

HALLIBURTON

GAMMA RAY COLLAR
RESERVOIR MONITOR
LOG
(GR-RMTI)

CompanyURSA OPERATING CO., LLC.
WellTOMPKINS 31C-08-07-95
FieldPARACHUTE
CountyGARFIELDStateCO

CompanyURSA OPERATING CO., LLC.
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CountyGARFIELDStateCO

API No.: 05045224790000
Location:
N/A

Serv #:
Other Services

Sec: 8 Twp: 7S Rge: 95W

GR-CBL

Permanent Datum
Log Measured From
Drilling Measured From

G.L.
K.B. ,
K.B.

Elevation
17.0 Ft. above perm. datum
5532.0'

K.B.
D.F.
G.L.

Elevation
5549.0'
5532.0'

Date @ Time Logged
Run No.
Depth - Driller
Depth - Logger
Bottom - Logged Interval
Top - Log Interval
Max. Recorded Temp.
CEMENTING DATA
Date / Time Cemented
Primary / Squeeze
Expected
Compressive Strength
Cement Volume
Cement Type / Weight
Formulation
Mud Type / Mud Wgt.

08/29/2016
ONE
7194'
7158'
7156'
3600'
N/A
Surface
String

Type Fluid in Hole
Density of Fluid
Fluid Level
Cement Top Est. Logged
Equipment / Location
Recorded by
Witnessed by
Protection
String

WATER
8.45#
SURFACE
N/A
11591000 /
BRIAN PEDERSEN
MR. NATE GILL
Production
String
Liner

Run Number
ONE
TWO
THREE

24.0"
12.25"
7.875"

From
SURF
77'
1809'

To
77'
1809'
7288'

Size
16.0"
8.625"
4.5"

Weight
75.5#
32.0#
11.6#

From
SURF.
SURF.
SURF.

To
77'
1797'
7157'

Float
COLLAR

7158'

<<< Fold Here >>>

HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

Comments

NO OPEN HOLE LOGS RUN ON THIS WELL USED 17' K.B. FOR DEPTH CONTROL
RMTI LOGGED TD TO 500' ABOVE WILLAMS FORK AS PER CUSTOMERS REQUEST" THANK YOU FOR USING HALLIBURTON ENERGY SERVICES "
YOUR CREW FOR TODAY: F. ALIAS; F. NAVARRO
MBU. #BK0606
RIG: HES CRANE

Service Ticket No.903505058API No.045-22483PGM Ver15.10.29001

The Well Name, Location, Borehole Description, and / or Cementing Data Furnished by Client

EQUIPMENT DATA

XHU

GAMMA

RMTI

HCBLM

Run No. ONE

Run No. ONE

Run No. ONE

Run No. ONE

Serial No. 12029128

Serial No. 12157979

Serial No. 11680597

Serial No. 12091451

Model No. XHU-3

Model No. TTTC-U2

Model No. RMTI

Model No.

Diameter 1 11/16"

Diameter 1 11/16"

Diameter 2.25"

Diameter

LOGGING DATA

General Data

Pass

Depths

Well Head

Speed

Logging Run Comments

No

From

To

Pressure

Ft/Min

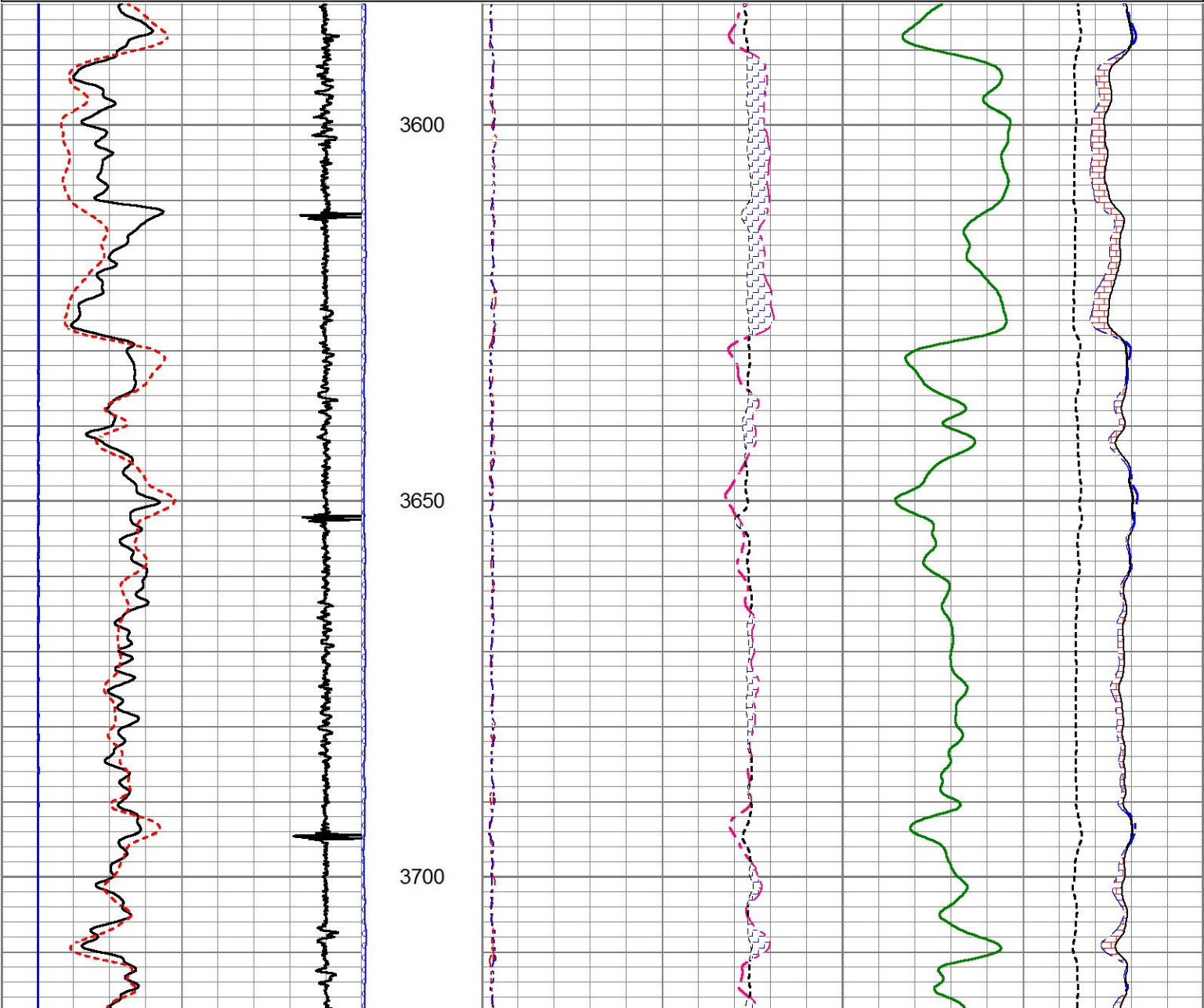
ONE	7152'	6950'	0 PSI	60'	REPEAT			
TWO	7152'	1700'	0 PSI	60'	MAIN			
	GAMMA							
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
1-3	0	150						
4	0	150						
DIRECTIONAL INFORMATION								
Maximum Deviation			deg. @		KOP			

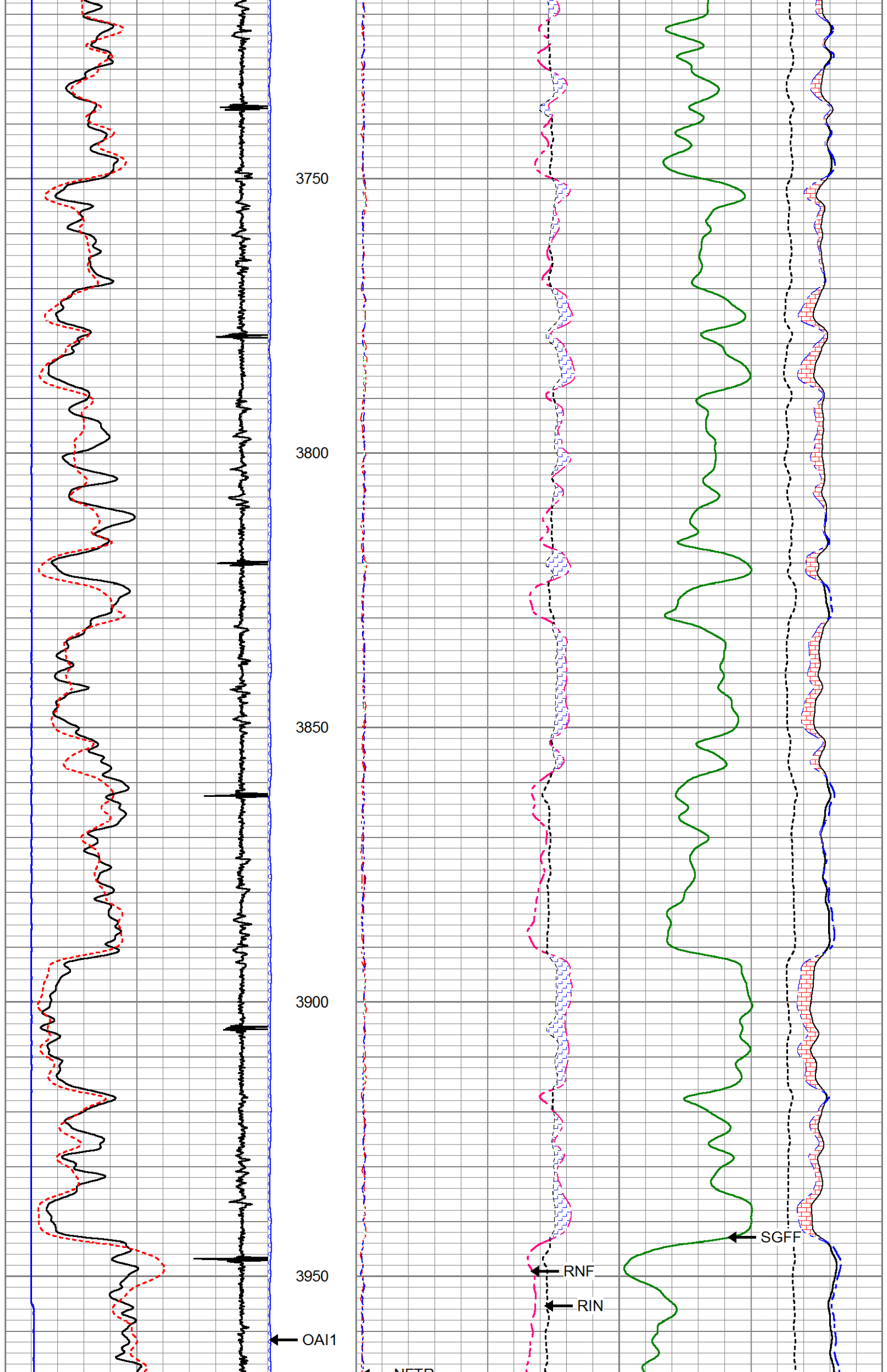
HALLIBURTON

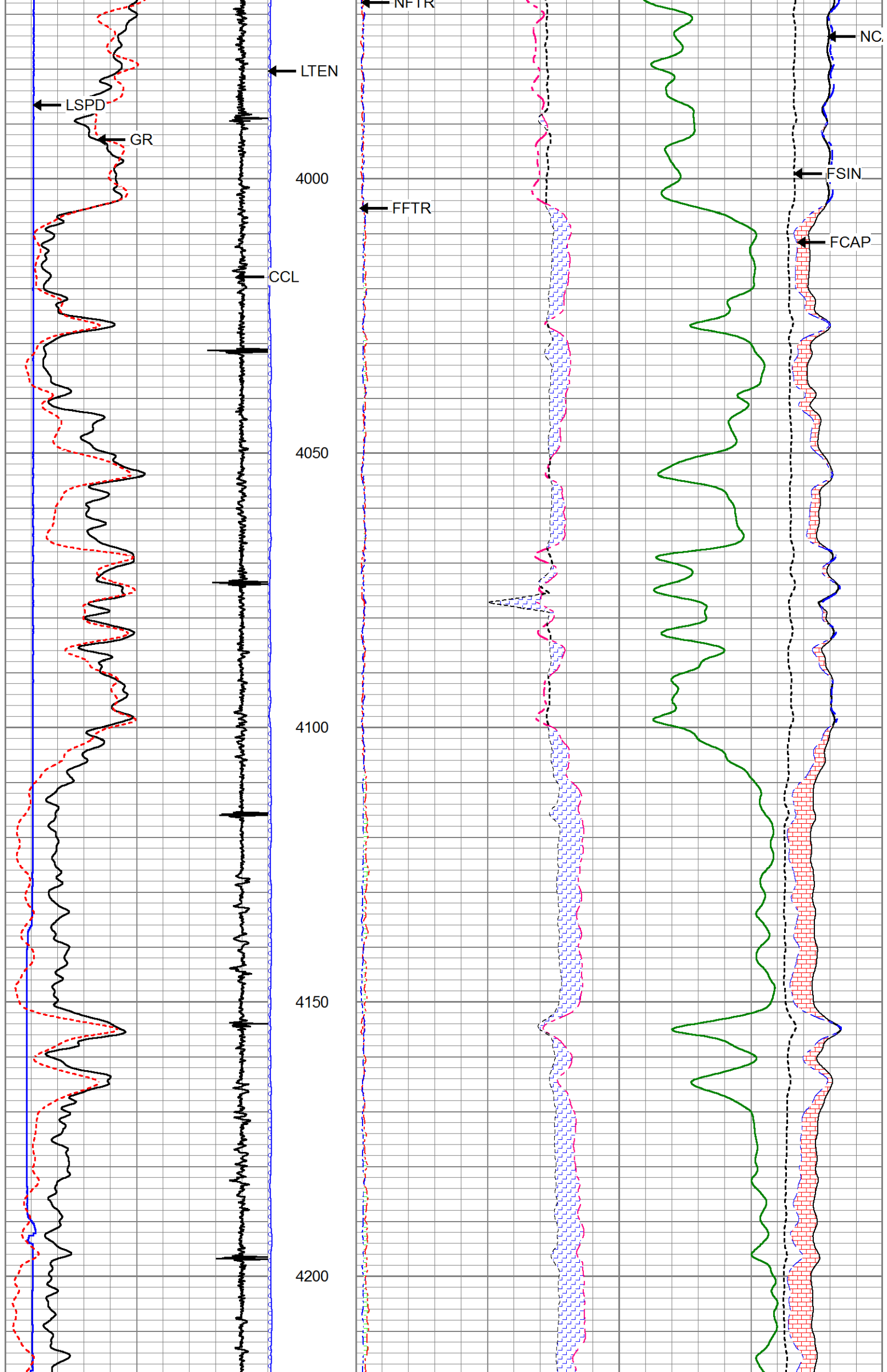
MAIN PASS

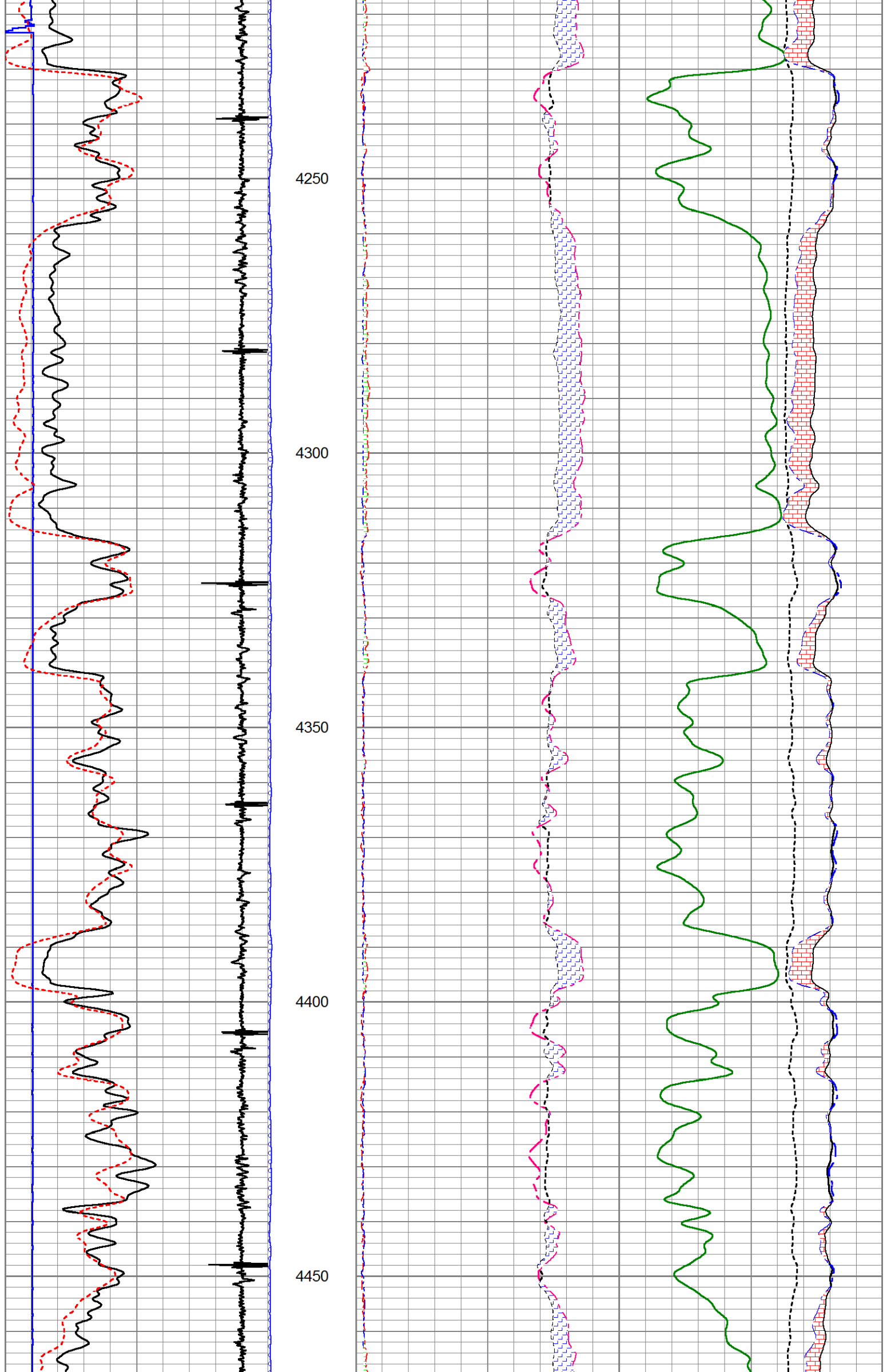
Database File	ursa-tom-31c_rmt.db
Dataset Pathname	pass4
Presentation Format	!1!!rmt_rmti
Dataset Creation	Mon Aug 29 19:56:52 2016
Charted by	Depth in Feet scaled 1:240

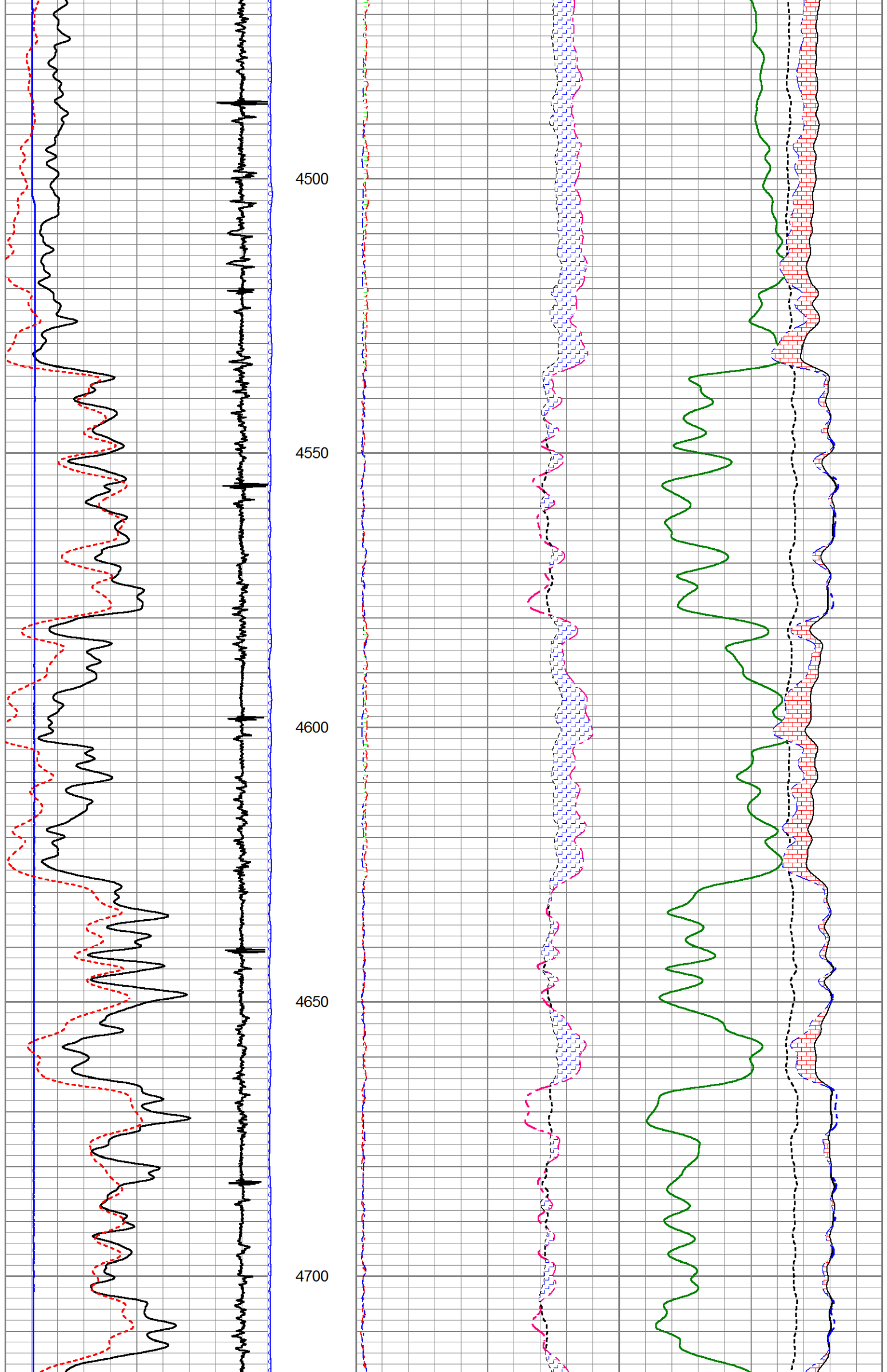
0	GR	200	LTEN (lb5000 OAI1100)	60	SGFF					0
1800	CCL	-200		2	RNF (Ratio Near/Far)	0.5	100000	FSIN	0	
0	LSPD (ft/min)	200		1.65	RIN (Ratio Near/Far Incl)	0.65	60000	NCAP	0	
10	SGINear	40		0	NFTR (Near Fit Error)	100	60000	FCAP	0	
				0	FFTR (Far Fit Error)	100				

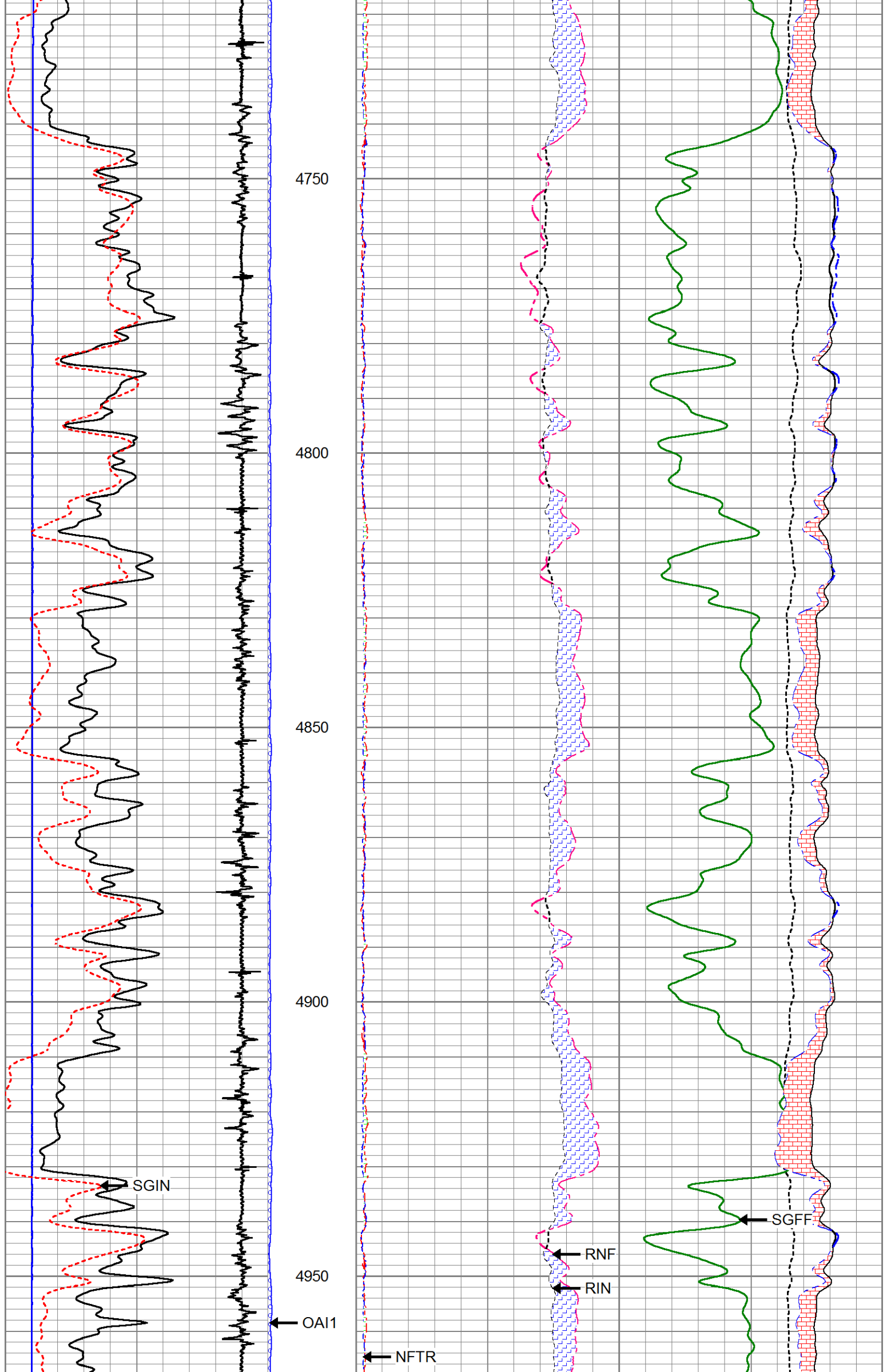


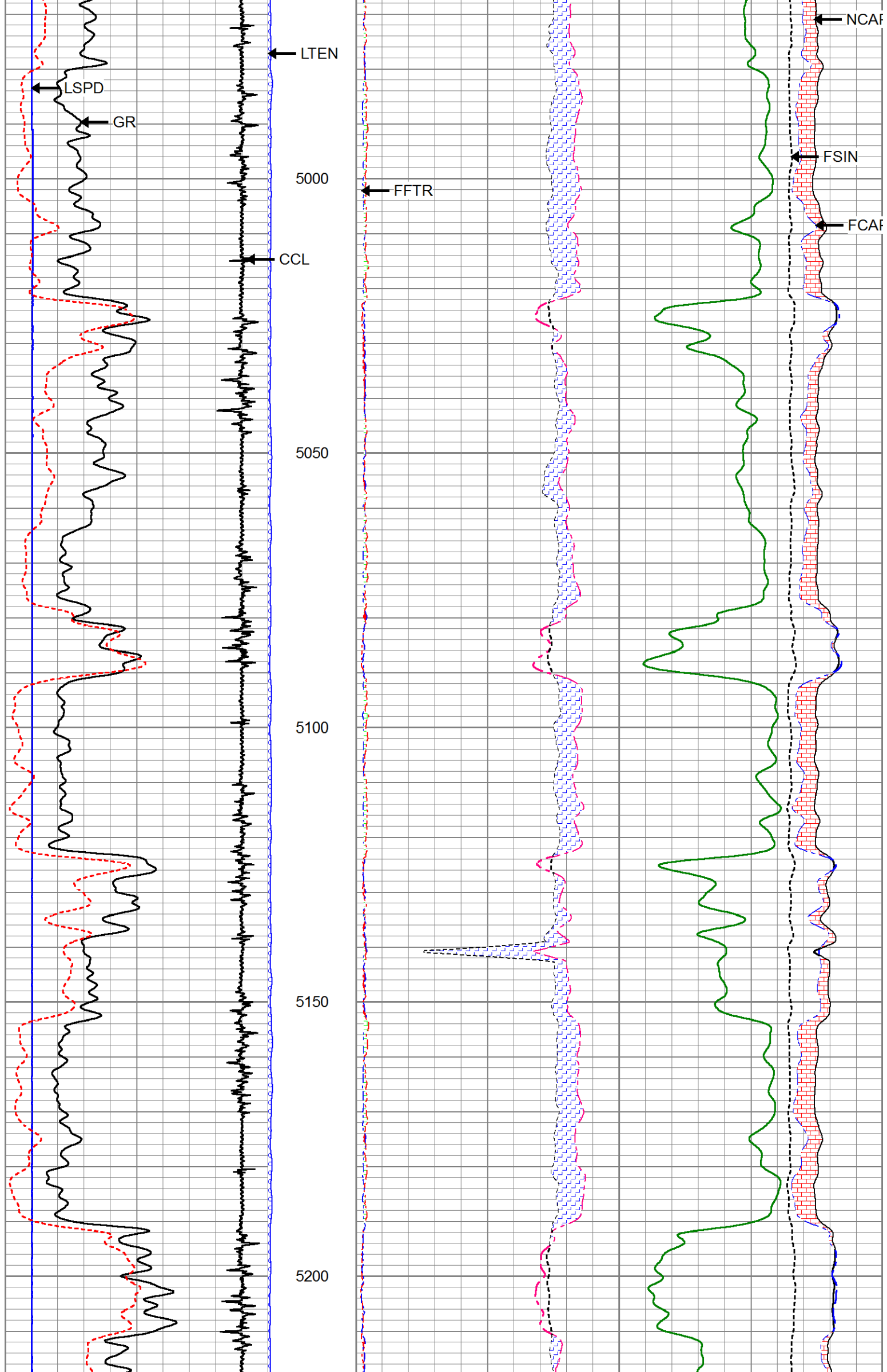


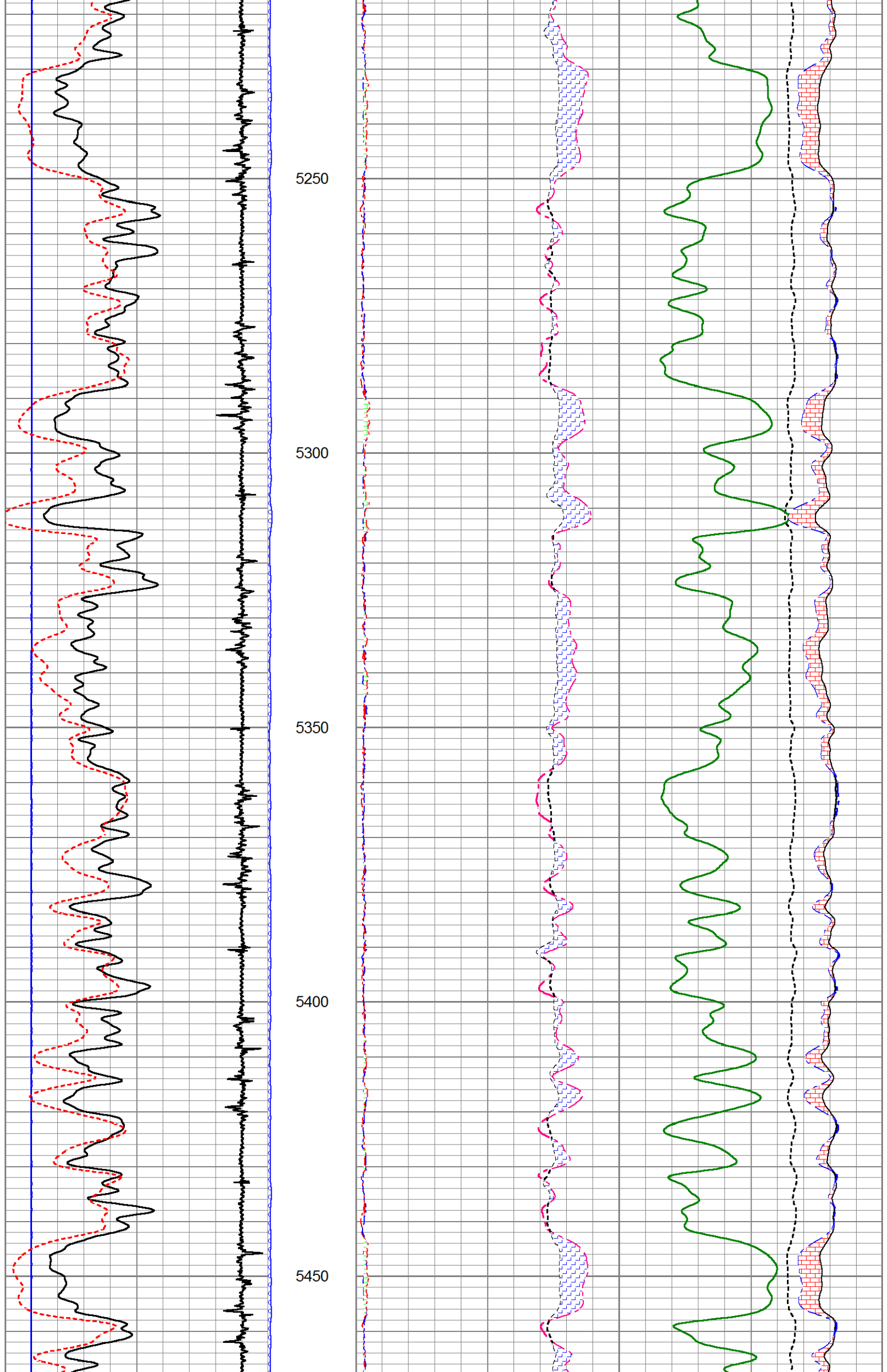


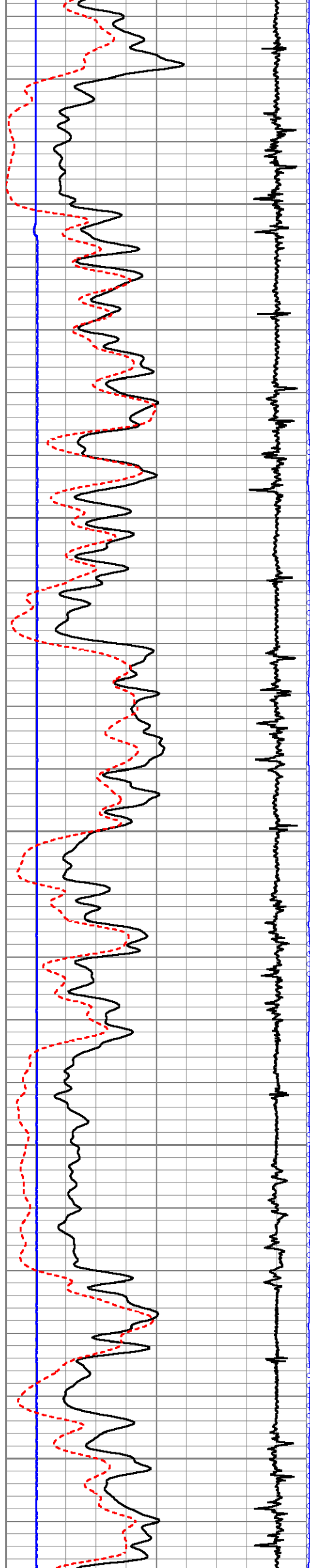












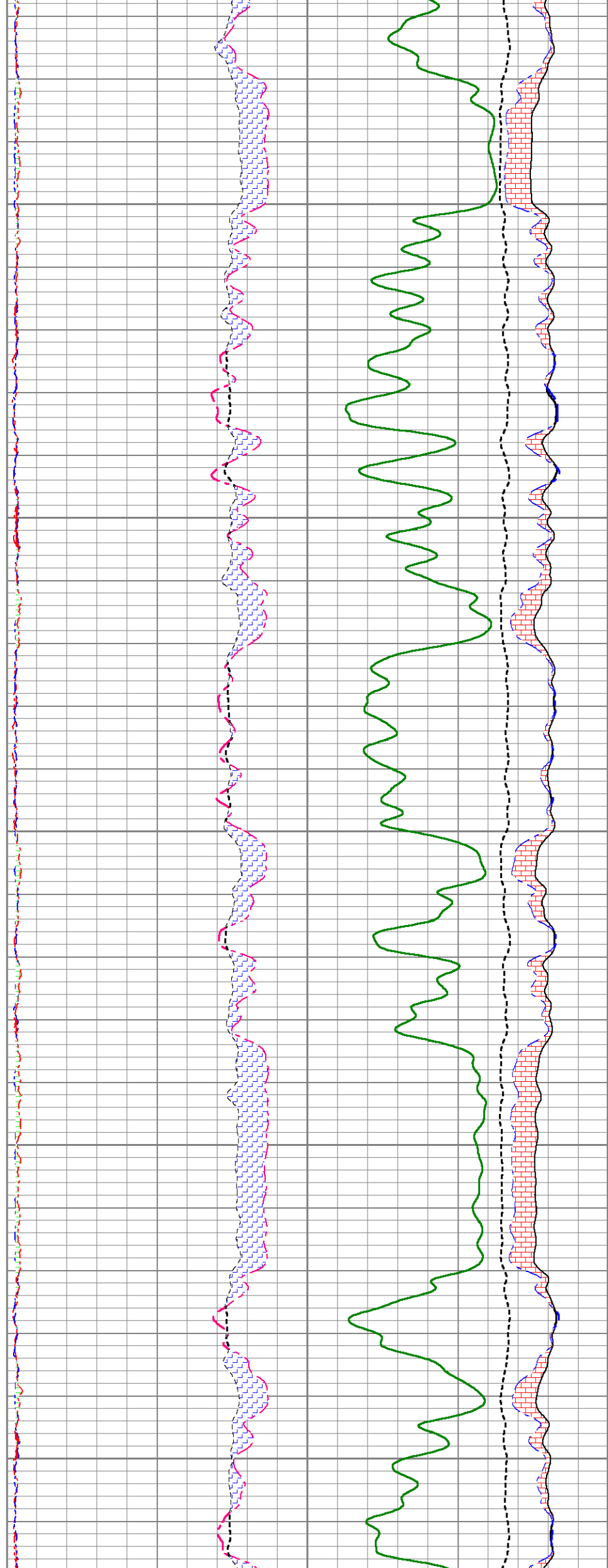
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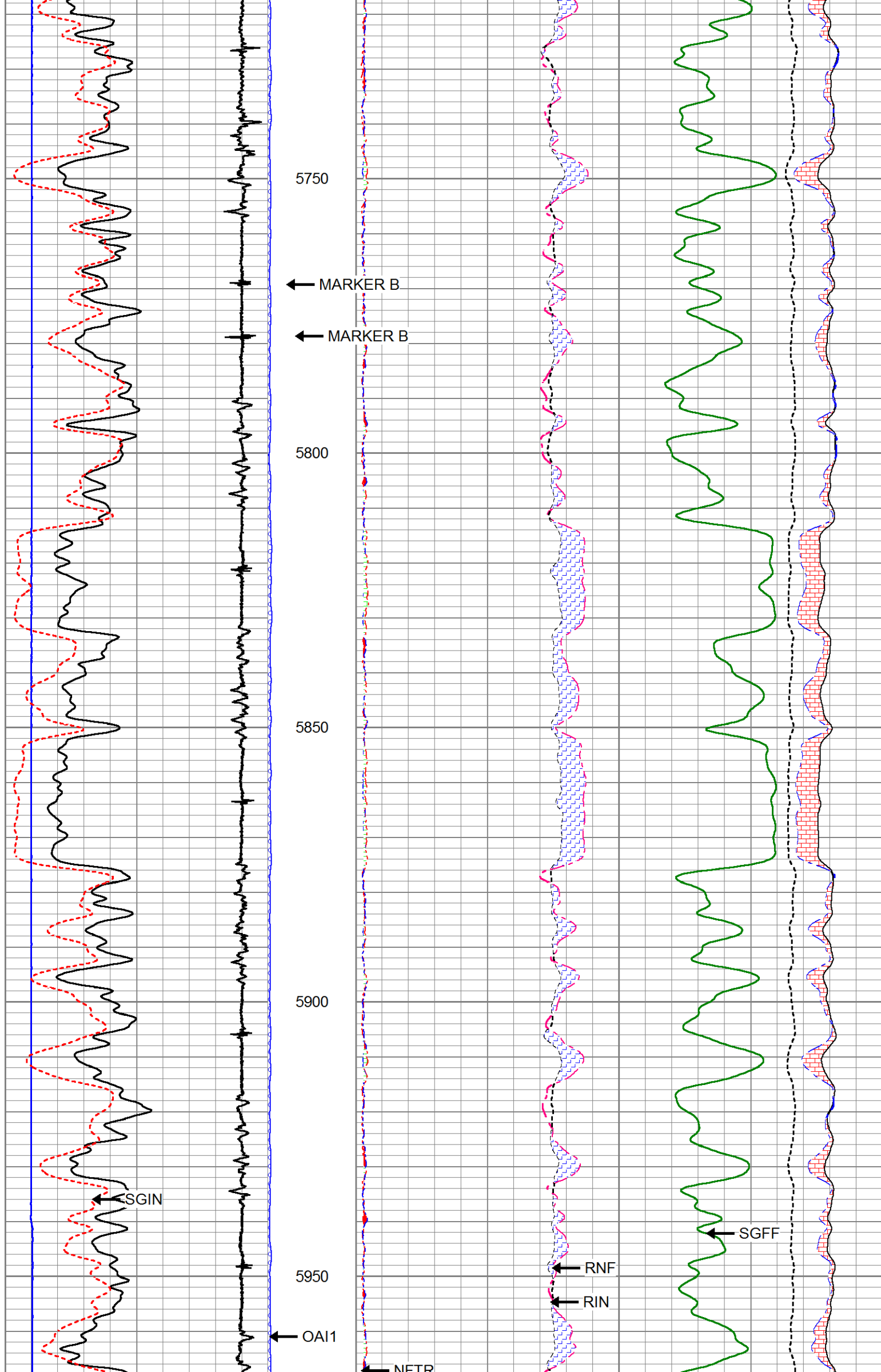
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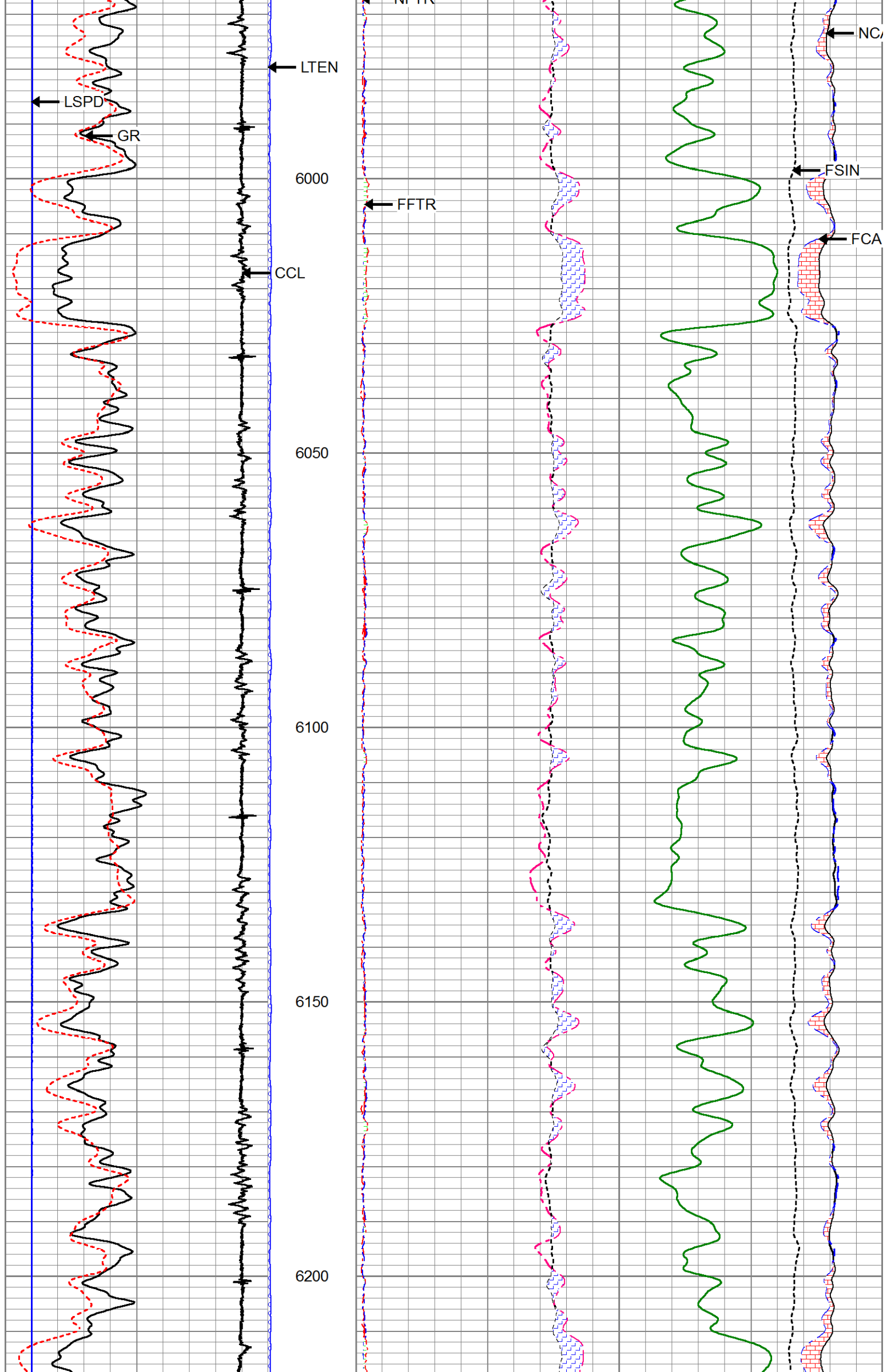
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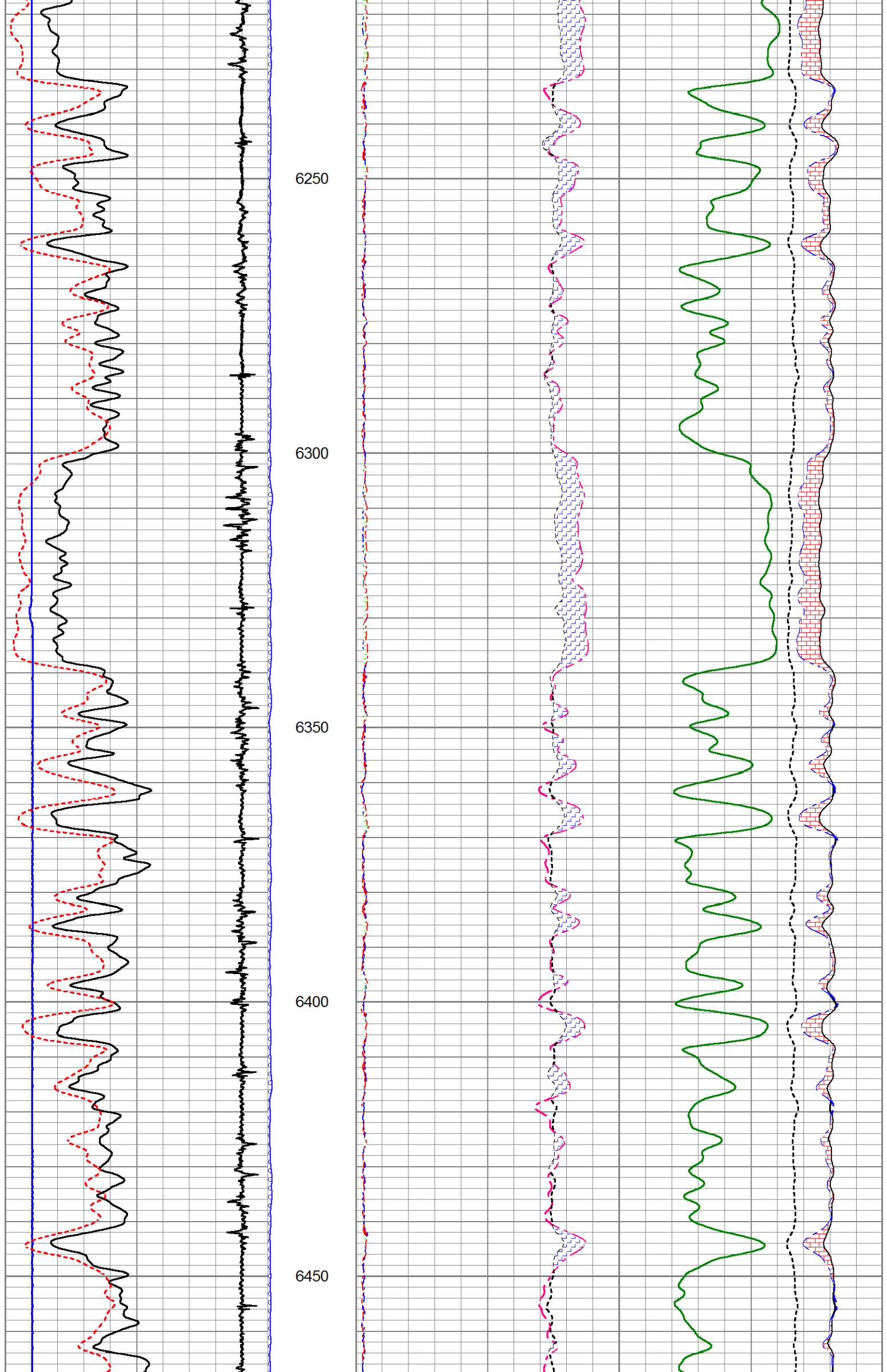
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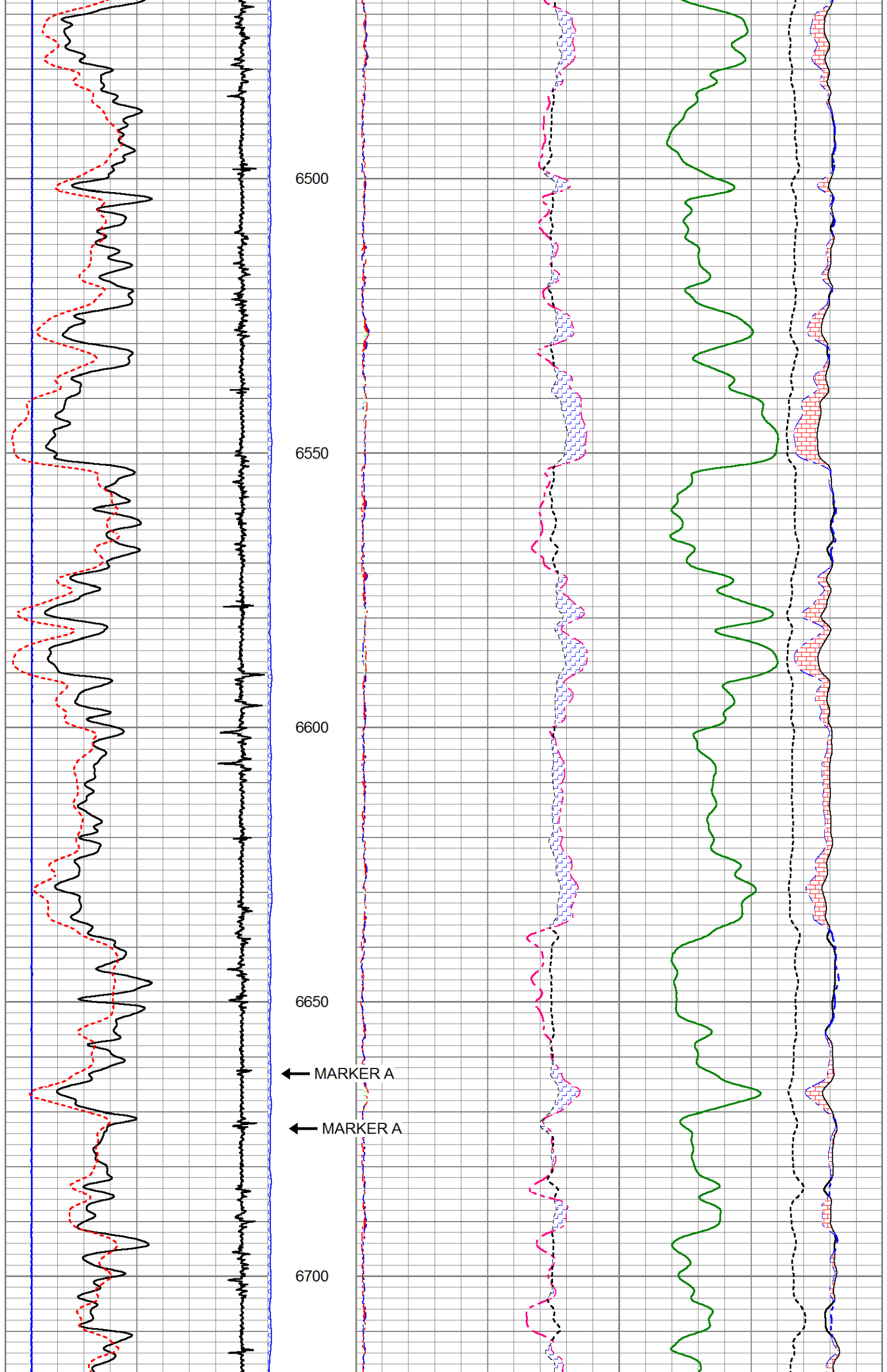
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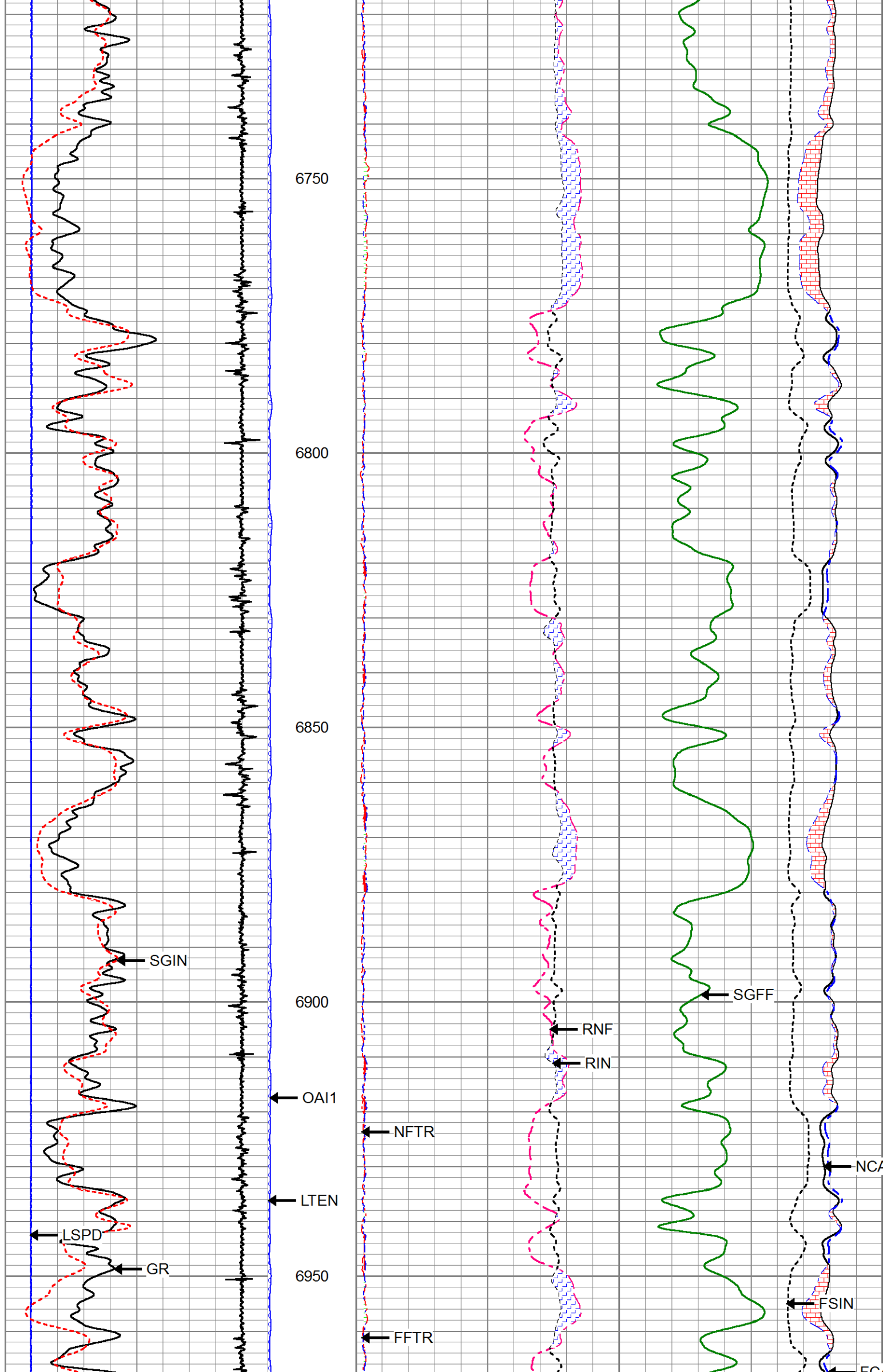


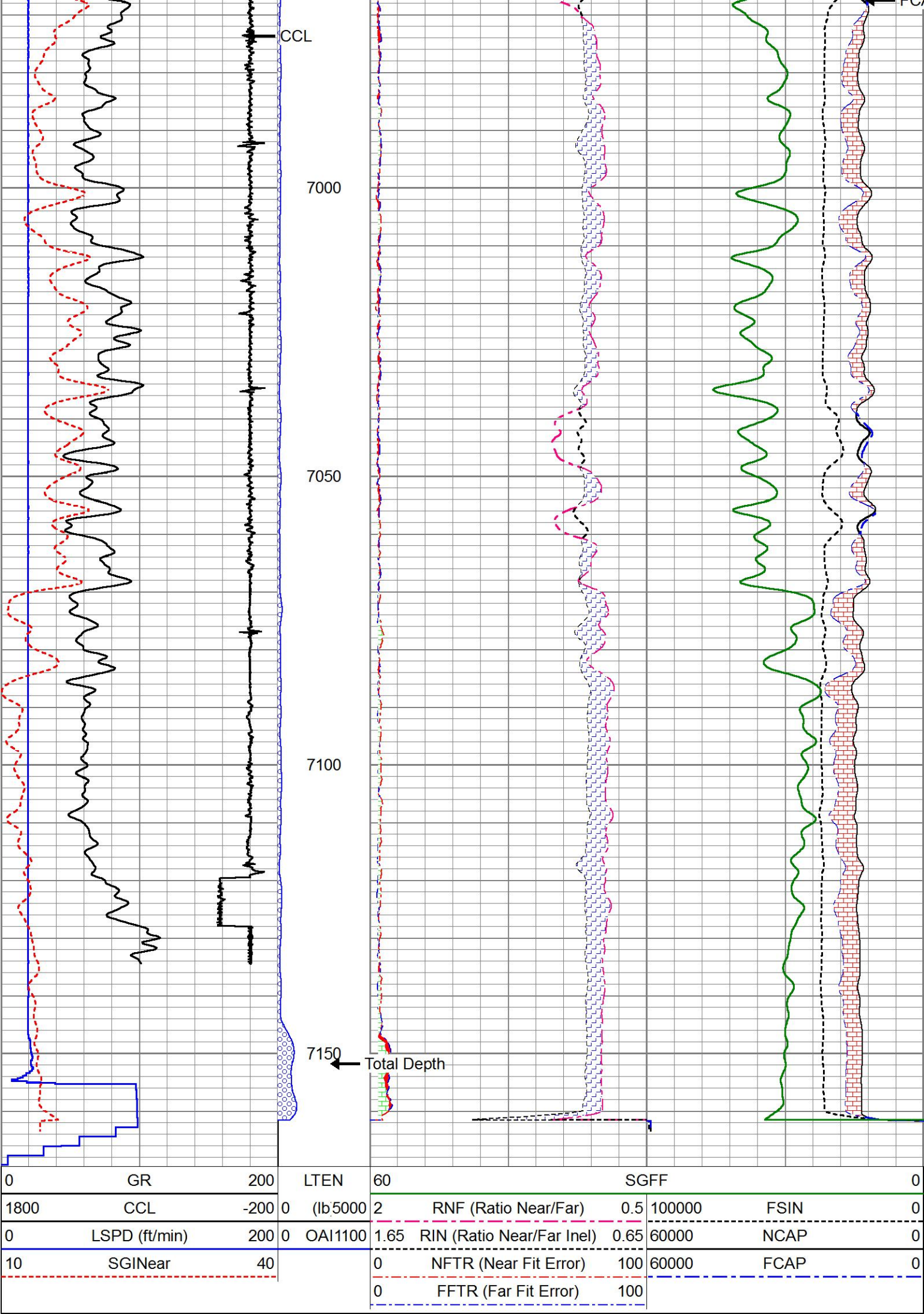






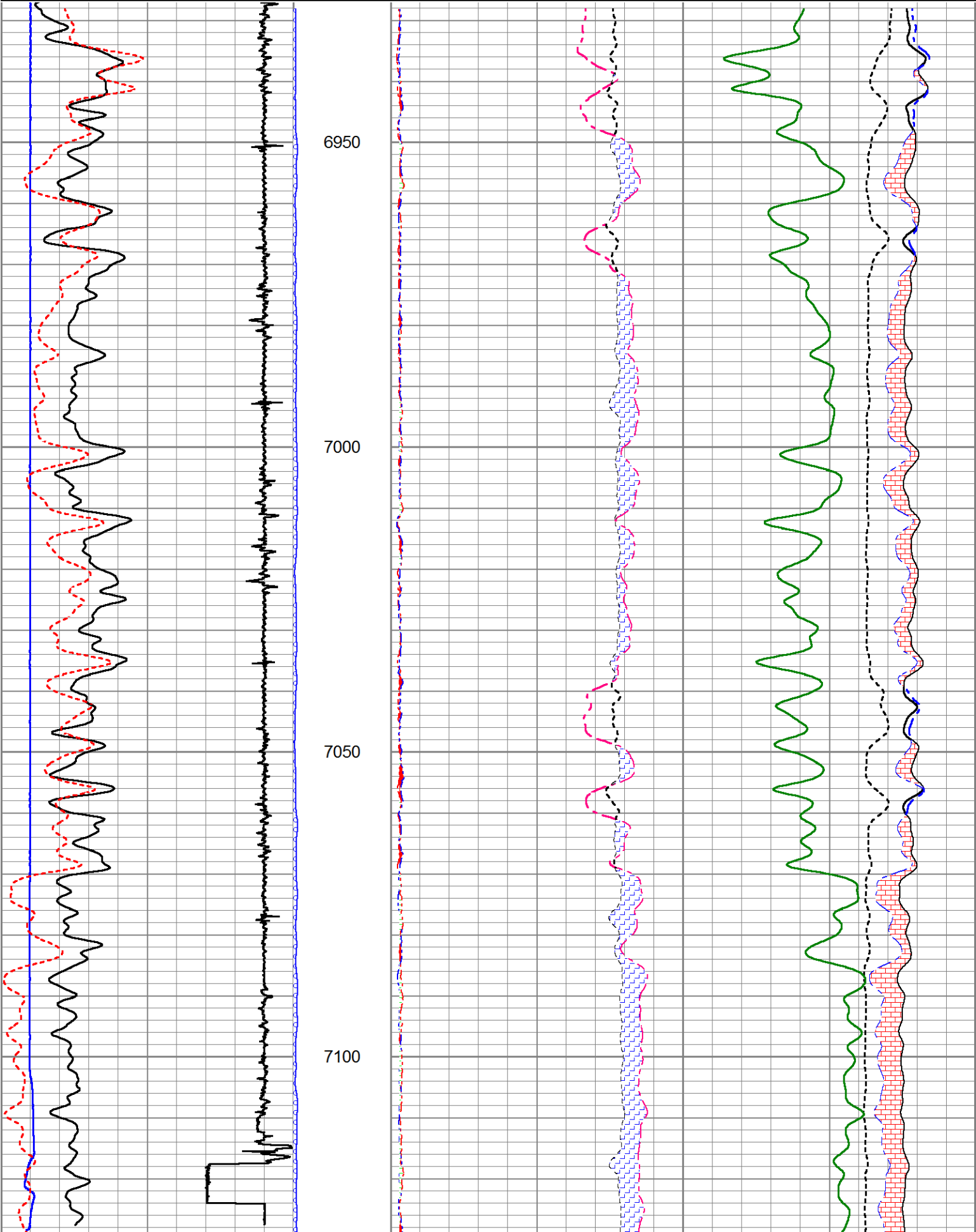


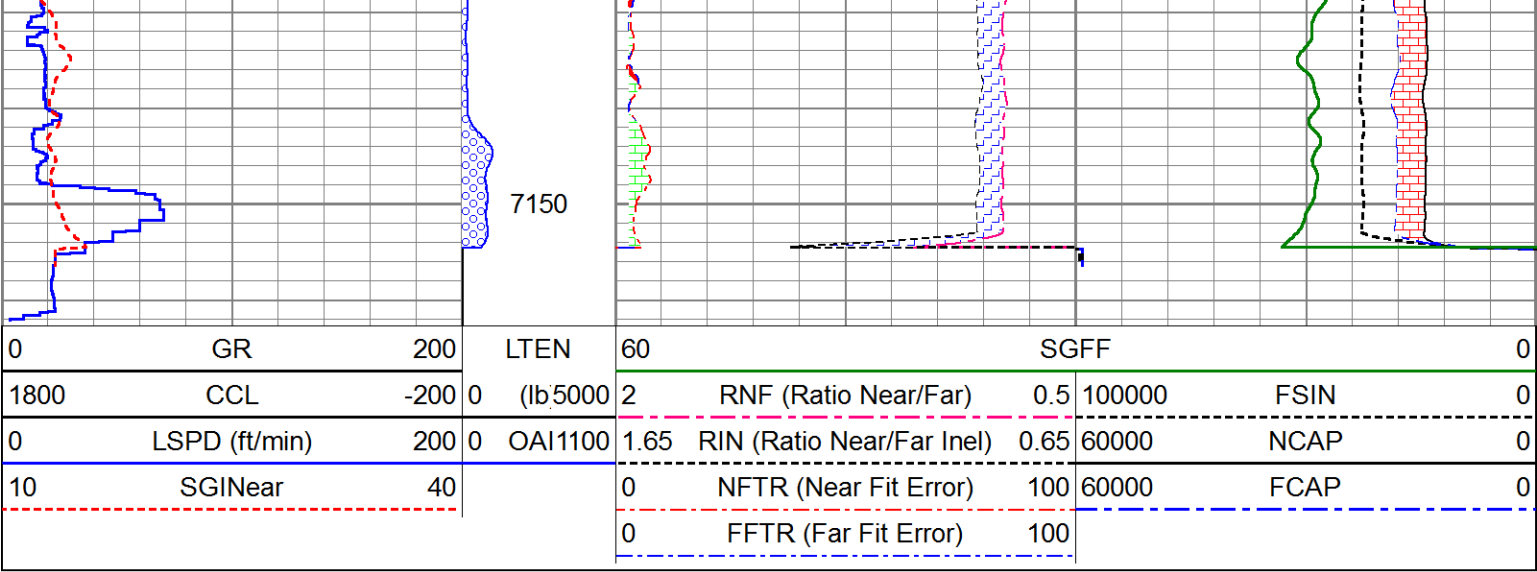




Database File	ursa-tom-31c_rmt.db
Dataset Pathname	pass3
Presentation Format	!1!!rmt_rmti
Dataset Creation	Mon Aug 29 19:43:37 2016
Charted by	Depth in Feet scaled 1:240

0	GR	200	LTEN (lb,5000 OAI1100	60	SGFF					0
1800	CCL	-200		2	RNF (Ratio Near/Far)		0.5	100000	FSIN	0
0	LSPD (ft/min)	200		1.65	RIN (Ratio Near/Far Incl)		0.65	60000	NCAP	0
10	SGINear	40		0	NFTR (Near Fit Error)		100	60000	FCAP	0
				0	FFTR (Far Fit Error)		100			





Log Variables

DatabaseD:\Warrior_data\ursa-tom-31c_rmt.db
Dataset field/well/run1/pass4/_vars_

Top - Bottom

BHSAL1	BHSAL2	BHTEMP_Src	BITSIZE in	BORSAL kppm	BOTTEMP degF	CASED?	CASEOD in
1	0	TEMP	7.875	150	200	Yes	4.5
CASETHCK in	CASEWGHT lb/ft	LTH	MSGGN	MudWgt lb/gal	PERFS	POROS1	POROS2
0.25	11.6	Sandstone	1	9.5	0	1	0
RHOFC	SO in	SRFTEMP degF	TDEPTH ft	UHSGC	USERFTT usec/ft	ZREF MRayl	
0.25	0	0	0	NONE	0	1.7	

Calibration Report

Database File ursa-tom-31c_rmt.db
Dataset Pathname pass4
Dataset Creation Mon Aug 29 19:56:52 2016

Reservoir Monitor Tool I Calibration Report

Serial-Model: 11680597-A
Shop Calibration Performed: Sat Aug 27 17:21:57 2016

Carbon/Oxygen Mode

Stabilization

Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	84.00	80.00	4.00	+/-15.00	V
ITCR2	3130	3250	-120	+/-250	cps

Near Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0278	5.69	<6.00
Fe	207	206 +/-2	0.0967	----	----
NGAIN = 0.992	NZOFF = 0.8				

Far Detector

	Channel	Expected Value	Amplitude	FWHM	Tol.
H	60	60 +/-2	0.0382	5.90	<6.50
Fe	209	208 +/-2	0.0926	----	----
FGAIN = 0.992	FZOFF = 0.8				

Flask Temperature		57.6 degF			
Result	Logged	Expected Value	Diff.	Tol.	Units
COIR2	0.44	0.45	-0.01	+/-0.02	
LIRI2	1.37	1.36	0.01	+/-0.05	
TCCR2	3766	4000	-234	+/-1000	cps
ITCR2	3102	3200	-98	+/-250	cps

Sigma Mode					
Stabilization					
Result	Logged	Expected Value	Diff.	Tol.	Units
GENV	84.00	80.00	4.00	+/-15.00	V
FCAP	9744	10000	-256	+/-500	cps
Horizontal Water Tank					
Result	Logged	Expected Value	Diff.	Tol.	Units
N/F Normalizer	0.92	0.95	-0.03		
N/F Inel Norm	0.60	0.61	-0.01		
RNF	1.09	1.07	0.02	+/-0.12	
RINC	1.68	1.64	0.04	+/-0.18	
SGFN	24.13	24.00	0.13	+/-0.50	cu
SGFF	22.93	22.85	0.08	+/-0.50	cu
FSIN	23037	24000	-963	+/-2000	cps
FCAP	9704	10000	-296	+/-1000	cps
NFTR	0.80			<5.00	
FFTR	0.91			<5.00	
NBKG	216			<500	cps
FBKG	105			<500	cps
RTN	0.37	0.40	-0.03	+/-0.10	usec
RTF	0.42	0.40	0.02	+/-0.10	usec

Calibration Software Modules	
HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1
Log Data Acquisition Software Modules	
HRMTI Module	2015.5.4.0
RMTI Module	2015.10.16.1



Cement Bond Log Shop Calibration Report	
Serial-Model:	12091451-A
Calibration Performed:	Fri Aug 19 09:34:51 2016

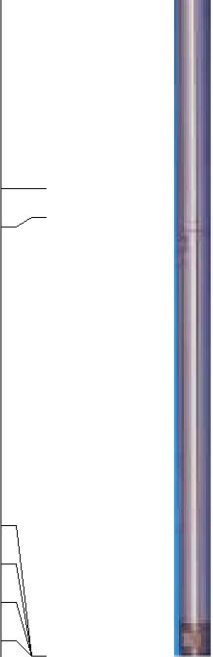
Free Pipe Calibration		
TT	Measured	Units
Amplitude	289.1	usec
Log Base Line	572.6	mV
	7.2	mV
Calibration References and Gain		
Name	Value	Units
Pipe O.D.	7.000	in
Pipe Weight	26.0	lb/ft
Pipe Ref. Amp.	65.0	mV
Amp. Gain	0.115	

Gamma Ray Calibration Report	
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Type / Serial:	002 / 12105780
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SHOP CALIBRATION		Wed Aug 17 17:47:54 2016			
	Counts/Sec.	Gain	Offset	Jig	Units
Background	27.8				cps
Calibrator	295.2	1.3760			cps
					GAPI/cps
PRIMARY VERIFICATION					
Background	39.3				cps
Calibrator	407.7				cps
Difference				368.5	GAPI
BEFORE SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI
AFTER SURVEY VERIFICATION					
Background	0.0				cps
Calibrator	0.0				cps
Difference				0.0	GAPI

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	34.87		STNDCH-STND_CH 1.4375 IN CABLE HEAD	1.50	1.44	1.00
GR	32.61		TTTCU-002 (12105780) Through Tubing Telemetry Cartridge - Ultrawire	7.65	1.69	100.00
Temp	22.89		XHU-003 (000001) Crossover Halliburton 1553 to Ultrawire	1.58	1.69	7.00
			CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00
TT3FT	20.64		HCBLM-A (12091451) Halliburton HCBLM Tool	9.38	2.75	116.00
AMP3FT	20.64					
WVF5FT	19.68					
WVF3FT	16.16		CENT-CASTM-CENT CAST M INLINE CENTRALIZER	2.16	3.13	25.00

RmtTFGT	8.25		RMTI-A (11680597) Halliburton RMTI Tool	14.00	2.13	77.00
RmtTNGT	7.75					
RmtFP5V	0.00					
RmtNFwvMcsPh	0.00					
RmtCommFWar	0.00					
LLMTEN	0.00					
Dataset: ursa-tom-31c_rmt.db: field/well/run1/pass4						
Total length: 38.44 ft						
Total weight: 351.00 lb						
O.D.: 3.13 in						

Company	URSA OPERATING CO., LLC.				
Well	TOMPKINS 31C-08-07-95				
Field	PARACHUTE				
County	GARFIELD		State	CO	
HALLIBURTON	GAMMA RAY COLLAR				
	RESERVOIR MONITOR				
	LOG				
	(GR-RMTI)				