



Tucker

ENERGY SERVICES

PHASED INDUCTION
SHALLOW FOCUS SP LOG

Company PICKRELL DRILLING COMPANY, INC		File No : TUL 59749	
Well #3 MAPLE "K"		Company : PICKRELL DRILLING COMPANY, INC	
Field SPIVEY-GRABS-BASIL		Well : #3 MAPLE "K"	
County KINGMAN		Field : SPIVEY-GRABS-BASIL	
State KANSAS		County : KINGMAN	
Country USA		State : KANSAS	
API No. 15-095-22291-0000		Country : USA	
API No : 15-095-22291-0000		Location : 1980' FSL & 660' FEL C NE SE	
LSD :		Sect : 30 Twp : 29S Rge : 6W	
Permanent Datum:		Elevations:	
Drilling Measured From:		KB 1529.00 FT	
Log Measured From:		DF 1527.00 FT	
Above Permanent Datum: 10.00 Ft		GL 1519.00 FT	
Services:		CNT PIT	
LDT		MLT	
Date 10-06-2014			
Run Number 1			
Depth--Driller 4230.0 Ft			
Depth--Logger 4240.0 Ft			
First Reading 4240.0 Ft			
Last Reading 213.0 Ft			
Casing--Driller 213.0 Ft			
Casing--Logger 213.0 Ft			
Bit Size 7.875 In			
Casing Size 8.625 In			
Hole Fluid Type CHEM GEL			
Density 9.5 lb/gl			
Fluid Loss 9.0 ml/30min			
PH/Viscosity 10.0 53.0 sec/qt			
Sample Source MEASURED			
RM@Measured Temp. 2.000 @ 75 F			
RMF@Measured Temp 1.600 @ 75 F			
RMC@Measured Temp. 2.400 @ 75 F			
Source RMF/RMC CALCULATED/CALCULATED			
RM@BHT 1.670 @ 119 F			
Time Circulation Stopped 10-06-2014 6:00 pm			
Max Recorded Temp. 119 F			
Equipment/Base 127 TULSA			
Recorded By SHELDON TYLER / AMOUR DUHO			
Witnessed By JERRY SMITH			

The customer is hereby warned that by providing the log data herein, T. E. S. does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. T. E. S. does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by T. E. S. personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by T. E. S. for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	4230.00	8.625	32.00	213.00	0.00

Run Number	1	
Date	10-06-2014	
Date/Time On Bottom	10-06-2014 9:30 pm	
Depth to Fluid	0.0 Ft	
Salinity	3000.000 ppm	
RMF@BHT	1.330 @ 119 F	
RMC@BHT	2.000 @ 119 F	

Run Number 1

Comments

ALL PRESENTATIONS AS PER CUSTOMER REQUEST
 GRT, CNT, LDT, MLT AND PIT RUN IN COMBINATION
 CALIPERS ORIENTED ON X-Y AXIS
 2.71 G/CC USED TO CALCULATE POROSITY
 ANNULAR HOLE VOLUME CALCULATED USING 4.5" PRODUCTION CASING
 PHIN IS CALIPER CORRECTED

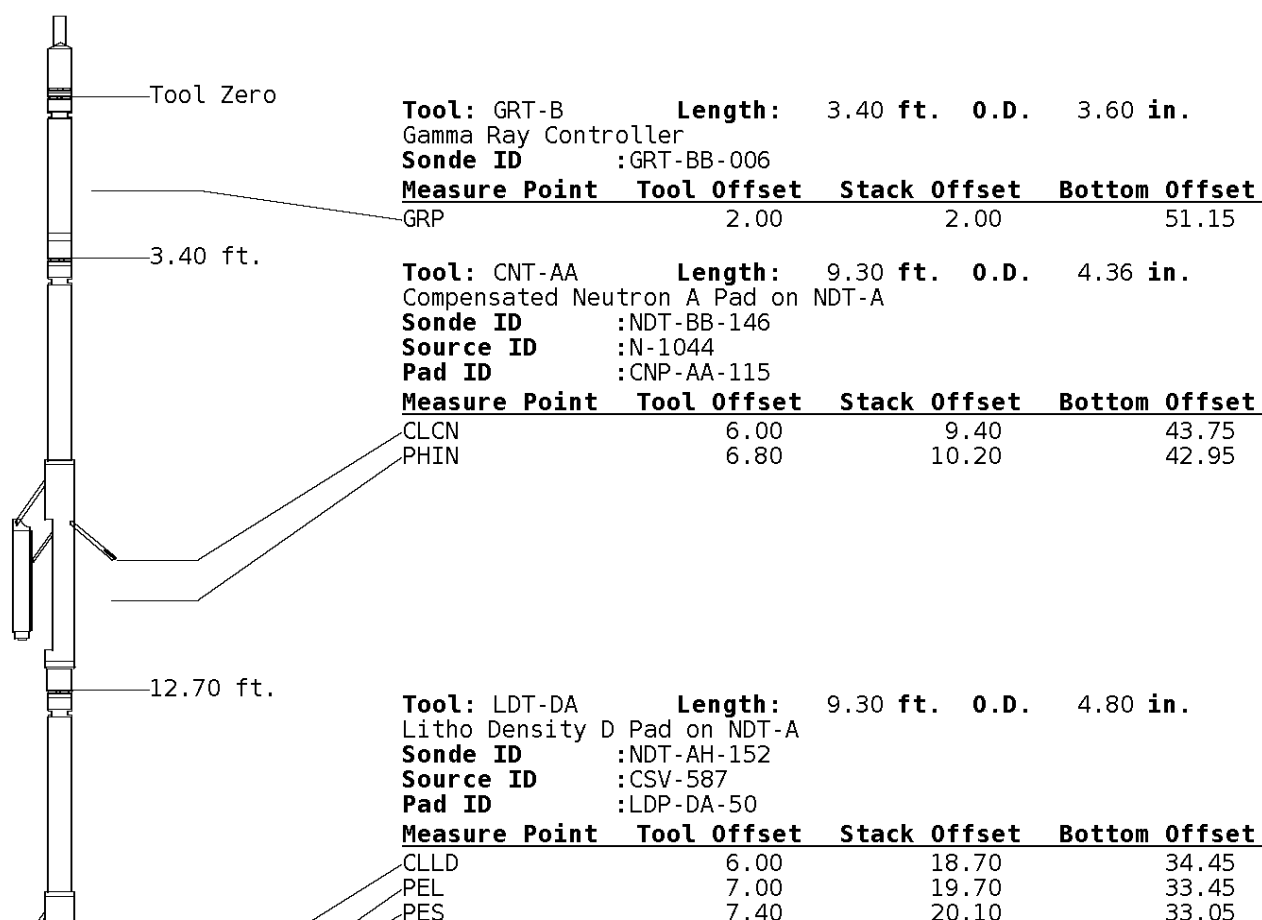
CUSTOMER REQUESTED DETAILS PULLED FROM TD TO 2800'

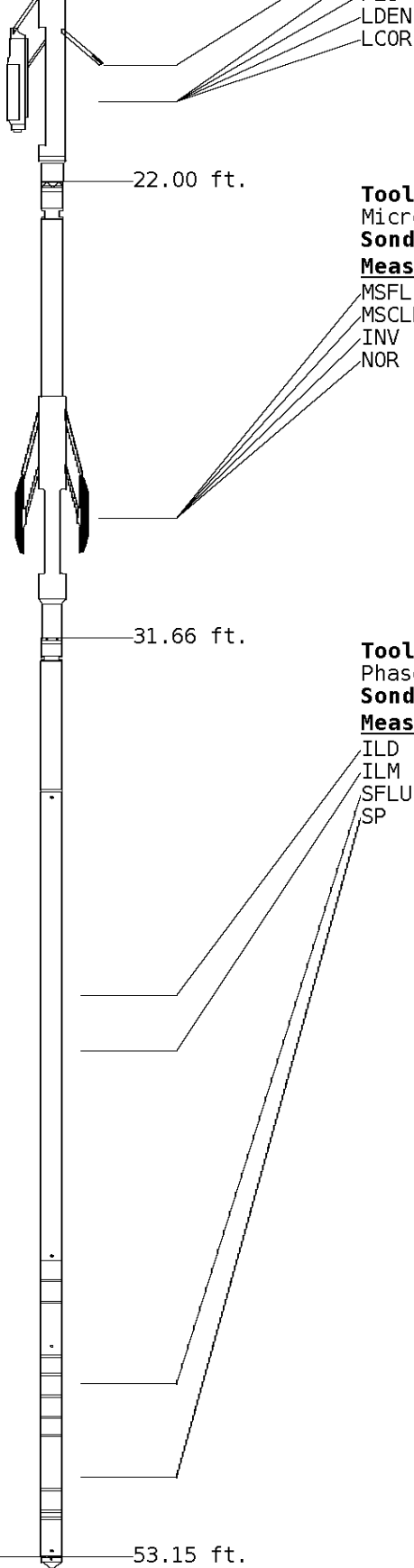
GRT: GRP, GRX
 CNT: PHIN, CLCNIN, PHXN
 LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN, PRXL, PECLX, LDENNX, LCORX
 MLT: NOR_RF, INV_RF, MSCLPIN
 PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS: +3
 B. BROWN
 D.DUNCAN

Tool String Schematic

Total Tool Length - 53.15 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 943.00 lbs.





Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
 Micro Spherically Focused (IC)
Sonde ID :MLT-DA-21

Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	29.60	23.55
MSCLP	7.60	29.60	23.55
INV	7.60	29.60	23.55
NOR	7.60	29.60	23.55

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
 Phased Dual Induction w/ RM & D
Sonde ID :PIT-CA-062

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	40.58	12.56
ILM	10.10	41.76	11.39
SFLU	17.49	49.15	4.00
SP	20.60	52.26	0.88

Well File: PICKRELL MAPLE K 3 OCT6 MSTK

Scale: 1:600 **Format:** DIL-600

Segment: V1.D1.S5 Reprocess of MAIN

Acquired: 2014-10/06 21:15 3.4.0-13115

Reference: 0

Processed: 2014-10/06 22:22 3.4.0-13115

RXO/RT

-160

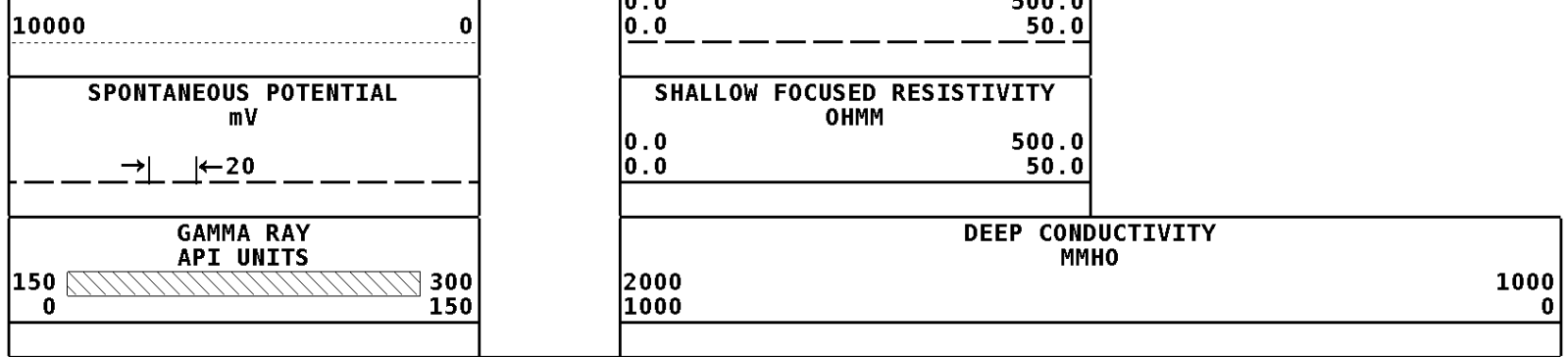
40

**TENSION
LBS**

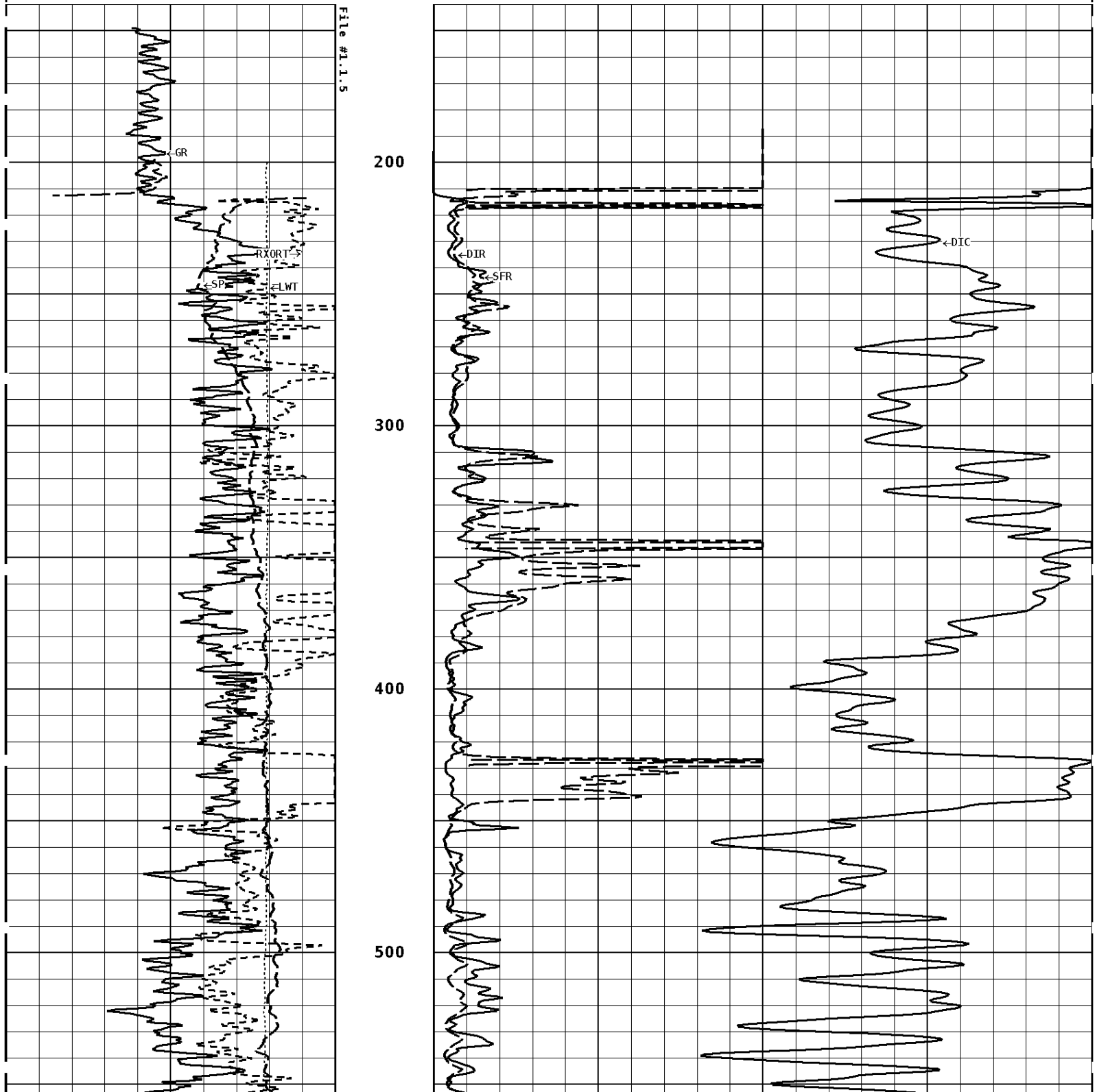
**DEEP INDUCTION
OHMM**

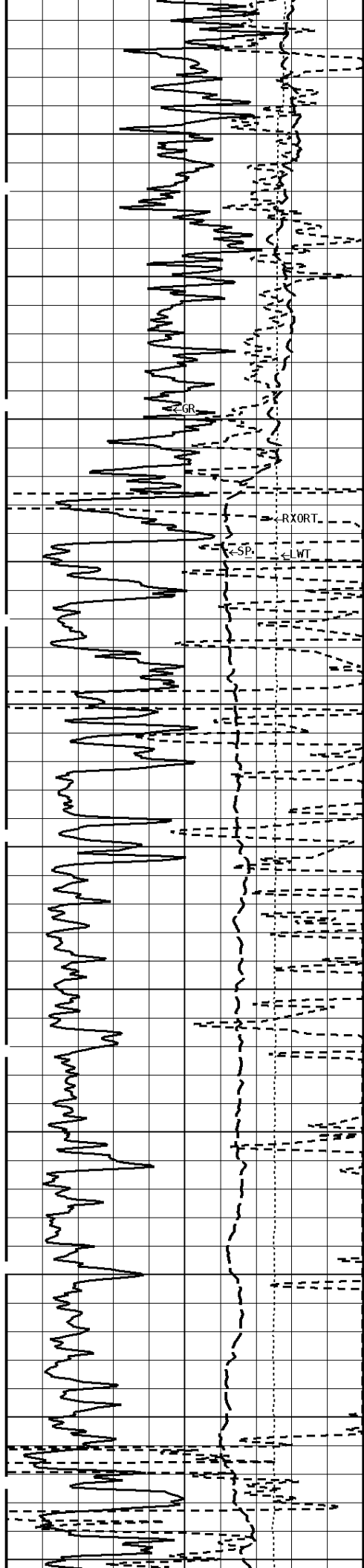
0.0

500.0



1:600 MAIN SECTION





600

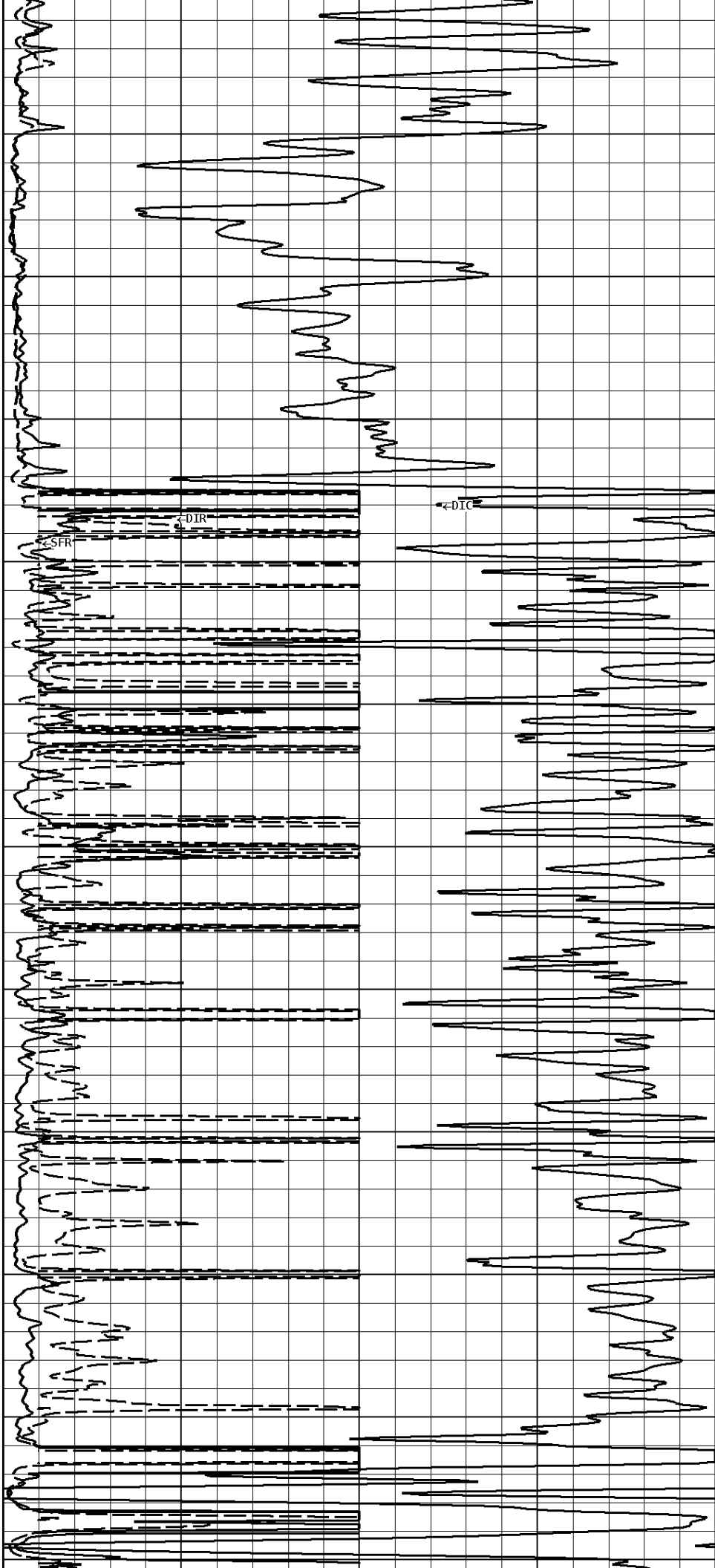
700

800

900

1000

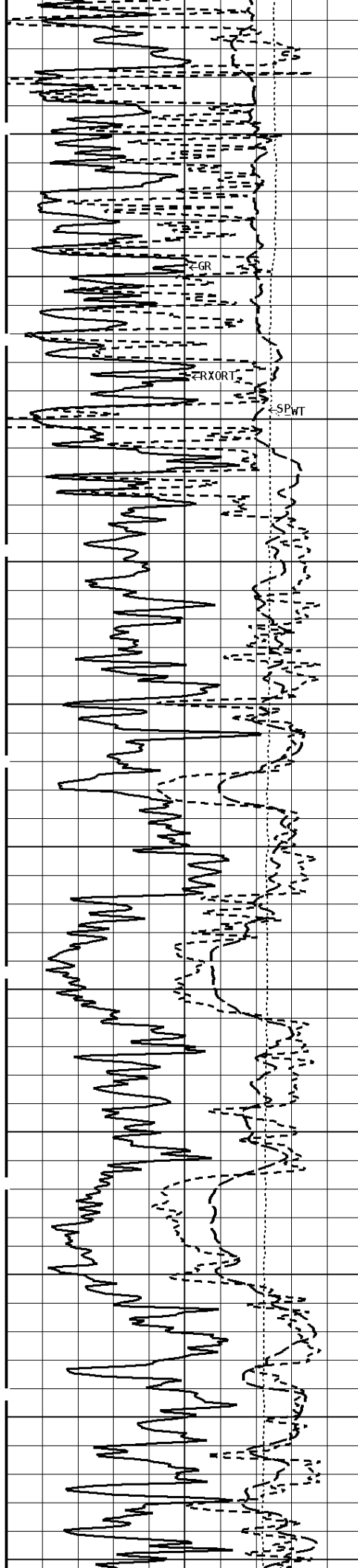
1100



DTR

DIC

SFR



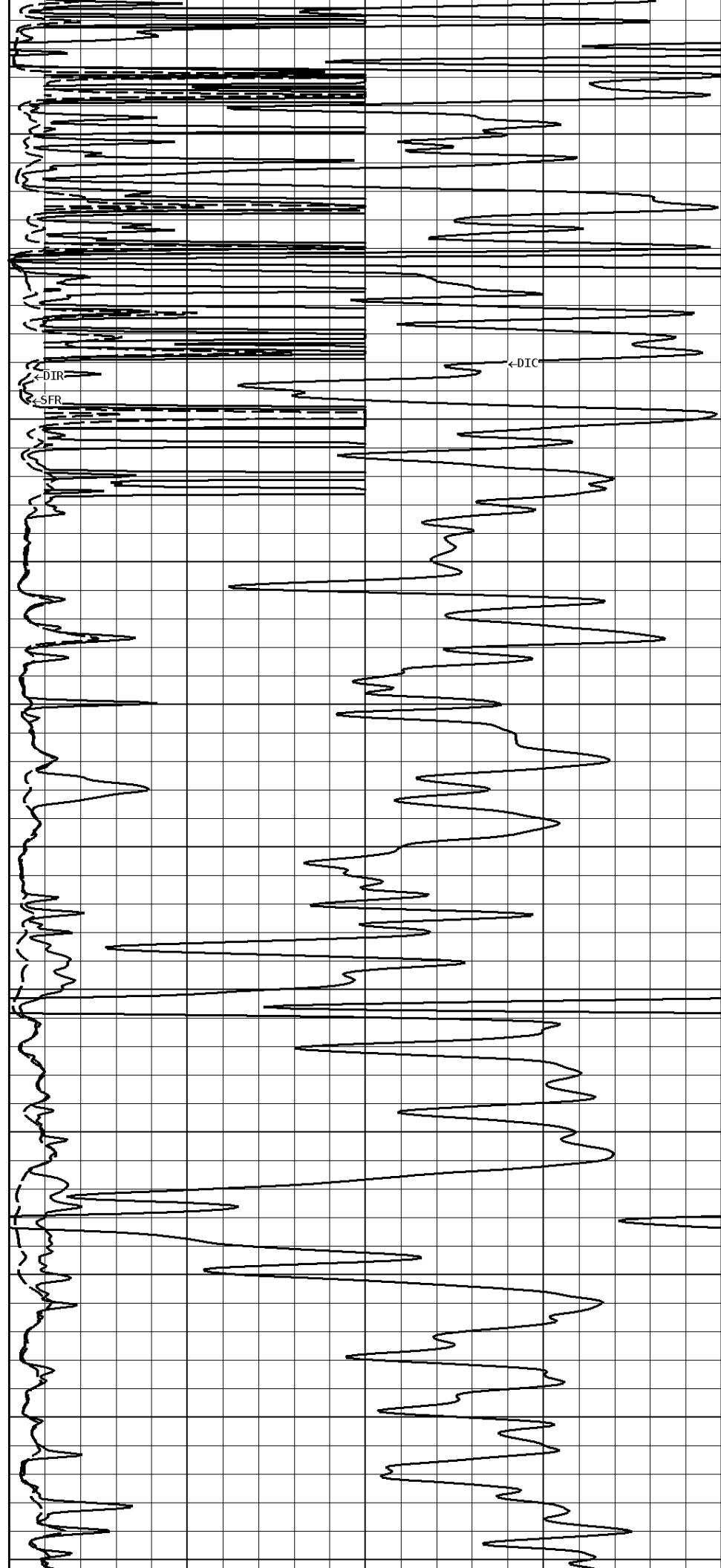
1200

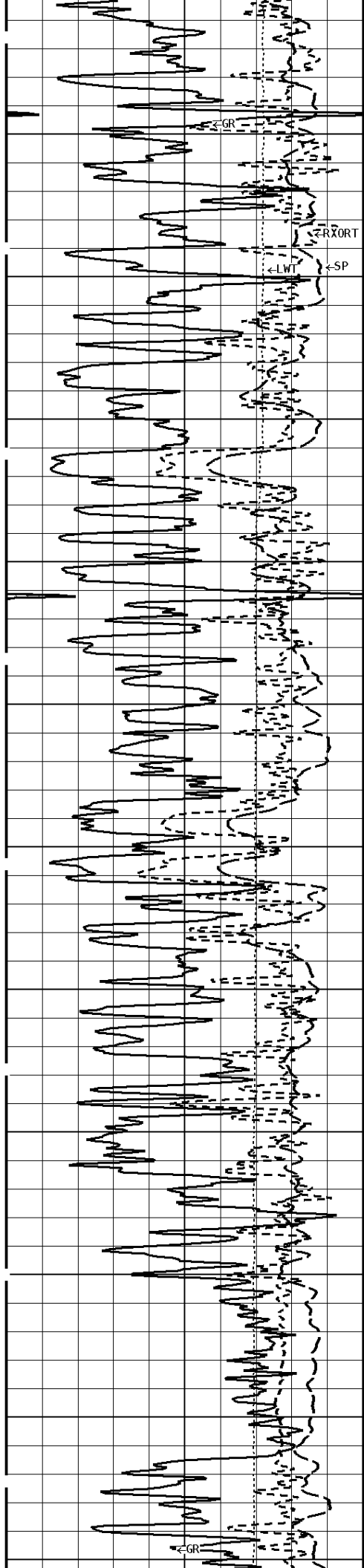
1300

1400

1500

1600





1700

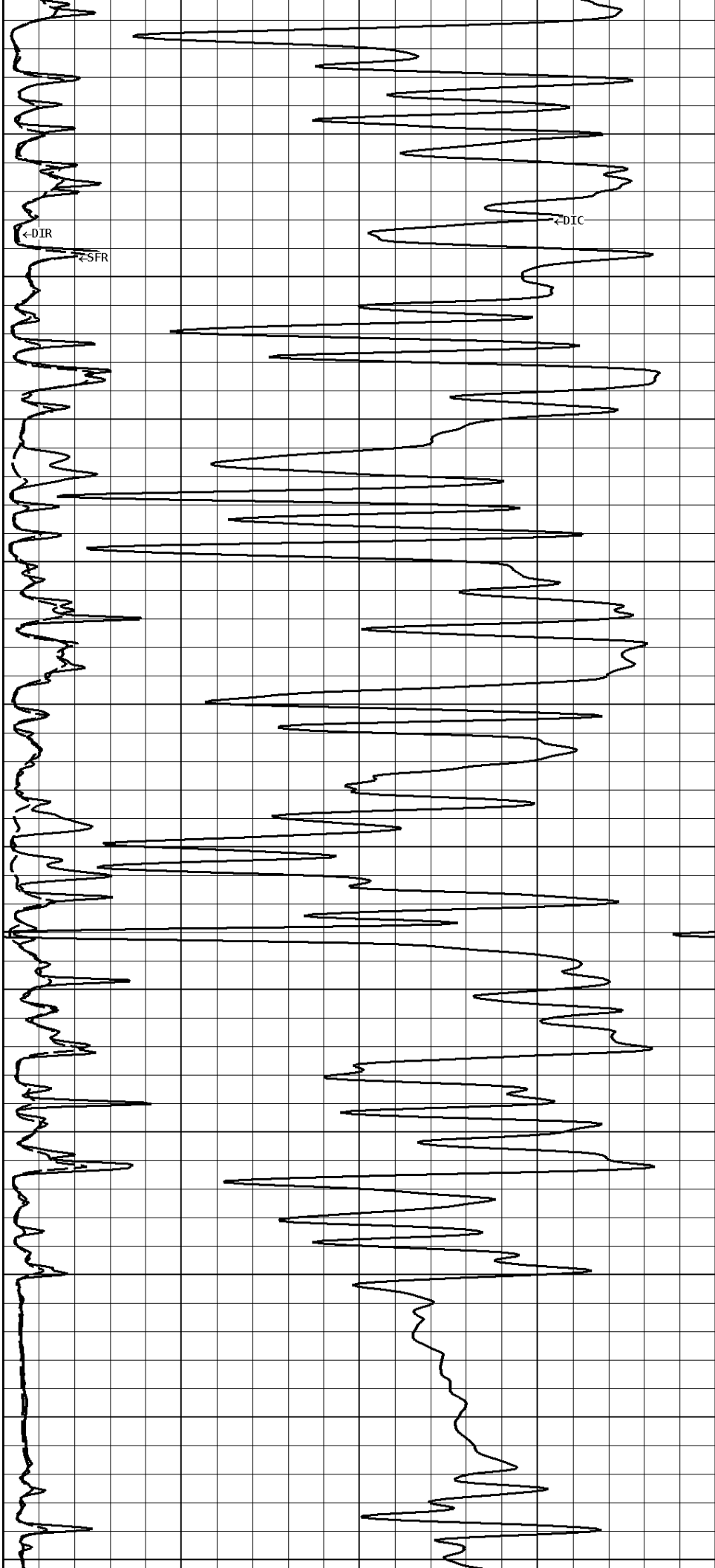
1800

1900

2000

2100

2200

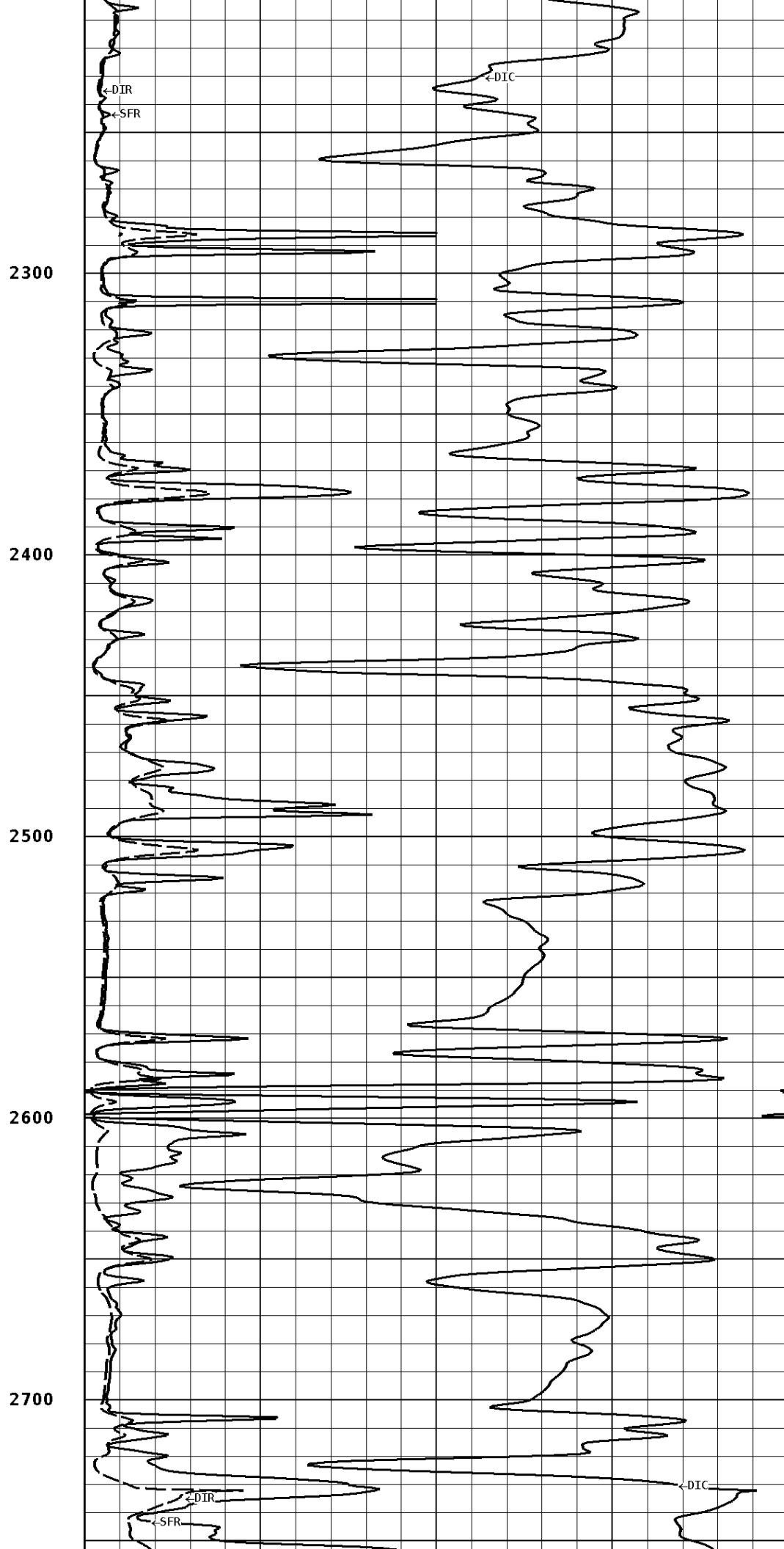
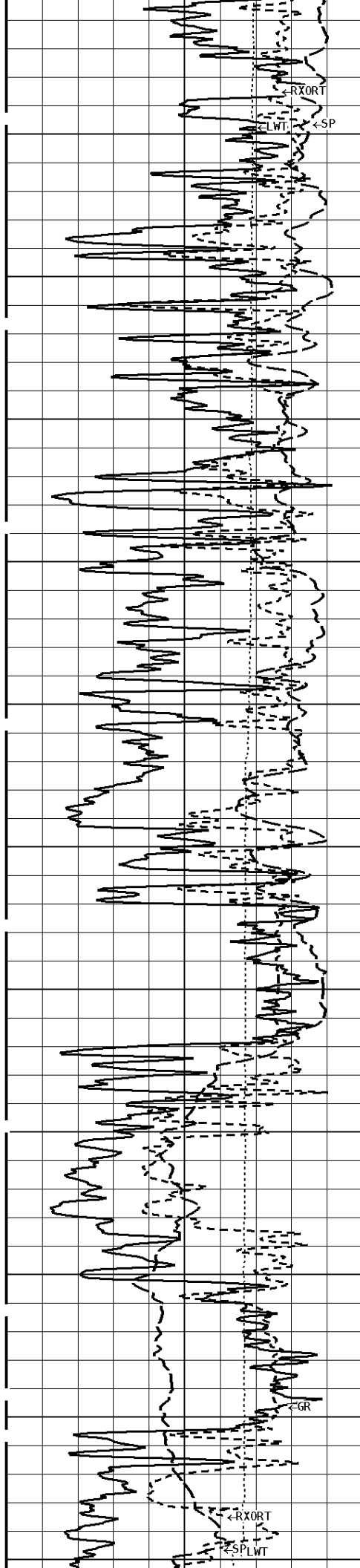


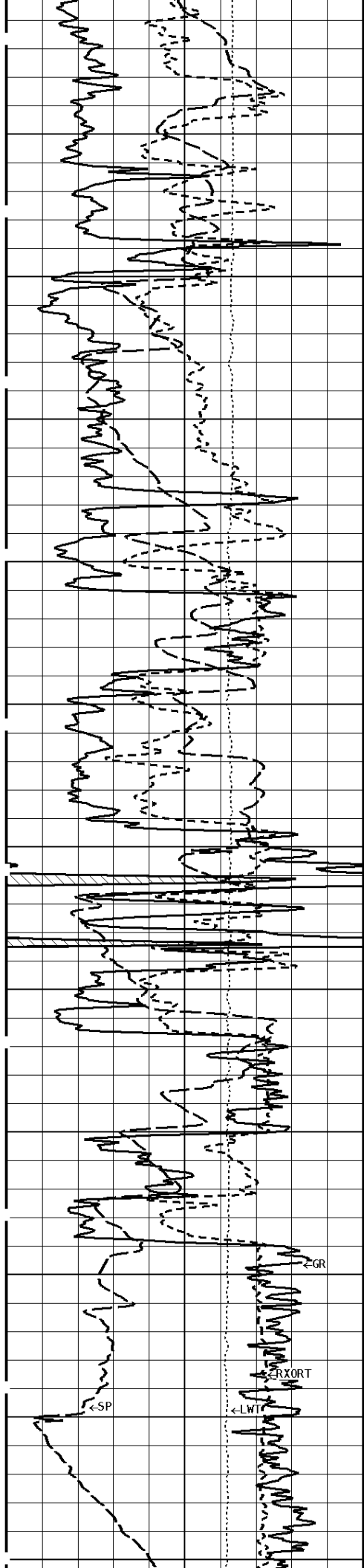
←DIR

←SFR

←DIC

←GR





2800

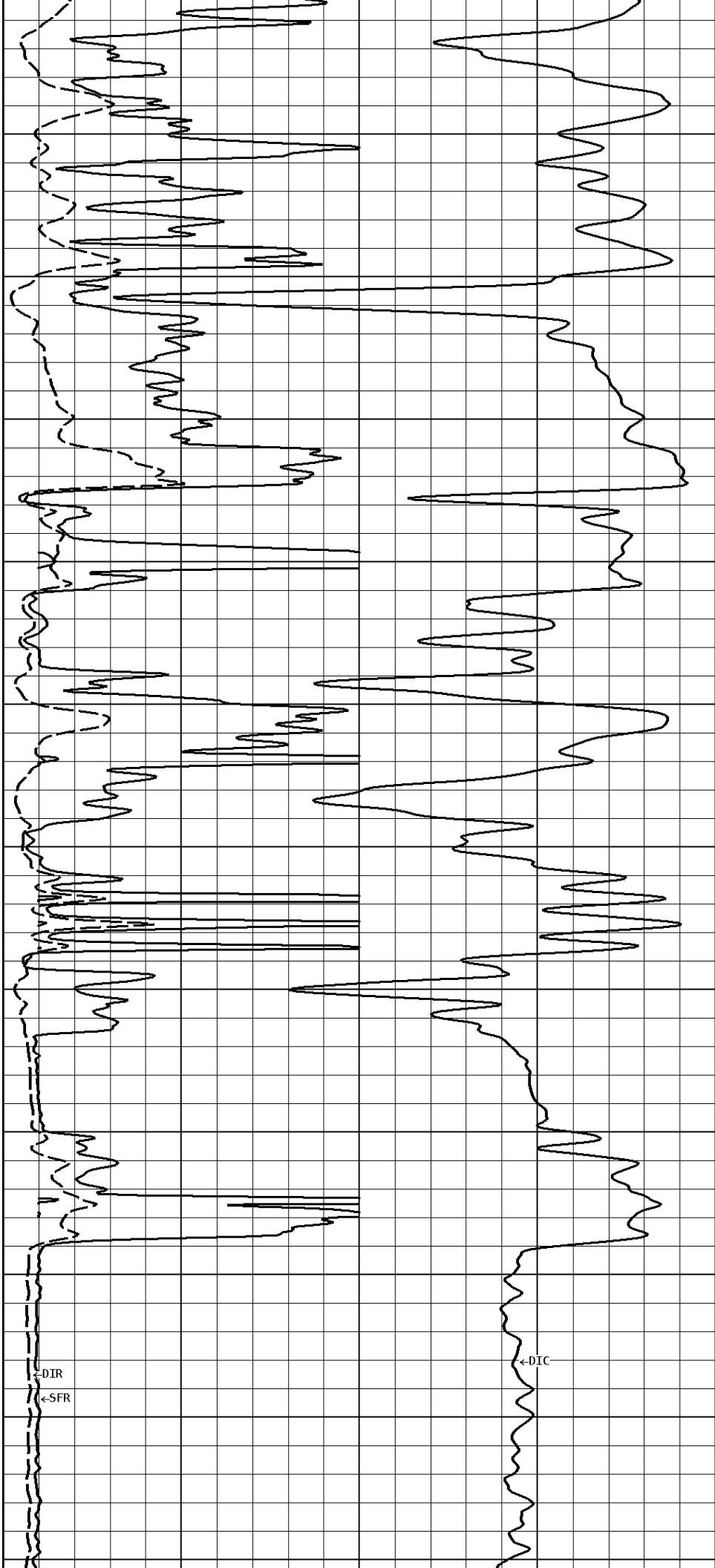
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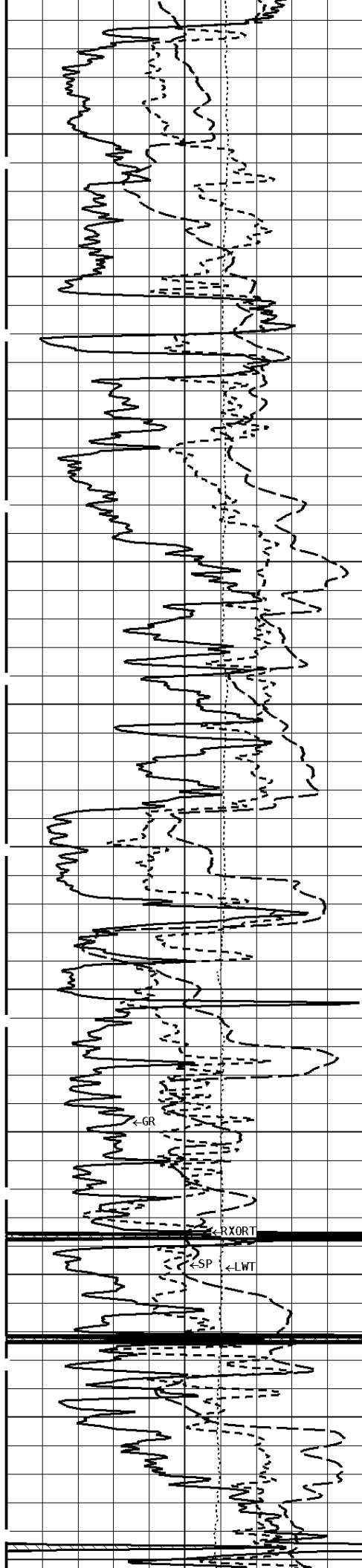
3000

3100

3200

3300





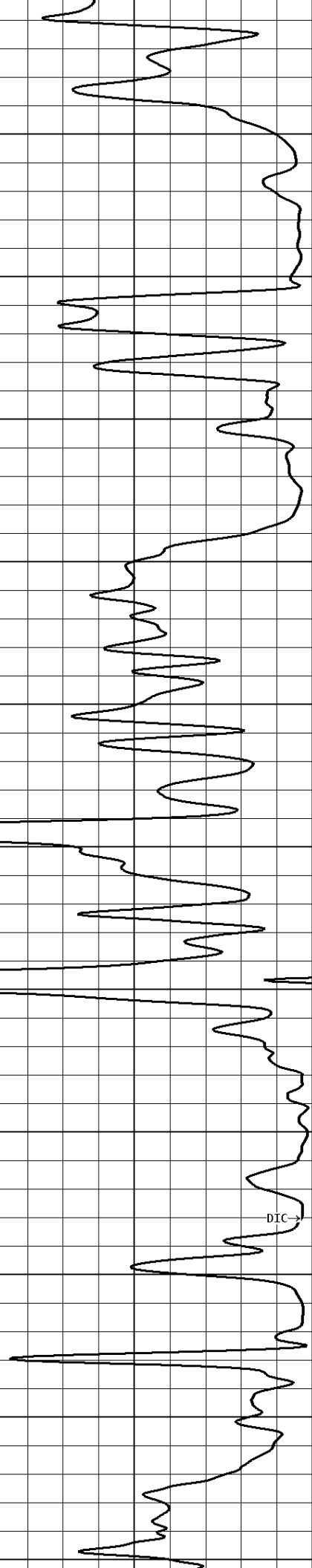
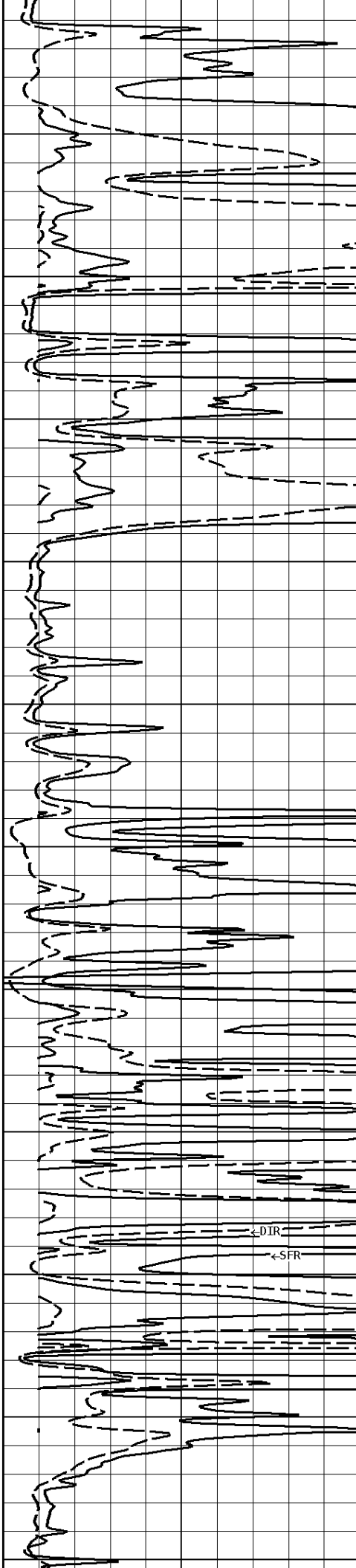
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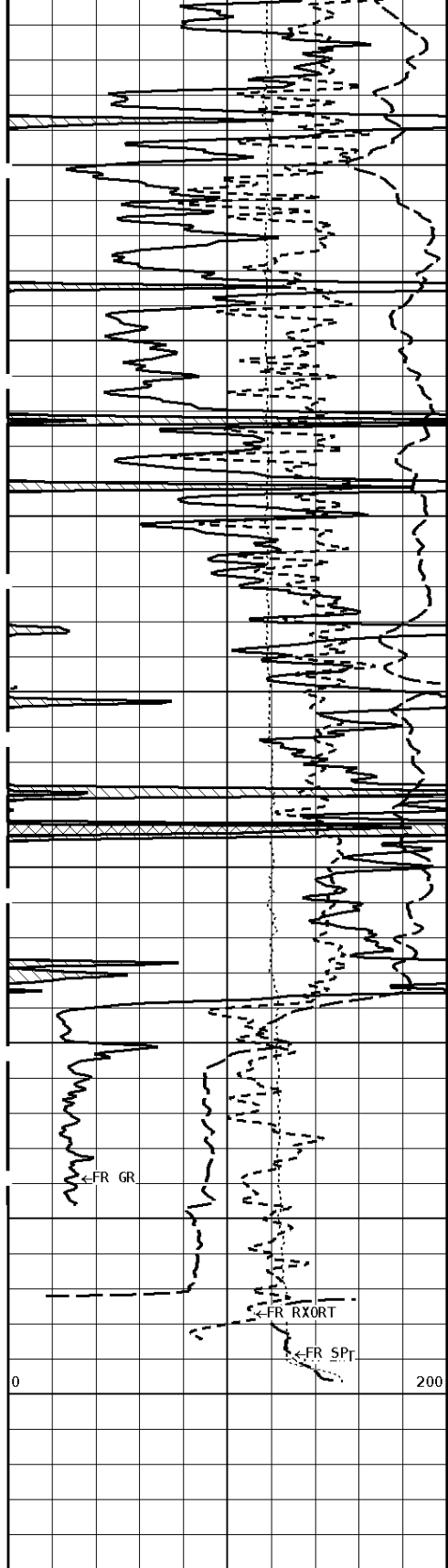
3500

3600

3700

3800





File #1.1.5

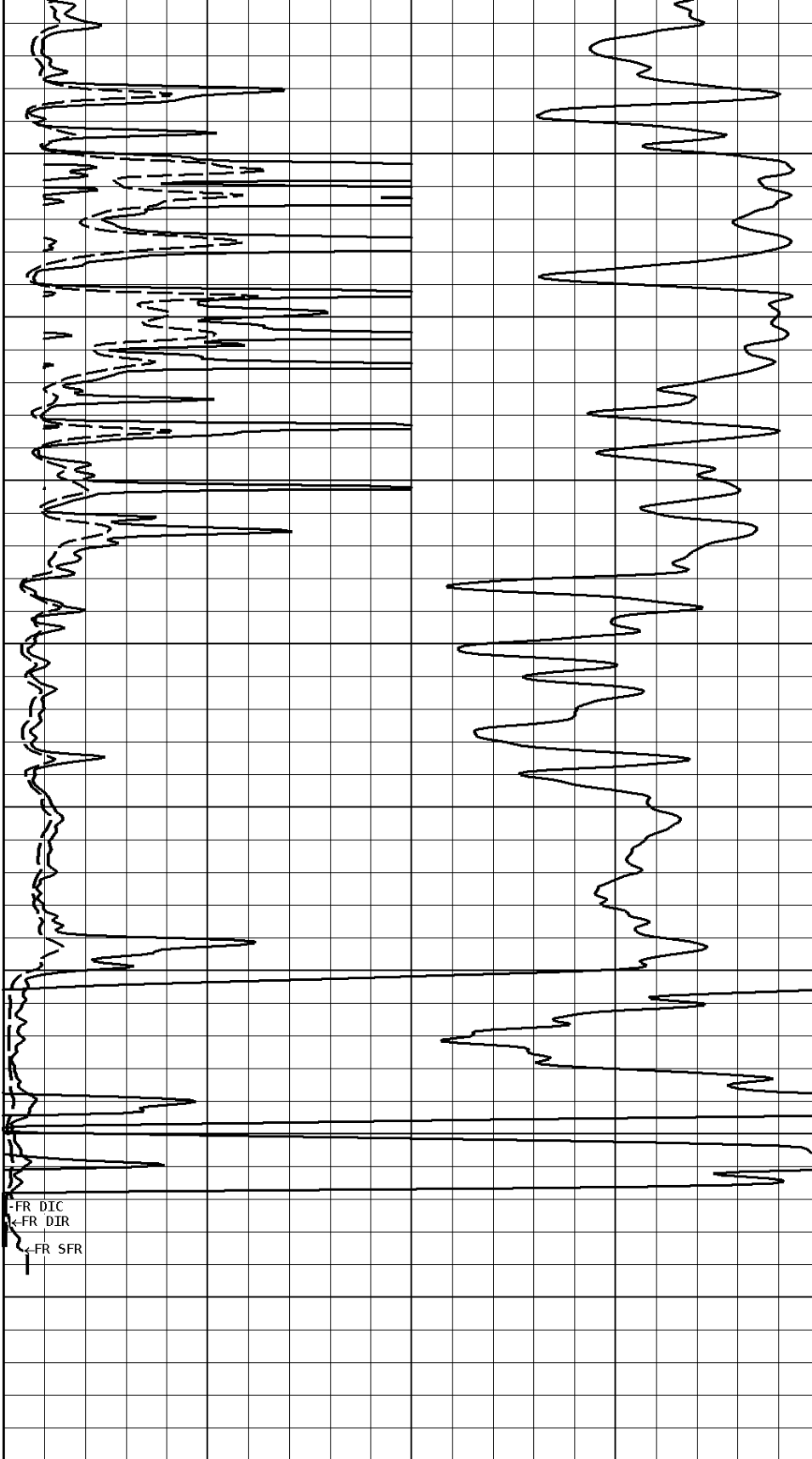
3900

4000

4100

4200

4240



1:600 MAIN SECTION

GAMMA RAY
API UNITS

150 0 300 150

DEEP CONDUCTIVITY
MMHO

2000 1000 1000 0

SPONTANEOUS POTENTIAL
mV

1 20

SHALLOW FOCUSED RESISTIVITY
OHMM

0.0 500.0
0.0 50.0

TENSION LBS	
10000	0
RXO/RT	
-160	40

DEEP INDUCTION OHMM	
0.0	500.0
0.0	50.0

Well File: PICKRELL MAPLE K 3 OCT6 MSTK Scale: 1:240 Format: DIL-240
Segment: V1.D1.S5 Reprocess of MAIN Acquired: 2014-10/06 21:15 3.4.0-13115
Reference: 0 Processed: 2014-10/06 22:22 3.4.0-13115

RXO/RT	
-160	40

SPONTANEOUS POTENTIAL mV	
→	←20

TENSION LBS	
10000	0

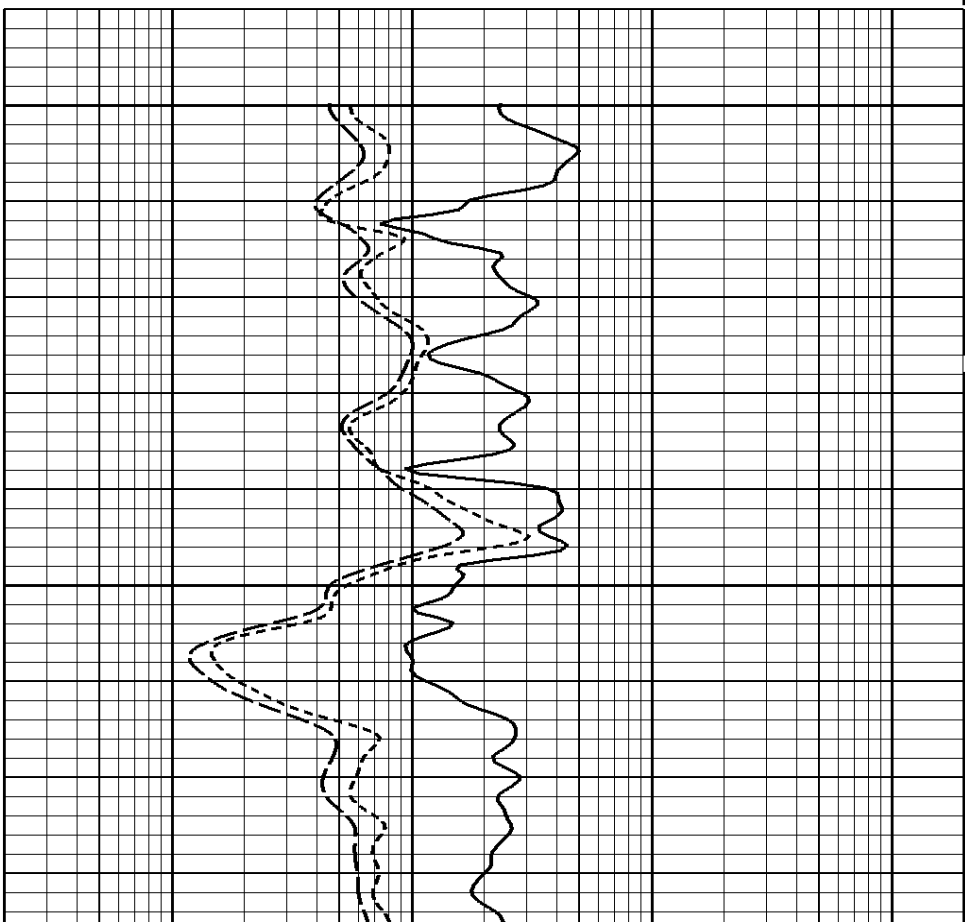
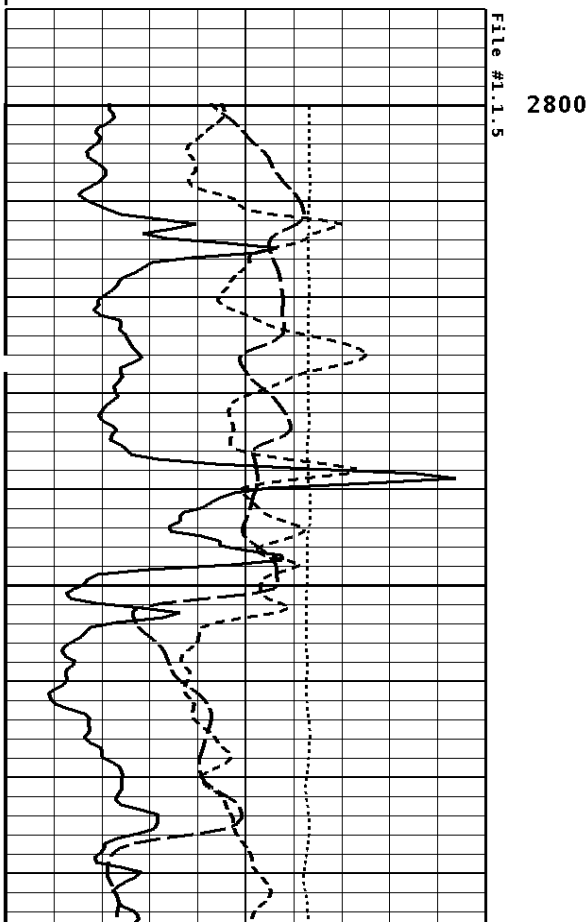
GAMMA RAY API UNITS	
150	300
0	150

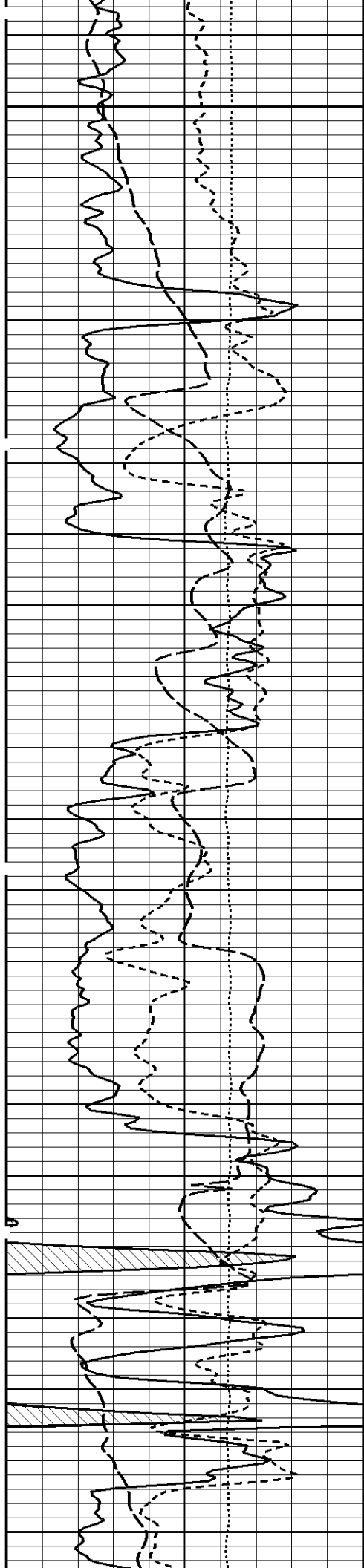
DEEP INDUCTION OHMM	
0.2	2000.0

MEDIUM INDUCTION OHMM	
0.2	2000.0

SHALLOW FOCUSED RESISTIVITY OHMM	
0.2	2000.0

1:240 MAIN SECTION

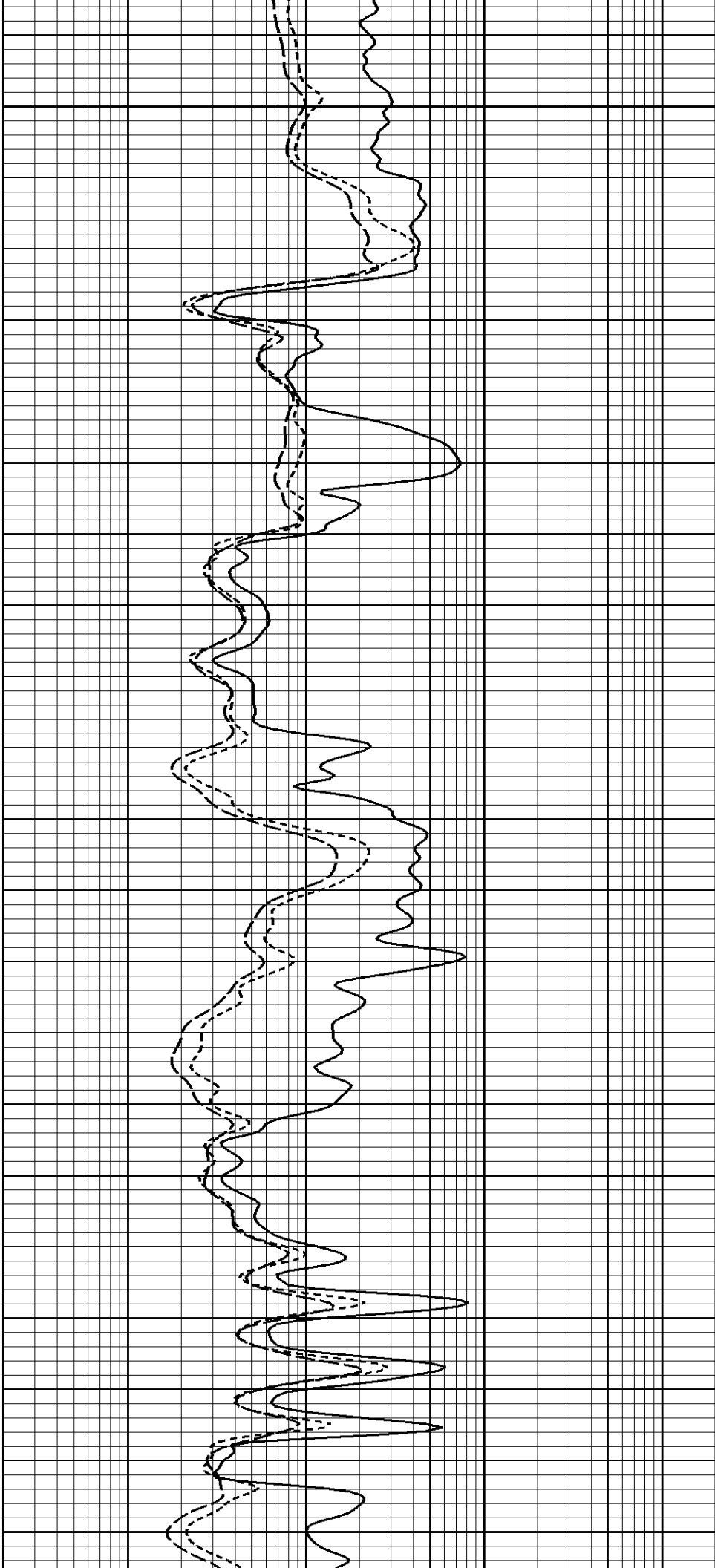


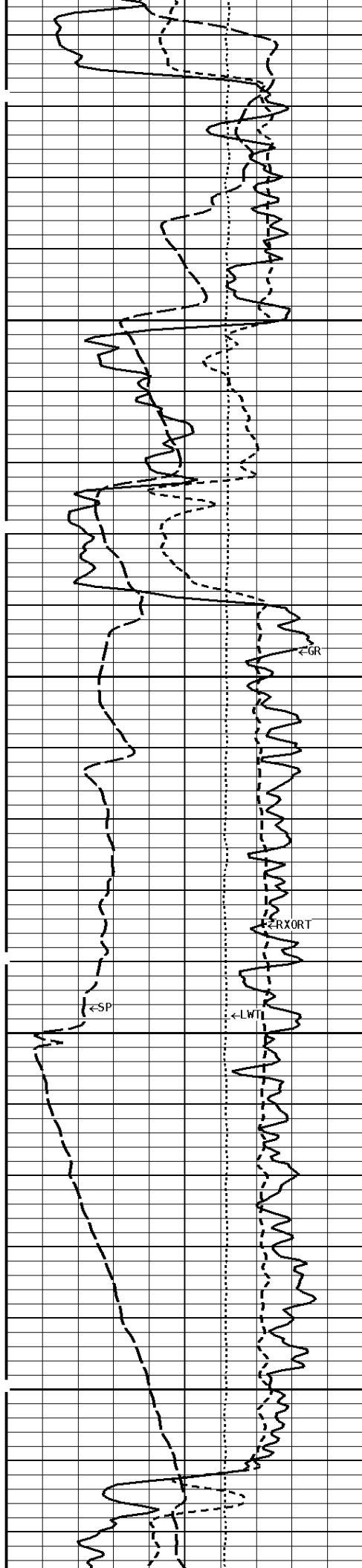


2900

3000

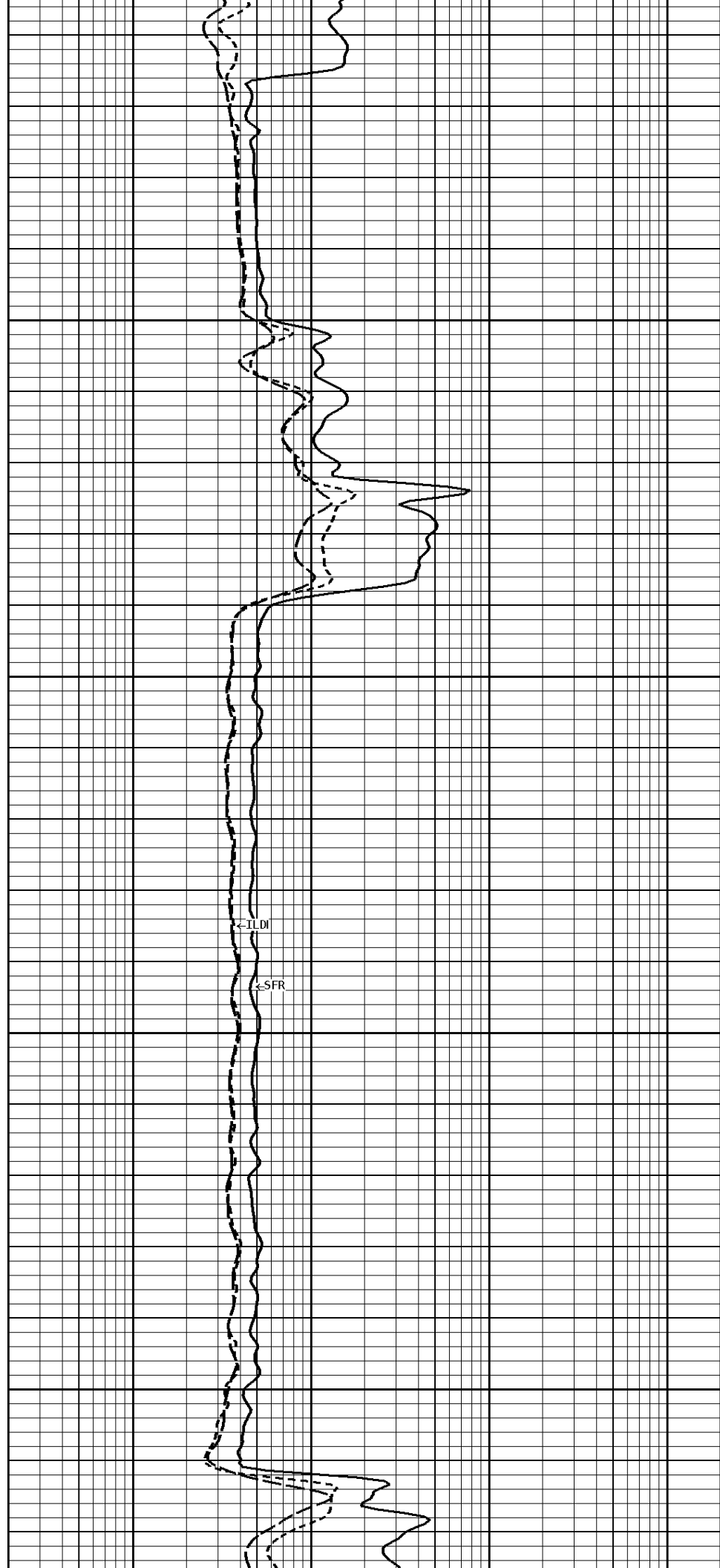
3100

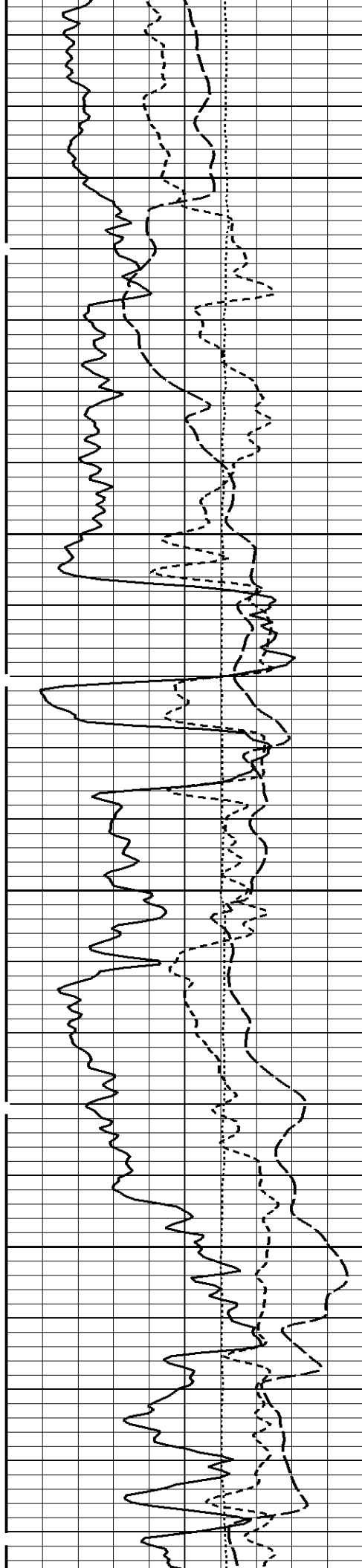




3200

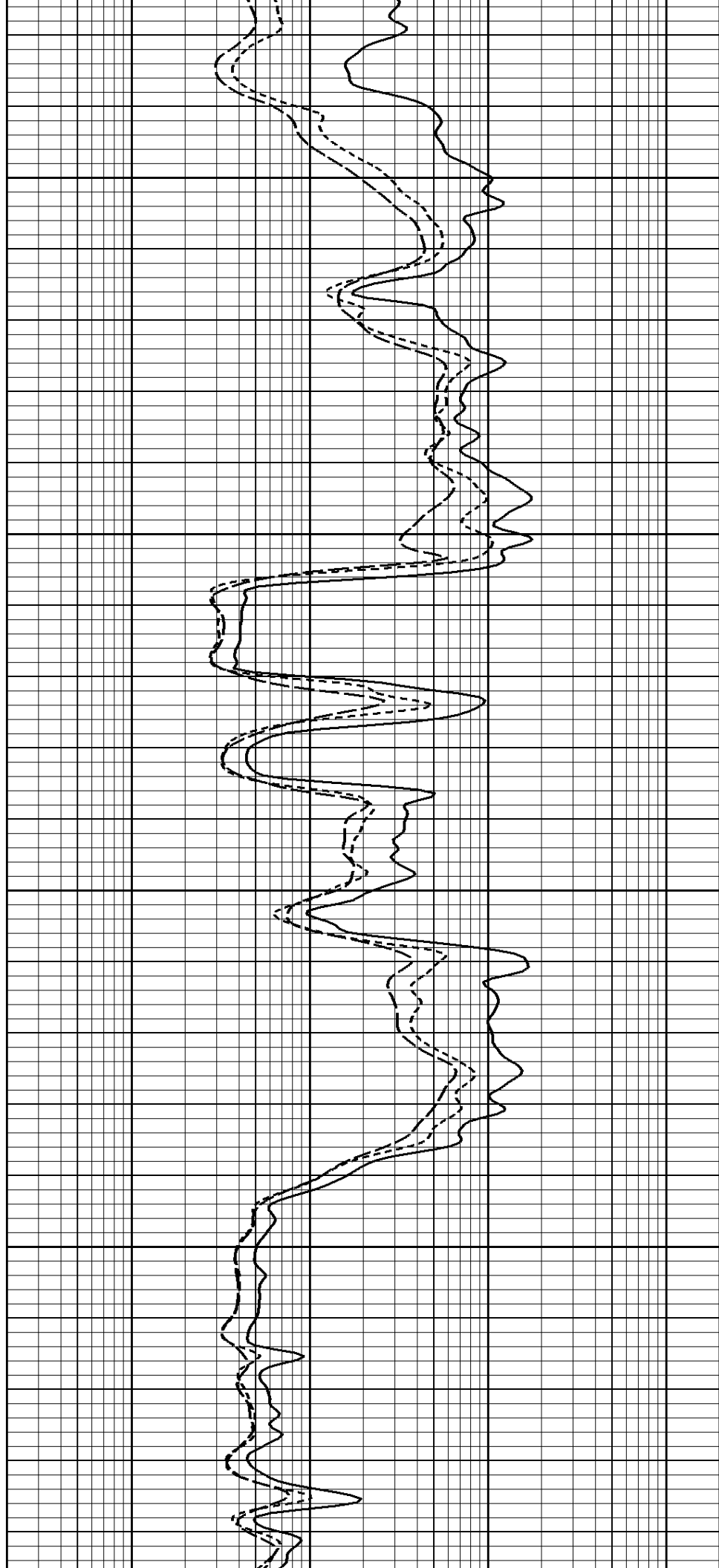
3300

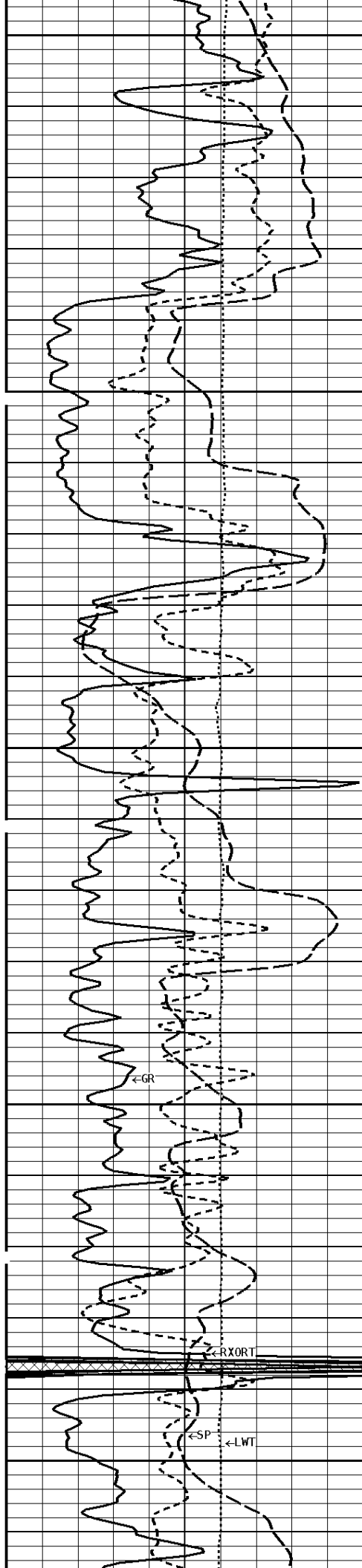




3400

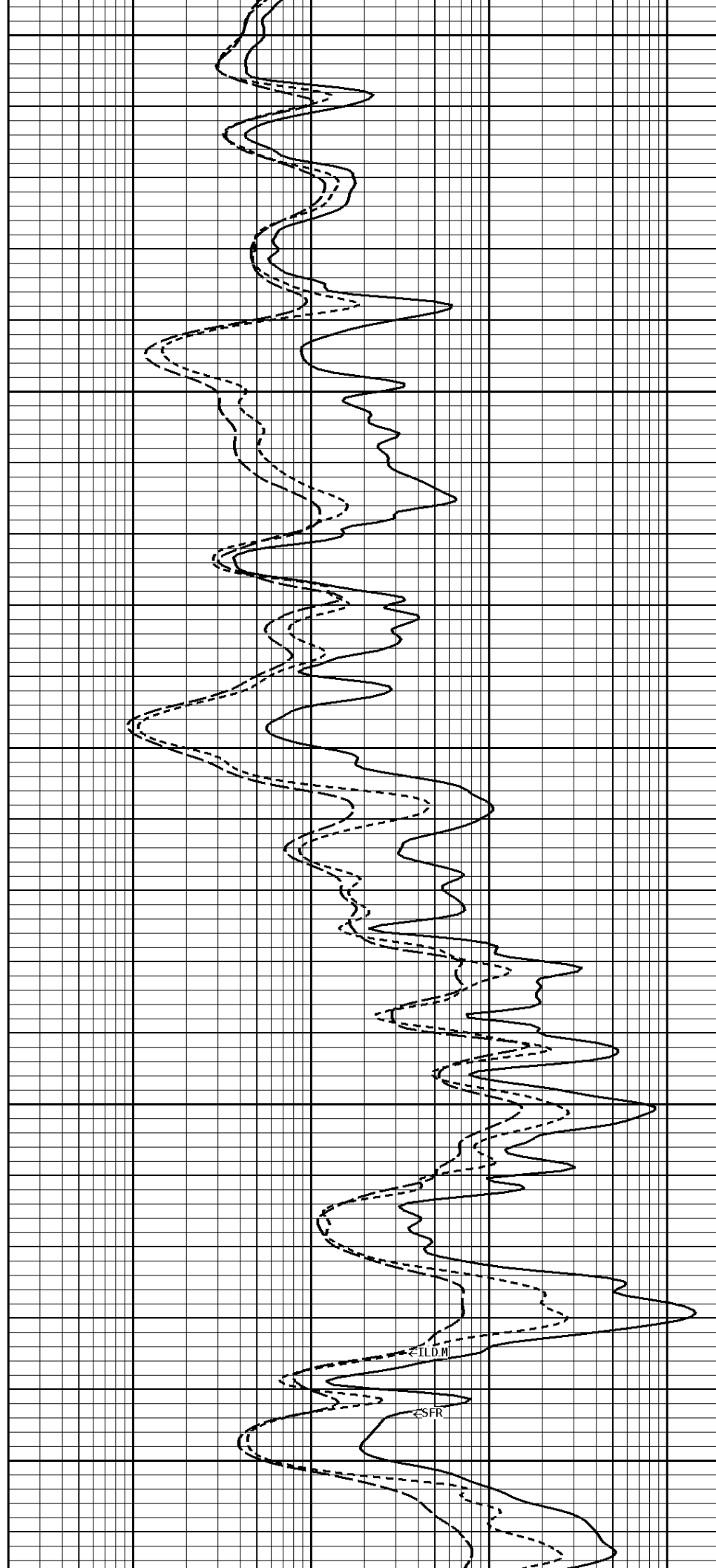
3500

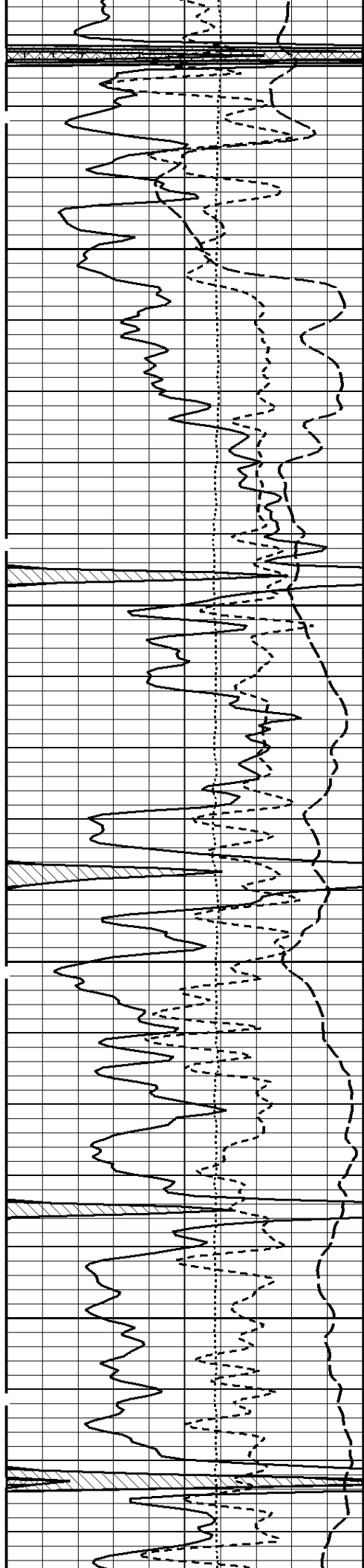




3600

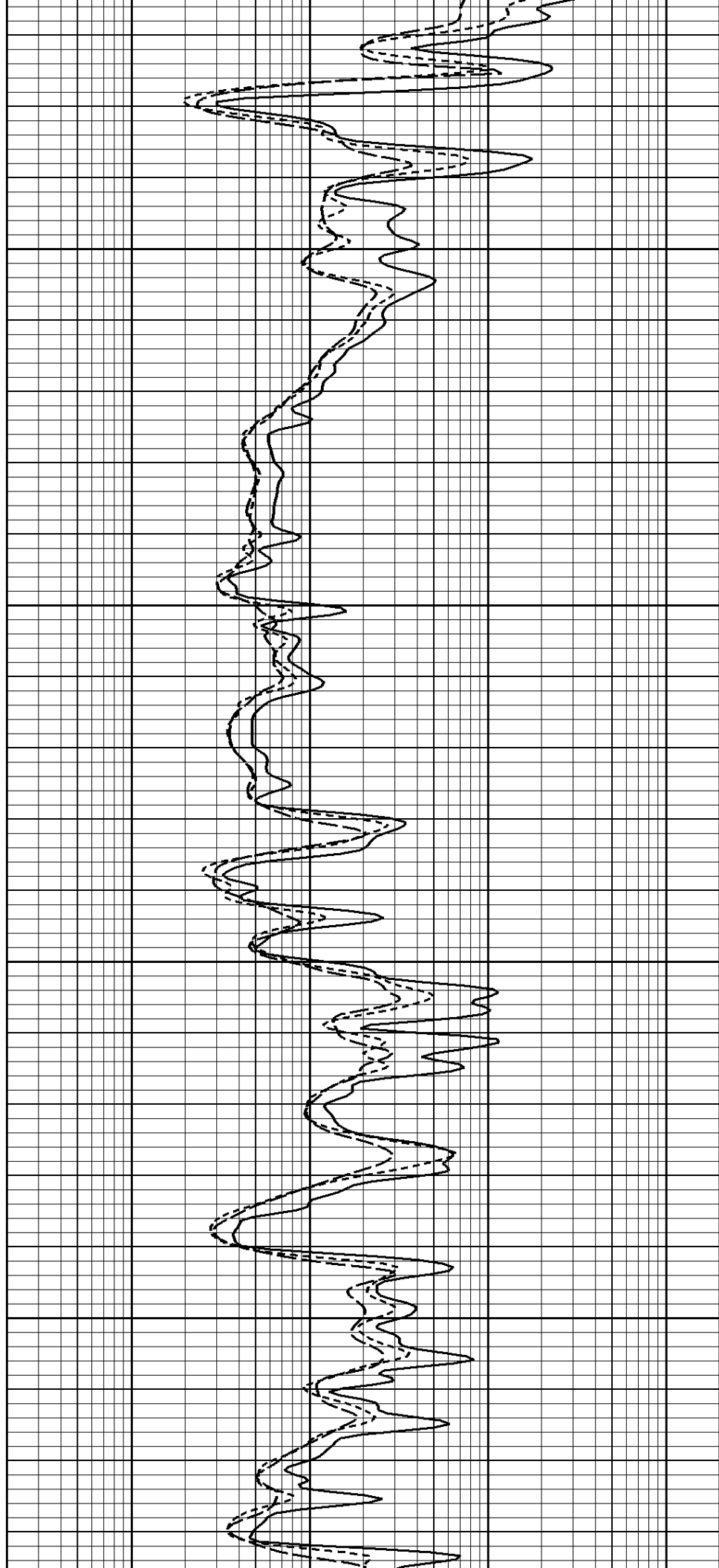
3700

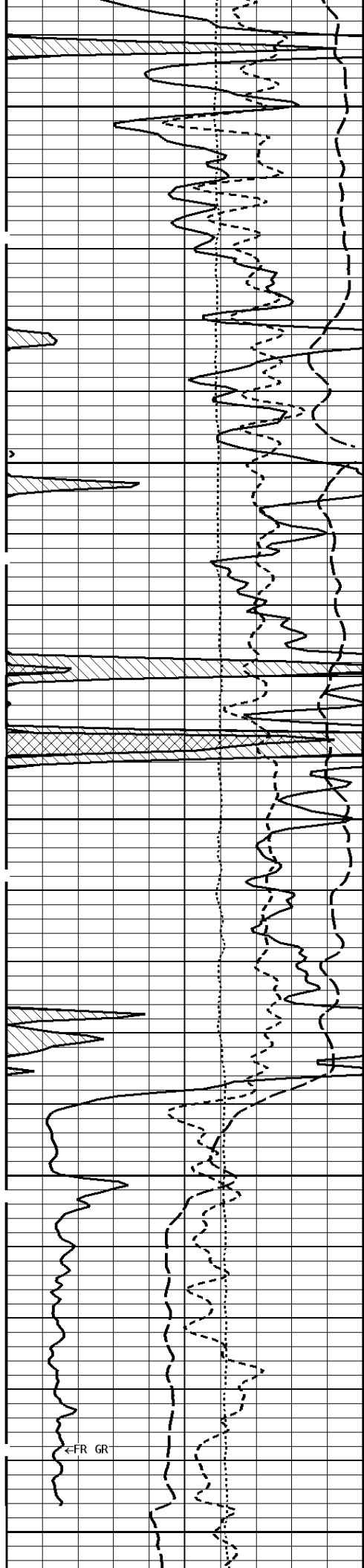




3800

3900

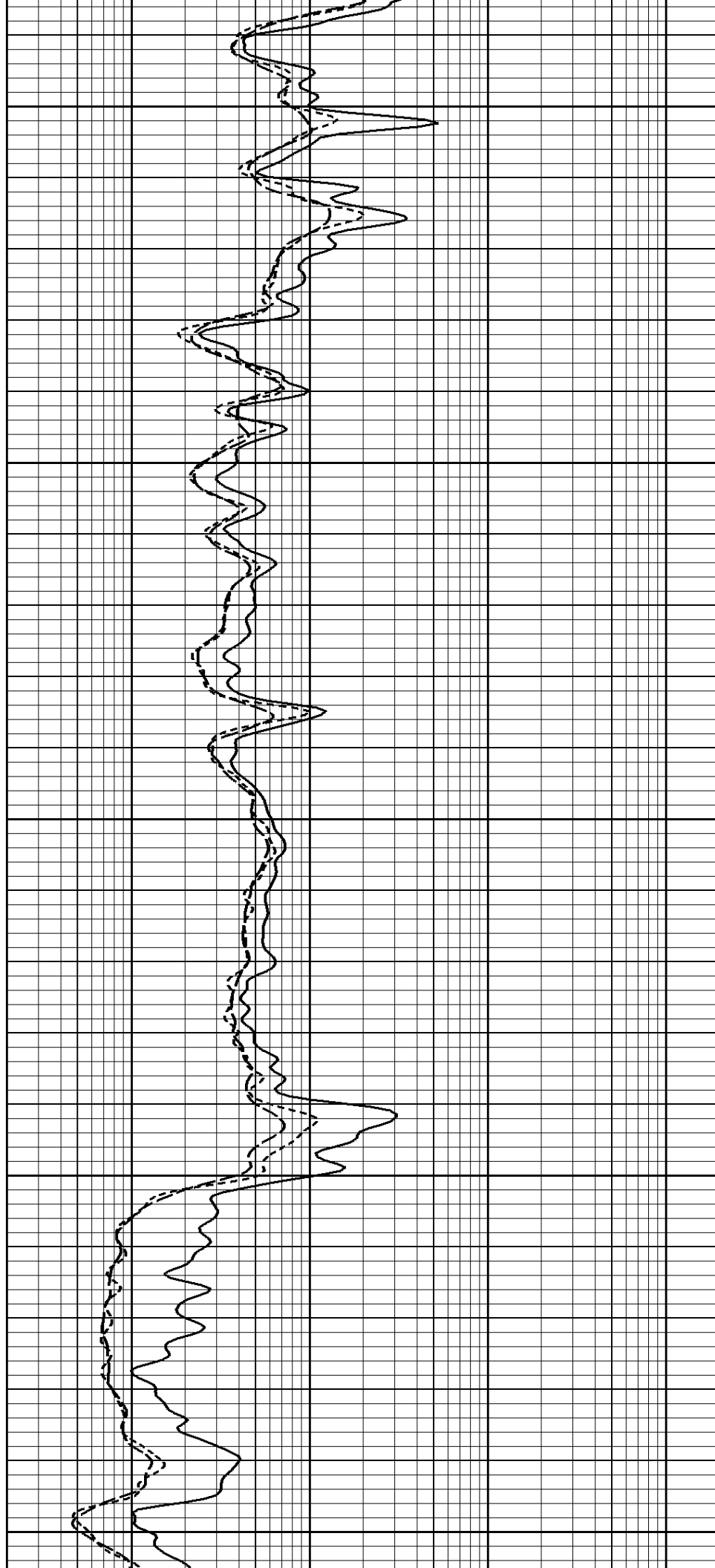


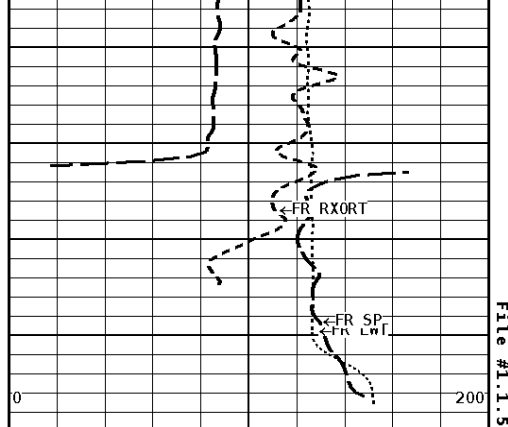


4000

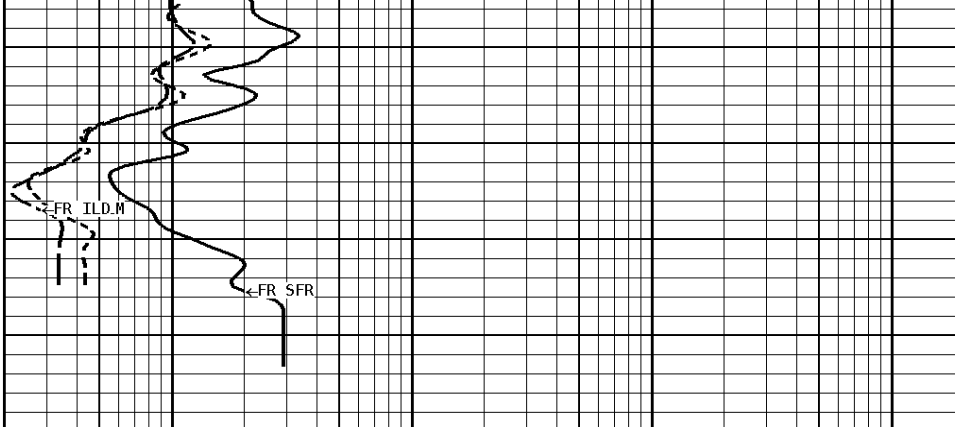
4100

4200





4240



1:240 MAIN SECTION

GAMMA RAY API UNITS	
150	300
0	150
TENSION LBS	
10000	0
SPONTANEOUS POTENTIAL mV	
→	←20
RXO/RT	
-160	40

SHALLOW FOCUSED RESISTIVITY OHMM	
0.2	2000.0
MEDIUM INDUCTION OHMM	
0.2	2000.0
DEEP INDUCTION OHMM	
0.2	2000.0

* Borehole Zone Factors *

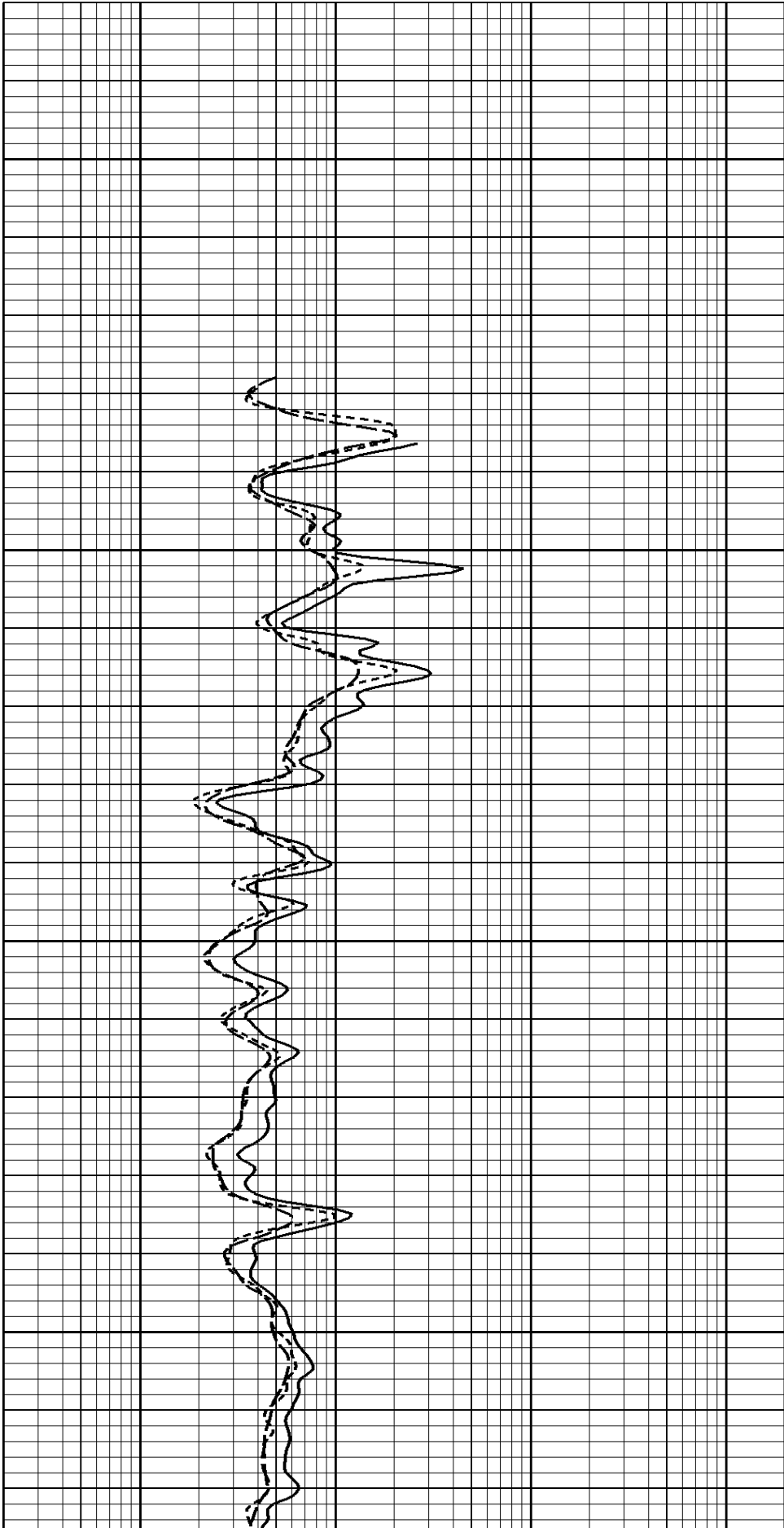
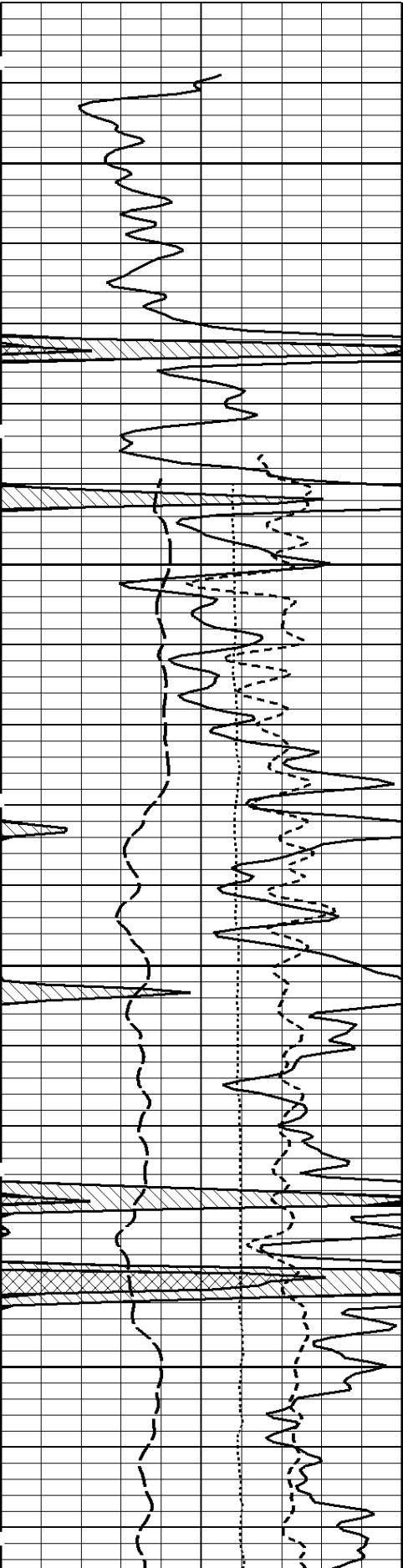
Zone 1	99999.0	to	0.0	Feet
Drill Bit Size				7.875 in
Casing Diameter				4.500 in
BHT Depth				4230.000 ft
Borehole Temperature				119.0 degF
Temperature Gradient				1.00 DFHF
Resistivity Of Mud				0.200 ohm/m
Resistivity Of Mud Temperature				75.00 degF

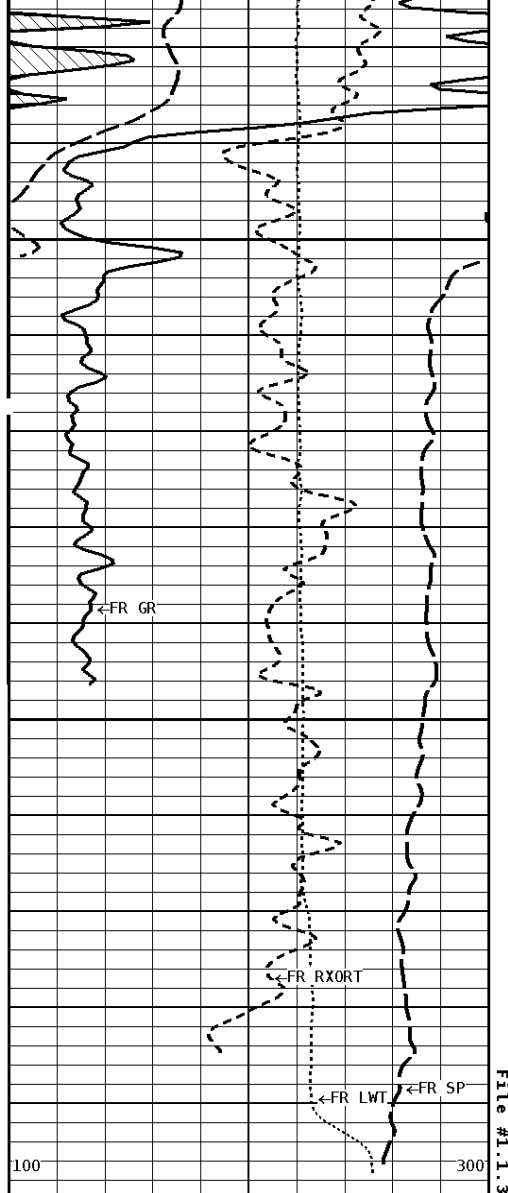
Well File: PICKRELL MAPLE K 3 OCT6 MSTK	Scale: 1:240	Format: DIL-240
Segment: V1.D1.S3 Reprocess of REPEAT	Acquired: 2014-10/06 21:03 3.4.0-13115	Processed: 2014-10/06 21:14 3.4.0-13115
Reference: 0		

RXO/RT	
-160	40
SPONTANEOUS POTENTIAL mV	
→	←20
TENSION LBS	
10000	0
GAMMA RAY API UNITS	
150	300

DEEP INDUCTION OHMM	
0.2	2000.0
MEDIUM INDUCTION OHMM	
0.2	2000.0
SHALLOW FOCUSED RESISTIVITY OHMM	

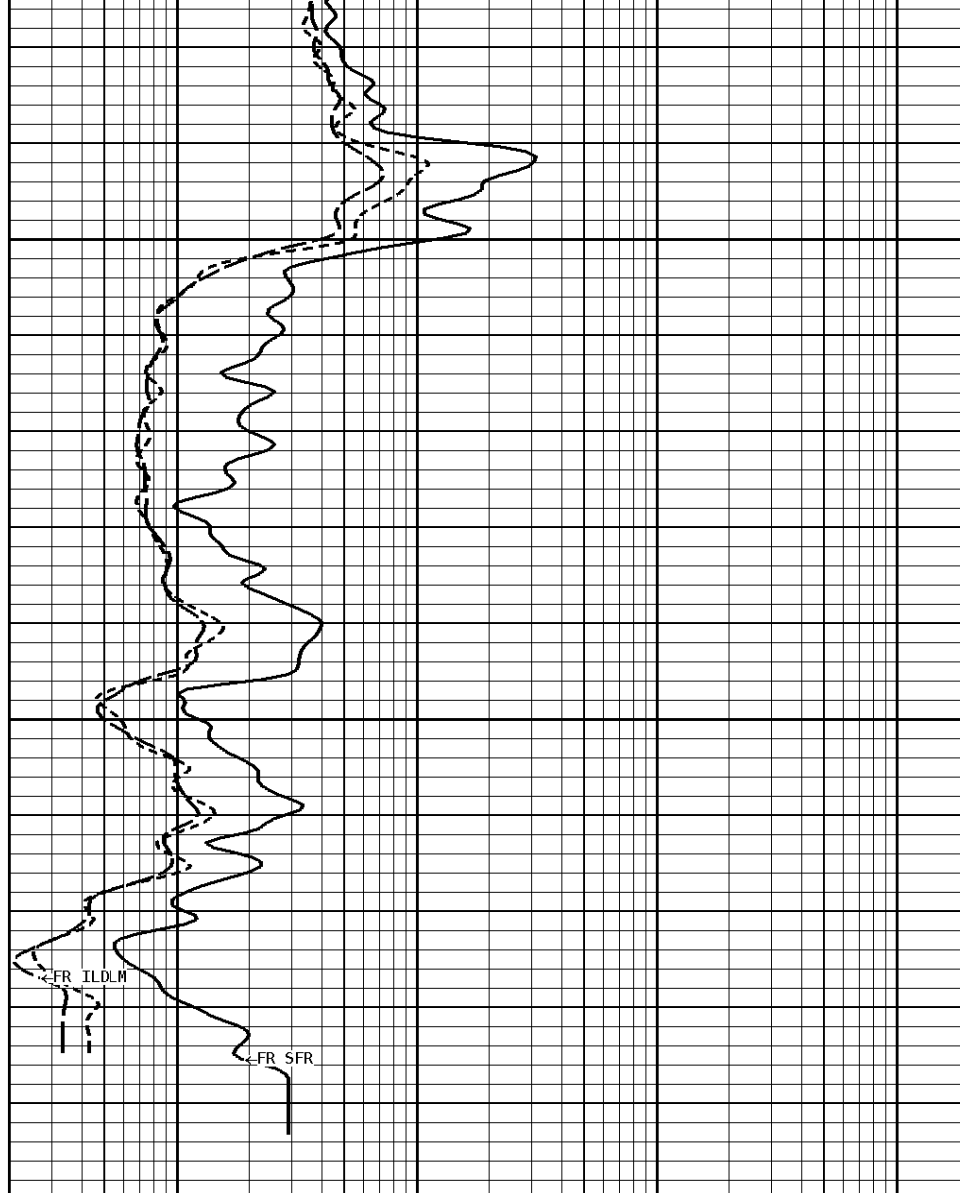
1:240 REPEAT SECTION





4200

4240



GAMMA RAY
API UNITS

150 0 300 150

TENSION
LBS

10000 0

SPONTANEOUS POTENTIAL
mV

→ | ← 20

RX0/RT

-160 40

SHALLOW FOCUSED RESISTIVITY
OHMM

0.2 2000.0

MEDIUM INDUCTION
OHMM

0.2 2000.0

DEEP INDUCTION
OHMM

0.2 2000.0

* Borehole Zone Factors *

Zone 1 99999.0 to 0.0 Feet

Drill Bit Size 7.875 in
Casing Diameter 4.500 in

BHT Depth	4230.000	ft
Borehole Temperature	119.0	degF
Temperature Gradient	1.00	DFHF
Resistivity Of Mud	0.200	ohm/m
Resistivity Of Mud Temperature	75.00	degF

*** Calibration Summary ***

Shop Calibration					
GRT-B					
Performed : 22-SEP-2014			Time : 09:30		
Sensor Suite : GR-GR5			ID : GRT-BB-006		
	Measured	Units	Calibrated	Units	
GR	Background Jig		Jig		
	62 374	CPS	175		GRAPI

Shop Calibration					
PIT-CA					
Performed : 22-Sep-2014			Time : 12:08		
Sensor Suite : P-IND-T			ID : PIT-CA-062		
	Measured		Calibrated		
	R	X	R	X	Units
Air	130580	130694	-0.6	-0.9	MMHOS
Zero	131070	131068	26.0	5.8	MMHOS
Reference	253403	250257	5026.0	5005.8	MMHOS
Loop	130399	221825	3815.0	3829.4	MMHOS
Sonde Error			-1.9	-16.4	MMHOS
Cond			5026.0	5005.8	MMHOS
	Medium				
	Measured		Calibrated		
	R	X	R	X	Units
Air	129101	131419	1.1	0.3	MMHOS
Zero	131069	131067	41.2	-16.3	MMHOS
Reference	233843	231793	2041.2	1983.7	MMHOS
Loop	128983	222342	1804.2	1807.9	MMHOS
Sonde Error			-8.5	-11.5	MMHOS
Cond			2041.2	1983.7	MMHOS
	Deep				
	Measured		Calibrated		
	Low	High	Low	High	Units
	16980.0	56920.0	70.0	350.0	DEGF
	Temperature				
Performed : 22-Sep-2014			Time : 11:59		
Sensor Suite : SFL			ID : PIT-CA-062		
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
Im	32760.0	48929.8	0.0	7028.0	uA
Ib	32766.9	48730.4	0.0	1750.0	mA
MOM1	32746.3	57508.7	0.0	175.0	mV
Equivalent SFL				43.97	OHMM
Performed : 22-SEP-2014			Time : 11:56		
Sensor Suite : P-SP			ID : PIT-CA-062		
	Measured		Calibrated		
	Zero	Reference	Zero	Reference	Units
	32765.9	58980.4	0.0	1000.0	mV
	Internal				

Well File: PICKRELL MAPLE K 3 OCT6 MSTK	Scale: 1:1200	Format: DIL1200
Segment: V1.D1.S5 Reprocess of MAIN	Acquired: 2014-10/06 21:15 3.4.0-13115	
Reference: 0	Processed: 2014-10/06 22:22 3.4.0-13115	

TENSION
LBS

10000 0

SPONTANEOUS POTENTIAL
mV

→ | ← 20

GAMMA RAY
API UNITS

150 300
0 150

DEEP INDUCTION
OHMM

0.0 500.0
0.0 50.0

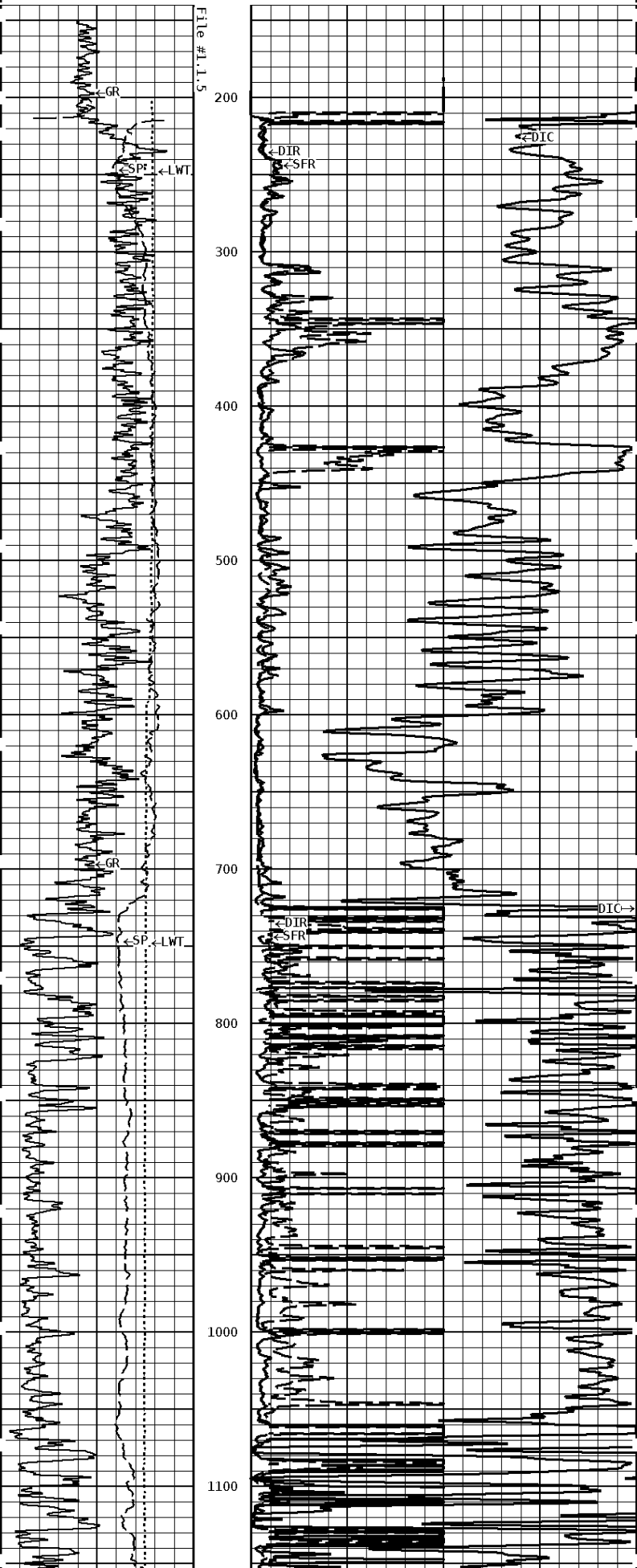
SHALLOW FOCUSED
OHMM

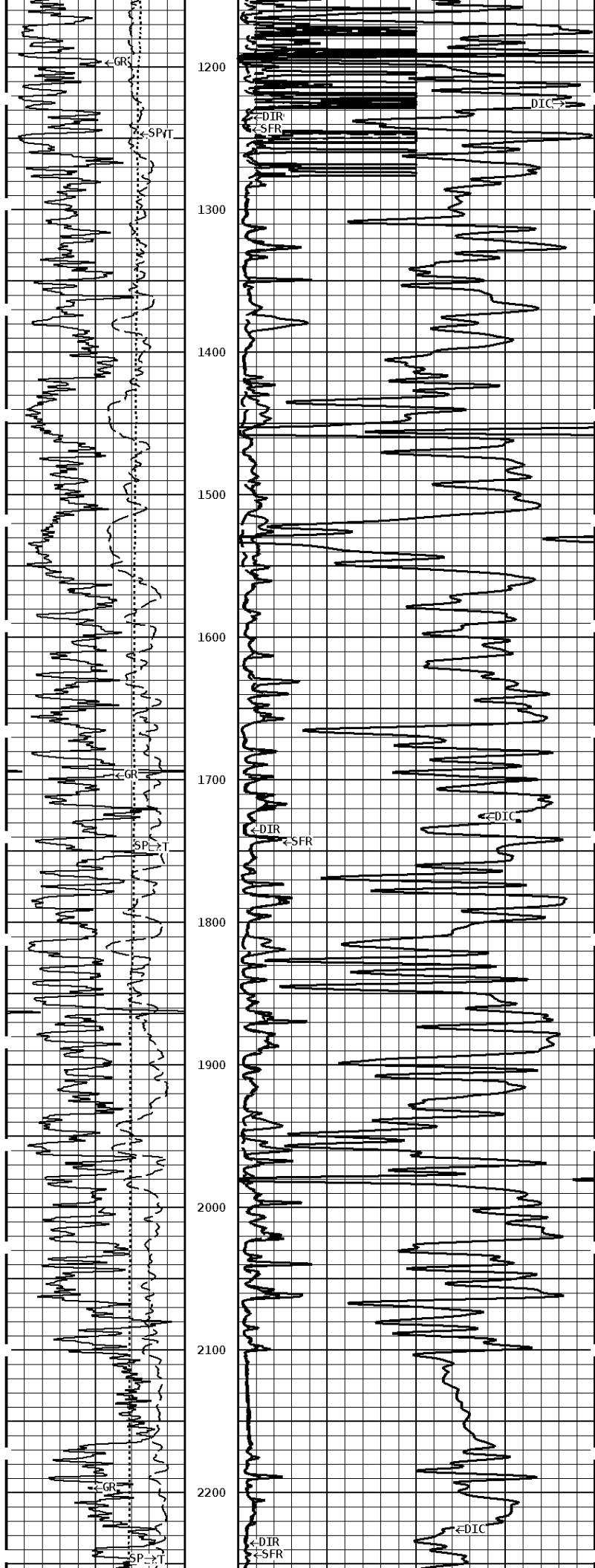
0.0 500.0
0.0 50.0

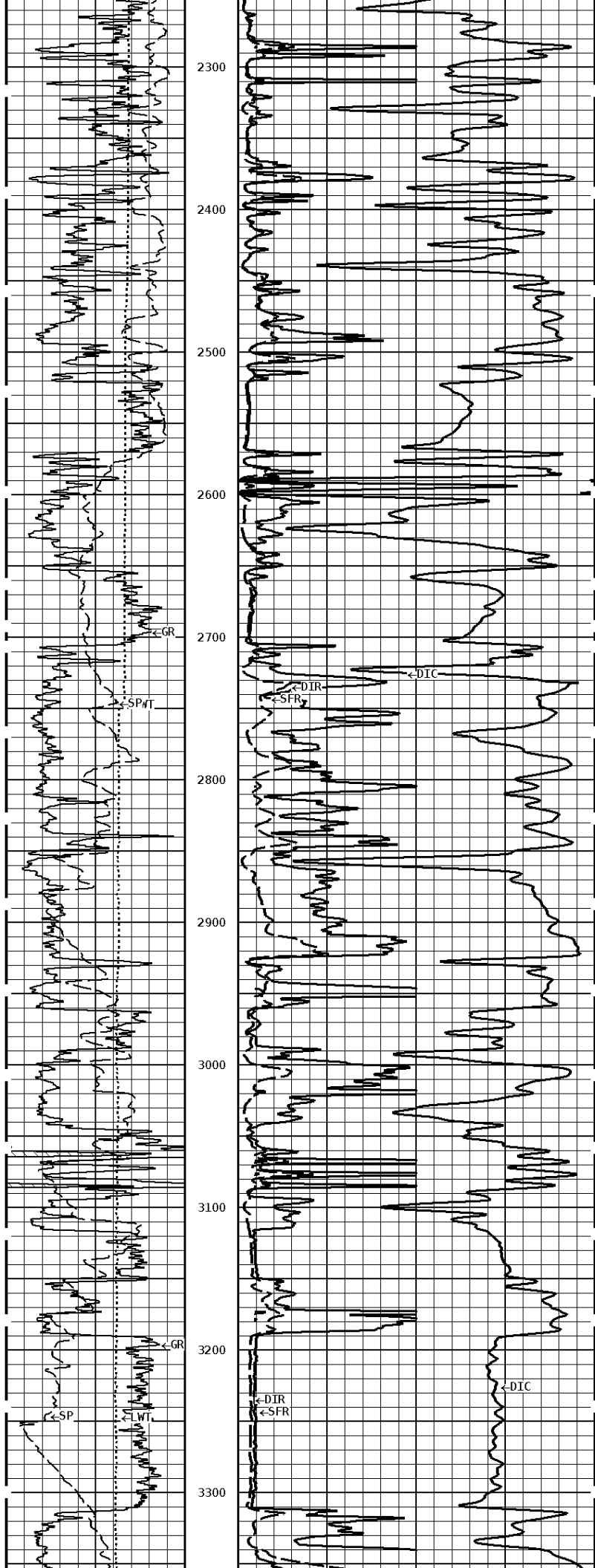
DEEP CONDUCTIVITY
MHMO

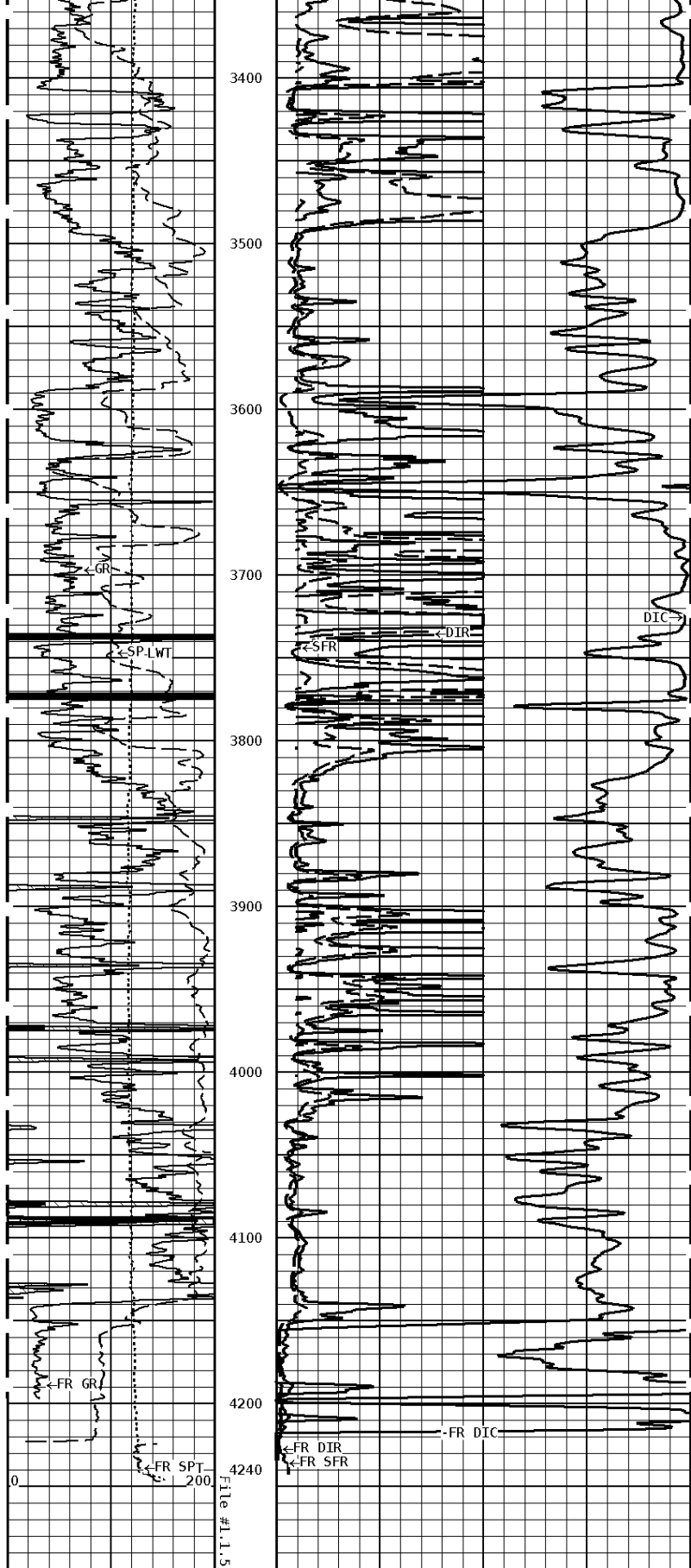
2000 1000
1000 0

1:1200 MAIN SECTION









GAMMA RAY API UNITS		DEEP CONDUCTIVITY MH0	
150	300	2000	1000
0	150	1000	0
SPONTANEOUS POTENTIAL mV		SHALLOW FOCUSED OHMM	
		0.0	500.0

→	←20
TENSION LBS	
10000	0

0.0	500.0
0.0	50.0
DEEP INDUCTION OHMM	
0.0	500.0
0.0	50.0



Tucker
ENERGY SERVICES

Company: PICKRELL DRILLING COMPANY, INC

Well: #3 MAPLE "K"

Location: 1980' FSL & 660' FEL

Logged: 10-06-2014

K.B. Elev: 1529.0 Ft