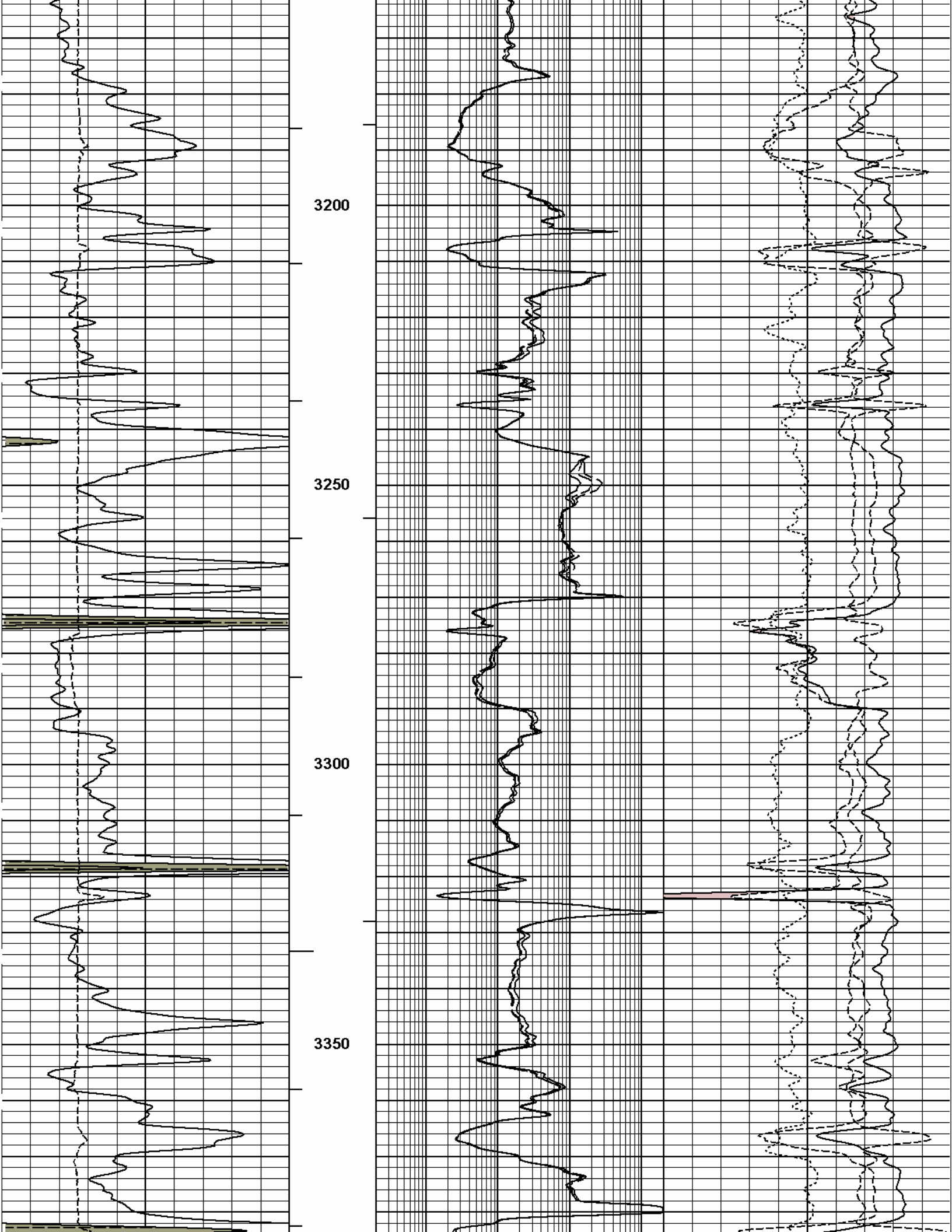


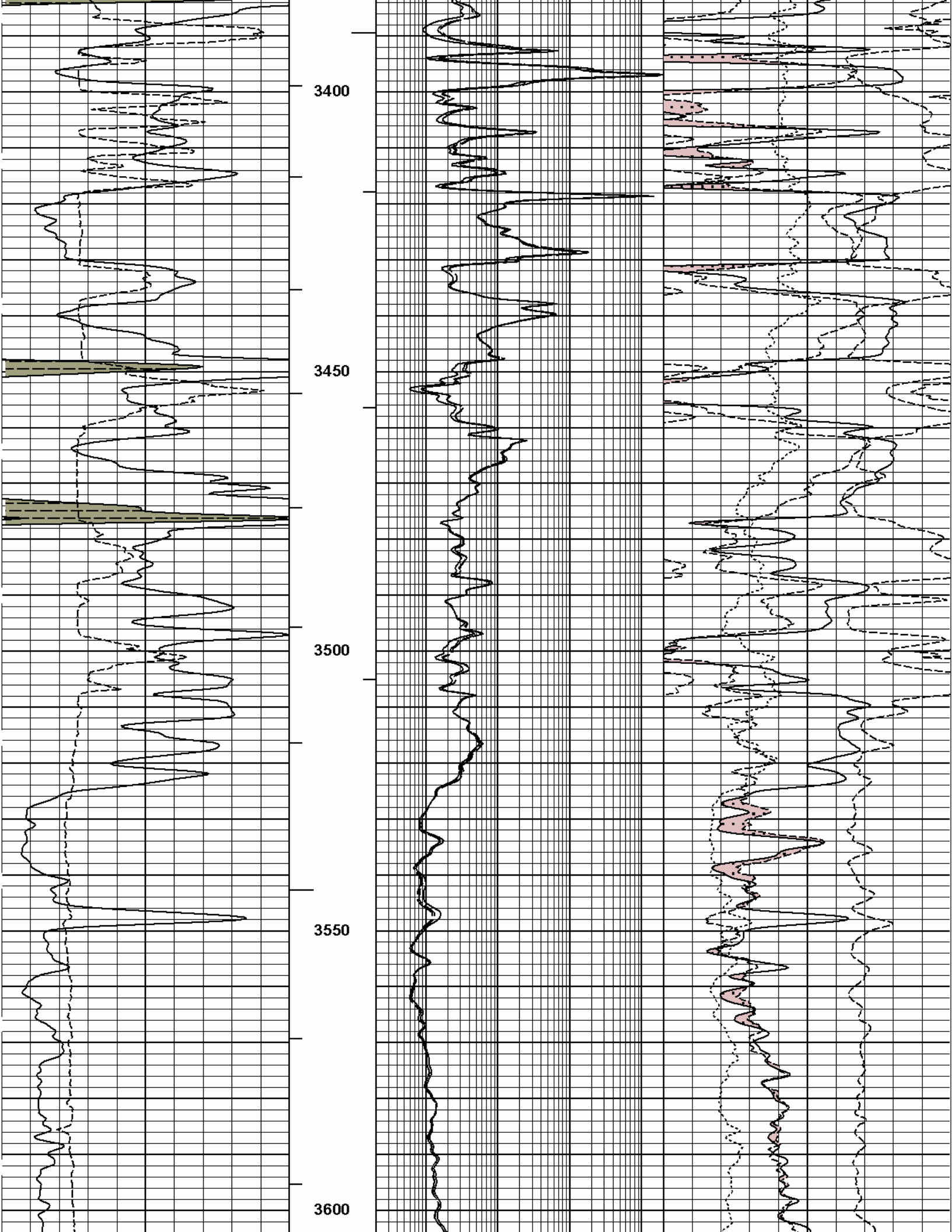


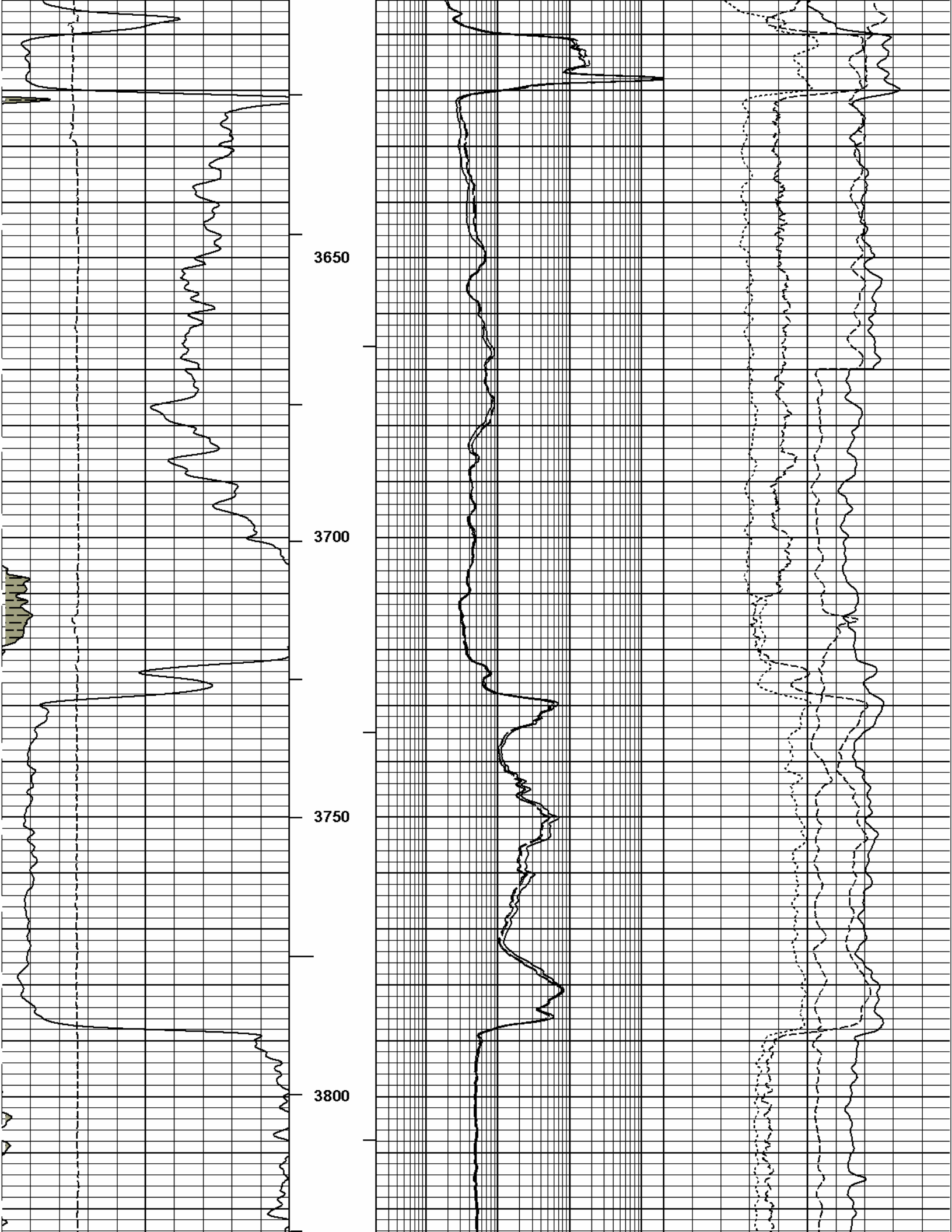


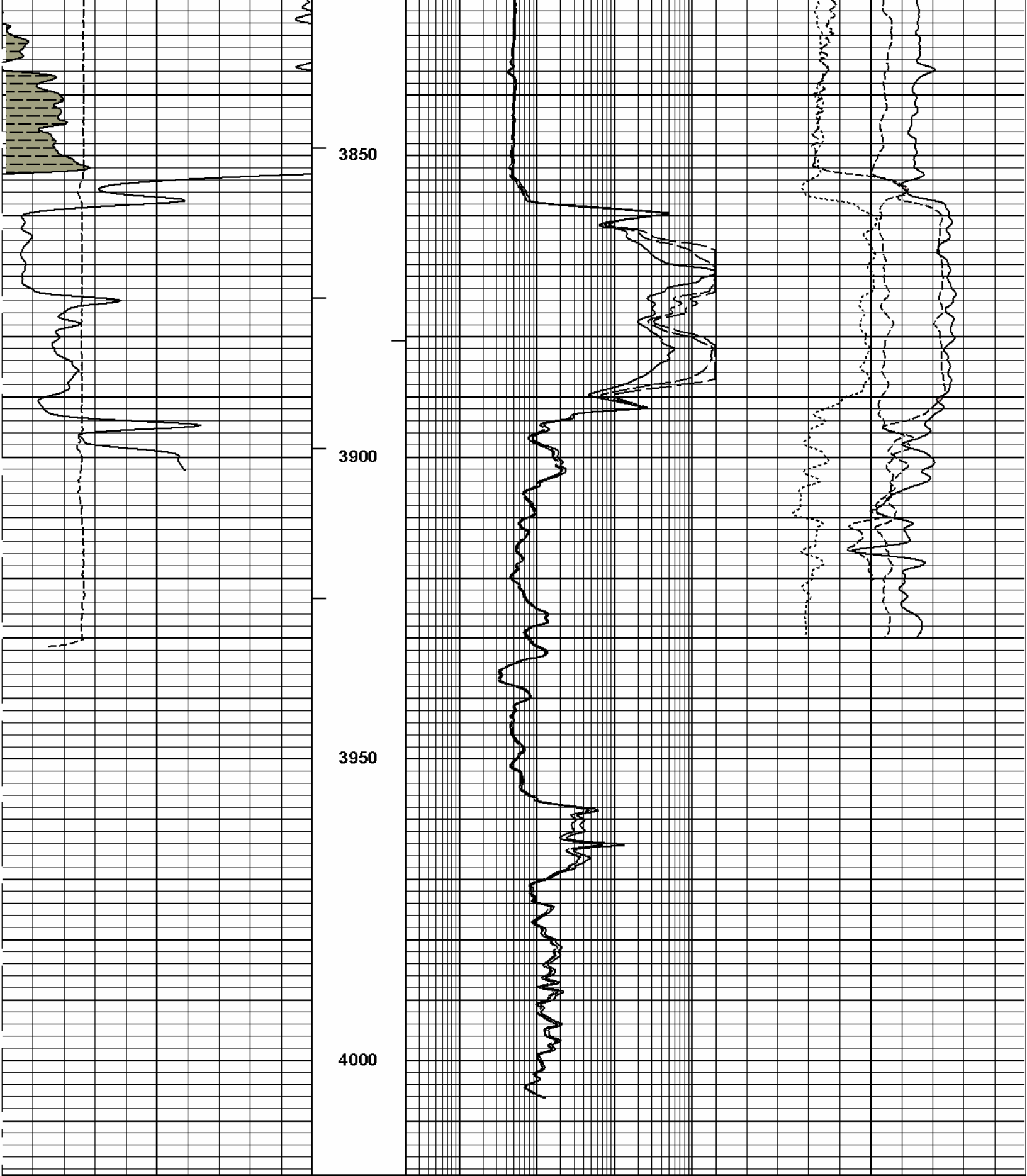












6	Caliper	16	TVD 1 : 240 ft	0.2	20in Resistivity 1ft Res	2000	-0.25	DensityCorr	0.25
	inches				ohm-metre			g/cc	
0	Gamma API	150	AHVT	0.2	60in Resistivity 1ft Res	2000	1.95	Bulk Density	2.95
	api				ohm-metre			g/cc	
			BHVT	0.2	90in Resistivity 1ft Res	2000	0	Pe	10

**HALLIBURTON**

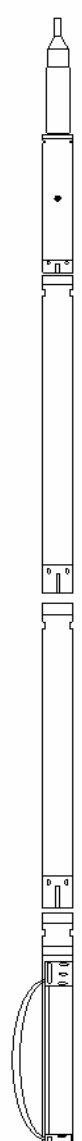
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 Plot Range: 349.37 ft to 4019 ft  
 Data: SIEGRIST\_2207\Well Based\CASING\  
 Plot File: \\TRIPLE\TC\_5\_NO\_ML\_RPT\_SHELL

**5 INCH REPEAT LOG TVD**

5 INCH REPEAT MD

**HALLIBURTON**

**TOOL STRING DIAGRAM REPORT**

Description	Overbody Description	O.D.	Diagram	Sensors @ Delays	Length	Accumulated Length
CH_HOS-CH_696 37.50 lbs		Ø 2.750 in →		← Temperature @ 127.96 ft	3.03 ft	128.99 ft
SP Sub-001 60.00 lbs		Ø 3.625 in →		← SP @ 124.18 ft	3.74 ft	125.96 ft
GTET-11048627 165.00 lbs		Ø 3.625 in →		← GammaRay @ 116.16 ft	8.52 ft	122.22 ft
CSNG-10965402 114.00 lbs		Ø 3.625 in →		← CSNG @ 108.07 ft	8.17 ft	113.70 ft
DSN Decentralizer-11005605 6.60 lbs		Ø 5.000 in* →				
DSNT-11019643 174.00 lbs		Ø 3.625 in →			9.69 ft	105.53 ft

SDLT-10950489  
360.00 lbs

SDLT Pad-10844781  
65.00 lbs  
Microlog Pad-10950489  
8.00 lbs

Ø 4.500 in →

Ø 4.750 in<sup>2</sup> →  
Ø 4.750 in<sup>2</sup> →

← DSN Far @ 98.60 ft  
← DSN Near @ 97.85 ft

Microlog @ 88.03 ft  
SDL Caliper @ 87.85 ft  
SDL @ 87.84 ft

95.85 ft

10.81 ft

85.03 ft

Flex Joint-001  
140.00 lbs

Ø 3.625 in →

5.67 ft

Centralizer 25-001  
8.00 lbs

Ø 4.000 in<sup>2</sup> →

79.36 ft

Wavesonic-I-  
10753396  
520.00 lbs

Ø 3.625 in →

34.07 ft

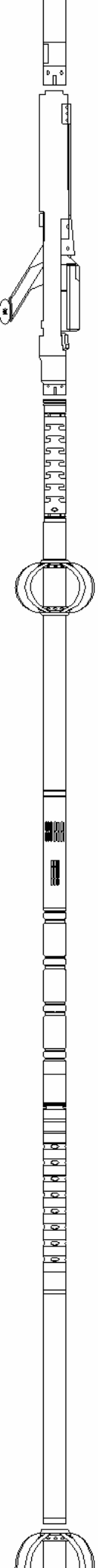
← Wavesonic Delay @ 56.79 ft

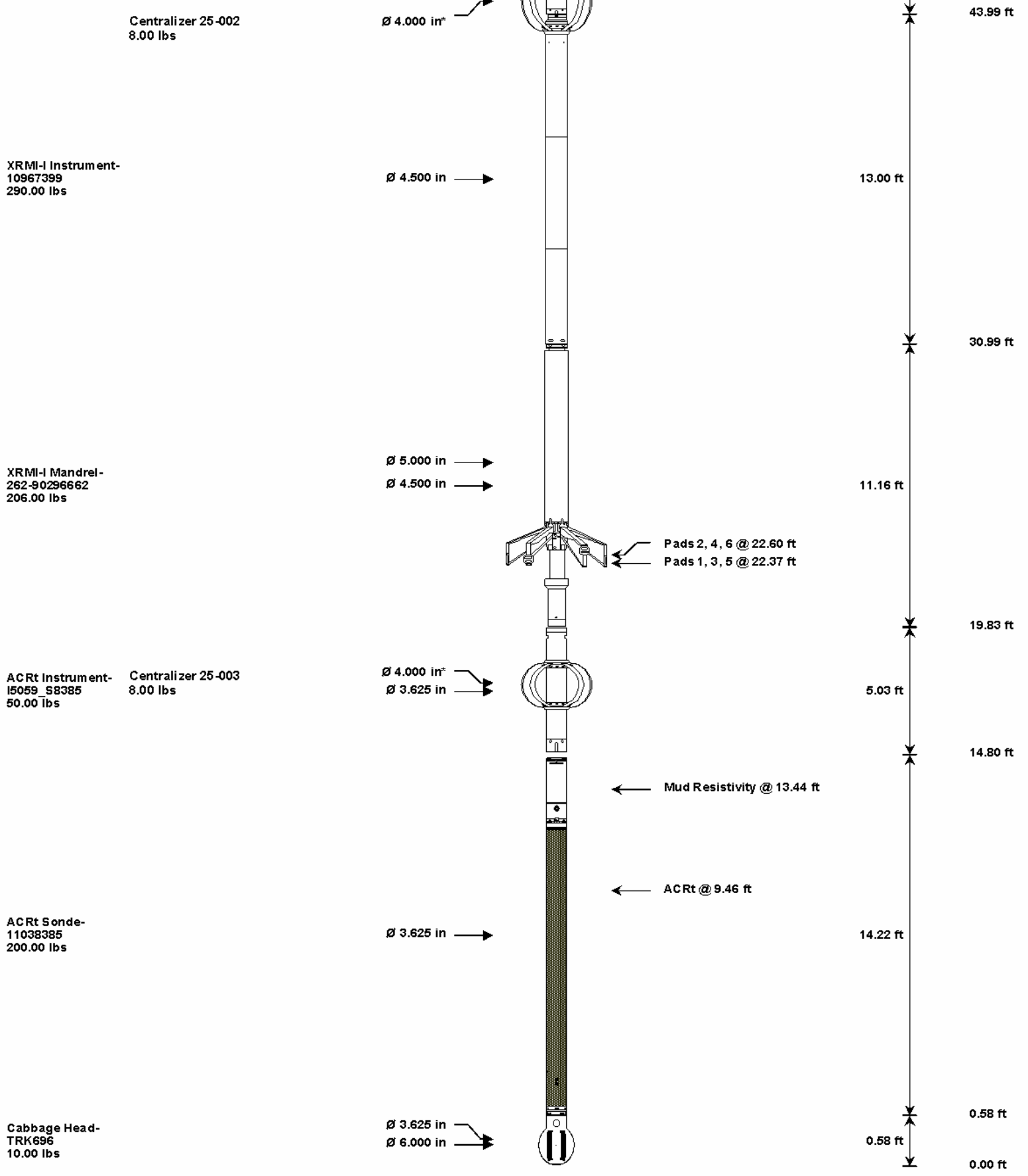
XRMI Isolator-001  
32.50 lbs

Ø 4.500 in →

1.30 ft

45.29 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_696	37.50	3.03	125.96	300.00
SP	SP Sub	001	60.00	3.74	122.22	300.00
GTET	Gamma Telemetry Tool	11048627	165.00	8.52	113.70	60.00
CSNG	Compensated Spectral Natural Gamma	10965402	114.00	8.17	105.53	15.00
DSNT	Dual Spaced Neutron	11019643	174.00	9.69	95.85	60.00
DCNT	DSN Decentralizer	11005605	6.60	5.13	99.18	300.00
SDLT	Spectral Density Tool	10950489	360.00	10.81	85.03	60.00
MICP	Microlog Pad	10950489	8.00	1.00	87.53	60.00

SDLP	Density Insite Pad	10844781	65.00	2.55 *	87.24	60.00
FLEX	Flex Joint	001	140.00	5.67	79.36	300.00
WSTT	WaveSonic Insite	10753396	520.00	34.07	45.29	30.00
OBCEN	Centralizer - 25 in. Overbody	001	8.00	2.08 *	77.28	300.00
	Isolator for the XRMI tool	001	32.50	1.30	43.99	300.00
XRMI	XRMI Navigation - Insite	10967399	290.00	13.00	30.99	30.00
OBCEN	Centralizer - 25 in. Overbody	002	8.00	2.08 *	43.21	300.00
XRMI-I	XRMI Imager - Insite	262-90296662	206.00	11.16	19.83	30.00
ACRt	Array Compensated True Resistivity Instrument Section	I5059_S8385	50.00	5.03	14.80	300.00
OBCEN	Centralizer - 25 in. Overbody	003	8.00	2.08 *	16.51	300.00
ACRt	Array Compensated True Resistivity Sonde Section	11038385	200.00	14.22	0.58	300.00
CBHD	Cabbage Head	TRK696	10.00	0.58	0.00	300.00

**Total** **2,462.60** **128.99**

\* Not included in Total Length and Length Accumulation.

Data: SIEGRIST\_22070001 SP-GTET-CSNG-DSN-SDLT-FLEX-WSTT-XRMI-ACRT-CHIDLE

Date: 16-Mar-13 04:53:05

# HALLIBURTON

## CALIBRATION REPORT

### NATURAL GAMMA RAY TOOL SHOP CALIBRATION

**Tool Name:** GTET - 11048627 **Reference Calibration Date:** 13-Feb-13 14:00:35

**Engineer:** J. BOLLLOM **Calibration Date:** 05-Mar-13 09:33:28

**Software Version:** WL INSITE R3.8.0 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Measurement	Measured	Calibrated	Units
Background	50.6	51.6	api
Background + Calibrator	315.2	321.3	api
Calibrator	264.6	269.6	api

### NATURAL GAMMA RAY TOOL FIELD CALIBRATION

**Tool Name:** GTET - 11048627 **Reference Calibration Date:** 05-Mar-13 09:33:28

**Engineer:** J. BOLLLOM **Calibration Date:** 13-Mar-13 13:27:59

**Software Version:** WL INSITE R3.8.0 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: TB146

Calibrator API Reference:265.00 api

Equivalent Calibrator API Reference:269.6 api

Field Verification	Shop	Field	Units
Background	51.6	25.1	api
Background + Calibrator	321.3	298.2	api
Calibrator	269.6	273.1	api

Shop	Field	Difference	Tolerance
269.6	273.1	-3.5	+/- 9.00

### NATURAL GAMMA RAY TOOL POST CALIBRATION

**Tool Name:** GTET - 11048627 **Reference Calibration Date:** 13-Mar-13 13:27:59

**Engineer:** J. BOLLLOM **Calibration Date:** 16-Mar-13 13:08:26

**Software Version:** WL INSITE R3.8.0 (Build 2) **Calibration Version:** 1

Calibrator Source S/N: TB146



**Pass/Fail Summary**

**Centroid**

239 KEV Peak

Passed

583 KEV Peak

Passed

2614 KEV Peak

Passed

Blanket Reference Value: 228.00 API

Calibrator Value: 258.9 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1398.7	CPS	297.1	277.3	API
Background	92.4	CPS	38.1	18.3	API

Gamma Ray Gain: 1.00

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

**CSNG-FS POST CALIBRATION**

**Tool Name:** CSNG - 10965402

**Reference Calibration Date:** 13-Mar-13 13:25:12

**Engineer:** J. BOLLLOM

**Calibration Date:** 16-Mar-13 13:15:27

**Software Version:** WL INSITE R3.8.0 (Build 2)

**Calibration Version:** 1

**Source SN:**

**TITANIUM CASE**

**Field Survey**

**Post Survey**

**Units**

60 KEV Peak Channel #	48.0	48.0	Channel #
239 KEV Peak Channel #	22.9	22.5	Channel #
583 KEV Peak Channel #	51.5	50.6	Channel #
2614 KEV Peak Channel #	211.9	208.1	Channel #
Calibrate Temperature	77.1	126.1	degF

**Pass/Fail Summary**

**Centroid**

239 KEV Peak

Passed

583 KEV Peak

Passed

2614 KEV Peak

Passed

Blanket Reference Value: 228.00 API

Calibrator Value: 258.9 API

	Counts	Units	Measured	Calibrated	Units
Thorium Blanket	1443.8	cps	277.3	279.8	API
Background	107.5	cps	18.3	20.8	API

Gamma Ray Gain: 0.98

Expected Gain Range: 0.85 - 1.15

Gamma Gain Check: Passed

**DUAL SPACED NEUTRON SHOP CALIBRATION**

**Tool Name:** DSNT - 11019643

**Reference Calibration Date:** 05-Mar-13 09:55:34

**Engineer:** J. BOLLLOM

**Calibration Date:** 05-Mar-13 10:09:49

**Software Version:** WL INSITE R3.8.0 (Build 2)

**Calibration Version:** 1

Logging Source S/N: 696

Tank Serial Number: LIBERAL\_NEUTRON

Reference value assigned to Tank: 51.680

Reference Value Assigned to Tank: 1.000  
 Snow Block S/N: 696  
 Calibration Tank Water Temperature: 65 degF  
 Min. Tool Housing Outside Diameter: 3.625 in

**CALIBRATION CONSTANTS**

Measurement	Prev. Value	New Value	Control Limit On New Value
Gain:	0.945	0.949	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):	0.2098	0.2110	0.0012	+/- 0.0020
Calibrated Ratio:	9.69	9.73	0.039	+/- 0.050

**VERIFIER**

Measurement	Value	Control Limit
Snow-Block Porosity (decp):	0.0573	0.02000 - 0.09000

**PASS/FAIL SUMMARY**

Background Check:	Passed
Gain-Range Check:	Passed
Snow-Block Check:	Passed

**DUAL SPACED NEUTRON FIELD CALIBRATION**

<b>Tool Name:</b> DSNT - 11019643	<b>Reference Calibration Date:</b> 05-Mar-13 10:09:49
<b>Engineer:</b> J. BOLLUM	<b>Calibration Date:</b> 14-Mar-13 22:29:37
<b>Software Version:</b> WL INSITE R3.8.0 (Build 2)	<b>Calibration Version:</b> 1

Logging Source S/N: 696  
 Snow Block S/N: 696

**NEUTRON FIELD-CHECK SUMMARY**

	Shop	Field	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0573	0.0460	-0.0113	+/- 0.0150

**PASS/FAIL SUMMARY**

Block Change Check:	Passed
Snow Block Stat Check:	Passed
Temperature Check:	Passed

**DUAL SPACED NEUTRON POST CALIBRATION**

<b>Tool Name:</b> DSNT - 11019643	<b>Reference Calibration Date:</b> 14-Mar-13 22:29:37
<b>Engineer:</b> J. BOLLUM	<b>Calibration Date:</b> 16-Mar-13 13:20:43
<b>Software Version:</b> WL INSITE R3.8.0 (Build 2)	<b>Calibration Version:</b> 1

Logging Source S/N: 696  
 Snow Block S/N: 696

**NEUTRON POST-CHECK SUMMARY**

	Field Value	Post Value	Difference	Control Limit On Change
Snow-Block Porosity (decp):	0.0460	0.0423	-0.0037	+/- 0.0150

**PASS/FAIL SUMMARY**

Block Change Check:  
Snow Block Stat Check:  
Temperature Check:

Passed  
Passed  
Passed

### DENSITY CALIPER SHOP CALIBRATION

**Tool Name:** SDLT - 10950489      **Reference Calibration Date:** 07-Mar-13 09:55:09  
**Engineer:** J. BOLLLOM      **Calibration Date:** 07-Mar-13 10:03:24  
**Software Version:** WL INSITE R3.8.0 (Build 2)      **Calibration Version:** 1  
**Host Tool Name:** DSNT - 11019643

### CALIBRATION COEFFICIENTS

Measurement	Previous Value	New Value	Control Limit On New Value
Pad Offset	-1782.49	-1752.48	-7000.00 - -1000.00
Pad Gain	0.0003933	0.0003885	0.000200 - 0.000600
Arm Offset	-1168.26	-1689.88	-5000.00 - 3000.00
Arm Gain	0.0004633	0.0005298	0.000300 - 0.000700
Arm Power	-0.000001258	-0.000005780	-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)	2.01	2.00	-0.01	+/- 0.20
Medium Ring (in)	3.78	3.75	-0.03	+/- 0.20
RING DIAMETER:				
Small Ring (in)	6.54	6.50	-0.04	+/- 0.20
Medium Ring (in)	8.14	8.25	0.11	+/- 0.20
Large Ring (in)	14.97	15.00	0.03	+/- 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 - 10844781      **Reference Calibration Date:** 17-Jan-13 14:21:35  
**Engineer:** J. BOLLLOM      **Calibration Date:** 05-Mar-13 11:01:55  
**Software Version:** WL INSITE R3.8.0 (Build 2)      **Calibration Version:** 1

Logging Source S/N: 5168GW

Aluminum Block S/N: LIBERAL

Density: 2.598g/cc

Pe: 3.170

Magnesium Block S/N: LIBERAL

Density: 1.684g/cc

Pe: 2.598

### DENSITY CALIBRATION SUMMARY

Measurement	Previous Value	New Value	Control Limit
Near Bar Gain	1.0434	1.0190	0.90 - 1.10
Near Dens Gain	1.0101	1.0001	0.90 - 1.10
Near Peak Gain	1.0002	0.9771	0.90 - 1.10
Near Lith Gain	0.9736	0.9818	0.90 - 1.10
Far Bar Gain	1.0096	1.0161	0.90 - 1.10
Far Dens Gain	0.9991	1.0035	0.90 - 1.10
Far Peak Gain	0.9920	0.9974	0.90 - 1.10

Far Peak Gain	0.9714	0.9744	0.90 - 1.10
Near Bar Offset	-0.1830	0.0500	NONE
Near Dens Offset	0.1114	0.2016	NONE
Near Peak Offset	0.2008	0.3863	NONE
Near Lith Offset	0.4173	0.3415	NONE
Far Bar Offset	0.0534	0.0099	NONE
Far Dens Offset	0.1337	0.1093	NONE
Far Peak Offset	0.1632	0.1328	NONE
Far Lith Offset	0.2973	0.2908	NONE
Near Bar Background	809.28	804.29	700 - 1450
Near Dens Background	265.36	265.46	230 - 480
Near Peak Background	115.37	115.14	100 - 210
Near Lith Background	142.88	142.71	125 - 260
Far Bar Background	526.94	523.45	450 - 900
Far Dens Background	207.77	206.08	175 - 345
Far Peak Background	82.16	82.40	70 - 140
Far Lith Background	86.57	85.02	75 - 145

### CALIBRATION BLOCK SUMMARY

Measurement	Current Reading (Previous Coef)	Calibrated (New Coef)	Change	Control Limit On Change
<b>MAGNESIUM</b>				
Density (g/cc)	1.695	1.684	-0.011	+/- 0.015
Pe	2.462	2.552	0.090	+/- 0.150
<b>ALUMINUM</b>				
Density (g/cc)	2.597	2.598	0.001	+/- 0.01500
Pe	2.977	3.120	0.143	+/- 0.150

### TOOL SUMMARY

Measurement	Near Detector		Far Detector	
	Value	Control Limits	Value	Control Limits
<b>QUALITY</b>				
Background	-0.0009	+/- 0.0110	-0.0026	+/- 0.0140
Magnesium Block	-0.0007	+/- 0.0110	-0.0020	+/- 0.0140
Aluminum Block	-0.0013	+/- 0.0110	-0.0013	+/- 0.0140
Resolution	9.48	6.00 - 11.50	8.88	6.00 - 11.50
Internal Verifier(B+D+P+L)	1328	1200 - 2700	897	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

Engineer: J. BOLLUM

Calibration Date: 14-Mar-13 22:23:36

Software Version: WL INSITE R3.8.0 (Build 2)

Calibration Version: 1

Pad Temperature: 61.1 degF

DENSITY FIELD CALIBRATION SUMMARY

Measurement	Shop	Field	Change	Control Limit +/-
Near (B+D+P+L) cps	1327.598	1322.810	-4.788	14.741
Far (B+D+P+L) cps	896.943	890.845	-6.098	16.294
Near Resolution	9.48	9.44	-0.040	0.50
Far Resolution	8.88	8.90	0.020	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

SPECTRAL DENSITY POST CHECK

Tool Name: SDLT Pad - 10844781

Reference Calibration Date: 14-Mar-13 22:23:36

Engineer: J. BOLLUM

Calibration Date: 16-Mar-13 13:04:09

Software Version: WL INSITE R3.8.0 (Build 2)

Calibration Version: 1

Pad Temperature: 55.5 degF

DENSITY POST CALIBRATION SUMMARY

Measurement	Field	Post	Change	Control Limit +/-
Near (B+D+P+L) cps	1322.810	1327.992	5.182	14.741
Far (B+D+P+L) cps	890.845	894.776	3.931	16.294
Near Resolution	9.44	9.50	0.060	0.50
Far Resolution	8.90	8.99	0.090	1.00

PASS/FAIL SUMMARY

Bkg Quality Check:	Passed
Bkg Resolution Check:	Passed
Bkg Verification Check:	Passed

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10950489

Reference Calibration Date: 07-Mar-13 10:03:24

Engineer: J. BOLLUM

Calibration Date: 14-Mar-13 22:32:32

Software Version: WL INSITE R3.8.0 (Build 2)

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

SDLT CALIPER POST CALIBRATION

Tool Name: SDLT - 10950489

Reference Calibration Date: 14-Mar-13 22:32:32

Engineer: J. BOLLUM

Calibration Date: 16-Mar-13 13:13:02

Software Version: WL INSITE R3.8.0 (Build 2)

Calibration Version: 1

**MEASURED CALIPER VALUES**

Measurement	Field	Post	Change	Control Limit On New Value
Pad Extension	3.71	3.73	0.02	+/- 0.10
Ring Diameter	8.25	8.19	-0.06	+/- 0.15

**PASS/FAIL SUMMARY**

Pad Extension Check: Passed  
 Diameter Check: Passed

**ARRAY COMPENSATED TRUE RESISTIVITY SHOP CALIBRATION**

**Tool Name:** ACRT Sonde - 11038385      **Reference Calibration Date:** 31-Jan-13 15:16:35  
**Engineer:** J. BOLLUM      **Calibration Date:** 02-Mar-13 10:50:16  
**Software Version:** WL INSITE R3.8.0 (Build 2)      **Calibration Version:** 1  
**Host Tool Name:** ACRT Instrument - I5059\_S8385

**TYPICAL GAIN RANGE**

Subarray	R12KHz			R36KHz			R72KHz		
	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper	Lower	(mmho/m)	Upper
A1 (80")	0.95	1.01	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A2 (50")	0.95	1.01	1.05	0.95	1.02	1.05	0.95	1.02	1.05
A3 (29")	0.95	1.00	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A4 (17")	0.95	1.01	1.05	0.95	1.01	1.05	0.95	1.01	1.05
A5 (10")	N/A	N/A	N/A	0.95	1.00	1.05	0.95	1.00	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	-1.30	2	-6	-5.28	-2	-8	-4.58	-2
A2 (50")	-7	-2.63	0	-7	-3.66	0	-7	-4.53	0
A3 (29")	-27	-12.94	-9	-9	-3.67	-3	-7	-2.51	-1
A4 (17")	-180	-104.06	-60	-45	-33.05	-15	-39	-25.52	-13
A5 (10")	N/A	N/A	N/A	-150	-82.06	-50	-80	-40.79	-10
A6 (6")	N/A	N/A	N/A	175	339.74	525	90	168.45	270

**TRANSMITTER CURRENT GAIN**

Signal	Lower	R	Upper
12K	0.6	0.85	1.3
36K	1.0	1.34	2.0
72K	1.0	1.60	2.0

**R-MUD VERIFICATION**

Signal	Lower (ohm-m)	Measured (ohm-m)	Upper (ohm-m)
Mud Cell	0.95	1.00	1.05

**PASS/FAIL SUMMARY**

GAIN RANGE CHK      PASS  
 SONDE OFFSET RANGE CHK      PASS  
 Tx CURRENT GAIN      PASS  
 Rmud VERIFICATION      PASS

TOOL OK TO LOG

**CALIBRATION SUMMARY**

Sensor	Shop	Field	Post	Difference	Tolerance	Units
--------	------	-------	------	------------	-----------	-------

Sensor	Group	Field	Post	Difference	Tolerance	Units
<b>GTET-11048627</b>						
Gamma Ray Calibrator	269.6	273.1	271.7	1.4	+/- 9.00	api
<b>CSNG-10965402</b>						
60 KEV Peak Channel #	48.0	48.0	48.0	0.0	-----	Channel #
239 KEV Peak Channel #	22.8	22.9	22.5	0.4	-----	Channel #
583 KEV Peak Channel #	51.4	51.5	50.6	0.9	-----	Channel #
2614 KEV Peak Channel #	211.5	211.9	208.1	3.8	-----	Channel #
<b>DSNT-11019643</b>						
Snow-Block Porosity	0.0573	0.0460	0.0423	0.0037	+/- 0.0150	decp
<b>SDLT-10950489</b>						
Pad Extension	3.75	3.71	3.73	-0.02	+/-0.10	in
Ring Diameter	8.25	8.25	8.19	0.06	+/-0.15	in
<b>SDLT Pad-10844781</b>						
Near(B+D+P+L)	1327.598	1322.810	1327.992	-5.182	+/-14.741	cps
Far(B+D+P+L)	896.943	890.845	894.776	-3.931	+/-16.294	cps
<b>ACRt Sonde-11038385</b>						
Mud Cell	1.00	-----	-----	0.00	-----	ohm-m

Well: GREGORY-00710004 OR GTET-0000-SON-0015-LEVEL-WGT-VDRM-ACRT-0015 Date: 10 May 13 13:04:53

# HALLIBURTON

## PARAMETERS REPORT

Depth (ft)	Tool Name	Mnemonic	Description	Value	Units
TOP					
	SHARED	BS	Bit Size	8.750	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	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	ohm m
	SHARED	TRM	Temperature of Mud	75.0	degF
	SHARED	CSD	Logging Interval is Cased?	No	
	SHARED	ICOD	AHV Casing OD	7.000	in
	SHARED	ST	Surface Temperature	75.0	degF
	SHARED	TD	Total Well Depth	4030.00	ft
	SHARED	BHT	Bottom Hole Temperature	200.0	degF
	SHARED	SVTM	Navigation and Survey Master Tool	XRMI-I Instrument	
	SHARED	AZTM	High Res Z Accelerometer Master Tool	XRMI-I Instrument	
	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	ohm m
	Rwa / CrossPlot	TMFR	Rmf Ref Temp	75.00	degF
	Rwa / CrossPlot	RWA	Resistivity of Formation Water	0.05	ohm m

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	
CSNG	CGOK	Process CSNG Data?	Yes	
CSNG	CENT	Is Tool Centralized?	No	
CSNG	GBOK	Gamma Enviromental Corrections?	Yes	
CSNG	BARF	Barite Correction Factor	1.00	
CSNG	ORDG	Use Fixed Gain	No	
CSNG	ORDO	Use Fixed Offset	No	
CSNG	ORDR	Use Fixed Resolution Degradation Factor	No	
DSNT	DNOK	Process DSN?	Yes	
DSNT	DEOK	Process DSN EVR?	No	
DSNT	NLIT	Neutron Lithology	Limestone	
DSNT	DNNO	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	
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
Wavesonic-I	WSOK	Process WSTT?	Yes	
Wavesonic-I	AFIL	Adaptive Filtering?	No	
Wavesonic-I	PINT	Process 1 Sample and Skip	0	
Wavesonic-I	PROM	Process Mode: M=1,MX=2,MY=3,MXY=4	4	
Wavesonic-I	DTSH	Delta -T Shale	100.00	uspf
Wavesonic-I	DTMT	Delta -T Matrix Type	User define	
Wavesonic-I	DTMA	Delta -T Matrix	47.60	uspf
Wavesonic-I	DTFL	Delta -T Fluid	189.00	uspf
Wavesonic-I	RHOM	Matrix Density	2.7100	g/cc
Wavesonic-I	RHOF	Fluid Density	1.0000	g/cc
Wavesonic-I	SMTH	Semblance Threshold	0.25	
Wavesonic-I	VPVS	VPVS Ratio for Porosity	1.40	
Wavesonic-I	APEQ	Acoustic Porosity Equation	Wyllie	
Wavesonic-I	NAVS	Navigation Source Tool	XRMI-I Instrument	
XRMI-I Instrument	WRTI	Survey Writing Interval	30	ft
XRMI-I Instrument	SOPT	Smoothing Option	None	
XRMI-I Mandrel	DIMG	Process XRMI?	Yes	
XRMI-I Mandrel	ROTI	Rotate Image (N-E-S-W-N)?	Yes	
XRMI-I Mandrel	AGN	Use Button Auto Gain?	Yes	
XRMI-I Mandrel	BCLR	Button Auto Gain Color	127	
XRMI-I Mandrel	BFIL	Button Auto Gain Filter	0.020	
XRMI-I Mandrel	BGAN	Button Gain Value	0.001	
XRMI-I Mandrel	BOFF	Button Offset	0	
XRMI-I Mandrel	DIRE	Process Diameter Calculations?	Yes	

XRMI-I Mandrel	DIPE	Process Dipmeter Calculations?	Yes	
XRMI-I Mandrel	BHCS	Process Borehole Corrections?	Yes	
XRMI-I Mandrel	CLOK	Process Caliper Outputs?	Yes	
XRMI-I Mandrel	CMAX	Caliper Maximum Limit	100.0	in
XRMI-I Mandrel	CMIN	Caliper Mimimum Limit	3.5	in
XRMI-I Mandrel	NAVS	Navigation Source Tool	XRMI-I Instrument	
XRMI-I Mandrel	BHVC	Radius type for borehole volume calcautions	Elliptical	
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	ohm m
ACRt Sonde	RMIN	Maximum Resistivity for MAP	200.00	ohm m
ACRt Sonde	THQY	Threshold Quality	0.50	
ACRt Sonde	MRFX	Fixed mud resistivity	2000	ohm m

BOTTOM

Data: SIEGRIST\_220710001 SP-GTET-CSNG-DSN-SDLT-FLEX-WSTT-XRMI-ACRT-CHIDLE

Date: 16-Mar-13 05:00:45

# HALLIBURTON

## INPUTS, DELAYS AND FILTERS TABLE

Mnemonic	Input Description	Delay (ft)	Filter Type	Filter Length (ft)
<b>Depth Panel</b>				
TENS	Tension	0.00	NO	
<b>CH_HOS</b>				
DHTN	Downhole Tension	0.00	BLK	0.000
<b>SP Sub</b>				
PLTC	Plot Control Mask	124.18	NO	
SP	Spontaneous Potential	124.18	BLK	1.250
SPR	Raw Spontaneous Potential	124.18	NO	
SPO	Spontaneous Potential Offset	124.18	NO	
<b>GTET</b>				
TPUL	Tension Pull	116.16	NO	
GR	Natural Gamma Ray API	116.16	TRI	1.750
GRU	Unfiltered Natural Gamma Ray API	116.16	NO	
EGR	Natural Gamma Ray API with Enhanced Vertical Resolution	116.16	W	1.416 , 0.750
ACCZ	Accelerometer Z	0.00	BLK	0.083
DEVI	Inclination	0.00	NO	
<b>CSNG</b>				
TPUL	Tension Pull	108.07	NO	
STAT	Status	108.07	NO	
FRMC	Tool Frame Count	108.07	BLK	0.250
TFRM	Total Frames	108.07	NO	
LSPD	Line Speed	108.07	BLK	0.250
CTIM	Accumulation time for sample	108.07	BLK	0.250
NOIS	Spectral Noise	108.07	BLK	0.250
STAB	Stabilizer Voltage in mv	108.07	BLK	0.250
STBP	Stabilizer 60 KEV Peak	108.07	BLK	0.250

AMER	Americium	108.07	BLK	0.250
FTMP	Flask PCB Temperature	108.07	BLK	0.250
SPEL	Low Energy Spectrum	108.07	BLK	0.250
SPEH	High Energy Spectrum	108.07	BLK	0.250
SSP	Stabilization Energy Spectrum	108.07	BLK	0.250
CSPC	CSNG Lo Hi Spectrum Data	108.07	NO	
<b>DSNT</b>				
TPUL	Tension Pull	97.75	NO	
RNDS	Near Detector Telemetry Counts	97.85	BLK	1.417
RFDS	Far Detector Telemetry Counts	98.60	TRI	0.583
DNTT	DSN Tool Temperature	97.85	NO	
DSNS	DSN Tool Status	97.75	NO	
ERND	Near Detector Telemetry Counts EVR	97.85	BLK	0.000
ERFD	Far Detector Telemetry Counts EVR	98.60	BLK	0.000
ENTM	DSN Tool Temperature EVR	97.85	NO	
<b>SDLT</b>				
TPUL	Tension Pull	87.85	NO	
PCAL	Pad Caliper	87.85	TRI	0.250
ACAL	Arm Caliper	87.85	TRI	0.250
<b>Wavesonic-I</b>				
TPUL	Tension Pull	56.79	NO	
DPSX	Dipole Source X Structurel	45.29	NO	
DPSY	Dipole Source Y Structurel	45.29	NO	
DPSM	Monopole Source Structure	45.29	NO	
WVST	Wavesonic Compressed Data	56.79	NO	
TPUL	Tension Pull	56.79	NO	
XMS1	Wave Sonic Status Word 1	45.29	NO	
XMS2	Wave Sonic Status Word 2	45.29	NO	
XMS1	Wave Sonic XMITStatus Word 1	45.29	NO	
XMS1	Wave Sonic XMITStatus Word 2	45.29	NO	
F1HA	Dipole 1 HV After	45.29	NO	
F1HB	Dipole 1 HV Before	45.29	NO	
F2HA	Dipole 2 HV After	45.29	NO	
F2HB	Dipole 2 HV Before	45.29	NO	
F3HA	Monopole HV After	45.29	NO	
F3HB	Monopole HV Before	45.29	NO	
INVT	Input Voltage	45.29	NO	
5VOL	5 Volts	45.29	NO	
MI5A	Minus 5 Volts Analog	45.29	NO	
ITMP	Instrument Temperature	45.29	NO	
PL5A	Plus 5 Volts Analog	45.29	NO	
5VD	Plus 5 Volts Digital	45.29	NO	
TCUR	Tool Current	45.29	NO	
SUPV	Supply Voltage	45.29	NO	
PRVT	Preregulated voltage	45.29	NO	
PRVT	Pre-regulated voltage Xmter	45.29	NO	
TEMP	Temperature	45.29	NO	
ACQN	Acquisition Number	45.29	NO	
XDP	Delay Reference	56.79	NO	
MITM	MIT Mode	56.79	NO	
VERS	Version	45.29	NO	
D1CT	Dipole 1 Compressed Word Count	56.79	NO	
D2CT	Dipole 2 Compressed Word Count	56.79	NO	

MCNT	Monopole Compressed Word Count	56.79	NO
SEQN	Sequence Number	45.29	NO
FREV	Firmware Revision	45.29	NO
MSMP	Monopole Sample Rate	45.29	NO
MSMP	Dipole Sample Rate	45.29	NO
MFWF	Monopole Firing Waveform	45.29	NO
MFRQ	Monopole Frequency	45.29	NO
MDLY	Monopole Delay	45.29	NO
DXWF	Dipole X Firing Waveform	45.29	NO
XFRQ	Dipole X Frequency	45.29	NO
XDLY	Dipole X Delay	45.29	NO
DYWF	Dipole Y Firing Waveform	45.29	NO
YFRQ	Dipole Y Frequency	45.29	NO
YDLY	Dipole Y Delay	45.29	NO
DPSX	Dipole Source X Structurel	45.29	NO
DPSY	Dipole Source Y Structurel	45.29	NO
DPSM	Monopole Source Structure	45.29	NO
WVST	Wavesonic Compressed Data	56.79	NO
AUTM	Auto Mode	45.29	NO
SONM	tool mode for sonic - 0 for normal or 3 for calibration	45.29	NO
MSL	Monopole Lower Travel Time	56.79	NO
MSH	Monopole Upper Travel Time	56.79	NO
MLFC	Monopole-1 Lower Filter Bandpass Frequency Cut-off	45.29	NO
MUFC	Monopole-1 Upper Filter Bandpass Frequency Cut-off	45.29	NO
DLTT	Dipole Lower Travel Time	45.29	NO
DUTT	Dipole Upper Travel Time	45.29	NO
DLFC	Dipole Lower Filter Bandpass Frequency Cut-off	45.29	NO
DUFC	Dipole Upper Filter Bandpass Frequency Cut-off	45.29	NO
MUTE	WaveSonic Mute/Enable Channels and Sides map	45.29	NO
MUTS	Mute/Enable Sides	45.29	NO
WSRB	Relative Bearing	56.79	NO
WSAZ	WSX Azimuth Pad 1	56.79	NO
TPUL	Tension Pull	56.79	NO
WMP	Summed array of Monopole for SIDES - A,B,C,D	56.79	NO
WXX	Dipole X for SIDES - A-C	56.79	NO
WYY	Dipole Y for SIDES - B-D	56.79	NO
WXY	Dipole X for SIDES - B-D	56.79	NO
WYX	Dipole Y for SIDES - A-C	56.79	NO
TPUL	Tension Pull	56.79	NO
WMA	Monopole Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WMB	Monopole Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WMC	Monopole Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WMD	Monopole Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
WXA	Dipole X Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WXB	Dipole X Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WXC	Dipole X Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO
WXD	Dipole X Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
WYA	Dipole Y Waveform Side A - Channel 1 to Channel 8 Receivers	56.79	NO
WYB	Dipole Y Waveform Side B - Channel 1 to Channel 8 Receivers	56.79	NO
WYC	Dipole Y Waveform Side C - Channel 1 to Channel 8 Receivers	56.79	NO

## Receivers

WYD	Dipole Y Waveform Side D - Channel 1 to Channel 8 Receivers	56.79	NO
GAR1	Gain Side A Receiver 1	45.29	NO
GAR2	Gain Side A Receiver 2	45.29	NO
GAR3	Gain Side A Receiver 3	45.29	NO
GAR4	Gain Side A Receiver 4	45.29	NO
GAR5	Gain Side A Receiver 5	45.29	NO
GAR6	Gain Side A Receiver 6	45.29	NO
GAR7	Gain Side A Receiver 7	45.29	NO
GAR8	Gain Side A Receiver 8	45.29	NO
GBR1	Gain Side B Receiver 1	45.29	NO
GBR2	Gain Side B Receiver 2	45.29	NO
GBR3	Gain Side B Receiver 3	45.29	NO
GBR4	Gain Side B Receiver 4	45.29	NO
GBR5	Gain Side B Receiver 5	45.29	NO
GBR6	Gain Side B Receiver 6	45.29	NO
GBR7	Gain Side B Receiver 7	45.29	NO
GBR8	Gain Side B Receiver 8	45.29	NO
GCR1	Gain Side C Receiver 1	45.29	NO
GCR2	Gain Side C Receiver 2	45.29	NO
GCR3	Gain Side C Receiver 3	45.29	NO
GCR4	Gain Side C Receiver 4	45.29	NO
GCR5	Gain Side C Receiver 5	45.29	NO
GCR6	Gain Side C Receiver 6	45.29	NO
GCR7	Gain Side C Receiver 7	45.29	NO
GCR8	Gain Side C Receiver 8	45.29	NO
GDR1	Gain Side D Receiver 1	45.29	NO
GDR2	Gain Side D Receiver 2	45.29	NO
GDR3	Gain Side D Receiver 3	45.29	NO
GDR4	Gain Side D Receiver 4	45.29	NO
GDR5	Gain Side D Receiver 5	45.29	NO
GDR6	Gain Side D Receiver 6	45.29	NO
GDR7	Gain Side D Receiver 7	45.29	NO
GDR8	Gain Side D Receiver 8	45.29	NO

**XRMI-I Mandrel**

TPUL	Tension Pull	22.60	NO
PAD1	XRMI Pad 1 values	22.36	NO
PAD2	XRMI Pad 2 values	22.36	NO
PAD3	XRMI Pad 3 values	22.36	NO
PAD4	XRMI Pad 4 values	22.36	NO
PAD5	XRMI Pad 5 values	22.36	NO
PAD6	XRMI Pad 6 values	22.36	NO
OD1	EMI Odd Button Values Pad 1	22.36	NO
OD2	EMI Odd Button Values Pad 2	22.60	NO
OD3	EMI Odd Button Values Pad 3	22.36	NO
OD4	EMI Odd Button Values Pad 4	22.60	NO
OD5	EMI Odd Button Values Pad 5	22.36	NO
OD6	EMI Odd Button Values Pad 6	22.60	NO
EV1	EMI Even Button Values Pad 1	22.39	NO
EV2	EMI Even Button Values Pad 2	22.57	NO
EV3	EMI Even Button Values Pad 3	22.39	NO
EV4	EMI Even Button Values Pad 4	22.57	NO
EV5	EMI Even Button Values Pad 5	22.39	NO
EV6	EMI Even Button Values Pad 6	22.57	NO

ITMP	Instrument Temperature	19.83	NO	
EMIM	Tool Mode	19.83	NO	
HAZI	Hole Azimuth	22.11	NO	
HAZI	Hole Azimuth - Down Delay	22.61	NO	
ZACC	Accelerometer Z	22.36	NO	
TPUL	Tension Pull	22.60	NO	
FIR1	Current Button R - Pad 1	22.36	NO	
FIR2	Current Button R - Pad 2	22.60	NO	
FIR3	Current Button R - Pad 3	22.36	NO	
FIR4	Current Button R - Pad 4	22.60	NO	
FIR5	Current Button R - Pad 5	22.36	NO	
FIR6	Current Button R - Pad 6	22.60	NO	
FIX1	Current Button X - Pad 1	22.36	NO	
FIX2	Current Button X - Pad 2	22.60	NO	
FIX3	Current Button X - Pad 3	22.36	NO	
FIX4	Current Button X - Pad 4	22.60	NO	
FIX5	Current Button X - Pad 5	22.36	NO	
FIX6	Current Button X - Pad 6	22.60	NO	
SIR1	Current Slow Button R - Pad 1	22.36	BLK	3.000
SIR2	Current Slow Button R - Pad 2	22.60	BLK	3.000
SIR3	Current Slow Button R - Pad 3	22.36	BLK	3.000
SIR4	Current Slow Button R - Pad 4	22.60	BLK	3.000
SIR5	Current Slow Button R - Pad 5	22.36	BLK	3.000
SIR6	Current Slow Button R - Pad 6	22.60	BLK	3.000
SIX1	Current Slow Button X - Pad 1	22.36	BLK	3.000
SIX2	Current Slow Button X - Pad 2	22.60	BLK	3.000
SIX3	Current Slow Button X - Pad 3	22.36	BLK	3.000
SIX4	Current Slow Button X - Pad 4	22.60	BLK	3.000
SIX5	Current Slow Button X - Pad 5	22.36	BLK	3.000
SIX6	Current Slow Button X - Pad 6	22.60	BLK	3.000
EMMR	Phasor Voltage - Real Part	22.36	NO	
EMMX	Phasor Voltage - Imaginary Part	22.36	NO	
PADV	Pad Voltage	19.83	BLK	0.250
ITMP	Instrument Temperature	19.83	BLK	0.000
CON1	Conductivity Pad 1	22.36	BLK	3.000
CON2	Conductivity Pad 2	22.60	BLK	3.000
CON3	Conductivity Pad 3	22.36	BLK	3.000
CON4	Conductivity Pad 4	22.60	BLK	3.000
CON5	Conductivity Pad 5	22.36	BLK	3.000
CON6	Conductivity Pad 6	22.60	BLK	3.000
UIR2	Current Button R No Delay - Pad 2	22.36	NO	
UIR4	Current Button R No Delay - Pad 4	22.36	NO	
UIR6	Current Button R No Delay - Pad 6	22.36	NO	
UIX2	Current Button X No Delay - Pad 2	22.36	NO	
UIX4	Current Button X No Delay - Pad 4	22.36	NO	
UIX6	Current Button X No Delay - Pad 6	22.36	NO	
TPUL	Tension Pull	22.60	NO	
ARM1	Caliper 1 measurement	22.36	BLK	0.000
ARM2	Caliper 2 measurement	22.36	BLK	0.000
ARM3	Caliper 3 measurement	22.36	BLK	0.000
ARM4	Caliper 4 measurement	22.36	BLK	0.000
ARM5	Caliper 5 measurement	22.36	BLK	0.000
ARM6	Caliper 6 measurement	22.36	BLK	0.000
MOTV	Motor Voltage Monitor 1	22.36	BLK	0.000
PRES	Caliper percentage of total compression of the spring	19.83	BLK	0.000
HAZI	Hole Azimuth	22.11	NO	

HAZI	Hole Azimuth	22.36	NO	
RB	Relative Bearing	22.36	NO	
AZI1	PAD1 Azimuth	22.36	NO	
DEVI	Inclination	22.36	NO	
<b>ACRt Sonde</b>				
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 Current Raw 12K X Receiver	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	
<b>Microlog Pad</b>				
TPUL	Tension Pull	88.03	NO	
MINV	Microlog Lateral	88.03	BLK	0.750
MNOR	Microlog Normal	88.03	BLK	0.750
<b>SDLT Pad</b>				
TPUL	Tension Pull	87.84	NO	
NAB	Near Above	87.66	BLK	0.920
NHI	Near Cesium High	87.66	BLK	0.920
NLO	Near Cesium Low	87.66	BLK	0.920
NVA	Near Valley	87.66	BLK	0.920
NBA	Near Barite	87.66	BLK	0.920
NDE	Near Density	87.66	BLK	0.920
NPK	Near Peak	87.66	BLK	0.920
NLI	Near Lithology	87.66	BLK	0.920
NBAU	Near Barite Unfiltered	87.66	BLK	0.250
NLIU	Near Lithology Unfiltered	87.66	BLK	0.250
FAB	Far Above	88.01	BLK	0.250
FHI	Far Cesium High	88.01	BLK	0.250
FLO	Far Cesium Low	88.01	BLK	0.250
FVA	Far Valley	88.01	BLK	0.250
FBA	Far Barite	88.01	BLK	0.250
FDE	Far Density	88.01	BLK	0.250
FPK	Far Peak	88.01	BLK	0.250
FLI	Far Lithology	88.01	BLK	0.250
PTMP	Pad Temperature	87.85	BLK	0.920
NHV	Near Detector High Voltage	87.24	NO	
FHV	Far Detector High Voltage	87.24	NO	
ITMP	Instrument Temperature	87.24	NO	
DDHV	Detector High Voltage	87.24	NO	
Data: SIEGRIST_220710001 SP-GTET-CSNG-DSN-SDLT-FLEX-WSTT-XRMI-ACRT-CHIDLE			Date: 16-Mar-13 05:00:25	

COMPANY	<b>SHELL</b>		
WELL	<b>SIEGRIST 2207 7-2</b>		
FIELD	<b>WILDCAT</b>		
COUNTY	<b>RENO</b>	STATE	<b>KANSAS</b>
<b>HALLIBURTON</b>		<b>TRIPLE COMBO LOG</b>	