Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

COMPANY	MCCOY PETROLEUM CORPORATION
WELL	YOHN 'A' #1-26
FIELD	ALFORD SOUTH
PROVINCE/COUNTY	KIOWA
COUNTRY/STATE	U.S.A. / KANSAS
LOCATION	330' FNL & 660' FWL

SEC	TWP	RGE	Other Services
26	30S	19W	MPD/MDN MML

Latitude
Longitude
API Number 15-097-21794

Permanent Datum GL, Elevation 2220 feet
Log Measured From KB
Drilling Measured From KB @ 13 FEET

Elevations:	feet
KB	2233.00
DF	2231.00
GL	2220.00

Date	25-JUN-2014			
Run Number	ONE			
Service Order	7606-90896255			
Depth Driller	5200.00	feet		
Depth Logger	5198.00	feet		
First Reading	5194.53	feet		
Last Reading	621.00	feet		
Casing Driller	621.00	feet		
Casing Logger	623.00	feet		
Bit Size	7.875	inches		
Hole Fluid Type	CHEMICAL			
Density / Viscosity	9.45 lb/USg	54.00 CP		
PH / Fluid Loss	9.50	12.80 ml/30Min		
Sample Source	MUD PIT			
Rm @ Measured Temp	0.66 @ 75.0	ohm-m		
Rmf @ Measured Temp	0.53 @ 75.0	ohm-m		
Rmc @ Measured Temp	0.79 @ 75.0	ohm-m		
Source Rmf / Rmc	CALC	CALC		
Rm @ BHT	0.45 @113.0	ohm-m		
Time Since Circulation	3 HOURS			
Max Recorded Temp	113.00	deg F		
Equipment / Base	13096	LIB		
Recorded By	BEN WELDIN		DEREK CARTER	
Witnessed By	ZACK WIELE			
JOB #	LB14-190			

BOREHOLE RECORD

Last Edited: 25-JUN-2014 14:08

Bit Size inches	Depth From feet	Depth To feet
12.250	0.00	621.00
7.875	621.00	5200.00

CASING RECORD

Type	Size inches	Depth From feet	Shoe Depth feet	Weight pounds/ft
SURFACE	8.625	0.00	621.00	24.00

REMARKS

- SOFTWARE ISSUE: WLS 13.08.2113
- TOOL STRING: MCG, MML, MDN, MPD, MFE, MAI RUN IN COMBINATION
- HARDWARE:
  - MDN: DUAL BOWSPRING ECCENTRALIZER
  - MFE: 1 X 0.5 INCH STANDOFF
  - MAI: 2 X 0.5 INCH STANDOFF
- 2.71 G/CC LIMESTONE DENSITY MATRIX USED TO CALCULATE POROSITY
- BOREHOLE RUGOSITY, TIGHT PULLS, AND WASHOUTS WILL AFFECT DATA QUALITY
- ALL INTERVALS LOGGED AND SCALED PER CUSTOMER'S REQUEST
- TOTAL HOLE VOLUME FROM TD TO SURFACE CASING: 2010 CU. FT.

- ANNULAR HOLE VOLUME WITH 5.5 INCH CASING FROM TD TO 3900 FT.: 220 CU. FT.

- SERVICE ORDER # 7606-90896255

- RIG: STERLING #5

- ENGINEER: DEREK CARTER

- JUNIOR FIELD ENGINEER: BEN WELDIN

- OPERATOR: CARLOS RAMIREZ

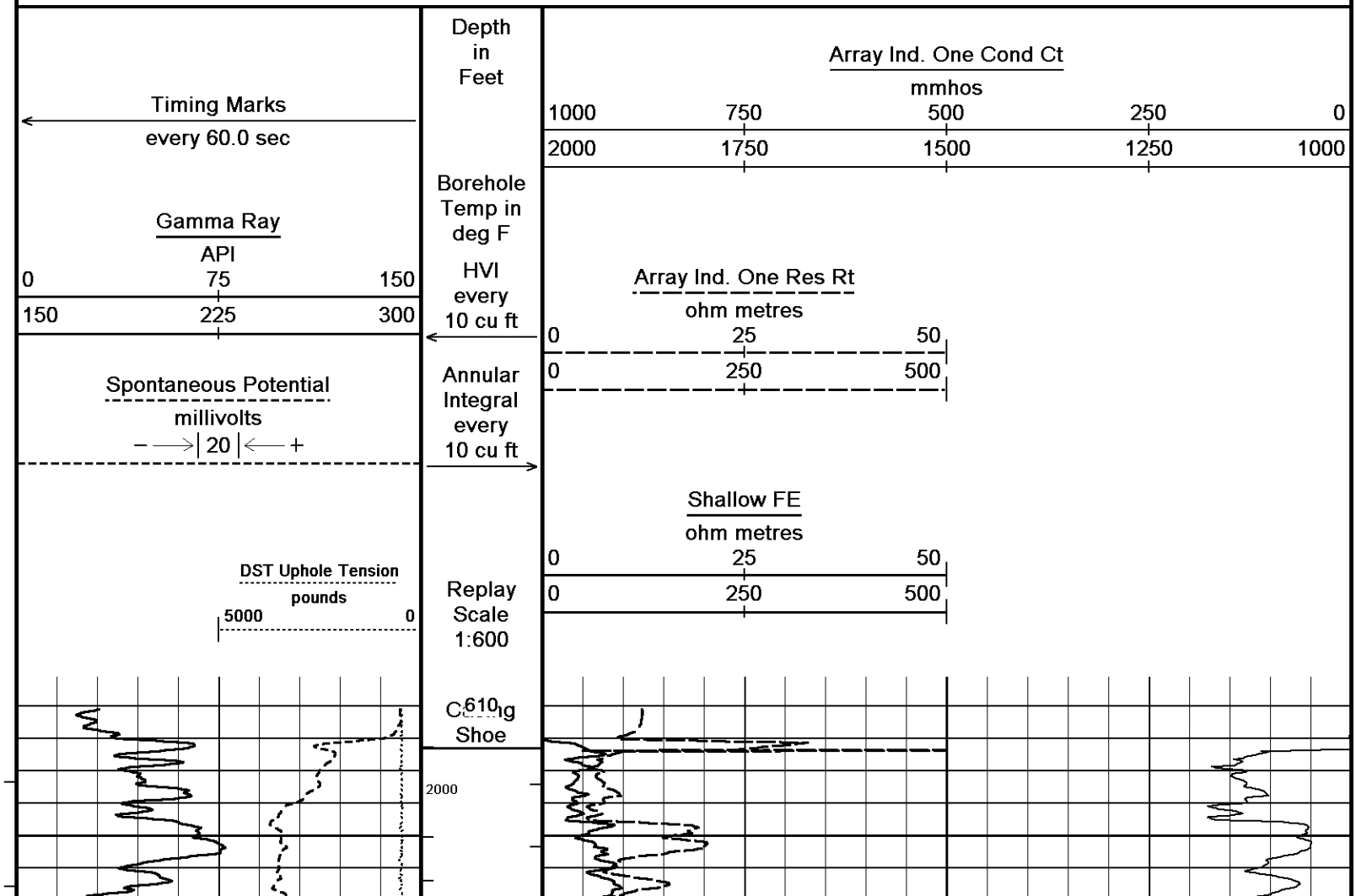
- LOST TENSION WHILE RUNNING IN HOLE AT 2160' ON LEDGE. PULLED BACK UP AND WORKED PAST WITH NO OTHER PROBLEMS

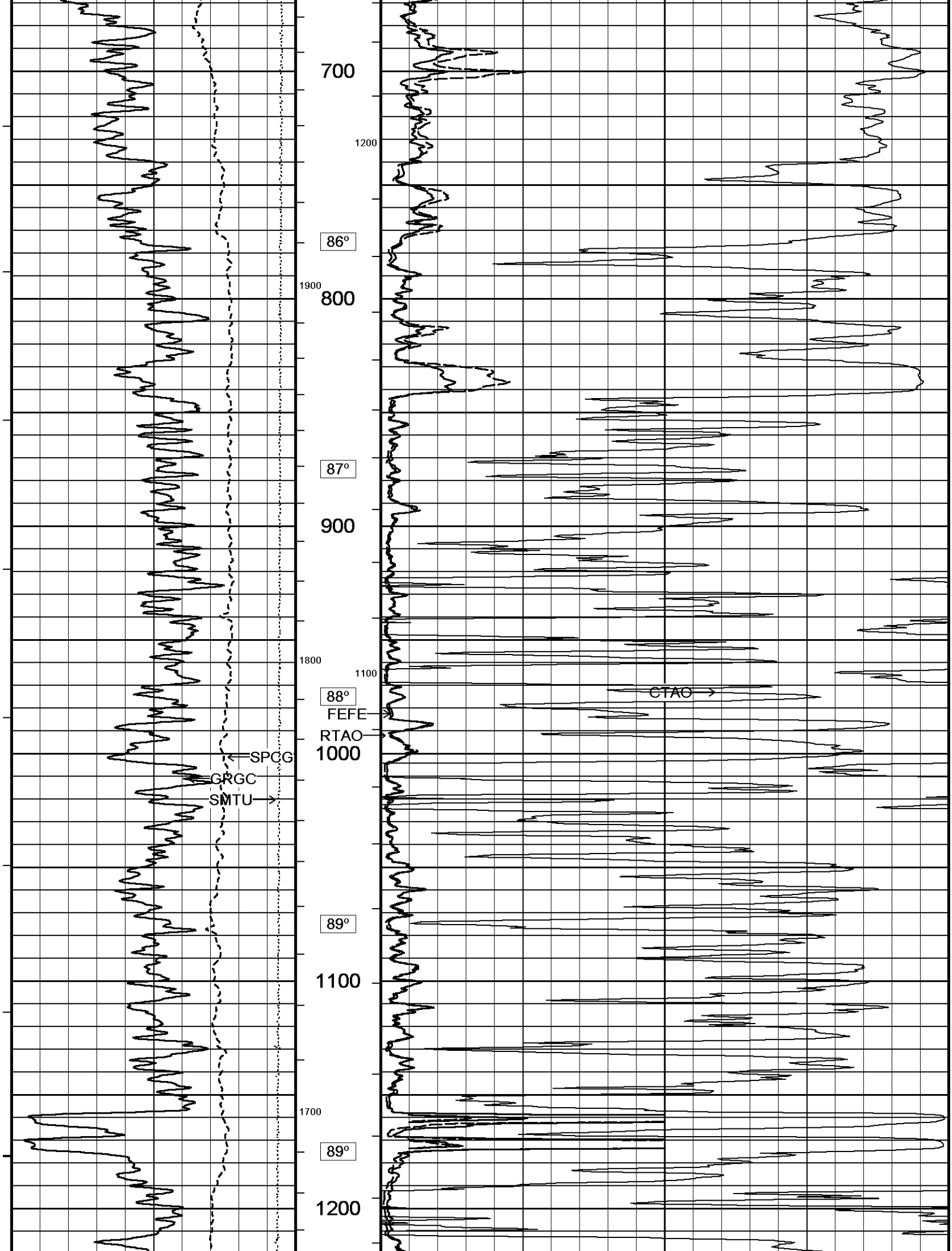
2 INCH MAIN

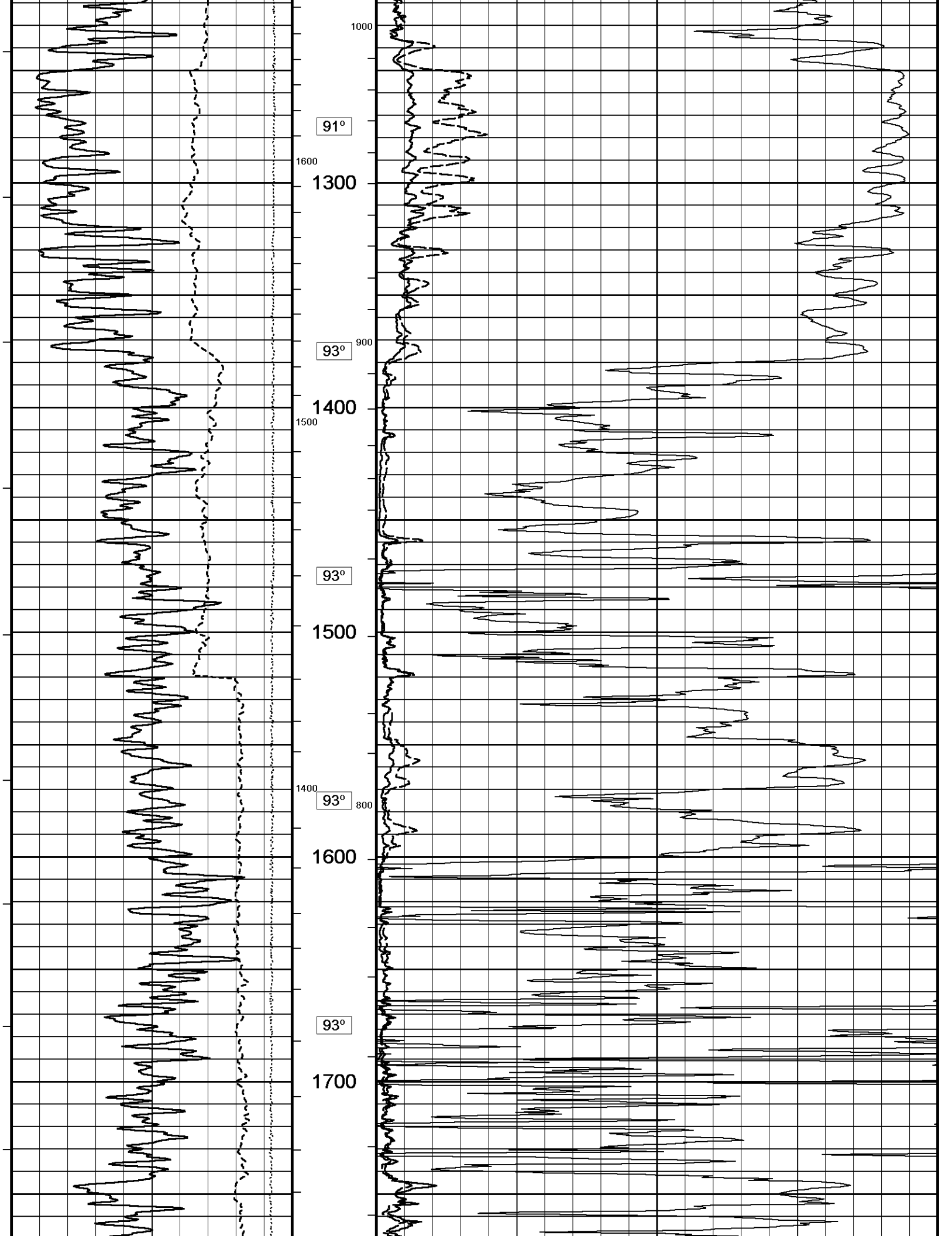
Depth Based Data - Maximum Sampling Increment 10.0cm — Plotted on 25-JUN-2014 17:28

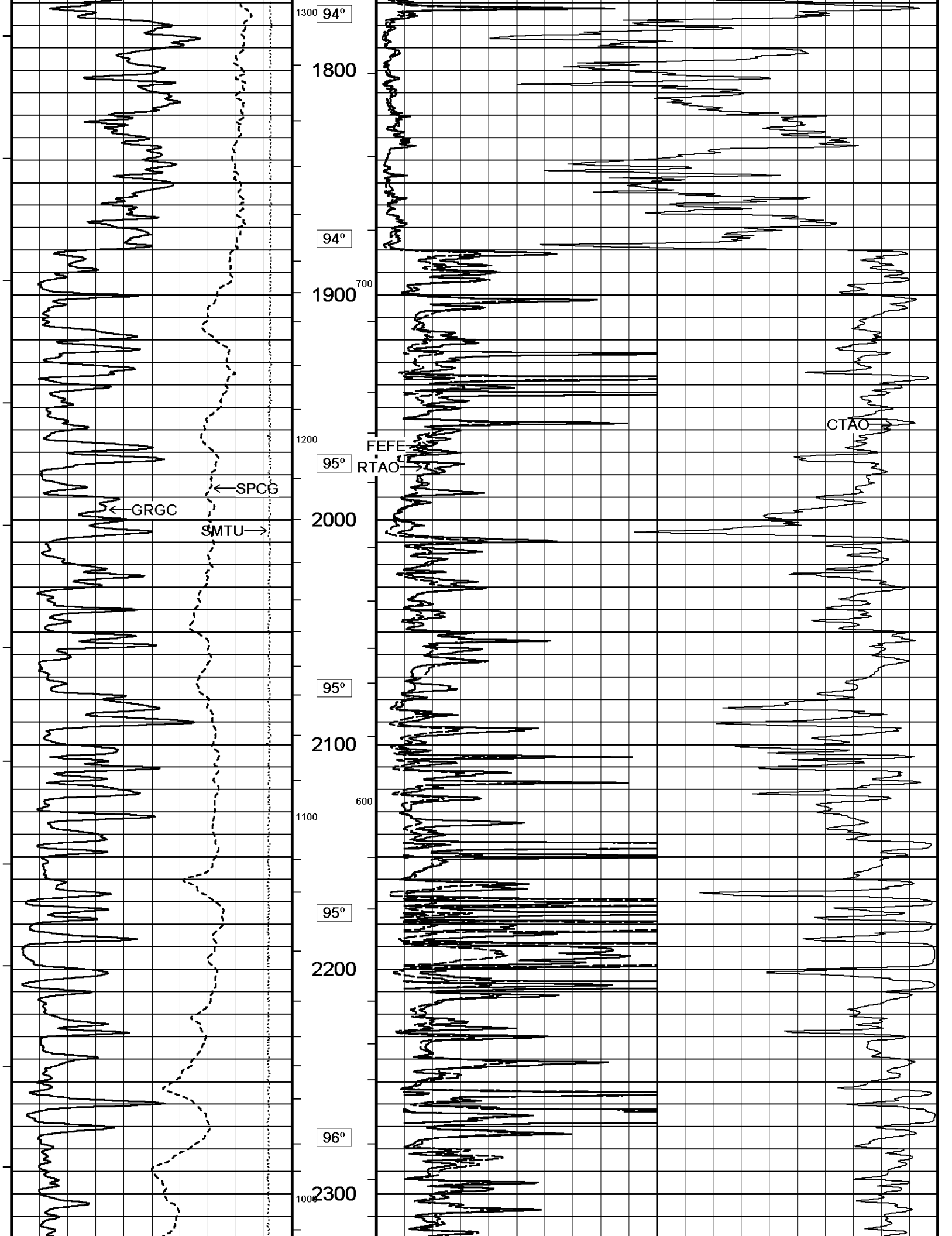
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta — Recorded on 25-JUN-2014 15:13

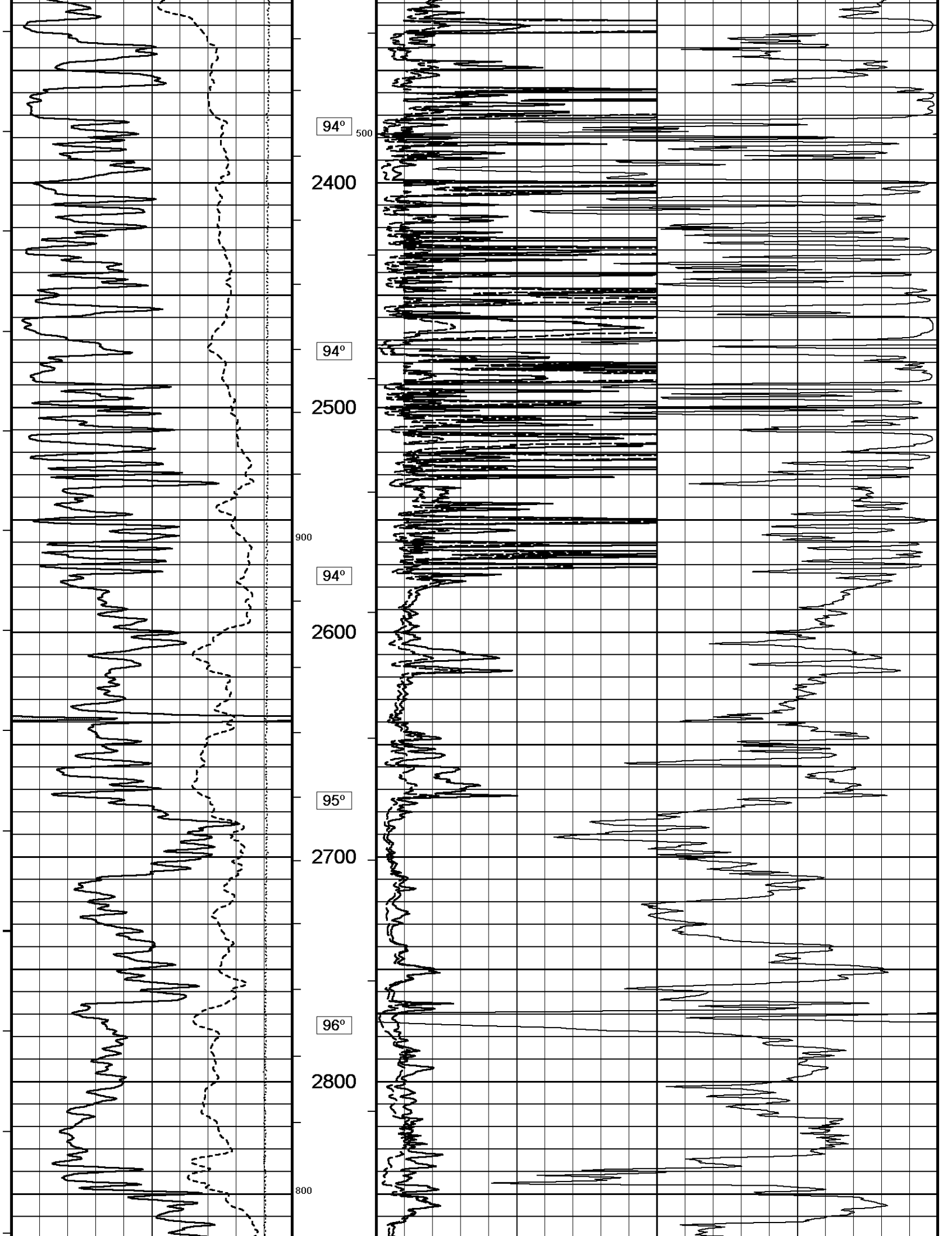
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

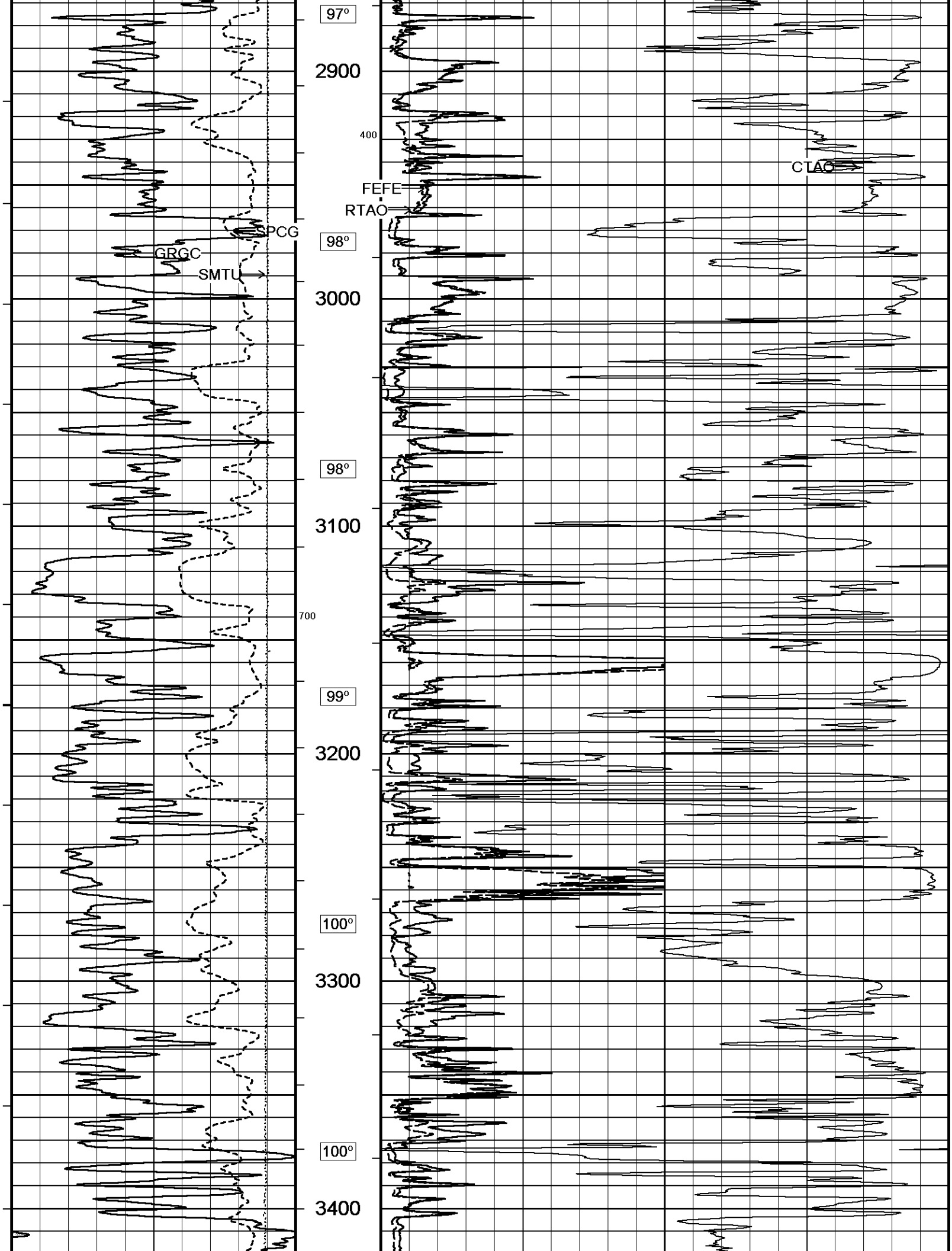


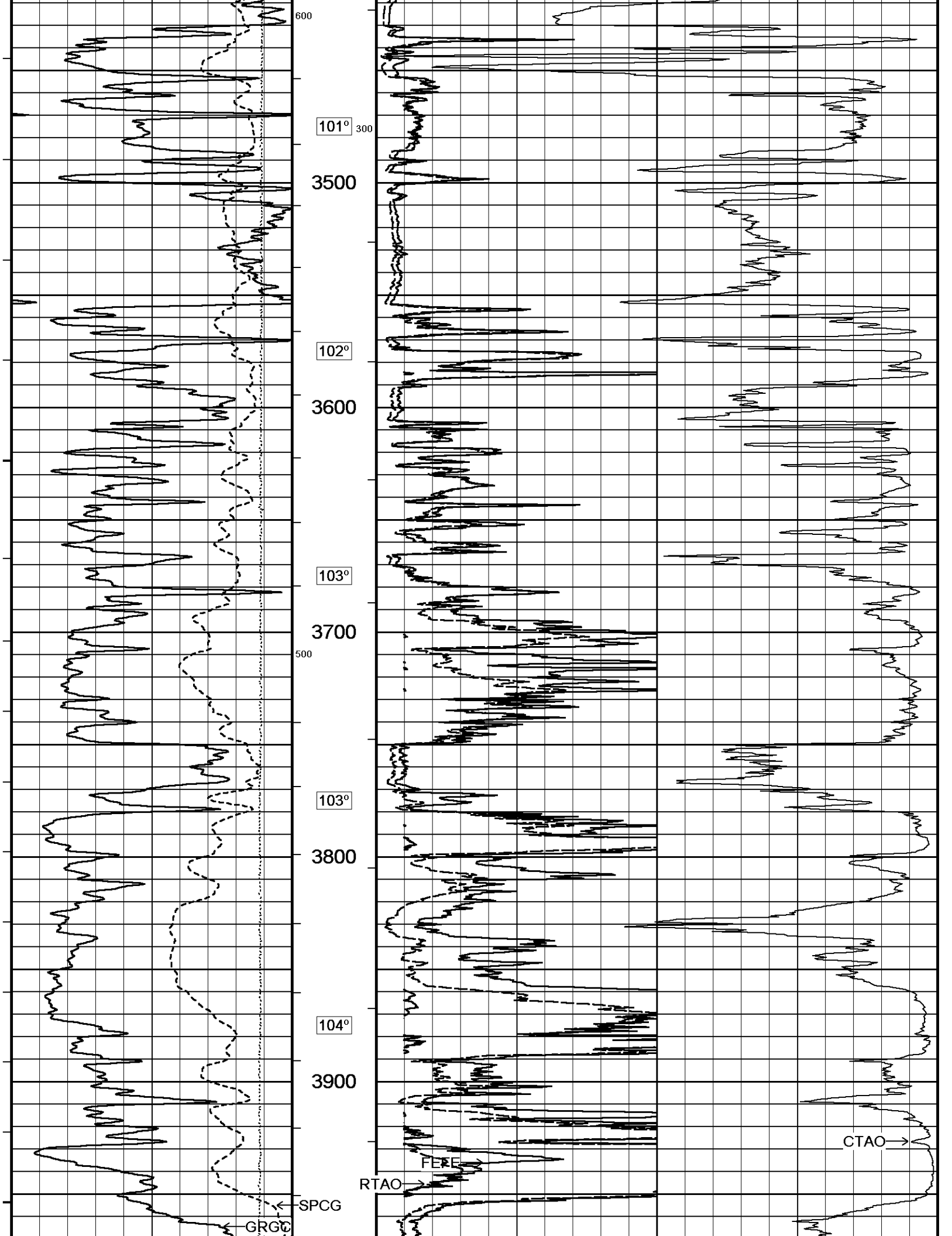

700
1200
86°
1900
800
87°
900
1800
1100
88°
FEFE
RTAO
1000
SPCG
GRGC
SMTU
CTAO
89°
1100
1700
89°
1200

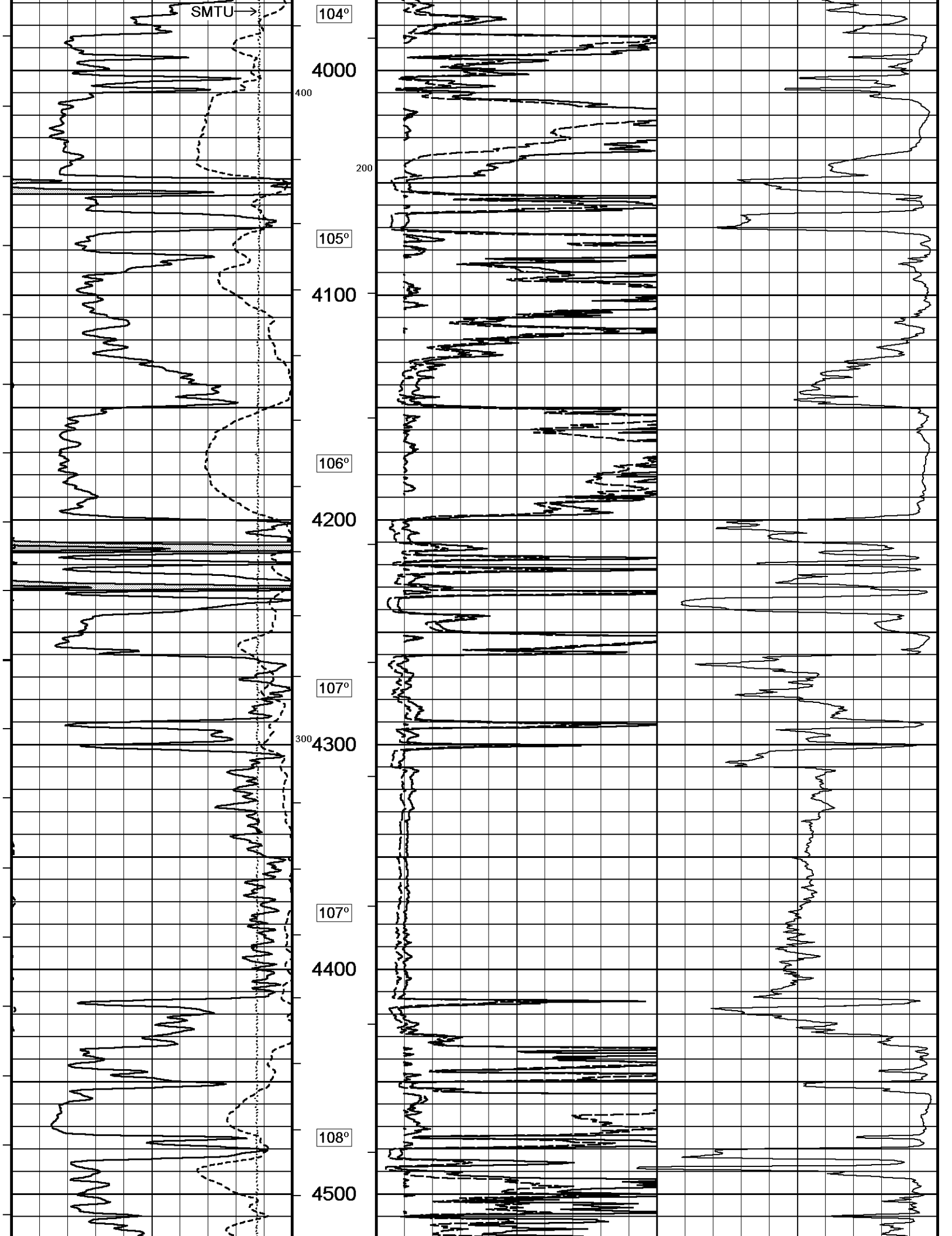

1000
91°
1600
1300
93°
900
1400
1500
93°
1500
1400
93°
800
1600
93°
1700

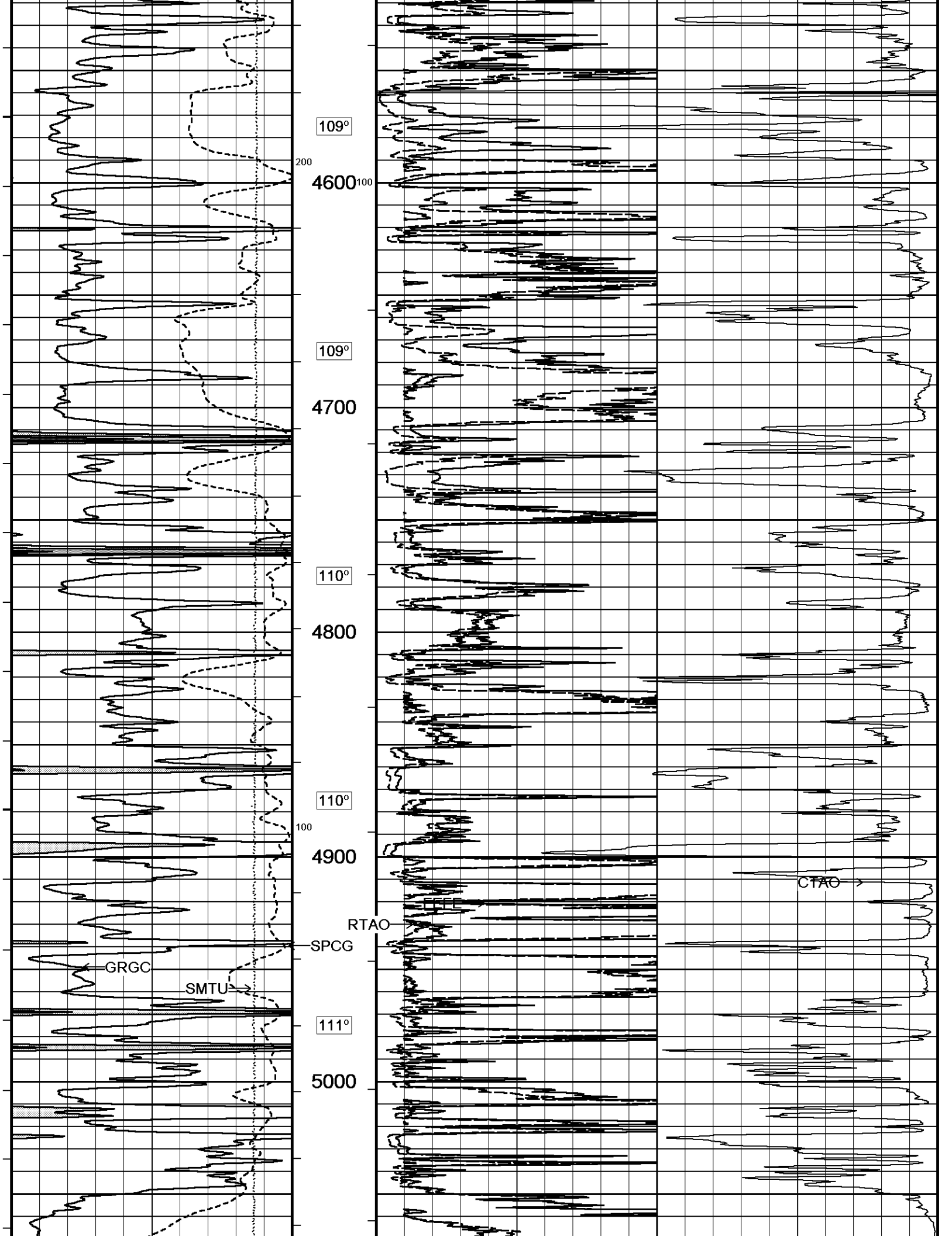

1300
94°
1800
94°
1900
700
1200
FEFE
95°
RTAO
CTAO
SPCG
GRGC
SMTU
2000
95°
2100
600
1100
95°
2200
96°
1000
2300

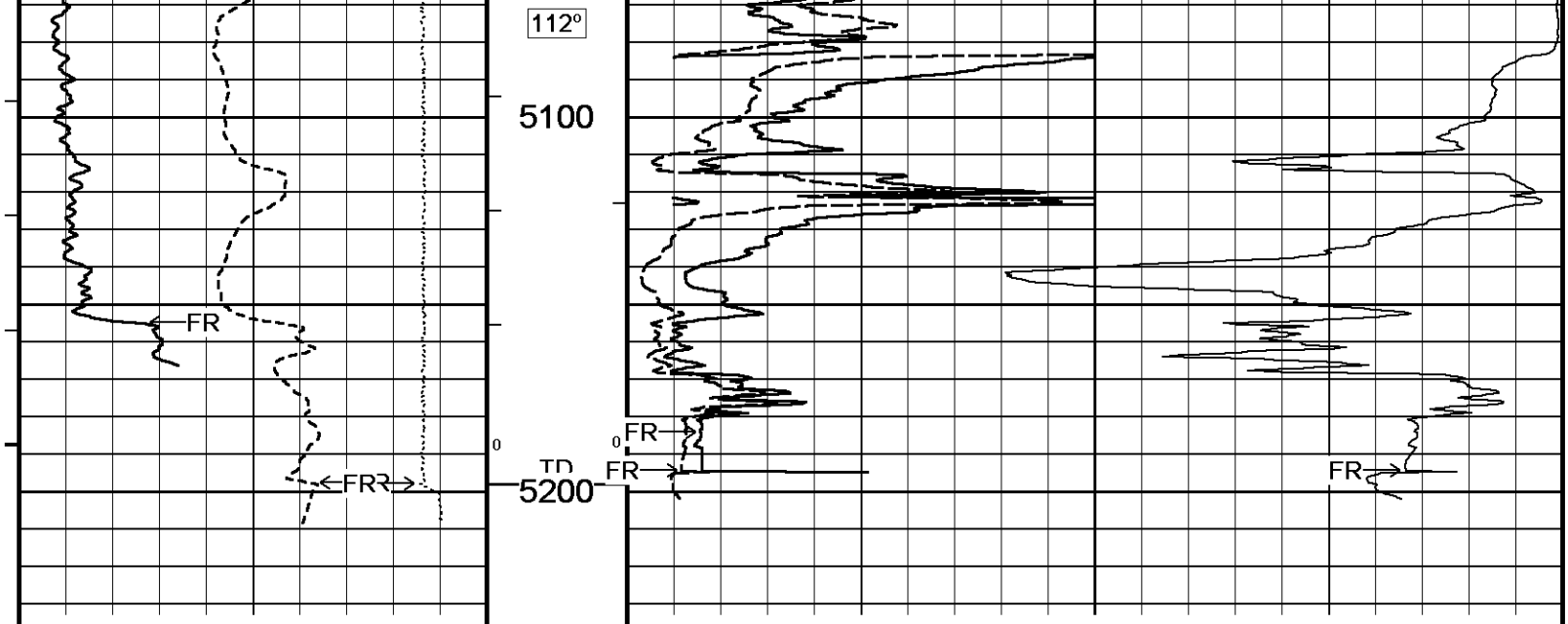

94°
500
2400
94°
2500
900
94°
2600
95°
2700
96°
2800
800


97°
2900
400
CTAO
FEFE
RTAO
PCG
98°
GRGC
SMTU
3000
98°
3100
700
99°
3200
100°
3300
100°
3400


600
101°
300
3500
102°
3600
103°
3700
500
103°
3800
104°
3900
CTAO
FERE
RTAO
SPCG
GRGC


SMTU
104°
4000
400
200
105°
4100
106°
4200
107°
300
4300
107°
4400
108°
4500


109°
200
4600
100
109°
4700
110°
4800
110°
100
4900
RTAO
SPCG
GRGC
SMTU
111°
5000
CTAO



Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Borehole Temp in deg F

HVI every 10 cu ft

Spontaneous Potential
millivolts
– 20 +

Annular Integral every 10 cu ft

DST Uphole Tension
pounds
5000 0

Replay Scale 1:600

Array Ind. One Cond Ct
mmhos
1000 750 500 250 0
2000 1750 1500 1250 1000

Array Ind. One Res Rt
ohm metres
0 25 50
0 250 500

Shallow FE
ohm metres
0 25 50
0 250 500

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

Plotted on 25-JUN-2014 17:28
Recorded on 25-JUN-2014 15:13

2 INCH MAIN

5 INCH MAIN - ANHYDRITE SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

Plotted on 25-JUN-2014 17:28
Recorded on 25-JUN-2014 15:13

Depth in Feet

Timing Marks
every 60.0 sec

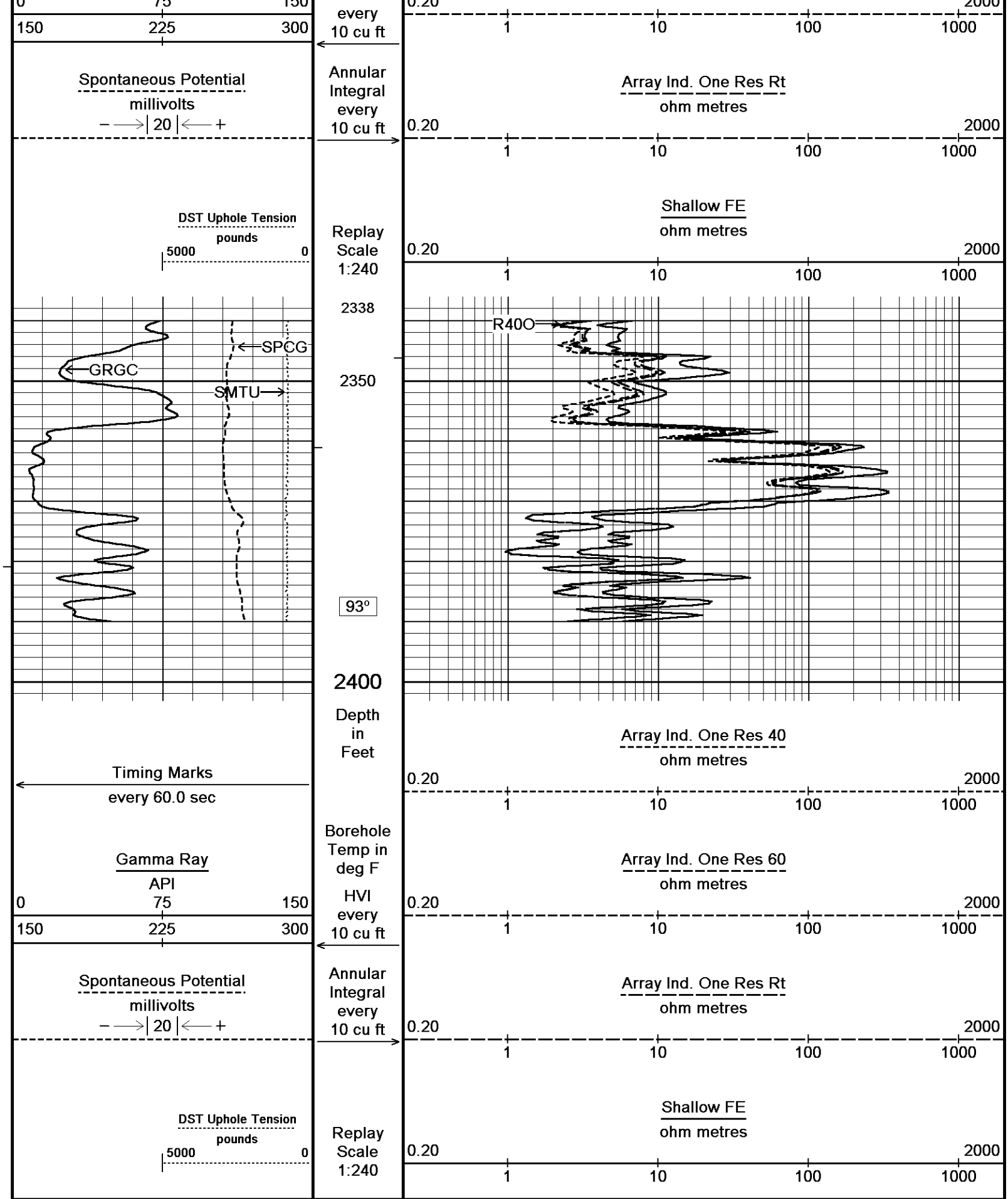
Gamma Ray
API

Borehole Temp in deg F

HVI

Array Ind. One Res 40
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res 60
ohm metres



Depth Based Data - Maximum Sampling Increment 10.0cm

Plotted on 25-JUN-2014 17:28

Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta

Recorded on 25-JUN-2014 15:13

System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

5 INCH MAIN - ANHYDRITE SECTION

5 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-JUN-2014 17:28
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta
Recorded on 25-JUN-2014 15:13
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
– 20 +

DST Uphole Tension
pounds
5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Array Ind. One Res 40
ohm metres
0.20 1 10 100 1000 2000

Array Ind. One Res 60
ohm metres
0.20 1 10 100 1000 2000

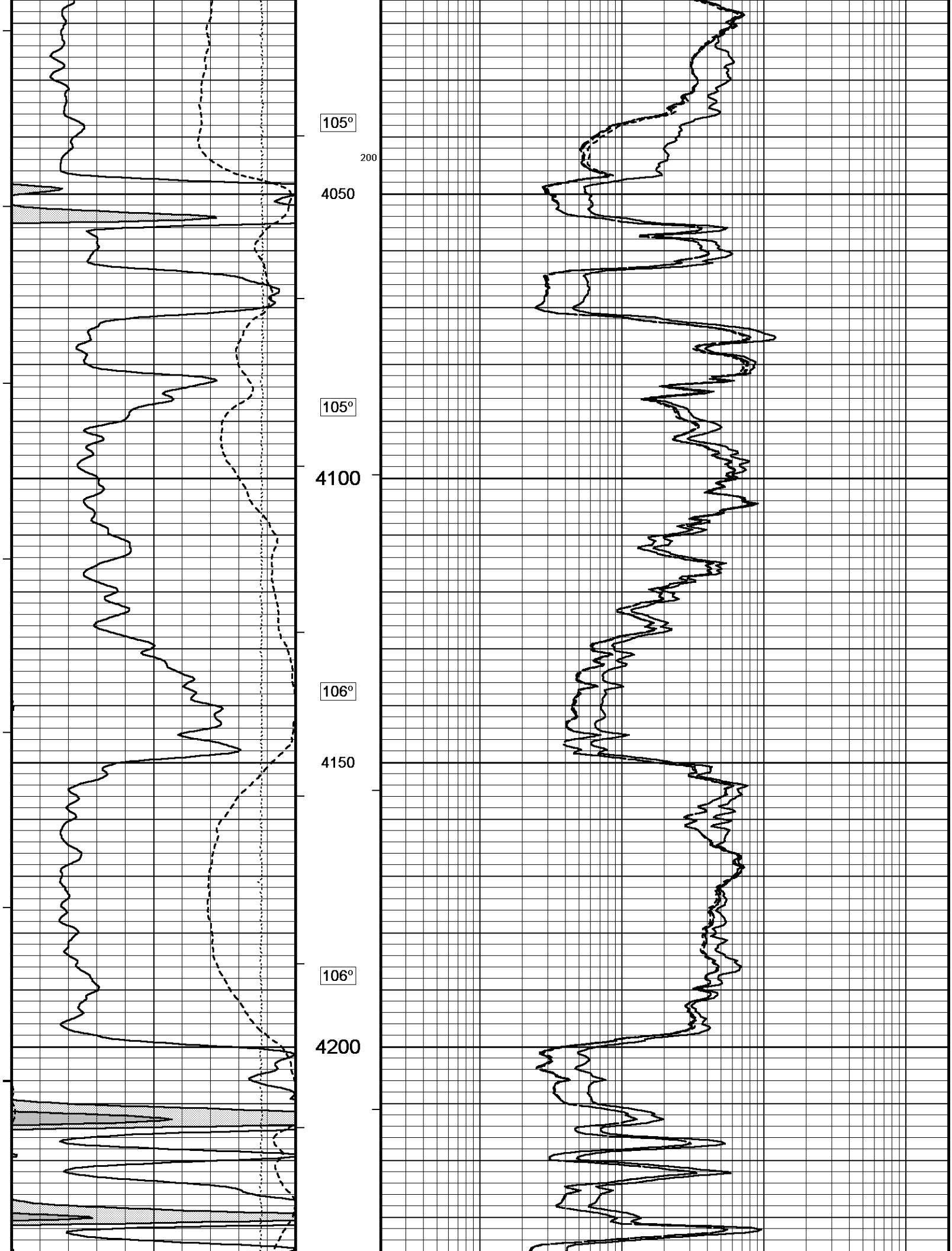
Array Ind. One Res Rt
ohm metres
0.20 1 10 100 1000 2000

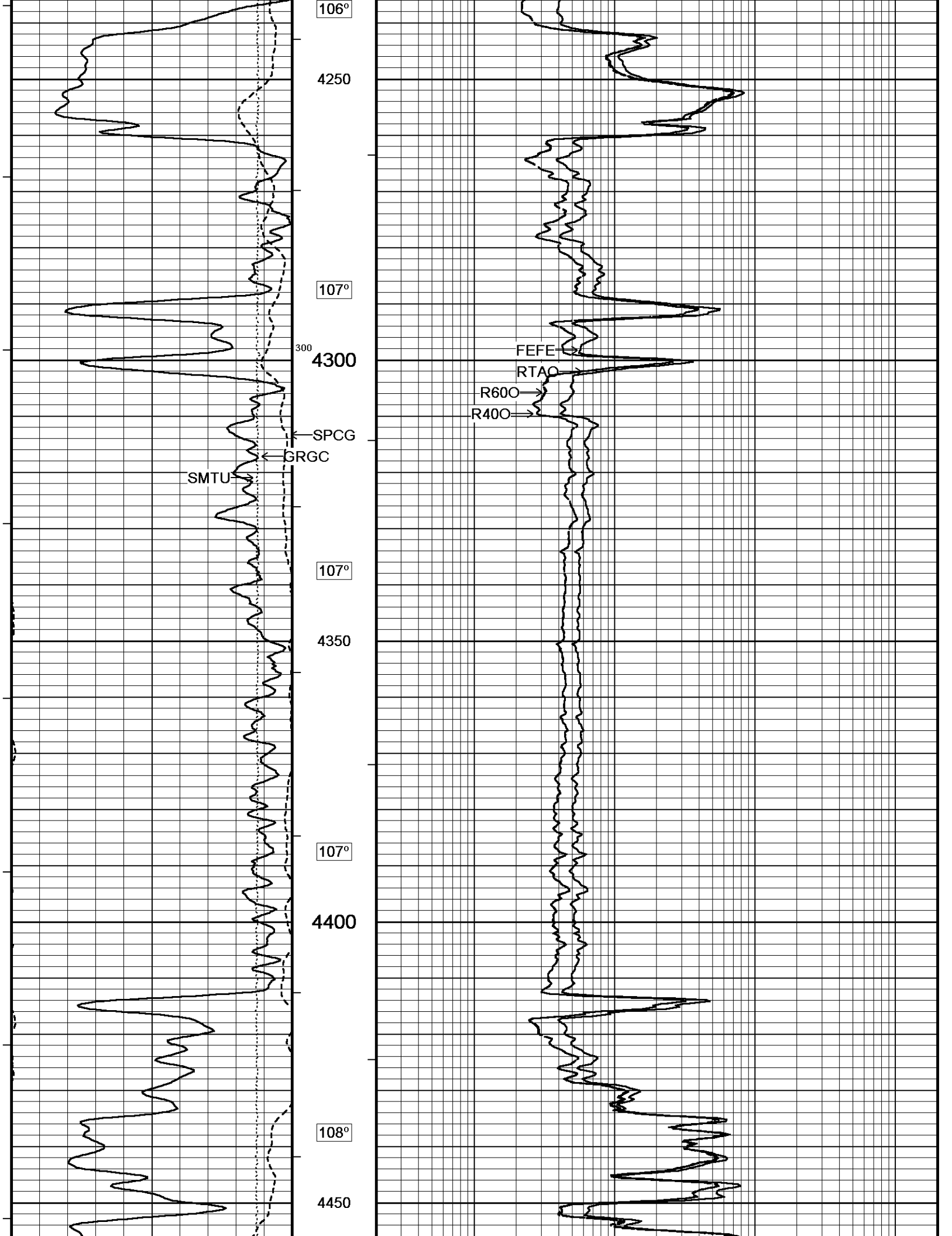
Shallow FE
ohm metres
0.20 1 10 100 1000 2000

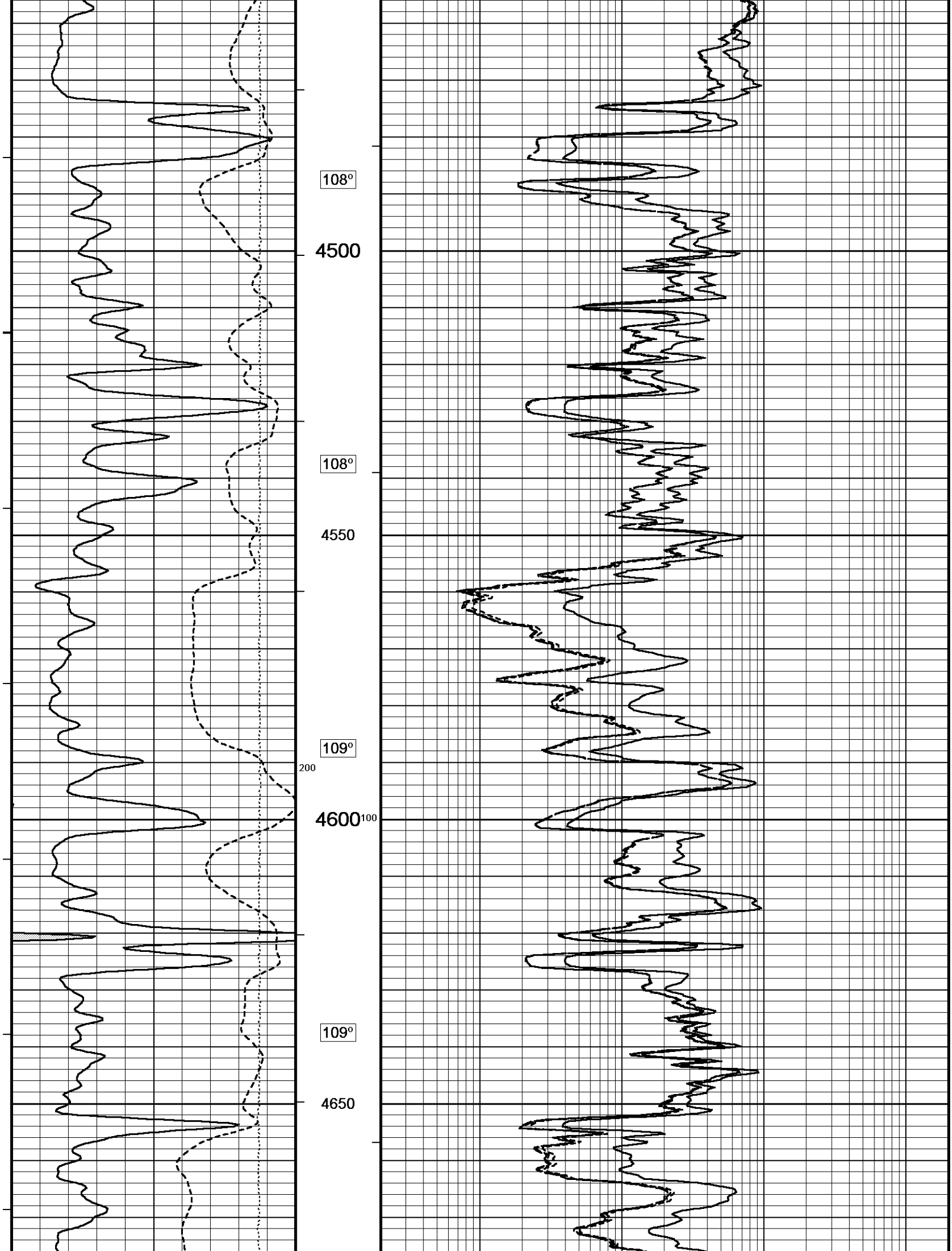
3900
104°
3950
105°
4000
400

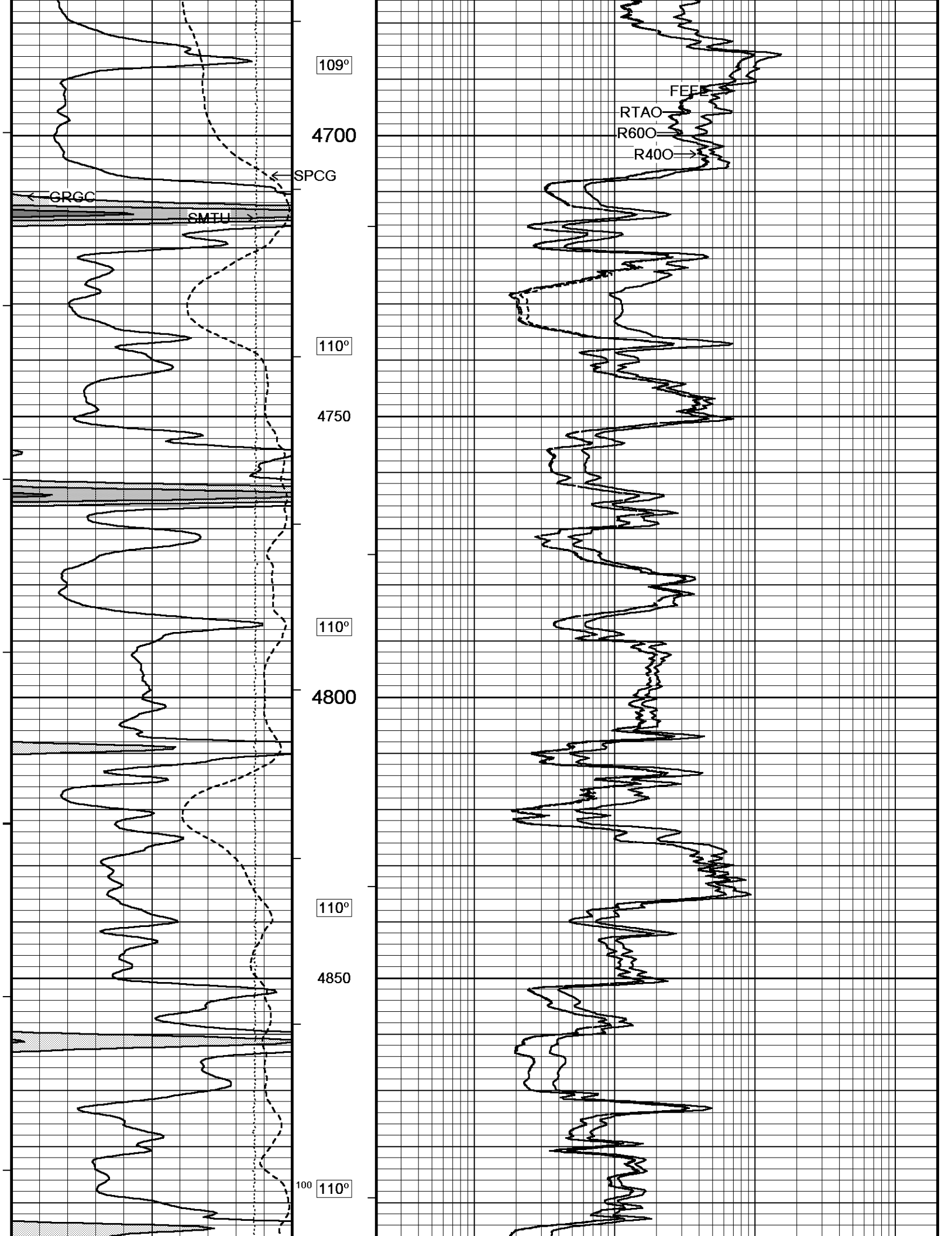
SPCG
GRGC
SMTU

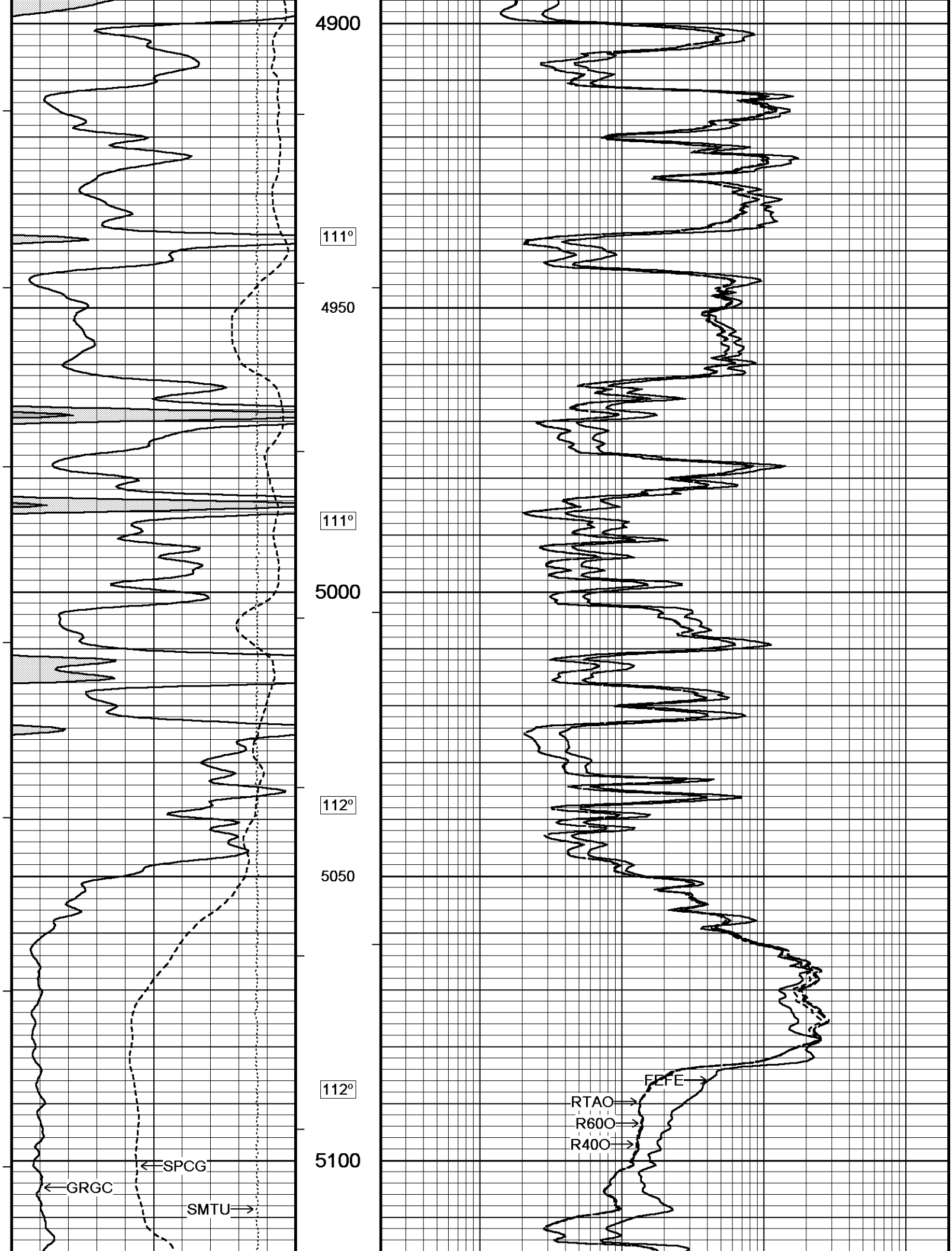
FEFE
RTAO
R60O
R40O

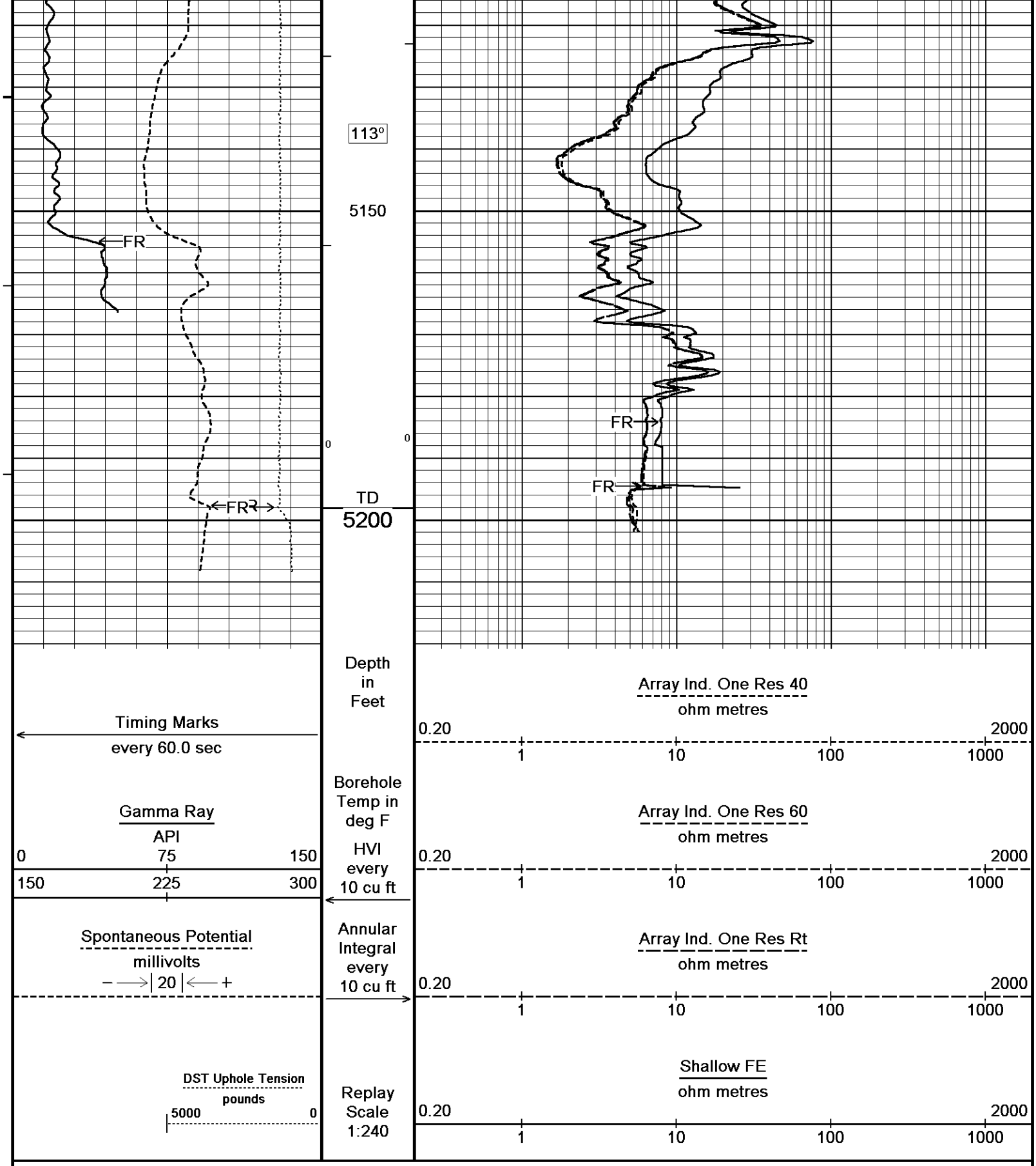

105°
200
4050
105°
4100
106°
4150
106°
4200


106°
4250
107°
300
4300
FEFE
RTAO
R60O
R40O
SPCG
GRGC
SMTU
107°
4350
107°
4400
108°
4450


108°
4500
108°
4550
109°
200
4600
100
109°
4650


109°
4700
SPCG
GRGC
SMTU
110°
4750
110°
4800
110°
4850
100
110°
FEFE
RTAO
R60O
R40O


4900
111°
4950
111°
5000
112°
5050
112°
5100
SPCG
GRGC
SMTU
FEFE
RTAO
R60O
R40O



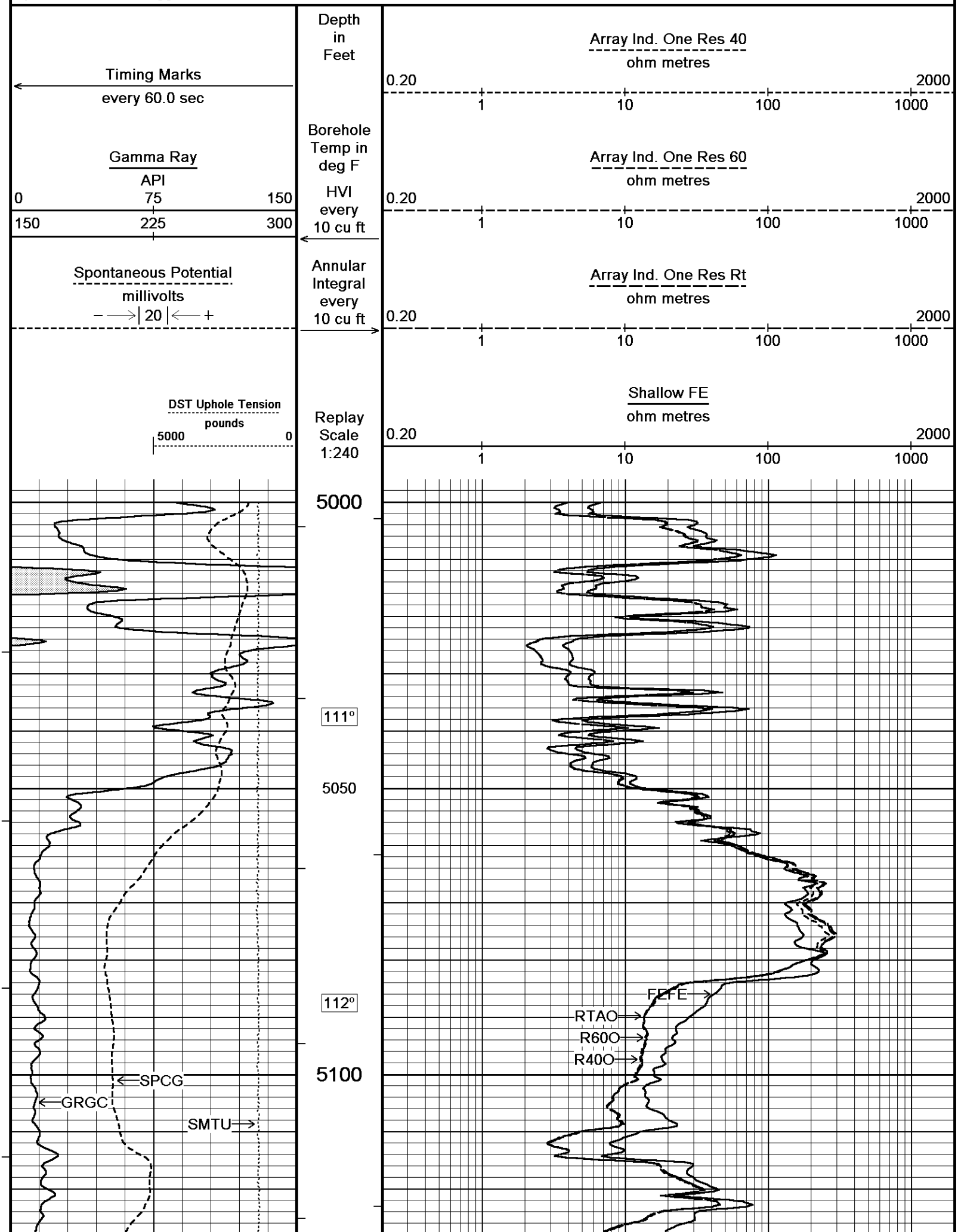
Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-JUN-2014 17:28
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta
Recorded on 25-JUN-2014 15:13
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

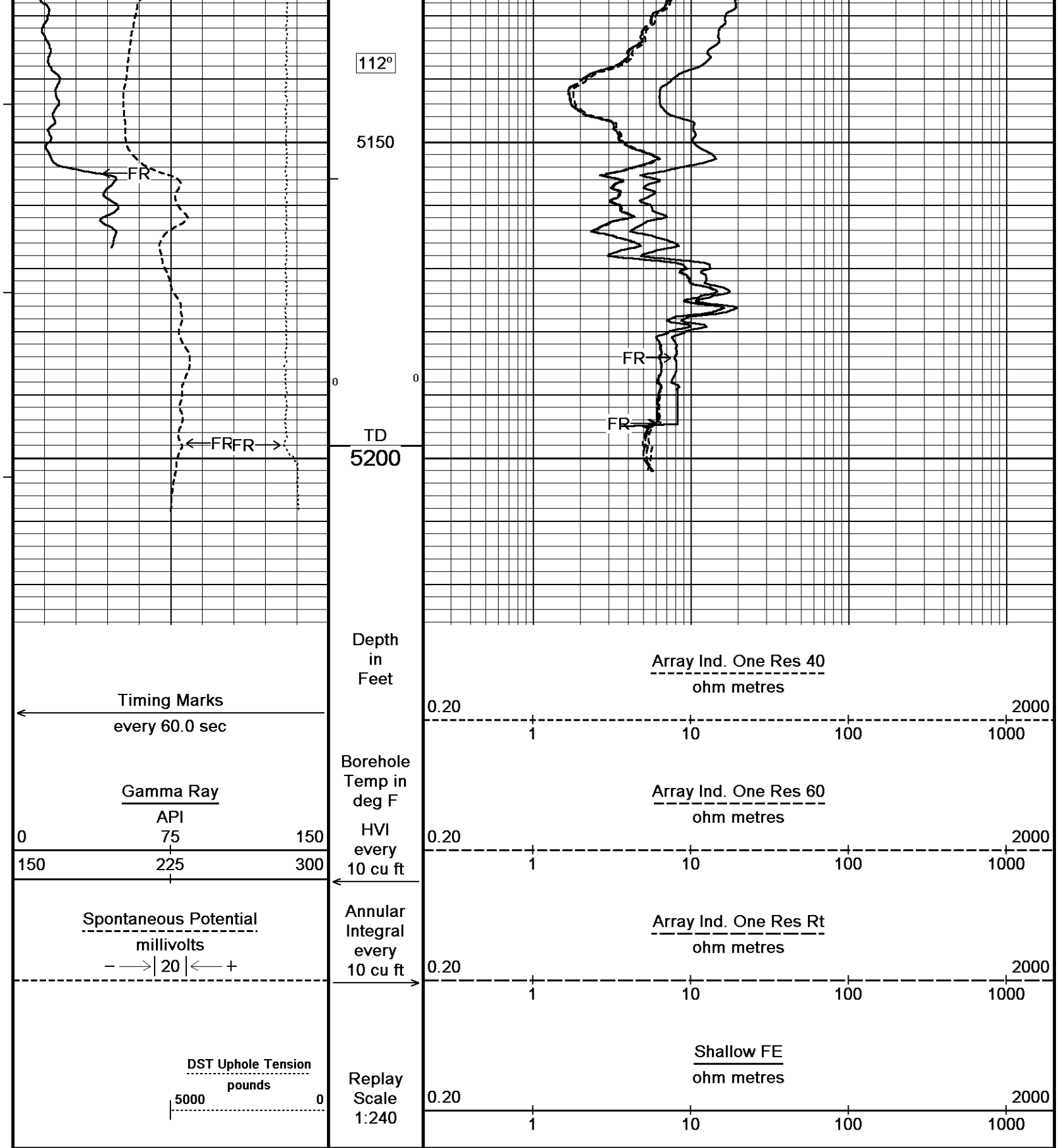
5 INCH MAIN

REPEAT SECTION

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-JUN-2014 17:28
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Repeat.dta
Recorded on 25-JUN-2014 14:55

Filename: C:\Minimus 13.08.2113\Log Data\McCoy Tohn A #1-26\McCoy Tohn A #1-26 Repeat.dta Recorded on 25-JUN-2014 14:55
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113





Depth in Feet

Timing Marks
every 60.0 sec

Gamma Ray
API
0 75 150
150 225 300

Spontaneous Potential
millivolts
− → | 20 | ← +

DST Uphole Tension
pounds
5000 0

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:240

Array Ind. One Res 40
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res 60
ohm metres
0.20 2000
1 10 100 1000

Array Ind. One Res Rt
ohm metres
0.20 2000
1 10 100 1000

Shallow FE
ohm metres
0.20 2000
1 10 100 1000

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-JUN-2014 17:28
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Repeat.dta
Recorded on 25-JUN-2014 14:55
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

REPEAT SECTION

BEFORE SURVEY CALIBRATION

C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta

General Constants All 000

Last Edited on 25-JUN-2014,13:31

General Parameters

Mud Resistivity	0.660	ohm-metres
Mud Resistivity Temperature	75.000	degrees F
Water Level	0.000	feet
Borehole Fluid Processing	Wet Hole	

Hole/Annular Volume and Differential Caliper Parameters

HVOL Method	Single Caliper	
HVOL Caliper 1	Density Caliper	
HVOL Caliper 2	N/A	
Annular Volume Diameter	5.500	inches
Caliper for Differential Caliper	None	

Rwa Parameters

Porosity used	Crossplot Porosity	
Resistivity used	Array Ind. One Res Rt	
RWA Constant A	1.000	
RWA Constant M	2.000	
SW/APOR Tool Source	0.000	

Gamma Calibration MCG-D.K 469

Field Calibration on 25-JUN-2014 09:24

	Measured	Calibrated (API)
Background	68	46
Calibrator (Gross)	1139	771
Calibrator (Net)	1071	725

Gamma Constants MCG-D.K 469

Last Edited on 24-JUN-2014,04:24

Gamma Calibrator Number	GRC038	
Mud Density	1.13	gm/cc
Caliper Source for Processing	Density Caliper	
Tool Position	Eccentred	
Concentration of KCl		kppm
K Mud Type	Chloride	
K Mud Concentration	0.00	%

High Resolution Temperature Calibration MCG-D.K 469

Field Calibration on 12-MAY-2014,02:16

	Measured	Calibrated(Deg F)
Lower	10.00	10.00
Upper	100.00	100.00

High Resolution Temperature Constants MCG-D.K 469

Last Edited on 12-JUN-2014,06:51

Pre-filter Length	11

FE Calibration MFE-A.A 135

Base Calibration on 03-JUN-2014 20:44
Field Check on 25-JUN-2014 09:00

Base Calibration

	Measured	Calibrated (ohm-m)
Reference 1	0.0	0.0
Reference 2	963.0	126.8
Base Check		281.2
Field Check		281.4

FE Constants MFE-A.A 135

Last Edited on 25-JUN-2014,13:23

Running Mode	No Sleeve	
MFE K Factor	0.1268	
Caliper Source for FE correction	Density Caliper	
Caliper Value for FE correction	N/A	inches
Rm Source for FE correction	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Stand-off	0.5	inches

Induction Calibration MAI-A.A 111

Base Calibration on 26-MAY-2010,08:56
Field Check on 25-JUN-2014 08:59

Base Calibration

Test Loop Calibration	Measured		Calibrated (mmho/m)	
Channel	Low	High	Low	High

1	17.6	473.6	9.3	966.2
2	6.4	385.9	7.6	821.4
3	3.2	264.0	5.2	566.0
4	2.1	135.5	2.6	279.2

Array Temperature 23.0 Deg F

Channel	Base Check (mmho/m)		Field Check (mmho/m)	
	Low	High	Low	High
1	13.8	3868.8	12.9	3869.0
2	30.1	3522.6	29.9	3523.9
3	29.1	3016.3	29.1	3018.2
4	19.1	2055.0	19.1	2056.3
Deep	17.8	1958.9	17.7	1960.5
Medium	43.0	3969.5	43.0	3972.2
Shallow	44.8	5224.6	44.6	5225.8
Array Temperature		89.1		71.7 Deg F

Induction Constants MAI-A.A 111

Last Edited on 25-JUN-2014,13:23

Induction Model	RtAP-WBM	
Caliper for Borehole Corr.	Density Caliper	
Hole Size for Borehole Correction	N/A	inches
Tool Centred	No	
Stand-off Type	Fins	
Stand-off	0.50	inches
Number of Fins on Stand-off	8.0000	
Stand-off Fin Angle	45.00	degrees
Stand-off Fin Width	0.5000	inches
Borehole Corr. Rm Source	Temperature Corr	
Temp. for Rm Corr.	MCG External Temperature	
Squasher Start	0.0020	mhos/metre
Squasher Offset	N/A	mhos/metre

Borehole Normalisation

DRM1	0.0000	DRC1	0.0000
DRM2	0.0000	DRC2	0.0000
MRM1	0.0000	MRC1	0.0000
MRM2	0.0000	MRC2	0.0000
SRM1	0.0000	SRC1	0.0000
SRM2	0.0000	SRC2	0.0000

Calibration Site Corrections

Channel 1	0.00	mmhos/metre
Channel 2	0.00	mmhos/metre
Channel 3	0.00	mmhos/metre
Channel 4	0.00	mmhos/metre

Apparent Porosity and Water Saturation Constants

Archie Constant (A)	1.00	
Cementation Exponent (M)	2.00	
Saturation Exponent (N)	2.00	
Saturation of Water for Apor	100.00	percent
Resistivity of Water for Apor and Sw	0.05	ohm-m
Resistivity of Mud Filtrate for Sw	0.00	ohm-m
Source for Rt	0.00	
Source for Rxo	0.00	

Caliper Calibration MPD-C.A 216

Base Calibration on 18-JUN-2014 10:39
Field Calibration on 25-JUN-2014 09:05

Base Calibration

Reading No	Measured	Calibrator Size (in)
1	16948	3.99
2	27088	5.98
3	37015	7.97
4	46800	9.86
5	58001	11.92
6	N/A	N/A

Field Calibration

Measured Caliper (in)	Actual Caliper (in)
7.92	7.97

DOWNHOLE EQUIPMENT

C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta

3/8" Triple Cone Cable Head (MCB C A)
MCB-C.A 5 LG: 1.58 ft WT: 15.4 lb OD: 2.244 in

Compact Comms Gamma
MCG-D.K 469 LG: 8.70 ft WT: 63.9 lb OD: 2.240 in

Compact Micro-log
MML-A 3 LG: 7.97 ft WT: 81.6 lb OD: 2.240 in

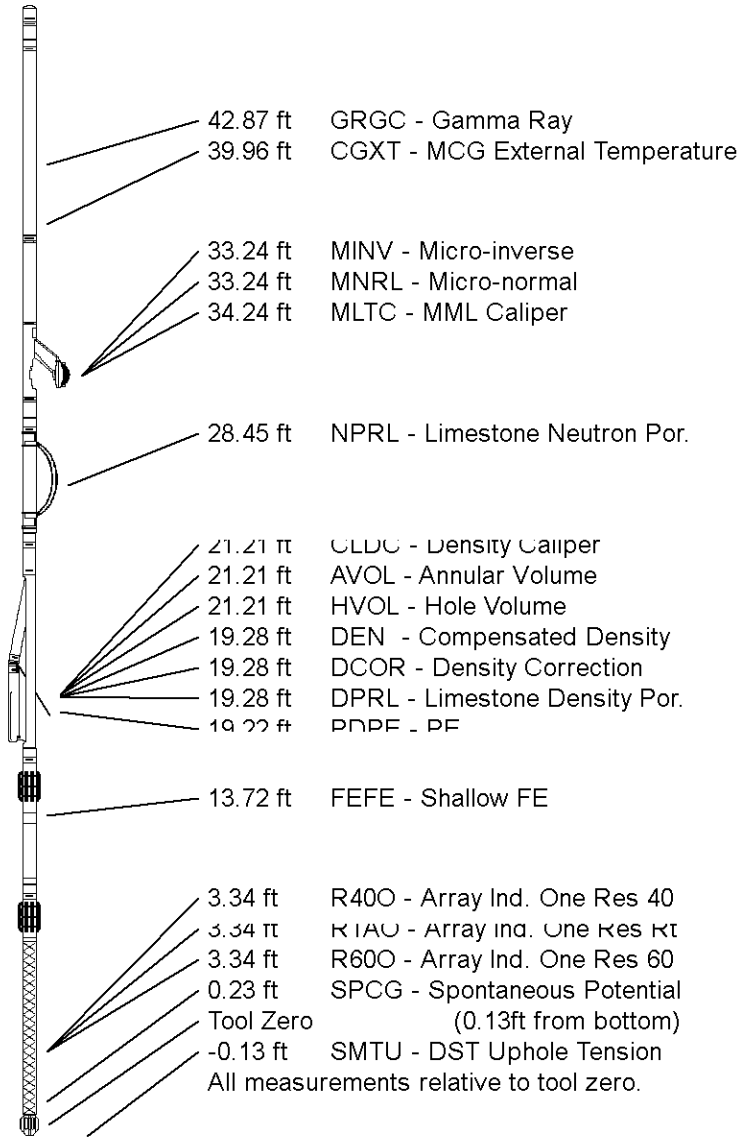
Compact Neutron
MDN-A.B 66 LG: 5.04 ft WT: 50.7 lb OD: 2.244 in

Compact Density/Caliper
MPD-C.A 216 LG: 9.59 ft WT: 90.4 lb OD: 2.449 in

Compact Focussed Electric
MFE-A.A 135 LG: 6.05 ft WT: 48.5 lb OD: 2.244 in

Compact Induction
MAI-A.A 111 LG: 10.81 ft WT: 48.5 lb OD: 2.244 in

Total Length: 49.73 ft Weight: 399.0 lb



COMPANY	MCCOY PETROLEUM CORPORATION
WELL	YOHN 'A' #1-26
FIELD	ALFORD SOUTH
PROVINCE/COUNTY	KIOWA
COUNTRY/STATE	U.S.A. / KANSAS

Elevation Kelly Bushing	2233.00	feet	First Reading	5194.53	feet
Elevation Drill Floor	2231.00	feet	Depth Driller	5200.00	feet
Elevation Ground Level	2220.00	feet	Depth Logger	5198.00	feet

Weatherford®

ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG

Weatherford

ARRAY INDUCTION SHALLOW FOCUSED ELECTRIC LOG

MCCOY PETROLEUM CORPORATION
YOHN 'A' #1-26
ALFORD SOUTH
KIOWA
U.S.A. / KANSAS
330' FNL & 660' FWL

Permanent Datum	GL	Elevation	2220 feet
Log Measured From	KB		13 FEET
Drilling Measured From	KB		

API Serial No.	15-097-21794		
Section	26	Township	30S
Range	19W	Other Services	
			MPD/MDN

Elevations:		feet
KB		2233.00
DF		2231.00
GL		2220.00

MML

Run Number	ONE
Depth Driller	7606-90896255
Depth Logger	5200.00
Bottom Logged Interval	5198.00
Top Logged Interval	5194.53
Casing Driller	621.00
Casing Logger	621.00
Bit Size	7.875
Type Fluid in Hole	CHEMICAL
Density/Viscosity	9.45 lb/USg
Fluid Loss	9.50
Source	MUD PIT
R / Rmf / Rmc	0.45 @113.0
Measured Temp	0.79 @75.0
R / Rmf / Rmc	0.45 @113.0
Measured Temp	0.66 @75.0
R / Rmf / Rmc	CALC
Measured Temp	0.53 @75.0
R / Rmf / Rmc	CALC
Measured Temp	0.79 @75.0
Source	CALC
Rm @ Measured Temp	0.45 @113.0
Time Since Circulation	3 HOURS
Max Recorded Temp	113.00
Equipment / Base	13096
Recorded By	BEN WELDIN
Witnessed By	ZACK MIELE
	LB14-190

Bit Size	25-JUN-2014	
Type Fluid	CHEMICAL	
Density	9.45	lb/USg
Viscosity	54.00	CP
PH	12.80	ml/30Min
Fluid Loss		
Source		
Rm @ Measured Temp		ohm-m
Rmf @ Measured Temp		ohm-m
Rmc @ Measured Temp		ohm-m
Source Rmf / Rmc	CALC	
Rm @ Measured Temp		deg F
Max Recorded Temp		
Equipment / Base	LIB	
Recorded By	DEREK CARTER	

1 INCH MAIN

Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-JUN-2014 17:28
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta
Recorded on 25-JUN-2014 15:13
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

Timing Marks every 60.0 sec

Gamma Ray API 0 75 150 150 225 300

Spontaneous Potential millivolts -20+

DST Uphole Tension pounds 5000 0

Depth in Feet

Borehole Temp in deg F

HVI every 10 cu ft

Annular Integral every 10 cu ft

Replay Scale 1:600

Array Ind. One Cond Ct mmhos 1000 750 500 250 0 2000 1750 1500 1250 1000

Array Ind. One Res Rt ohm metres 0 25 50 0 250 500

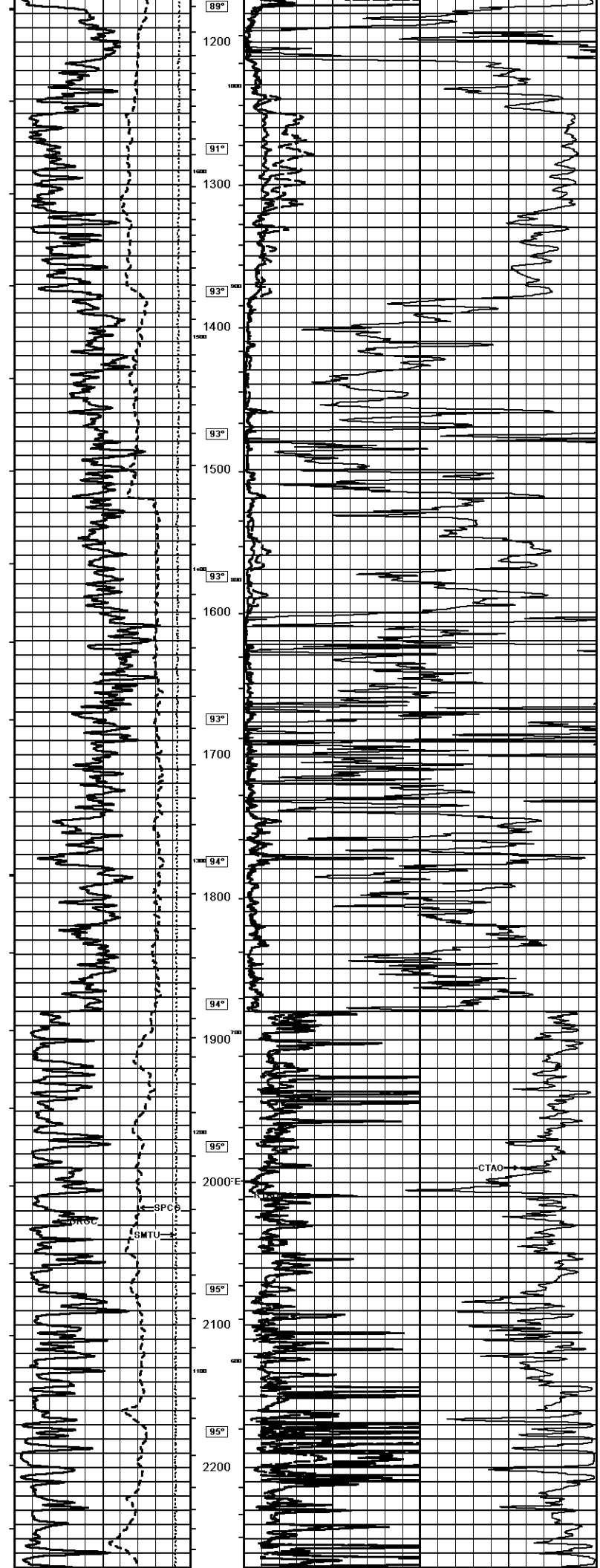
Shallow FE ohm metres 0 25 50 0 250 500

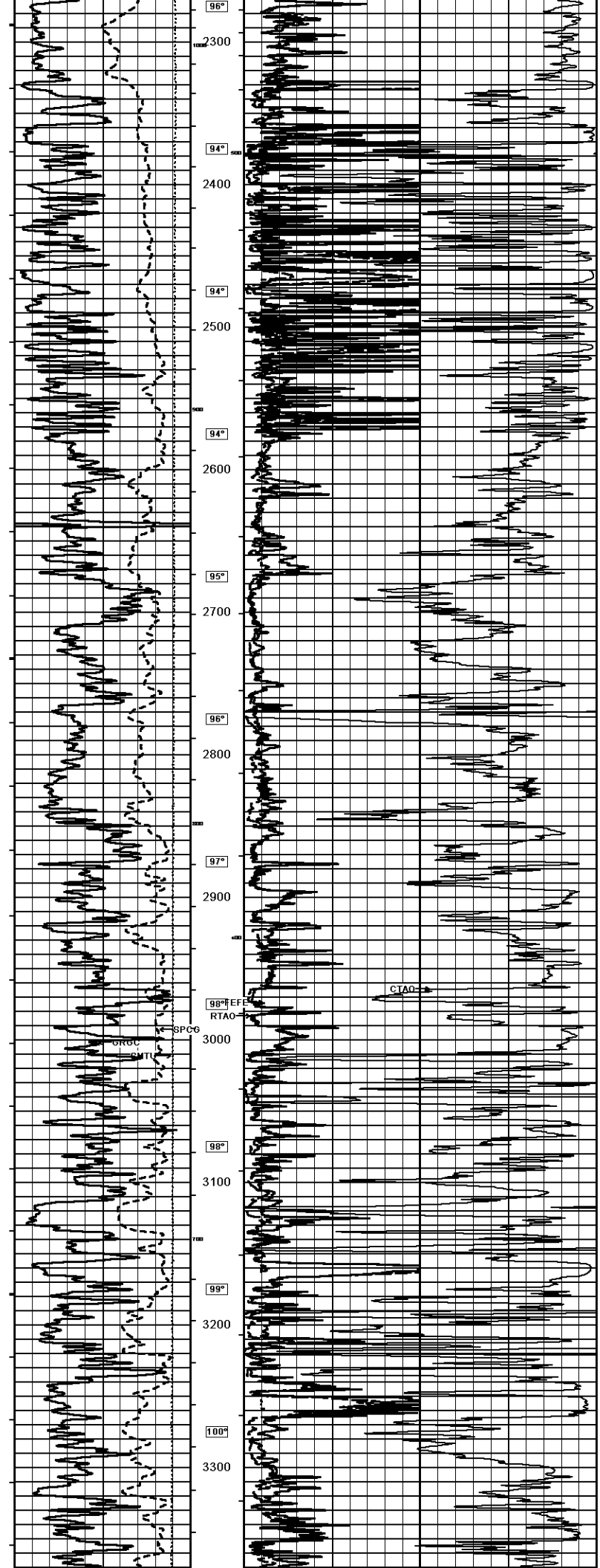
Casing Shoe

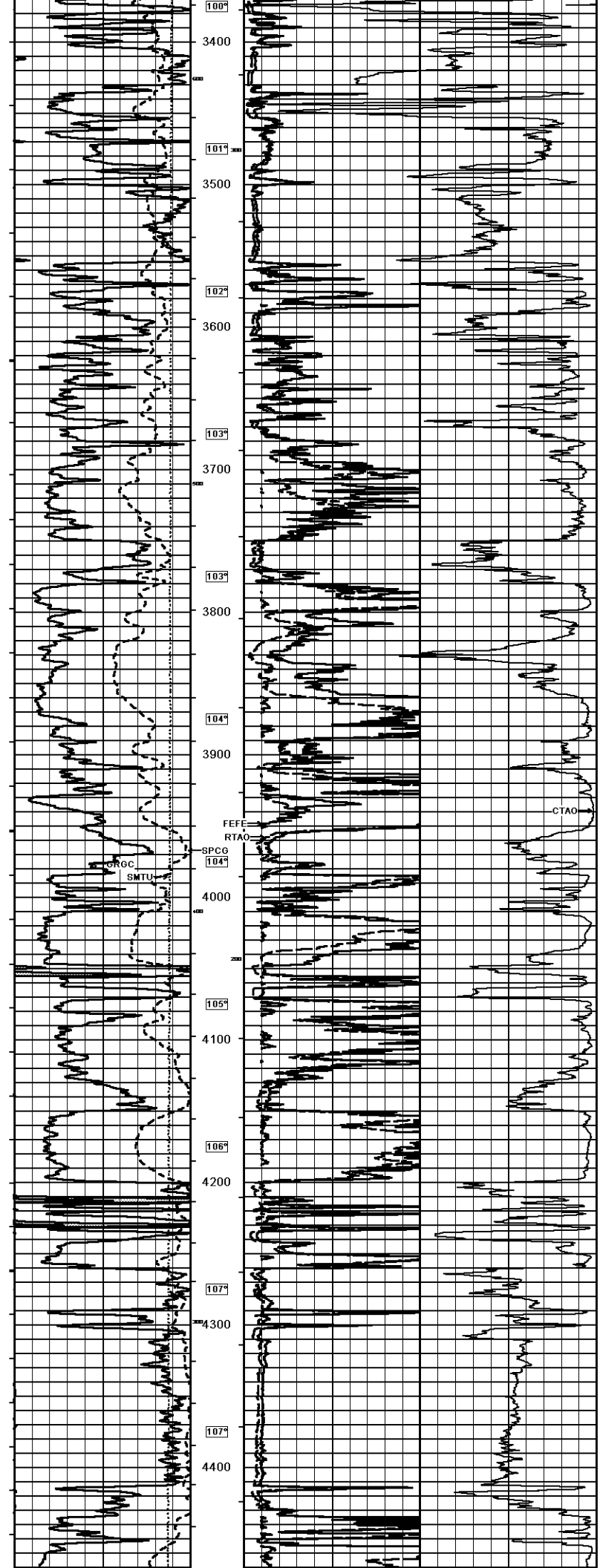
700 800 900 1000 1100

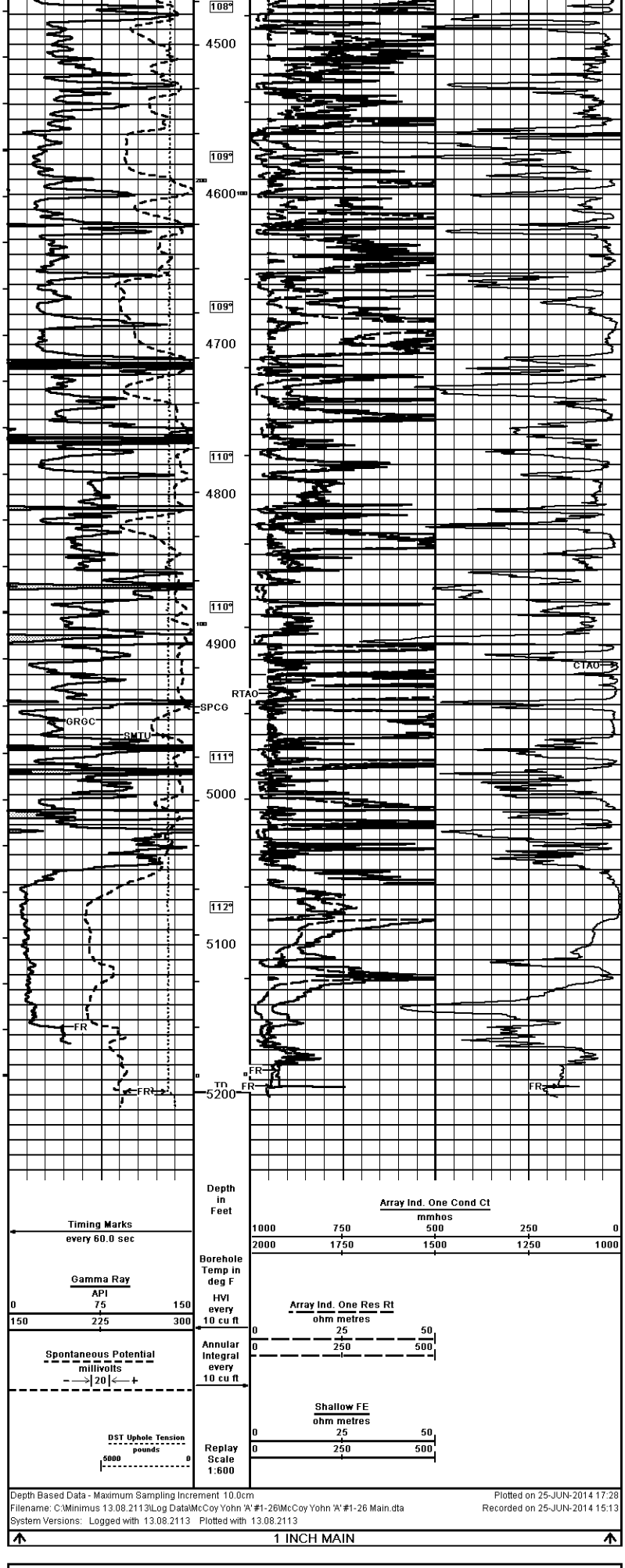
86° 87° 88° 89°

CTAO FEFE RTAO SPCO GRGC MTU


89°
1200
91°
1300
93°
1400
93°
1500
93°
1600
93°
1700
94°
1800
94°
1900
95°
2000
SPCO
SMTU
CTAO
95°
2100
95°
2200


96°
2300
94°
2400
94°
2500
94°
2600
95°
2700
96°
2800
97°
2900
98°
REFE
RTAO
CTAO
SPCG
GRGC
SMTU
3000
98°
3100
99°
3200
100°
3300


100°
3400
101°
3500
102°
3600
103°
3700
103°
3800
104°
3900
FEFE
RTAO
SPCG
104°
GRGC
SMTU
4000
105°
4100
106°
4200
107°
4300
107°
4400
CTAO



Depth Based Data - Maximum Sampling Increment 10.0cm
Plotted on 25-JUN-2014 17:28
Filename: C:\Minimus 13.08.2113\Log Data\McCoy Yohn 'A' #1-26\McCoy Yohn 'A' #1-26 Main.dta
Recorded on 25-JUN-2014 15:13
System Versions: Logged with 13.08.2113 Plotted with 13.08.2113

1 INCH MAIN

COMPANY	MCCOY PETROLEUM CORPORATION
WELL	YOHN 'A' #1-26
FIELD	ALFORD SOUTH
PROVINCE/COUNTY	KIOWA
COUNTRY/STATE	U.S.A. / KANSAS

COUNTRY/STATE	U.S.A. / KANSAS				
Elevation Kelly Bushing	2233.00	feet	First Reading	5194.53	feet
Elevation Drill Floor	2231.00	feet	Depth Driller	5200.00	feet
Elevation Ground Level	2220.00	feet	Depth Logger	5198.00	feet

Weatherford

ARRAY INDUCTION
SHALLOW FOCUSED
ELECTRIC LOG