SUPERIOR WELL SERVICES

SUPERIOR
Hays,
Kansas

DUAL INDUCTION LOG

Company	PFEIFER EXPLORATIONS, LLC.
Well	HASELHORST #15-1
Field	WILDCAT
County	ELLIS
State	KANSAS

Company PFEIFER EXPLORATIONS, LLC.
Well HASELHORST #15-1
Field WILDCAT
County ELLIS State KANSAS
Location: API # : 15-051-26366-0000
1200' FNL & 430' FWL
SE - SW - NW - NW
SEC 15 TWP 15S RGE 19W

Permanent Datum	GROUND LEVEL	Elevation	2002.8
Log Measured From	KELLY BUSHING 8.5' A.G.L.		
Drilling Measured From	KELLY BUSHING		

Other Services: CDL/CNL, MEL

Elevation: K.B. 2011.3, D.F. 2009.3, G.L. 2002.8

Date	9/12/12					
Run Number	ONE					
Depth Driller	3730					
Depth Logger	3728					
Bottom Logged Interval	3726					
Top Log Interval	00					
Casing Driller	8 5/8"@1219'					
Casing Logger	1220					
Bit Size	7 7/8"					
Type Fluid in Hole	CHEMICAL MUD	CHLORIDES 9,500 PPM				
Density / Viscosity	9.1/48					
pH / Fluid Loss	10.0/10.0					
Source of Sample	FLOWLINE					
Rm @ Meas. Temp	.650@76F					
Rmf @ Meas. Temp	.488@76F					
Rmc @ Meas. Temp	.780@76F					
Source of Rmf / Rmc	MEASUREMENT					
Rm @ BHT	.433@114F					
Time Circulation Stopped	2 HOURS					
Time Logger on Bottom	1:30 A.M.					
Maximum Recorded Temperature	114F					
Equipment Number	4010					
Location	HAYS, KANSAS					
Recorded By	JEFF LUEBBERS					
Witnessed By	ROGER MOSES	JAY PFEIFER				

<<< Fold Here >>>

Comments

THANK YOU FOR USING SUPERIOR WELL SERVICE HAYS, KANSAS (785) 628-6395
DIRECTIONS
ANTONINO, KS. 2W., 2 1/4S., E. INTO

SUPERIOR WELL SERVICES

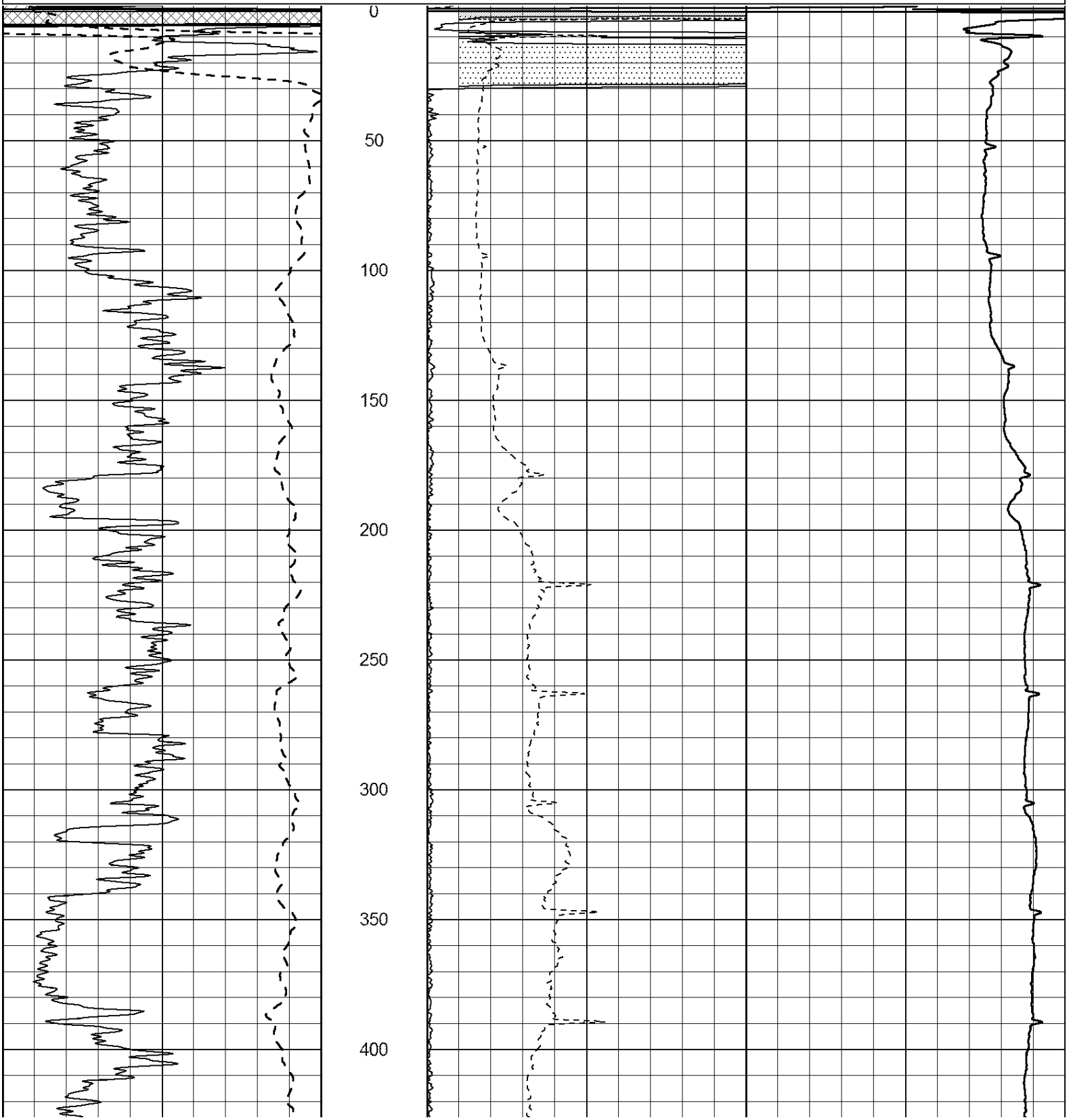
SUPERIOR
Hays,
Kansas

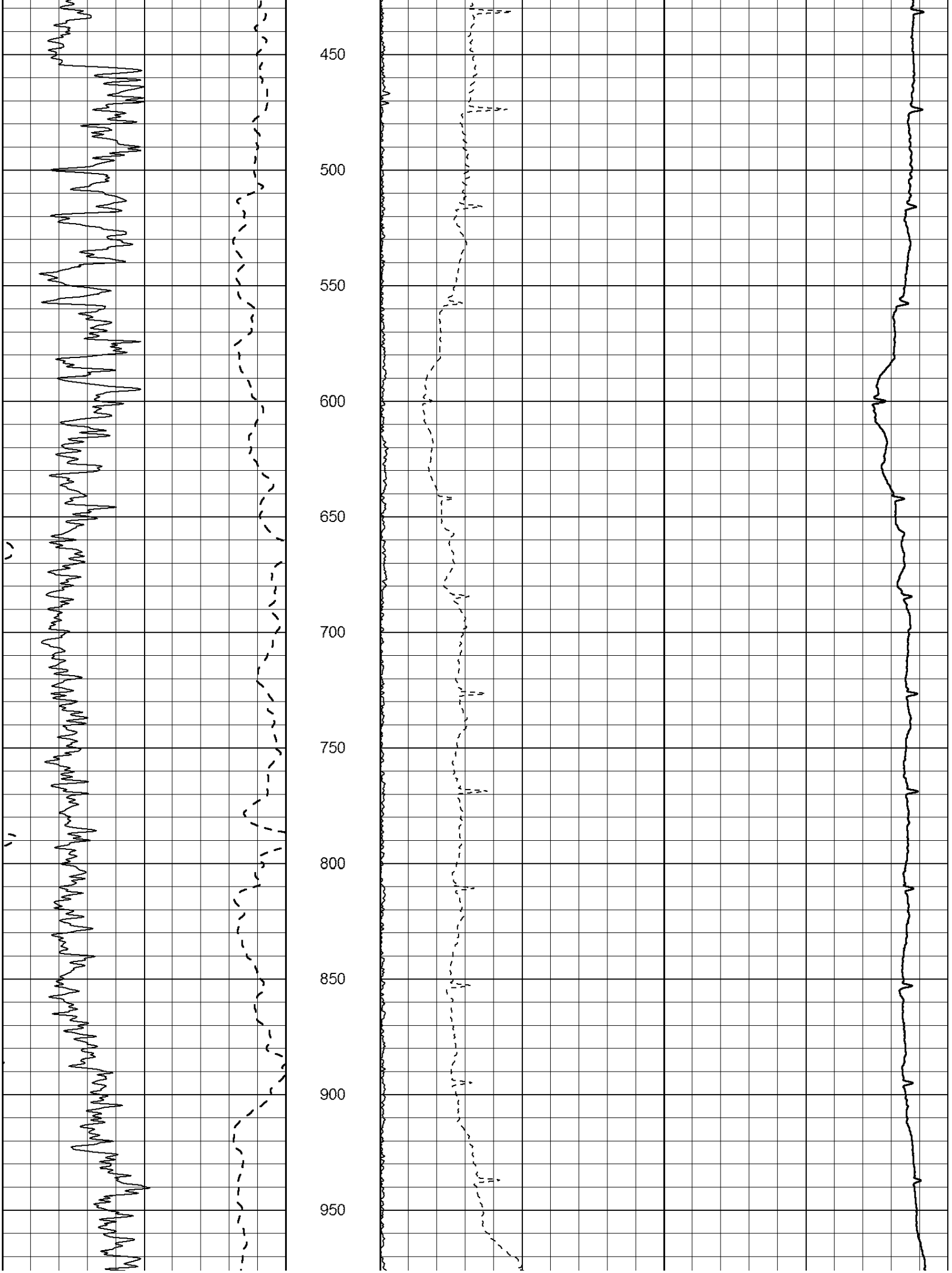
MAIN SECTION

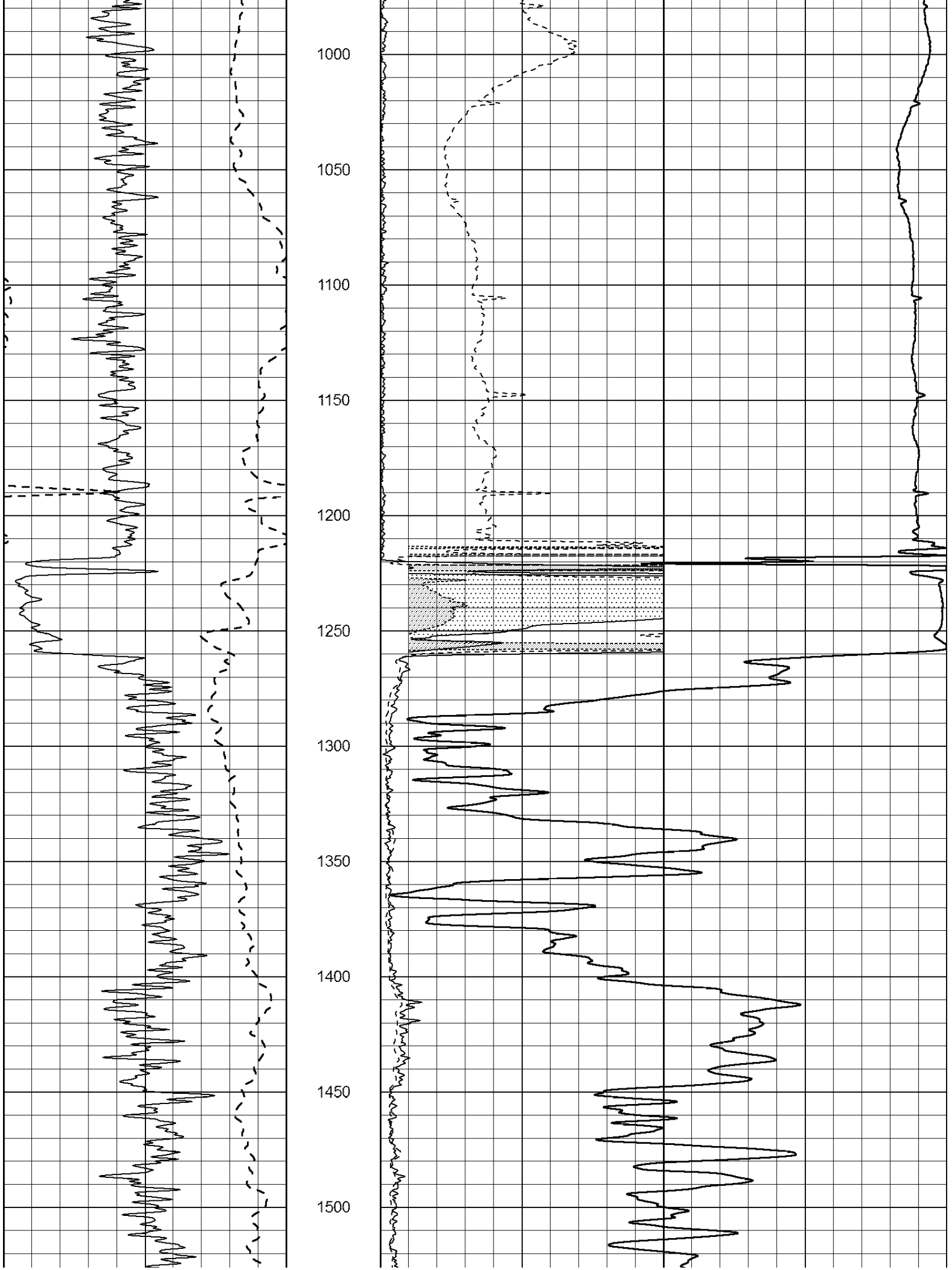
Database File: 409522ddn.db
Dataset Pathname: pass3.3
Presentation Format: dil2
Dataset Creation: Wed Sep 12 03:07:49 2012 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:600

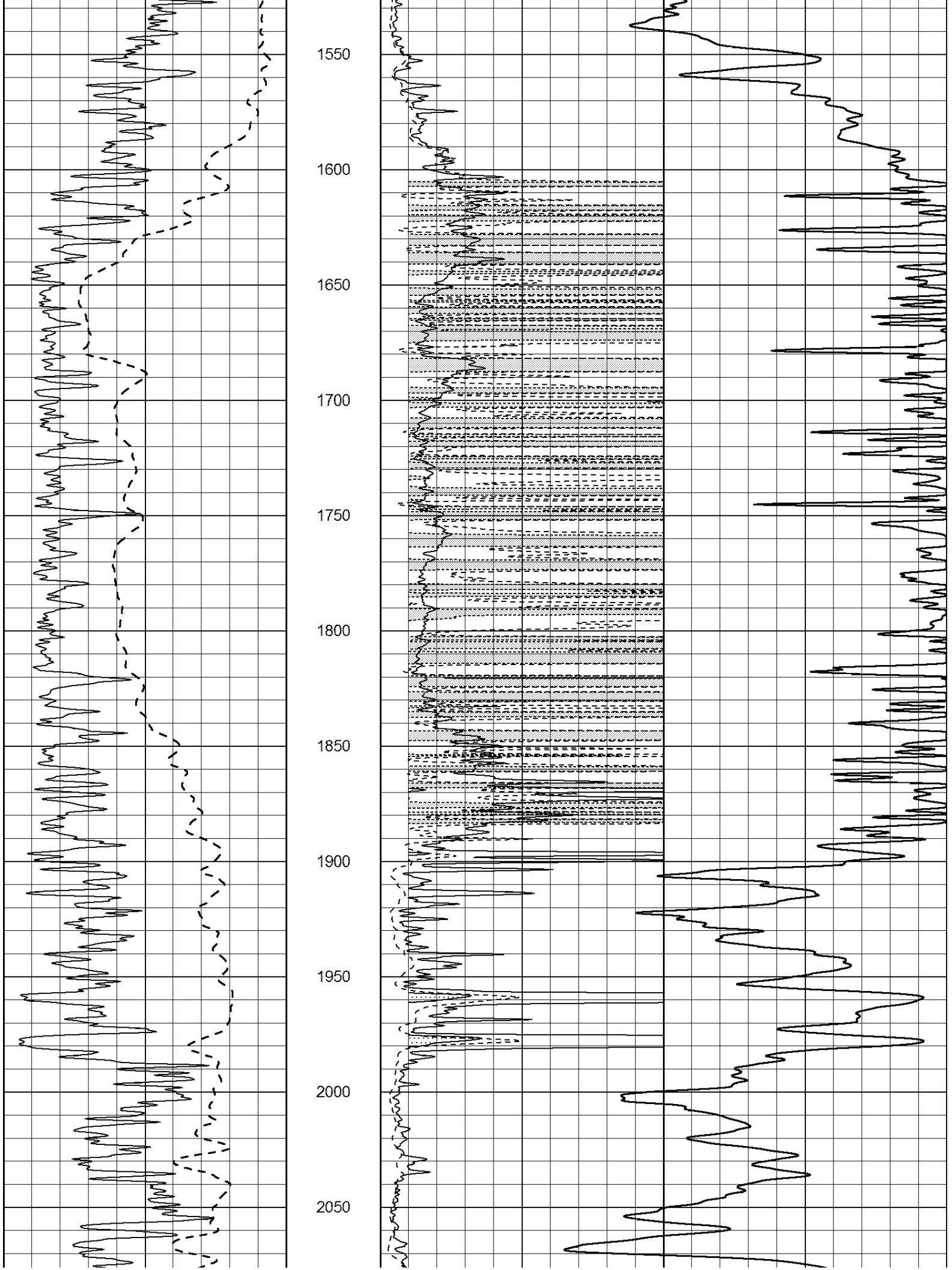
0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

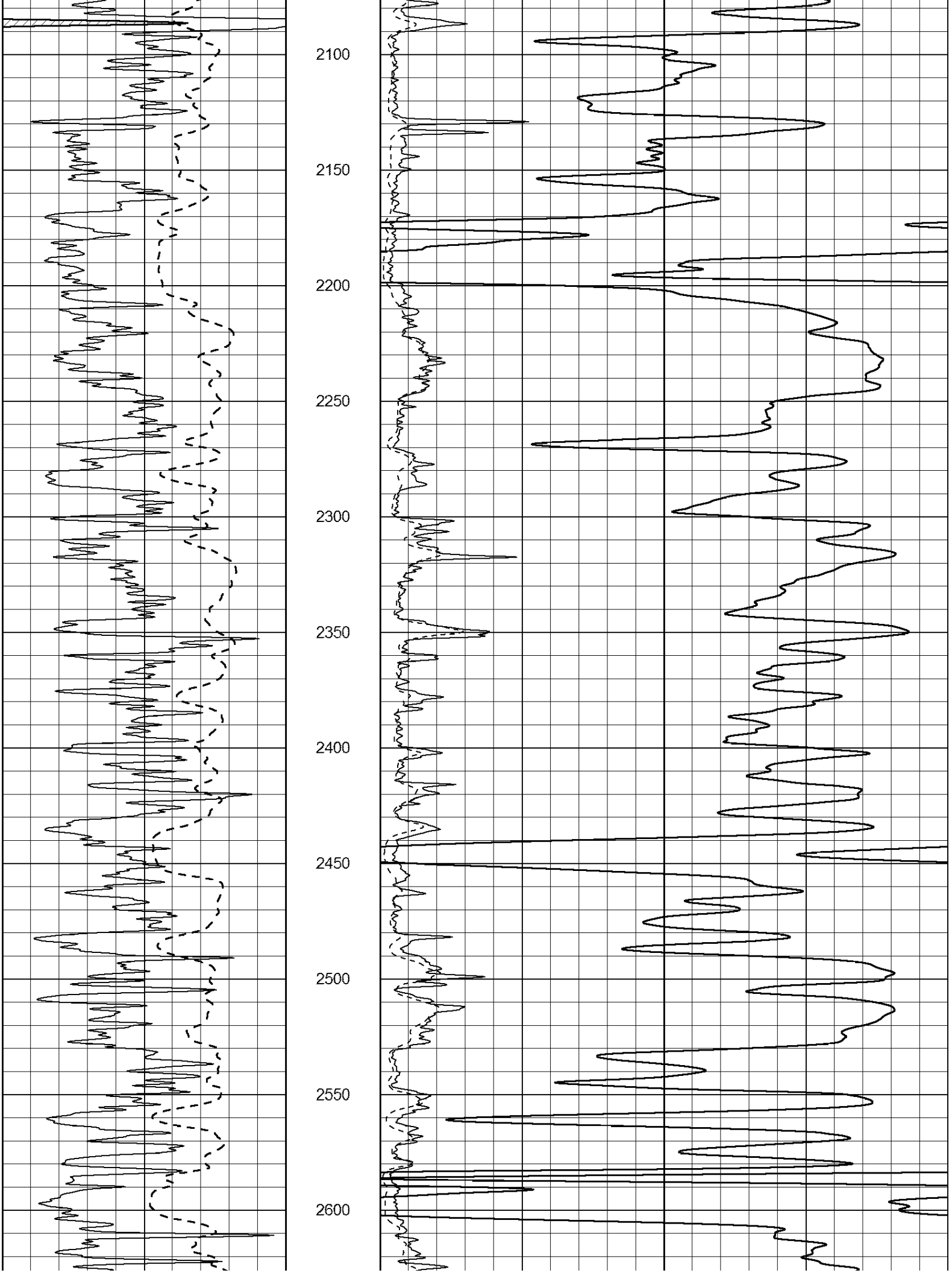
0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

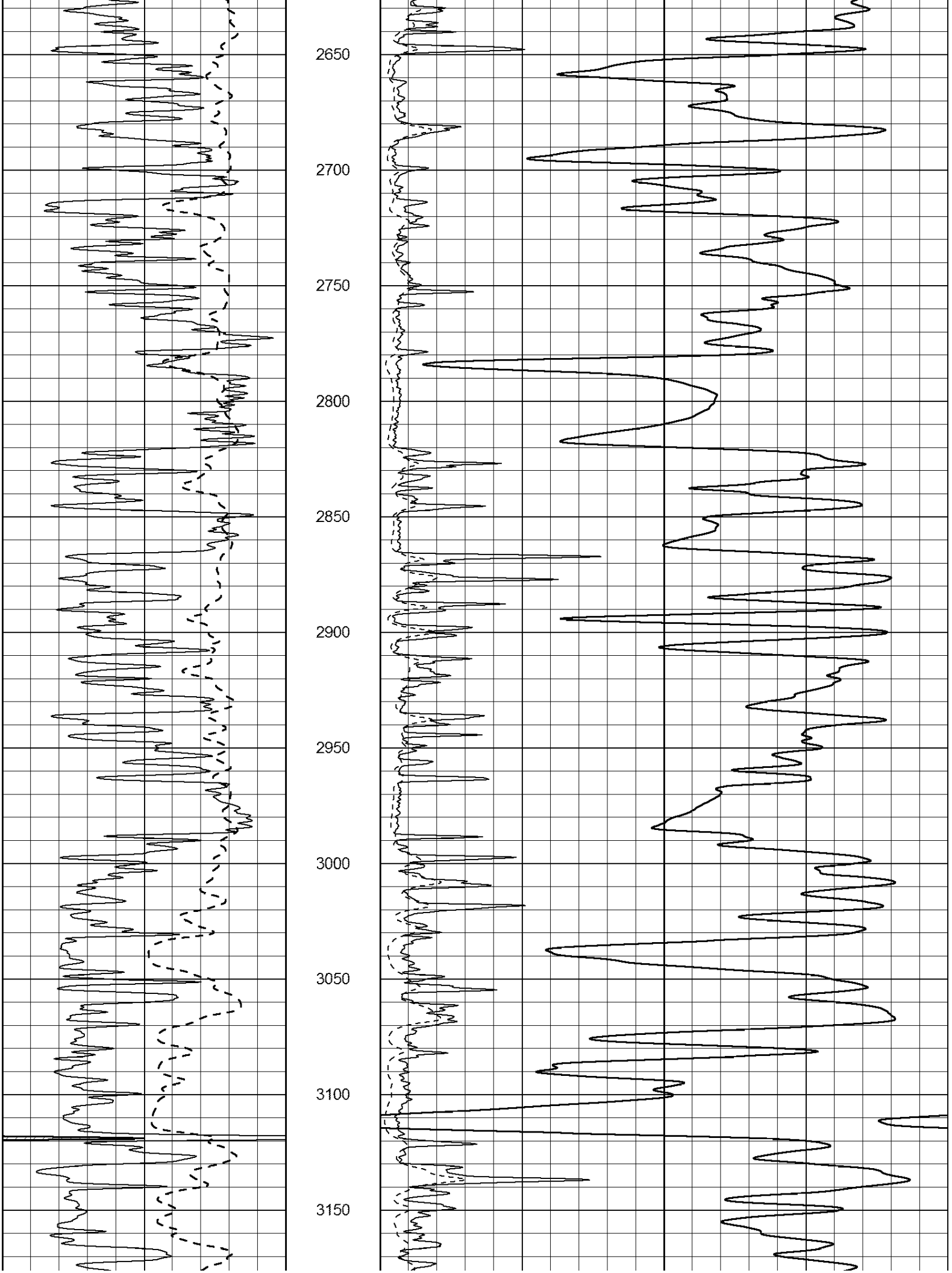


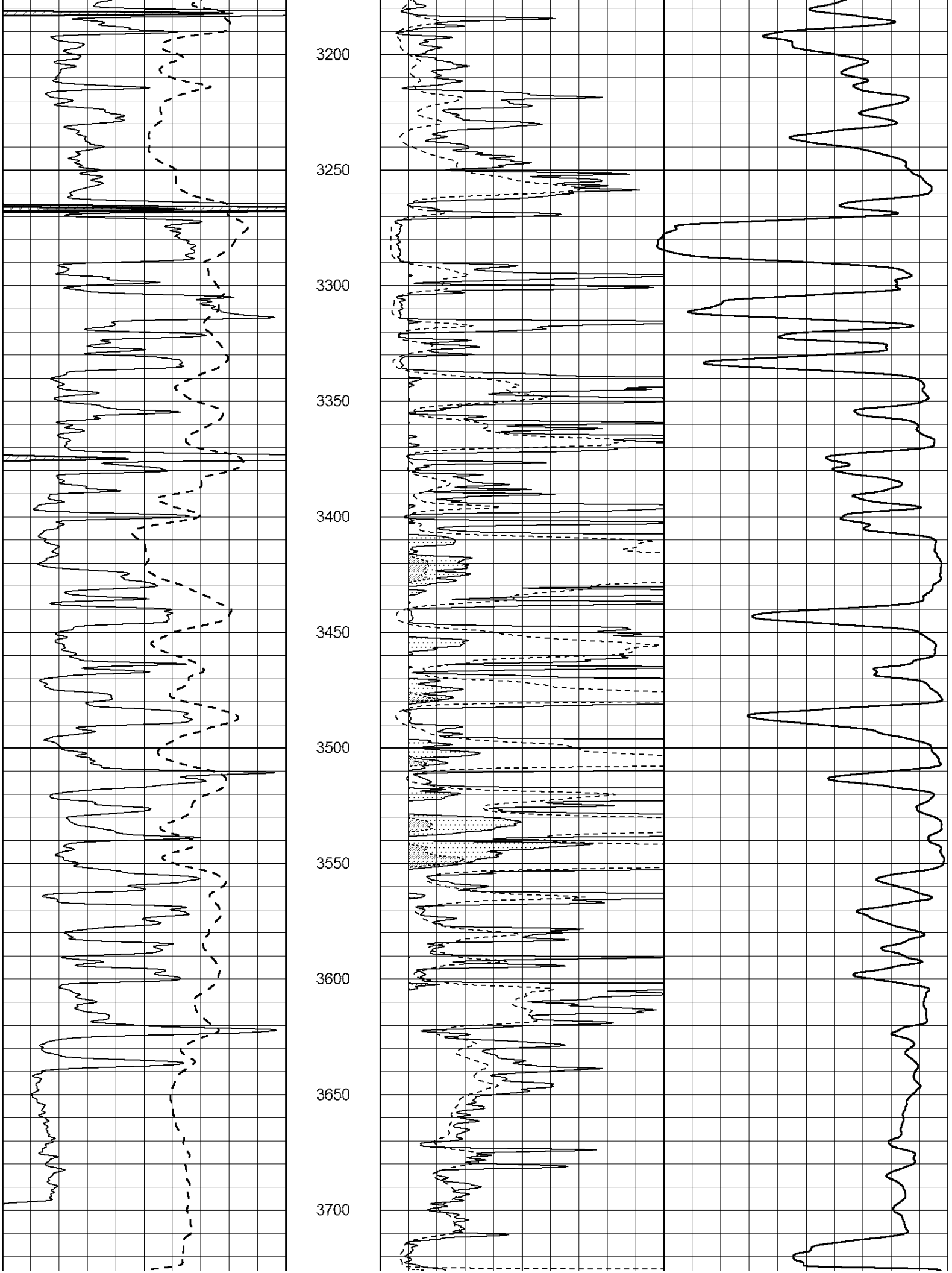

450
500
550
600
650
700
750
800
850
900
950


1000
1050
1100
1150
1200
1250
1300
1350
1400
1450
1500


1550
1600
1650
1700
1750
1800
1850
1900
1950
2000
2050


2100
2150
2200
2250
2300
2350
2400
2450
2500
2550
2600


2650
2700
2750
2800
2850
2900
2950
3000
3050
3100
3150


3200
3250
3300
3350
3400
3450
3500
3550
3600
3650
3700

0	Gamma Ray (GAPI)	150
-100	SP (mV)	100

0	RLL3 (Ohm-m)	50
0	RILD (Ohm-m)	50
1000	CILD (mmho/m)	0
50	RILD X10 (Ohm-m)	500
50	RLL3 X10 (Ohm-m)	500

SUPERIOR WELL SERVICES

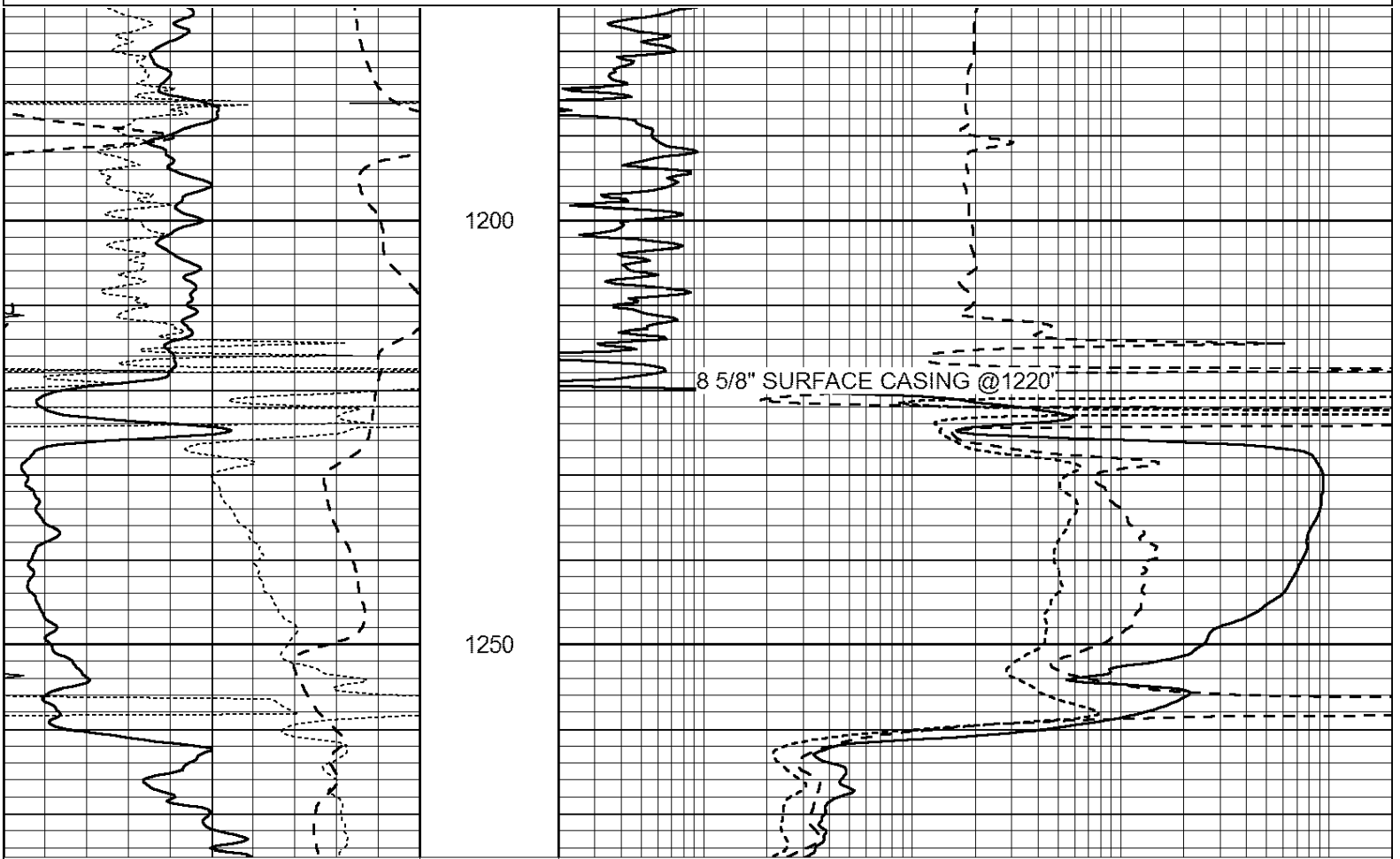
SUPERIOR
Hays,
Kansas

ANHYDRITE

Database File: 409522ddn.db
Dataset Pathname: pass3.4
Presentation Format: dil
Dataset Creation: Wed Sep 12 03:08:43 2012 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

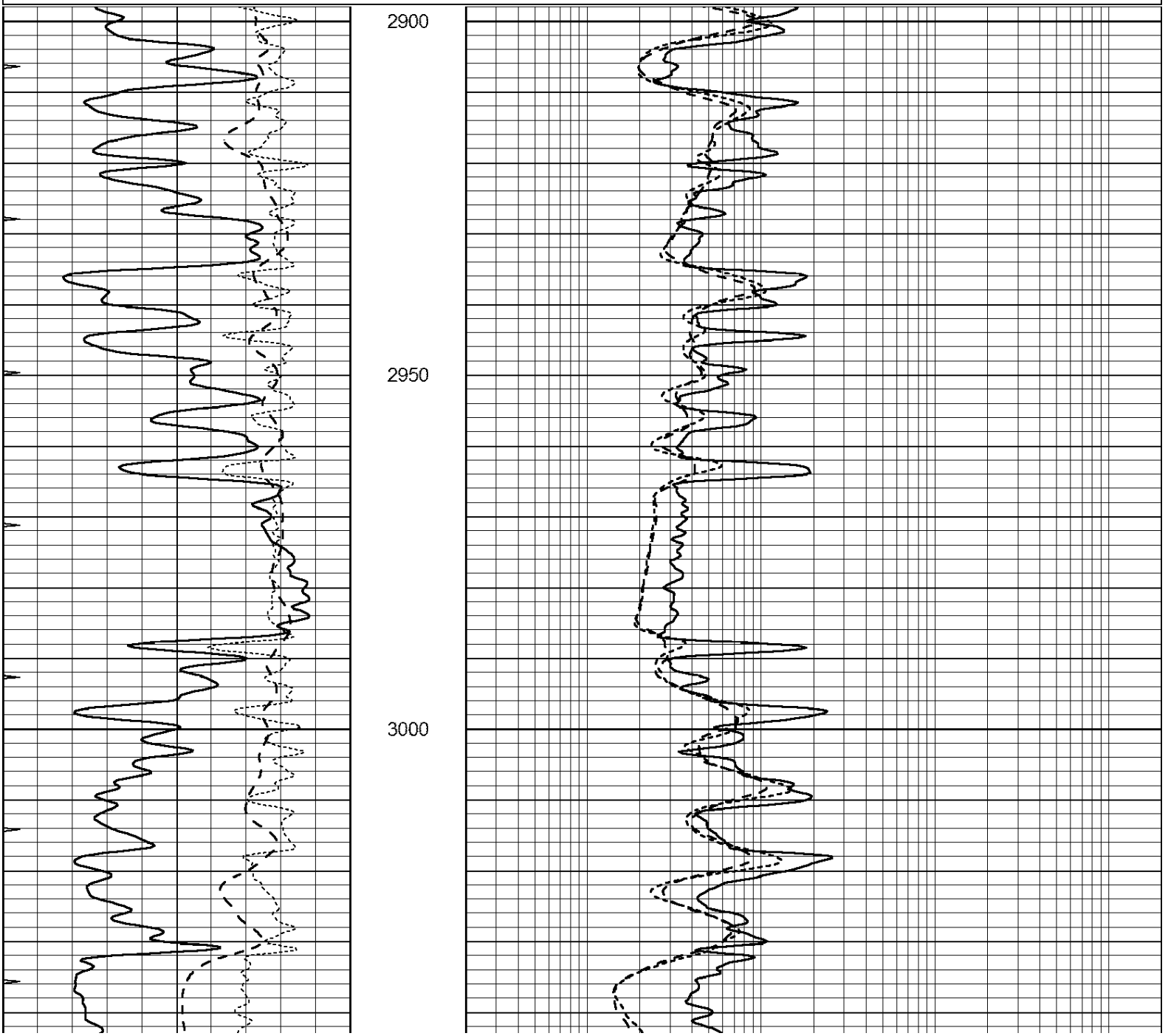
SUPERIOR
Hays,
Kansas

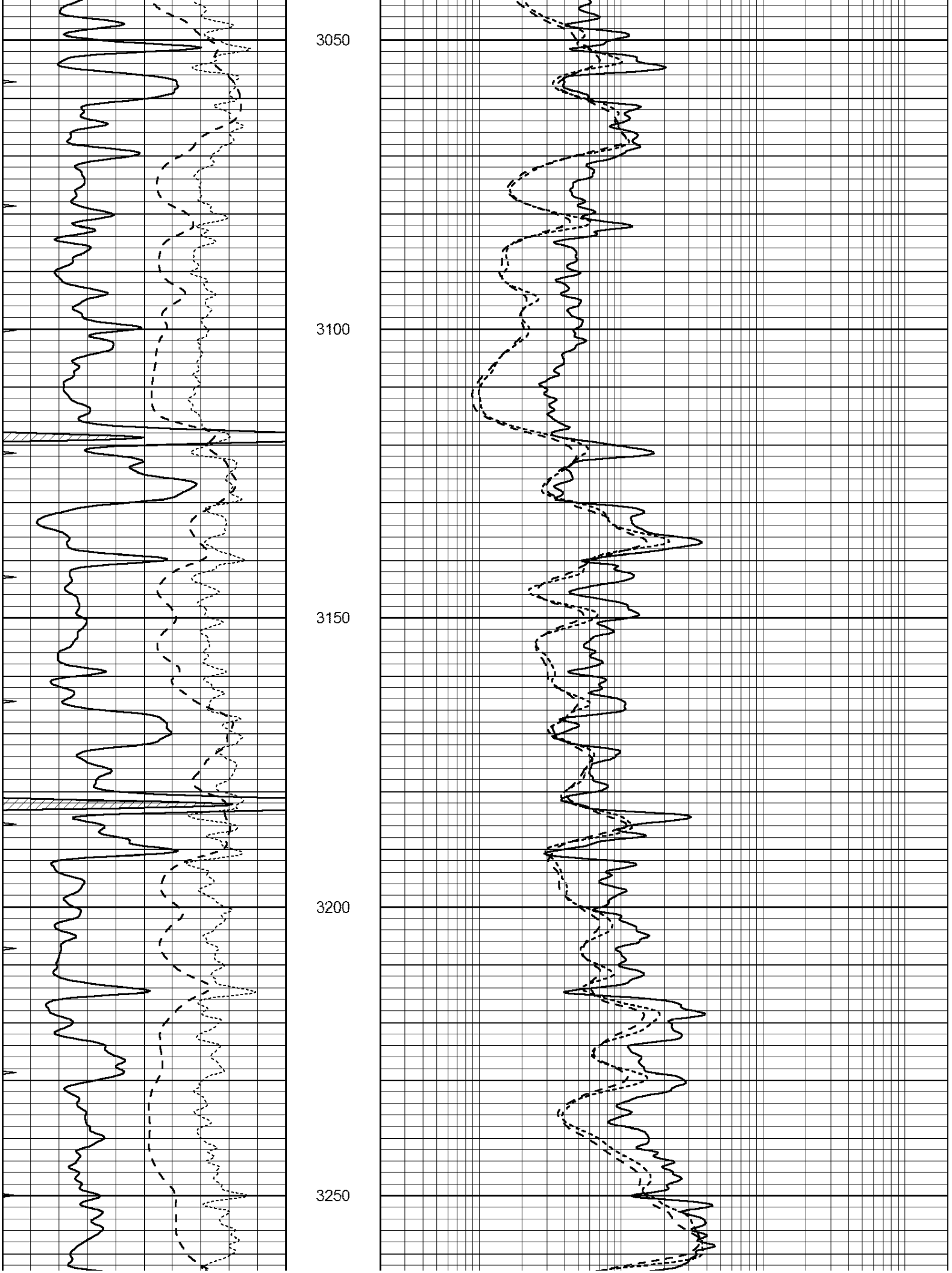
MAIN SECTION

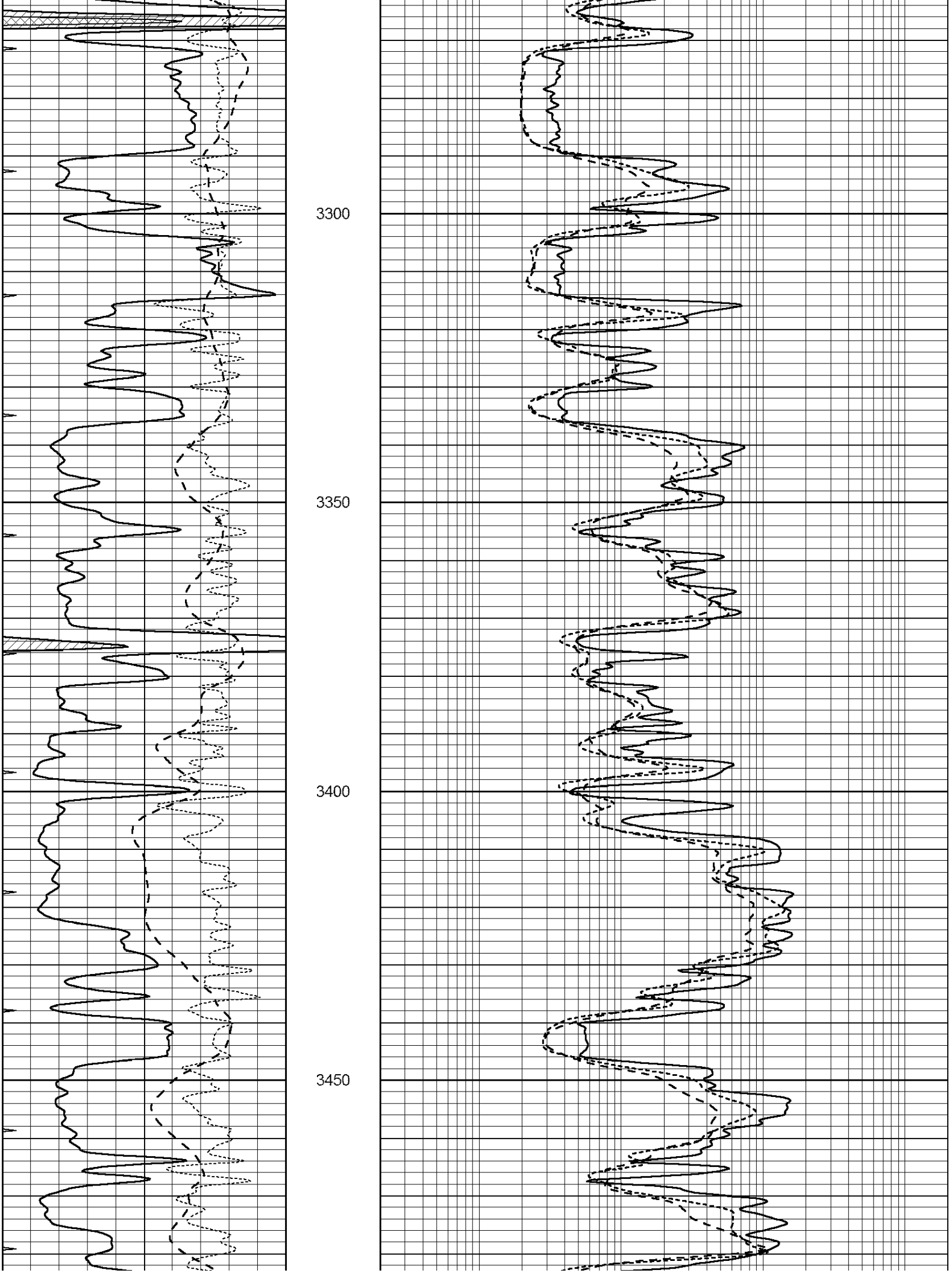
Database File:	409522ddn.db
Dataset Pathname:	pass3.3
Presentation Format:	dil
Dataset Creation:	Wed Sep 12 03:07:49 2012 by Calc Open-Cased 110302
Charted by:	Depth in Feet scaled 1:240

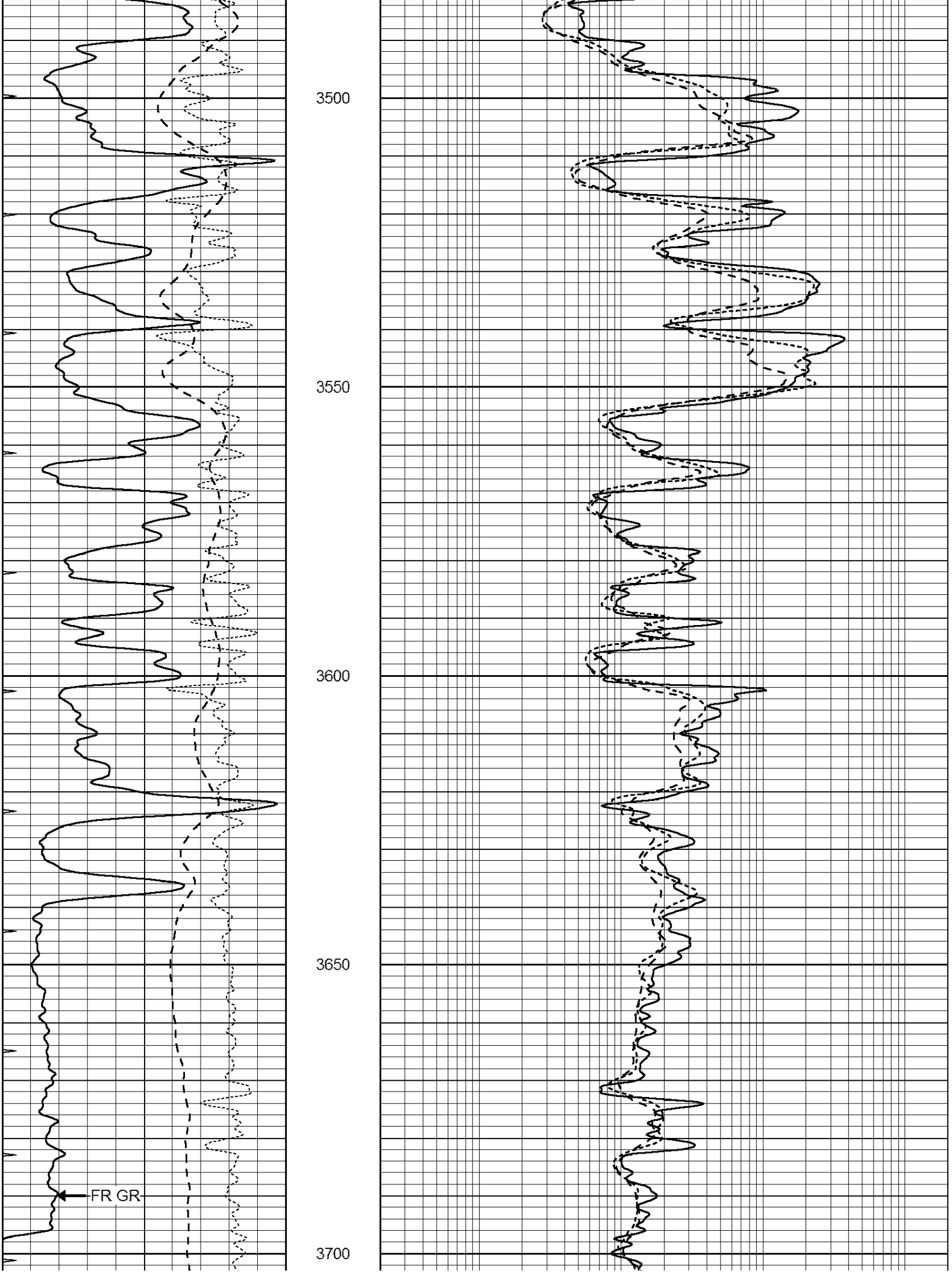
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

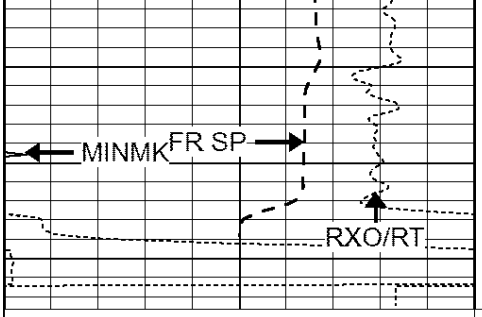
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



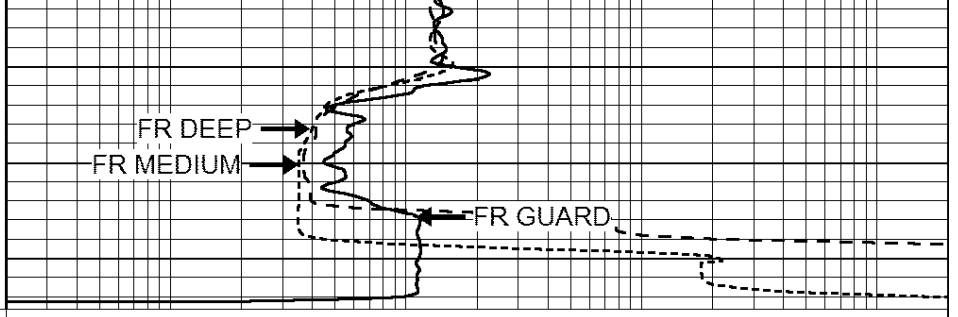

3050
3100
3150
3200
3250


3300
3350
3400
3450


3500
3550
3600
3650
3700
FR GR



LTD 3728



0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000

SUPERIOR WELL SERVICES

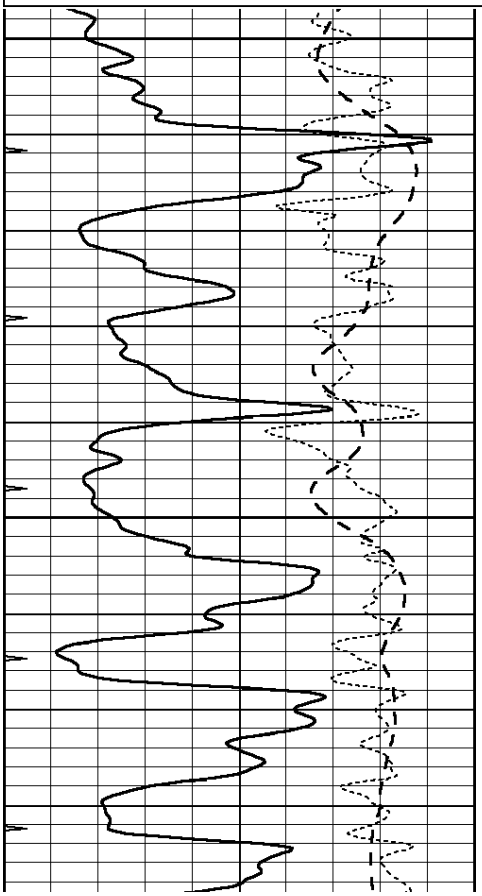
SUPERIOR
Hays,
Kansas

REPEAT SECTION

Database File: 409522ddn.db
Dataset Pathname: pass2.3
Presentation Format: dil
Dataset Creation: Wed Sep 12 01:55:04 2012 by Calc Open-Cased 110302
Charted by: Depth in Feet scaled 1:240

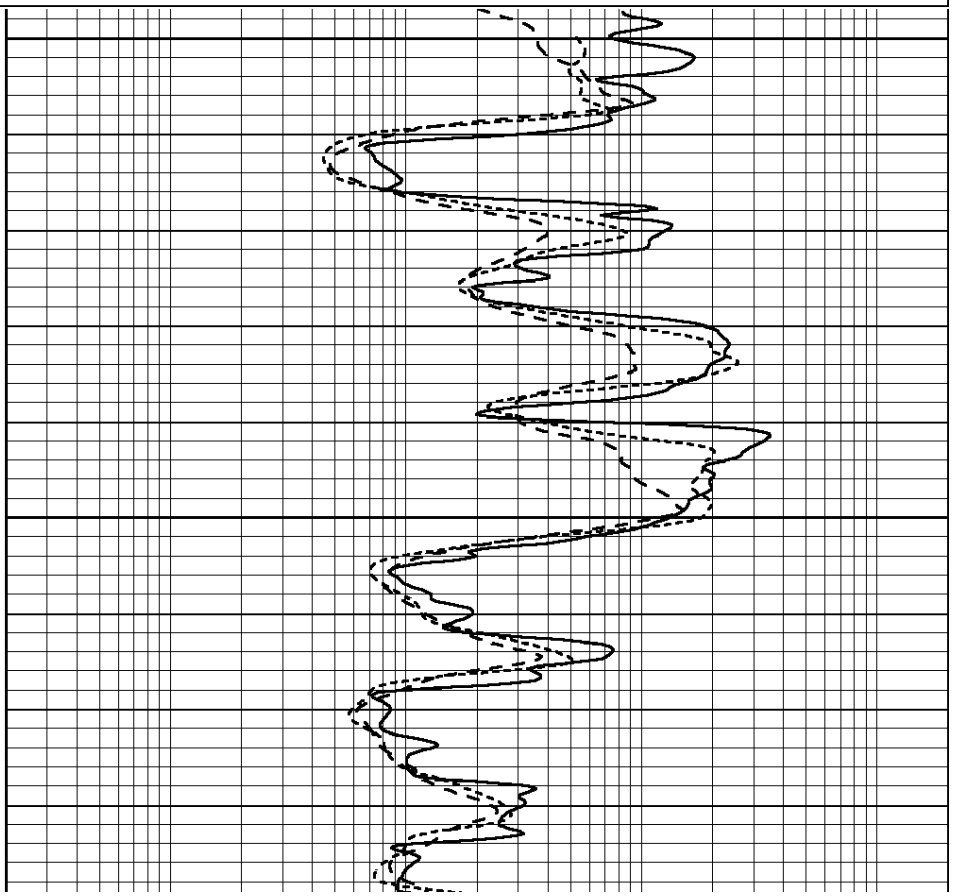
0	GAMMA RAY (GAPI)	150
-100	SP (mV)	100
-250	Rxo/Rt	50
0	MINMK	20

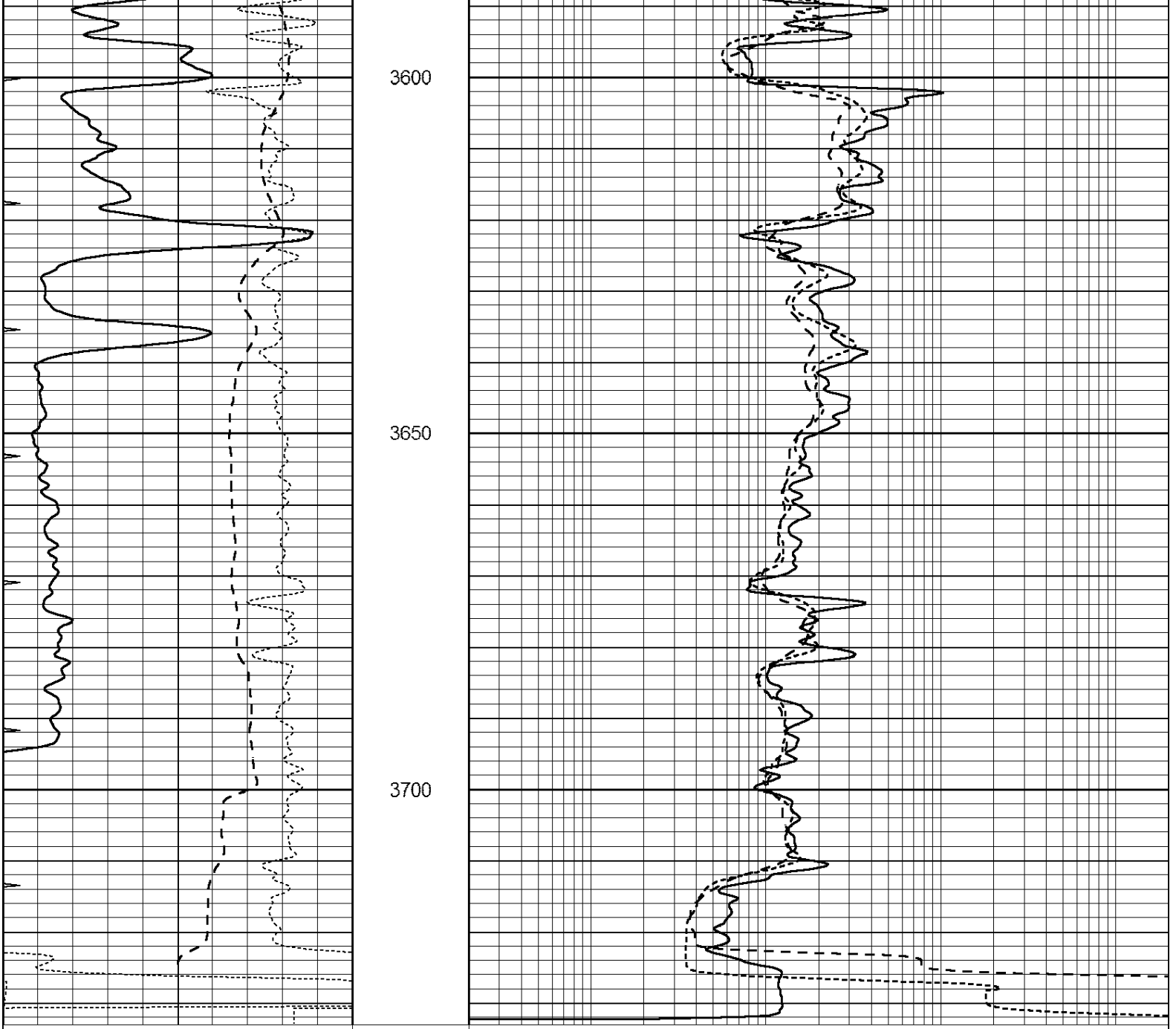
0.2	SHALLOW GUARD (Ohm-m)	2000
0.2	DEEP INDUCTION (Ohm-m)	2000
0.2	MEDIUM INDUCTION (Ohm-m)	2000



3500

3550





Calibration Report

Database File: 409522ddn.db
Dataset Pathname: pass3.3
Dataset Creation: Wed Sep 12 03:07:49 2012 by Calc Open-Cased 110302

Dual Induction Calibration Report

Serial-Model: DIL4-GEAR
Performed: Tue Aug 21 12:27:33 2012

	Readings		References		Results	
Loop:	Air	Loop	Air	Loop	m	b

Deep	0.008	0.666	V	0.000	400.000	mmho/m	570.000	0.000
Medium	-0.003	0.769	V	0.000	462.500	mmho/m	560.000	-1.000

Internal:	Zero	Cal		Zero	Cal		m	b
Deep	0.013	0.651	V	0.000	400.000	mmho/m	627.541	-8.365
Medium	0.020	0.754	V	0.000	462.500	mmho/m	630.311	-12.549

Litho Density Calibration Report

Serial: 003N Model: PRB
Performed Tue Sep 08 14:14:44 2009

Litho Density Calibration

	Background	Magnesium	Aluminum	Sandstone	
Window 1	2042.6	12312.8	4225.8	13758.4	cps
Window 2	1855.8	10134.7	3624.2	11113.1	cps
Window 3	1639.4	6760.2	2716.3	7260.3	cps
Window 4	466.4	469.2	466.1	476.5	cps
Long Space	0.0	8278.9	1768.4	9257.4	cps
Short Space	2.2	2377.3	1544.1	2574.2	cps
Rho		1.7100	2.5900	1.3800	g/cc
Pe			2.5700	1.5500	

Rib Angle	: 44.4	Rib Slope	: 0.979	Density/Spine Ratio	: 0.549
Spine Angle	: 74.4	Spine Slope	: 3.577	Spine Intercept	: -18.8

Caliper

	Readings	Reference
Low Ref	3.4	7.9
High Ref	5.0	15.0
	Gain: 4.5	Offset: -7.4

Compensated Neutron Calibration Report

Serial Number: 070808
Tool Model: Probe

PRE-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

POST-SURVEY VERIFICATION

Detector	Readings	Measured	Target
Short Space	cps		
Long Space	cps	pu	pu

Gamma Ray Calibration Report

Serial Number: 070559
Tool Model: OPEN_GR
Performed: Tue Sep 04 17:31:06 2012

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps
Calibrator Reading: 1.0 cps

Sensitivity: 0.3000 GAPI/cps